YAMAHA

AW2816

PROFESSIONAL AUDIO WORKSTATION

Owner's Manual

Keep This Manual For Future Reference.

E

Important

Read the following before operating the AW2816

■ Warnings

- Do not place a container with liquid or small metal objects on top of this unit. Liquid or metal objects inside this unit are a fire and electrical shock hazard.

- Do not allow water to enter this unit or allow the unit to become wet. Fire or electrical shock may result.

- Connect this unit's power cord only to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Failure to do so is a fire and electrical shock hazard.

- Do not scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard.

- Do not place heavy objects, including this unit, on top of the power cord. A damaged power cord is a fire and electrical shock hazard. In particular, be careful not to place heavy objects on a power cord covered by a carpet.

- To avoid possible electrical shock, do not install an I/O card, hard disk, or CD-RW drive in the unit while the power cable is connected to the AC outlet.

- Use the ground connector on the rear panel to securely ground the device. If the device is not grounded, you may suffer a dangerous electrical shock.

- If you notice any abnormality, such as smoke, odor, or noise, or if a foreign object or liquid gets inside the unit, turn it off immediately. Remove the power cord from the AC outlet. Consult your dealer for repair. Using the unit in this condition is a fire and electrical shock hazard.

- Should this unit be dropped or the cabinet be damaged, turn the power switch off, remove the power plug from the AC outlet, and contact your dealer. If you continue using the unit without heeding this instruction, fire or electrical shock may result.

- If the power cord is damaged (i.e., cut or a bare wire is exposed), ask your dealer for a replacement. Using the unit with a damaged power cord is a fire and electrical shock hazard.

- Do not modify the unit. Doing so is a fire and electrical shock hazard.

- Do not apply force to, disassemble, or modify the I/O card, the PC board of the hard disk, or the connectors on the unit. Otherwise, malfunction, fire, or electrical shock may result.

- If lightning begins to occur, turn off the power switch of the unit as soon as possible, and unplug the power cable plug from the electrical outlet.

- If there is a possibility of lightning, do not touch the power cable plug if it is still connected. Doing so may be an electrical shock hazard.

■ Cautions

- This unit has ventilation holes at the bottom to prevent the internal temperature rising too high. Do not block them. Blocked ventilation holes are a fire hazard.

- Hold the power cord plug when disconnecting it from an AC outlet. Never pull the cord. A damaged power cord is a potential fire and electrical shock hazard.

- Do not touch the power plug with wet hands. Doing so is a potential electrical shock hazard.

- Always touch a well-grounded metal surface or the like to fully discharge any static electric charge on your body and clothing before handling an I/O card or hard disk.
  Neglecting this precaution can cause damage to the unit from static electricity.

- Be careful not to touch the leads (metal feet) on the rear side when handling an I/O card or hard disk. Touching the leads can cause contact defects.

- Use only the included power supply cable for this unit. Using other types may be a fire hazard.

■ Operating Notes

- The digital circuits of this unit may induce a slight noise into nearby radios and TVs. If noise occurs, relocate the affected equipment.

- Using a mobile telephone near this unit may induce noise. If noise occurs, use the telephone away from the unit.

- XLR-type connectors are wired as follows:
  pin 1: ground, pin 2: hot (+), and pin 3: cold (–).

- Insert TRS phone jacks are wired as follows:
  sleeve: ground, tip: send, and ring: return.

- If the message "LOW BATTERY" appears when you turn on this unit, contact your dealer as soon as possible about replacing the internal data backup battery.
  We recommend that you save the data on CD-RW drive or external SCSI device before replacing the battery.

- The performance of components with moving contacts, such switches, rotary controls, faders, and connectors, deteriorates over time. The rate of deterioration depends on the operating environment and is unavoidable. Consult your dealer about replacing defective components.

Handling the CD-R/RW media

Please observe the following points when handling the disk.

Failure to do so may cause problems such as the recorded data being lost, the drive to malfunction, or the printed label to become blurred.

- Do not place the disk in locations of direct sunlight, high temperature, or high humidity.
- Do not touch either surface of the disk.
- Hold the disk at the edges. Gently wipe dust or dirt off of the recording surface of the disk.
- Do not wipe the disk with chemicals or detergents.
- Do not bend or drop the disk.
- Use an air duster or cleaner to remove dust. Vigorously rubbing the surface of the disk with a dry cloth may scratch the disk.
- Do not write on the disk or affix labels to it.

Storing produced data

Produced data can be lost due to breakdown or mistaken operation. We recommend that you store all important data on CD-R or CD-RW disks or other external storage medium.

Responsibility for loss of data, etc.

- Yamaha will accept no responsibility for any damages (including consequential or incidental) incurred by the customer or any third party as a result of loss or impairment of the data stored on the CD-R media, regardless of whether such loss could have been or actually was foreseen by Yamaha.
- Nor does Yamaha guarantee the media against any defect that may render it unusable.

Cautions for handling optional equipment

- For inquiries concerning I/O card, hard disk, or CD-RW drive handling, please consult your Yamaha dealer.
- Always switch off the power for the main unit and all peripherals, unplug the power cord for the main unit from the outlet, then disconnect the cables connecting the main unit with the peripherals before starting installation work.
- Wear thick gloves when working on this equipment to avoid cutting your hands on metal fittings or the like on the main unit, I/O card, hard disk, or CD-RW drive.

- Always touch a well-grounded metal surface or the like to fully discharge any static electric charge on your body and clothing before starting to work on this equipment.
- Take extreme care to avoid touching any terminals or board surface parts.
- In order to protect the electronic circuits of the I/O card, hard disk, CD-RW drive, etc. from damage due to static electricity, when handling any of this equipment, take the most extreme care to avoid touching IC leads or other electronic parts.
- Be careful not to drop any screws into the main unit. If you switch the power on with a dropped screw still in the main unit, the main unit may malfunction or break down. If a dropped screw can not be retrieved, consult your Yamaha dealer.
- If the hard disk or CD-RW drive breaks down, contact the store where you purchased that equipment.

Except for duplication for personal use or when there is no copyright problem, the duplication or transfer of commercially sold music/sound data without the permission of the copyright holder is prohibited. When using this equipment, please consult with a copyright specialist.

■ Warning

The Yamaha Professional Audio Workstation is designed to be used professionally and responsibly by recording industry professionals. The reproduction, distribution, or, in some instances, the public performance, of all or a portion of a sound recording or musical composition protected by copyright, without having obtained a proper license from the relevant copyright holders, may constitute copyright infringement and may otherwise violate copyright laws and other laws. In addition, laws (such as the Audio Home Recording Act and the Digital Millennium Copyright Act in USA) contain certain restrictions and requirements that may apply to your use of works protected by copyright and related information and data that may accompany such works. Violation of such laws may result in civil remedies and, in some cases, criminal liability.

Because violations of copyright laws may be serious offenses, you should consult a lawyer familiar with the law of copyright, including all laws that may be applicable to your use of the Workstation (such as the Audio Home Recording Act and the Digital Millennium Copyright Act in USA), if you have any questions regarding your intended use of all or parts of sound recordings or musical compositions protected by copyright.

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Block diagram

Before you begin

This chapter explains preparations you need to make before using the AW2816, such as checking the included items and installing options.

Checking the included items

Please make sure that the package contains the following items. If any items are missing, please contact your dealer.

- AW2816 mixer/recorder unit: 1
- Owner's manual (this document): 1
- Tutorial: 1
- Power supply cable: 1
- CD-ROM: 1
- Screws for installing 2.5 inch hard disk/CD-RW drive: 8

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Yamaha website

<http://www.yamaha.co.jp/product/proaudio/homeenglish/>

Installing an internal hard disk
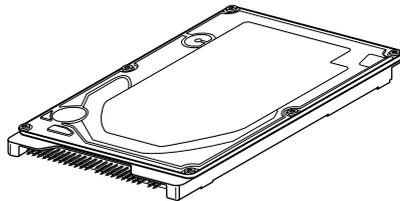
You must install a hard disk in the AW2816 before using it. If you attempt to use the AW2816 without installing a hard disk, the recorder section and mixer section will fail to operate correctly, and the AW2816 will be damaged as well.

About the internal hard disk

On the AW2816, all data necessary for reproducing a composition (mixer settings, recorder settings, audio data etc.) is stored on the hard disk as a "song."

An internal hard disk is installed by attaching it to the inside of the hard disk cover plate located on the bottom panel of the AW2816. Hard disks with the following specifications can be used.

- Type: IDE 2.5 inch (attachment location conforms to SFF-8201)
- Thickness: no particular limitation
- Capacity: no particular limitation (however, the AW2816 can use a maximum capacity of 64 GB)
- Models known to work: consult your local Yamaha distributor or refer to the website at the following URL.
<http://www.aw2816.com/>

⚠️
- *By "models known to work," we mean commercially available models that Yamaha has obtained, installed in the AW2816, and successfully tested by means of various operational tests. However, we cannot take into account slight differences in performance that may occur due to the manufacturing tolerances of each manufacturer.*
- *Hard disks are precision devices. Strong physical shock, magnetism, static electricity, or excessive current etc. can damage the data on a hard disk. You must use media such as an external SCSI device or CD-RW to backup your important musical data.*
- *Please be aware that Yamaha Corporation will accept no responsibility for any damages, neither direct nor indirect, resulting from the use of any of the above hard disks.*

Installation

Please read and observe the cautions on installing optional equipment listed at the beginning of this manual.

The following steps describe the procedure by which the 2.5 inch IDE hard disk is attached to the hard disk cover plate located on the bottom of the AW2816 for installation.

⚠️
- *Hard disks are precision devices. Do not subject them to physical shock or static electricity, etc.*
- *Do not place a hard disk nearby devices that produce a strong magnetic field, or in locations of extreme cold, heat, or moisture.*
- *Before you handle a hard disk, touch your hand to a grounded metallic object to release any static charge that may be present in your body or clothing. If you fail to do so, static electricity may damage the hard disk.*
- *Never attempt to disassemble a hard disk or apply excessive force to it.*
- *In order to install the internal hard disk, you will need to turn the AW2816 upside down. Please make sure that your work surface is spacious enough.*
- *The AW2816 is shipped with four screws for attaching a 2.5 inch hard disk, and four screws for attaching a CD-RW drive, making a total of eight included screws of the same type.*

1 You will need the following items.
- The AW2816 itself
- A 2.5 inch IDE hard disk (sold separately) for installation
- Four screws included with the AW2816 for attaching the 2.5 inch hard disk
- A philips (+) screwdriver
- Work surface

2 Make sure that the power of the AW2816 is turned off. For safety's sake, disconnect the power cable from the AC outlet.

⚠️
Always switch off the power for the main unit and all peripherals, unplug the power cord for the main unit from the outlet, then disconnect the cables connecting the main unit with the peripherals before starting installation work.

3 Spread a soft cloth over your work surface, and place magazines or books to support the four corners of the AW2816 so that the faders, keys, and other controllers on the top panel will not be damaged. Then turn the AW2816 face down.

4 From the bottom, unfasten the hard disk cover plate to which the internal 2.5 inch IDE hard disk will be attached.

Hard disk cover plate

⚠
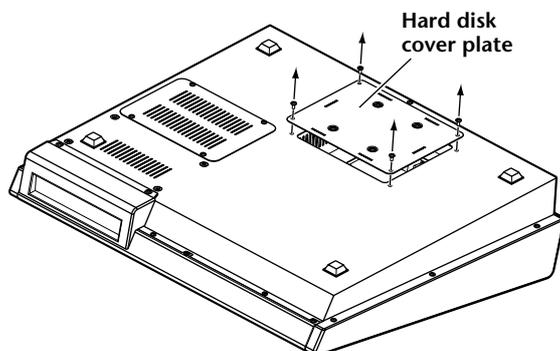
The screws you remove will be used again to fasten the cover plate, so be careful not to lose them.

5 Turn over the hard disk cover plate. As shown in the illustration, place the hard disk to be installed on the cover plate, align the screw holes of the hard disk with the holes of the cover panel, and use a screwdriver and the included screws to fasten the hard disk at four locations.

Connector

⚠
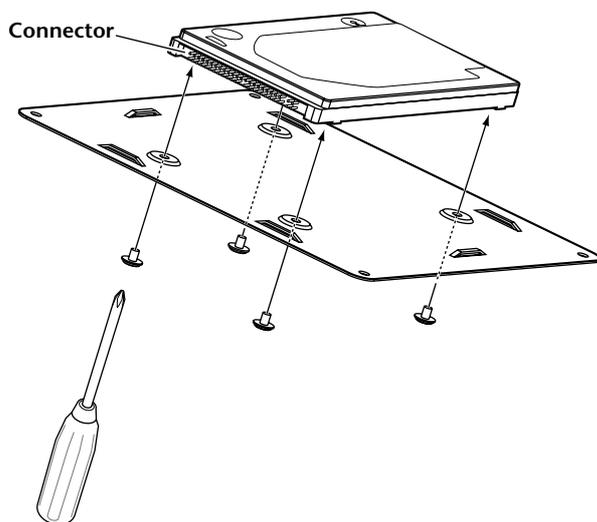
If you fail to tighten the screws all the way, the hard disk may vibrate and fail to operate correctly.

6 Pull out the flat cable from inside the AW2816, and plug the flat cable into the connector of the hard disk as shown in the illustration. Press both ends of the flat cable connector to ensure that it is firmly plugged in all the way.

⚠

• *Even if the connector is difficult to insert, do not attempt to insert it by applying excessive force. Doing so may damage the hard disk, or you may injure yourself.*

• *When inserting the connector, be careful that it is not mis-aligned up/down or left/right.*
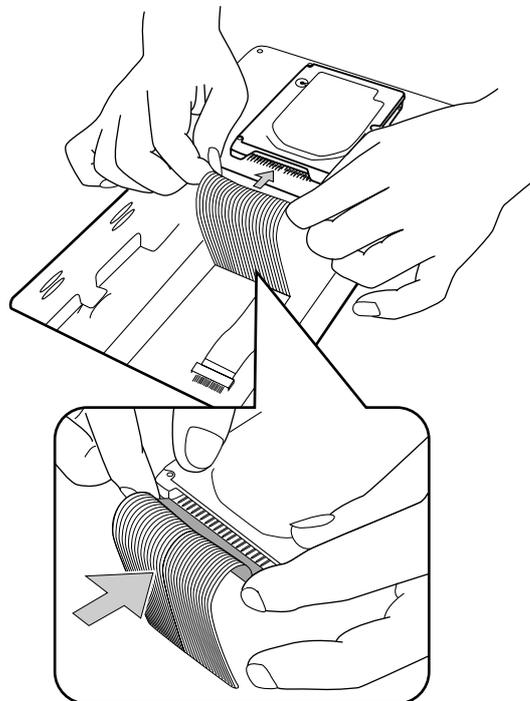
7 As shown in the illustration place the cover plate with the attached hard disk back onto the bottom panel of the AW2816, and fasten the cover plate to the bottom panel using the four screws that you removed in step 4.

⚠
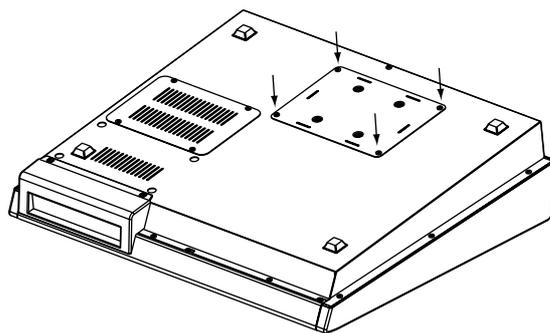
• *You must use the same screws that you removed in step 4, or identical screws. Using longer screws may damage the interior of the unit, or may cause electrical shock.*

• *Do not turn on the power of the AW2816 until all options have been installed.*

• *When you turn on the power of the AW2816 after installing a new hard disk, formatting of the hard disk will begin automatically (→ P.11).*

Installing a CD-RW drive
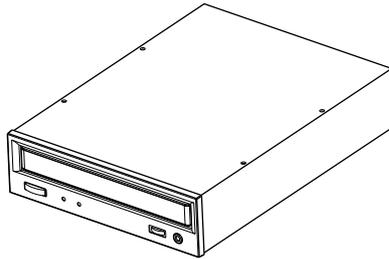
About the CD-RW drives

A CD-RW drive is an option that allows you to create music CD's, to backup/restore internal hard disk data, to play a music CD or to read a CD-ROM. An internal-type CD-RW drive can be installed by removing the CD-RW drive cover from the front panel. CD-RW drives with the following specifications can be used.

- Interface: ATAPI
- Models known to work: consult your local Yamaha distributor or refer to the website at the following URL.
  <http://www.aw2816.com/>

⚠️

- *CD-RW drives designed for internal installation can be installed in the AW2816. Please be aware that internal CD-RW drives designed for use with the AW4416 cannot be used in the AW2816.*
  In the case of external SCSI-connected CD-RW drives, a CD-RW drive usable with the AW4416 can also be used with the AW2816.
- *By "models known to work," we mean commercially available models that Yamaha has obtained, installed in the AW2816, and successfully tested by means of various operational tests. However, we cannot take into account slight differences in performance that may occur due to the manufacturing tolerances of each manufacturer.*
- *Please be aware that Yamaha Corporation will accept no responsibility for any damages, neither direct nor indirect, resulting from the use of any of the above CD-RW drives.*

CD-RW drive settings

Insert the jumper (included with the CD-RW drive) into the jumper switch on the rear panel of the CD-RW drive to set your CD-RW drive to function as a SLAVE unit. The AW2816 will not start up if the CD-RW is set to a mode other than SLAVE.

- If you are installing a CD-RW drive manufactured by Yamaha, it will be set to SLAVE when shipped from the factory, so you do not need to change the setting.
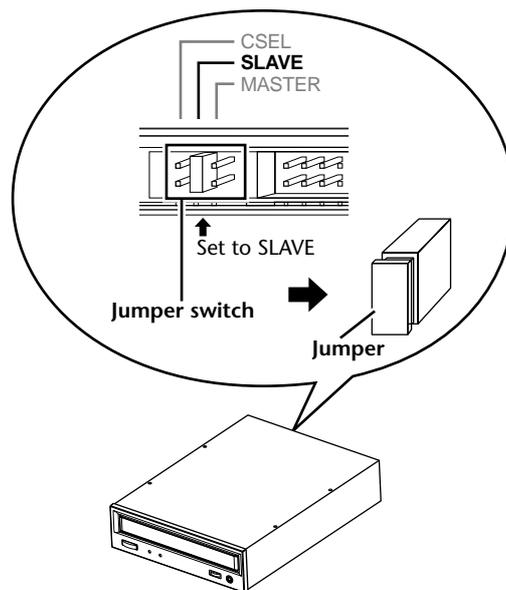
For details on this setting, refer to the manual that came with your CD-RW drive.

* Note that the cover panel of the AW2816 cannot be attached to a CD-RW drive with a lid-type tray. The AW2816's cover panel can be attached to a CD-RW drive with a tray of the following dimensions.
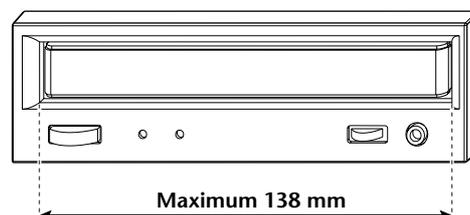
Maximum 138 mm

Installation procedure

Please carefully read the cautions for installing optional equipment given at the beginning of this manual.

1 You will need the following items.

- The AW2816 itself
- Internal CD-RW drive (option)
- Four screws (included with the AW2816) for attaching the CD-RW drive
- Philips (+) screwdriver
- Work surface

⚠

- *In order to install the CD-RW drive you will need to turn the AW2816 on its back. Make sure that you have a sufficiently broad work surface.*
- *The AW2816 is shipped with four screws for attaching the 2.5 inch hard disk, and four screws for attaching the CD-RW drive, making a total of eight screws of the same type.*

2 Make sure that the power of the AW2816 is turned off. For safety's sake, disconnect the power cable from the AC outlet.

⚠

Always switch off the power for the main unit and all peripherals, unplug the power cord for the main unit from the outlet, then disconnect the cables connecting the main unit with the peripherals before starting installation work.

3 Spread a soft cloth over your work surface, and place magazines or books to support the four corners of the AW2816 so that the faders, keys, and other controllers on the top panel will not be damaged. Then turn the AW2816 face down.

4 Remove the CD-RW drive cover from the front panel, and remove the bottom panel.

Bottom panel

CD-R/RW drive cover panel
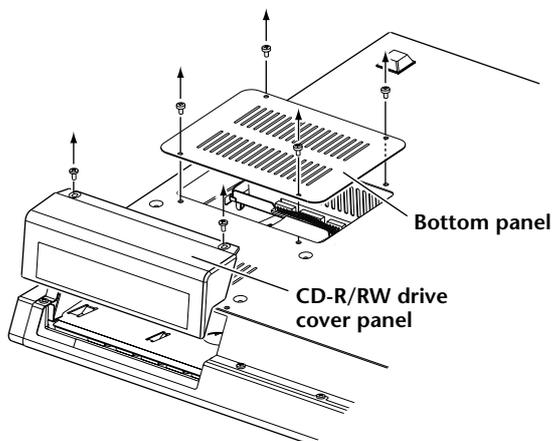
5 Turn the CD-RW drive over, and insert it little by little, stopping when the connector end of the CD-RW drive enters the opening in the bottom of the AW2816.
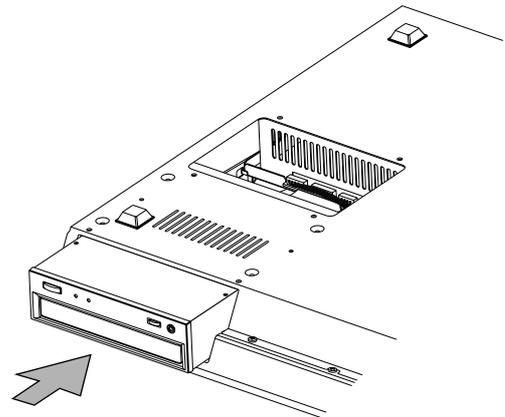
6 Connect the flat cable (①) and CD-RW drive power supply connector (②) (from inside the AW2816) to the connectors of the CD-RW drive. Connect the flat cable first, and then the power supply connector.

Power supply connector

Flat cable
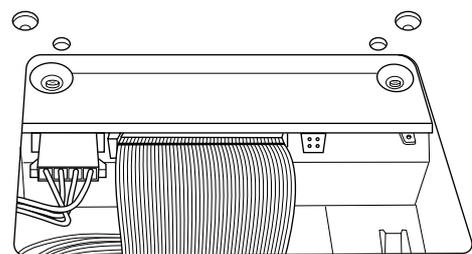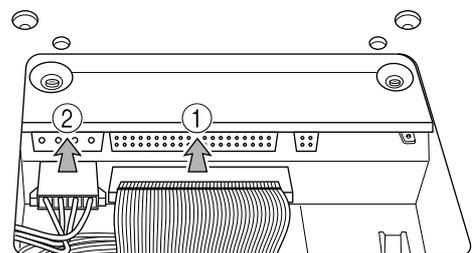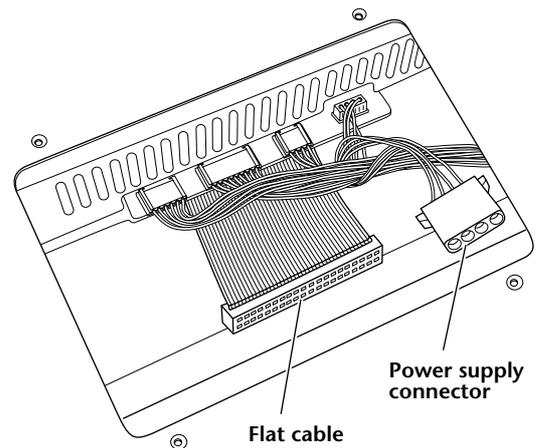
7 Align the fastening screw-holes on the bottom of the CD-RW drive with the screw-holes in the AW2816, and using a screwdriver and the included screws, fasten it in four locations.
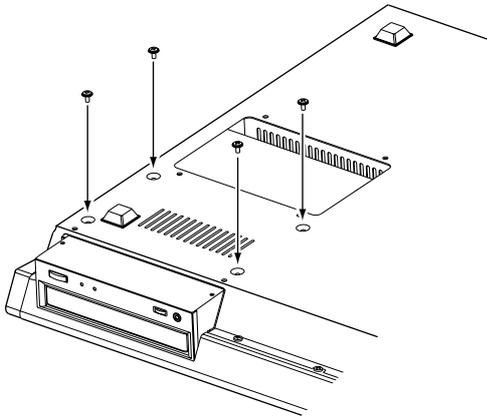
8 Re-attach the CD-RW drive cover and the bottom panel that you removed in step 4. At this time, remove the inner cover from the CD-RW drive cover.

Bottom panel

CD-R/RW drive cover panel

Inner cover
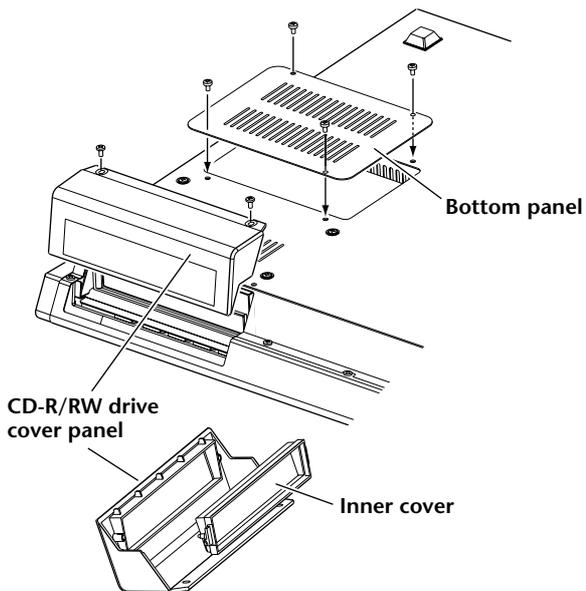
Removing the transport protection pad

The disc tray of some CD-RW drive models contains a transport protection pad that protects the internal mechanism from physical shock suffered during shipment. If your CD-RW drive contains this protective pad, please remove it before use.

⚠️

Be sure to save the transport protection pad for the next time you need to transport the unit.

Manual eject (emergency disc removal)

Manual eject allows you to remove the disc manually in the case of an emergency such as a malfunction of the disc tray mechanism (usually temporary) or a power failure. Please be aware that using this method frequently can cause the CD-RW drive to malfunction. For the location of the eject hole and the procedure, refer to the manual of your CD-RW drive.

In order to perform this operation, you will need a pin-like object 2 mm or less in diameter, such as a straightened paper clip.
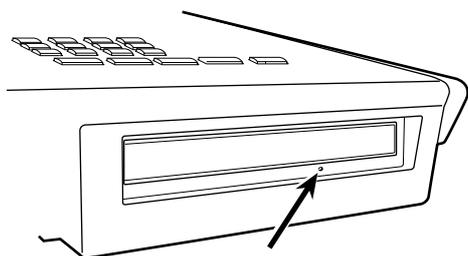
Eject Hall
Insert a pin-like object 2 mm
or less in diameter.

* This diagram shows a CD-RW drive manufactured by Yamaha Corporation.

Attaching an external SCSI device

About external SCSI devices

The external SCSI devices referred to here are storage devices used to backup/restore the internal data of the AW2816, and can be connected to the SCSI connector on the rear panel of the AW2816. The following types of storage device can be used.

- Type of drive: MO drives (128 MB, 230 MB, 540MB, 640 MB 1.3 GB), hard disk drives, CD-RW drives
- Interface: SCSI-2
- Models known to work: consult your local Yamaha distributor or refer to the website at the following URL.
  <http://www.aw2816.com/>

⚠

- *By "models known to work," we mean commercially available models that Yamaha has obtained, connected to the AW2816, and successfully tested by means of various operational tests. However, we cannot take into account slight differences in performance that may occur due to the manufacturing tolerances of each manufacturer.*
- *Please be aware that Yamaha Corporation will accept no responsibility for any damages, neither direct nor indirect, resulting from the use of any of the above storage devices.*

⚠

It is not possible to directly record or play back audio signals in realtime on an external storage device connected to the SCSI connector.

Connection procedure

1 Make sure that the power is turned off for the AW2816 and for the external SCSI device(s), and use a SCSI cable to connect the SCSI connectors of each device.

⚠

Use only good-quality SCSI cables.

When connecting an external SCSI device, use only high impedance SCSI cables of 100 ohms (±10 ohms) impedance that are 1 meter or shorter in length.

📝 **Note**
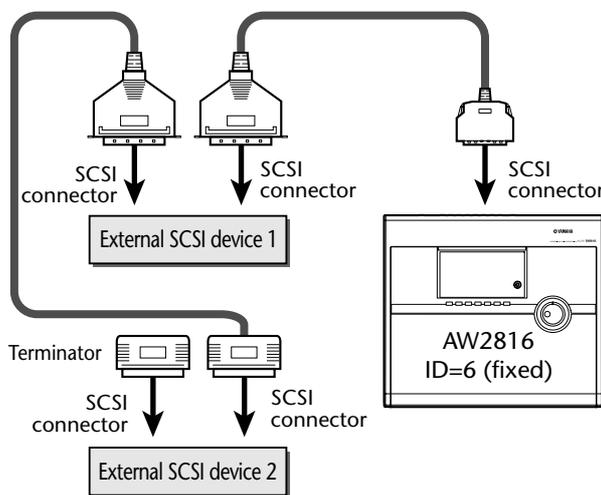
- *A maximum of seven SCSI devices (SCSI ID= 0–5,7) can be connected in a daisy-chain.*
- *When connecting multiple SCSI devices, you must make sure that the SCSI ID of each device does not conflict with any other device. (For details on how to set the SCSI ID, refer to the manuals for your SCSI devices.)*
- *The SCSI ID of the AW2816 itself is fixed at "6."*

2 Attach a terminator to the last SCSI device in the chain.

A "terminator" is a device that terminates the SCSI signal at the end of the chain, and is normally attached to the vacant SCSI connector of the last device in the daisy chain. If the SCSI device itself has a built-in terminator, turn it on. (For details on how to turn on the internal terminator, refer to the manual of your SCSI device.)

⚠️

Before using an external SCSI device, you will need to format it. For details on this procedure, refer to page 160.

■ About terminators

"Termination" refers to the process of applying a resistor appropriate for the impedance of the SCSI bus to terminate the end of the circuit. The resistor required for this is called the "terminator." Normally, a terminator must be installed at the beginning and end of the SCSI bus (in the case of the example in the previous page, this would be the AW2816 itself, and the SCSI device connected to the end of the daisy chain).

However, this is only a general principle, and is not an absolute. Depending on the combination of SCSI devices, the order of connection, or on the length of the SCSI cables, there may be cases in which better results are obtained by terminating only one end of the chain. If problems occur such as the AW2816 failing to start up when an external SCSI device is connected, try defeating the terminator of the external SCSI device. (The terminator inside the AW2816 is always on, and cannot be defeated.)

■ About SCSI errors

The SCSI bus is able to transfer data in a stable manner only if all connected SCSI devices are operating correctly. If the SCSI bus of the AW2816 is connected to a device whose operation is unstable or which produces noise, errors may occur in other devices, or the AW2816 may fail to start up correctly. If such problems occur, check the following points.

● **Check the SCSI ID**
Make sure that the SCSI ID of each SCSI device (including the AW2816) does not conflict with the SCSI ID of any other device. The SCSI ID of the AW2816 is fixed at "6."

● **Check the terminator**
Check the location of the terminator. Under certain conditions, better results may be obtained by terminating only one end of the SCSI chain.

● **Check the SCSI cables**
Since errors are often caused by low-quality SCSI cables or unnecessarily long SCSI cables, you should avoid using such cables. Please use double-shielded cables that are as short as possible. It is also important that the shield within the cable is grounded to the connector.

● **External SCSI devices with 25-pin connectors**
Most SCSI cables with 25-pin connectors at both ends do not meet SCSI specifications. For this reason if the system includes a SCSI device that uses a 25-pin connector, the problems may be due to this type of cable.

● **Daisy-chain connection**
Sometimes the operation of a SCSI bus will be unstable because of daisy-chain connections. Connect only the SCSI device you are using to the AW2816.

● **Power supply of SCSI devices**
When using the system, turn on the power of all connected SCSI devices. Operation of the SCSI bus cannot be guaranteed if one of the connected devices is not turned on.

Installing I/O card

About I/O cards

I/O cards compatible with the Yamaha mini-YGDAI format can be installed in the OPTION I/O slot located on the rear panel of the AW2816 in order to add input/output ports. For example by installing an ADAT format compatible I/O card into an OPTION I/O slot, you can transmit/receive eight channels of digital audio to/from an ADAT format digital recorder.

At present, the following types of I/O cards can be used.

● **MY8-AT**

This card transmits and receives eight channels of Alesis ADAT format digital signals.

● **MY8-TD**

This card transmits and receives eight channels of TASCAM format digital signals.

● **MY8-AE**

This card transmits and receives eight channels of AES/EBU format digital signals.

● **MY8-AD**

This is an A/D card with eight channels of analog input jacks (balanced TRS phone jacks).

● **MY4-AD**

This is an A/D card with four channels of analog input jacks (balanced XLR jacks).

● **MY4-DA**

This is a D/A card with four channels of analog output jacks (balanced XLR jacks).

For up-to-date information on available MY cards, contact your local Yamaha distributor or check the following website.
<http://www.aw2816.com/>

Installation procedure

Please carefully read the cautions for installing optional devices, given at the beginning of this manual.

1 Make sure that the power of the AW2816 is turned off. For safety's sake, disconnect the power cable from the AC outlet.

⚠

Always switch off the power for the main unit and all peripherals, unplug the power cord for the main unit from the outlet, then disconnect the cables connecting the main unit with the peripherals before starting installation work.

2 From the OPTION I/O slot located on the rear panel of the AW2816, remove the two screws that hold the cover in place.

⚠
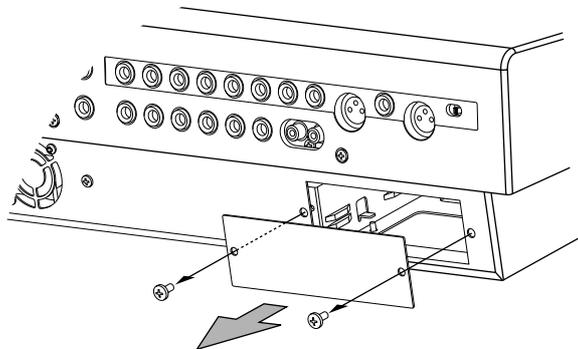
Please keep the cover and screws you removed in a safe place.

3 Slide the I/O card along the rails inside the slot until it clicks into place.

4 Tighten the two screws included with the I/O card to fasten the card securely.

⚠
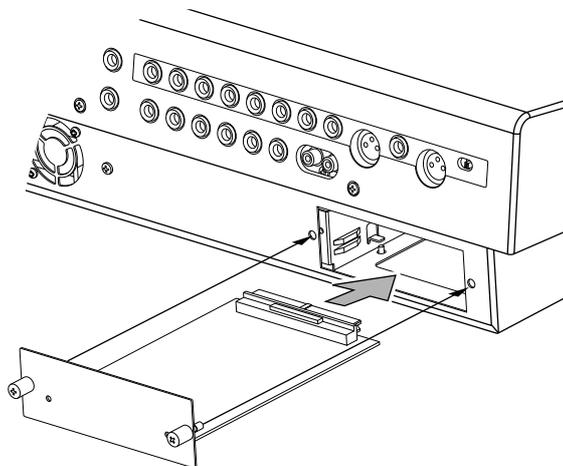
Please note that if the screws are loose, the card may not be grounded correctly.

Please observe the following points

This section explains how to turn the power of the AW2816 on and off, and how to set the internal clock.

Turning the power on

When turning on the power of a system that includes the AW2816, each device must be turned on in the following order.

① **Any storage devices connected to the SCSI connector of the AW2816, and external tone generators connected to the input/output jacks**

② **The AW2816 itself**

③ **The monitor system connected to the output jacks or the AW2816**

Following the opening screen, the following screen will appear in the display of the AW2816.

⚠
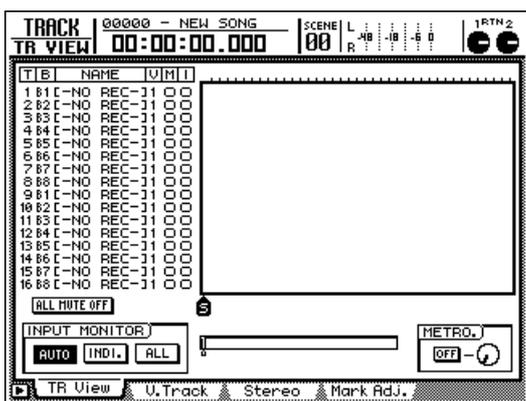
- *If the AW2816 is powered-on when a SCSI-connected external device is turned off, it may not start up correctly.*
- *Do not turn off the power of a SCSI-connected device while the AW2816 is in use.*
- *Before turning the power on, check that the power cable plug is firmly connected to the AW2816 and to the AC outlet. If the power is accidentally disconnected (turned off) while the AW2816 is in use, the AW2816 itself and/or the hard disk may be damaged.*

The first time the power is turned on after a new internal hard disk is installed in the AW2816, the display will indicate "Format OK? [Y (Enter)/N (Any)]." If you press the [ENTER] key at this time, the hard disk will be formatted automatically, and the screen shown above will appear when formatting has been completed.

⚠

Never turn off the power of the AW2816 while formatting is in progress. Doing so may damage the hard disk itself.

Setting the internal clock

When the AW2816 is shipped from the factory, the internal clock is set to Japan time. When you save a song you created on the AW2816, the date and time will be stored according to this internal clock.

Use the following procedure to set the date and time of the internal clock after replacing the internal battery, or if you need to set the clock for any other reason.

1 Press the [UTILITY] key → [F4] key.

The following screen will appear.
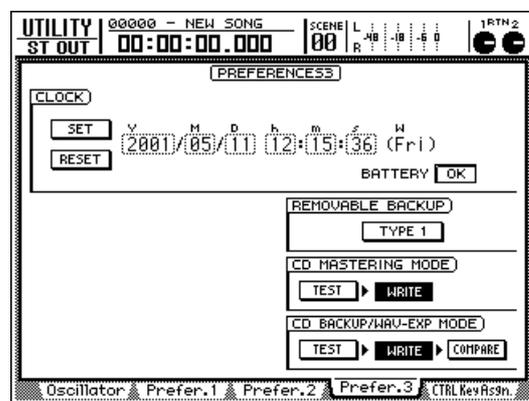
2 Use the CURSOR [▶] key to move the cursor (the blinking area in the display) to the Y (year) field in the CLOCK area, and turn the [DATA/JOG] dial to set the year.

The clock field will begin blinking.

3 In the same way, input the M (month), D (date), h (hour), m (minute), and s (second) fields.

The W (weekday) field will be set automatically according to the date.

4 When you have input all of the values, use the CURSOR keys to move the cursor to the SET button, and press the [ENTER] key.

The CLOCK area will stop blinking, and the new date and time will take effect. If you decide not to change the date and time, move the cursor to the RESET button and press the [ENTER] key.

✎ **Tip!**

The internal clock continues to operate even when the power of the AW2816 is turned off. Once you have set the clock, you will not need to reset it unless you change the battery.

Turning the power off

When turning off the power of a system that includes the AW2816, each device must be turned off in the following order.

① **The monitor system connected to the output jacks or the AW2816**

② **The AW2816 itself**

③ **Any storage devices connected to the SCSI connector of the AW2816, and external tone generators connected to the input/output jacks**

When turning off the power of the AW2816 itself, you must use the shutdown procedure described below.

1 In the WORK NAVIGATE section located on the top panel of the AW2816, press the [SONG] key.

2 Press the [F5] (SHUT DOWN) key located below the display.

3 Press the [ENTER] key.

A message will ask you whether you want to save the current song.

4 Use the CURSOR keys located in the right center of the top panel to move the cursor to the OK button, and press the [ENTER] key.

5 When a message of "Now safe to turn off" appears, turn off the [POWER] switch of the rear panel.

- *If you turn off the power of the AW2816 without using the above shutdown procedure, the data on the hard disk may be damaged.*
- *Never turn off the power while the access indicator which indicates the access status of the internal hard disk is lit. Doing so may damage the hard disk itself.*

Chapter
1 | Parts and their functions

This chapter explains the functions of each part of the AW2816's top panel, rear panel, and front panel.

⚠️ ═══════════════════════════

The names of controllers (keys and knobs etc.) on the top panel are enclosed in square brackets [ ] in order to distinguish them from the software knobs and buttons that appear in the display. Example: [SEL] key, [GAIN] control

Top panel

Analog input/output section
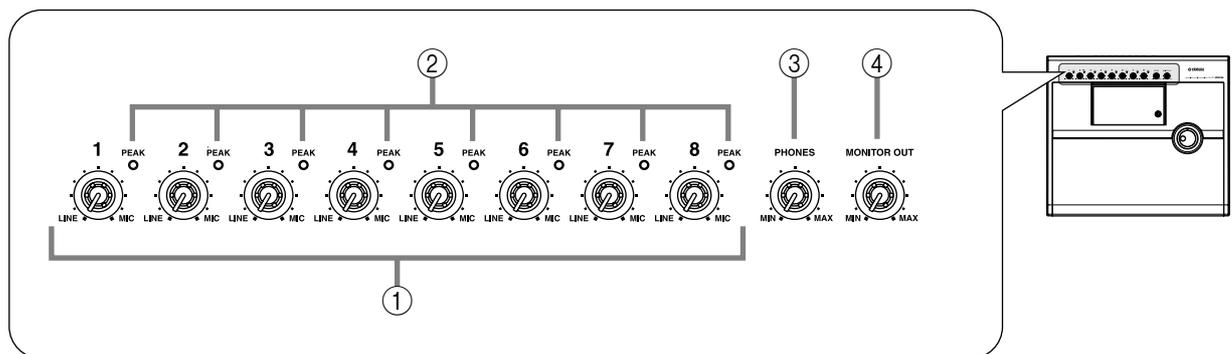
① **[GAIN] control**

These knobs adjust the input sensitivity of INPUT jacks 1–8 over a range of +4 dB to –46 dB. They support signals ranging from line level devices such as synthesizers to mic inputs.

② **[PEAK] indicators**

A [PEAK] indicator will light red if the input signal that has passed through the [GAIN] control reaches a level 3 dB below the clipping point. In order to record at the optimal level, adjust the [GAIN] control (①) so that this indicator flickers briefly when you play most loudly.

③ **[PHONES] (headphones) control**

This knob adjusts the volume of the headphones connected to the rear panel PHONES jack.

④ **[MONITOR OUT] control**

This knob adjusts the level of the signal that is output from the rear panel MONITOR OUT jacks.

WORK NAVIGATE section
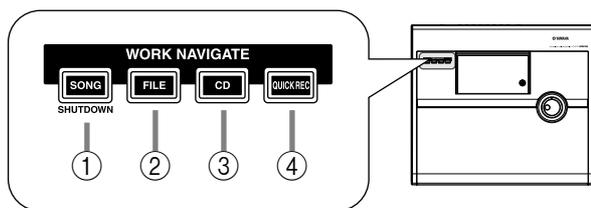
① **[SONG] key**

This key accesses the SONG screen, where you can save or load songs, or shut down the AW2816.

② **[FILE] key**

This key accesses the FILE screen, where you can backup and restore songs, and format or erase an internal/external drive.

③ **[CD] key**

This key accesses the CD screen, where you can use an optional CD-RW drive to create an audio CD, or play back an audio CD.

④ **[QUICK REC] (Quick Record) key**

This key accesses the QUICK REC screen, where you can instantly patch input signals to tracks.

UNIT section
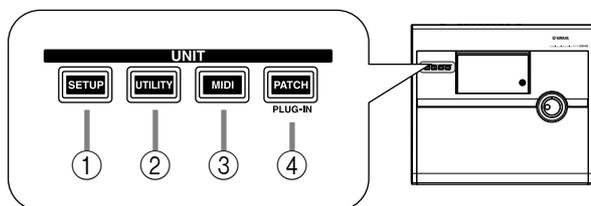
① **[SETUP] key**

This key accesses the SETUP screen, where you can make basic settings for the AW2816 such as word clock, dither, and solo.

② **[UTILITY] key**

This key accesses the UTILITY screen, where you can operate the test tone oscillator, and make settings for the operating environment of the AW2816.

③ **[MID] key**

This key accesses the MIDI screen, where you can make MIDI-related settings.

④ **[PATCH] key**

This key accesses the PATCH screen, where you can patch external inputs/outputs to internal signal routes.

MIXER section
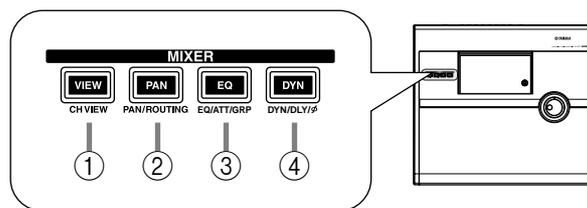
① **[VIEW] key**

This key accesses the VIEW screen, where you can view all mix parameters for a specified channel.

② **[PAN] key**

This key accesses the PAN/ROUTE screen, where you can set pan and routing for each channel.

③ **EQ (Equalizer) key**

This key accesses the EQ/ATT/GRP screen, where you can set the EQ and attenuator of each channel, and make fader group and mute group settings.

④ **[DYN] (Dynamics) key**

This key accesses the DYN/DLY screen, where you can make dynamics processor settings for a selected channel, and set the delay and phase of each channel.

FADER MODE section
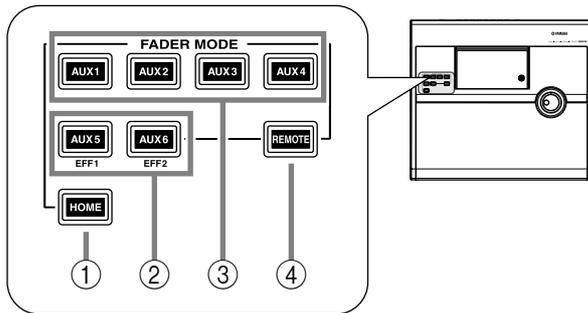
This section selects the parameters that will be controlled by the top panel faders 1–8. The selected key will light.

① **[HOME] key**

When this key is on, you can use faders 1–8 to control the input levels of the channels currently selected in the MIXING LAYER section. The display will show the HOME screen, where you can view meters that indicate the input/output levels of each channel.

② **[AUX 5]/[AUX 6] keys**

When these keys are on, you can use faders 1–8 to adjust the send levels of the signals sent to internal effects 1/2 from the channels currently selected in the MIXING LAYER section. The display will show the AUX5/EFF1 screen or AUX6/EFF2 screen, where you can make on/off and pre/post settings for the signals sent from each channel to internal effects 1/2, and set effect parameters.

③ **[AUX 1]–[AUX 4] keys**

When this key is on, you can use faders 1–8 to control the send levels of the signals sent to AUX buses 1–4 from the channels selected in the MIXING LAYER section. The display will show the AUX 1–AUX 4 screens, where you can make on/off and pre/post settings for the signals sent from each channel to AUX 1–4.

④ **[REMOTE] key**

When this key is on, you can use faders 1–8 and [ON] keys 1–8 to remotely control external MIDI devices. The display will show the REMOTE screen, where you can make settings related to remote control.

MIXING LAYER section
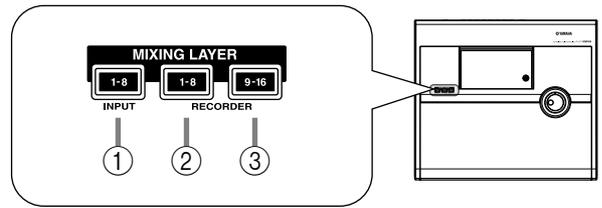
① **INPUT [1-8] key**

② **RECORDER [1-8] key**

③ **RECORDER [9-16] key**

These keys select the channels (mixing layer) that will be operated by [SEL] keys 1–8, [ON] keys 1–8, and faders 1–8.

The currently selected key will light. When the respective key is selected, the [SEL] keys 1–8, [ON] keys 1–8, and faders 1–8 will operate the mixing layers listed below.

● **When the INPUT [1-8] key is lit**
Input channels 1–8

● **When the RECORDER [1-8] key is lit**
Monitor channels 1–8

● **When the RECORDER [9-16] key is lit**
Monitor channels 9–16

For details on channels and mixing layers, refer to page 38.

Fader section
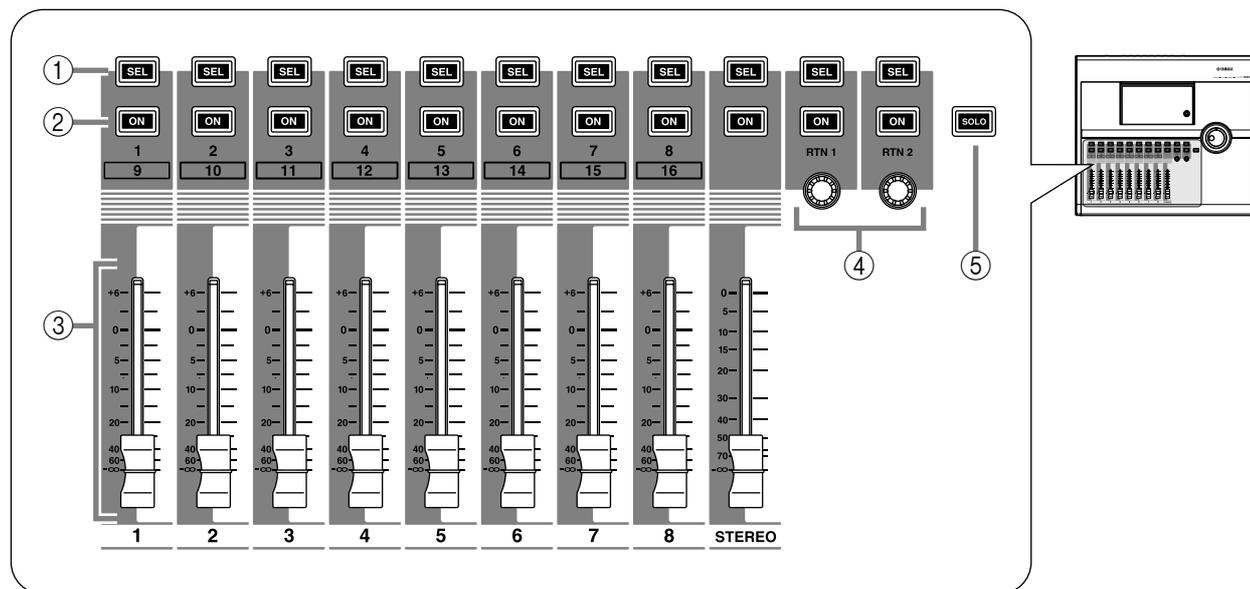
① **[SEL] keys (1–8/STEREO/RTN 1/RTN 2)**

These keys select the channel for operation.

② **[ON] keys (1–8/STEREO/RTN 1/RTN 2)**

These keys turn each channel on/off.

③ **Faders (1–8/STEREO)**

According to the settings of the FADER MODE section and MIXING LAYER section, these moving faders adjust either the input level of each channel or the send level of each channel to AUX buses 1–6.

④ **[RTN 1]/[RTN 2] controls**

According to the settings of the FADER MODE section, these knobs adjust either the level of return channels 1/2 (effect return) or the send level from return channels 1/2 to AUX buses 1–6.

⚠

Return channel 1 does not have a send level to AUX bus 5. Similarly, return channel 2 does not have a send level to AUX bus 6.

⑤ **[SOLO] key (1–16/STEREO/RTN 1/RTN 2)**

This key switches the Solo function on/off.

Display section
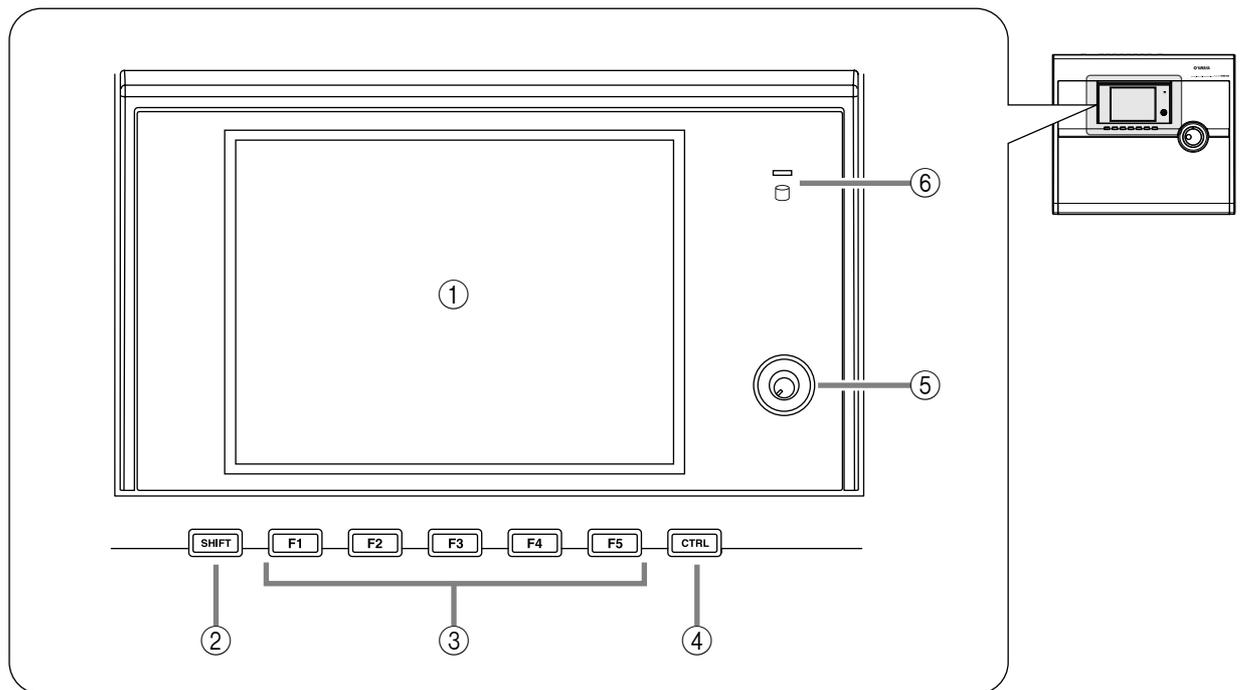
① Display

This is a 320 x 240 pixel liquid crystal display with backlight, that displays the mix parameter settings and the current operating status.

When you press one of the keys in the WORK NAVIGATE or UNIT section, the screen for the corresponding key will appear. Most screens consist of multiple "pages" (the name of the pages in each screen are indicated by tabs at the bottom of the screen), and you can use the [F1]–[F5] keys (③) to access the desired page.

Screen

pages

② [SHIFT] key

This key is used in conjunction with the function keys (③) to execute additional functions.

③ [F1]–[F5] (Function 1–5) keys

These keys select pages within the currently selected screen. When the [SHIFT] key or [CTRL] key is held down, these keys execute additional functions assigned to each key.
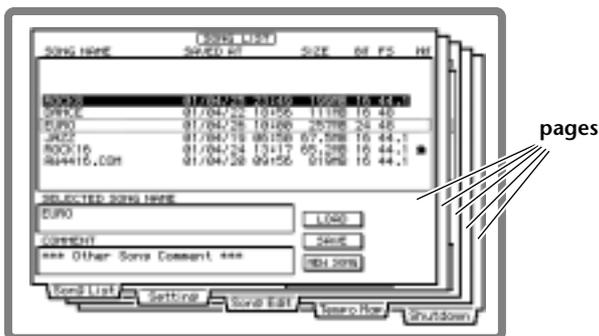
④ [CTRL] (Control) key

This key is used in conjunction with the function keys (③) to execute user-defined functions.

⑤ Contrast

This knob adjusts the brightness of the display.

⑥ Access indicator

This indicator indicates the access status of the internal hard disk. When the hard disk is being read or written, this indicator will light.

⚠

Never turn off the power of the AW2816 when the access indicator is lit. Doing so will not only damage the data on the internal hard disk, but may also damage the hard disk itself. When you want to turn off the power of the AW2816, you must perform the shutdown procedure (→P.12).

REC TRACK SELECT section

① [CUE] key

This key allows the output of tracks 1–16 or the stereo track to be monitored directly from the MONITOR OUT jacks without passing through the monitor channel.

Use the REC TRACK SELECT keys (③) to select a track. When you press the [CUE] key, the [CUE] key and the REC TRACK SELECT keys will blink, allowing you to select a track. Press a REC TRACK SELECT key to select a track, and that key will light.

② [METER] key

This key accesses the METER screen, where you can view meters of the input/output level of tracks 1–16 and the output level of the stereo output channel.

③ REC TRACK SELECT [1]–[16]/[ST]

These keys select the recording track (tracks 1–16 or the stereo track).

④ [ALL SAFE] key

This key cancels record-ready mode for all tracks. If any tracks are muted, all muting will be cancelled.

RECORDER section
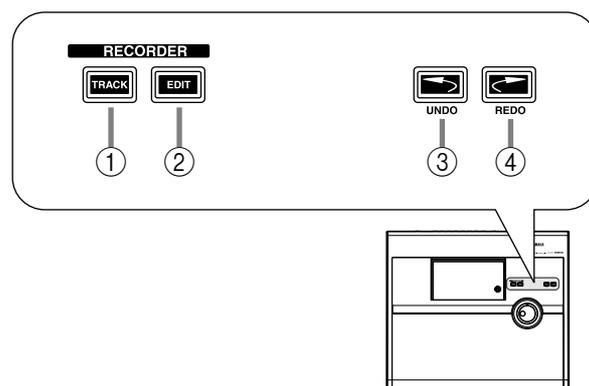
① [TRACK] key

This key accesses the TRACK screen, where you can operate the audio tracks of the recorder section.

② [EDIT] key

This key accesses the EDIT screen, where you can edit the audio tracks that have been recorded.

③ [UNDO] key

This key cancels the most recently performed recording or editing operation, returning to the previous state (Undo). When the Undo function is available, the [UNDO] key will light.

④ [REDO] key

This key re-executes the recording or editing operation that was cancelled by the [UNDO] key (Redo). When the Redo function is available, the [REDO] key will light.

AUTOMATION section
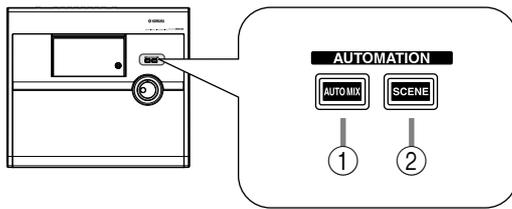
① **[AUTOMIX] key**

This key accesses the AUTOMIX screen, where you can perform automix operations. By using automix, operations of mix parameters such as the faders and [ON] keys can be recorded in realtime.

② **[SCENE] key**

This key accesses the SCENE screen, where you can perform scene memory operations. By using scene memories, you can save the current state of the mixer section and the input/output patching state.

SCENE MEMORY section
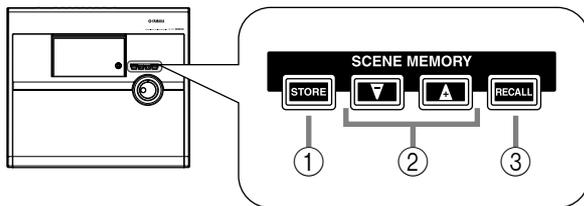
① **[STORE] key**

This key saves the current state of the mixer section and input/output patching to the scene number shown in the display.

② **[▼]/[▲] keys**

These keys select the store destination or recall source scene number.

③ **[RECALL] key**

This key recalls the scene number currently shown in the display.

CURSOR/JOG&SHUTTLE section
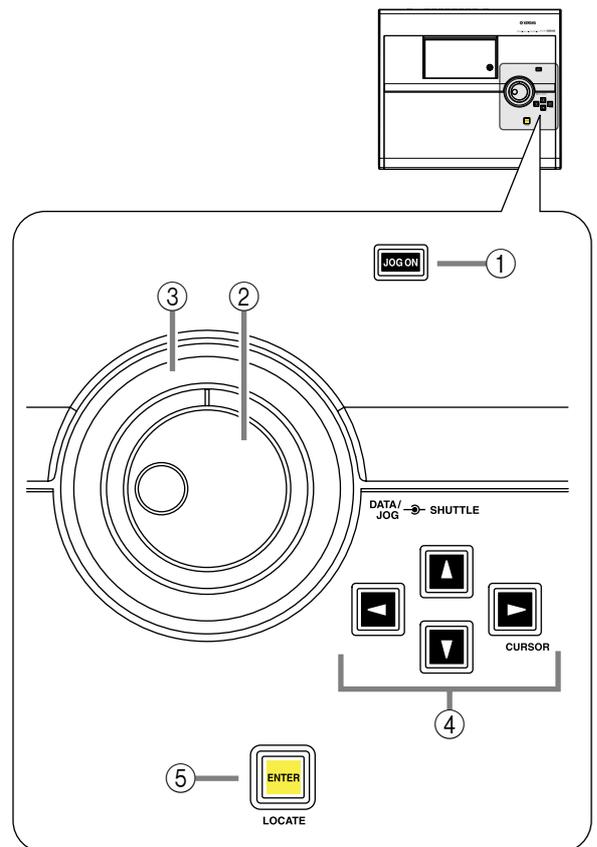
① **[JOG ON] key**

This key is an on/off switch for the Nudge function (a destination that repeatedly plays a specified region before or after the current location) controlled by the [DATA/JOG], [SHUTTLE] dial. When the Nudge function is on, the [JOG ON] key will light.

② **[DATA/JOG] dial**

Depending on the on/off status of the [JOG ON] key and the [NUM LOCATE] key of the Locate section, this dial is used to edit parameter values or to operate the Nudge function.

③ **[SHUTTLE] dial**

Depending on the on/off status of the [JOG ON] key, this dial rewinds or fast-forwards the playback (review or cue), or operates the Nudge function.

④ **CURSOR [◄]/[►]/[▲]/[▼] keys**

These keys are used to move the cursor (the blinking box) in the display.

⑤ **[ENTER] key**

This key is used to operate a button displayed in the screen, to finalize a numerical value that you input, or to execute a specific function.

LOCATE section
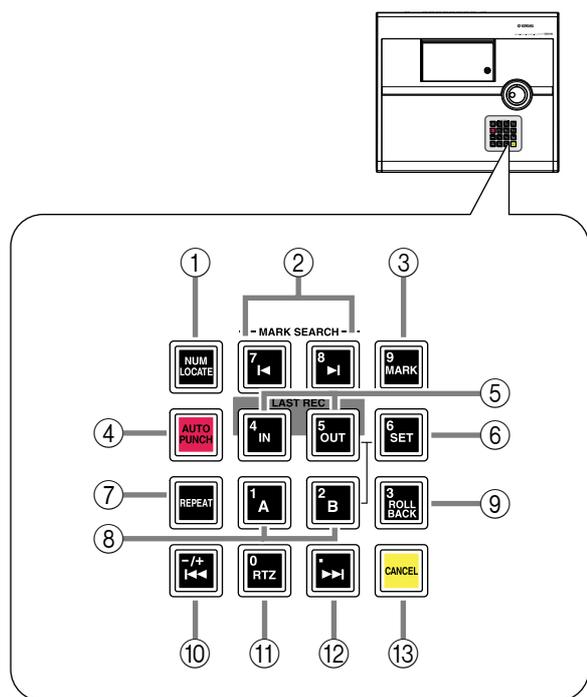
① [NUM LOCATE] key

This key is used to specify a location numerically. When this key is lit, you can use the numeric keys or the [DATA/JOG] dial to input a location, and press the [ENTER] key to execute the locate operation.

② MARK SEARCH [|◀]/[▶|] keys

These keys are used to search for markers placed in a song. If a marker has been placed earlier than the current location, the [|◀] key will light. If a marker has been placed after the current location, the [▶|] key will light.

③ [MARK] key

This key sets a marker at the current location of the song.

④ [AUTO PUNCH] key

This key turns the auto punch-in/out function on/off.

⑤ LAST REC [IN/[OUT] (Last recording in/out) key

These keys set the recording start location (In point) and end location (Out point) for auto punch-in/out. When these keys are lit, you can use them as locate keys to move to the point at which recording most recently began (In point) or ended (Out point).

⑥ [SET] key

This key is used in conjunction with the LAST REC [IN]/[OUT] keys or the [A]/[B] keys to set the current location of the song to a locate point.

⑦ [REPEAT] key

This key is an on/off switch for the A-B Repeat function which repeatedly plays a specified region.

⑧ [A]/[B] keys

These keys set the beginning (A point) and end (B point) of the region played by the A-B Repeat function. These keys can also be used as locate keys to specify the A point or B point as locate destinations.

⑨ [ROLL BACK] key

This key rewinds the current location by a specified distance.

⑩ [|◀◀] key

This key locates to the absolute time zero location (start point).

⑪ [RTZ] (Return to zero) key

This key locates to the counter zero location (when the counter is displaying measures, this will be the beginning of the first measure).

⑫ [▶▶|] key

This key locates to the last location at which audio is recorded (end point).

⑬ [CANCEL] key

In conjunction with the LAST REC [IN]/[OUT] keys, [A]/[B] keys, and [MARK] keys, this key erases a locate point from the song.

Transcript section
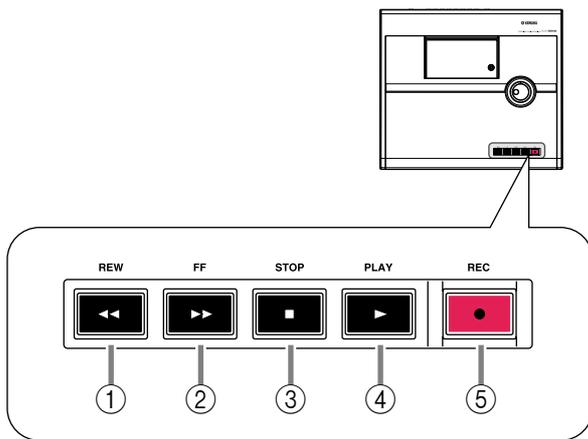
① **REW [◄◄] (Rewind) key**

This key rewinds from the current location. Each time you press this key, you will switch between 8X speed and 16X speed rewinding. To stop rewinding, press the STOP [■] key or PLAY [►] key.

② **FF [►►] (Fast-forward) key**

This key fast-forwards from the current location. Each time you press this key, you will switch between 8X speed and 16X speed fast-forwarding. To stop fast-forwarding, press the STOP [■] key or PLAY [►] key.

③ **STOP [■] key**

This key stops playback, recording, fast-forward, or rewind.

④ **PLAY [►] key**

When the recorder is stopped, pressing this key will begin playback. (If you hold down the REC [●] key and press this key, recording will begin.)

Pressing this key during rewind or fast-forward will switch to normal-speed playback.

Pressing this key during recording will stop recording and continue pressing (i.e., punch-out).

⑤ **REC [●] (Record) key**

When the recorder is stopped, holding down this key and pressing the PLAY[►] key will begin recording.

During playback, holding down this key and pressing the PLAY [►] key will switch from playback to recording (i.e., punch-in).

Rear panel
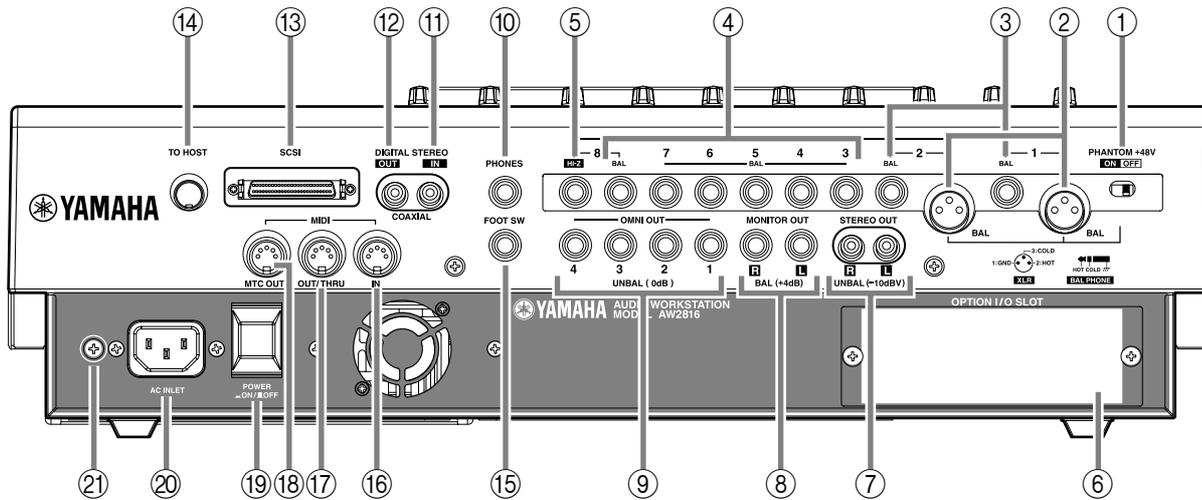
① **[PHANTOM +48V ON/OFF] switch**

This switch supplies +48 V phantom power to the INPUT (XLR) 1/2 jacks (②). Turn this switch ON when condenser mics that require an external power supply are connected to the INPUT 1/2 (XLR) jacks.

⚠
* **This switch must be turned off if devices not requiring an external power supply are connected to the INPUT 1/2 (XLR) jacks.**
* **If the phantom power supply is turned on, power will be supplied to both the INPUT (XLR) 1 and 2 jacks.**

② **INPUT 1/2 (XLR) jacks**

These are XLR-3-31 type input jacks for connecting balanced condenser mics or line level devices. The nominal input level is +4 dB to –46 dB. The pin wiring is as follows.

Male XLR connector
1 (ground)
3 (cold)
2 (hot)
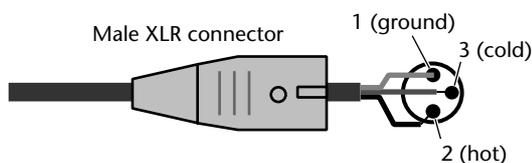
③ **INPUT 1/2 (TRS phone) jacks**

These are balanced TRS phone input jacks. Devices with unbalanced output, such as synthesizers, can also be connected. The nominal input level is –46 dB – +4 dB. The pin wiring is as follows.

1/4" TRS phone plug
Tip (hot)
Ring (cold)
Sleeve (ground)
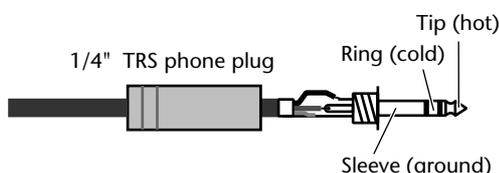
⚠
* **If plugs are inserted into both the XLR jack and TRS phone jack of INPUT 1/2, the TRS phone jack will take priority.**
* **Phantom power is not supplied from the INPUT 1/2 (TRS phone) jack.**

④ **INPUT 3–8 (TRS phone) jacks**

These are balanced TRS phone input jacks. The specifications of these jacks are the same as for the INPUT 1/2 (phone) jacks.

⑤ **INPUT 8 (Hi-Z) jack**

This is a high-impedance unbalanced phone input jack. Instruments with a high output impedance such as passive-type electric guitars can be connected directly to this jack. The nominal input level is –46 dB to +4 dB.

⚠
If plugs are inserted into both the TRS phone jack and the Hi-Z jack for INPUT 8, the Hi-Z jack will take priority.

⑥ **OPTION I/O slot**

An optional I/O card can be installed in this slot.

💡Tip!
For details on installing an I/O card, refer to page 10.

⑦ **STEREO OUT jacks**

These unbalanced RCA phono jacks are analog outputs for the signal selected in the PATCH screen Patch OUT page (→P.284). The nominal output level is –10 dBV.

⑧ **MONITOR OUT jacks**

These balanced TRS phone jacks are analog outputs for monitoring the stereo bus, internal metronome, solo signal, or direct output of recorder tracks 1–16. The nominal output level is +4 dB.

⑨ **OMNI OUT jacks**

These unbalanced phone jacks are analog outputs for the signals selected in the PATCH screen Patch OUT page (→P.284). The nominal output level is 0 dB.

⑩ **PHONES jack**

A set of stereo headphones can be connected to this jack. This jack will always output the same signal as the MONITOR OUT jacks.

⑪ **DIGITAL STEREO IN jack**

This is a coaxial jack for digital input of a stereo signal. It supports the IEC 958 consumer format.

⑫ **DIGITAL STEREO OUT jack**

This is a coaxial jack for digital output of the signal selected in the PATCH screen Patch OUT page (→P.284). It supports the IEC 958 consumer format.

⑬ **SCSI connector**

This is a D-sub half-pitch 50 pin SCSI connector compatible with the SCSI-2 specification. External SCSI-2 devices such as CD-RW drives or MOD drives can be connected here.

⚠

- *To connect an external device, use only a high impedance SCSI cable with impedance of 100 ohms (±10 ohms) and a length of 1 meter or less.*
- *External devices connected to the SCSI connector are used mainly to back up song data. It is not possible to record a song using an external SCSI device instead of the internal hard disk.*

⑭ **TO HOST connector**

This is an 8-pin mini-DIN connector that can be connected directly to the serial port of a PC or Macintosh for use with MIDI application programs.

⑮ **FOOT SW jack**

An optional foot switch (Yamaha FC5) can be connected to this jack. You can use the foot switch to perform transport operations such as playback/stop, and to control manual punch-in/out.

⚠

Foot switches other than the Yamaha FC5 (or equivalent) may not operate correctly.

⑯ **MIDI IN connector**

⑰ **MIDI OUT/THRU connector**

⑱ **MTC OUT connector**

These connectors can be connected to external MIDI devices to exchange MIDI messages.

The MIDI IN connector is for reception only.

The MIDI OUT/THRU connector can be switched internally to function either as a MIDI OUT connector (to transmit the AW2816's own MIDI messages) or as a MIDI THRU connector (to re-transmit received messages without change).

The MTC OUT connector is dedicated to transmitting MTC (MIDI Time Code).

⑲ **POWER switch**

This switch turns the power on/off.

To turn the power on/off, you must use the procedures described in "Turning the power on" and "Turning the power off," pages 11–12.

⑳ **AC INLET connector**

The included power cable is inserted into this connector to supply power. Use only the included cable.

㉑ **Grounding terminal**

This terminal is used when grounding the chassis of the AW2816. To prevent electrical shock, you must make this connection before plugging the power cable into the AC outlet. This connection will also help prevent hum and other noise.

Front panel
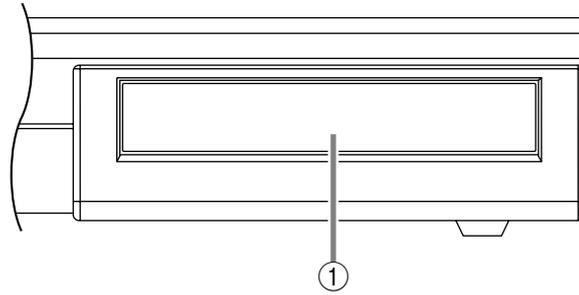
① **CD-RW drive cover**

This covers the installation bay for the optional
CD-RW drive.

Tip!

*For details on installing a CD-RW drive, refer to
page 4.*

2 Welcome to the world of the AW2816

This chapter explains the features and signal flow of the AW2816, and covers basic operation.

Features of the AW2816

The AW2816 is an audio workstation that combines a digital mixer, hard disk recorder, and multi-effect unit. It allows you to carry out the entire music production process — multi-track recording, mixing, audio editing, effect processing, and CD production [*1] — without needing any other equipment. This section explains the features of each section of the AW2816.

*1: A separately sold internal or external CD-RW drive is required.

Mixer section

• **Maximum 28 channel input/18 bus configuration**
A total of 28 input channels are provided: 8 input channels to which analog inputs, digital stereo inputs, or OPTION I/O slot inputs can be freely assigned, 16 recorder monitor channels, and 2 return channels (stereo). There are a total of 18 output buses: 8 group buses, 6 AUX buses, stereo bus and the SOLO bus (stereo).

• **4-band EQ and dynamics processors on all channels**
Each channel including the stereo output has 4-band full-parametric EQ and a dynamics processor (except for the two return channels).

• **Two high-quality multi-effect units are built-in**
The two multi-effect units provide spatial effects, modulation effects, guitar effects, and more. The effect units can be used via AUX bus send/return, or can be inserted into any desired channel.

• **Scene/library functionality**
Mix parameters and effect settings can be saved as a "scene," and recalled by operating the keys of the top panel or by transmitting program change messages from an external MIDI device. Up to 96 scenes can be used for each song. The AW2816 also provides various libraries in which EQ, dynamics processor, channel, and patching settings can be stored independently.

• **Full-automated mixing**
The AW2816 features nine 60 mm motor-drive faders. Fully automated mixing allows time-axis recording of not only scene memory and library recall operations, but also fader movements, pan operations, and EQ operations.

Recorder section

• **Efficient data management**
The audio data, scene memories, libraries, and automix data used by a single composition is saved together on the internal hard disk as a "song." The desired song can be recalled at any time. Songs can also be backed up on external media such an MO disk or CD-R/RW disc.

• **Support for large hard disks up to 64 GB**
Separately sold hard disks for internal installation (2.5 inch IDE type) up to 64 GB (maximum 6.4 GB per song) are supported. An internal hard disk can store up to 30,000 songs.

• **16 x 8 virtual tracks + stereo track**
The track structure of a song consists of 16 tracks x 8 virtual tracks + stereo track (total 130 tracks). For each song, you can select the quantization word length (16 bits/24 bits) and sampling frequency (44.1 kHz/48 kHz). Simultaneous playback of 16 tracks or simultaneous recording of 8 tracks is supported (for a 16 bit song), making the AW2816 ideal for live recording or pingpong recording. The 16 tracks can be mixed down directly to a stereo track within the AW2816. This allows unified management of the multi-track material and the two-track stereo mix.

• **Versatile editing functions**
Editing can be performed at any level: song, track, part, or region. Editing functions include "Time Compression" that compresses or expands the time in a range of 50%–200%, and a "Pitch Change" command that shifts the pitch up or down in a range of one octave. Undo/Redo functions are also provided, and you can retrace your editing as far as 15 previous operations.

CD-RW drive (option)

• **CD-RW drive can be installed internally**

Stereo tracks on the hard disk can be used to pro-
duce an audio CD off-line. The CD-RW drive can
also be used to store recorded data for backup.
Playback of audio CD's and loading from CD-ROM
is also supported.

Other features

• **Simple panel layout and efficient operation**

A large backlit LCD screen provides excellent visi-
bility. The AW2816 is designed with a graphical
user interface for easy and intuitive operation.

• **Option I/O card slot**

A wide variety of input/output formats including
ADAT, TASCAM, AES/EBU, and analog are sup-
ported. The AW2816's open architecture ensures
excellent expandability.

• **Import/export audio data**

WAV files can be loaded from CD-ROM or MO
disk, and audio from tracks recorded on the
AW2816 can be converted and written as a WAV
file. This allows audio files to be exchanged with
waveform editing software running on your com-
puter. Track audio data and some song data is com-
patible with the AW4416, allowing AW4416 data to
be imported from external media.

• **Rich array of MIDI functionality**

MIDI messages such as control changes and param-
eter changes can be used to record AW2816 opera-
tions on an external device, and to remotely control
the AW2816 from an external device. In addition,
desired MIDI messages can be assigned to the fad-
ers and [ON] keys so that the controllers of the
AW2816 can control external MIDI devices.

Signal flow within the AW2816

The following diagram shows the general signal flow within the AW2816. As you can see from this diagram, the AW2816 is divided into input patch, output patch, mixer, recorder, and CD-RW drive (option) sections.

AW2816
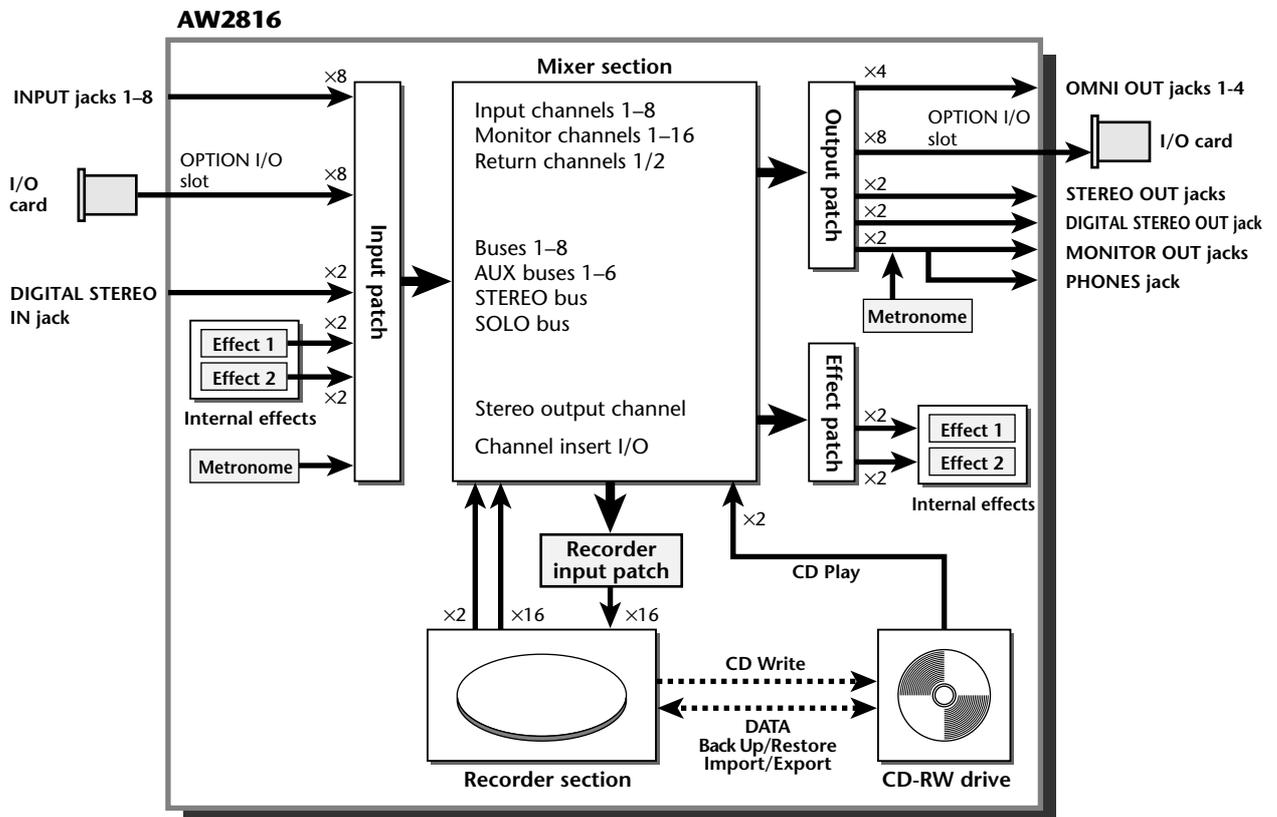
Input patch

Input Patch is the section where input signals are assigned to input channels 1–8 and return channels 1/2. The following types of input signals can be selected.

- **MIC/LINE INPUT**

  Input signals from analog INPUT jacks 1–8.

- **OPTION IN**

  Input signals from an I/O card installed in the rear panel OPTION I/O slot. A maximum of 8 channels of signals can be input simultaneously.

- **EFFECT 1/2**

  Return signals from internal effects 1/2.

- **DIGITAL STEREO IN**

  Input signal from the DIGITAL STEREO IN jack.

- **METRONOME**

  Playback sound of the internal metronome.

The following input signals can be assigned to each channel.

	Input channels 1–8 (mono)	Return channel 1 (stereo)	Return channel 2 (stereo)
MIC/LINE INPUT	◯	◯	◯
OPTION IN	◯	◯	◯
EFFECT 1		◯	
EFFECT 2			◯
DIGITAL STEREO IN	◯	◯	◯
METRONOME	◯		
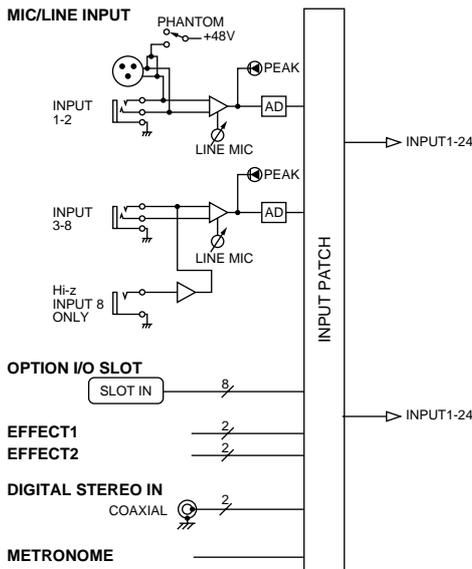
Input channels 1–8

These are monaural input channels used mainly for inputting mics or line-level instruments. The signals that are input to input channels 1–8 pass through an attenuator, phase, 4-band EQ, dynamics processor, and delay, and are sent to buses 1–8, the stereo bus, and AUX buses 1–6. Input channels 1–8 also have a direct output (DIRECT OUT), which allows them to be sent directly from various output jacks or to the recorder section.
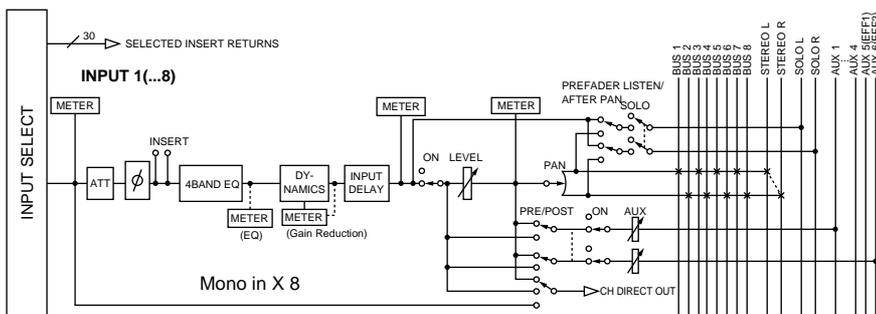
Return channels 1/2

These are stereo input channels used mainly for inputting the return signal from internal effects 1/2. However, the input signal assignment can be changed in the input patch section, allowing these to be used as additional input channels.

Each of these channels is structured the same as the input channels except for the following differences:

① **Stereo**

② **No dynamics processor**

③ **No direct output**

④ **No send level from return channel 1 to AUX bus 5**

⑤ **No send level from return channel 2 to AUX bus 6**

Tip!

Since return channels 1/2 are stereo, adjacent odd-numbered/even-numbered signals will be assigned to them when MIC/LINE INPUT or OPTION IN are selected as the input signal. Also, if DIGITAL STEREO IN is selected, both L and R signals will be assigned.

⚠

• *Return channel 1 has no AUX bus 5 send level, and return channel 2 has no AUX bus 6 send level. This is so that the signal returned from an internal effect to a return channel will not be sent to the same effect, producing a loop.*
• *Even if other input signals are assigned to return channels 1/2, the send level to the corresponding AUX bus will not be available.*
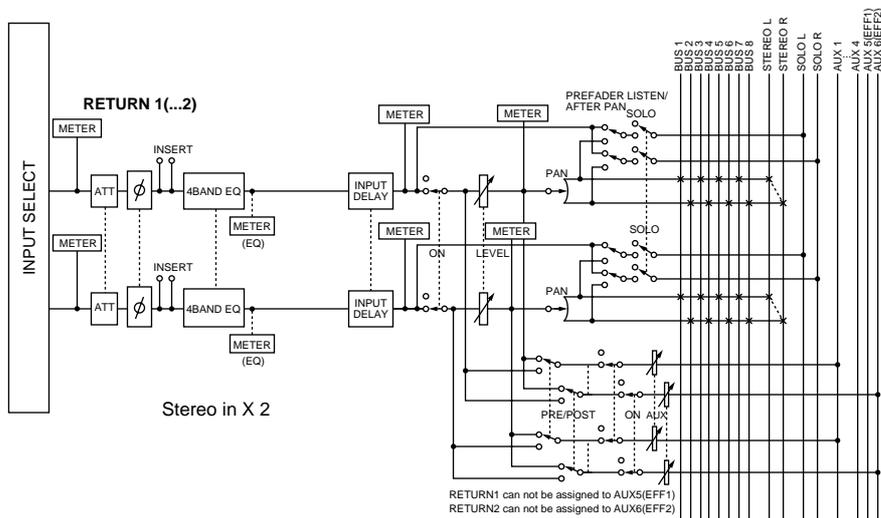
Recorder input patch

This section assigns input signals to the tracks of the recorder. The following signals can be selected for tracks 1–16.

• **BUS 1–8**
The output signals of buses 1–8.

• **DIRECT OUT 1–8**
The direct output signals of input channels 1–8.
When recording on the stereo track, the output signal of the stereo bus that has passed through the stereo output channel (STEREO) will be input.
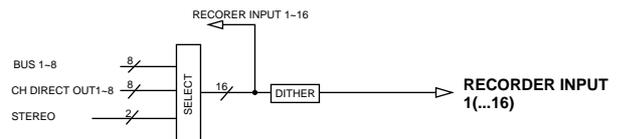
Monitor channels 1–16

These are monaural channels assigned to the output of tracks 1–16 of the recorder section. Depending on the input monitor setting and the state of the transport, these will input either the signals that are currently being input to tracks 1–16 or the playback signals of tracks 1–16.

Only when you are playing back the stereo track included in the song, the output of the stereo track is patched to monitor channels 1/2, and tracks 1–16 will be forcibly muted during this time.

Each of these channels is structured the same as the input channels except for the fact that the direct output is fixed at a location immediately before the attenuator.
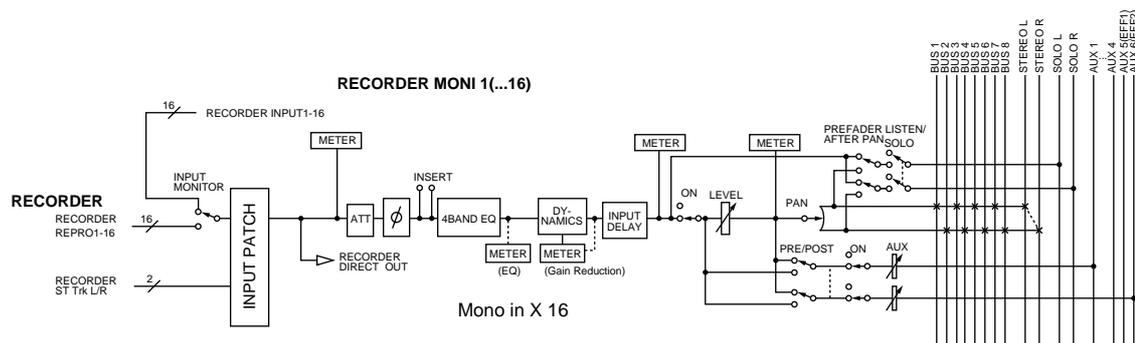
Digital cascade connection

The input signal from the rear panel DIGITAL STEREO IN connector can be cascade-connected directly to the stereo bus, instead of being routed through the input patch section and patched to an input channel. This is convenient when you want to link an external digital mixer or similar device with the mixer section of the AW2816. Cascade connection settings are made in the SETUP screen D.in Setup page.

Oscillator

The AW2816 contains an oscillator that allows you to select either sine wave (100 Hz, 1 kHz, 10 kHz) or white noise. The oscillator signal can be sent to buses 1–8, AUX buses 1–6, or the stereo bus. Oscillator settings are made in the UTILITY screen Oscillator page.
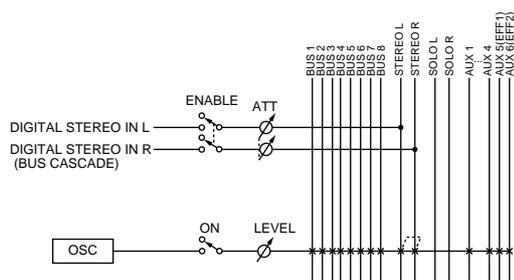
Stereo output channel

This is a stereo output channel that processes the signals sent from each channel to the stereo bus. It provides a 4-band EQ and dynamics processor identical to those provided on the input channels. The output signal of the stereo output channel is sent via the output patch section to the various output jacks, and is also simultaneously output to the MONITOR OUT jacks and PHONES jack.

When you use an internal or external CD-RW drive to play back an audio CD, the CD audio signal is patched to the pre-fader location of the stereo output channel.
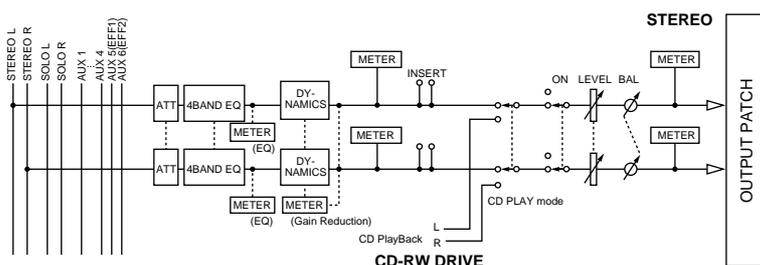
Buses 1–8

The signals sent from each channel to buses 1–8 pass through a master level, and are sent to the output patch section. The master level of buses 1–8 is controlled in the HOME screen Bus page.

AUX buses 1–6

The signals sent from each channel to AUX buses 1–6 pass through a master level, and are sent to the output patch section. The master level of AUX buses 1–6 is controlled in the HOME screen Bus page.

Tip!
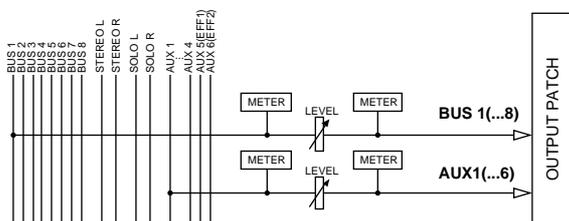
With the AW2816's default settings, the output of AUX buses 5/6 is sent to the output patch section, and also assigned to the input of internal effects 1/2.

Output patch

This section assigns output signals to OMNI OUT jacks 1–4, the STEREO OUT jacks, DIGITAL STEREO OUT jack, and an I/O card installed in the OPTION I/O slot. The following output signals can be selected.

- **STEREO**

  The output signal of the stereo bus routed through the stereo output channel.

- **BUS 1–8**

  The output signals of buses 1–8.

- **AUX 1–6**

  The output signals of AUX buses 1–6.

- **CH DIRECT OUT 1–8**

  The direct output of input channels 1–8.

- **INSERT SEND**

  Insertion outputs for inserting internal effects into each channel.

- **RECORDER DIRECT OUT 1–16**

  The direct output of tracks 1–16 of the recorder section.

Tip!

In general, these output signals can be assigned to any output jack or output channel. For the STEREO OUT jacks and DIGITAL STEREO OUT jacks, two adjacent odd-numbered → even-numbered signals will always be assigned.
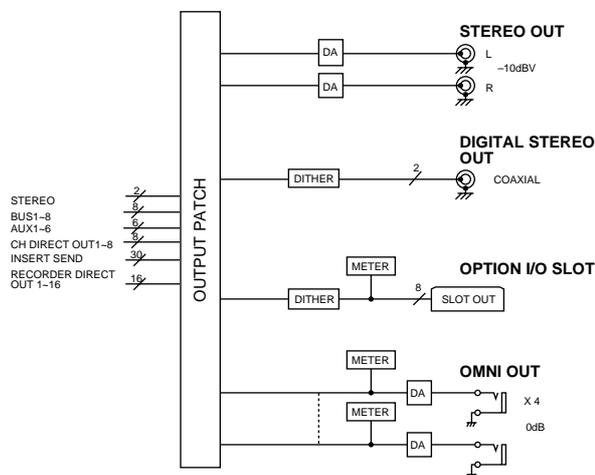
Internal effects 1/2

With the AW2816's default settings, the outputs of AUX buses 5/6 are patched to the inputs of internal effects 1/2 respectively. Also, the outputs of effects 1/2 are assigned to return channels 1/2.

If desired, you may defeat these assignments and insert internal effects 1/2 into desired channels, or use AUX buses 5/6 and return channels 1/2 for other purposes.
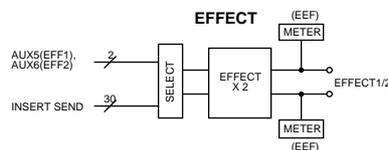
Monitor output/headphone output

For monitoring purposes, the AW2816 provides MONITOR OUT jacks and a PHONES jack. The type of signal that is output from these jack will change as follows, depending on the state of the AW2816.

① **When the AW2816 is in the default state**

  The signal of the stereo output channel will be output directly to the MONITOR OUT jacks/PHONES jack.

② **When the [SOLO] key is on**

  The signal of the channel selected by the [ON] key will be sent to the SOLO bus, and will be output from the MONITOR OUT jacks/PHONES jack. During this time, other signals will be muted.

③ **When the [CUE] key is on**

  The direct output signal of the track selected by the REC TRACK SELECT [1]–[16]/[ST] keys will be output from the MONITOR OUT jacks/PHONES jack. During this time, other signals will be muted.

④ **When the internal metronome is on**

  The metronome signal will be mixed into the output signals of (①)–(③).

Tip!
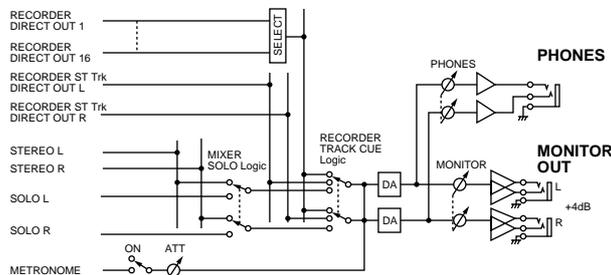
- *The MONITOR OUT jacks and PHONES jack always output the same signal. However, the level adjustment is independent: the output level of the MONITOR OUT jacks is adjusted by the [MONITOR OUT] control, and the output level of the PHONES jack is adjusted by the [PHONES] control.*
- *If both the [SOLO] key and the [CUE] key are turned on, only the [CUE] key will be valid.*

The track structure of the AW2816

This section explains the track structure of the AW2816. The recorder section of the AW2816 handles three types of tracks: audio tracks, virtual tracks, and the stereo track.

Audio tracks

These are the physical tracks on which recording and playback is performed, and are also referred to simply as "tracks." When the AW2816 is in the default state, the outputs of buses 1–8 are patched to the inputs of tracks 1–8/9–16, and the outputs of tracks 1–16 are patched to monitor channels 1–16, allowing up to sixteen tracks to be recorded simultaneously. (However since there are only eight mixer input channels, only eight input signals can normally be recorded independently.)

However, the number of tracks that can be played back simultaneously is affected by the number of tracks that are being recorded simultaneously. If you increase the number of tracks for simultaneous recording, tracks will automatically be muted accordingly.

The following tables show the number of tracks that can be simultaneously recorded and simultaneously played back, and the number of tracks that will be muted in each case, for 16 bit and 24 bit songs.

• **16 bit song**

Number of tracks recorded simultaneously	Number of tracks played back simultaneously	Number of tracks muted
0–8	16	0
9–16	0	16

• **24 bit song**

Number of tracks recorded simultaneously	Number of tracks played back simultaneously	Number of tracks muted
0	16	0
1–2	14	2
3–4	12	4
5–8	8	8
9–16	0	16

For example with a 24 bit song, if you set four tracks to record-ready mode, four tracks will automatically be muted. (Unrecorded tracks will be muted first.) Note that for either a 16 bit or a 24 bit song, setting nine or more tracks to record-ready mode will cause all tracks to be muted, so that it will no longer be possible to monitor the track playback.

In either case, simply defeating record-ready mode will not defeat track muting. To defeat muting, you must access the METER screen (→P.351) and turn off muting for each track, or use the [ALL SAFE] key. (If you use the [ALL SAFE] key, muting and record-ready mode will be defeated simultaneously for all tracks.)

Virtual tracks

These are virtual tracks that can be selected. On the AW2816, one virtual track 1–8 can be selected for each audio track 1–16, and used for recording/playback.

The following illustration is a conceptual diagram of virtual tracks. The horizontal rows correspond to audio tracks 1–16, and the vertical columns to virtual tracks 1–8. The shaded areas are virtual tracks that are currently selected for recording/playback.
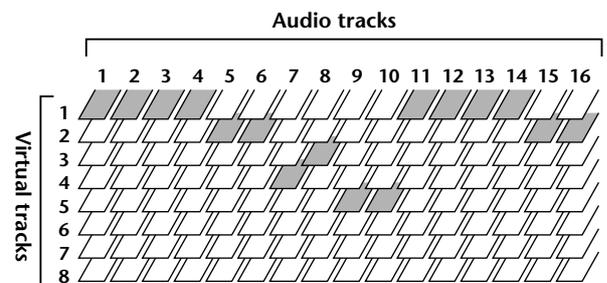
For example if you are recording a solo part on a track, you can switch virtual tracks while recording multiple takes, and select the best take later.

The stereo track

The "stereo track" is independent from the "audio tracks." It is used mainly as a master track for creating an audio CD. The AW2816 provides one stereo track for each song.

The input of the stereo track is always connected internally to the output of the stereo output channel. You can record the stereo bus signal simply by putting the stereo track in record mode.

While the stereo track is being recorded, audio tracks 1–16 can only be played back, and cannot be recorded. When the stereo track is played back, the stereo track output is automatically assigned to monitor channels 1/2. During this time, audio tracks 1–16 are forcibly muted, and cannot be unmuted.

About the display

This section explains what you will see in the LCD display of the top panel. The display shows the following information.
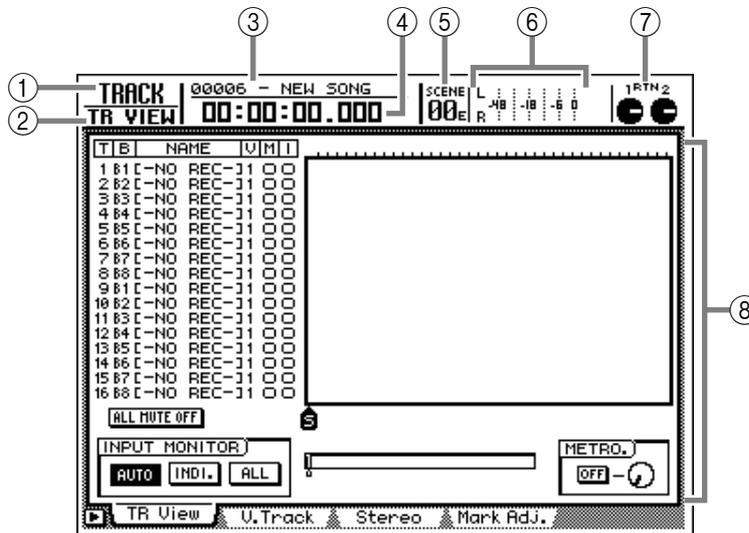
① Screen name

This is the name of the currently selected screen.

② Page name/channel

The information appearing here will depend on the screen, and will be either the name of the page selected within that screen, or the channel that is selected for operation.

③ Song name

This is the name of the currently selected song.

④ Counter

This counter shows the current location of the song. The counter display units can be selected from the following. (→P.238).

•**Time display (SECOND)**

.... Hours: Minutes: Seconds. Milliseconds

•**Time code display (TIME CODE)**

.... Hours: Minutes: Seconds: Frames. Sub-frames

•**Measure display (MEASURE)**

.... Measures. Beats. Ticks (1/960 of a quarter note)

Tip!

In the TRACK screen TR View page, you can hold down the [SHIFT] key and press the [F1] key to make the counter indicate the remaining time for recording.

⑤ Scene number

This is the scene number of the currently selected scene (the current scene). If the mix parameters of the last stored/recalled scene have been edited, an "E" symbol will be displayed at the lower right.

⑥ Level meters L/R

These level meters show the output level of the stereo output channel (the signal after passing through EQ and the dynamics processor).

⑦ RTN 1/2 knobs

These knobs indicate the input levels of return channels 1/2, or the send level from return channel 1 to AUX bus 6 (the send level from return channel 2 to AUX bus 5). The knob will be highlighted at the –∞ dB, 0 dB, and +6 dB positions.

Tip!

When the AW2816 is in the default state, the name (scene name) of the selected scene and the current tempo/time signature information will be briefly displayed in the ⑥ and ⑦ areas when you press the [▼]/[▲] keys of the SCENE MEMORY section.

⑧ Main screen

The information displayed in this area will depend on the key that was pressed last. The main screen area uses the following user interface conventions.

Cursor

The blinking frame within the display is called the "cursor." When an item in the screen is enclosed by the cursor, this indicates that the corresponding item is selected for editing or operations.

Cursor

Buttons

Buttons in the display are used to switch a parameter on/off, or to select one of multiple choices. Currently-on buttons are highlighted as white text on a black background, and currently-off buttons are displayed as black text on a white background.

Off ── PRE EQ   PRE FADER

On ── **POST FADER**

Knobs/faders/numerical boxes

Knobs/faders/numerical boxes in the display are used to edit the value of the corresponding parameter. The value of a knob or fader is displayed below or at the right of it.

00:00:00:00.00

• **Knob**   • **Fader**   • **Numerical box**
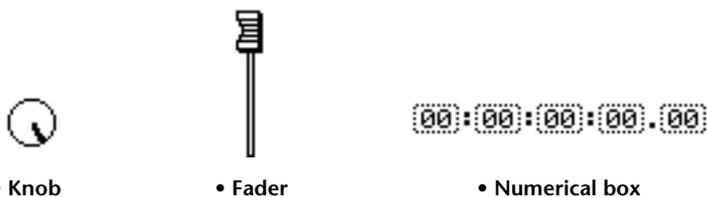
Tabs

If a screen contains multiple pages, the name of each page will appear at the bottom of the display. The area in which each name is displayed is called a "tab." Tabs are used to switch between pages within a screen.

Oscillator Prefer.1 Prefer.2 Prefer.3 CTRL KeyAsgn.

For some screens, additional tabs or buttons can be accessed in this area. Such screens are indicated by a ▶ symbol at the lower left of the display.

Main   Memory

Basic operation of the AW2816

This section explains basic operations of the AW2816, such as screen operations and selecting channels.

Accessing screens and pages

When you want to operate a mix parameter or edit an internal setting of the AW2816, you must first recall the desired screen in the display. if a screen is divided into multiple pages, select the desired page after recalling the screen.

1 Press the key for the desired screen.

When you press a key in the top panel WORK NAVIGATE, UNIT, MIXER, FADER MODE, RECORDER, or AUTOMATION sections or the [METER] key, the corresponding screen will appear. For example, the following illustration shows the PATCH screen that will appear when you press the [PATCH] key of the UNIT section.

Tip!
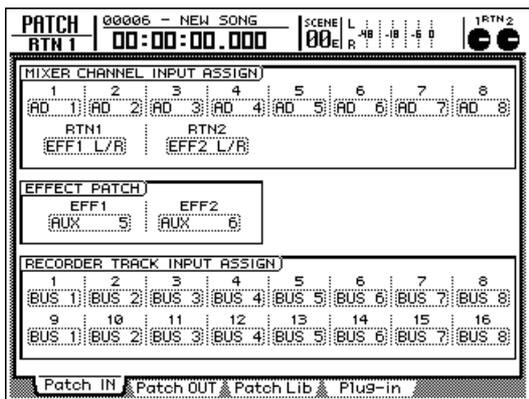
If the screen contains multiple pages, the most-recently operated page of that screen will appear.

2 To select another page within that screen, press the function key ([F1]–[F5]) that corresponds to the desired page.

The tabs displayed at the bottom of the screen correspond to the function keys ([F1]–[F5]) as shown in the following illustration. For example if you want to access the Patch OUT page of the PATCH screen, press the [F2] key.

Tip!
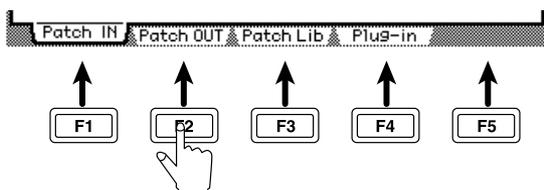
• *You can also move successively between the pages of a screen by repeatedly pressing the same key in step 1.*

• *In this manual, consecutive key operations are listed as "[PATCH] key → [F2] key" (press the [PATCH] key and then press the [F2] key).*

Switching a button on/off

A button displayed in the screen can be switched on/off as follows.

1 Use the CURSOR keys to move the cursor to the desired button.

2 Press the [ENTER] key.

The button will be switched on/off. A highlighted button is currently "on."

Editing the value of a fader/ knob/numerical box

The value of a fader/knob/numerical box displayed in the screen can be edited as follows.

1 Use the CURSOR keys to move the cursor to the desired fader/knob/numerical box.
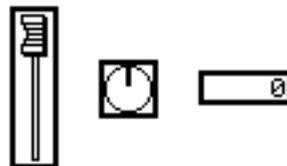
2 Turn the [DATA/JOG] dial to edit the value.

Using the additional function buttons

When a ▶ symbol is shown in the lower left of the display, you can press and hold the [SHIFT] key to access new buttons in the bottom of the display, and use various additional functions.

1
In a screen that displays a ▶ symbol in the lower left, press and hold the [SHIFT] key.

While the [SHIFT] key is held, new function buttons will be displayed in the tab area at the bottom of the display.

2
Continue to hold the [SHIFT] key, and press the function key ([F1]–[F5] key) corresponding to the desired button.

The function assigned to the corresponding button will be executed.

Tip!

In this manual, key operations such as the above where one key is held down while another is pressed are given as "[SHIFT] key + [F3] key" (hold down the [SHIFT] key and press the [F3] key).

Inputting text

When you create a new song, or when you save a scene memory or library, a popup window will appear, allowing you to assign a name to the song or settings. Text can be input in a popup window as follows.

1
Perform a scene or library Save operation, or create a new song.

When you save a scene or library, a TITLE EDIT popup window will appear, allowing you to assign a name to the scene or library.

When you create a new song, a NAME EDIT popup window will appear, allowing you to assign a name to the song.
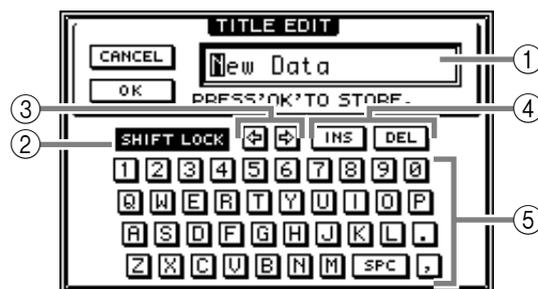
The popup window contains the following areas and functions.

① **Text input box**
Characters, numerals, and symbols you input are displayed in this box. When you store a library or scene for the first time, a default name will be displayed here. The highlighted area indicates the character that can now be edited.

② **SHIFT LOCK button**
This switches the type of character that will be input from the character palette (⑤).

③ **[◄/►/▲/▼] buttons**
These buttons move the highlighted area within the text input box. The ▲/▼ buttons are used only in a popup window that allows more than 16 characters to be input.

④ **INS button/DEL button**
The INS button inserts a space at the highlighted area of the text input box. Subsequent characters will be moved backward.

The DEL button deletes the highlighted character in the text input box. Subsequent characters will be moved forward.

⑤ **Character palette**
Here you can select the character that will be input into the text input box (①). In conjunction with the on/off state of the SHIFT LOCK button, the following characters/symbols/numerals can be input.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
spc (space) 1 2 3 4 5 6 7 8 9 0 , . ! " # & / * - + < > : ;

2 Use the [CURSOR] keys to move the cursor within the character palette to the button for the character you want to input, and press the [ENTER] key.

The corresponding character/symbol/numeral will be input, and the highlighted area in the text input box will move to the right.

3 Use the same procedure to input the remaining characters.

Tip!

• *Instead of the ⊞/⊞ buttons, you can also use the [DATA/JOG] dial to move the highlighted area left or right.*

• *If you want to correct a character that you input by mistake, use the ⊞/⊞ buttons or the [DATA/JOG] dial to specify the location of that character, and use the text palette to select a new character.*

4 When you are finished inputting the name, move the cursor to the OK button, and press the [ENTER] key.

If you are saving a scene or library, the new name will be confirmed at this stage, and the TITLE EDIT popup window will close.

If you are creating a new song, the NAME EDIT window will close, and a COMMENT EDIT window will appear, allowing you to assign a comment to the song. Operations in this window are the same as in the NAME EDIT window.

Tip!

• *If you decide to cancel the operation, move the cursor to the CANCEL button and press the [ENTER] key. The name you input will be discarded, and the previous screen will reappear.*

• *A scene or library can be given a name of up to 16 characters, and a song name and comment can be up to 64 characters long.*

Selecting a channel

In order to operate the mix parameters of a channel on the AW2816, you must first select the channel that you want to operate. Here's how to select a channel.

1 Use the keys of the MIXING LAYER section to select the mixing layer that you want to operate.

In the AW2816, the controls for the monaural channels in the top panel ([SEL] keys 1–8, [ON] keys 1–8, faders 1–8) are shared between input channels 1–8 and monitor channels 1–16. For this reason, you must first select the mixing layer (group of eight channels) that contains the channel you want to operate.

According to the key you select in the MIXING LAYER section, the channels operated by the fader section will change as follows.

→ Return channel 2
→ Return channel 1
→ Stereo output channel

[1-8] INPUT	Input channels 1–8
[1-8] RECORDER	Monitor channels 1–8
[9-16] RECORDER	Monitor channels 9–16

Tip!
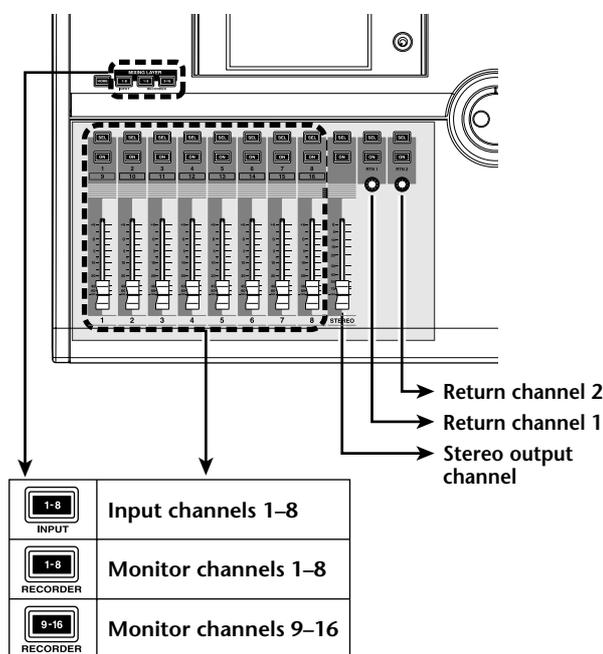
The [SEL] keys, [ON] keys, and faders (controls) of the stereo output channel and return channels 1/2 are not affected by operations of the MIXING LAYER section keys.

2 If you want to operate the faders, use the [HOME] key and [AUX 1]–[AUX 6] keys of the FADER MODE section to select the fader mode.

Faders 1–8 are used to adjust the input levels of the currently selected mixing layer or the send levels to AUX 1–6. To select the parameters that will be controlled by faders 1–8, use the keys of the FADER MODE section.

The following table shows how the parameters controlled by faders 1–8 will change depending on the fader mode.

Fader mode	Faders 1–8		
	MIXING LAYER : INPUT [1–8]	MIXING LAYER : RECORDER [1–8]	MIXING LAYER : RECORDER [9–16]
HOME	Input levels of input channels 1–8	Input levels of monitor channels 1–8	Input levels of monitor channels 9–16
AUX 1	Send levels from input channels 1–8 to AUX bus 1	Send levels from monitor channels 1–8 to AUX bus 1	Send levels from monitor channels 9–16 to AUX bus 1
AUX 2	Send levels from input channels 1–8 to AUX bus 2	Send levels from monitor channels 1–8 to AUX bus 2	Send levels from monitor channels 9–16 to AUX bus 2
AUX 3	Send levels from input channels 1–8 to AUX bus 3	Send levels from monitor channels 1–8 to AUX bus 3	Send levels from monitor channels 9–16 to AUX bus 3
AUX 4	Send levels from input channels 1–8 to AUX bus 4	Send levels from monitor channels 1–8 to AUX bus 4	Send levels from monitor channels 9–16 to AUX bus 4
AUX 5	Send levels from input channels 1–8 to AUX bus 5 (effect 1)	Send levels from monitor channels 1–8 to AUX bus 5 (effect 1)	Send levels from monitor channels 9–16 to AUX bus 5 (effect 1)
AUX 6	Send levels from input channels 1–8 to AUX bus 6 (effect 2)	Send levels from monitor channels 1–8 to AUX bus 6 (effect 2)	Send levels from monitor channels 9–16 to AUX bus 6 (effect 2)

Fader mode	STEREO fader	[RTN 1] control	[RTN 2] control
HOME		Level of return channel 1	Level of return channel 2
AUX 1		Send level from return channel 1 to AUX bus 1	Send level from return channel 2 to AUX bus 1
AUX 2		Send level from return channel 1 to AUX bus 2	Send level from return channel 2 to AUX bus 2
AUX 3	Output level of the stereo output channel	Send level from return channel 1 to AUX bus 3	Send level from return channel 2 to AUX bus 3
AUX 4		Send level from return channel 1 to AUX bus 4	Send level from return channel 2 to AUX bus 4
AUX 5		—	Send level from return channel 1 to AUX bus 5 (effect 1)
AUX 6		Send level from return channel 1 to AUX bus 6 (effect 2)	—

3 To operate the mix parameters of a specific channel, access the corresponding screen/page, and press the [SEL] key of the desired channel.

To set mix parameters such as pan, EQ, and dynamics, access the screen/page for that parameter, and press the [SEL] key for the desired channel to select it. (Alternatively, you can select the channel before you access the screen/page.)

The [SEL] key of the corresponding channel will light. Also, that channel will be selected in the display as the object of operations.

Let's record on the AW2816
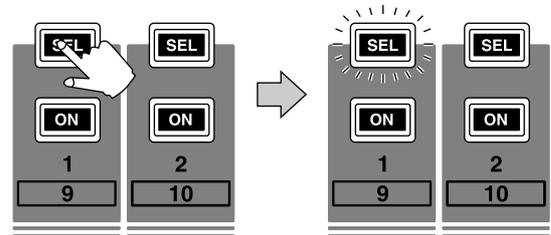
As a way to explain the basic operations of multi-track recording and mixdown on the AW2816, this chapter describes how you can successively record instruments such as rhythm machine (drums), bass, guitar, and keyboard to create a song. You will also learn more advanced techniques that you will find convenient.

Connections and setup

This section explains connections to external devices, creating a new song, word clock settings, and other things that you need to do before you begin recording.

Making connections

The following diagram shows common examples of audio signal connections. Refer to this diagram and connect the mics, instruments, or external devices that you will use.
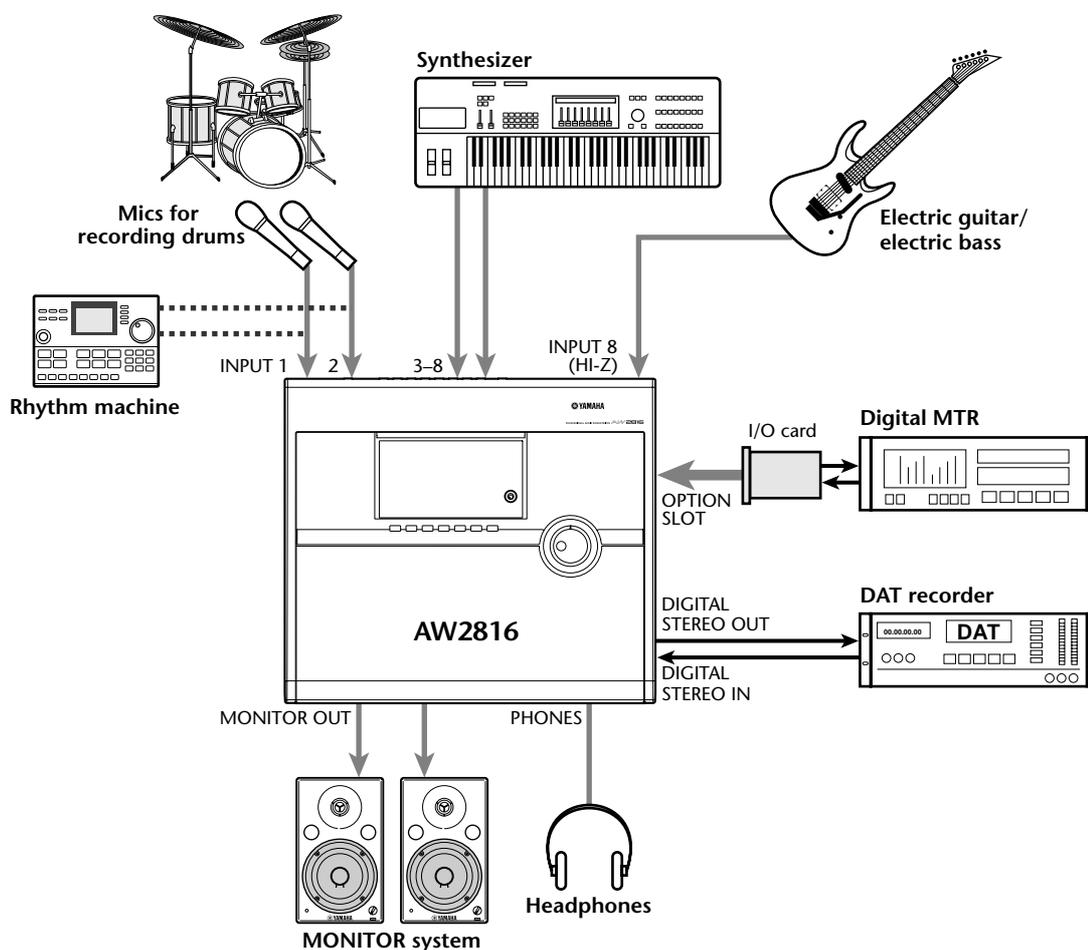
- Connect line-level instruments (rhythm machines and synthesizers) to the INPUT 1–8 (phone) jacks.

- If you use mics, connect them to the INPUT 1–8 (phone) jacks or the INPUT 1/2 (XLR) jacks.

- If you use condenser mics that require phantom power, connect them to the INPUT 1/2 (XLR) jacks, and turn the rear panel [PHANTOM +48V ON/OFF] switch on.

- If you are connecting an electric guitar or electric bass via a direct box or pre-amp, connect it to an INPUT 1/2 (XLR) jack or INPUT 1–8 (phone) jack, depending on the type of output connector.

- If you are directly connecting a high impedance instrument such as an electric guitar or electric bass with passive pickups, connect it to the INPUT 8 (HI-Z) jack.

Creating a new song

On the AW2816, all information needed to reproduce a song (mixer settings, recorder settings, audio data, etc.) is managed as a "song." When you want to begin a new recording, you must start by creating a new song.

Tip!

When you format the internal hard disk, a new 44.1 kHz/16 bit song will be created, and will be loaded the next time the AW2816 is powered-on. If you want to use this song, the following procedure is not necessary.

1 Turn on the power in the following order: external devices connected to the AW2816 → the AW2816 itself → your monitor system.

When you turn on the power of the AW2816, the song that was used most recently will be loaded automatically.

⚠

If SCSI devices are connected to the AW2816, the AW2816 may not start up correctly if its power is turned on when the connected SCSI devices are still powered-off. SCSI devices must be turned on before the AW2816.

2 Press the [SONG] key → [F1] key.

The SONG screen Song List page will appear. In this page you can create a new song, and save/load existing songs.
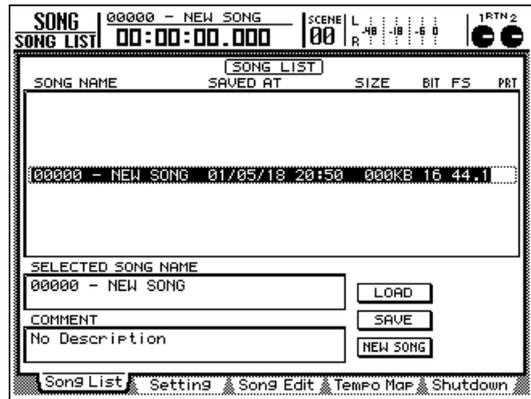
3 Use the CURSOR [◄]/[►]/[▲]/[▼] keys to move the cursor to the NEW SONG button in the lower right of the screen, and press the [ENTER] key.

A popup window will appear, asking you whether you want to save the song currently being operated (referred to as the "current song").

4 Move the cursor to the YES button if you want to save the current song, or to the NO button if you do not want to save it, and press the [ENTER] key.

The NEW SONG SETTING popup window will appear.

In this popup window you can specify the attributes of the new song.

① **Fs**
This selects the sampling frequency (44.1 kHz/ 48 kHz) of the audio data that will be recorded on the hard disk. Move the cursor to either the 44.1 kHz button or the 48 kHz button, and press the [ENTER] key.

② **Recbit**
This selects the number of quantization bits (16 bit/24 bit) of the audio data that will be recorded on the hard disk. Move the cursor to the 16 BIT button or the 24 BIT button, and press the [ENTER] key.

5 Use the Fs and Recbit buttons to select the sampling frequency and number of quantization bits for the newly created song.

⚠️
- *It is not possible to change the sampling frequency or quantization after creating the song.*
- *The quantization you select here will affect the number of tracks that can be played back simultaneously while multiple tracks are being recorded simultaneously. If you need 8 tracks of simultaneous recording and 16 tracks of simultaneous playback, you must select 16 bit (→P.33).*
- *If you intend to write the song to an audio CD, you must select 44.1 kHz as the sampling frequency. It is not possible to create an audio CD from a song whose sampling frequency is 48 kHz.*

6 Move the cursor to the OK button and press the [ENTER] key.

The MIXER DATA IMPORT popup window will appear. In this popup window you can choose to import (load) various settings such as mixer data (not audio data) from the current song into the newly created song. For this example, you do not need to make any selection here.

```
       MIXER DATA IMPORT
   Select items of
   current MIXER data to import.
   SCENE MEM.   AUTOMIX   MIDI REMOTE
   TEMPO MAP    LIBRARY
          CANCEL      OK
```

✎ Tip!
- *If you select 48 kHz as the sampling frequency, a popup window will appear following step 5, informing you that it will not be possible to create a CD from this song. Move the cursor to the OK button and press the [ENTER] key.*
- *Mixer data can be imported even after a new song is created (→P.155).*

7 Move the cursor to the OK button and press the [ENTER] key.

A NAME EDIT popup window will appear, allowing you to assign a name to the new song.

```
          NAME EDIT
   PRESS'OK'   00001 - NEW SONG
   TO STORE.
   CANCEL
   OK

   SHIFT LOCK  ⇦ ⇨ ⇧ ⇩  INS  DEL
   1 2 3 4 5 6 7 8 9 0
   Q W E R T Y U I O P
   A S D F G H J K L .
   Z X C V B N M SPC ,
```

8 Use the character palette to input a song name of up to 64 characters. (For details on inputting characters, refer to page 37.) When you are finished, move the cursor to the OK button and press the [ENTER] key.

A COMMENT EDIT popup window will appear, allowing you to assign a comment to the new song.

```
          COMMENT EDIT
   PRESS'OK'   No Description
   TO STORE.
   CANCEL
   OK

   SHIFT LOCK  ⇦ ⇨ ⇧ ⇩  INS  DEL
   1 2 3 4 5 6 7 8 9 0
   Q W E R T Y U I O P
   A S D F G H J K L .
   Z X C V B N M SPC ,
```

9 As desired, input a comment in the same way as you input the song name. Then move the cursor to the OK button and press the [ENTER] key.

The new song will be created.

✎ Tip!
- *The song name and comment can be modified even after the new song is created (→P.150).*
- *In steps 5–8, you can cancel creation of a new song by moving the cursor to the CANCEL button and pressing the [ENTER] key.*

Word clock settings

"Word clock" is clock data that acts as the timing reference for digitally processing the audio data. If digital audio data is being transmitted or received between the AW2816 and an external digital audio device, each device must be using the same word clock. Specifically, one device must be set to operate as the "word clock master" (the device that transmits word clock data), and the remaining devices must be set to operate as "word clock slaves" (devices that follow the word clock provided by the master).

If you are digitally connecting an external device such as a digital MTR or sampler to the AW2816, select the word clock master as described below.

⚠

- *Be aware that if your system contains an unsynchronized device, dropouts and click noise will occur.*
- *Even if an external device is not digitally connected, a message of "WRONG WORD CLOCK!" will appear if the word clock setting is inappropriate, and it will not be possible to record correctly. Please check the word clock settings as explained in the following procedure.*

1 Press the [SETUP] key → [F1] key.

The SETUP screen D.in Setup page will appear, in which you can make word clock settings.
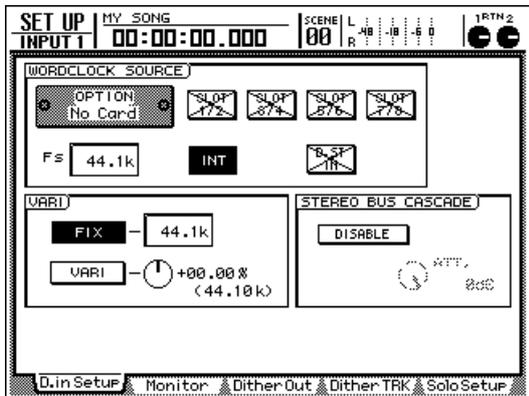
In the WORD CLOCK SOURCE area of this page, you can select one of the following word clock sources to which the AW2816 will synchronize.

- **SLOT 1/2–7/8**
  The clock data included in the input signal of the digital I/O card will be used as the word clock source. You can select one pair of input channels (1/2–7/8) from the digital I/O card, and the AW2816 will synchronize to the clock data included in that input signal.

- **D.ST IN**
  The clock data included in the input signal of the DIGITAL STEREO IN connector will be used as the word clock source.

- **INT**
  Use the internal clock of the AW2816.

   A button will be highlighted to indicate that it has been selected as the current word clock source.

   An X superimposed on a button indicates that no digital audio signal is being input to the corresponding slot or jack.

   A diagonal line/superimposed on a button indicates that a digital audio signal is being input to the corresponding slot or jack, but is not synchronized to the internal clock of the AW2816.

   Buttons without an X or/indicate that a digital audio signal is being input to the corresponding slot or jack, and is synchronized to the internal clock of the AW2816.

2 In the WORD CLOCK SOURCE area, select the desired clock source, and move the cursor to the corresponding button.

The clock source you should select will depend on the system in which you are using the AW2816. Several typical examples are described below.

- **Using the AW2816 as the word clock master**
  If no digital audio device is connected to the AW2816, or if you want the AW2816 to be the word clock master that the other external devices (e.g., digital MTR) will follow, turn on the INT button. You should also use this setting when recording from the AW2816's DIGITAL STEREO OUT jack to a DAT recorder or MD recorder.
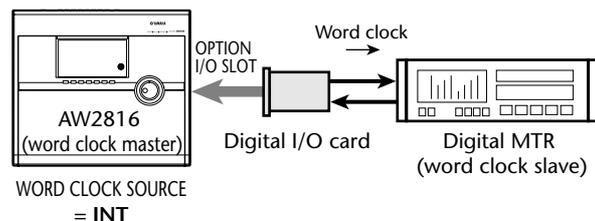
Set the digital MTR so that it will use the word clock included in the input signal from the AW2816.

- **Using the digital MTR as the word clock master**
  In this case, the digital MTR will be the word clock master, and the AW2816 will follow the word clock included in the input signal from the digital I/O card. Turn on one of the SLOT 1/2–7/8 buttons.

Word clock
OPTION I/O SLOT
AW2816 (word clock slave)
Digital I/O card
Digital MTR (word clock master)

WORD CLOCK SOURCE = **SLOT 1/2–7/8**
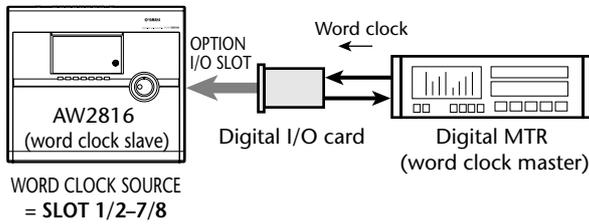
Set the digital MTR so that it will operate using its own internal clock.

- **Using a DAT recorder or MD recorder as the word clock master**
  If you want to record the signal from a DAT recorder or MD recorder into the AW2816 via the DIGITAL STEREO IN jack, turn on the D.ST IN button.

DIGITAL STEREO IN jack
Word clock
AW2816 (word clock slave)
DIGITAL STEREO OUT jack
DAT recorder (word clock master)

WORD CLOCK SOURCE = **D.ST IN**
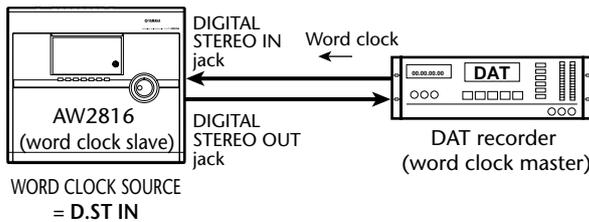
⚠ *Most consumer DAT recorders and MD recorders are designed to forcibly lock to the word clock of the input signal during recording. Such DAT recorders can be used as a word clock master only during play-back.*

3 After selecting the appropriate button, press the [ENTER] key.

The AW2816 will switch to the specified clock source. The sampling frequency of the signal currently selected as the clock source will be indicated by the Fs (sampling frequency) field in the upper left of the display.
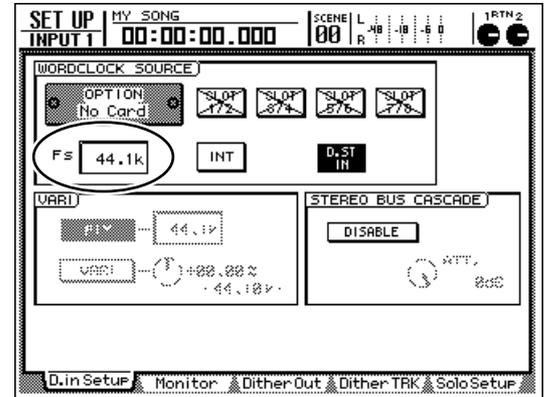
⚠
- *If you are using the internal clock of the AW2816 as the clock source, the sampling frequency selected when you created the current song will be the sampling frequency of the entire system.*
- *If you want the AW2816 to follow an external clock source, you must make sure that the sampling frequency of the song matches the value displayed in the Fs field. If these values are different, the pitch may change when you set the clock source back to "INT" (internal clock).*
- *A certain amount of time may be required for the AW2816 to switch clock sources, and there may be silence during this time.*
- *After switching the clock source, verify that an X or/ symbol is not superimposed on the button you selected in step 3. If an X or/symbol is displayed, or if an error message is displayed, check whether the clock setting and connections of the external device is appropriate.*

Recording the first track

This section explains the procedure for recording the first track. As an example, we will assume that you want a rhythm machine (or drum mics) connected to INPUT jacks 1/2 to be recorded on tracks 1/2.

⚠️

The procedure described below assumes that the AW2816 is in the default state. If internal settings have already been modified, recall scene number 00 from scene memory to return the internal settings of the AW2816 to the default state (→P.129).

Setting the input level

1 While producing sound on the instrument connected to the INPUT 1/2 jacks, adjust [GAIN] controls 1/2 so that PEAK indicators 1/2 flicker faintly at the loudest volume levels.

Tip!
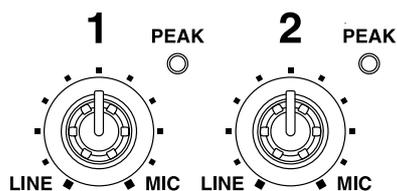
The [GAIN] controls adjust the sensitivity of the analog inputs. In order to record with the widest dynamic range and least noise, set the [GAIN] controls as high as possible without allowing clipping to occur.

2 Press the [HOME] key → [F1] key.

The HOME screen IN/Rtn/MON page will appear. This page displays meters that show the input levels of the input channels, return channels, and monitor channels.
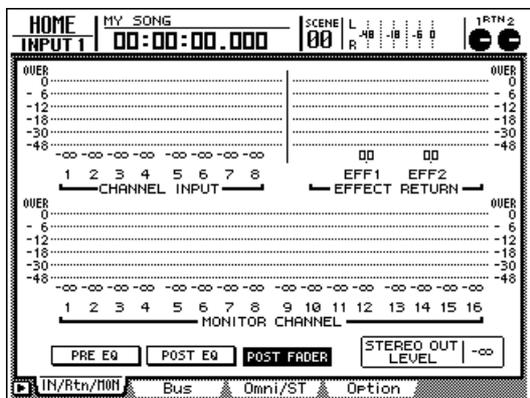
3 In the MIXING LAYER section, press the INPUT [1-8] key to select input channels 1–8 as the mixing layer.

The INPUT [1-8] key will light, and now you can use [SEL] keys 1–8, [ON] keys 1–8, and faders 1–8 to control input channels 1–8.

Tip!

- *"Mixing layer" refers to the group of channels that is being controlled by the panel controls ([SEL] keys 1–8, [ON] keys 1–8, and faders 1–8) (→P.38).*
- *Even when you switch to a different mixing group, the fader locations and [ON] key status of the previous mixing layer are remembered, and the faders and keys will return to their previous status when you recall that mixing layer once again.*

4 In the lower left of the IN/Rtn/MON page, make sure that the POST FADER button is turned on.

If another button (PRE EQ/POST EQ) is on, move the cursor to the POST FADER button and press the [ENTER] key. Now the meters will indicate the post-fader input levels.

Tip!

The pre-EQ input levels will be displayed if the PRE EQ button is on, and the post-EQ pre-fader input levels will be displayed if the POST EQ button is on.

5 Make sure that [ON] keys 1/2 are on (lit), and raise faders 1/2 to the 0 dB position.

6 While producing sound on your instrument, watch the level meters in the screen to see the input levels for input channels 1/2.

When the AW2816 is in the default state, the input signals of the INPUT 1–8 jacks are assigned to input channels 1–8 respectively, as shown in the following diagram. This means that the signals from the rhythm machine (drum recording mics) connected to the INPUT 1/2 jacks are connected to input channels 1/2.
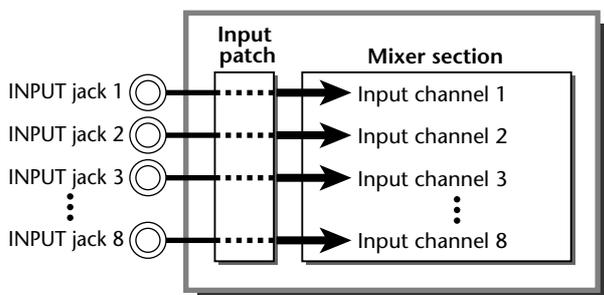
For this example, raise the faders of input channels 1/2 to the 0 dB position, and watch the meters in the HOME screen IN/Rtn/MON page to verify that the signals are being input.
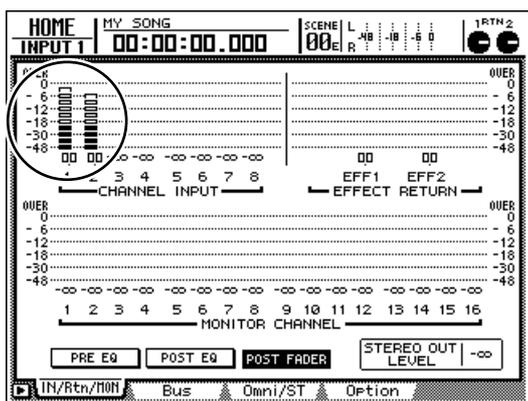
🖊️ **Tip!**
- *If the level meters for input channels 1/2 reach the "OVER" position, check whether faders 1/2 are at the 0 dB position, and then lower [GAIN] controls 1/2.*
- *The type of signal assigned to input channels 1–8 can be changed if necessary. For details refer to page 71.*

Pairing two channels

The AW2816 allows adjacent odd-numbered → even-numbered input channels or monitor channels to be specified as a stereo pair. When two channels are paired, their mix parameters will be linked, with the exception of phase, pan, and effect insert. When inputting a stereo source, it is convenient to pair the input channels.

1 To assign input channels 1/2 as a stereo pair, hold down [SEL] key 1 and press [SEL] key 2.

When you simultaneously press two adjacent odd-numbered → even-numbered [SEL] keys, a CHANNEL PAIRING popup window will appear, allowing you to specify how pairing will occur.

2 Move the cursor to one of the following buttons.
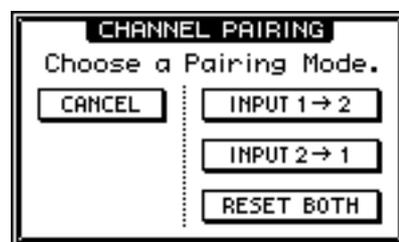
- **INPUT x→y (x=odd number, y=even number)**
  The parameters of the odd-numbered channel will be copied to the even-numbered channel.

- **INPUT y→x (x=odd number, y=even number)**
  The parameters of the even-numbered channel will be copied to the odd-numbered channel.

- **RESET BOTH**
  The parameters of both channels will be reset to the default values.

3 When you have selected the pairing method, press the [ENTER] key.

The two channels will be paired.

🖊️ **Tip!**
- *If you select RESET BOTH, faders 1/2 will move down to the -infinity position. Raise them back to 0 dB.*
- *To cancel pairing, hold down one of the [SEL] keys and press the other [SEL] key to display a popup window that will ask whether you really want to cancel pairing. Move the cursor to the OK button and press the [ENTER] key.*
- *Pairing can also be set/cancelled in the PAN screen Pair page (→P.295).*

⚠️ *When channels are paired, you must operate only one of the faders of the pair. If you attempt to move both faders simultaneously, the motors will be strained, causing malfunctions.*

Patching input signals to recorder inputs

When recording on the AW2816, you can either send the signals of each input channel directly to the recorder inputs (tracks), or send them via buses 1–8 to the recorder inputs. In this example, we will change the internal settings as shown in the following diagram, so that the signals from the rhythm machine (drum recording mics) connected to input channels 1/2 are sent directly to the inputs of tracks 1/2.
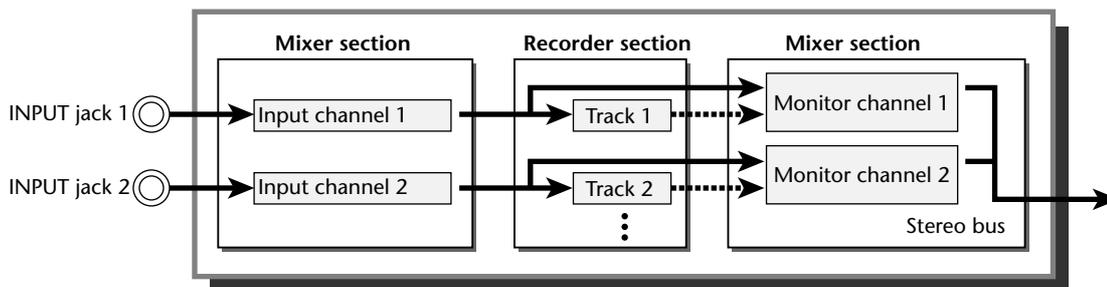
If you want to mix multiple input channels and record them on one or two tracks, it is convenient to route them through buses 1–8 and send them to the recorder tracks. This method of recording is explained in chapter 14, "Mixing and recording multiple channels" (→P.230).

1 Press the [PAN] key → [F1] key.

The PAN/ROUTE screen Pan 1-8 page will appear. In this page you can set the pan (or balance) of each channel, and assign it to buses.
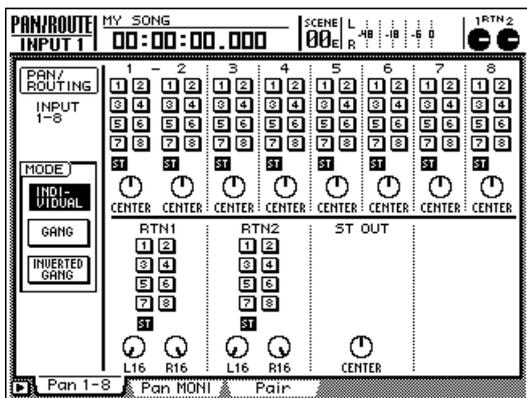
2 Move the cursor to the ST button of input channel 1, and press the [ENTER] key to turn it off.

Now the input signal of input channels 1/2 will no longer be sent to the stereo bus. In this example, input channels 1/2 have been paired, so that when you operated the ST button of input channel 1, input channel 2 followed the setting.
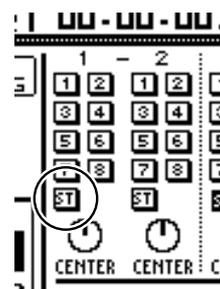
When the AW2816 is in the default state, input channels 1–8 are assigned to the stereo bus, and can be monitored from the MONITOR OUT jacks/PHONES jack. However in this example we want to send the input signals directly to the recorder tracks and monitor via the monitor channels for those tracks, and this is why we defeated the assignment from the input channels to the stereo bus.

3 Press the [PATCH] key → [F1] key.

The PATCH screen Patch IN page will appear. In this page you can select the signals that will be assigned (patched) to the input of each channel and to the inputs of the recorder.
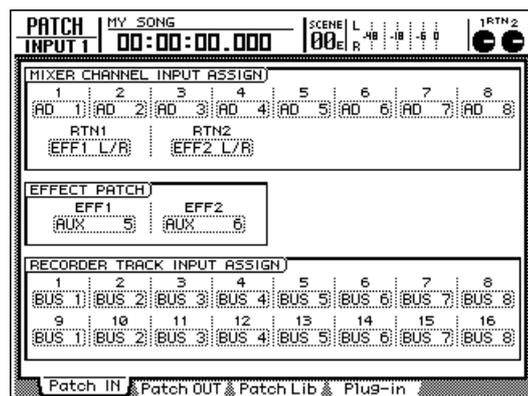
When the AW2816 is in the default state, the outputs of buses 1–8 (BUS 1–BUS 8) are assigned to recorder inputs 1–8/9–16 as shown in the diagram below.
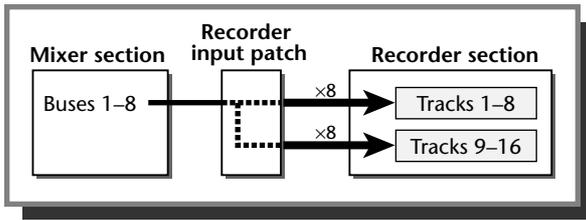
4 Move the cursor to the RECORDER TRACK INPUT ASSIGN area. Change the recorder input 1 setting to "DIR 1," and the recorder input 2 setting to "DIR 2."

The DIR 1–DIR 8 settings indicate the direct output (with the initial settings, the post-fader input signal) of input channels 1–8. As shown in the diagram below, patching "DIR 1" and "DIR 2" to recorder inputs 1/2 will cause the input signal of input channels 1/2 to be sent directly to tracks 1/2.
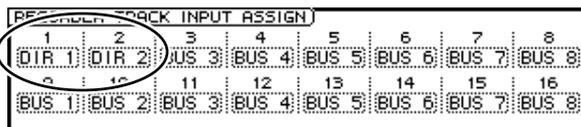
5 Press the REC TRACK SELECT [1]/[2] keys.
The REC TRACK SELECT [1]/[2] keys will begin blinking, and tracks 1/2 will be in record-ready mode.
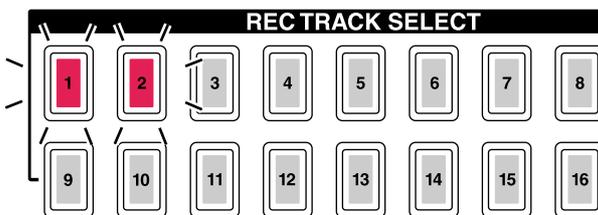
6 Press the [METER] key.
The METER screen will appear, displaying meters that indicate the input/output levels of tracks 1–16.
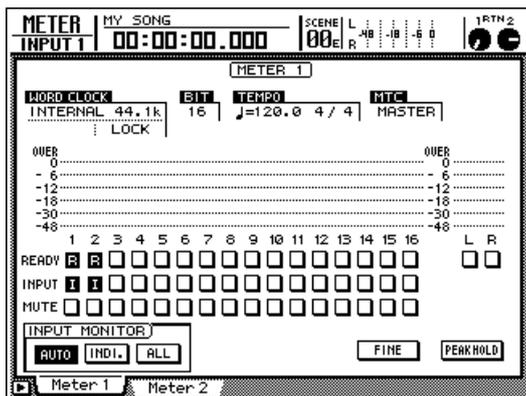
Tip!
The METER screen has two pages, Meter 1 and Meter 2, and you can switch between these by using the [F1]/[F2] keys or by repeatedly pressing the [METER] key. The functions of the meter area are the same for both pages.

7 In the INPUT MONITOR area, make sure that the AUTO button is on.

The three buttons in the INPUT MONITOR area located in the lower right of the METER screen are used to select the input metering mode (the way in which input metering of each track is switched). When the AUTO button is on, the signal being monitored for record-ready tracks will change automatically depending on the running mode, as shown in the following table.

Running mode	Monitored signal
Stopped	Track input source
Playing	Track playback
Recording	Track input source

8 While playing sounds on the instrument connected to the INPUT 1/2 jacks, check level meters 1/2.

The level of the signals input to tracks 1/2 will be displayed in level meters 1/2. (However at this stage, they will not yet be output to the MONITOR OUT jacks/PHONE jack.) If the level meters reach the OVER position, check whether the fader 1/2 (input level of input channels 1/2) settings are appropriate.
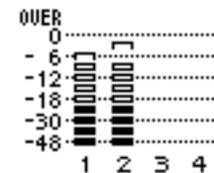
Tip!
You can use the Quick Rec screen to make the settings of steps 1–6 in a single operation. For details on the Quick Rec function, refer to page 80.

Adjusting the monitor level

Now we will send the signal of the rhythm machine (drum recording mics) via monitor channels 1/2 to the stereo bus, and monitor it from the MONITOR OUT jacks or PHONES jack.

1 Press the RECORDER [1-8] key.

Monitor channels 1–8 are selected as the mixing layer that will be controlled by the panel controllers.

2 Set monitor channels 1/2 as a stereo pair.

By simultaneously pressing adjacent odd-numbered → even-numbered [SEL] keys, you can pair monitor channels in the same way as input channels.

3 Press the [PAN] key → [F2] key.

The PAN/ROUTE screen Pan MONI page will appear. In this page you can make pan settings and bus assignments for monitor channels 1–16.
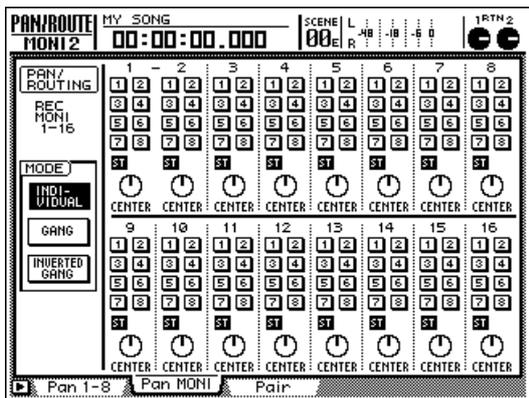
4 In the monitor channel 1/2 area, make sure that the ST buttons are on and the 1–8 buttons are off.

The signal of the rhythm machine (drum recording mics) will be sent via monitor channels 1/2 to the stereo bus.

5 Move the cursor to the PAN knob of monitor channel 1, and turn the [DATA/JOG] dial to set the pan value to "L16" (far left). In the same way, set the PAN knob of monitor channel 2 to "R16" (far right).
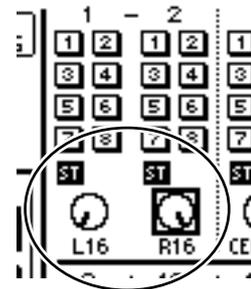
Tip!

Even when channels are paired, the PAN knob, phase, and effect insert settings will not be linked.

6 Make sure that [ON] keys 1/2 and the STEREO [ON] key are turned on.

7 Press the [METER] key to display the METER screen.

8 While playing sounds on your instrument, raise faders 1/2 and the STEREO fader. Also use the [MONITOR OUT] control/ [PHONES] control to adjust the monitor level.

The signal of the stereo bus can be monitored through your monitor system or headphones. If the L/R level meters reach the OVER location, lower the STEREO fader.
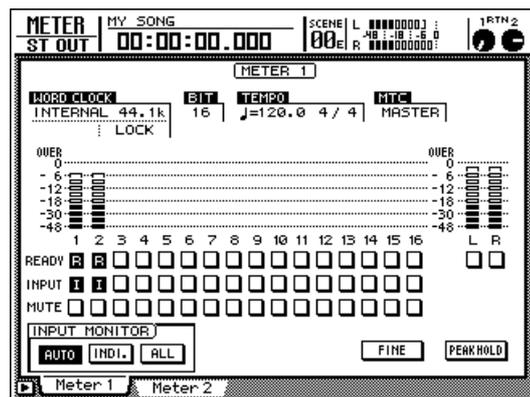
Tip!

The monitor channels affect the signal after it has passed through the recorder. This means that operating the pan, fader, and [ON] keys of the monitor channels will not affect the signal recorded on the recorder.

Recording

Now we will record the signal of the rhythm machine (drum recording mics) on tracks 1/2.

1 Press the [METER] key → [F2] key to display the METER screen Meter 2 page.

The METER screen Meter 2 page will display the input/output levels of tracks 1–16 and the output level of the stereo output channel, as well as a counter in large numerals.

2 Press the [RTZ] key of the Locate section.

The counter in the display will rewind to zero (00:00:00.000).

Tip!
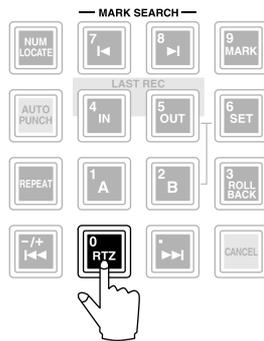
When the song is in the initial state, the counter will indicate the current location in units of "hours: minutes: seconds. millisecond" units. If desired, you can change this to time code display (hours: minutes: seconds: frames. subframes) or measure display (measures: beats. ticks) (→P.238).

⚠

If the [SONG], [FILE], [CD], or [EDIT] keys have been pressed, the keys of the Locate section and Transport section will not be valid (or their function may change). Select other keys before you continue.

3 To begin recording, press the REC [●] key of the Transport section, and then press the PLAY [▶] key.

The REC [●] key and PLAY [▶] key will light, and recording on tracks 1/2 will begin. During recording, the REC TRACK SELECT [1]/[2] keys will light.
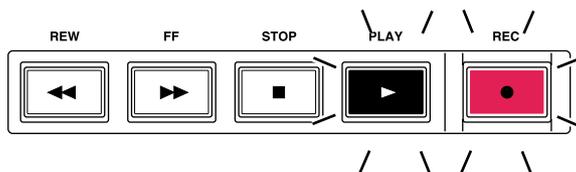
4 Begin performing on your instrument.

Tip!

When recording a live performance such as drums or guitar on the first track, you may wish to monitor the click of the internal metronome as you record. Metronome operation is explained in chapter 14, "Using the metronome" (→P.229).

5 When you are finished playing, press the STOP [■] key.

The REC [●] key and PLAY [▶] key will go dark, and recording will end.

6 To hear the recorded content, press the [◀◀] key of the Locate section, and then press the PLAY [▶] key.

When you press the PLAY [▶] key, you will be able to monitor the playback of the recorded tracks. If you decide to re-record, stop the song, press the [UNDO] key to cancel the previous recording, and repeat steps 2–5.

Tip!

By pressing the [IN] key of the Locate section you can instantly return to the location where recording was last begun.

⚠

Be aware that if a button other than AUTO (i.e., INDI./ALL) is turned on in the INPUT MONITOR area of the METER screen, it may not be possible to monitor the playback sound unless you cancel record-ready mode for the tracks.

7 If you are satisfied with the content that was recorded, press the STOP [■] key to stop the song.

8 Press the REC TRACK SELECT [1]/[2] keys to cancel record-ready mode for tracks 1/2.

⚠

- *By using the [ALL SAFE] key in the REC TRACK SELECT section, you can cancel record-ready mode for all tracks in a single operation.*
- *If you want to take a break at this point, we recommend that you save the song (→P.62).*

Recording additional tracks (Overdubbing)

This section explains how you can listen to the rhythm machine (drums) recorded on tracks 1/2 while you overdub an electric bass connected to the INPUT 8 (HI-Z) jack onto track 3.

Setting the input level

1 While playing the bass connected to the INPUT 8 (HI-Z) jack, adjust [GAIN] control 8 so that PEAK indicator 8 flickers faintly when you play the loudest.

Tip!
- *The INPUT 8 (HI-Z) jack is for directly connecting instruments with a high output impedance, such as an electric guitar or electric bass with passive pickups.*
- *It is not possible to use the INPUT 8 TRS phone jack and HI-Z jack simultaneously. If plugs are inserted into both, the HI-Z jack will take priority.*

2 Press the [HOME] key → [F1] key.

The HOME screen IN/Rtn/MON page will appear. In the lower left of the screen, make sure that the POST FADER button is turned on.
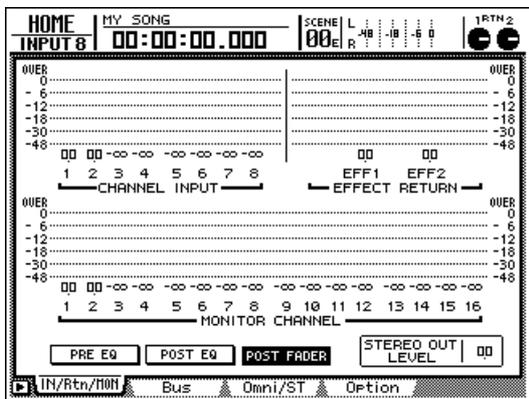
3 Press the INPUT [1-8] key to select input channels 1–8 as the mixing layer.

4 Make sure that [ON] key 8 is turned on, and raise fader 8 to the 0 dB position.

5 While producing sound on your instrument, watch the level meters in the screen and check the input level of input channel 8.
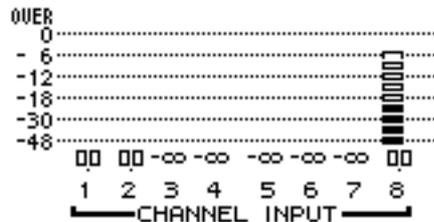
When the AW2816 is in the default state, the input signal of INPUT jack 8 is patched to input channel 8. If the input channel 8 level meter reaches the "OVER" position, make sure that fader 8 is in the 0 dB position, and lower [GAIN] control 8.

Patching the input signal to the recorder input

Now we will change the internal settings so that the bass signal that is being input to input channels 8 will be sent to the input of track 3.

1 Press the [VIEW] key → [F1] key.

The VIEW screen CH View page will appear. This page displays all mix parameters of the currently selected channel. (Here you can also edit the main parameters of the channel.) It is convenient to use this page when you want to edit the mix parameters of a specific channel.

In "Recording the first track," we used the PAN/ROUTE screen to defeat the stereo bus assignment, but here we will use the VIEW screen CH View page to perform the same operation.
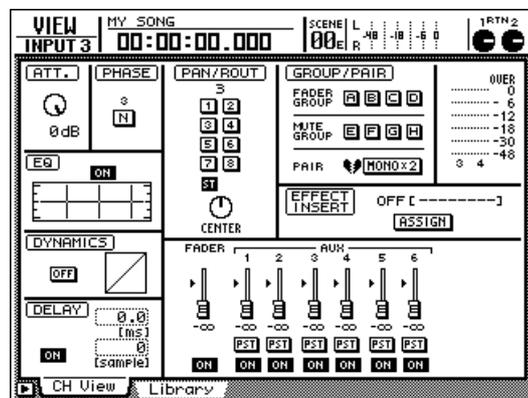
2 Press the INPUT [1-8] key → [SEL] key 8.

On the AW2816, you specify the channel that you want to operate by first selecting the mixing layer in the MIXING LAYER section, and then using a [SEL] key to select the desired channel. (The [SEL] key of the selected channel will light.) In the CH View page, the currently selected channel is shown in the upper left of the display.

```
VIEW  │MY
INPUT 8│ [
┌─────────────────
│ (ATT.) [PHF
```

3 Move the cursor to the ST button in the PAN/ROUT area, and press the [ENTER] key to switch it off.

Now the input signal of input channel 8 will no longer be sent to the stereo bus.

4 Press the [PATCH] key → [F1] key.

The PATCH screen Patch IN page will appear.

```
PATCH │MY SONG      │SCENE│L            │1RTN2
INPUT 8│ 00:00:00.000│00ᴇ│R -48 -18 -6 0 │●  ●

┌MIXER CHANNEL INPUT ASSIGN┐
  1      2      3      4      5      6      7      8
 [AD  1][AD  2][AD  3][AD  4][AD  5][AD  6][AD  7][AD  8]
    RTN1          RTN2
 [EFF1 L/R]    [EFF2 L/R]

┌EFFECT PATCH┐
    EFF1          EFF2
 [AUX    5]    [AUX    6]

┌RECORDER TRACK INPUT ASSIGN┐
  1      2      3      4      5      6      7      8
 [DIR 1][DIR 2][BUS 3][BUS 4][BUS 5][BUS 6][BUS 7][BUS 8]
  9     10     11     12     13     14     15     16
 [BUS 1][BUS 2][BUS 3][BUS 4][BUS 5][BUS 6][BUS 7][BUS 8]

 Patch IN  Patch OUT  Patch Lib  Plug-in
```
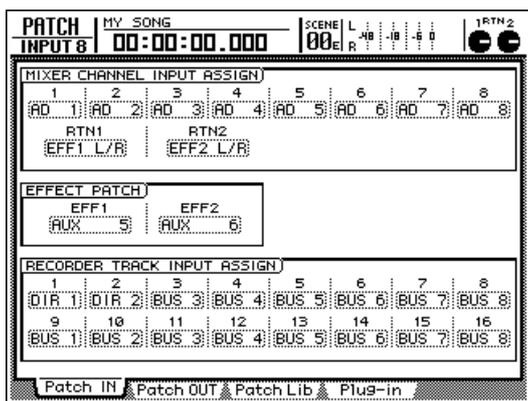
5 Move the cursor to the RECORDER TRACK INPUT ASSIGN area, and change the setting of recorder input 3 to "DIR 8."

Now the input signal of input channel 8 (bass) will be sent directly to track 3.

```
┌RECORDER TRACK INPUT ASSIGN┐
  1      2      3      4      5      6      7      8
 [DIR 1][DIR 2][DIR 8][BUS 4][BUS 5][BUS 6][BUS 7][BUS 8]
  9     10     11     12     13     14     15     16
 [BUS 1][BUS 2][BUS 3][BUS 4][BUS 5][BUS 6][BUS 7][BUS 8]
```
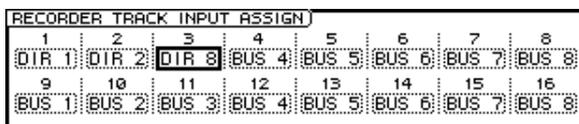
6 Press the REC TRACK SELECT [3] key.

The REC TRACK SELECT [3] key will begin blinking, and track 3 will be in record-ready mode.

```
                        REC TRACK SELECT
 ┌─┐  ┌─┐  ┌─┐  ┌─┐  ┌─┐  ┌─┐  ┌─┐  ┌─┐
 │1│  │2│  │3│  │4│  │5│  │6│  │7│  │8│
 └─┘  └─┘  └─┘  └─┘  └─┘  └─┘  └─┘  └─┘
 ┌─┐  ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐
 │9│  │10│ │11│ │12│ │13│ │14│ │15│ │16│
 └─┘  └──┘ └──┘ └──┘ └──┘ └──┘ └──┘ └──┘
```
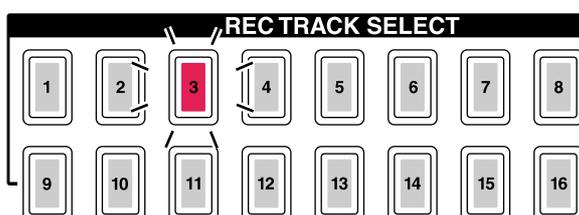
7 Press the [METER] key.

The METER screen will appear. In the INPUT MONITOR area, make sure that the AUTO button is turned on.

```
METER  │MY SONG      │SCENE│L            │1RTN2
INPUT 8│ 00:00:00.000│00ᴇ│R -48 -18 -6 0 │●  ●
┌──────────────── METER 1 ────────────────┐
│                                          │
│┌WORD CLOCK┐ ┌BIT┐┌TEMPO┐      ┌MTC┐      │
││INTERNAL 44.1k│ 16 │♩=120.0 4/4│ MASTER│   │
│    LOCK                                  │
│OVER                                  OVER│
│  0                                    0  │
│ - 6                                  - 6 │
│ -12                                  -12 │
│ -18                                  -18 │
│ -30                                  -30 │
│ -48                                  -48 │
│    1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  L R│
│READY □ □ ▣ □□□□□□□□□□□□□□     □□  │
│INPUT □ □ I □□□□□□□□□□□□□□           │
│MUTE  □□□□□□□□□□□□□□□□           │
│┌INPUT MONITOR┐                          │
││AUTO│ INDI.│ ALL│          FINE  PEAKHOLD│
└─┤ Meter 1 │ Meter 2 ├────────────────────┘
```
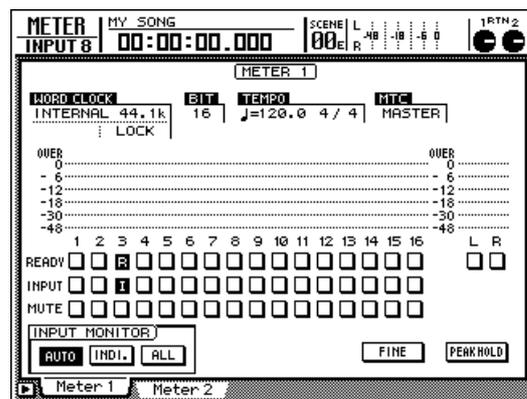
8 While playing the bass connected to INPUT (HI-Z) jack 8, watch level meter 3.

The level of the signal sent to the input of track 3 will be displayed in level meter 3. If the level meter reaches the OVER position, check whether fader 8 (input level of input channel 8) is set appropriately.

Adjusting the monitor level

Next we will send the bass signal via monitor channel 3 to the stereo bus, mix it with the signal of the previously-recorded tracks 1/2, and monitor it from the MONITOR OUT jacks or PHONES jack.

1 Press the RECORDER [1-8] key → [SEL] key 3.

[SEL] key 3 will light, and monitor channel 3 will be selected for operations.

2 Press the [VIEW] key → [F1] key

The VIEW screen CH View page will display the mix parameters of monitor channel 3.
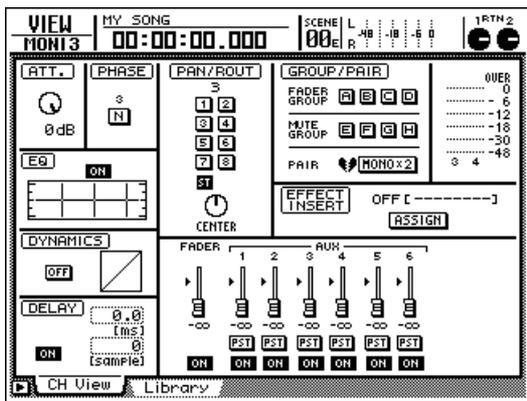
3 Make sure that the ST button is turned on in the PAN/ROUT area.

The signal of monitor channel 3 will be sent to the stereo bus.

4 Move the cursor to the PAN knob, and set the bass to a stereo location that is most comfortable for monitoring.

Tip!

If you move the cursor to the PAN knob and press the [ENTER] key, the knob will be reset to the center.

5 Make sure that [ON] key 3 is turned on. Then while you play on your bass, raise fader 3 to a volume that is comfortable for monitoring.

Applying the equalizer to the input signal

The AW2816 provides 4-band full-parametric EQ on all channels. Here's how to use the input channel EQ to process the signal before it is recorded on the track.

1 Press the INPUT [1-8] key → [SEL] key 8.

[SEL] key 8 will light, and input channel 8 will be selected for operations.

2 Press the [EQ] key → [F1] key.

The EQ screen EQ/Att page will appear, in which you can edit the EQ for input channel 8.
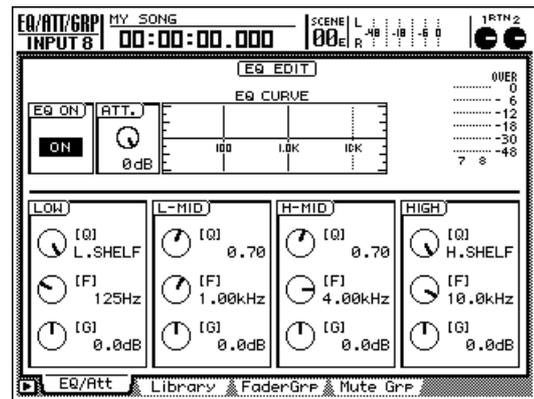
3 Make sure that the ON/OFF button in the upper left of the display is turned ON.

The ON/OFF button switches the EQ on/off. If it is turned OFF, press the [ENTER] key to switch it ON.

Tip!

When the EQ/Att page is displayed, you can simply press the [ENTER] key (regardless of the cursor location) to switch the ON/OFF button.

4 While playing sounds on your instrument, adjust the EQ parameters.

To adjust the EQ parameters, move the cursor in the lower part of the display, and use the [DATA/JOG] dial to edit the values. For each of the LOW, L-MID, H-MID, and HIGH bands, you can edit the following parameters.

• **Q knob**
This knob specifies the steepness at which the region of the center frequency specified by the F knob will be boosted/cut. The range is 10–0.10, and the curve will become steeper as this value decreases. For the LOW/HIGH bands, this knob is also used to switch the equalizer type.

• **F (Frequency) knob**
This knob specifies the center frequency at which the boost/cut will occur. The range is 21 Hz–20.1 kHz for each band.

- **G (Gain) knob**

    This knob sets the amount of boost/cut over a range of -18.0 dB– +18 dB. When "HPF" is selected for the LOW band EQ, or when "LPF" is selected for the HIGH band EQ, this knob also switches the filter on/off.

    Tip!

    - *The LOW band EQ will change to "L.SHELF" (low shelving) if the Q knob is turned fully clockwise, and to "HPF" (high pass filter) if the Q knob is turned fully counter-clockwise.*
    - *The HIGH band EQ will change to "H.SHELF" (high shelving) if the Q knob is turned fully clockwise, and to "LPF" (low pass filter) if the Q knob is turned fully counter-clockwise.*
    - *With the default settings, "L.SHELF" is selected for the LOW band, and "H.SHELF" is selected for the HIGH band.*

    ⚠️

    The signal level after passing through the EQ is shown in the upper right of the display. If this meter reaches the "OVER" position, use the ATT. knob located in the upper left of the display to lower the level of the signal that is input to the EQ.

    Tip!

    - *It is also possible to apply EQ to the signal of the monitor channel instead of to the input channel. By using this method, you can process only the signal being monitored, without affecting the signal that is recorded on the recorder.*
    - *The EQ library (special memory for storing EQ settings) contains preset EQ settings (programs) suitable for many types of instruments, which you may find convenient to use.*

Applying the dynamics processor to the input signal

All channels of the AW2816 (except for return channels 1/2) provide a dynamics processor that can be used as a compressor, limiter, or gate. This section explains how to use the dynamics processor of the input channel to process the bass sound before it is recorded on the track.

1 Press the INPUT [1-8] key → [SEL] key 8.

[SEL] key 8 will light, and input channel 8 will be selected for operations.

2 Press the [DYN] key → [F2] key.

The DYN/DLY screen Library page will appear. In this page you can save dynamics processor settings (programs) in a special memory area (the dynamics library), or load previously-saved programs. Dynamics library numbers 001–040 contain preset programs suitable for many types of instruments, which you may find convenient to use.
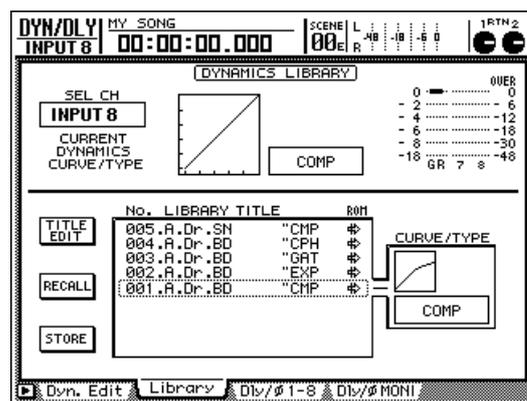
3 Turn the [DATA/JOG] dial to scroll the list, and select the program that you want to load.

The row enclosed by a dotted frame in the list is the currently selected program. For this example, let's select a program named "E.B. Finger."
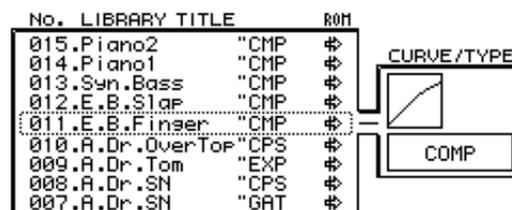
4 Move the cursor to the RECALL button at the left of the library list, and press the [ENTER] key.

A CONFIRMATION popup window will appear, asking you whether you really want to recall the data.

```
 CONFIRMATION 
 Will Recall
 DYN Lib. #011.

 ARE YOU SURE ?
 CANCEL      OK 
```

5 Move the cursor to the OK button and press the [ENTER] key.

The "E.B. Finger" program will be loaded into the dynamics processor of input channel 8.

6 Press the [F1] key.

The DYN/DLY screen Dyn.Edit page will appear. In this page you can edit the parameters of the dynamics processor.
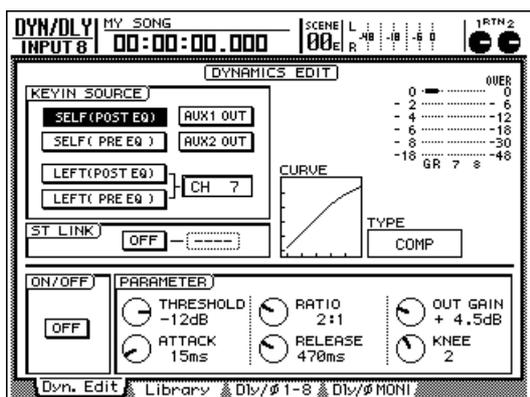
7 Press the [ENTER] key to turn on the ON/OFF button located in the lower left of the display.

The ON/OFF button switches the dynamics processor on/off. This enables the dynamics processor of input channel 8.

Tip!

In the Dyn.Edit page, you can press the [ENTER] key to switch the ON/OFF button regardless of the location of the cursor.

8 While playing your instrument, edit the dynamics processor parameters as desired.

To adjust the parameters, move the cursor to the PARAMETER area in the lower right of the display, and use the [DATA/JOG] dial to edit the value.

The upper right of the display contains a meter that indicates the signal level after passing through the dynamics processor. Be careful that this meter does not reach the "OVER" level.

Tip!

- *The dynamics processor provides five types: CMP (compressor), EXP (expander), GAT (gate), CPS (compander soft), and CPH (compander hard). Each of these types has different parameters. (refer to page 382 for the parameters of each type.)*
- *In the Dyn.Edit page, it is not possible to switch the dynamics processor type. If you want to use a specific type, you must start by loading a dynamics library program that uses that type, and then edit the parameters as desired.*

Recording

Now we will record the bass sound on track 3.

1 In the Locate section, press the [◄◄] key.
The counter in the display will rewind to the zero location (00:00:00.000).

2 To begin recording, hold down the REC [●] key and press the PLAY [►] key.
The REC [●] key and PLAY [►] key will light, and recording will begin.

3 While listening to the rhythm machine (drums) you previously recorded on tracks 1/2, play your bass.
If you want to change the monitor balance between the rhythm machine (drums) and bass, press the RECORDER [1-8] key of the MIXING LAYER section, and adjust faders 1–3.

4 When you are finished playing, press the STOP [■] key.
The REC [●] key and PLAY [►] key will go dark, and recording will stop.

5 To listen to the recorded content, press the [◄◄] key, and then press the PLAY [►] key.
If you decide to re-do the recording, stop the song, press the [UNDO] key to cancel the previous recording, and then repeat steps 1–4.

Tip!
You can press the [IN] key of the Locate section to return instantly to the location at which recording was last begun.

6 If you are satisfied with your recording, press the REC TRACK SELECT [3] key to disable record-ready mode.

Tip!
• You can also re-record from the middle of the song. If you are repeatedly re-recording the same region, it is convenient to set a marker or a locate point at that location for quick access (→P.102), or to use the auto punch-in/out function (→P.64).
• The basic procedure described above also applies when you want to record additional instruments on the remaining tracks. Go ahead and record the remaining instruments for your song in the same way.

Mixing to the stereo track (Mixdown)

This section explains how to mix the signals recorded on tracks 1–16 down to a stereo signal, use the internal effect processors to add effects, and record the result on the stereo track.

Adjusting the mix balance

Here's how to set the mix balance of the signals recorded on tracks 1–16, and use the EQ and dynamics processors to process the sounds.

1 Make sure that record-ready mode is defeated for all tracks 1–16, and that the REC TRACK SELECT [1]–[16] keys are dark. Also make sure that the input channel 1–8 [ON] keys are all dark.

Tip!

If necessary, you can mix down the input signals from input channels 1–8 in addition to the signals of tracks 1–16. In this case, turn on the [ON] keys for the input channels that you want to use.

2 Press the [PAN] key → [F2] key.

The PAN/ROUTE screen Pan MONI page will appear. In this page you can make pan settings and bus assignments for monitor channels 1–16.
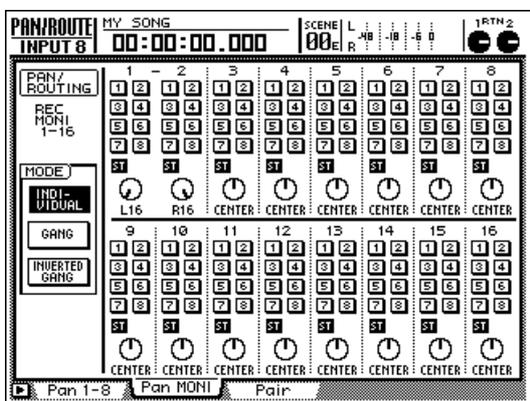
3 For monitor channels 1–16, turn on the ST button and turn off the bus assign 1–8 buttons.

With these settings, the signals of monitor channels 1–16 will be sent to the stereo bus.

Tip!

The input of the stereo track is always patched to the output of the stereo output channel. For this reason, sending the signals of monitor channels 1–16 to the stereo bus allows them to be recorded via the stereo output channel onto the stereo track.

4 Use the PAN knobs of monitor channels 1–16 to adjust the stereo position of each track.

5 Raise the STEREO fader to the 0 dB position. Make sure that the [ON] keys and STEREO [ON] keys of monitor channels 1–16 are lit.

6 Press the [METER] key.

The METER screen will appear.

7 Play back the song from the beginning, and set the mix balance of the tracks.

To set the mix balance, operate the faders while using the RECORDER [1-8] key and [9-16] key of the MIXING LAYER section to switch mixing layers. If the output level of the stereo output channel (L/R) reaches OVER in the METER screen, lower the STEREO fader.

8 If you want to use EQ to process a specific track, press its [SEL] key to select the monitor channel, and press the [EQ] key → [F1] key.

The EQ screen EQ/Att page will appear. Edit the EQ parameters (→P.54).

9 If you want to use the dynamics processor to process a specific track, press its [SEL] key to select the monitor channel, and press the [DYN] key → [F2] key.

The DYN/DLY screen Library page will appear. Load the desired dynamics program (→P.55). To edit the dynamics processor parameters, press the [DYN] key → [F1] key to display the DYN/DLY screen Dyn.Edit page.

Using the internal effects

The AW2816 contains two multi-effect units (effect 1/2). These internal effects can be used either via AUX send/return or by insertion into a desired channel. In this section we will explain how to use an AUX bus to apply reverb to the signal of each track.

1 **Press the [PATCH] key → [F1] key.**

The PATCH screen Patch IN page will appear, allowing you to patch an input signal to each channel.
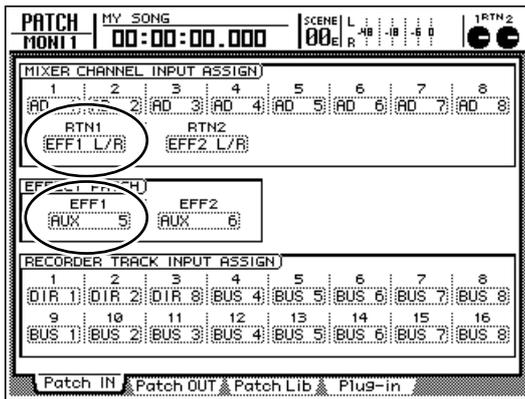
Make sure that in the EFFECT PATCH area EFF 1 is set to "AUX 5," and that in the MIXER CHANNEL INPUT ASSIGN area RTN1 is set to "EFF1 L/R."

With these settings, the signal of each channel will be routed through AUX bus 5 and sent to the input of effect 1. Also, the output signal of effect 1 will be sent to return channel 1.

Tip!

- *If these parameters are set differently, move the cursor to the corresponding field and turn the [DATA/JOG] dial to change the setting.*
- *With the default settings of an AW2816 song, the output of AUX buses 5/6 is patched to the input of internal effects 1/2, and the output of internal effects 1/2 is patched to the input of return channels 1/2. Thus, if you are using the default settings, it will not be necessary to change the patching.*

2 **Press the [PAN] key → [F1] key.**

The PAN/ROUTE screen Pan 1-8 page will appear.
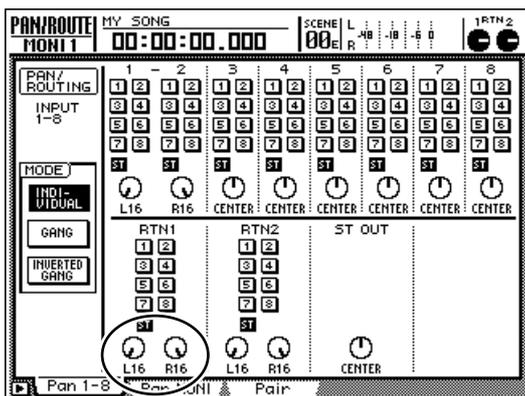
Make sure that in the RTN1 (return channel 1) area the ST button is turned on, and that the two PAN knobs are spread apart to left and right.

With these settings, the return signal from effect 1 will be sent to the stereo bus, and mixed with the signals of the monitor channels.

3 **Press the [AUX 5] key → [F2] key.**

The [AUX 5] key will light, and the AUX5/EFF 1 screen Library page will appear. In this page, effect library programs can be loaded/saved for internal effect 1. The display will show a list of the saved programs.
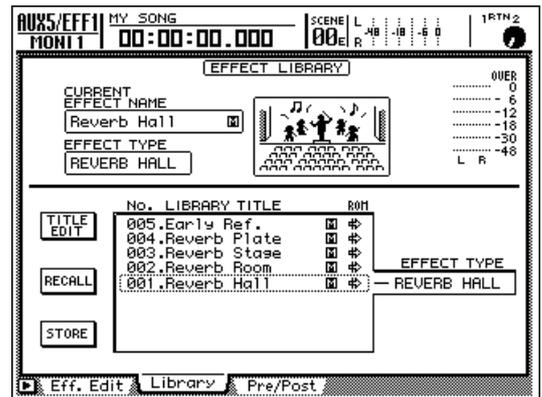
4 **Move the cursor to the library list, and turn the [DATA/JOG] dial to display "002. Reverb Room" at the cursor location.**

In this example we will load a room reverb program.

5 **Move the cursor to the RECALL button and press the [ENTER] key.**

A popup window will appear, asking you to confirm that you want to load the effect program.

6 **Move the cursor to the OK button and press the [ENTER] key.**

The "Reverb Room" effect program will be loaded into internal effect 1.

7 Press the [AUX 5] key → [F3] key.

The AUX5/EFF1 screen Pre/Post page will appear. In this page, the signal sent from each channel to AUX bus 5 can be switched on/off, and you can select the location from which the signal will be sent (pre-fader or post-fader).

Make sure that in the REC MONITOR (monitor channel) area, the POST/PRE switch of each channel is set to "POST," and the ON/OFF button is turned "ON."

Tip!

By using the GBL (Global) buttons located in the right of the destination, you can switch all channels to PRE (pre-fader) or POST (post-fader) at one touch.

8 While you play back the song from the beginning, operate the faders to adjust the send levels of the signals that are sent from monitor channels 1–16 to AUX bus 5.

When the [AUX 5] key is lit, faders 1–8 will adjust the send levels from each channel to AUX bus 5. While using the RECORDER [1-8]/[9-16] keys to switch the mixing layer, adjust the send level of the signals that are sent from monitor channels 1–16 to AUX bus 5.

9 If you want to adjust the return level from effect 1, press the [HOME] key and adjust the [RTN1] control.

The [RTN 1] control is not valid while the [AUX 5] key is lit. If you want to adjust the return level of effect 1 (the level of return channel 1), press a FADER MODE section key other than [AUX 5] (such as the [HOME] key), and then press the [RTN1] control.

Tip!

Settings for effect 2 can be made in essentially the same way, with the difference that AUX bus 6 is used instead of AUX bus 5, and that return channel 2 is used instead of return channel 1.

Recording on the stereo track

The AW2816 has a stereo track that is independent of audio tracks 1–16, and is used as a master track to create a final mix. When using a CD-RW drive to create an audio CD, this stereo track is what will be written to the CD. (However, only the stereo track of songs with a sampling frequency of 44.1 kHz can be written to an audio CD.)

Once you have decided on the mix balance and effect amounts for tracks 1–16, you are ready to mix down to the stereo track and create the final song.

1 Press the REC TRACK SELECT [ST] key.

The stereo track will be in record-ready mode.

2 Press the [METER] key.

The METER screen will appear.

3 Play back the song from the beginning, and watch the level in the L/R meter.

The input of the stereo track is always internally connected to the stereo output channel of the mixer. Thus, you can use the L/R meter of the METER screen to monitor the input levels of the stereo track. If the L/R meter reaches OVER, lower the STEREO fader.

4 If you want to use EQ to process the input signal of the stereo track, press the STEREO [SEL] key to select the stereo output channel, and press the [EQ] key → [F1] key.

The EQ screen EQ/Att page will appear. Make the desired settings for the EQ parameters (→P.54).

Tip!

EQ library numbers 30–32 contain presets that can be used for overall EQ, and you may find it convenient to use these. (For details on using the EQ library, refer to page 220.)

5 If you want to use the dynamics processor to process the input signal of the stereo track, press the STEREO [SEL] key to select the stereo output channel, and press the [DYN] key → [F2] key.

The DYN/DLY screen Library page will appear. Load the desired dynamics program (→P.55). If you want to edit the dynamics processor parameters, press the [DYN] key → [F1] key to access the DYN/DLY screen Dyn.Edit page.

Tip!

Dynamics library numbers 36–40 contain preset programs for limiters for two-track mixdown and overall compression.

6 Rewind to the beginning of the song. Then hold down the REC [●] key of the transport section and press the PLAY [▶] key.

Recording on the stereo track will begin.

7 When recording ends, press the STOP [■] key.

8 To hear the stereo track that was recorded, press the RECORDER section keys [TRACK] → [F3].

The TRACK screen Stereo page will appear, in which you can play back or erase the stereo track. With the default settings of the AW2816, the M (Mute) button in the upper left of the screen is turned on, so that the stereo track is muted.
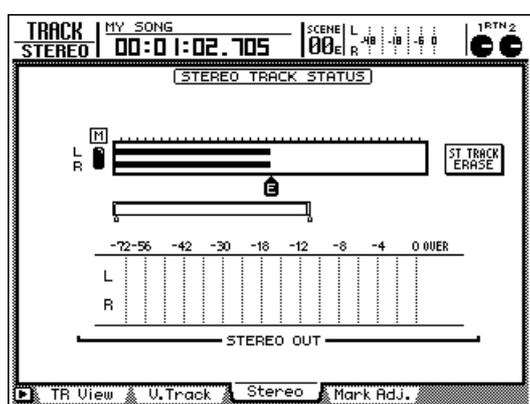
9 Move the cursor to the M (Mute) button, and press the [ENTER] key.

Muting of the stereo track will be disabled, and it can now be played.

At this time, the stereo track will automatically be assigned to monitor channels 1/2, and the other monitor channels will be muted. If you play back the song now, you can monitor the stereo track via monitor channels 1/2 → stereo bus.

However if you play back with the AW2816 in this state, the playback sound will be affected by the settings (pan, EQ, dynamics processor) of monitor channels 1/2 and the stereo output channel, meaning that you may not be monitoring the "flat" sound. For this reason, we will monitor the stereo track by sending it directly to the MONITOR OUT jacks/PHONES jack.

10 In the level meter/counter section, turn on the TRACK [CUE] key.

The TRACK [CUE] key is used to send the signal of the desired track directly to the MONITOR OUT jacks/PHONES jack.

Tip!

If you press the TRACK [CUE] button when stereo track muting is disabled, the TRACK [CUE] key will blink and the REC TRACK SELECT [ST] key will blink red. This indicates that only the stereo track can be selected as the signal for monitoring.

11 Press the REC TRACK SELECT [ST] key.

The blinking TRACK [CUE] key and REC TRACK SELECT [ST] key will now be steadily lit, and the stereo track has been selected as the signal for monitoring.

⚠

When you use the TRACK [CUE] key, the signal will be sent directly to the MONITOR OUT jacks/PHONES jack (i.e., without passing through a channel), meaning that it will not be possible to use a fader to adjust the level. Lower the [MONITOR OUT] control/[PHONES] control so that a high volume is not produced suddenly from your monitor speakers/headphones.

12 Press the Locate section [RTZ] key, and then press the Transport section PLAY [▶] key.

The "flat" (unprocessed) signal of the stereo track can now be monitored directly from the MONITOR OUT jacks/PHONES jack.

Tip!

As an alternative way to monitor the flat signal of the stereo track, you can save a scene in which monitor channels 1/2 and the stereo output channel are set to their default settings, and recall this scene when you want to play back the stereo track.

13 If you are satisfied with the recorded result, turn off the TRACK [CUE] key.

The REC TRACK SELECT [ST] key will go dark at the same time. To defeat muting of audio tracks 1–16, access the TRACK screen Stereo page and turn the M (Mute) button on once again.

Tip!

Each song has only one stereo track. If you perform the mixdown again, it will be overwrite the previous stereo track. However even in this case, you can use the [UNDO]/[REDO] keys to compare the previous and most recent versions.

Saving your song

On the AW2816, all data required for reproducing a completed composition (mixer, settings, recorder settings, audio data, etc.) is saved on the internal hard disk as a "song."

If you accidentally turn off the power of the AW2816 before saving the song, the audio track and stereo track data as well as the mixer settings will be lost. When you have finished creating your song, you must use the following procedure to save it.

⚠
- *If you turn off the power of the AW2816 without saving the current song, any changes you made to the settings within the current song will be lost.*
- *To turn off the power of the AW2816, you must use the Shutdown procedure (→P.12).*

1 Press the [SONG] key → [F1] key.

The SONG screen Song List page will appear.
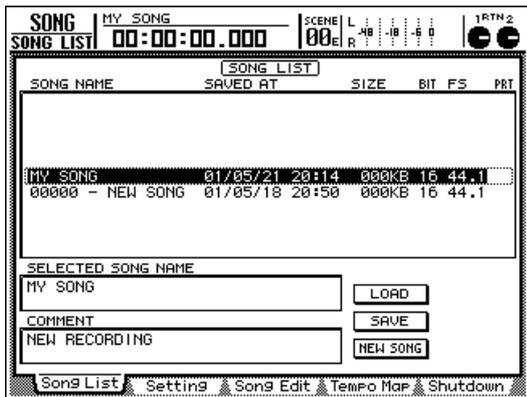
2 Move the cursor to the SAVE button in the bottom of the window, and press the [ENTER] key.

A CONFIRMATION popup window will appear, asking you to confirm that you want to save the song.

Tip!

Instead of pressing the [SONG] key in step 1, you can hold down the [SHIFT] key and press the [SONG] key to access the Song list page, and the cursor will automatically move to the SAVE button. This method can be used as a shortcut to save the current song.

3 Move the cursor to the OK button and press the [ENTER] key.

The song will be saved.

Tip!
- *In actuality, performing certain operations (such as Shutdown) will automatically save the current song. However as a precaution against the power being accidentally turned off during editing, we strongly recommend that you save the song regularly, not just after mixdown is completed.*
- *For details on how to load a song that was saved, refer to page 149.*

Advanced techniques on the AW2816

This section introduces more advanced recording and mixing techniques that you will find useful.

Manually re-recording only a specific area (Manual Punch-in/out)

If you make a mistake while recording a performance, you can re-record just the portion of the track that contains the mistake. This section will explain how to use the transport keys or a foot switch (Yamaha FC-5) to manually punch-in/out.

1 Locate the song to a point ahead of where you will punch-in.

> **Tip!**
> - *If you want to use a foot switch (Yamaha FC-5) to perform manual punch-in/out, connect the foot switch to the rear panel FOOT SW jack before you continue.*
> - *For details on Locate operations, refer to "Chapter 6. Transport/Locate operations."*

2 Press the [REC TRACK SELECT] key for the track that you want to record.

The [REC TRACK SELECT] key will blink, and it will be in record-ready mode.

3 Press the [TRACK] key → [F1] key.

In the INPUT MONITOR area, make sure that the AUTO button is turned on. If it is not turned on, move the cursor to the AUTO button and press the [ENTER] key.
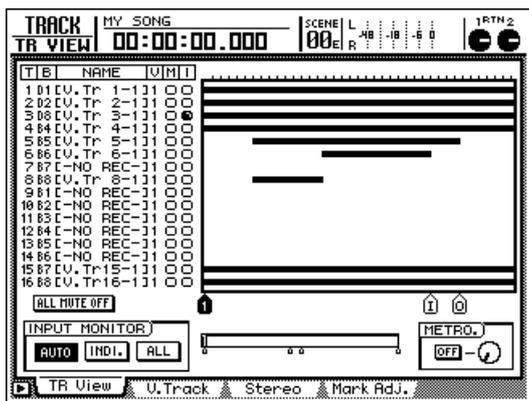
> **Tip!**
> *When using punch-in/out, select AUTO (auto input) as the input monitor mode. This mode lets you monitor the track playback of record-ready tracks before you punch-in, and the input source after you punch-in.*

4 Press the PLAY [▶] key. (Alternatively, press the foot switch.)

Song playback will begin.

> ⚠️
> *Operation may not be correct if you use a foot switch other than the Yamaha FC-5.*

5 At the location that you want to punch-in, press the REC [●] key + PLAY [▶] key (or press the foot switch).

The REC [●] key will light, and recording will begin on the track you selected in step 2.

6 At the location that you want to punch-out, press the PLAY [▶] key (or press the foot switch).

The REC [●] key will go dark, and you will return to normal playback mode.

7 To stop the song, press the STOP [■] key (or press the foot switch).

The song will stop.

8 To listen to the recorded result, locate to the location of step 1, and press the PLAY [▶] key.

> **Tip!**
> *If you made a mistake during recording, press the [UNDO] key while stopped to automatically cancel the previous recording operation.*

The following diagram shows the procedure for manual punch-in/out.
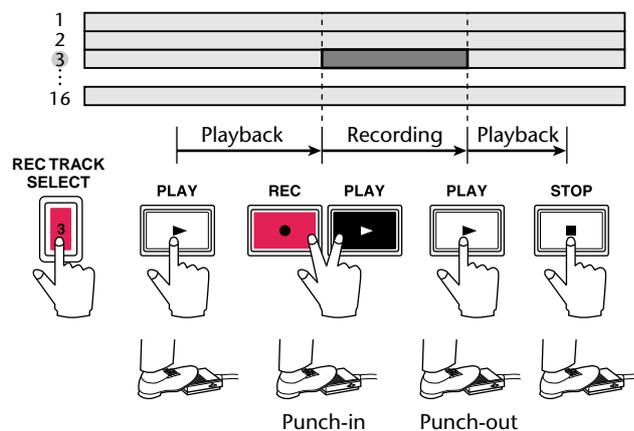
Automatically re-recording only a specific area (Auto Punch-in/out)

It is also possible to automatically punch-in/out when you come to a pre-specified point. This is called "auto punch-in/out." This section explains the procedure for auto punch-in/out.

1 Locate the song to the point where you want to punch-in. Then hold down the [SET] key and press the LAST REC [IN] key.
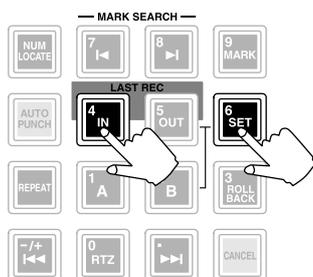
In order to use the auto punch-in/out function, you must first specify the punch-in and punch-out points. Use the two locate buttons In point and Out point to specify these points.

When you hold down the [SET] key and press the LAST REC [IN] key, the LAST REC [IN] key will light, indicating that this location has been assigned as the In point.

Tip!

Unless you specify otherwise, the locations at which recording most recently began and ended will be assigned as the In point and Out point respectively.

2 Locate the song to the point where you want to punch-out. Then hold down the [SET] key and press the LAST REC [OUT] key.

The LAST REC [OUT] key will light, indicating that this location has been assigned as the Out point.

⚠️
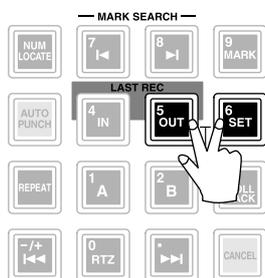
Be aware that auto punch-in/out cannot be executed if the Out point is set earlier than the In point, or if the In point and Out point are too close (less than approximately 100 msec).

Tip!

Fine adjustments can be made to the in/out point locations in millisecond units or sub-frame units, as necessary. For details refer to page 104.

3 Press the [REC TRACK SELECT] key of the track that you want to re-record.

The [REC TRACK SELECT] key will blink, and it will be in record-ready mode.

4 Press the [TRACK] key → [F1] key.

In the INPUT MONITOR area, make sure that the AUTO button is turned on. If it is not on, move the cursor to the AUTO button and press the [ENTER] key.
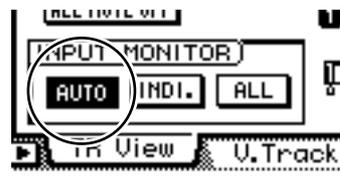
5 In the Locate section, make sure that the LAST REC [IN]/[OUT] keys are lit, and press the [AUTO PUNCH] key.

The [AUTO PUNCH] key will light, and you will locate to a point a certain time ahead of the punch-in point (the pre-roll time).

Tip!
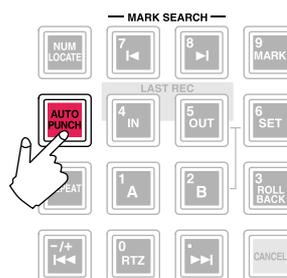
- *When executing auto punch-in/out, you can specify a fixed length of playback that will occur immediately before punch-in and immediately after punch-out. The length of playback before the punch-in time is called the "pre-roll time," and the length of playback after the punch-out time is called the "post-roll time."*
- *With the factory settings, the pre-roll/post-roll times are set to 5 seconds respectively, but you may change these settings if desired (→P.266).*
- *The point at which pre-roll begins is called the "pre-roll point," and the point at which post-roll ends is called the "post-roll point."*

⚠️

While the [AUTO PUNCH] key is lit, Transport/Locate operations other than the STOP [■]/PLAY [▶]/REC [●] keys are disabled.

6 To rehearse auto punch-in/out, press the PLAY [▶] key.

① The PLAY [▶] key will light, and playback will begin from the pre-roll point.

② When you reach the auto punch-in point, the REC [●] key will begin blinking, and the signal being monitored for the track you selected in step 3 will switch from the track playback sound to the input signal (the recording source). However, recording will not actually occur.

③ When you reach the auto punch-out point, the REC [●] key will go dark, and the signal being monitored will switch back to the track playback sound.

④ When you reach the post-roll point, the transport will return to the pre-roll point and stop.

7 If you want to rehearse again, press the PLAY [▶] once again while stopped.

Tip!

If you press the [REPEAT] key before or during rehearsal, operations ①–④ of step 6 will be repeated. (The A-B Repeat function will be disabled during this time.) If you want to stop repeating rehearsal, press the [REPEAT] key once again or press the STOP [■] key.

8 To actually perform auto punch-in/out, make sure that the transport is stopped, and hold down the REC [●] key and press the PLAY [▶] key.

① The PLAY [▶] key will light, the REC [●] will blink, and playback will begin from the pre-roll point.

② When you reach the auto punch-in point, the REC [●] key will change from blinking to steadily lit, and recording will begin on the track you selected in step 1 (punch-in).

③ When you reach the auto punch-out point, the REC [●] key will resume blinking, recording will be defeated, and you will return to playback mode (punch-out).

④ When you reach the post-roll point, the transport will return to the pre-roll point and stop.

9 If you want to listen to the recorded result, press the [AUTO PUNCH] key to make it go dark, and then press the PLAY [▶] key.

Tip!

If you make a mistake while recording with auto punch-in/out, press the [UNDO] key while stopped. The previous recording operation will be cancelled, and the state before recording will be recovered.

The following diagram shows the auto punch-in/out procedure.
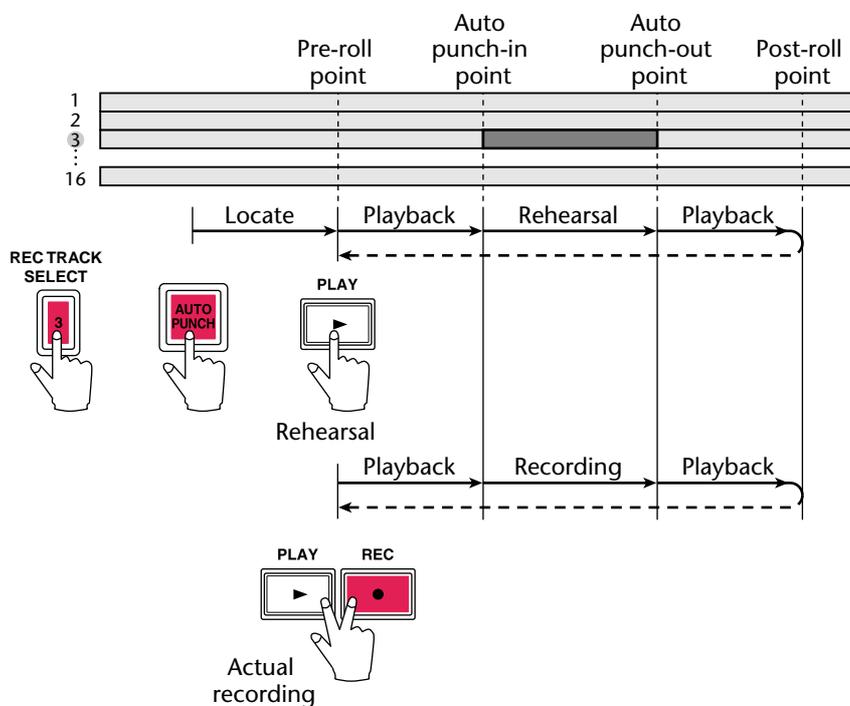
Switching virtual tracks

On the AW2816, you can select and record or play-back one of eight virtual tracks 1–8 for each of the audio tracks 1–16.

For example when you are recording a solo part on one of the tracks, you can switch virtual tracks to record several takes, and later select the virtual track that contains the best take. In this section we will explain how to switch the virtual track that will be used by a track.

1 **Press the [TRACK] key → [F2] key.**

The display will show the TRACK screen V.Track page.
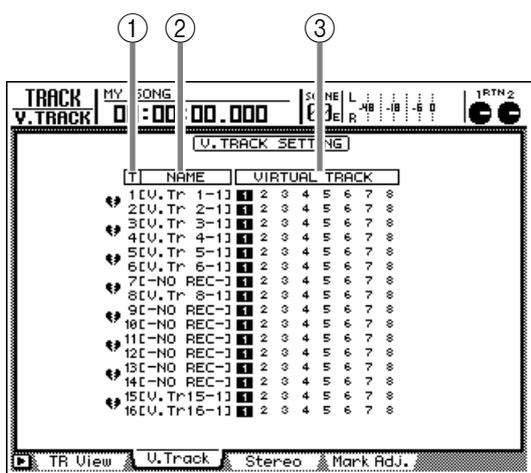
This page contains the following information.

① **Track number**
This is the track number 1–16.

② **Track name**
This is the name assigned to the virtual track that is selected for each track. Virtual tracks that have already been recorded will be assigned a default name of "V.Tr x-y" ("x" is the track number 1–16, and "y" is the virtual track number 1–8).

This name can be changed later if desired (→P.109). Virtual tracks that have not yet been recorded will be displayed as "-NO REC-".

③ **Virtual track**
The highlighted number is the virtual track that is currently selected for each track 1–16. In the illustration above, virtual track 1 is assigned to all tracks 1–16 (this is the default state).

Of the virtual tracks that are not currently selected, the track numbers that have been recorded will be displayed with a frame; e.g., 🔲.

2 **Move the cursor to the number of the vir-tual track that you want to assign to the track, and press the [ENTER] key.**

The selected virtual track number will be high-lighted. Now you can record or playback using the newly selected virtual track.

3 **If you want to specify pairing between tracks, move the cursor to the heart sym-bol (♥) for the corresponding tracks, and press the [ENTER] key.**

The heart symbol will be joined, and the two tracks will be paired. To cancel pairing, move the cursor to the heart symbol once again, and press the [ENTER] key.

Tip!

Adjacent odd-numbered → even-numbered tracks (tracks 1/2, 3/4, ... tracks 15/16) can be paired in the same way as channels. Paired tracks will operate in tandem when selected for track editing operations or when switching virtual tracks.

Operating multiple faders together (Fader Groups)

"Fader grouping" is a function that lets you operate the faders of multiple channels as a group. Channels that are registered in the same fader group can be controlled together by operating just one of the faders.

1 Press the [EQ] key → [F3] key.

The EQ screen FaderGrp page will appear. In this page you can assign input channels 1–8/monitor channels 1–16 to fader groups A–D. The row where the cursor is located is the currently selected fader group.
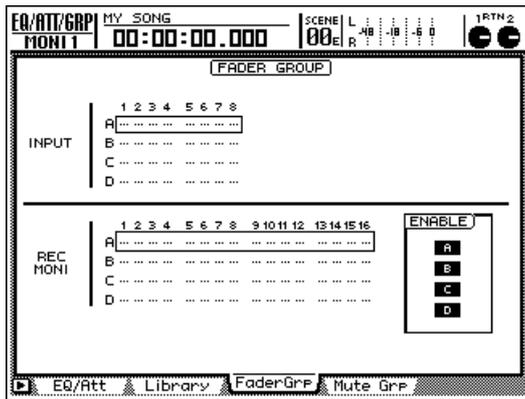
2 Use the CURSOR [▲]/[▼] keys to select a fader group A–D.

3 Use the keys of the MIXING LAYER section to select a mixing layer, and use the [SEL] keys to select the channels that you want to assign to that fader group.

When a channel is assigned to a fader group, a "●" symbol will be displayed in the A–D rows. To cancel an assignment, press the same [SEL] key once again.

Tip!

While this page is displayed, the lit/dark status of the [SEL] keys will indicate whether each channel is assigned to the fader group.

4 Repeat steps 2–3 to make assignments for the other fader groups.

5 Make sure that the A–D ENABLE buttons are on (highlighted).

The A–D ENABLE buttons switch the corresponding fader group on/off. To turn a button on, move the cursor to that button and press the [ENTER] key.

6 Operate the fader of a channel assigned to a fader group.

The faders of all channels belonging to that fader group will move.

Tip!

- *If you want to adjust the position of a channel fader after that channel has already been assigned to a fader group, turn the ENABLE button off to temporarily defeat that fader group.*
- *When screens other than the FaderGrp page are displayed, you can press and hold a [SEL] key to temporarily exclude that channel from the fader group. By holding down the [SEL] key of a channel and operating its fader, you can operate the desired channel independently of its fader group.*

Operating multiple [ON] keys together (Mute Groups)

"Mute grouping" is a function that lets you operate the [ON] of multiple channels as a group. Channels that are registered in the same mute group can be turned on/off together by operating just one of the [ON] keys.

1 Press the [EQ] key → [F4] key.

The EQ screen MuteGrp page will appear. In this page you can assign input channels 1–8/monitor channels 1–16 to mute groups E–H. The row where the cursor is located is the currently selected mute group.
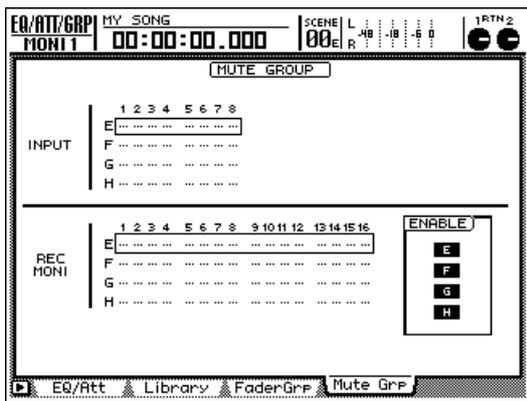
2 Use the CURSOR [▲]/[▼] keys to select a mute group E–H.

3 Use the keys of the MIXING LAYER section to select a mixing layer, and use the [SEL] keys to select the channels that you want to assign to that mute group.

When a channel is assigned to a mute group, a "●" symbol will be displayed in the E–H rows. To cancel an assignment, press the same [SEL] key once again.

Tip!

While this page is displayed, the lit/dark status of the [SEL] keys will indicate whether each channel is assigned to the mute group.

4 Repeat steps 2–3 to make assignments for the other mute groups.

5 Make sure that the E–H ENABLE buttons are on (highlighted).

The E–H ENABLE buttons switch the corresponding mute group on/off. To turn a button on, move the cursor to that button and press the [ENTER] key.

6 Operate the [ON] key of a channel assigned to a mute group.

The on/off status will be switched for the [ON] keys of all channels belonging to that mute group.

Tip!

• *On/off settings of the [ON] keys may be mixed within the same mute group. This is convenient when you want to switch between two channels during playback.*
• *If you want to change the setting of an [ON] key after that channel has already been assigned to a mute group, turn the ENABLE button off to temporarily defeat that mute group.*

Using the Solo function

The AW2816 contains a very flexible Solo function. By pressing the [SOLO] key on the top panel and then pressing the [ON] key for a desired channel, you can monitor that channel by itself.

1 Press the [SETUP] key → [F5] key.

The SET UP screen Solo Setup page will appear. In this page you can make various settings for the Solo function.
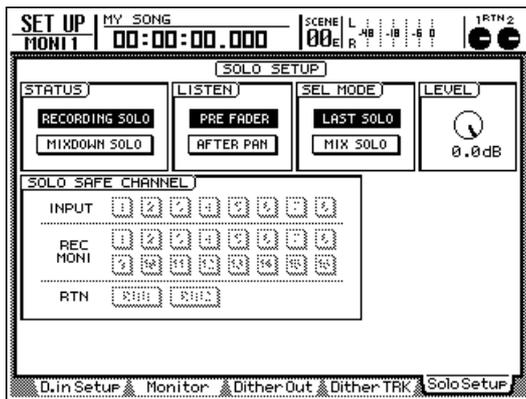
2 Move the cursor to the STATUS area, and select one of the following two modes to specify how the Solo function will operate.

- **RECORDING SOLO**
  In this mode, the signal of the channel being soloed will be routed through a dedicated SOLO bus and output from the MONITOR OUT jacks/ PHONES jack. The signals being output to the stereo bus or buses 1–8 will not be affected. This method also lets you monitor a channel that is not assigned to the stereo bus or buses 1–8, or even a channel whose [ON] key is turned off.

  This solo mode is convenient when you want to monitor a specific input source during multi-track recording without affecting the signals that are being recorded on the tracks.

- **MIXDOWN SOLO**
  In this mode, only the signal of the channel being soloed will be routed through the stereo bus and output from the MONITOR OUT jacks/PHONES jack. Other channels will be muted. With this method, it is not possible to monitor a channel that is not assigned to the stereo bus, or a channel whose [ON] key is turned off.

  This solo mode is convenient when you are mixing down, and want to send only a specific track to the stereo bus while muting all other tracks.

3 Move the cursor to the SEL MODE area, and select one of the following two modes to specify how the Solo function will operate.

- **LAST SOLO**
  While the [SOLO] key is on, only the channel that was last selected by its [ON] key will be monitored.

- **MIX SOLO**
  While the [SOLO] key is on, all channels that are selected by their [ON] keys will be monitored.

4 If you selected RECORDING SOLO in the STATUS area, move the cursor to the SEL MODE area, and select one of the following two choices to specify the location from which the signal will be sent to the SOLO bus.

- **PRE FADER**
  The pre-fader signal will be sent to the SOLO bus. In this case, the pan and fader settings of the channel will be ignored, and the signal sent to the MONITOR OUT jacks/PHONES jack will be monaural.

- **AFTER PAN**
  The post-fader/pan signal will be sent to the SOLO bus, In this case, the pan and fader settings of the channel will affect the signal sent to the MONITOR OUT jacks/PHONES jack.

5 If you selected MIXDOWN SOLO in the STATUS area, move the cursor to the SOLO SAFE CHANNEL area, and select the channels that you want to set to Solo Safe.

Solo Safe is a function that excludes specified channels from Solo operations when MIXDOWN SOLO is selected. In the SOLO SAFE CHANNEL area, move the cursor to the buttons of channels that you want to set to Solo Safe, and press the [ENTER] key. (You may select more than one channel.)

Tip!

For example if you turn on the RTN1/RTN2 buttons in the SOLO SAFE CHANNEL area, the soloed channels will be monitored with reverb or other effect applied.

6 To enable the Solo function, press the [SOLO] key.

The [SOLO] key and [ON] keys 1–8 will blink.
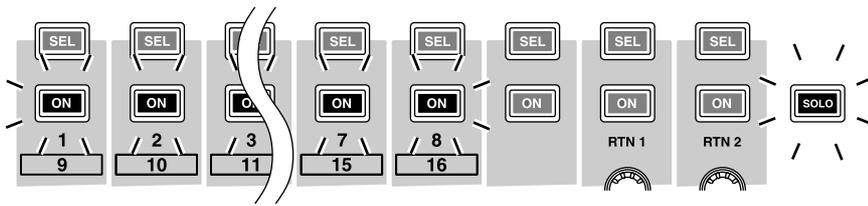
7 Use the keys of the MIXING LAYER section to select the desired mixing layer, and use the [ON] keys to select the channel that you want to solo.

The corresponding channel will be soloed, and all other [ON] keys will go dark.

Operation while the Solo function is enabled will depend on the settings of the SETUP screen Solo Setup page.

8 To defeat the Solo function, press the [SOLO] key once again.

4 Input/output patching

This chapter explains how input/output signals and input/output jacks can be assigned to the various signal routes within the AW2816.

Assigning signals to input channels/ return channels (Input Patch)

In the Input Patch section, input signals such as signals received at the input jacks, the output from the internal effects, and the output of the internal metronome can be assigned to input channels 1–8 and return channels 1/2.

With the default settings of an AW2816 song, the input signals shown in the following diagram are assigned to input channels 1–8 and return channels 1/2.
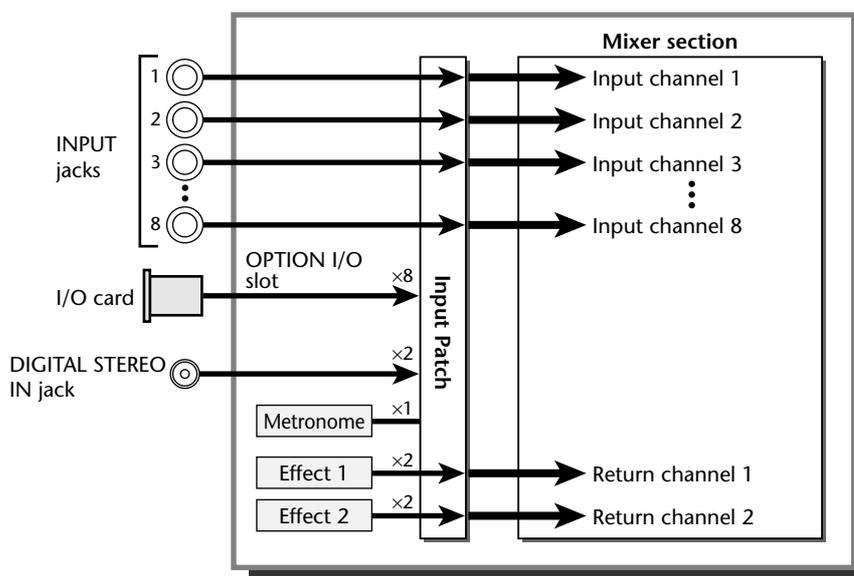
Tip!

To return the input patch section to its default state, recall scene number 00 or patch library number 00.

To change the patching shown above, use the following procedure.

1 Press the [PATCH] key → [F1] (Patch IN) key.

The PATCH screen Patch IN page will appear, where you can patch input channels and recorder inputs. The MIXER CHANNEL INPUT ASSIGN area of this page displays the signals that are assigned to input channels 1–8 and return channels 1/2
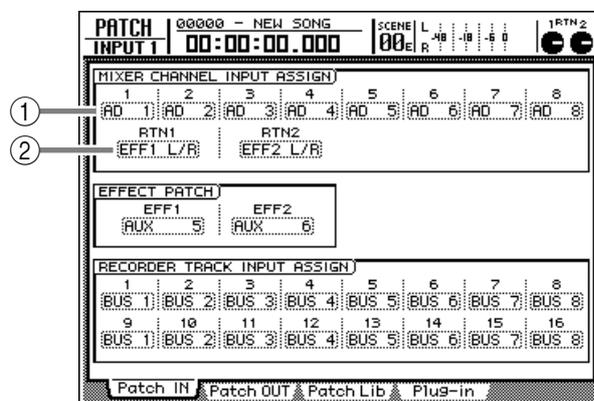
① Signals assigned to input channels 1–8

② Signals assigned to return channels 1/2

2 Move the cursor to the channel whose patching you want to change, and use the [DATA/JOG] dial to select the desired signal.

The following signals can be assigned to each channel.

- **Input channels 1–8**

Display	Signal type
AD 1–AD 8	INPUT jacks 1–8
SLT-1–SLT-8	INPUT 1–8 of an I/O card
DIN L/DIN R	L or R channel of the DIGITAL STEREO INPUT jack
MET	Internal metronome

- **Return channels 1/2**

Display	Signal type
EFF1 L/R	Return from internal effect 1 [*1]
EFF2 L/R	Return from internal effect 2 [*2]
AD 1/2–AD 7/8	INPUT jacks 1/2–7/8
SLT-1/2–SLT-7/8	INPUT 1/2–7/8 of an I/O card
DIN L/R	DIGITAL STEREO INPUT jack (stereo)

*1. Only return 1 can be selected
*2. Only return 2 can be selected

For example if you change input channel 2 to "AD 1" (INPUT jack 1) from the default setting, the input signal of INPUT jack 1 will be sent to both input channels 1 and 2, as shown in the diagram below.
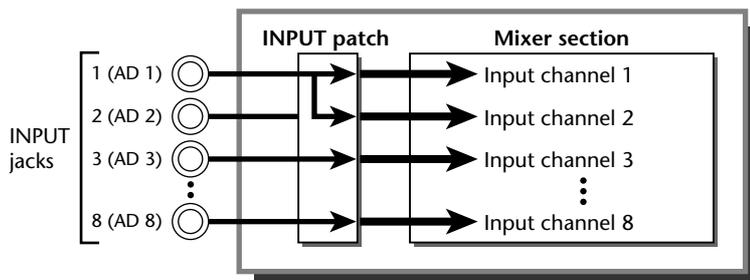
Tip!

- *You can use the patch library to save the edited patching status. For details refer to page 76.*
- *Return channels 1/2 can also be used as input channels.*

Assigning signals to the recorder inputs (Recorder Input Patch)

In the Recorder Input Patch section you can assign the output signals of buses 1–8 and the direct outputs of input channels 1–8 to the inputs of recorder tracks 1–16 (recorder inputs 1–16).

With the default settings of an AW2816 song, the bus 1–8 signals are assigned to recorder inputs 1–16 as shown in the diagram below.
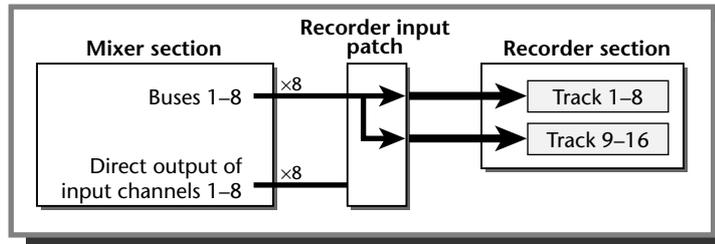
To change the patching shown above, use the following procedure.

1 Press the [PATCH] key → [F1] (Patch IN) key to access the PATCH screen Patch IN page.

The RECORDER CHANNEL INPUT ASSIGN area of this page displays the signals that are assigned to recorder inputs 1–16.
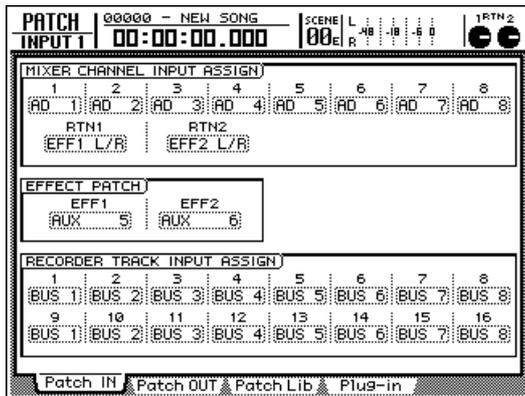
2 Move the cursor to the recorder input whose patching you want to change, and use the [DATA/JOG] dial to select the desired signal.

The following types of signal can be assigned to the input of each track.

Display	Signal type
BUS 1–BUS 8	Buses 1–8
DIR 1–DIR 8	Direct output of input channels 1–8

When you change recorder inputs 1–8 to "DIR 1"–"DIR 8," the signals of input channels 1–8 will be sent (without passing through buses 1–8) to tracks 1–8 as shown in the diagram below. This method is useful when you want to record the sounds of individual instruments directly on tracks without mixing them with other instruments.
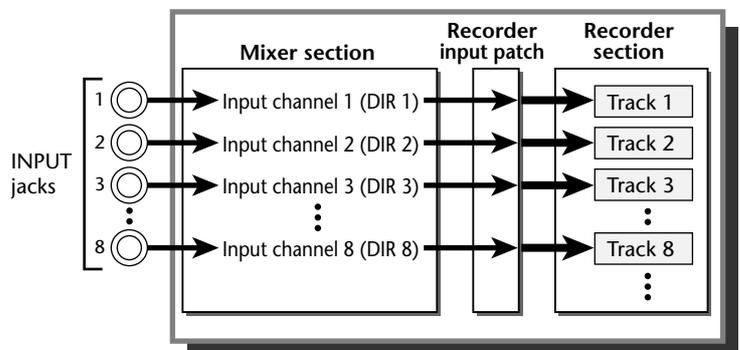
Tip!

If you have selected "DIR 1"–"DIR 8," you can choose either the pre-EQ signal or the pre-fader signal as the signal that will be sent to the recorder input. This selection is made in the UTILITY screen Prefer.1 page (→P.264).

Assigning signals to output jacks/ output channels (Output Patch)

In the Output Patch section, signals such as buses 1–8, AUX buses 1–6, the stereo bus, and direct outputs from the recorder can be assigned to output jacks such as the STEREO OUT jacks and OMNI OUT jacks 1–4, or output channels of the OPTION I/O slot.

With the default settings of the AW2816, the following signals are assigned to the various output jacks and output channels.
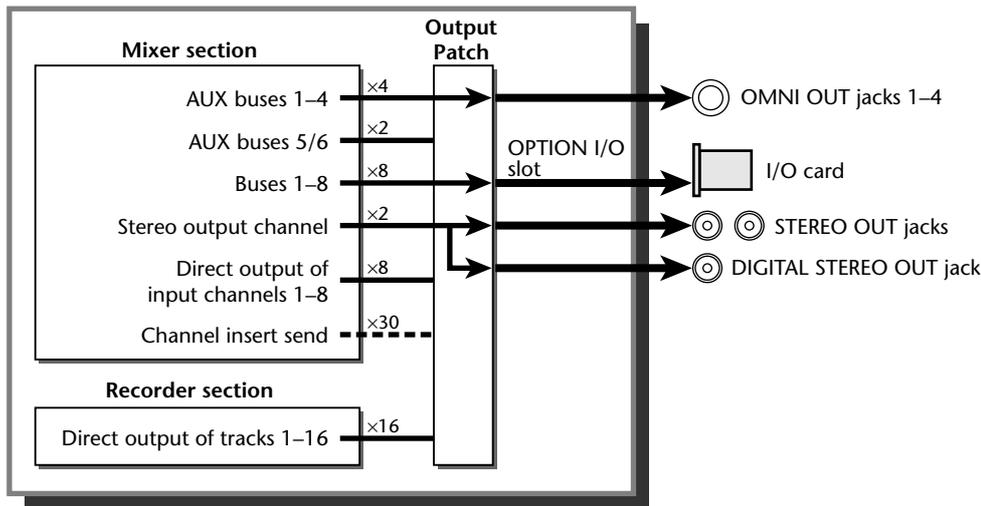
To change the patching shown above, use the following procedure.

1 Press the [PATCH] key → [F2] (Patch OUT) key.

The PATCH screen Patch OUT page will appear. The various areas of the display show the patching status for each input jack.
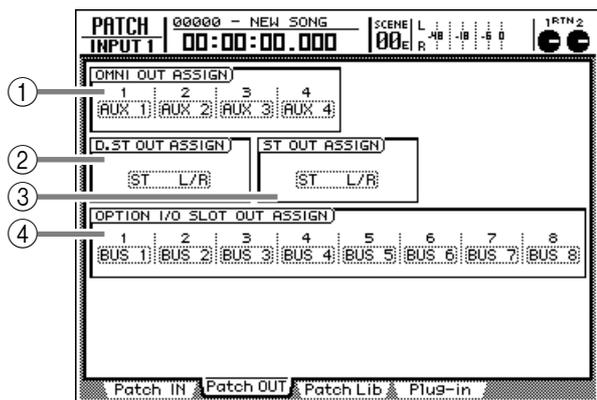
① OMNI OUT jacks 1–4

② DIGITAL STEREO OUT jack

③ STEREO OUT jacks

④ Output channels 1–8 of an I/O card (OPTION I/O slot)

2 Move the cursor to the output jack whose patching you want to change, and use the [DATA/JOG] dial to select the signal that you want to assign.

The following types of signals can be assigned to each output jack.

• **OMNI OUT jacks 1–4**

Display	Signal type
ST L/ST R	L/R stereo output channels
BUS 1–BUS 8	Buses 1–8
DIR 1–DIR 8	Direct output of input channels 1–8
AUX 1–AUX 6	AUX buses 1–6
RDR 1–RDR 16	Direct output of tracks 1–16

- **DIGITAL STEREO OUT jack**
- **STEREO OUT jacks**

Display	Signal type
ST L/R	Stereo output channel (L/R)
BUS 1/2–7/8	Buses 1/2–7/8
DIR 1/2–DIR 7/8	Direct output of input channels 1/2–7/8
AUX 1/2–AUX 5/6	AUX buses 1/2–5/6
RDR 1/2–RDR15/16	Direct output of tracks 1/2–15/16

- **OUTPUT 1–8 of an I/O card (OPTION I/O slot)**

Display	Signal type
ST L/ST R	L/R stereo output channels
BUS 1–BUS 8	Buses 1–8
DIR 1–DIR 8	Direct output of input channels 1–8
AUX 1–AUX 6	AUX buses 1–6
RDR 1–RDR 16	Direct output of tracks 1–16

⚠️

- *In the various areas of the Patch OUT page, you may see indications such as "I-I8" or "I-M16." These indicate that the insert send of an input channel (if the indication starts with "I-I") or the insert send of a monitor channel (if the indication starts with "I-M") has been patched to that output jack.*
- *When the above selections are grayed, this indicates that the corresponding insert send is invalid. Be aware that in this case, no signal will be output from that jack. (For details on patching a channel insert send to an output jack, refer to page 78.)*

Using the patch library

Up to 20 different patching settings you make in the PATCH screen Patch IN page and Patch OUT page can be stored in an area of internal memory called the "patch library." The contents of the patch library are saved on the internal hard disk as part of the song. Here we will explain how to perform patch library operations.

Storing the patching settings to the library

Here's how to assign a name to the patching settings, and store them in the patch library.

1 Press the [PATCH] key → [F3] (Patch Lib.) key.

The PATCH screen Patch Lib page will appear. The list in the lower part of screen shows the contents of the patch library.
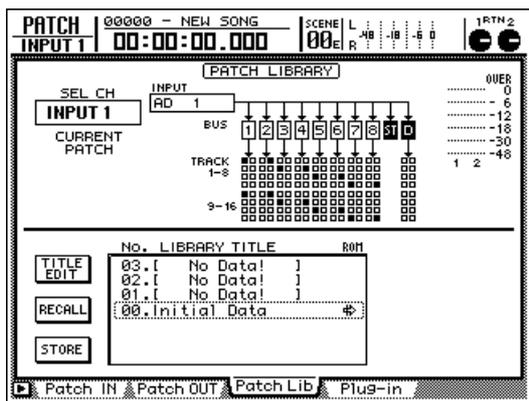
2 Use the [DATA/JOG] dial to select the patch library number (01–20) into which you will store.

✎
Tip!

Library number 00 contains a recall-only preset that resets all patching settings to their default state. Thus, it is not possible to store to number 00.

3 Move the cursor to the STORE button and press the [ENTER] key.

A TITLE EDIT popup window will appear, allowing you to assign a name to the patching settings.

4 Use the CURSOR [◄]/[►]/[▲]/[▼] keys and the [ENTER] key to assign a name to the patching settings.

For details on inputting characters, refer to page 37.

✎
Tip!

You can also omit inputting a name, and save directly to the library. To do so, go to the UTILITY screen Prefer. 1 page ([UTILITY] key → [F2] key) and turn off the STORE CONFIRMATION setting. In this state if you execute step 3, the settings will be saved in the library with a name of "New Data."

5 To execute the Store operation, move the cursor to the OK button and press the [ENTER] key.

To abort the Store operation, move the cursor to the CANCEL button and press the [ENTER] key. When the Store operation is executed, the patching settings stored in the list will be displayed.

Recalling patching settings from the library

Here's how to recall (load) patching settings that were saved to the library.

1 Press [PATCH] key → [F3] (Patch Lib.) key to display the PATCH screen Patch Lib page.

2 Use the [DATA/JOG] dial to select the patching settings that you want to recall.

3 Move the cursor to the RECALL button and press the [ENTER] key.

A popup window will appear, asking you to confirm the recall operation.

```
┌─────────────────────┐
│  ■CONFIRMATION■      │
│                      │
│     Will Recall      │
│   PATCH Lib.#01.     │
│                      │
│    ARE YOU SURE ?    │
│                      │
│  [CANCEL]  [  OK  ]  │
└─────────────────────┘
```

4 To execute the Recall operation, move the cursor to the OK button and press the [ENTER] key.

To abort the Recall operation, move the cursor to the CANCEL button and press the [ENTER] key.

Tip!

- *You can also cause the patching settings to be recalled immediately, without having to see the confirmation popup window. To do so, access the UTILITY screen Prefer.1 page ([UTILITY] key → [F2] key), and turn off the RECALL CONFIRMATION setting.*
- *By using automix, you can automatically recall a patch library at the desired point in a song. For details on automix, refer to page 133.*

Inserting an external effect into a channel

You can patch input/output jacks into an insert I/O point of a desired channel, and insert an external effect. For example this method can be used when you want to apply a studio chorus effect while recording a guitar, or when you want to apply an external compressor/limiter on the stereo bus signal during mixdown.

1 Use the keys of the MIXING LAYER section and the [SEL] keys to select the desired channel.

2 Press the [VIEW] key → [F1] (CH View) key.

The VIEW screen CH View page will appear. In this example, we have selected monitor channel 1.
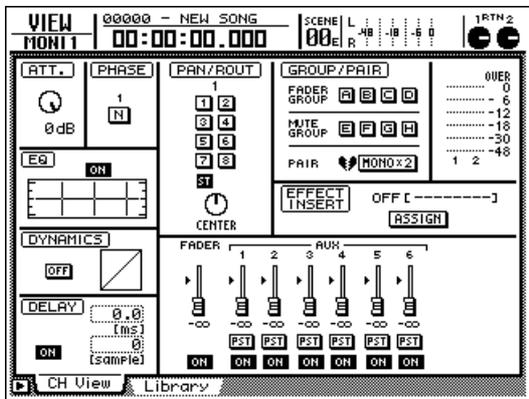
3 Move the cursor to the ASSIGN button of the EFFECT INSERT area, and press the [ENTER] key.

The EFF.INSERT SETTING popup window will appear. This window lets you insert an internal effect or external effect into the selected channel.
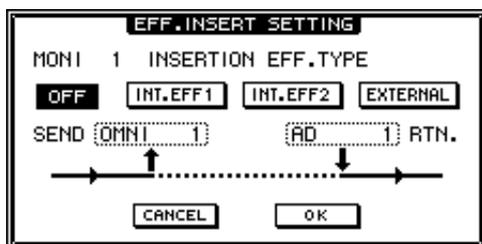
4 Move the cursor to the EXTERNAL button, and press the [ENTER] key.

The SEND area and RTN. area of the popup window will show the type of input/output jack or input/output channel that is patched.
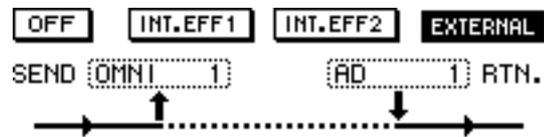
Tip!

By using the INT.EFF 1 button or INT.EFF 2 button of the EFF.INSERT SETTING popup window, you can insert internal effect 1/2 into that channel. For details refer to page 88.

5 Move the cursor to the SEND area, and use the [DATA/JOG] dial to select the output jack or output channel that you want to assign as the insert send.

The following types of jack can be selected.

• **If an input channel 1–8 or a monitor channel 1–16 is selected**

Display	Content
OMNI 1–OMNI 4	OMNI OUT 1–4 jacks
SLT 1–SLT 8	Output channels 1–8 of the OPTION I/O slot
D STO L/D STO R	L or R channel of the DIGITAL STEREO OUT jack
STOUT L/STOUT R	L or R channel of the STEREO OUT jacks

• **If a return channel 1/2 or the stereo output channel is selected**

Display	Content
OMNI 1/2–OMNI 3/4	OMNI OUT 1/2–3/4 jacks
SLT 1/2–SLT 7/8	Output channels 1/2–7/8 of the OPTION I/O slot
D STOUT	DIGITAL STEREO OUT jack (L/R)
STOUT	STEREO OUT jacks (L/R)

6 Move the cursor to the RTN. area, and use the [DATA/JOG] dial to select the input jack or input channel that you want to assign as the insert return.

The following types of jack can be selected.

• **If an input channel 1–8 or a monitor channel 1–16 is selected**

Display	Content
AD 1–AD 8	INPUT jacks 1–8
SLT 1–SLT 8	INPUT 1–8 of an I/O card (OPTION I/O slot)
D STIN L/D STIN R	L or R channel of the DIGITAL STEREO OUT jack

• **If return channel 1/2 or the stereo output channel is selected**

Display	Content
AD 1/2–AD 7/8	INPUT jacks 1/2–7/8
SLT 1/2–SLT 7/8	Input channels 1/2–7/8 of the OPTION I/O slot
DSTI L/R	DIGITAL STEREO IN jacks (L/R)

7 When you have finished making patching settings, move the cursor to the OK button and press the [ENTER] key.

The EFFECT INSERT area will indicate "ON (EXTERNAL)," and the input/output jacks/input/output channels will be assigned to the insert I/O point.

For example if you have selected "OMNI 1" as the insert send of the monitor channel 1, and selected "AD 1" as the insert return, the signal flow will be as follows.
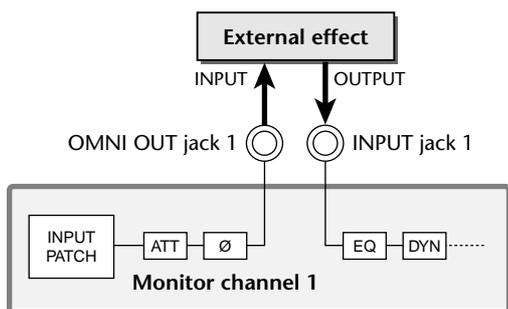
In this state if you access the PATCH screen Patch OUT page, the OMNI OUT ASSIGN 1 area will indicate "I-M 1." This indication means that the insert send of monitor channel 1 has been assigned to OMNI OUT jack 1.

If you change the "I-M 1" setting, the insert I/O point patching will be defeated. If you do so, be aware that you will need to make the settings once again, starting with step 1.

Tip!

• *External effects can be patched for multiple channels. However, it is not possible for multiple insert sends to use the same output jack or output channel.*

• *If you want to save the insert I/O patching settings you make here, store the current state as a scene memory. Insert I/O point information cannot be stored in a patch library or channel library.*

4

Input/output patching

Quickly assigning input signals to tracks (Quick Rec)

Quick Rec is a function that lets you quickly switch the patching so that the desired input signal can be recorded on the desired track, while you view the routing in a special screen. By using this function, you can quickly record each instrument on its own track without changing the INPUT jack connections.

1 Press the [QUICK REC] key.

The QUICK REC screen will appear. This screen displays the following information.
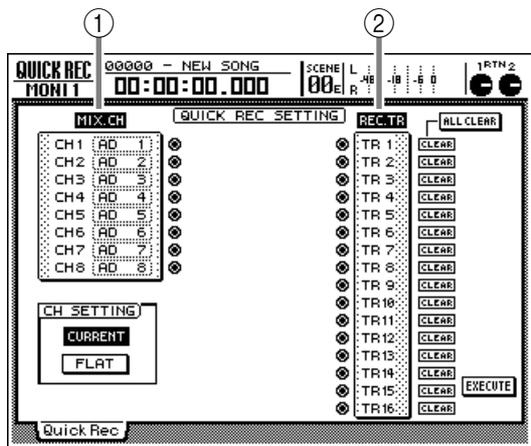
① **MIX. CH**

This area shows the type of input signals that are assigned to input channels 1–8 (CH 1–CH 8). The ⊚ (jack) symbols displayed at the right of the box indicate the direct output of each input channel.

② **REC. TR**

This area shows tracks 1–16 (TR 1–TR 16) of the recorder section. The ⊚ (jack) symbols displayed at the left of the box indicate the inputs of each track (recorder inputs 1–16).

2 If you want to change the input signal of a patch source input channel, move the cursor to the numerical box of that channel, and turn the [DATA/JOG] dial.
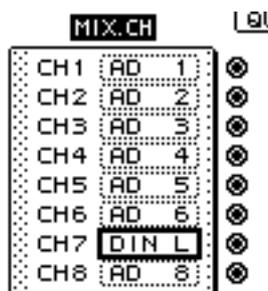
3 In the MIX. CH area, move the cursor to the input channel jack for the desired patch source, and press the [ENTER] key.

The selected input channel will be highlighted. In the following illustration, input channel 7 has been selected.

Tip!
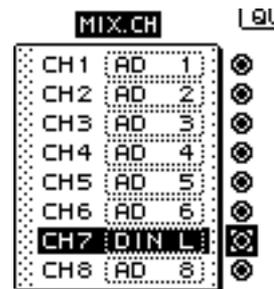
If you move the cursor to the jack of a highlighted input channel and press the [ENTER] key once again, the selection will be cancelled.

4 Move the cursor to a jack symbol in the REC. TR area, then move the cursor to the recorder input (1–16) for the desired patch destination, and press the [ENTER] key.

A patch cable will connect the patch source direct output to the patch destination recorder input.

Tip!
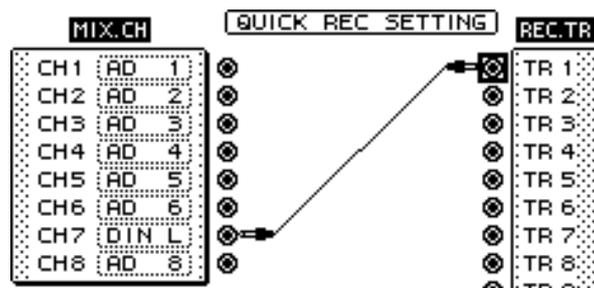
• *Steps 3 and 4 can be performed in the opposite order.*

• *The direct output of a channel can be patched to multiple recorder inputs. However, it is not possible to patch multiple direct outputs to one recorder input.*

5 In the same way, use patch cables to connect other direct outputs and recorder inputs.

Tip!
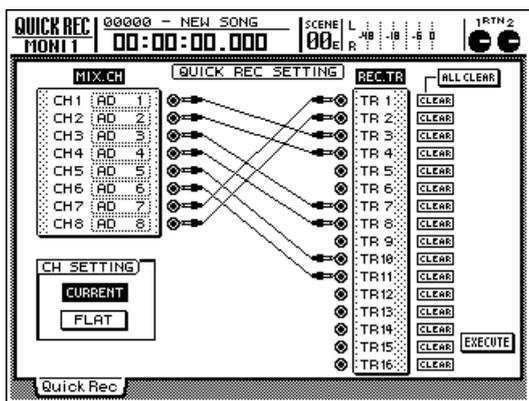
*   *To cancel an individual patch cable, move the cursor to the CLEAR button located at the right of the REC. TR area, and press the [ENTER] key.*
*   *To cancel all patch cables, move the cursor to the ALL CLEAR button located in the upper right of the display, and press the [ENTER] key.*

⚠️

A maximum of eight patch cables can be connected. After all eight have been connected, it will not be possible to change the connections unless you cancel one of the patch cables.

6 If you want the patch source channel to return to the default state when you change the patching, turn on the FLAT button in the lower left of the display.

If the FLAT button is on (highlighted), channel library number 01 will be recalled to input channels to which a patch cable is connected when you execute Quick Rec, and the mix parameters will be initialized.

7 When you have finished making all necessary patch cable connections, move the cursor to the EXECUTE button in the lower right of the display, and press the [ENTER] key.

A popup window will ask you to confirm execution of Quick Rec.

8 To execute Quick Rec, move the cursor to the OK button and press the [ENTER] key.

To abort the operation, move the cursor to the CANCEL button and press the [ENTER] key.

When you execute Quick Rec, the internal settings of the AW2816 will change as follows.

*   Input patch and recorder input patch settings will change according to the selected input signals and patch cable connections.
*   Assignments to the stereo bus will be forcibly defeated for input channels to which patch cable are connected.
*   If the FLAT button is on, mix parameters of patch source input channels will be initialized.
*   Channel library number 01 will be recalled for track monitor channels to which a patch cable is connected, initializing their mix parameters.

9 Hold down the REC [●] key and press the PLAY [▶] key.

When you execute Quick Rec, all tracks to which a patch cable is connected will be set to record-ready mode. Thus, you can simply hold down the REC [●] key and press the PLAY [▶] key to begin recording on the corresponding tracks.

5

Using the internal effects

This chapter explains how to use the two effects built into the AW2816.

About the internal effects

The AW2816 contains two multi-effect units, called "effect 1" and "effect 2." These internal effects can be used in the following two ways.

■ Using an effect via AUX send/return

In this method, the input signal from each channel is sent via an AUX bus to the input of internal effect 1/2, and the output signal of effect 1/2 is returned to the stereo bus or bus 1–8 and mixed with other signals. This method is used when you want several channels to share an effect such as reverb or delay.

With the default settings of the AW2816, the inputs of effects 1/2 are patched to AUX buses 5/6 respectively, and the output of effects 1/2 are patched to return channels 1/2.
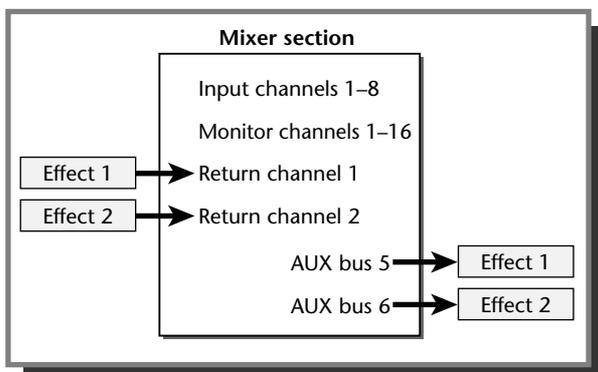
The signals sent from input channels 1–8 and monitor channels 1–16 to AUX buses 5/6 are input to effects 1/2 respectively. You can adjust the AUX 5/6 send levels for each channel, and switch between pre-fader and post-fader send.

The signals that are output from effects 1/2 are sent to return channels 1/2. By assigning return channels 1/2 to buses 1–8 or the stereo bus, you can mix them with the original (unprocessed) sound of the input or monitor channel.

■ Inserting an effect into a specific channel

In this method, the internal effect is released from its assignment to the AUX bus or return channel, and inserted into a specific channel. Use this method when you want to apply the effect only to a specific channel.
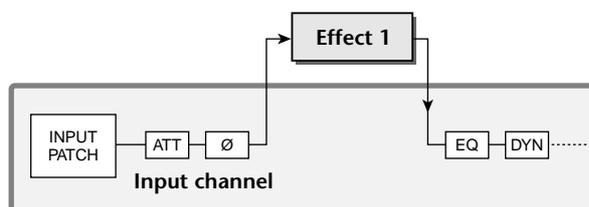
An effect can be inserted into the following channels.

- Input channels 1–8
- Monitor channels 1–16
- Return channels 1/2
- Stereo output channel

✎ **Tip!**
The location at which the effect is inserted (insert I/O point) will be immediately after the attenuator (for an input channel, monitor channel, or return channel) or immediately after the dynamics processor (for the stereo output channel). For details refer to page 27, "Signal flow within the AW2816."

⚠
An internal effect that has been inserted into a channel cannot be used via AUX send/return or inserted into another channel.

Using AUX send/return to apply an effect

This section describes the example of using effect 1 via AUX bus 5 in a send/return configuration.

Check the patching

First we will check whether the AUX send/return patching for effect 1 is set appropriately.

1 Press the [PATCH] key → [F1] key.

The PATCH screen Patch IN page will appear.
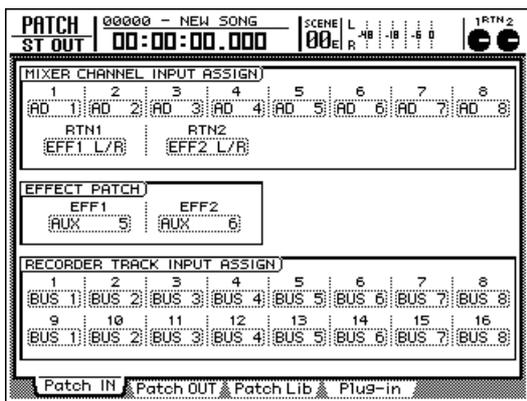
2 In the EFFECT PATCH area, make sure that EFF1 is set to "AUX 5."

In the EFFECT PATCH area of the Patch IN page, you can select whether effect 1/2 will be used via an AUX bus or inserted into a specific channel. With the default settings of the AW2816, AUX 5 (AUX bus 5) is assigned to EFF 1 (effect 1), and AUX 6 (AUX bus 6) is assigned to EFF 2 (effect 2), as shown in the illustration above.

Tip!

If EFF1 is set to "INSERT," move the cursor to the setting and turn the [DATA/JOG] dial. In the popup window that appears, move the cursor to the OK button, and press the [ENTER] key to switch EFF1 to the "AUX 5" setting.

3 In the MIXER CHANNEL INPUT ASSIGN area, make sure that RTN 1 is set to "EFF1 L/R."

In the MIXER CHANNEL INPUT ASSIGN area of the Patch IN page, you can select the signal that will be assigned to the input channels/return channels of the mixer. With the default settings, "EFF1 L/R" (L/R outputs of effect 1) is assigned to RTN1 (return channel 1).

Tip!

If RTN1 is set differently, move the cursor to the setting and turn the [DATA/JOG] dial to change it to "EFF1 L/R."

Recalling an effect program from the library

The internal effects of the AW2816 allow you to use 41 different effect types, such as REVERB HALL, GATE REVERB, and STEREO DELAY. With the factory settings, 41 effect programs using these effect types are preset in an area of internal memory called the "effect library." Here's how to recall an effect program into effect 1.

1 Press the [AUX 5] key → [F2] key.

The AUX5/EFF1 screen Library page will appear, in which you can store or recall effect programs. A list of the effect programs is shown in the lower part of the display.
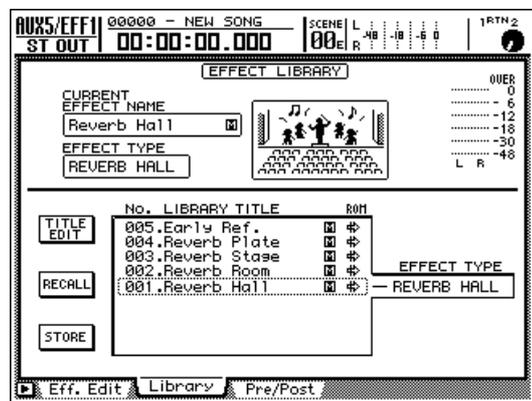
Tip!

Effect library numbers 001–041 contain read-only effect programs using each effect type.

⚠

The AW2816's effect library can be used by both effect 1 and effect 2. However, effect programs that use "HQ-Pitch" (library number 19) can be used only by effect 2.

2 Turn the [DATA/JOG] dial to select the program that you want to recall.

The row enclosed by the dotted frame is the currently selected effect program. When you select an effect program, the effect type used by that program will be displayed at the right of the list. For this example, let's select the "Reverb Room" program which uses the REVERB ROOM effect type.

Tip!
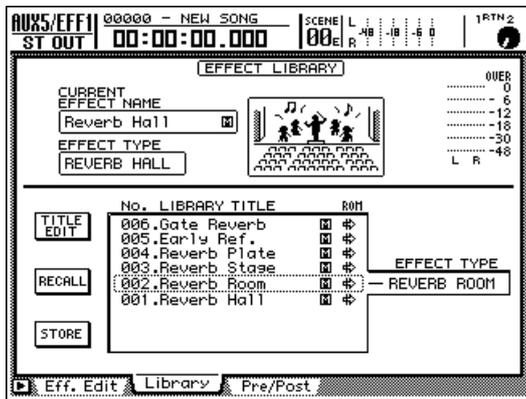
When this page is displayed, you can use the [DATA/JOG] dial to select a program regardless of the location of the cursor.

---

3 Move the cursor to the RECALL button and press the [ENTER] key.

A popup window will appear, asking you to confirm the effect program recall operation.

Tip!

It is also possible to recall an effect program directly, without displaying the above popup window. To do so, access the UTILITY screen Prefer.1 page ([UTILITY] key → [F2] key), and turn the RECALL CONFIRMATION setting OFF.

---

4 To recall the effect program, move the cursor to the OK button and press the [ENTER] key.

The selected effect program will be recalled to effect 1, and its name will be displayed in the CURRENT EFFECT NAME area at the upper left of the display.

If you decide not to recall the effect program, move the cursor to the CANCEL button and press the [ENTER] key.

5 Press the [F1] key.

The Eff.Edit page will appear, allowing you to edit the parameters of the effect.
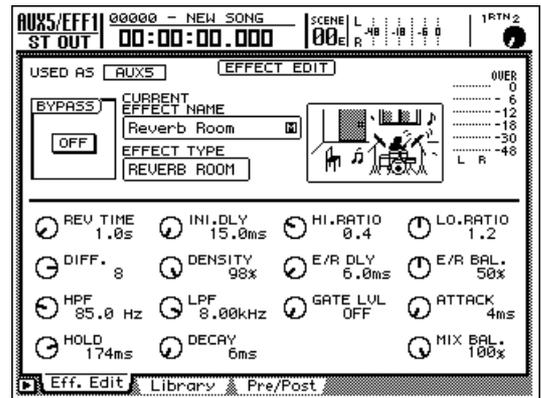
6 In the lower right of the display, make sure that the MIX BAL knob is set to 100%.

The Eff.Edit page displays the effect parameters for the currently-used effect type. For any effect type, the MIX BAL knob (which adjusts the balance between the original sound and effect sound) will be located at the lower right.

If you are using the effect via AUX send/return, you will need to set the MIX BAL parameter to 100% (so that only the effect sound will be output). To change this setting, move the cursor to the MIX BAL knob, and turn the [DATA/JOG] dial.

Tip!

- *For the preset programs in library numbers 001–041, the MIX BAL knob is set to 100% by default.*
- *For details on the type and function of the effect parameters for each effect type, refer to the "Effect parameter list" at the end of this manual.*

Switching between pre-fader/post-fader

Here's how to select the output position (pre-fader/post-fader) from which the signal will be sent from each channel to AUX bus 5.

1 Press the [AUX 5] key → [F3] key.

The AUX5/EFF1 screen Pre/Post page will appear. Here you can select either pre-fader or post-fader as the point from which the signal will be output from each channel to AUX bus 5 and sent to effect 1.
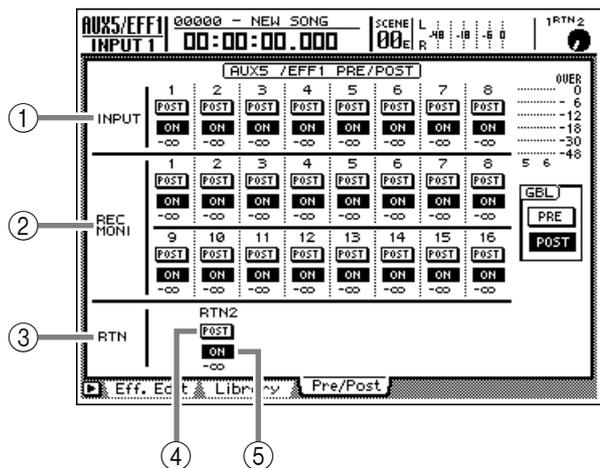
① Input channels

② Monitor channels

③ Return channel

④ PRE/POST button

⑤ ON/OFF button

2 To switch between pre-fader and post-fader, move the cursor to the PRE/POST button of the corresponding channel, and press the [ENTER] key.

Each time you press the [ENTER] key, the display will alternate between PRE (pre-fader) and POST (post-fader). (With the default settings of the song, all channels will be set to POST.)

If PRE (pre-fader) is selected, the signal can be sent to AUX bus 5/effect 1 without regard to the position of the channel faders. If POST (post-fader) is selected, the signal that has passed through the faders will be sent to AUX bus 5/effect 1. (This means that no effect will be applied to a channel whose fader is turned down.)

Tip!

- *If you move the cursor to the PRE button or POST button in the GBL area at the right of the display and press the [ENTER] key, all channels will switch to pre-fader or post-fader.*
- *It is not possible to send the signal from return channel 1 to effect 1 (AUX bus 5), or from return channel 2 to effect 2 (AUX bus 6). This is to prevent a loop from occurring between the return channel and the effect.*
- *Because of the reason described above, return channel 1 (return channel 2) is not displayed in the AUX5/EFF1 screen (AUX6/EFF2 screen) Pre/Post page.*

3 Make sure that the ON/OFF button is turned ON for each channel to which you want to apply the effect.

The ON/OFF buttons are used to switch the AUX send on/off for each channel. If a button is turned OFF, move the cursor to that button and press the [ENTER] key.

Adjusting the return level

Here's how to adjust the level of return channel 1 (the level of the effect sound returned from effect 1), and send it to the stereo bus.

1 Make sure that the [ON] key of return channel 1 is on (lit).

If it is off, press the [ON] key to turn it on.

2 Press the [SEL] key of return channel 1.

Return channel 1 will be selected.

3 Press the [VIEW] key → [F1] key.

The VIEW screen CH View page will appear.
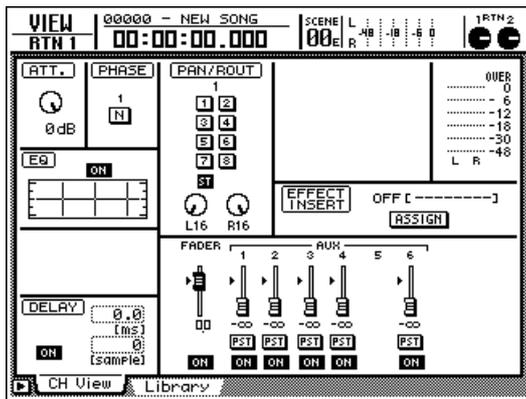
4 In the PAN/ROUT area, make sure that the ST button is turned on.

If the ST button is off, move the cursor to the button and press the [ENTER] key. Now the return signal from effect 1 will be sent to the stereo bus, and mixed with the signals from the other channels.

5 Turn the [RTN 1] control to adjust the level of return channel 1 (the level of the effect sound returned from effect 1).

The current level is shown by the FADER in the lower part of the CH View page, and by the RTN 1 knob in the upper right. With the default settings of the AW2816, the level of return channels 1/2 is set to nominal level (0 dB).

Tip!

The RTN 1/2 knobs in the upper right of the screen are always displayed, regardless of the currently selected screen. The knob will be highlighted when the level is -infinity, 0 dB, or +6 dB.

Adjusting the send level

Here's how to adjust the send level of the channel(s) that will use effect 1.

1 Press the [AUX 5] key.

The AUX5/EFF1 screen will appear. When this screen is displayed, you can use faders 1–8 to adjust the send level from each channel to AUX bus 5 (effect 1).

Tip!
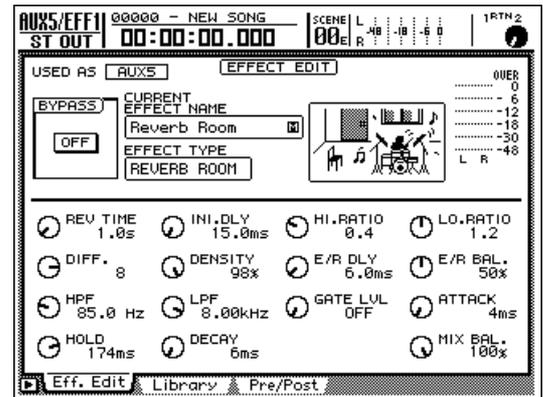
The AUX5/EFF1 screen contains three pages: the Eff.Edit page, Library page, and Pre/Post page. However, the above operations can be performed when any of these pages are displayed. The Pre/Post page is convenient when you want to view the numerical value of the send levels for each channel.

2 Use the keys of the MIXING LAYER section to select a mixing layer.

If you want to apply the effect to input channels 1–8, press the INPUT [1-8] key. If you want to apply the effect to monitor channels 1–8/9–16, press the RECORDER [1-8]/[9-16] key.

3 Use faders 1–8 to adjust the send level of each channel.

If you are applying the effect to the monitor channels, play back the song while you adjust the send level of each channel.

4 Use the [RTN 1] control to readjust the return level as necessary.

Inserting an effect into a specific channel

The internal effects of the AW2816 can also be inserted into a specific channel. This is convenient when you want to apply an internal effect to an input source while recording it, or when you want to apply an effect only to a specific track (monitor channel) during mixdown. As an example, here's how to insert effect 2 into monitor channel 1.

Change the patching

With the default settings of the AW2816, AUX bus 6 is patched to the input of effect 2, and the output of effect 2 is patched to return channel 2. In order to insert effect 2 into a specific channel, you must first defeat this patching.

1 Press the [PATCH] key → [F1] key.

The PATCH screen Patch IN page will appear.
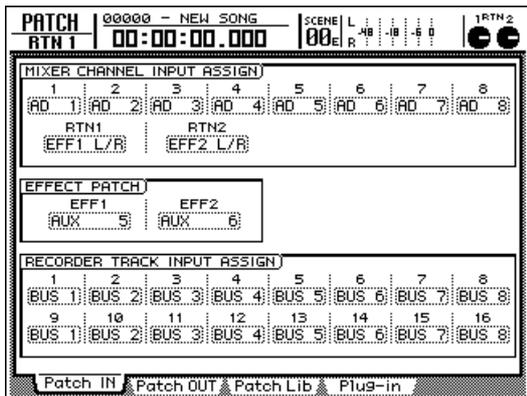
2 Move the cursor to the EFFECT PATCH area EFF2 parameter, and turn the [DATA/JOG] dial.

A popup window will appear, asking you whether you really want to use effect 2 for insertion.

3 Move the cursor to the OK button and press the [ENTER] key.

In the EFFECT PATCH area, the EFF2 setting will change to "INSERT." Now effect 2 can be inserted into the desired channel.

⚠ ───────────────────────

Effect 2 cannot be used via AUX send/return unless you change the EFFECT PATCH area EFF2 parameter from "INSERT" back to "AUX 6."

Tip! ───────────────────────

When you make the above setting, the Patch IN page RTN 2 area will change to an indication of "—". This indicates that the effect 2 output which had been patched to return channel 2 has been cancelled, and that no signal is currently assigned.

Inserting the effect into a channel

Now that we have specified effect 2 for insertion, here's how to insert it into monitor channel 1.

1 Press the RECORDER [1-8] key → [SEL] key 1.

Monitor channel 1 will be selected.

2 Press the [VIEW] key → [F1] key.

The VIEW screen CH View page will appear. This shows the mix settings of monitor channel 1.
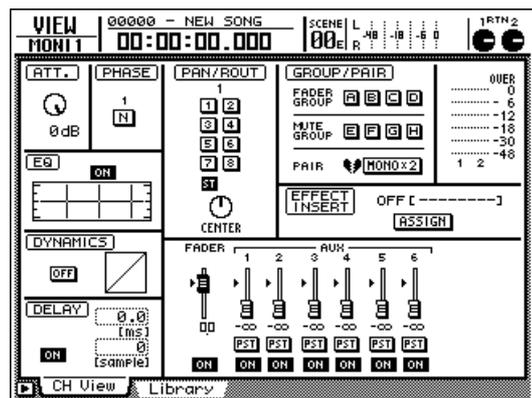
3 Move the cursor to the ASSIGN button of the EFFECT INSERT area, and press the [ENTER] key.

The EFF.INSERT SETTING popup window will appear. In this popup window you can use the following four buttons to select the to insert effect.

```
┌─────────────────────────────┐
│      EFF.INSERT SETTING       │
│                               │
│ MONI  1  INSERTION EFF.TYPE   │
│                               │
│ OFF  [INT.EFF1] [INT.EFF2] [EXTERNAL] │
│                               │
│ SEND [OMNI    1]    [AD    1] RTN. │
│         ↑              ↓       │
│    ─────────·············──────→ │
│                               │
│      [CANCEL]    [OK]         │
└─────────────────────────────┘
```
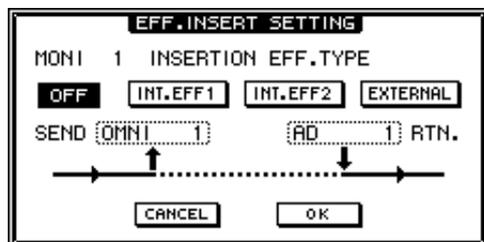
- **OFF** .... Cancel effect insertion.
- **INT.EFF1** .... Insert effect 1.
- **INT.EFF2** .... Insert effect 2.
- **EXTERNAL** .... Insert an external effect.

4 To insert effect 2, move the cursor to the INT.EFF2 button, and press the [ENTER] key.

The SEND area in the popup window will change to "EFF2," and the RTN. area will change to "EFF 2L." This indicates that the input of effect 2 is patched to the insert send of monitor channel 1, and the L output of effect 2 is patched to the insert return.

Tip!

- *By moving the cursor to the RTN. area and turning the [DATA/JOG] dial, you can switch between "EFF 2L" and "EFF 2R."*
- *If you insert an effect into a stereo channel (return channel 1/2 or the stereo output channel), the L/R outputs of the effect will be returned to the L/R inputs of the channel.*

5 When you have finished making settings, move the cursor to the OK button and press the [ENTER] key.

The popup window will close, and the EFFECT INSERT area will indicate "ON [INT.EFF2]." This means that that effect 2 is inserted into the corresponding channel (in this example, monitor channel 1).

```
┌──────────────────────────────┐
│ PHIR  ⬇[MONOx2]      ·  ·      │
│ ┌─────────┐                    │
│ │ EFFECT  │  ON [INT.EFF2]     │
│ │ INSERT  │                    │
│ └─────────┘    [ASSIGN]        │
│         ── AUX ──              │
└──────────────────────────────┘
```

Tip!

To cancel the insertion, turn on the OFF button in the EFF.INSERT SETTING popup window. Also, a popup window asking you to confirm cancellation of the insertion will appear if you insert effect 2 into another channel.

Recalling an effect program

Here's how to recall an effect program for use by effect 2.

1 Press the [AUX 6] key → [F2] key.
The AUX6/EFF2 screen Library page will appear.

2 Use the [DATA/JOG] dial to select the effect program that you want to recall.

3 Move the cursor to the RECALL button and press the [ENTER] key.
The selected program will be recalled to effect 2.

4 Press the [F1] key.
The Eff.Edit page will appear.

5 Move the cursor to the MIX BAL. knob, and turn the [DATA/JOG] dial to adjust the balance between the original sound and the effect sound.

When you insert an internal effect into a specific channel, use the Eff.Edit page MIX BAL. knob to adjust the balance between the original sound and the effect sound. Adjust this setting to an appropriate level as necessary.

5

Using the internal effects

Applying effects while you record

If you have inserted an internal effect into an input channel, the input source processed by the effect can be recorded on a track. Here we will explain how to insert effect 1 into input channel 1, and record the processed sound directly onto track 3.

Change the patching

First we will change the patching of effect 1, input channel 1, and track 3.

1 Press the [PATCH] key → [F1] key.

The PATCH screen Patch IN page will appear.
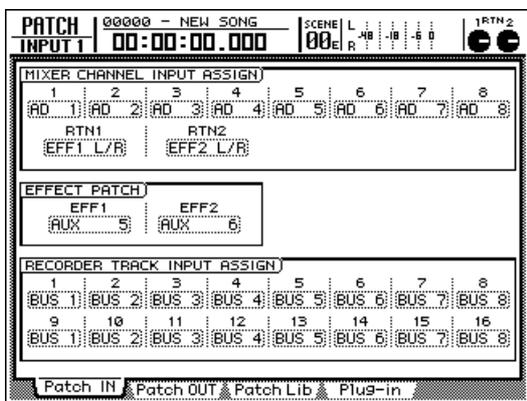
2 Move the cursor to the EFFECT PATCH area, and change the EFF1 setting to "INSERT."

Now effect 1 can be inserted into the desired channel.
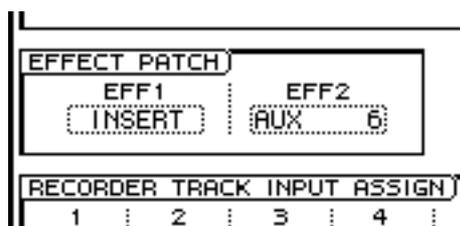
3 Move the cursor to the MIXER CHANNEL INPUT ASSIGN area, and select the input source that you want to assign to input channel 1.

For example if you want the input signal of INPUT jack 1 to be assigned to input channel 1, select "AD 1."

4 Move the cursor to the RECORDER TRACK INPUT ASSIGN area, and change the recorder input 3 setting to "DIR 1" (direct output of input channel 1).

Now the input signal of input channel 1 will be sent directly to track 3.
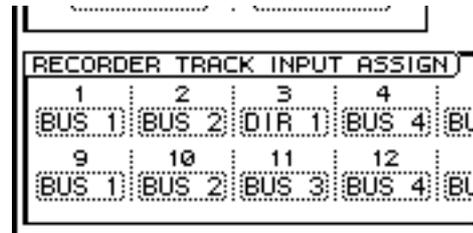
Insert the effect into a channel

Here's how to insert effect 1 into input channel 1.

1 Press the INPUT [1-8] key → [SEL] key 1.

Input channel 1 will be selected.

2 Press the [VIEW] key → [F1] key.

The VIEW screen CH View page will appear.

3 Move the cursor to the ASSIGN button of the EFFECT INSERT area, and press the [ENTER] key.

The EFF.INSERT SETTING popup window will appear.

4 Move the cursor to the INT.EFF 1 button, and press the [ENTER] key.

The SEND setting in the popup window will change to "EFF1," and the RTN. setting will change to "EFF 1L."
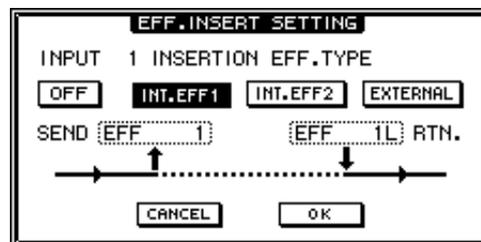
5 Move the cursor to the OK button and press the [ENTER] key.

The CH View page EFFECT INSERT area will display "ON [INT.EFF1]," indicating that effect 1 has been inserted into input channel 1.

PHIR ☜ｍｏｎｏ×2

┌─────────┐
│ EFFECT │ ON [INT.EFF1]
│ INSERT │
└─────────┘   [ASSIGN]

──── AUX ────

6 Turn off the ST button in the PAN/ROUT area.

In generally, you will monitor the signal that is sent to the stereo bus via monitor channel 3 when the recording. For this reason, you need to turn off the ST button of input channel 1, so that the input signal of input channel 1 will not be sent directly to the stereo bus, duplicating the signal.

7 Press the [AUX 5] key → [F2] key, and recall the effect program that you want to use for effect 1.

For details on recalling an effect program, refer to page 84.

Start recording

1 Press the [VIEW] key → [F1] key to display the VIEW screen CH View page.

2 Press the RECORDER [1-8] key → [SEL] key 3.

Monitor channel 3 will be selected.

3 Turn the ST button in the PAN/ROUT area.

The input signal of monitor channel 3 (the signal recorded on track 3) will be sent to the stereo bus.

4 Raise the STEREO fader and fader 3 to the 0 dB position.

5 Press the REC TRACK SELECT [3] key to put track 3 in record-ready mode.

Now the input signal of input channel 1 can be monitored from the MONITOR OUT jacks.

6 Press the [METER] key.

The METER screen will appear, where you can view input/output level meters for tracks 1–16.

7 Press the INPUT [1-8] key, and while playing the instrument connected to the INPUT jack 1, use fader 1 to adjust the recording level.

8 Press the REC [●] key + PLAY [▶] key to start recording.

5

Using the internal effects

Adjusting the effect parameters

You can freely edit the parameters of the effect programs built into the AW2816 to create the sound you want. You can also save an edited program in the effect library. As an example, here's how to edit the effect program of effect 2.

1 Press the [AUX 6] key → [F2] key.

The AUX6/EFF2 screen Library page will appear, in which you can perform effect library operations.
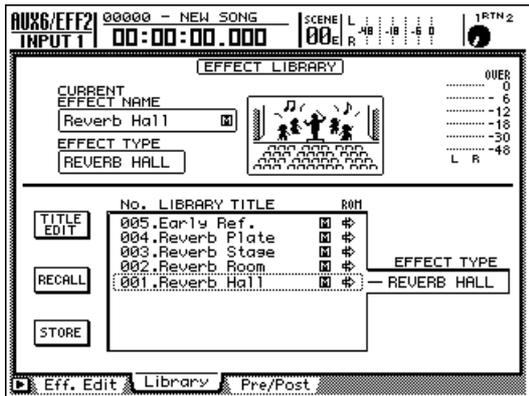
2 From library numbers 001–041, select the effect program that you want to edit, and recall it.

⚠

It is not possible to change the effect type of the effect program that you recall. Thus, even if you want to create an effect program from scratch, you must start by recalling a program that uses the desired effect type from the effect library.

3 Press the [F1] key.

The Eff.Edit page will appear, where you can edit the recalled effect program. The lower part of the screen will show knobs for the parameters that can be edited.
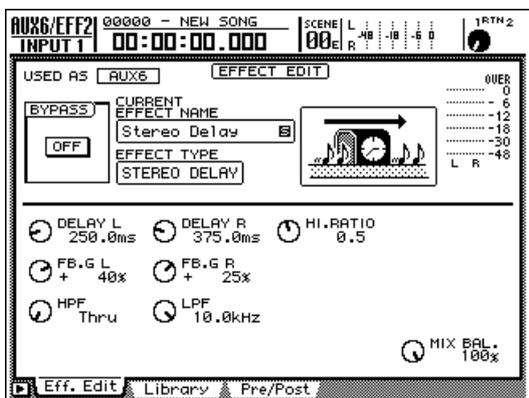
4 Move the cursor to the knob of the effect parameter that you want to edit, and use the [DATA/JOG] dial to edit the value.

✎ **Tip!**

For details on the parameters and functions of each effect type, refer to the "Effect parameter list" at the end of this manual.

Saving an effect program

Up to 86 different effect programs that you edited can be stored (saved) in vacant locations of the effect library, and recalled later. Here's how the effect program you edited for effect 2 can be stored in the library.

Tip!

- *Programs stored in the effect library are saved on the hard disk as part of the song data.*
- *By using the MIDI Bulk Dump function, specific effect programs that you stored in the effect library can be backed up on a MIDI sequencer or other external MIDI device. For details on Bulk Dump, refer to page 212.*

1 Press the [AUX 6] key → [F2] key.

The AUX6/EFF2 screen Library page will appear.
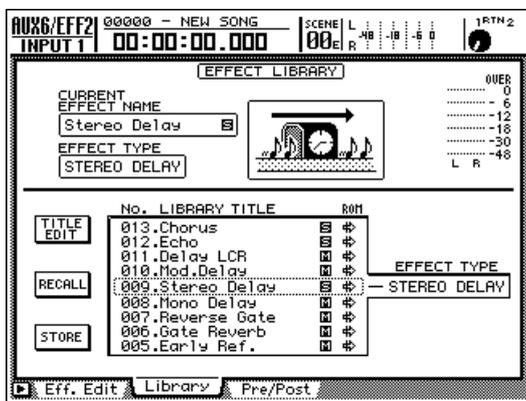
2 Use the [DATA/JOG] dial to select the store destination library number (042–128).

⚠️ *Library numbers 001–041 are recall-only. They cannot be stored.*

3 Move the cursor to the STORE button, and press the [ENTER] key.

The TITLE EDIT popup window will appear, allowing you to input a name (library title) for the effect program.

4 Use the character palette to input a name.

For details on inputting characters, refer to page 37.

5 To store the program, move the cursor to the OK button and press the [ENTER] key.

To cancel without storing, move the cursor to the CANCEL button and press the [ENTER] key.

Tip!

You can also store directly without inputting the library title. To do so, go to the UTILITY screen Prefer.1 page ([UTILITY] key → [F2] key), and turn the STORE CONFIRMATION parameter OFF.

Chapter 6

Transport/Locate operations

This chapter explains transport and locate operations on the AW2816.

Transport key functions

Transport operations for the recorder are performed using the five keys of the Transport section (the transport keys). The function of each transport key will change depending on the current state (running mode) of the transport. The following chart shows the function of each transport key in each running mode.

Running mode/ Transport key	Stopped	Playing	Rewinding	Review (rewind-play)	Fast-forward	Cue (play-fast-forward)	Recording
STOP ■	—	Stop	Stop	Stop	Stop	Stop	Stop
PLAY ►	Play back	—	Play back	Play back	Play back	Play back	Play back (punch-out)
REW ◄◄	Rewind (8x speed)	Review (8x speed)	Switch rewind speed (8x ⇔ 16x)	Switch review speed (8x ⇔ 16x)	Rewind (8x speed)	Review (8x speed)	—
FF ►►	Fast-forward (8x speed)	Cue (8x speed)	Fast-forward (8x speed)	Cue (8x speed)	Switch fast-forward speed (8x ⇔ 16x)	Switch cue speed (8x ⇔ 16x)	—
REC ● + PLAY ►	Record*	Record* (punch-in)	Play back	Play back	Play back	Play back	—
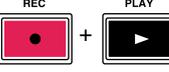
* : Recording will be executed only if one or more of the REC TRACK SELECT [1]–[16]/[ST] keys are blinking.
– : Key does nothing.

⚠️ *Transport operations and Locate operations cannot be performed when the SONG, FILE, CD, or EDIT screens are shown in the display.*

Fast forward-play/Fast reverse-play (the Shuttle function)

While the transport is stopped or playing, you can operate the [SHUTTLE] dial to play fast-forward (cue) or play in reverse (review). This is referred as the "Shuttle function."

The speed of cue or review will change according to the angle of the [SHUTTLE] dial, as shown in the illustration at right. When the [SHUTTLE] dial is returned to the center, the Shuttle function is defeated, and the transport will return to the previous state (stopped or playing).

Backward — –1/4 Stop +1/4 — Forward
–1/2   +1/2
–1   +1 (normal speed)
–2   +2
–4   +4
–8   +8
–16   +16
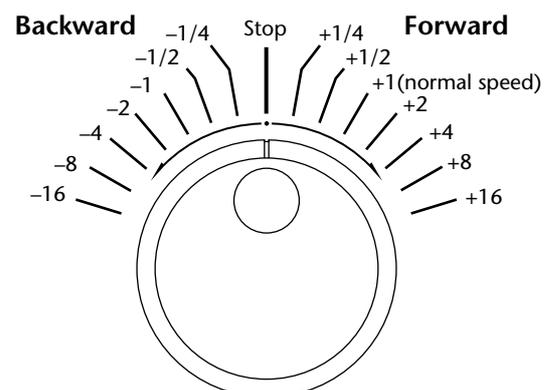
Searching for a point while you listen (the Nudge function)

"Nudge" is a function that repeatedly plays back a short region before or after the current location. By using this function, you can listen as you move the current location in small steps to find a desired point. This is convenient when you need to specify a location accurately, such as when specifying the auto punch-in/out points, or when specifying a range for track editing.

1 Use the transport or the shuttle function to locate to the approximate point you want to find.

2 With the transport stopped, press the [JOG ON] key.

The [JOG ON] key will light, and the Nudge function will be turned on. The audio will be played back repeatedly, starting at the current location and continuing for a specified length of time (100 msec by default).

3 To move the current location forward, turn the [DATA/JOG] dial toward the right. To move it backward, turn the [DATA/JOG] dial toward the left.

The current location will move in millisecond units if time display is selected as the counter display method, or in sub-frame units if timecode display is selected. You can also use the [SHUT-TLE] dial to move the current location rapidly.

[DATA/JOG] dial moves in smallest steps

Larger movement according to the angle of the [SHUTTLE] dial

Current location

Song track

Nudge time

⚠️
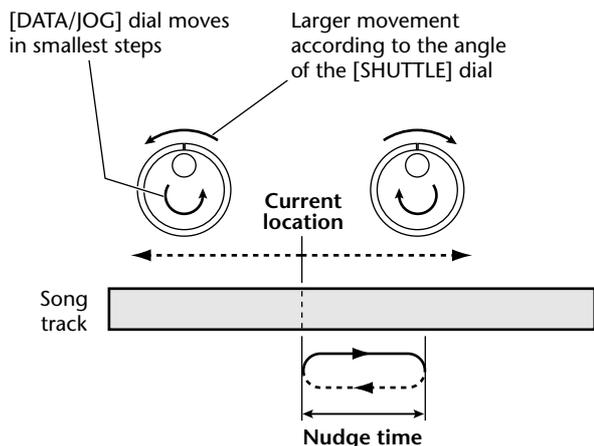
If measure display is selected as the counter display method, the current location will move in steps of one beat when the [DATA/JOG] dial is turned.

4 To defeat the Nudge function, press the [JOG ON] key or the transport section STOP [■] key.

The [JOG ON] key will go dark, and the Nudge function will be defeated.

5 To change the playback time or playback direction of the Nudge function, press the [UTILITY] key → [F3] key.

The UTILITY screen Prefer.2 page will appear. In the NUDGE area of this page, you can change the nudge time (the duration of the repeated playback) and play mode (playback direction).

```
UTILITY  FUSION          SCENE L           1RTN2
MONI14   00:00:00.000    01 E R -40 -10 -6 0   ● ●

        [PREFERENCES2]

[GRID]                      [NUDGE]
 [00]:[00]:[00].[000]        PLAY MODE  [ AFTER ]
                                  TIME [100] msec
[ROLLBACK TIME]
  00:00:[05].[000]          [CD/DAT DIGITAL REC]
                                  [DISABLE]
[PREROLL/
 POSTROLL TIME]             [DIGITAL OUT COPYRIGHT]
 PREROLL    POSTROLL             [DISABLE]
  [5] sec    [5] sec
[METER FINE]
    [NORMAL]

 Oscillator  Prefer.1  Prefer.2  Prefer.3  CTRLKeyAsgn.
```
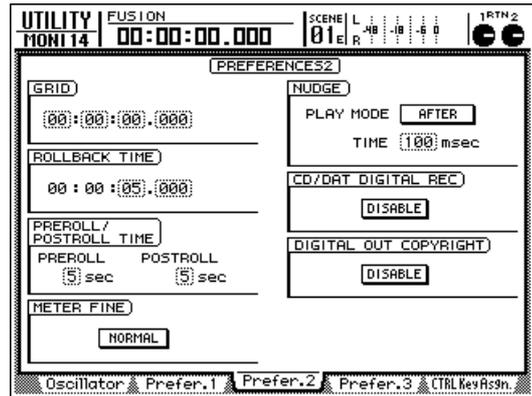
6 To adjust the nudge time, move the cursor to the TIME field of the NUDGE area, and use the [DATA/JOG] dial to set the nudge time.

The nudge time can be specified in the range of 25 ms–800 ms (default= 100 ms).

7 To change the play mode, move the cursor to the PLAY MODE button in the NUDGE area, and press the [ENTER] key to switch between the following two play modes.

- **AFTER**
  Playback will repeat over an area corresponding to the nudge time and starting at the current location (default setting).

- **BEFORE**
  Playback will repeat over an area corresponding to the nudge time and ending at the current location.

PLAY MODE BEFORE

Current location

PLAY MODE AFTER

Current location
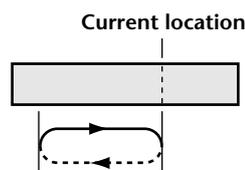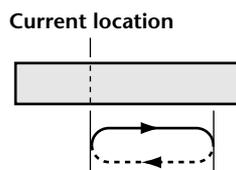
Searching for a point while viewing the waveform

The AW2816 lets you view the recorded contents of a track as a waveform while you search for a desired location or set marker or locate points.

1 Use the Transport or Shuttle function to move to the approximate location that you want to find.

2 Press the [TRACK] key → [F1] key.

The TRACK screen TR View page will appear.
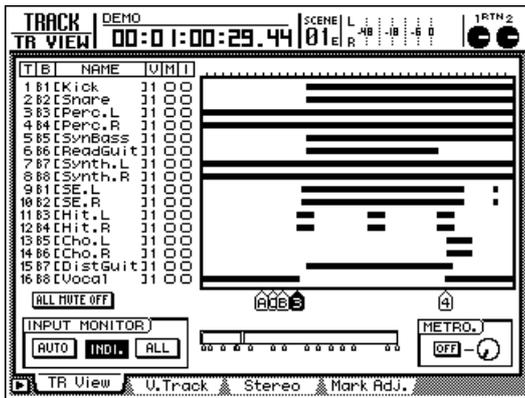
3 Move the cursor to the track whose waveform you want to view.

Cursor
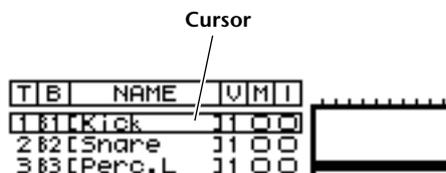
4 With the transport stopped, hold down the [SHIFT] key and press the [F2] key.

The WAVE DISPLAY popup window will appear, displaying the audio waveform of the selected track.

Pointer location **Pointer**

⚠️
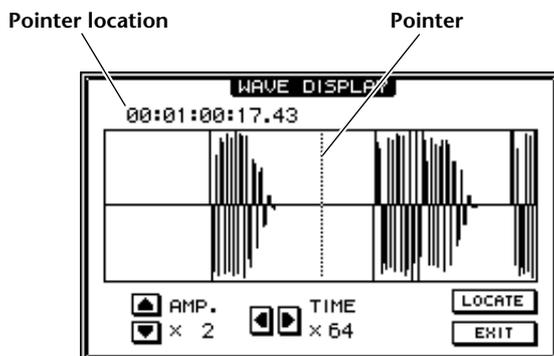
The audio data recorded on the track cannot be played back while the WAVE DISPLAY popup window is displayed.

5 As necessary, use the following buttons to adjust the magnification of the level (vertical axis) and time (horizontal axis).

• **AMP. ▲/▼ buttons**
Change the magnification of the vertical axis in the range of x1–x16.

• **TIME ◀/▶ buttons**
Change the magnification of the horizontal axis in the range of x1–x4096.

6 If you want to move the pointer location, turn the [DATA/JOG] dial.

Turning the dial toward the right will move the pointer forward, and turning the dial toward the left will move the pointer backward. This operation merely moves the pointer location, and does not affect the counter location.

7 To set the current counter location to the pointer displayed in the WAVE DISPLAY popup window, move the cursor to the LOCATE button and press the [ENTER] key.

The song will move to the pointer location, and the popup window will close.

8 To close the WAVE DISPLAY popup window without changing the current location, move the cursor to the EXIT button and press the [ENTER] key.

📝 *Tip!*

While the WAVE DISPLAY popup window is displayed, you can use the locate buttons and markers to move the pointer to the desired location. You can also set a locate point or marker to the current location of the pointer. (For details on setting locate points or markers, refer to page 102)

Rewinding for a specific distance (Rollback)

When the transport is stopped or playing, you can press the [ROLL BACK] key of the locate section to rewind for a specific distance. (This is called the Rollback function.) This is convenient when you would like to record from a point slightly earlier than the current location, or when you want to hear a passage once again during playback. The distance that is rewound by the Rollback function ("rollback time") is 5 seconds by default, but this can be changed as desired.

1 Press the [UTILITY] key → [F3] key.

The UTILITY screen Prefer.2 page will appear. The rollback time can be specified in the ROLL-BACK TIME area of this page.
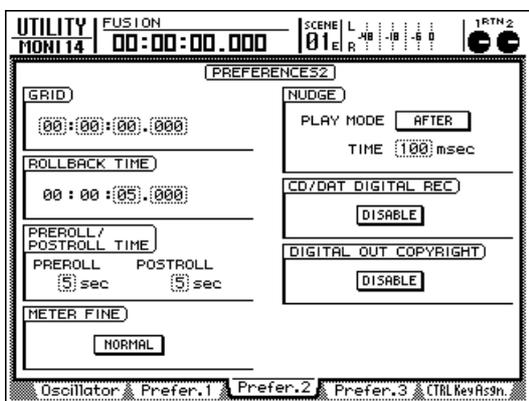
2 Move the cursor to the ROLLBACK TIME area, and use the [DATA/JOG] dial to set the rollback time.

The rollback time can be set in millisecond units over a range of 0–30 seconds.

3 When the song is stopped or playing, press the [ROLL BACK] key.
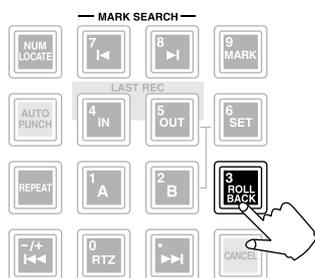
The transport will rewind by the distance you specified in step 2.

Repeatedly playing a specified region (A-B Repeat)

"A-B Repeat" is a function that repeatedly plays back between the A point and B point you specify. For example this is convenient when you want to repeatedly play back a certain region of the song while you adjust the mix.

■ Setting the A/B points

1 Move the song to the location at which you want to begin repeated playback.

2 Hold down the [SET] key and press the [A] key.

The [A] key will light, indicating that the A point (the beginning of repeat playback) has been set.
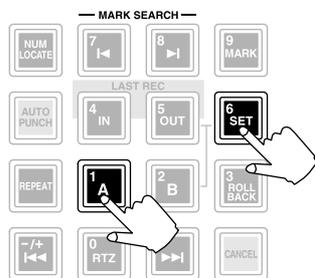
3 Move the song to the location at which you want to end repeated playback.

4 Hold down the [SET] key and press the [B] key.
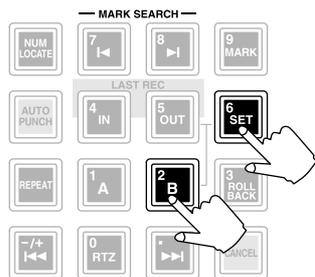
The [B] key will light, indicating that the B point (the end of repeat playback) has been set.

Tip!
- *The A point and B point can be set even while the song is playing.*
- *If you set the B point earlier than the A point, playback will repeat between B → A.*

⚠ *The A and B points must be at least 1 second apart. Repeat playback will not occur if the points are closer than this.*

■ Performing A-B Repeat playback

5 When the transport is stopped, press the [REPEAT] key.

The [REPEAT] key will light, and the A-B Repeat function will be turned on. The song will automatically locate to the A point.

6 To begin repeated playback, press the PLAY [▶] key.

Playback will begin from the A point. When the B point is reached, the song will automatically return to the A point and resume playback.

Tip!
If you press the [REPEAT] key while the song is playing, repeated playback between the A/B points will begin automatically, regardless of the current location.

7 To stop playback, press the STOP [■] key.

Playback will stop, but the A-B Repeat function will stay on.

When the A-B Repeat function is on, pressing the PLAY [▶] key will immediately resume repeated playback, regardless of the current location.

8 To cancel repeated playback, press the [REPEAT] key.

The [REPEAT] key will go dark, and the A-B Repeat function will be cancelled. If you cancel the A-B Repeat playback during repeated playback, normal playback will occur from that location.

Tip!
- *If you perform a recording operation when the A-B Repeat function is on, the A-B Repeat function will be cancelled automatically.*
- *The A-B Repeat function will stop automatically after 100 repetitions.*

Locating to a specified point

You can specify a locate point numerically, and locate to that point.

1 With the transport stopped, press the [NUM LOCATE] key.
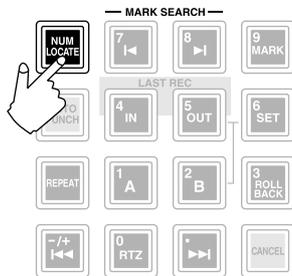
The [NUM LOCATE] key will blink, and the cursor will move to the counter in the upper part of the display.

Cursor

2 Use the [DATA/JOG] dial or the numeric keys to specify a locate point.

A locate point can be specified using either of the following two methods.

• **Using the [DATA/JOG] dial**
With this method you can move the cursor left or right to specify the unit that you want to change, and turn the [DATA/JOG] dial to change the value. When the counter is displaying time, you can specify hours/minutes/seconds/milliseconds. When it is displaying time code, you can specify hours/minutes/seconds/frames/sub-frames. When it is displaying measures, you can specify measures/beats.

• **Using the numeric keys to directly input a value**
With this method you can use the [0]–[9] keys of the Locate section to directly input a numerical value. When time display is selected for the counter, pressing [1]→[5]→[2]→[3]→[0]→[0]→[0] will input "00:15:23.000".

You can also move the cursor to the left and input only the upper places. In this case, the values to the right of the cursor will be set to 0.

For example if the counter is displaying time, you can move the cursor to the seconds unit and press [1]→[5]→[2]→[3] to input "00:15:23.000".

Tip!

If you want to locate to a negative location, use the [|◄◄] key to specify the minus sign. Each time you press the [►►|] key, the minus sign will alternately turn on/off.

3 To locate to the specified location, press the [ENTER] key.

The song will move to the specified location. If you want to cancel your input and return to the previous value, press the [CANCEL] key.

Locating to the zero location of the counter

When the song is stopped or playing, you can press the [RTZ] key to locate to the zero location of the counter (in the case of measure display, this will be the beginning of the first measure).
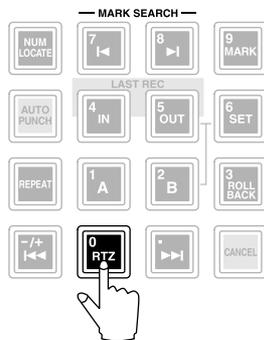
The point to which the [RTZ] key will locate will depend on the counter display unit (time, time code, measures) or display method (absolute time or relative time), as shown in the following table.

	ABS	REL
Time display	Absolute time zero location (start point)	Relative time zero location
Time code display	00:00:00:00.00 location	Relative time zero location
Measure display	Absolute time zero location (start point)	

⚠ *If measure display (MEASURE) is selected as the counter display method, the absolute time zero location will always be the start point. For this reason, pressing the [RTZ] key will always return to the start point (0001.01.0000) location.*

Tip!
The counter display method can be changed in the DISPLAY area of the SONG screen Setting page ([SONG] key → [F2] key).

Setting the relative time zero location

The relative time (REL) zero location can be set as follows.

1 Locate to the point that you want to specify as relative time zero.

Tip!
The relative time zero location can also be set while the song is playing.

2 Hold down the [SET] key and press the [RTZ] key.

The counter display will automatically switch to relative time, and will be reset to relative time zero (time display = 00:00:00.000/time code display = 00:00:00:00.00).

Start point   Relative time zero location
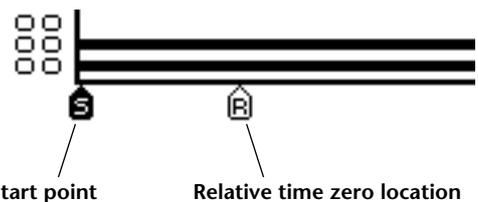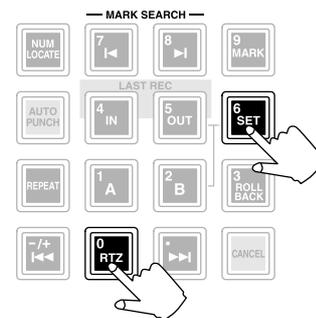
Tip!
- *If you want to return the counter display to absolute time (ABS), access the METER screen Meter 2 page, move the cursor to the ABS button in the upper left of the display, and press the [ENTER] key.*
- *The specified relative time zero location is saved on the hard disk as part of the current song.*

6

Transport/Locate operations

Using various locate points to locate

The AW2816 lets you specify locate points at desired locations in a song, and press a key to locate (change the current time location) instantly to those points. You can set the following locate points.

● **In point/Out point**

These are locate points used to specify the range for auto punch-in/out (→P.64). Normally, the locations at which recording most recently began and ended will automatically be set as the In and Out points. As necessary, the location of these points can be edited in the screen.

● **A/B points**

These are locate points used to specify the range of the A-B Repeat function (→P.99). The A point and B point can be set at any point in the song, either by using the keys or by editing the settings in the screen.

● **Start point/End point**

These locate points normally correspond to the beginning and end of the song. When a new song is created, the Start point will be initially set as absolute time 00:00:00.000. When you record or edit the song, the last location in the song will automatically be set as the End point. As necessary, the location of these points can be edited in the screen.

The procedure for using the keys to set a locate point and then to locate to that point is as follows.

■ Setting a locate point

1 Use the transport or the Shuttle function to move the song to the location at which you want to set a locate point.

A locate point can be specified when the song is playing or stopped.

2 Hold down the [SET] key and press the key for the locate point you want to set.

The following keys correspond to the various locate points.
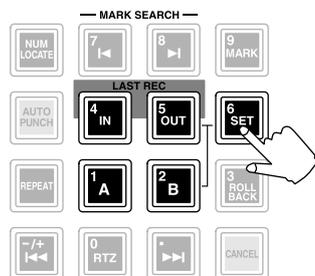
- **In point** .... LAST REC [IN] key
- **Out point** .... LAST REC [OUT] key
- **A point** .... [A] key
- **B point** .... [B] key

⚠

If you want to edit the location of the Start point or End point, do so in the TRACK screen MARK Adj. page.

When a locate point has been set, the corresponding key will light.

■ Locating to a specified point

3 To locate to a locate point that has been set, press the corresponding key while the song is stopped or playing.

4 Press the [◄◄] key to locate to the Start point, or the [►►] key to locate to the End point.
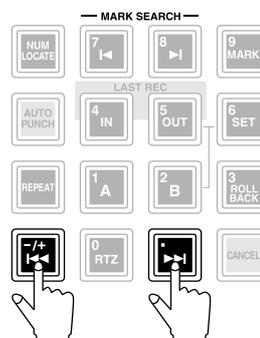
The various locate points that have been set in a song are displayed as follows in the TRACK screen TR View page ([TRACK] key → [F1] key).

| Start
point | In/Out
points | A/B
points | End
point |

Tip!
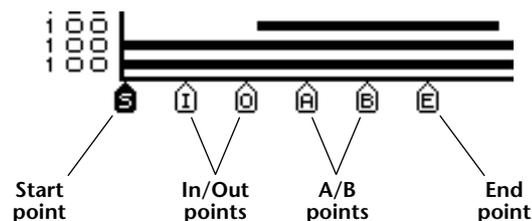
- *Locate point settings are saved on the internal hard disk as part of the song.*
- *The position of a locate point can be edited as desired (→P.104). You can also delete locate points other than the Start point and End point (→P.106).*

Using markers to locate

The AW2816 allows you to assign up to 99 markers at desired points in a song. You can use the [◄◄]/[►►] keys to locate to these markers. Here's how to assign and use markers.

■ Setting a marker

1 Move the song to the point where you want to set a marker.

Markers can be set when the song is during recording and playing or stopped.

2 Press the [MARK] key.

A message of "MARK SET" will appear for a time in the lower part of the display, indicating that a marker has been set. A new marker will be added each time you press the [MARK] key.

Tip!
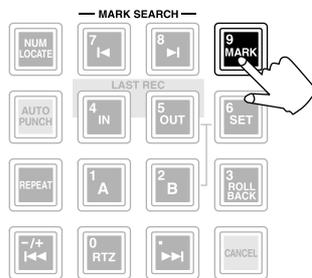
- *Marker settings are saved on the internal hard disk as part of the song.*
- *You can delete a marker (→P.106) or edit its location (→P.104).*

3 Press the [◄◄] key to locate to the marker that precedes the current location, or press the [►►] to locate to the marker that follows the current location.

The [◄◄] key will light if a marker exists before the current location, and the [►►] key will light if a marker exists after the current location.
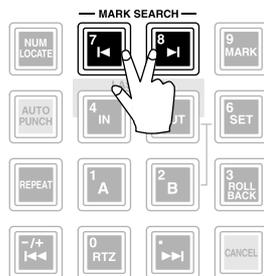
Markers that you set are displayed as follows in the TRACK screen TR View page ([TRACK] key → [F1] key).
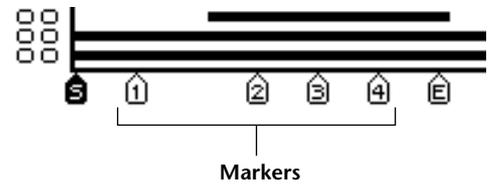
Markers

As shown in the diagram above, markers are automatically numbered from 1–99 starting at the beginning of the song. If you set a new marker between two existing markers, subsequent markers will be renumbered.

Set a marker
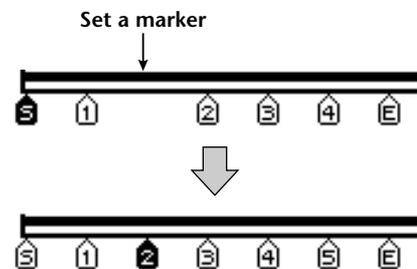
Editing the location of a locate point or marker

The location of the Start point, End point, A/B points, In/Out points, or Markers can be edited if desired.

1 Press the [TRACK] key → [F4] key.

The TRACK screen MARK Adj. page will appear. The LOCATOR POSITION area in the upper part of the screen shows the location of each currently-set locate point. The MARKER POSITION area in the lower part of the screen lists the currently-set markers.

A point   B point
 In point   Out point
  Start point   End point

Markers
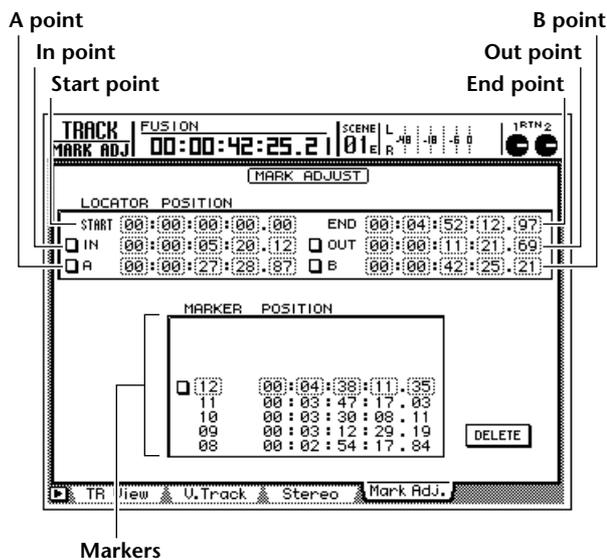
Tip!
The numeric boxes will indicate "–" for locate points that have not been set.

2 Move the cursor to the desired locate point.

Tip!
- *The Start point and End point will always use time code display, regardless of the currently selected display method.*
- *The numerical position of locate points other than the Start point and End point will depend on the currently selected counter display method (hours/time code/measures).*

3 Use the CURSOR [◄]/[►] keys to select the unit that you want to edit, and use the [DATA/JOG] dial to edit the value.

If the counter is set to time display you can edit "hours/minutes/seconds/milliseconds." If it is set to time code display you can edit "hours/minutes/seconds/frames/sub-frames." If it is set to measure display you can edit "measures/beats."

4 To adjust the location of a marker, move the cursor to the numeric box in the left of the MARKER POSITION area, and turn the [DATA/JOG] dial to select the desired marker number.

5 Use the CURSOR [◄]/[►] keys to select the unit that you want to edit, and use the [DATA/JOG] dial to edit the value.

⚠ *When editing the location of a marker, it is not possible to move the marker past the preceding or following marker.*

The relation between the Start point and time code

In the TRACK screen MARK Adj. page, the Start point and End point are always displayed as time code. This is because the absolute time zero location of the time display is determined by the time code value that has been specified as the Start point.

For example when the song is in the default state, the Start point is set to 00:00:00:00.00 (time code), and matches the beginning of the song. However if the Start point is changed to 00:00:05:00.00 (time code), the Start point (absolute time zero in the time display) will be five seconds after the beginning of the song.

Start point = 00:00:00:00.00

Start point = 00:00:05:00.00

📝 **Tip!**

If the counter is set to Measure display, the location that is set for the Start point will be the first beat of the first measure.

On the AW2816, you can change the time code that corresponds to the beginning of the song (Time Code Top). This is convenient when you need to align the beginning of the song to a specific location of the time code (MTC) being received from an external.

In this case, changing the Time Code Top will also affect the time code that is set as the Start point. For example if you change the Time Code Top from 00:0000:00.00 to 00:00:03:00.00, the Start point will correspondingly move three seconds later.

Time code top = 00:00:00:00.00
Start point = 00:00:05:00.00

Time code top = 00:00:03:00.00
Start point = 00:00:08:00.00

📝 **Tip!**

The Time Code Top setting can be edited in the SONG screen Setting page ([SONG] key → [F2] key).

⚠️

- *It is not possible to set the Start point earlier than the Time Code Top.*
- *The AW2816's automix operates according to the absolute time of a song. Thus if you change the Start point after automix events have been recorded, be aware that the song and the automix will no longer be synchronized.*

Deleting a locate point/marker

Locate points (other than the Start and End points) and markers can be deleted. A locate point or marker can be deleted either in the screen or by using key operations.

⚠️

- *It is not possible to delete the Start or End points.*
- *A locate point or marker that has been deleted cannot be recovered.*

Deleting from within the screen

1 Press the [TRACK] key → [F4] key.

The TRACK screen MARK Adj. page will appear.
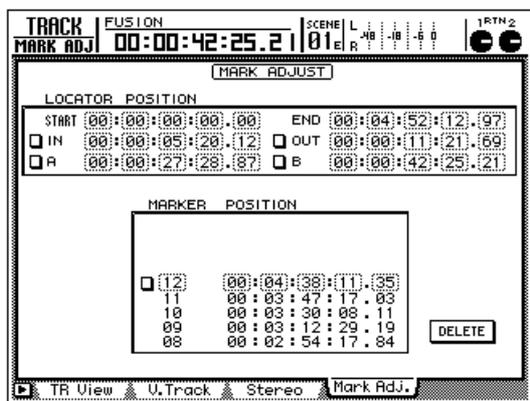
2 Select the locate point or marker that you want to delete, move the cursor to the button located at the left side of the display, and press the [ENTER] key.

A "D" character will be displayed in the button. This indicates that the corresponding locate point or marker has been selected for deletion.

📝 *Tip!*
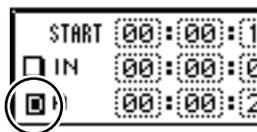
Multiple locate points can be selected simultaneously for deletion. However in the case of markers, only one can be selected for deletion.

3 Move the cursor to the DELETE button in the lower right of the display, and press the [ENTER] key.

The locate point(s) or marker selected in step 2 will be deleted. If an In/Out point or A/B point was deleted, the corresponding key (LAST REC [IN]/[OUT] key or [A]/[B] key) will go dark.

Deleting by using key operations

1 To delete a locate point, hold down the [CANCEL] key and press the corresponding key (LAST REC [IN]/[OUT] key, or [A]/[B] key).

The locate point will be deleted, and the corresponding key will go dark.

📝 *Tip!*

A locate point can be deleted using key operations even during playback.

2 To delete a marker, use the [◄◄]/[►►] keys to locate to the marker you want to delete. Then hold down the [CANCEL] key and press the [MARK] key.

A message of MARK ERASE will appear in the bottom of the display, and the selected marker will be deleted.

📝 *Tip!*

A marker can be deleted using key operations only while the song is stopped.

Editing tracks and virtual tracks

This chapter explains how to name a recorded virtual track, and how to edit a recorded audio track.

Editing tracks and virtual tracks

Audio data recorded on the AW2816 can be edited in a variety of ways by copying between tracks, moving data to a different location within the same track, or by changing its pitch. Audio track data can be edited in the TR Edit page or in the V.TR Edit page.

In the TR Edit page, editing operations are performed on the virtual track currently selected for each track 1–16. You can use these operations (for example) to copy audio data between tracks 1–16, or erase/delete an entire specified region of a song.
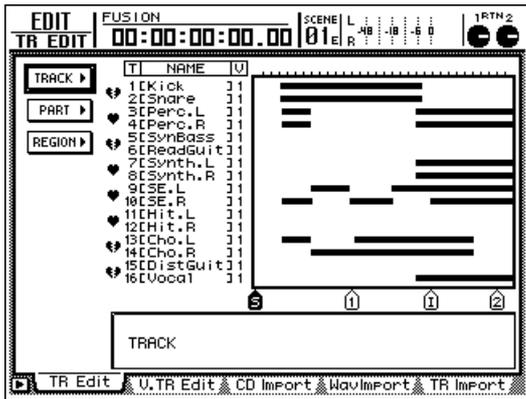
— the TR Edit page —

● **Editing in the TR Edit page**

Tracks 1–16
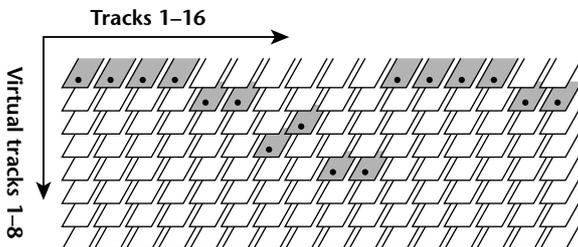
Virtual tracks 1–8

- • Virtual tracks affected by editing

- Virtual track selected for each track 1–16

In the V.TR Edit page, on the other hand, editing operations are performed on virtual tracks 1–8 of the specified track. You can use these operations to (for

example) combine takes that were recorded on separate virtual tracks into a single part.
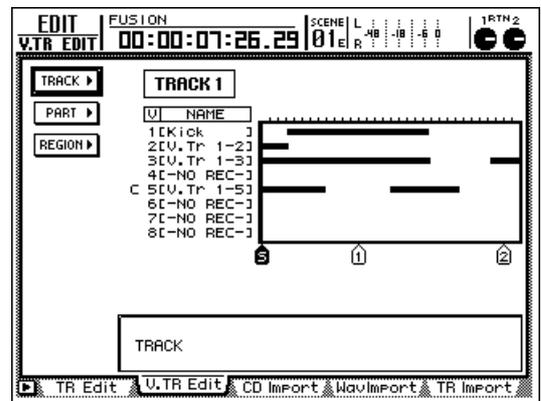
— the V.TR Edit page —

● **Editing in the V.TR Edit page**

Tracks 1–16
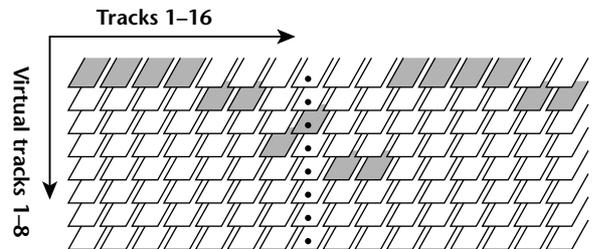
Virtual tracks 1–8

- • Virtual tracks affected by editing

- Virtual track selected for each track 1–16

⚠

- *Even after you have finished editing, you can use the [UNDO] key to revert to the state preceding as many as the 15 most recent operations, but no states earlier than this can be recovered.*
- *Be aware that when you execute the Song Optimize (→P.154) operation, all the Undo data will be erased, and that it will be impossible to use the [UNDO] key to revert to an earlier state.*

Tracks, parts, and regions

When editing audio data in the TR Edit page or the V.TR Edit page, you can select one of three units by which the data will be edited.

● **Tracks**
The entire selected track (1–16) or virtual track (1–8) will be the object of editing.

● **Parts**
Only the specified portion ("Part") of the selected track (1–16) or virtual track (1–8) will be the object of editing.

● **Region**
A length of audio that was recorded on a track in a single operation (referred to as a "region") will be the object of editing. Track areas that contain no data cannot be selected.

= continuous audio data
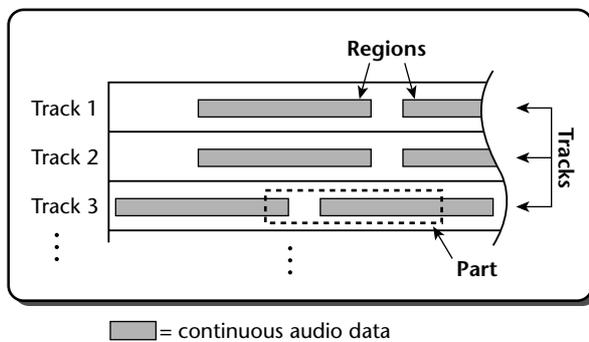
Naming a track or region

When something is recorded on a track, a default name is assigned to that virtual track and region as follows.

- **Default virtual track name**
  .... V.Tr x-y (x= track number, y= virtual track number)

- **Default region name**
  .... VTxy (x= track number, y= virtual track number)

✎ **Tip!**

If multiple regions exist in the same track (i.e., if you recorded more than one time), each region will have the same name.

These track names and virtual track names can be edited as follows.

Editing a virtual track name

1 Press the [EDIT] key → [F1] (TR Edit) key.
The EDIT screen TR Edit page will appear.
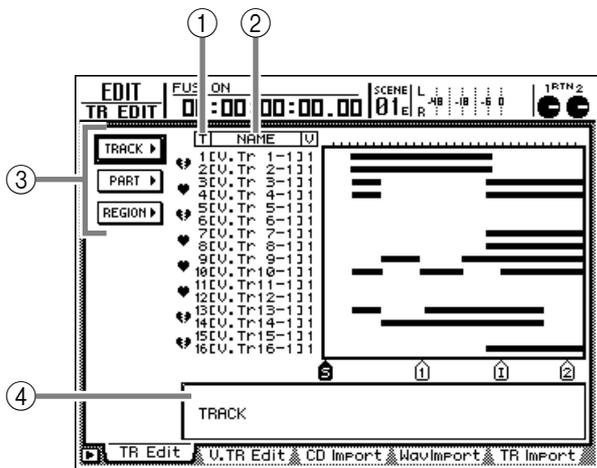
This page displays the following information.

① **Track numbers**
These are the track numbers 1–16.

② **Track names**
These are the names assigned to each virtual track.

③ **TRACK/PART/REGION menu**
These buttons let you select commands for editing tracks, parts, or regions. Use the TRACK menu to edit a track name, or use the REGION menu to edit a region name.

④ **Parameter settings**
This area displays the parameters needed to execute the editing command.

2 Move the cursor to the TRACK menu, and press the [ENTER] key.
The editing commands in the TRACK menu will be listed.

3 Move the cursor to the NAME command and press the [ENTER] key.
A button for setting the parameters of the NAME command will appear.

4 Move the cursor to the TRACK parameter button, and press the [ENTER] key.
The cursor will move to the parameter setting area in the lower right of the display.

5 Use the [DATA/JOG] dial to select the track, and press the [ENTER] key.

6 Move the cursor to the NAME parameter, and press the [ENTER] key.
The NAME EDIT popup window will appear, allowing you to input the track name.

7 Use the character palette to input the new track name.

A track name of up to sixteen characters can be input. For details on inputting characters, refer to page 37.

✎ **Tip!**

The TRACK page displays the first eight characters of the track name.

8 To confirm the new track name, move the cursor to the OK button and press the [ENTER] key.

To cancel the change, move the cursor to the CANCEL button and press the [ENTER] key.

Editing a region name

1 Press [EDIT] key → [F1] (TR Edit) key.

The EDIT screen TR Edit page will appear.
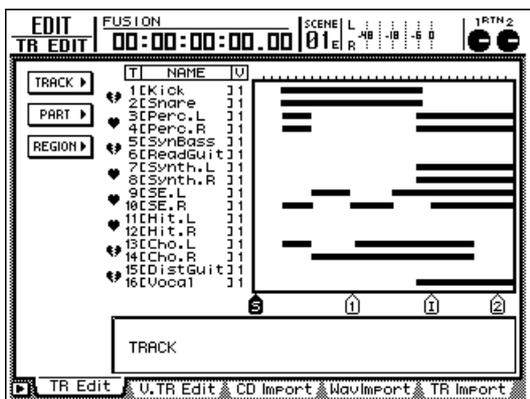
2 Move the cursor to the REGION menu and press the [ENTER] key.

The editing commands in the REGION menu will be listed.

3 Move the cursor to the NAME command button and press the [ENTER] key.

A button for setting the parameters of the NAME command will appear.

4 Move the cursor to the REGION parameter button and press the [ENTER] key.

The name of the currently selected region (NAME) and the start and end locations of the region (FROM/TO) will be displayed in the parameter area at the lower right of the display.

5 Use the CURSOR [◄]/[►]/[▲]/[▼] keys to select a region, and press the [ENTER] key.

The NAME EDIT popup window will appear, allowing you to assign a name to the region.

6 Move the cursor to the NAME parameter button, and press the [ENTER] key.

The NAME EDIT popup window will appear, allowing you to assign a name to the region.

7 Use the character palette to input the new region name.

A region name of up to eight characters can be input. For details on inputting characters, refer to page 37.

8 To confirm the new region name, move the cursor to the OK button and press the [ENTER] key.

To cancel the change, move the cursor to the CANCEL button and press the [ENTER] key.

Editing the audio data of tracks 1–16

This section explains how to use the TR Edit page to edit the audio of tracks 1–16 in units of entire tracks, or in units of individual parts or regions.

Editing entire Tracks

1 Press the [EDIT] key → [F1] (TR Edit) key.

The EDIT screen TR Edit page will appear. In this page, your editing operations will affect the virtual tracks that are selected for each track 1–16.
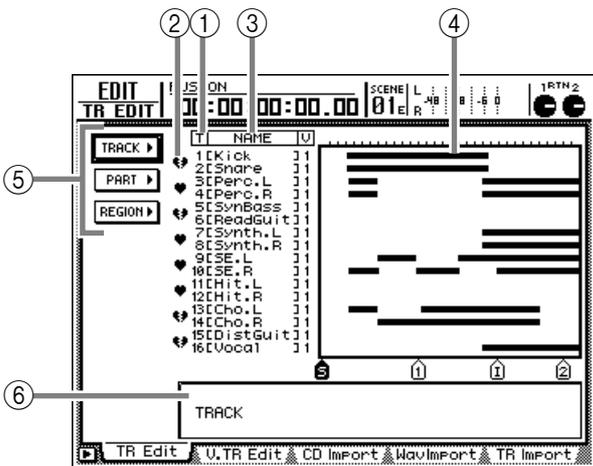
This page shows the following information.

① **Track numbers**
These are the track numbers 1–16.

② **Pairing**
This column indicates the pairing status of adjacent odd-numbered → even-numbered tracks. Pairing can also be enabled/disabled from this page.

Tip!

If you use an editing command to edit in track units, two paired tracks will generally be processed simultaneously by one command. It is convenient to pair two tracks that were used to record a stereo source.

③ **Track names**
These are the names assigned to each virtual track.

④ **Track view**
For each track, this area displays a bar graph to indicate the presence of audio data. Vertical lines within this area indicate the specified range of editing. The symbols displayed below this area indicate locate points and markers that have been set in the corresponding locations.

⑤ **TRACK/PART/REGION menu**
These buttons let you select commands for editing entire tracks, or individual parts or regions. Move the cursor to the desired menu and press the [ENTER] key to display a list of the commands for that menu.

⑥ **Parameter settings**
This area displays the parameters needed to execute the editing command. The type of parameters displayed here will differ depending on the currently selected editing command.

⚠

All transport operations are disabled when the EDIT menu is displayed.

2 Move the cursor to the TRACK menu, and press the [ENTER] key.

The editing commands in the TRACK menu will be listed.

Tip!

If you move the cursor to the TRACK menu displayed at the top of the list and press the [ENTER] key, you will return to the previous menu.

3 Move the cursor to the desired editing command and press the [ENTER] key.

According to the editing command that you selected, various buttons for setting the parameters of that command will appear. Also, the parameter setting area in the lower part of the display will show the settings of the parameter currently selected by the cursor. The following illustration shows the example of when the TRACK menu ERASE button is selected.

Parameter ───

Tip!
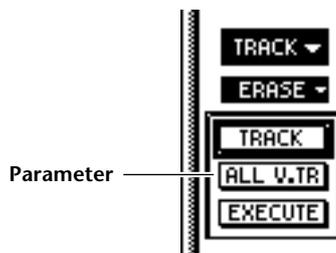
If you want to change your selection of an editing command, move the cursor to the highlighted editing command button, and press the [ENTER] key.

4 To edit the parameter settings, move the cursor to the corresponding button and press the [ENTER] key.

When you move the cursor to a button, the lower part of the display will show the setting values of that parameter. If you now press the [ENTER] key, the cursor will move to the parameter setting area, and you can edit the setting.
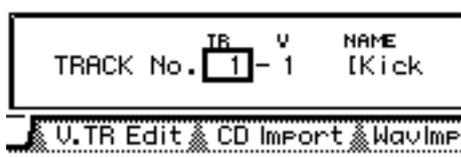
Tip!

For some editing commands, you will set the FR. TRACK and TO TRACK parameters to specify the edit source and edit destination tracks.

5 Use the [DATA/JOG] dial to edit the parameter settings.

Tip!
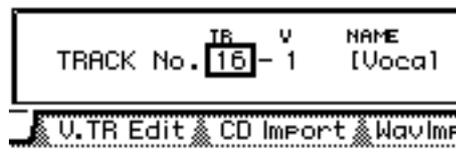
Parameters that specify a track 1–16 can also be set by using the REC TRACK SELECT [1]–[16] keys instead of the [DATA/JOG] dial.

⚠

The way in which a value is edited will depend on the type of command or parameter. In some cases you will use a controller other than the [DATA/JOG] dial. For details refer to page 118 ,"Editing commands."

6 Press the [ENTER] key.

The parameter value will be finalized, and you will return to step 3 (selecting the parameter). Repeat steps 4–6 as necessary to edit other parameters.

7 Move the cursor to the EXECUTE button and press the [ENTER] key.

A popup window will ask you to confirm execution of the editing operation.

8 To execute the operation, move the cursor to the OK button and press the [ENTER] key.

The editing command you selected in step 3 will be executed. When processing is completed, you will return to step 1.

Tip!

To cancel execution, move the cursor to the OK button and press the [ENTER] key.

With the exception of the NAME command and EXPORT command, you can press the [UNDO] key immediately after execution to cancel the result of the operation.

Editing by Part

1 Press the [EDIT] key → [F1] (TR Edit) key.

The EDIT screen TR Edit page will appear, where you can perform track editing operations.

2 Move the cursor to the PART menu, and press the [ENTER] key.

The editing commands of the PART menu will be listed.

3 Move the cursor to the desired editing command, and press the [ENTER] key.

According to the editing command you selected, buttons to set the execution parameters will be displayed. The parameter setting area in the lower part of the screen will show the settings of the parameter currently selected by the cursor.
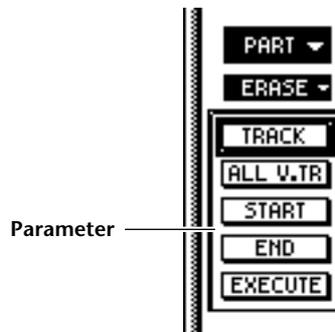
Parameter

4 Move the cursor to the TRACK parameter button, and press the [ENTER] key.

The TRACK parameter specifies the track (1–16) that will be the object of the editing operation. Move the cursor to the button and press the [ENTER] key, and the cursor will move to the parameter setting area.

✎ *Tip!*

For some editing commands, you will set the FR. TRACK and TO TRACK parameters to specify the edit source and edit destination tracks.

5 Use the [DATA/JOG] dial to select the track, and press the [ENTER] key.

The parameter setting will be finalized, and you will return to step 4 (parameter selection).

6 Move the cursor to the START parameter button, and press the [ENTER] key.

The START parameter specifies the beginning of the area (Part) that will be edited, and the END parameter specifies the end of the area. Move the cursor to the button, and press the [ENTER] key to move the cursor to the setting area for that parameter.

⚠ *In the case of a parameter that specifies a location within a song, the units used will depend on the currently selected counter display method (time/time code/measures).*

If measures (MEASURE) are selected as the counter display method, "beats" will be the smallest unit by which an editing location can be specified. However even in this case, you can use the Wave Display window or markers and locate points to specify the editing location in more detail.

Tip!

For some editing commands, you will use the FR. START and FR. END parameters to specify the edit source area, and the TO START parameter to specify the starting location of the edit destination.

7 Use the CURSOR [◄]/[►] keys and the [DATA/JOG] dial to edit the values of each unit.

```
♥11[Hit.L   ]1
 12[Hit.R   ]1
♥13[Cho.L   ]1
 14[Cho.R   ]1
♥15[DistGuit]1
♥16[Vocal   ]1
          (S)        (1)       (2)
START        [00]:[00]:[12]:[09].[00]
```

Tip!
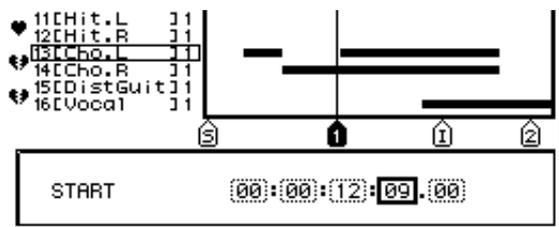
• *As necessary, the smallest unit of time changed by a single click of the [DATA/JOG] dial can be changed by the GRID setting in the UTILITY screen Prefer.2 page.*
• *If markers, A/B points, or In/Out points have been set in the song, you can use the [|◄]/[►|], [A]/[B], and [IN]/[OUT] keys to set an editing location to the location of the corresponding marker or locate point.*

8 Press the [ENTER] key.

The parameter setting will be finalized, and you will return to step 4 (parameter selection).

9 Set the END parameter in the same way that you set the START parameter.

In the same way, make settings for the other parameters required by the command.

10 Move the cursor to the EXECUTE button, and press the [ENTER] key.

A popup window will ask you to confirm the editing operation.

```
┌──────────────────────────────┐
│      [CONFIRMATION]           │
│ Execute PART ERASE            │
│                               │
│                               │
│ TR  V  NAME                   │
│ 13-1  [Cho.L        ]         │
│ 00:00:12:09.00 - 00:00:27:09.00│
│ ALL V.TRACKS  No              │
│                               │
│      [CANCEL]    [  OK  ]     │
└──────────────────────────────┘
```

11 To execute the editing operation, move the cursor to the OK button and press the [ENTER] key.

The editing command you selected in step 3 will be executed. When processing is finished, you will return to step 1.

Tip!

• *To cancel, move the cursor to the CANCEL button and press the [ENTER] key.*
• *With the exception of the EXPORT command, the result of the operation can be undone by pressing the [UNDO] key immediately after execution.*

Editing by Region

1 Press the [EDIT] key → [F1] (TR Edit) key.

The EDIT screen TR Edit page will appear, where you can perform track editing operations. For details on the items displayed in this page, refer to page 111 "Editing entire Tracks."

2 Move the cursor to the REGION menu, and press the [ENTER] key.

The editing commands of the REGION menu will be listed.

```
REGION▼
┌─────────┐
│ NAME  ▶ │
│ ERASE ▶ │
│ DELETE▶ │
│ COPY  ▶ │
│ MOVE  ▶ │
│ DIVIDE▶ │
│ TRIM IN ▶│
│ TRIM OUT▶│
│ T-COMP▶ │
│ PITCH ▶ │
│ EXPORT▶ │
└─────────┘
```
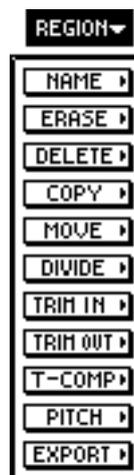
3 Move the cursor to the desired editing command, and press the [ENTER] key.

Buttons for setting the parameters of the selected command will appear. The parameter setting area in the lower part of the display will show the settings of the parameter currently selected by the cursor.

```
         REGION▼
         ERASE ▼
Parameter ─── REGION
         EXECUTE
```
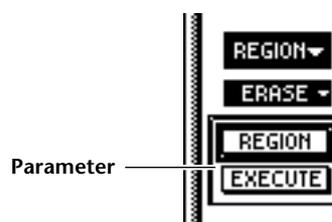
4 Move the cursor to the REGION parameter button, and press the [ENTER] key.

The parameter setting area will show the name of the currently selected region, and the starting location (FROM) and ending located (TO) of that region.
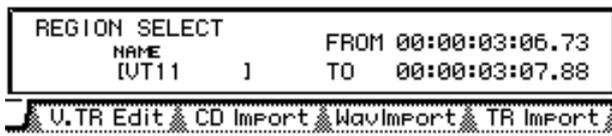
5 Use the CURSOR [◄]/[►]/[▲]/[▼] keys to select the region that you want to edit.

Use the CURSOR [▲]/[▼] keys to move between tracks (1–16), and use the CURSOR [◄]/[►] keys to select one of the regions included in that track.
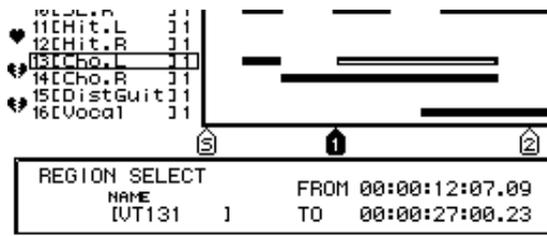
6 Press the [ENTER] key.

The region to be edited will be finalized, and you will return to step 3 (parameter selection).

Repeat steps 4–6 as necessary to set the other parameters in the same way.

7 Move the cursor to the EXECUTE button and press the [ENTER] key.

A popup window will ask you to confirm execution of the editing operation.
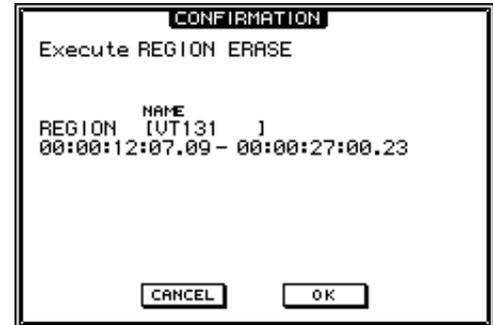
8 To execute, move the cursor to the OK button and press the [ENTER] key.

The editing command selected in step 3 will be executed. When processing is completed, you will return to the state of step 1.

Tip!

- *To cancel, move the cursor to the CANCEL button and press the [ENTER] key.*
- *With the exception of the NAME command and the EXPORT command, the result of the operation can be undone by pressing the [UNDO] key immediately after execution.*

7

Editing tracks and virtual tracks

Editing the audio data of virtual tracks 1–8

This section explains how to use the V.TR Edit page to edit the audio of virtual tracks 1–8 in units of entire tracks, or in units of individual parts or regions.

With the exception that a virtual track 1–8 within the specified track will be the object of operations, the contents of the menus, editing commands, and parameter settings are essentially the same as "Editing the audio data of tracks 1-16," P.111.

1 Press the [EDIT] key → [F2] (V.TR Edit) key.

The EDIT screen V.TR Edit page will appear, where you can edit virtual tracks.
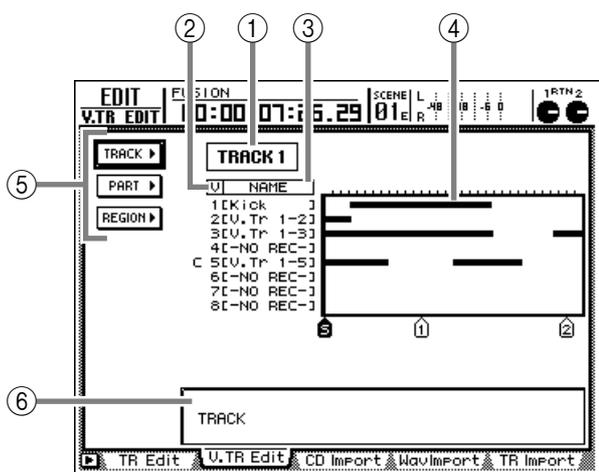
This page shows the following information.

① **Track number**

This is the currently selected track number (1–16). Your editing operations will affect the virtual tracks 1–8 included in this track. If virtual tracks are paired, this will be indicated by a heart symbol.

② **Virtual track numbers**

This area lists the virtual track numbers 1–8. The "C" character displayed at the left indicates the virtual track that is currently selected for the track ①.

③ **Track names**

These are the names assigned to virtual tracks 1–8.

④ **Track view**

For each virtual track 1–8, a bar graph indicates the presence of audio data. Vertical lines within this area indicate the specified editing area or editing destination. The symbols displayed below this area indicate locate points or markers that have been set at the corresponding locations.

⑤ **TRACK/PART/REGION menus**

These menus access the editing commands for tracks, parts, and regions.

⑥ **Parameter setting area**

In this area you can set the parameters necessary to execute the editing command.

2 Move the cursor to the track number area, and use the [DATA/JOG] dial to select a track (1–16).

When you switch tracks, the track names of virtual tracks 1–8 and the track view area will change accordingly.

Tip!

You can also use the REC TRACK SELECT [1]–[16] keys to select a track 1–16.

3 According to the smallest unit that you want to edit (the entire virtual track, part, or region), move the cursor to either the TRACK, PART, or REGION menu, and press the [ENTER] key.

The editing command menu will appear.

4 Move the cursor to the desired editing command, and press the [ENTER] key.

According to the editing command you selected, buttons for the parameters of that command will appear. The parameter area in the lower part of the display will show the settings of the parameter currently selected by the cursor.

5 To edit the setting of a parameter, move the cursor to the corresponding button, and press the [ENTER] key.

The cursor will move to the setting area in the lower part of the display.

6 Use the [DATA/JOG] dial to edit the value of the parameter, and press the [ENTER] key.

The cursor will return to the location of the button in step 4.

7 Repeat steps 4–6 to make settings for the other parameters.

8 To execute the editing command, move the cursor to the EXECUTE button and press the [ENTER] key.

A popup window will ask you to confirm execution of the editing command.

⚠️

As an exception, the NAME commands of the TRACK menu and REGION menu do not require the EXE-CUTE button to be used.

9 To execute the editing command, move the cursor to the OK button and press the [ENTER] key.

The editing command you selected in step 4 will be executed. When processing is completed, you will return to the state of step 1.

Tip!

- *To cancel, move the cursor to the CANCEL button and press the [ENTER] key.*
- *With the exception of the NAME commands of the TRACK/REGION menus and the EXPORT commands of the TRACK/PART/REGION menus, the result of the operation can be undone by pressing the [UNDO] key immediately after execution.*

Editing commands

This section describes the editing commands of the TRACK/PART/REGION menus of the TR Edit and V.TR Edit pages.

⚠️
* *All of the editing commands available in the TR Edit page and V.TR Edit page are the same. However, some parameters or values cannot be selected in the V.TR Edit page.*
* *Some editing commands require substantial time for processing. None of the commands can be cancelled while processing is taking place.*
* *Never turn off the power of the AW2816 while an editing command is being processed (in particular while the access indicator is blinking). Doing so can damage the internal hard disk, and cause all data to be lost forever.*

Commands and parameters of the TRACK menu

The TRACK menu contains commands that edit all audio in an entire track at once. The following pages describe the commands and parameters that can be selected from the TRACK menu.

Settings/parameters marked by an asterisk (*) cannot be selected in the V.TR Edit page.

● NAME
Edit the name (track name) of the specified track.

* **TRACK**
  Select the track whose name you want to edit.

* **NAME**
  Access the NAME EDIT popup window in which you can input the new name. Input the name in the popup window, move the cursor to the OK button and press the [ENTER] key to finalize the new name. If paired tracks are selected, finalizing the name of the odd-numbered track will display a popup window allowing you to set the name of the even-numbered track.

📝 **Tip!**
* *Once recording is performed, that virtual track is automatically assigned a default name of "V.Tr x-y" (x= track number 1–16, y= virtual track number 1–8). If an editing command is used to erase all audio data of a track, the track name will return to "-NO REC-".*
* *It is not possible to edit a track name that is displayed as "-NO REC-".*

● ERASE
Erase all audio data from the specified track.

* **TRACK**
  Select the track that you want to erase. If you select "AL" (*) as the setting, all virtual tracks currently selected for tracks 1–16 will be selected for erasure.

* **ALL V.TR (All virtual tracks) (*)**
  Specify whether you want to erase all virtual tracks included in the track (Yes) or only the virtual track currently selected for the track (No).

* **EXECUTE**
  Execute the command.

● COPY
Copy the audio data from the specified track to another track.

* **FR.TRACK (From track)**
  Select the copy source track.

* **TO TRACK**
  Select the copy destination track.

* **ALL V.TR (All virtual tracks) (*)**
  Specify whether you want to copy all virtual tracks included in the copy source track (Yes) or only the currently selected virtual track (No).

* **EXECUTE**
  Execute the command.

⚠️
When you execute the Copy command, the entire copy destination track will be erased, and replaced by the contents of the copy source.

📝 **Tip!**
If you copy from one of two paired tracks, the copy destination track will automatically be paired. If you copy from one track to a paired track, the same audio data will be copied to both of the paired tracks.

● EXCHANGE

Exchange the audio data of two tracks.

- **FR.TRACK (From track)**

- **TO TRACK**
  Select the two tracks that will be exchanged. An unrecorded track can be selected for the TO TRACK alone.

- **ALL V.TR (All virtual tracks) (*)**
  Specify whether all virtual tracks of the two tracks will be exchanged (Yes) or only the currently selected virtual track will be exchanged (No).

- **EXECUTE**
  Execute the command.

Tip!

If a paired track is selected for either the FR.TRACK or TO TRACK parameter, the command will be executed with the assumption that the other track is also a paired track.

● SLIP

Move all audio data of the specified track forward or backward.

- **TRACK**
  Select the track that will be moved. If you select "AL" (*) all virtual tracks currently selected for tracks 1–16 will be moved.

- **ALL V.TR (All virtual tracks) (*)**
  Specify whether all virtual tracks of the track will be moved (Yes) or only the virtual track currently selected for the track will be moved (No).

- **SLIP**
  Specify the distance of movement in the range of ±5 hours. (The smallest settable unit will depend on the currently selected counter display method.) When moving in the negative direction, it is not possible to set this parameter so that the beginning of a region would move earlier than absolute time zero.

- **EXECUTE**
  Execute the command.

● T-COMP (Time compression/expansion)

Expand or compress the length of the entire specified track without affecting its pitch.

- **TRACK**
  Select the track that you want to expand or compress.

- **RATIO**
  Specify the ratio of expansion/compression in 0.01% units, over a range of 50–200%.

- **EXECUTE**
  Execute the command.

⚠

- *Execution of the T-COMP command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.*
- *If multiple regions existed in the track, they will be combined into a single region as a result of executing this command.*

7

Editing tracks and virtual tracks
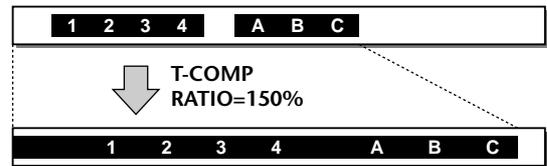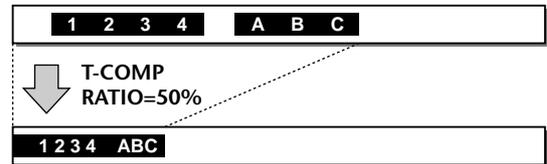
●PITCH

Raise or lower the pitch of the entire specified track without affecting the length of the audio.

- **TRACK**
  Select the track whose pitch you want to change.

- **PITCH**
  Specify the amount of pitch change in semitone steps, over a range of ±12 semitones.

- **FINE**
  Specify a fine adjustment in one-cent units to the pitch change, over a range of ±50 cents.

- **EXECUTE**
  Execute the command.

⚠

- *Execution of the PITCH command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.*
- *If multiple regions existed in a track, they will be combined into a single region as a result of executing this command.*

●APPEND

Combine the multiple regions within the specified track into a single region. Gaps between regions will be converted to silent audio data.

- **TRACK**
  Select the track whose regions you want to combine.

- **EXECUTE**
  Execute the command.
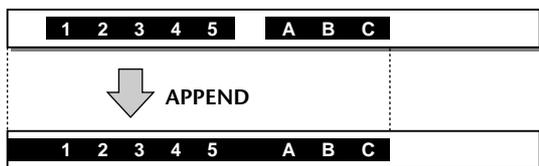
⚠

Execution of the APPEND command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.

●EXPORT

Convert the audio data of the specified track into a WAV file, and write it to a CD-RW drive, MO drive, or similar device.

- **TRACK**
  Select the track that you want to write as a WAV file. If you select a track 1–16 for this setting, a monaural WAV file for the corresponding track (a stereo WAV files if the track is paired) will be written. If you select "AL" (*), monaural WAV files for all tracks 1–16 (stereo WAV files for paired tracks) will be written. However, tracks that do not contain a region will not be written.

- **TO DRIVE**
  Switch to a screen where you can select the writing destination drive. In that screen, use the DRIVE area to select the drive, move the cursor to the EXIT button, and press the [ENTER] key to return to the previous screen.

- **TO FILE**
  Access a NAME EDIT popup window to edit the filename of the WAV file. (If you select "AL" as the setting of the TRACK parameter, it will not be possible to edit the filename.) Input the new filename, move the cursor to the OK button and press the [ENTER] key to finalize it.

- **TO SIZE**
  When writing 24 bit audio data to a WAV file, you can select whether it will be written as 24 bit data (24 bit) or whether the lower 8 bits will be discarded, converting the data to 16 bit (16 bit).

- **EXECUTE**
  Execute the command.

Length of the WAV file that is actually written

⚠

- *If you select "AL" for the TRACK parameter, it will not be possible to select CD-RW for the TO DRIVE parameter.*
- *Execution of the EXPORT command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.*

Tip!

- *For details on using the EXPORT command, refer to page 167.*
- *With the exception of the NAME and EXPORT commands of the TRACK menu, the result of the operation can be undone by pressing the [UNDO] key immediately after execution.*
- *When selecting the track for the TRACK/FR.TRACK/TO TRACK parameters, you can also use the REC TRACK SELECT [1]–[16] keys to specify the track number.*

Commands and parameters of the PART menu

The PART menu contains commands that edit the desired area (Part) of audio in the selected track. The following pages describe the commands and parameters that can be selected from the PART menu.

Settings/parameters marked by an asterisk (*) cannot be selected in the V.TR Edit page.

●ERASE

Erase all audio data from the specified part. If all audio data of the track is erased, the track name will change to "-NO REC-".

- **TRACK**
  Select the track from which you want to erase audio data. If you select "AL" (*) as the setting, all virtual tracks currently selected for tracks 1–16 will be selected for erasure.

- **ALL V.TR (All virtual tracks) (*)**
  Specify whether you want to erase data from all virtual tracks included in the track (Yes) or only the virtual track currently selected for the track (No).

- **START**
  Specify the beginning of the part that you want to erase.

- **END**
  Specify the end of the part that you want to erase.

- **EXECUTE**
  Execute the command.
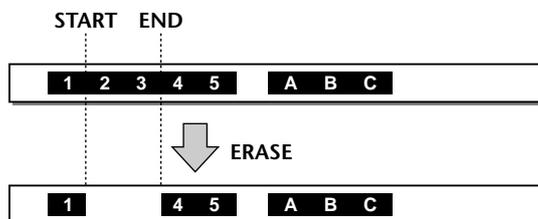
●DELETE

Delete all audio data from the specified part. Any existing audio data later than the deleted data will be moved forward according to the length of the deleted part.

- **TRACK**
  Select the track from which you want to delete audio data. If you select "AL" (*) as the setting, all virtual tracks currently selected for tracks 1–16 will be selected for deletion.

- **ALL V.TR (All virtual tracks) (*)**
  Specify whether you want to delete data from all virtual tracks included in the track (Yes) or only the virtual track currently selected for the track (No).

- **START**
  Specify the beginning of the part that you want to delete.

- **END**
  Specify the end of the part that you want to delete.

- **EXECUTE**
  Execute the command.
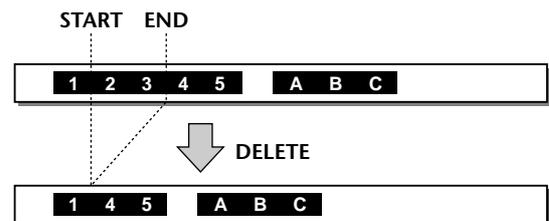
●COPY

Copy the audio data of the specified part to the specified location of the specified track.

- **FR.TRACK (From track)**
  Select the copy source track.

- **FR.START (From start)**
  Specify the beginning of the copy source part.

- **FR.END (From end)**
  Specify the end of the copy source part.

- **ALL V.TR (All virtual tracks) (*)**
  Specify whether you want to copy all virtual tracks included in the copy source track (Yes) or only the virtual track currently selected for that track (No).

- **TO TRACK**
  Specify the copy destination track.

- **TO START**
  Specify the beginning of the copy destination.

- **TIMES**
  Specify the number of times (1–99) that the data will be copied.

- **INTERVAL**
If the TIMES parameter is set to 2 or more, specify the spacing between the start locations of each copy. This cannot be set to a time that is shorter than the length of the specified part.

- **INSERT**
Specify whether the copied audio data will be inserted into the copy destination track (Insert) or overwritten (Overwrite).

- **EXECUTE**
Execute the command.
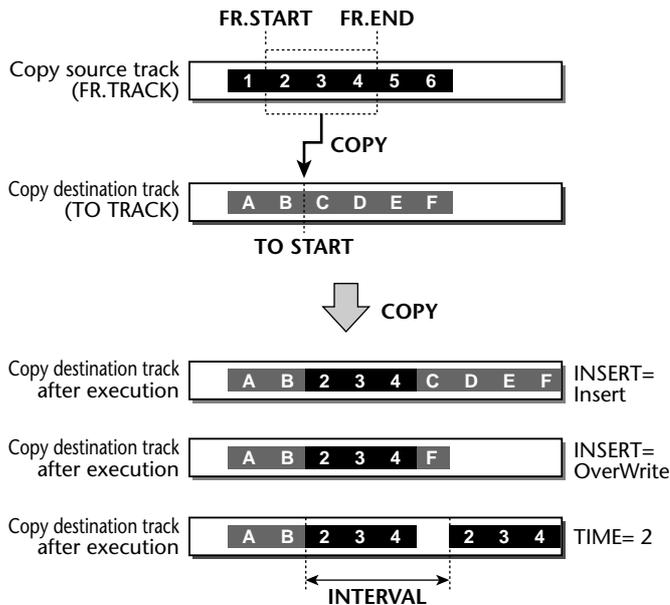
> **Tip!**
>
> *If you copy from a paired track to an unpaired track, the copy destination track will automatically be paired. If you copy from an unpaired track to a paired track, the same audio data will be copied to both of the paired tracks.*

●**MOVE**
Move the audio data of the specified part to the specified location of the specified track. At this time, the audio data at the move destination will be erased.

- **FR.TRACK (From track)**
Select the move source track.

- **FR.START (From start)**
Specify the start location of the part that will be moved.

- **FR.END (From end)**
Specify the end location of the part that will be moved.

- **ALL V.TR (All virtual tracks) (*)**
Specify whether all virtual tracks included in the track will be moved (Yes), or whether only the virtual track currently selected for the track will be moved (No).

- **TO TRACK**
Select the move destination track.

- **TO START**
Select the start location of the move destination.

- **INSERT**
Specify whether the audio data will be inserted into the move destination track (Insert) or overwritten (OverWrite).

- **EXECUTE**
Execute the command.
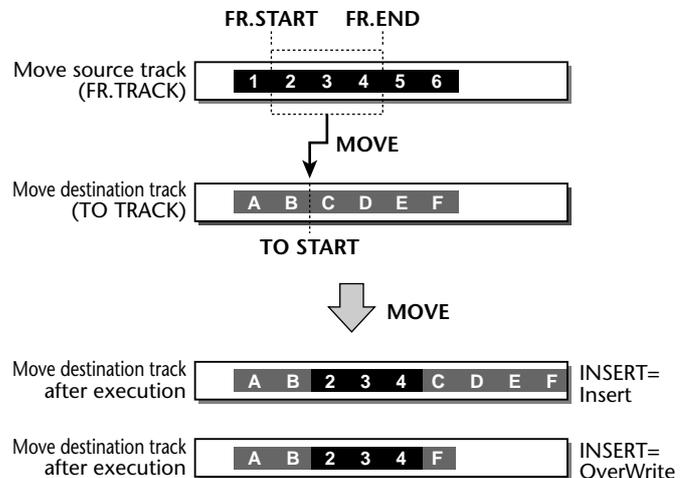
> **Tip!**
>
> *If you move from a paired track to an unpaired track, the move destination track will automatically be paired. If you move from an unpaired track to a paired track, only the odd-numbered track will be the move destination.*

● INSERT

Insert silence into the specified part. Subsequent audio data will be moved backward according to the length of the silent data that was inserted.

- **TRACK**
  Select the track into which silence will be inserted. If you select "AL" (*) for this setting, silence will be inserted into all virtual tracks currently selected for tracks 1–16.

- **START**
  Specify the starting location of the part into which silence will be inserted.

- **END**
  Specify the ending location of the part into which silence will be inserted.

- **ALL V.TR (All virtual tracks) (*)**
  Select whether silence will be inserted into all virtual tracks included in the track (Yes), or only into the virtual track currently selected for the track (No).
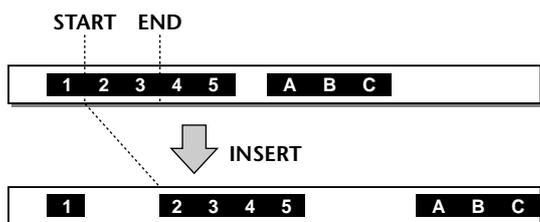
- **EXECUTE**
  Execute the command.

● T-COMP (Time compression/expansion

Expand or compress the length of the specified part without affecting its pitch.

- **TRACK**
  Select the track in which you want to expand or compress the length.

- **START**
  Specify the starting location of the part to be expanded/compressed.

- **END**
  Specify the ending location of the part to be expanded/compressed.

- **RATIO**
  Specify the ratio of expansion/compression in 0.01% units, over a range of 50–200%.

- **EXECUTE**
  Execute the command.

⚠️
- *Execution of the T-COMP command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.*
- *If multiple regions existed in the specified part, they will be combined into a single region as a result of executing this command. If there are gaps between regions, they will be converted into silent audio data.*

● PITCH

Raise or lower the pitch of the specified part without affecting the length of the audio.

- **TRACK**
  Select the track that contains the part whose pitch you want to change.

- **START**
  Specify the starting location of the part whose pitch will be changed.

- **END**
  Specify the ending location of the part whose pitch will be changed.

- **PITCH**
  Specify the amount of pitch change in semitone steps, over a range of ±12 semitones.

- **FINE**
  Specify a fine adjustment in one-cent units to the pitch change, over a range of ±50 cents.

- **EXECUTE**
  Execute the command.

⚠️
- *Execution of the PITCH command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.*
- *If multiple regions existed in the specified part, they will be combined into a single region as a result of executing this command. If there are gaps between regions, they will be converted into silent audio data.*

● **APPEND**

Combine the multiple regions within the specified part into a single region. Gaps between regions will be converted to silent audio data.

- **TRACK**
  Select the track containing the regions you want to combine.

- **START**
  Specify the starting location of the part in which regions will be combined.

- **END**
  Specify the ending location of the part in which regions will be combined.

- **EXECUTE**
  Execute the command.
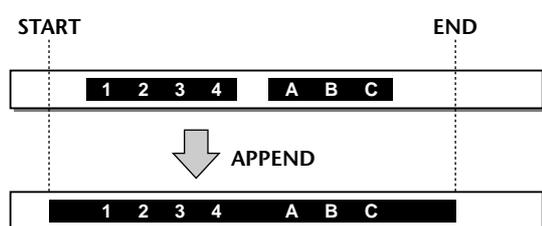
⚠️ *Execution of the APPEND command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.*

● **EXPORT**

Convert the audio data of the specified part into a WAV file, and write it to a CD-RW drive, external MO drive, or other device.

- **TRACK**
  Select the track from which you want to write a WAV file. If you select a track 1–16 for this setting, a monaural WAV file will be written from the corresponding track (a stereo WAV files if the track is paired) will be written. If you select "AL" (*), monaural WAV files for all tracks 1–16 (stereo WAV files for paired tracks) will be written. However, tracks that do not contain a region will not be written.

- **START**
  Specify the starting location of the part that will be written as a WAV file.

- **END**
  Specify the ending location of the part that will be written as a WAV file.

- **TO DRIVE**
  Switch to a screen where you can select the writing destination drive. In that screen, use the DRIVE area to select the drive, move the cursor to the EXIT button, and press the [ENTER] key to return to the previous screen.

- **TO FILE**
  Access a NAME EDIT popup window to edit the filename of the WAV file. (If you select "AL" as the setting of the TRACK parameter, it will not be possible to edit the filename.) Input the new filename, move the cursor to the OK button and press the [ENTER] key to finalize it.

- **TO SIZE**
  When writing 24 bit audio data to a WAV file, you can select whether it will be written as 24 bit data (24 bit) or whether the lower 8 bits will be discarded, converting the data to 16 bit (16 bit).

- **EXECUTE**
  Execute the command.

Length of the WAV file that is actually written

⚠️
- *If you select "AL" for the TRACK parameter, it will not be possible to select CD-RW for the TO DRIVE parameter.*
- *Execution of the EXPORT command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.*

Tip!
- *For details on using the EXPORT command, refer to page 167.*
- *With the exception of the EXPORT command of the PART menu, the result of the operation can be undone by pressing the [UNDO] key immediately after execution.*
- *When selecting the track for the TRACK/FR.TRACK/ TO TRACK parameters, you can also use the REC TRACK SELECT [1]–[16] keys to specify the track number.*
- *To specify a location for the START or END parameter, you can use the [|◄]/[►|] keys, [IN]/[OUT] keys, [A]/[B] keys, [|◄◄]/[►►|] keys, or [RTZ] key to assign the parameter to the location of the corresponding marker or locate point.*

Commands and parameters of the REGION menu

The REGION menu contains commands that edit the desired region (continuous audio data that was recorded in one operation) of audio. The following pages describe the commands and parameters that can be selected from the REGION menu.

Settings/parameters marked by an asterisk (*) cannot be selected in the V.TR Edit page.

●NAME
Edit the name (region name) of the region.

- **REGION**
  Select the region whose name you want to edit.

- **NAME**
  Access a NAME EDIT popup window where you can input the new name. Input the name in the popup window, move the cursor to the OK button and press the [ENTER] key to finalize the new name.

✏️ **Tip!**
- *Regions created during recording will automatically be given a default name of "VTxy (x= track number 1–16, y= virtual track number 1–8).*
- *Regardless of the track/part/region unit, the region name will be copied whenever audio data is copied.*

●ERASE
The selected region will be erased. If all regions in a track are erased, the track name will change to "-NO REC-".

- **REGION**
  Select the region that you want to erase.

- **EXECUTE**
  Execute the command.

●DELETE
The selected region will be deleted. Subsequent audio data will be moved forward according to the length of the deleted region. If all regions in a track are deleted, the track name will change to "-NO REC-".

- **REGION**
  Select the region that you want to delete.

- **EXECUTE**
  Execute the command.

●COPY
Copy the selected region to the specified location of the specified track.

- **REGION**
  Select the region that you want to copy.

- **TO TRACK**
  Select the copy destination track.

- **TO START**
  Specify the starting time of the copy destination.

- **TIMES**
  Specify the number of times (1–99) that the data will be copied.

- **INTERVAL**
  If you set the TIMES parameter to 2 or higher to make multiple copies, specify the spacing of the copy start locations. It is not possible to set this shorter than the length of the selected region.

- **INSERT**
  Select whether the copied audio data will be inserted into the copy destination track (Insert) or overwritten (OverWrite).

- **EXECUTE**
  Execute the command.

●MOVE
Copy the selected region to the specified location of the destination track. At this time, the move source region will be erased.

- **REGION**
  Select the region that you want to move.

- **TO TRACK**
  Select the move destination track.

- **TO START**
  Specify the starting time of the move destination.

- **INSERT**
  Select whether the region will be inserted into the move destination track (Insert) or overwritten (OverWrite).

- **EXECUTE**
  Execute the command.

●DIVIDE
Divide the selected region into two regions at the desired location.

- **REGION**
  Select the region that you want to divide.

- **DIVIDE**
  Specify the location at which you want to divide the region.

- **EXECUTE**
  Execute the command.

●**TRIM IN**
Move the starting location of the selected region later in time (toward the end of the song), and trim (discard) the unwanted portion.

• **REGION**
Select the region that you want to trim.

• **TRIM IN**
Specify the amount of trimming in sample units.

• **EXECUTE**
Execute the command.

●**TRIM OUT**
Move the ending location of the selected region earlier in time (toward the beginning of the song), and trim (discard) the unwanted portion.

• **REGION**
Select the region that you want to trim.

• **TRIM OUT**
Specify the amount of trimming in sample units.

• **EXECUTE**
Execute the command.

●**T-COMP (Time compression/expansion)**
Expand or compress the length of the selected region without affecting its pitch.

• **REGION**
Select the region that you want to expand or compress.

• **RATIO**
Specify the ratio of expansion/compression in 0.01% units, over a range of 50–200%.

• **EXECUTE**
Execute the command.

⚠ ─────────────

Execution of the T-COMP command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.

●**PITCH**
Raise or lower the pitch of the selected region without affecting the length of the audio.

• **REGION**
Select the region whose pitch you want to change.

• **PITCH**
Specify the amount of pitch change in semitone steps, over a range of ±12 semitones.

• **FINE**
Specify a fine adjustment in one-cent units to the pitch change, over a range of ±50 cents.

• **EXECUTE**
Execute the command.

⚠ ─────────────

Execution of the PITCH command will require more processing time than the actual time length of the data being processed. Also, it is not possible to cancel the command while processing is occurring.

●**EXPORT**
Convert the audio data of the specified region into a WAV file, and write it to a CD-RW drive, external MO drive, or similar device.

• **REGION**
Select the region that you want to write as a WAV file.

• **TO DRIVE**
Switch to a screen where you can select the writing destination drive. In that screen, use the DRIVE area to select the drive, move the cursor to the EXIT button, and press the [ENTER] key to return to the previous screen.

• **TO FILE**
Access a NAME EDIT popup window to edit the filename of the WAV file. Input the new filename, move the cursor to the OK button and press the [ENTER] key to finalize it.

• **TO SIZE**
When writing 24 bit audio data to a WAV file, you can select whether it will be written as 24 bit data (24 bit) or whether the lower 8 bits will be discarded, converting the data to 16 bit (16 bit).

• **EXECUTE**
Execute the command.

📝 *Tip!* ─────────────
• *For details on using the EXPORT command, refer to page 167.*
• *With the exception of the NAME and EXPORT commands of the REGION menu, the result of the operation can be undone by pressing the [UNDO] key immediately after execution.*
• *To specify a location for the TO START parameter, you can use the [|◀]/[▶|] keys, [IN]/[OUT] keys, [A]/[B] keys, [|◀◀]/[▶▶|] keys, or [RTZ] key to assign the parameter to the location of the corresponding marker or locate point.*

Scene memory operations

This chapter explains scene memory functions and operation.

About scene memories

On the AW2816, the mix parameters of each channel, the input patch and output patch settings, parameters for effects 1/2, and various other settings can be collectively assigned a name and stored in internal memory as a "scene."

The memory area in which scenes are stored is called "scene memory." Scene memory lets you store up to 96 different scenes, and you can recall a desired scene at any time by operations in the screen or by key operations. The scene memory contents are saved on the hard disk as part of the song.

Tip!
You can use automix (→P.133) to recall a scene, or send program changes from an external device to recall scenes on the AW2816 (→P.200).

Parameters included in a scene

The following parameters are included in a scene.

Mix parameters	Fader positions of all channels
	Send levels from each channel to AUX buses 1–6
	Master levels of AUX buses 1–6 and buses 1–8
	[ON] key settings of all channels
	Attenuation settings of all channels
	Phase settings of all channels
	EQ settings of all channels
	Pan settings of all channels
	Routing settings of all channels
	Fader group and mute group settings of all channels
	Pairing settings of all channels
	Dynamics settings of all channels
	Delay settings of all channels
Effect parameters	Parameter settings for effects 1/2
MIDI remote	Status of Remote A–D faders (1–8) and [ON] keys (1–8)
Other	Scene name
	Settings of the SCENE screen/Fade Time page
	Settings of the PATCH screen/Patch In/ Patch Out pages
	Insert effect settings of each channel

About scene numbers

There are 97 scene numbers, 00–96. Scenes can be stored in numbers 01–96. Scene number 00 is recall-only, and contains a preset scene used to restore the parameters to their default setting.

The currently-recalled scene number is always displayed in the SCENE area of the screen. When you operate the keys of the SCENE MEMORY section, the scene number of the currently-operated scene will be displayed briefly at the right of the SCENE area.

If an "E" character is displayed at the right of the scene number, this means that the current scene has been edited since it was last recalled or stored.

Tip!
- *The length of time that the scene name is displayed at the right of the SCENE area can be adjusted if desired. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and change the value of the SCENE NAME DISPLAY TIME setting (1–9 seconds).*
- *You can also make settings so that the scene name is not displayed when you operate the keys of the SCENE MEMORY section. To do this, access the UTILITY screen Prefer.1 page ([UTILITY] key → [F2] key), and turn the AUTO SCENE NAME DISPLAY setting OFF.*

Storing a scene

You can assign a name to the current settings and store them in scene memory. A scene can be stored either by operations in the screen, or by operating the keys of the top panel.

Storing a scene by operations in the screen

1 Press the [SCENE] key → [F1] key.

The SCENE screen/Scene Mem page will appear, in which you can manage scene memories.
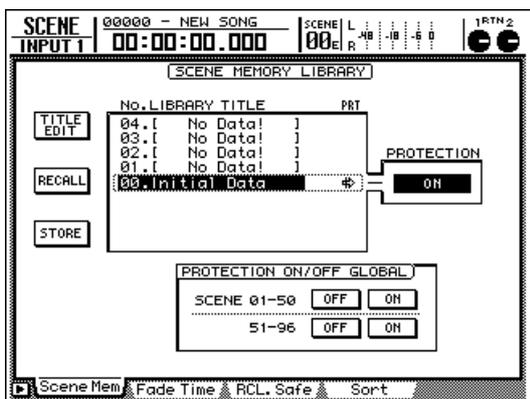
2 Use the [DATA/JOG] dial to select the store destination scene number (01–96).

The row enclosed by the dotted line is the currently selected scene.
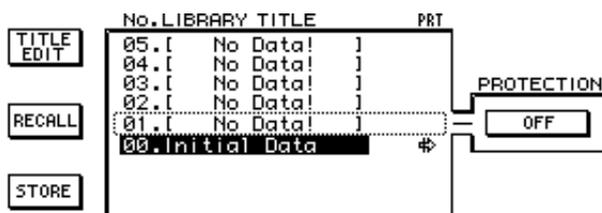
Tip!
- *The scene number can also be selected by using the [▼]/[▲] keys of the SCENE MEMORY section.*
- *Scene number 00 is recall-only. It is not possible to store to this number.*

3 Move the cursor to the STORE button, and press the [ENTER] key.

The TITLE EDIT popup window will appear, allowing you to input the scene name.
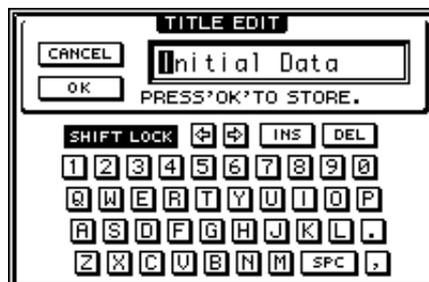
4 As necessary, use the character palette to input a scene name.

For details on inputting characters, refer to page 37.

5 To store the scene, move the cursor to the OK button and press the [ENTER] key.

To cancel without storing, move the cursor to the CANCEL button and press the [ENTER] key.

⚠

If you store to a number in which a scene has already been stored, the previous scene will be erased.

Tip!
- *It is also possible to store the scene directly, without inputting the scene name. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the STORE CONFIRMATION setting OFF.*
- *You can protect a scene number to prevent it from being accidentally erased (→P.131).*

Storing a scene by key operations

1 Use the SCENE MEMORY section [▼]/[▲] keys to select the store destination scene number.

The currently selected scene number will be displayed in the SCENE area in the upper part of the screen.

2 Press the [STORE] key.

The TITLE EDIT popup window will appear, allowing you to input the scene name.

3 As necessary, use the character palette to input a scene name.

4 To store the scene, move the cursor to the OK button and press the [ENTER] key.

Recalling a scene

Here's how you can recall a scene from scene memory. The recall operation can be performed from the screen or by using the keys of the top panel.

⚠️

When you recall a scene, the current scene will be discarded. If you will want to reuse the current scene later, store it in scene memory before recalling another scene.

Recalling a scene by operations in the screen

1 Press the [SCENE] key → [F1] key.

The SCENE screen/Scene Mem page will appear.

```
SCENE  | 00000 - NEW SONG  | SCENE | L ......  | 1 RTN 2
ST OUT | 00:00:00.000      | 00 E  | R ......  |

              ┌─────────────────────────┐
              │  SCENE MEMORY LIBRARY   │
              └─────────────────────────┘
              No.LIBRARY TITLE      PRT
  ┌──────┐    04.Ending MIX
  │TITLE │    03.Rhythm OFF
  │EDIT  │    02.SUB MIX                   ┌──────────┐
  └──────┘    01.INTRO MIX                 │PROTECTION│
  ┌──────┐    00.Initial Data      🔒      │  [ ON ]  │
  │RECALL│                                 └──────────┘
  └──────┘
  ┌──────┐
  │STORE │
  └──────┘
              ┌──────────────────────────────┐
              │ PROTECTION ON/OFF GLOBAL     │
              │  SCENE 01-50   [OFF]  [ON]   │
              │       51-96    [OFF]  [ON]   │
              └──────────────────────────────┘
  ▶ Scene Mem  Fade Time  RCL. Safe    Sort
```
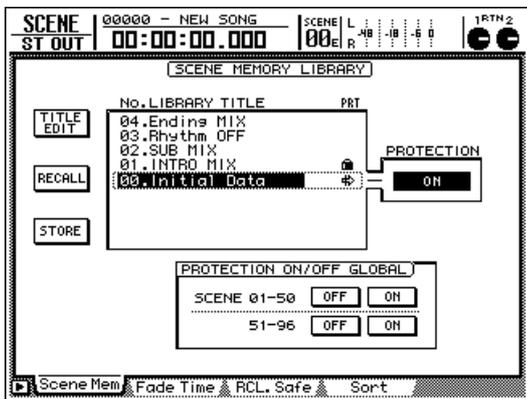
2 Use the [DATA/JOG] dial to select the scene number that you want to recall.

The row enclosed by the dotted line is the currently selected scene number.

3 Move the cursor to the RECALL button and press the [ENTER] key.

A popup window will ask you to confirm the scene recall operation.

```
  ┌────────────────────────┐
  │     CONFIRMATION        │
  │                         │
  │    Will Recall          │
  │    Scene #02.           │
  │                         │
  │    ARE YOU SURE ?       │
  │                         │
  │  [CANCEL]    [ OK ]     │
  └────────────────────────┘
```

✏️ *Tip!*

You can also execute the recall operation directly, without displaying this popup window. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the RECALL CONFIRMATION setting OFF.

4 To execute the recall, move the cursor to the OK button and press the [ENTER] key.

To cancel without recalling, move the cursor to the CANCEL button and press the [ENTER] key.

✏️ *Tip!*

- *The time (fade time) over which the faders reach their new locations when a scene is recalled can be adjusted. To do this, access the SCENE screen/Fade Time page ([SCENE] key → [F2] key), and set the fade time for each fader (→P.348).*
- *If necessary, you can exclude specific faders from recall operations. These settings are made in the SCENE screen/RCL.Safe page ([SCENE] key → [F3] key) (→P.349).*

Recalling a scene by key operations

1 Use the SCENE MEMORY section [▼]/[▲] keys to select the scene number that you want to recall.

The SCENE area will display the currently selected scene number. If a scene number other than the current scene is selected, the scene number will blink.

2 Press the [RECALL] key.

A popup window will appear, asking you to confirm the recall operation.

3 To execute the recall, move the cursor to the OK button and press the [ENTER] key.

The scene of the selected scene number will be recalled.

✏️ *Tip!*

In the same way as when using the screen to recall a scene, you can make settings so that the recall occurs directly, without displaying the popup window.

Editing the name of a scene

Here's how you can edit just the scene name of a
scene stored in memory.

1 Press the [SCENE] key → [F1] key.
The SCENE screen/Scene Mem page will appear.

2 Use the [DATA/JOG] dial to select the scene
number whose scene name you want to
edit.

⚠

*It is not possible to edit the scene name of a number
in which no scene has been stored, a scene number
that is protected, or scene number 00.*

3 Move the cursor to the TITLE EDIT button
and press the [ENTER] key.

The TITLE EDIT popup window will appear.

4 Use the character palette to input the
desired scene name.

5 To confirm the new scene name, move the
cursor to the OK button and press the
[ENTER] key.

To cancel without changing the scene name,
move the cursor to the CANCEL button and press
the [ENTER] key.

Protecting a scene

For each scene number, you can set the Protect setting to prevent a stored scene from being accidentally erased. Scenes for which Protect is turned on can only be recalled.

1 Press the [SCENE] key → [F1] key.

The SCENE screen/Scene Mem page will appear.

2 Use the [DATA/JOG] dial to select the scene number that you want to protect.

Tip!

You can also use the SCENE MEMORY section [▼]/[▲] keys to select the scene number.

⚠

It is not possible to make Protect settings for a number in which a scene has not been stored, or for scene number 00.

3 Move the cursor to the OFF button in the PROTECTION area, and press the [ENTER] key.

The button will change from OFF to ON, and protection will be turned on for the selected scene. Protected scenes will be indicated by a 📁 symbol displayed in the PRT column of the list.

```
| SCENE MEMORY LIBRARY |

No.LIBRARY TITLE        PRT
05.[    No Data!    ]
04.Endin9 MIX
03.Rhythm OFF
02.SUB MIX                    PROTECTION
01.INTRO MIX          🔒   ┌──────────┐
00.Initial Data      ✣    │    ON    │
                          └──────────┘
```
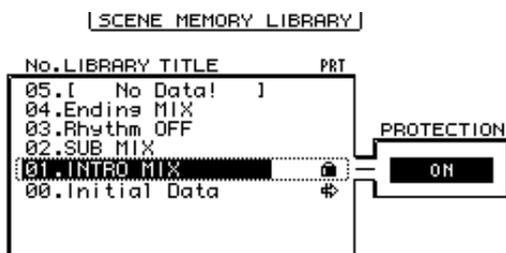
4 To defeat protection, move the cursor to the ON button in the PROTECTION area, and press the [ENTER] key.

The button will change from ON to OFF, and protection will be defeated.

You can use the buttons of the PROTECTION ON/OFF GLOBAL area to turn protection on/off for a entire group of scenes.

```
┌PROTECTION ON/OFF GLOBAL┐
│                        │
│ SCENE 01-50  ┌OFF┐ ┌ON┐│
│              └───┘ └──┘│
│ ·················     │
│       51-96  ┌OFF┐ ┌ON┐│
│              └───┘ └──┘│
└────────────────────────┘
```
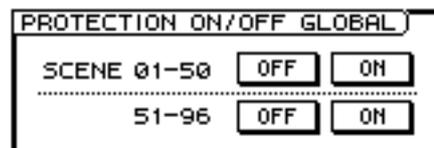
- **SCENE 01–50 ON/OFF buttons**
  These buttons turn protection on/off for scene numbers 01–50.

- **SCENE 51–96 ON/OFF buttons**
  These buttons turn protection on/off for scene numbers 51–96.

Changing the order of scenes

A scene saved in scene numbers 01–96 can be moved to another number.

1 Press the [SCENE] key → [F4] key.

The SCENE screen/Sort page will appear, in which you can change the order of scenes. In the SOURCE area at the left, you will select the scene number that you want to move. Then in the DESTINATION area at the right, you will select the location into which the selected scene will be inserted.
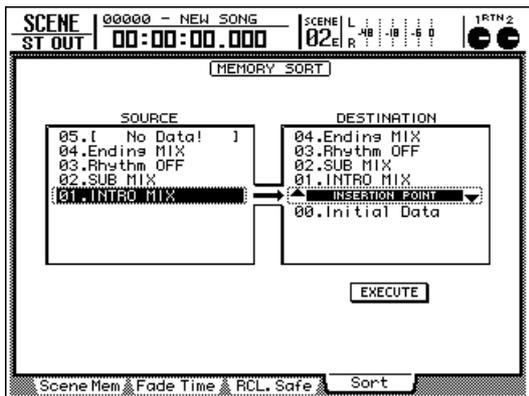
2 Move the cursor to the SOURCE area, and use the [DATA/JOG] dial to select the scene whose order you want to change.

The row enclosed by the dotted line is the selected scene.
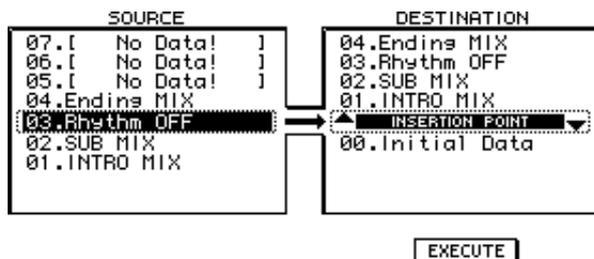
3 Move the cursor to the DESTINATION area, and use the [DATA/JOG] dial to select the location at which the scene will be inserted.

The list in the DESTINATION area will scroll, and the insertion location will move.
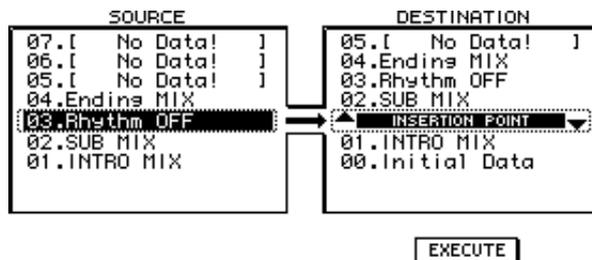
4 To execute the change in order, move the cursor to the EXECUTE button and press the [ENTER] key.

The selected scene will move to the new location, and the other scene numbers will change accordingly.

9 | Using automix
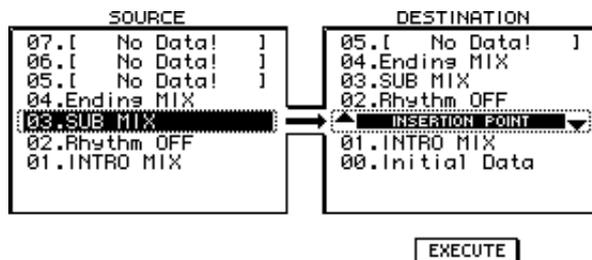
This chapter explains the functions and operation of Automix, which automates realtime mixing operations.

About automix

What is automix?

On the AW2816, operations of mixing parameters can be recorded in realtime, and then played back. This capability is called "automix." Scene recall operations, channel fader movements, and [ON] key operations etc. can be recorded in automix as the song progresses, allowing the mixdown to be completely automated.

The currently-operated automix is called the "current automix." The contents of the current automix can be stored in one of sixteen special memory areas, and recalled at any time. Data for the sixteen automixes in memory is saved on the hard disk as part of the currently-selected song (the "current song").

What can be recorded in automix?

The following operations can be recorded in automix.

- Fader operations of each channel (including operations of the [RTN 1]/[RTN 2] controls)
- AUX send operations of each channel
- [ON] key operations of each channel
- Pan operations of each channel
- EQ operations of each channel
- Scene memory and library recall operations
- REMOTE screen fader 1–8 and [ON] key operations

While the song plays back, the above operations can be recorded on the automix in realtime, or you can partially re-record specific operations by themselves. When automix is stopped, you can also edit the timing and values of individual recorded data events.

How the automix is related to the song

In general, automix operation is linked with the song. When you play back the song, the automix will also begin playing or recording, and when you stop the song, the automix will also stop. Although it is possible to stop only the automix while the song is playing, it is not possible to record or play back the automix while the song is stopped.

Automix always begins at the Start Point of the song (the absolute time zero location). For this reason if you change the start point, the starting location of automix will change accordingly. If you want to change the start point, you should make this change before you record the automix.

Start point = 00:00:00:00.00
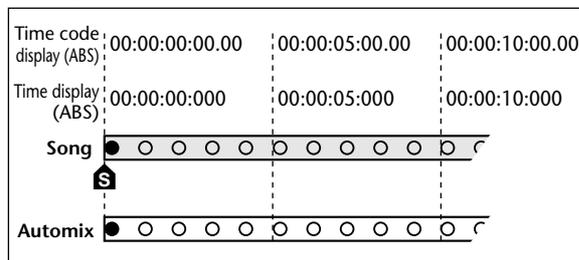
Start point = 00:00:05:00.00
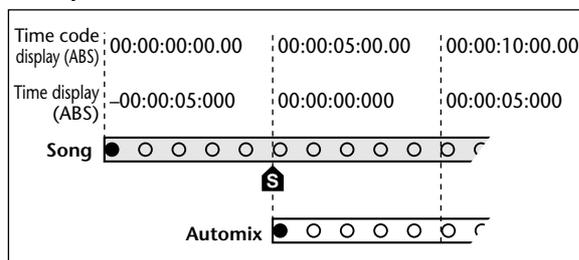
⚠️ *Be aware that if you change the start point, automix cannot be recorded in the area earlier than the start point (absolute time zero).*

Creating a new automix

When you want to record automix for the first time, you must start by creating a new automix.

1 While playing back the beginning of the song, make settings for the channel faders, pan, EQ, and effect send/return, and store them in a scene memory.

The scene you save will be the starting point for automix recording. Alternatively, if you want a previously-saved scene to be the starting point for automix, recall that scene.

2 Press the [AUTOMIX] key → [F1] key

The following screen will appear.
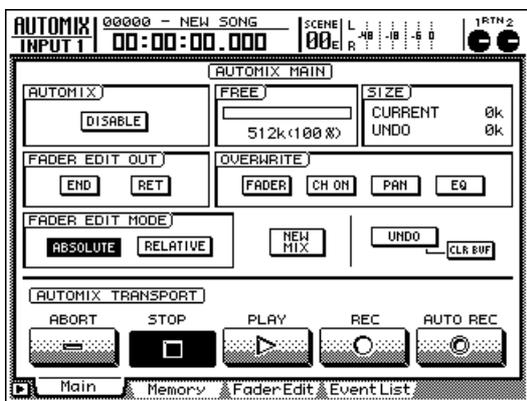
3 Move the cursor to the NEW MIX button located in the center of the display, and press the [ENTER] key.

A popup window will ask you to confirm that you want to create a new automix.

⚠️ *When a new automix is created, the contents of the current automix will be erased. If you want to save the contents of the current automix, refer to page 145 "Storing an automix."*

4 Move the cursor to the OK button and press the [ENTER] key.

A new automix will be created.

5 Press the [F4] key.

The screen will show the Event List page, where you can edit the events recorded in the current automix.

6 Move the cursor to the SCENE/LIB button in the upper left of the display, and press the [ENTER] key.

When the SCENE/LIB button is turned on, operations in the current automix that recall scenes and various libraries will appear in the list located in the center of the display. The TIME area of the list indicates the absolute time at which a recall operation will be executed, and the EVENT area indicates the type of event that will be recalled.
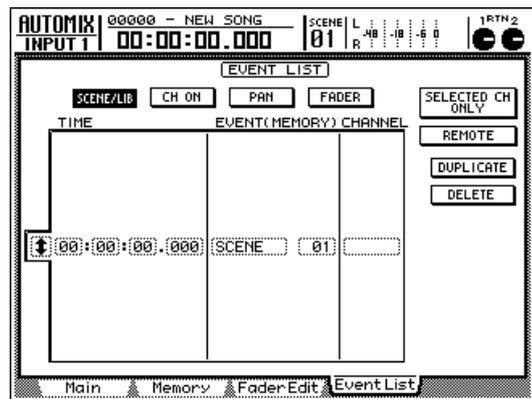
In this example, notice that data for the scene number you selected in step 1 has been written at the TIME area "00:00:00.000" location. When you create a new automix, an event that recalls the current scene (the most recently recalled or stored scene) will be written at this location. You are free to change this scene number or its time location later if desired.

Recording and playing an automix

This section explains how fader operations for monitor channels 1–8 can be recorded in the automix and played back.

Recording fader operations in the automix

1 Locate the song to a location slightly earlier than the point where you want to begin recording automix.

2 Press the [AUTOMIX] key → [F1] key.

The AUTOMIX screen/Main page will appear. Automix recording and playback is performed mainly in this page.

Tip!
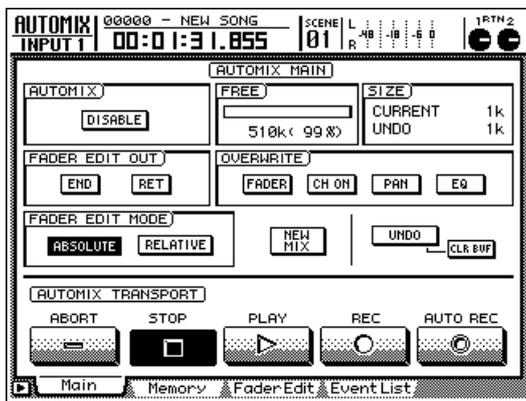
When you press the [AUTOMIX] key to switch to the AUTOMIX screen, the [HOME] key of the FADER MODE section will automatically be turned on.

3 Move the cursor to the DISABLE button of the AUTOMIX area, and press the [ENTER] key.

The button in the AUTOMIX area enables or disables the automix. When you move the cursor to the button indicating DISABLE and press the [ENTER] key, the button will change to "ENABLE," and the automix function will be enabled. While automix is enabled, the top panel [AUTOMIX] key will light (or blink).
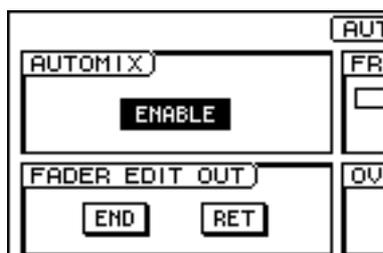
4 Move the cursor to the OVERWRITE area. Turn the FADER button on, and the other buttons (CH ON, PAN, EQ) off.

The FADER, CH ON, PAN, and EQ buttons in the OVERWRITE area select the events that will be recorded in the automix. When a button is on (highlighted), the corresponding type of events will be recorded in the automix. Each button corresponds to the following events.

- **FADER**.......... Fader operations of each channel (1–8/STEREO), and operations of the [RTN 1]/[RTN 2] controls
- **CH ON** .... [ON] key operations of each channel (1–8/STEREO/RTN 1/RTN 2)
- **PAN** .... Pan operations of each channel
- **EQ**................ EQ operations of each channel

Tip!

- *Recall operations for scene memories and the various libraries can be recorded in automix regardless of the settings of the OVERWRITE buttons.*
- *If you want to record the AUX bus 1–6 send levels, or to record operations of faders 1–8 in the REMOTE screen, turn on the FADER button. If you want to record operations of [ON] keys 1–8 in the REMOTE screen, turn on the CH ON button.*

5 Move the cursor to the REC button in the display, and press the [ENTER] key.

The REC will blink. This indicates that automix is in record-ready mode. When automix is in record-ready mode, the top panel [AUTOMIX] key will blink red.
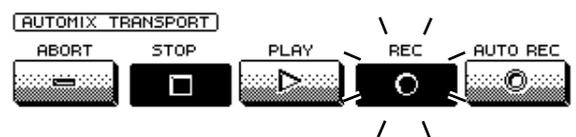
6 In the MIXING LAYER section, press the RECORDER [1-8] key.

Now faders 1–8 will function as channel faders for monitor channels 1–8. If you want to record fader operations of monitor channels 9–16, press the RECORDER [9–16] key.

7 Use the [SEL] keys to select the channel whose fader operations you want to record.

When automix is in record-ready mode, you can use the [SEL] keys to select the channels that will be recorded. The [SEL] keys will blink for the selected channels.

Tip!

If you press a blinking [SEL] key once again, the selection will be cancelled.

8 Press the top panel PLAY [▶] key to play back the song.

When the song begins playing, the REC button in the display will switch to on (highlighted), and automix recording will begin. While automix is being recorded, the [AUTOMIX] key will light external device.

9 While listening to the song, operate the faders of the selected channels.

10 When you are finished with operations, press the top panel STOP [■] key to stop the song.

The REC button in the display will return to off (normal display), and automix recording will stop. The [AUTOMIX] key will now be lit green. A popup window will appear in the display, asking you whether you want to update the recorded content.

11 If you want to update the recorded content, move the cursor to the OK button and press the [ENTER] key.

If you want to discard the recorded content, move the cursor to the CANCEL button and press the [ENTER] key, and the automix will return to its previous state.

Tip!

• *As an alternative to pressing the STOP [■] key, you can also stop automix recording by using the STOP button in the display. In this case, automix recording will stop, but the song will continue playing.*

• *Even after updating the recorded contents of automix, you can move the cursor to the UNDO button located in the right of the display and press the [ENTER] key to return to the state prior to recording (Undo). The top panel [UNDO] key cannot undo automix.*

Playing back the automix

1 In the AUTOMIX screen/Main page, make sure that the REC button and AUTO REC button are turned off.
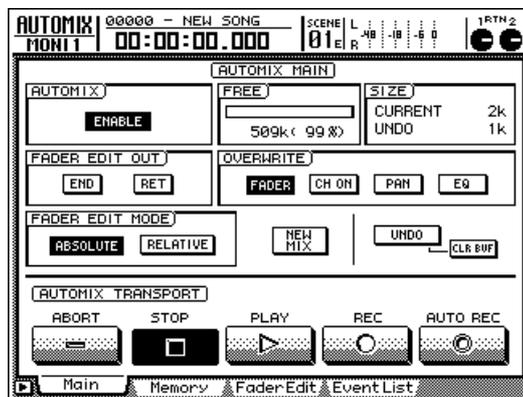
2 Locate the song to a point slightly earlier than where you began recording automix, and press the top panel PLAY [▶] key.

The PLAY button in the display will turn on (the STOP button will turn off), and automix will begin playing automatically.

Tip!

If you begin playback from the middle of the song, automix will also begin playback from that same location. In this case if there are any automix events earlier than the location at which playback was begun, automix playback will begin from a state in which all of those events have been executed.

3 To stop the automix, move the cursor to the STOP button in the display and press the [ENTER] key, or press the top panel STOP [■] key.

Even if you yourself do not stop the automix, it will stop automatically after the last event recorded in automix has been executed.

Recording additional fader operations of other channels

Here's how the previously-recorded automix can be played back while you additionally record fader operations of other channels.

1 Locate the song to a point slightly earlier than where you began recording automix.

2 In the AUTOMIX screen/Main page, make sure that the AUTOMIX button is set to "ENABLE," and that in the OVERWRITE area the FADER button is turned on.

3 Move the cursor to the REC button in the lower right of the display, and press the [ENTER] key.

Automix will be in record-ready mode.

```
AUTOMIX TRANSPORT
 ABORT      STOP      PLAY      REC    AUTO REC
  [===]      [■]       [▷]       [○]      [◉]
```

4 Use the [SEL] keys to select the monitor channels whose fader operations you want to record.

For this example, choose monitor channels other than those that you recorded earlier.

⚠

Be aware that if you accidentally select the same channels as before, the fader operation events that had been recorded on those channels will be erased.

5 Press the top panel PLAY [▶] key to play back the song.

The REC button and PLAY button in the display will turn on (highlighted), and automix recording (and playback of the recorded events) will begin.

6 While listening to the song, operate the faders that you selected in step 4.

7 When you are finished operating the faders, press the top panel STOP [■] key to stop the song.

A popup window will ask you whether you want to update the recorded contents.

8 If you want to update the recorded contents, move the cursor to the OK button and press the [ENTER] key.

If you want to discard the recorded contents, move the cursor to the CANCEL button and press the [ENTER] key.

Recording additional mix elements

Other mixing elements of the same channel can be recorded (overwritten), adding them to the previously-recorded automix. For example after you have recorded the fader operations, you can overwrite pan and EQ operations for the same channels. As an example, this section how pan operations for channel 1 can be overwritten into the automix, adding them to the previously-recorded fader operations for the monitor channels.

1 Locate the song to a location slightly earlier than the point where you want to begin overwriting.

2 Press the [AUTOMIX] key → [F1] key.

The AUTOMIX screen/Main page will appear. Make sure that the AUTOMIX button indicates "ENABLE."

3 Move the cursor to the OVERWRITE area. Turn on the PAN button, and turn off the other buttons (FADER, CH ON, EQ).

4 Move the cursor to the REC button in the display, and press the [ENTER] key.

The automix will be in record-ready mode.

5 Press the [PAN] key → [F2] key.

The PAN screen/Pan MONI page will appear, where you can make pan settings for the monitor channels.

Tip!
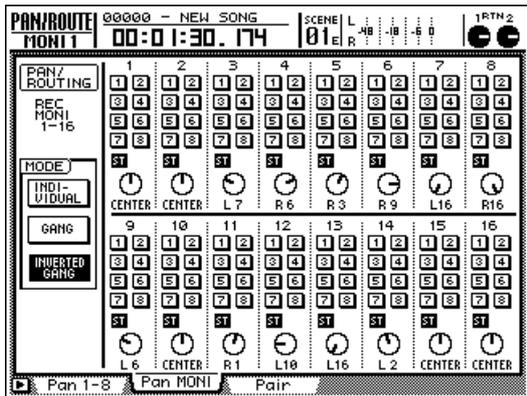
If you want to record operations other than channel fader operations or scene recall operations, access the desired screen after putting automix in record-ready mode (or while automix is actually being recorded). Switching screens will not cause record-ready mode to be cancelled.

6 Press the RECORDER [1-8] key → [SEL] key 1.

[SEL] key 1 will blink, and monitor channel 1 will be selected. In the display, the cursor will move to the PAN knob of monitor channel 1.

7 Press the top panel PLAY [▶] key to play back the song.

The song will start playback, and simultaneously, automix recording (and playback of the recorded events) will begin.

8 Use the [DATA/JOG] dial to operate the pan (PAN knob) of monitor channel 1.

Tip!

Pan operations can also be recorded by using the PAN knob displayed in the VIEW screen/CH View page.

9 When you are finished operating the pan, press the top panel STOP [■] key.

A popup window will ask you whether you want to update the recorded contents.

10 If you want to update the recorded contents, move the cursor to the OK button and press the [ENTER] key.

Re-recording only part of the automix (Punch-in/out)

If you make a mistake in your operations while recording automix, you can use the automix punch-in/out function to re-record just the incorrect part. As an example, here's how to use punch-in/out to re-record the previously-recorded pan operations for monitor channel 1.

1 Locate the song to a location slightly earlier than the point at which you want to punch-in.

2 Press the [AUTOMIX] key → [F1] key.

Make sure that the AUTOMIX button indicates "ENABLE."

3 Move the cursor to the OVERWRITE area. Turn the PAN button on, and the other buttons (FADER, CH ON, EQ) off.

4 Move the cursor to the AUTO REC button in the display, and press the [ENTER] key.

The AUTO REC button will turn on (highlighted), and automix will be in record-ready mode.

When you use the AUTO REC button instead of the REC button, record-ready mode will not be defeated even you start and then stop recording. It is convenient to use the AUTO REC button when you will be repeatedly recording and playing back, as when using punch-in/out. If you use the AUTO REC button, begin automix recording before you use the [SEL] key to select a channel. It is not necessary to press the [SEL] key before you start recording.
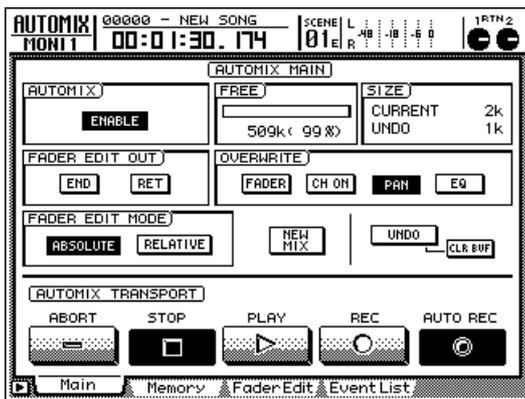
5 Press the [PAN] key → [F2] key.

The PAN screen Pan MONI page will appear.
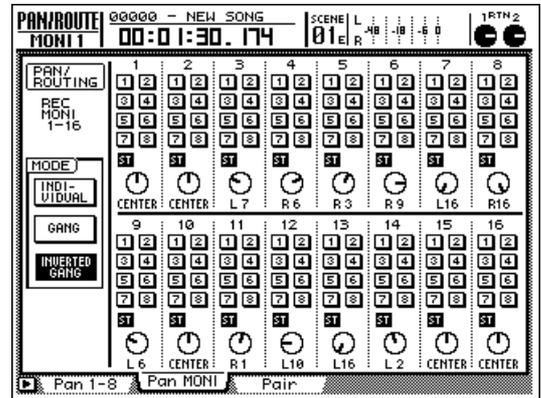
6 Press the RECORDER [1-8] key.

Monitor channels 1–8 will be selected as the mixing layer.

7 Press the top panel PLAY [▶] key to begin song playback.

The [AUTOMIX] key will light red, and automix will be in record mode. However at this point, nothing will be recorded since the recording channel has not yet been selected.

8 When the song reaches the desired punch-in location, press [SEL] key 1.

[SEL] key 1 will blink, and pan operations for monitor channel 1 will be recorded (punch-in). In the display, the cursor will move to the PAN knob of monitor channel 1.

9 Turn the [DATA/JOG] dial to change the pan (PAN knob) setting.

10 When you have finished making settings, once again press the [SEL] key that you pressed in step 8.

The [SEL] key will go dark, and recording will end (punch-out). Automix can continue to be recorded, but since a recording channel has not been selected, nothing will be actually be recorded.

Tip!

Even if you did not operate pan in step 9, the pan operation events that had been recorded between the punch-in and punch-out will be erased. This method can be used to erase undesired events from a specific section.

11 Press the top panel STOP [■] key.

A popup window will ask whether you want to update the recorded contents.

12 If you want to update the recorded contents, move the cursor to the OK button and press the [ENTER] key.

If the AUTO REC button is on, automix record-ready mode will not be defeated even after the recorded contents have been updated. (The [AUTOMIX] key will continue blinking red.) Now you can resume automix punch-in at any time by pressing the PLAY [▶] key.

If you want to defeat record-ready mode, access the AUTOMIX screen/Main page, move the cursor to the AUTO REC button, and press the [ENTER] key to turn the AUTO REC button off.

Tip!

Even when using the REC button to record automix, you can use the [SEL] key as described above to punch-in/out. However in this case, record-ready mode will be defeated when automix is stopped.

Re-recording fader operations

The AW2816's AUTOMIX screen contains a Fader Edit page in which you can watch previously-recorded fader movements while you record new fader movements. This page is convenient when you want to make detailed changes afterward to the fader movements. As an example, we will explain how previously-recorded movements of the monitor channel 1 fader can be edited in a specific section of the song.

⚠ *The Fader Edit page lets you view only the fader movements of the monitor channels, input channels, return channels, and stereo output channel. This method cannot be used to edit AUX send fader operations or REMOTE screen fader operations.*

1 Locate the song to a location slightly earlier than the point at which you want to start punch-in.

2 Press the [AUTOMIX] key →[F1] key.

Make sure that the AUTOMIX button is displayed as "ENABLE."

3 Move the cursor to the OVERWRITE area. Turn the FADER button on, and the other buttons (CH ON, PAN, EQ) off.

4 Press the [F3] key.

The Fader Edit page will appear.
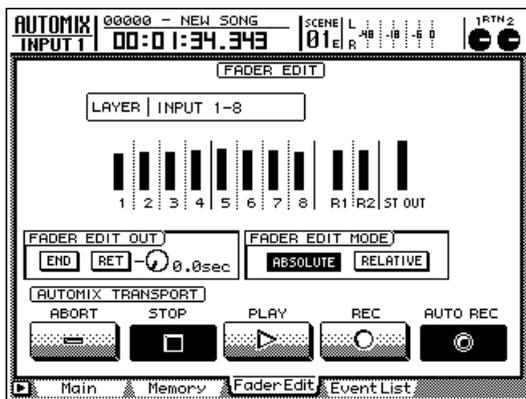
5 Press the RECORDER [1-8] key to select monitor channels 1–8 as the mixing layer.

In the center of the display, the current fader positions of monitor channels 1–8 (and the stereo output channel and return channels 1/2) will be displayed as a bar graph.
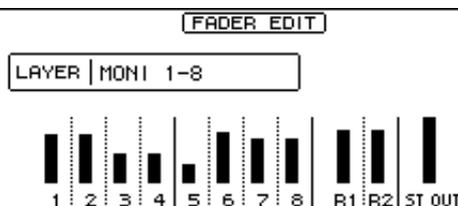
6 Make sure that the FADER EDIT MODE area ABSOLUTE button is turned on.

The two buttons in the FADER EDIT MODE area are used to select the fader editing method. If the ABSOLUTE button is on, the previously-recorded events will be erased, and the new events will be recorded.

💡 *The RELATIVE button is used when you want to apply a relative change to the previously-recorded fader events. For details refer to page 338.*

7 Move the cursor to the FADER EDIT OUT area. Turn the END button off, and the RET button on.

The END button of the FADER OUT AREA specifies whether to erase any events of the same type that were previously recorded after the point at which automix recording stopped. The RET button specifies whether faders will return (after punch-out) to the locations that were previously recorded at the punch-out point. In cases such as this example, where we want to edit the fader movement in a specific section of the song, set END=off and RET=on. If the RET button is on, the knob located at the right of the button can be used to specify the time (TIME) over which the faders will return to their previously-recorded positions.
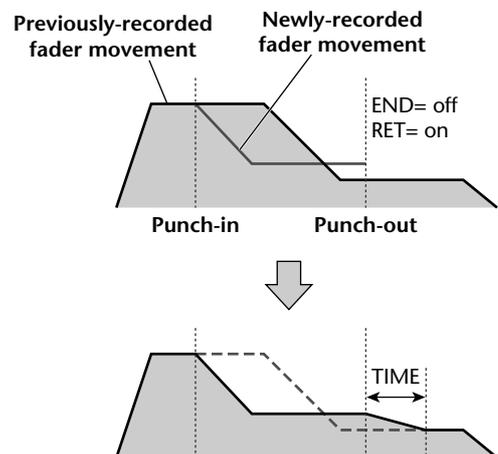
💡
- *For details on the functions of the FADER EDIT OUT area buttons END and RET, refer also to page 338.*
- *The setting of the FADER EDIT OUT area RET button has no effect on how operations other than faders are recorded.*

8 Move the cursor to the AUTO REC button in the screen, and press the [ENTER] key.

Automix will be in record-ready mode.

9 Press the top panel PLAY [▶] key to play back the song.

Automix will be in record mode. However since a recording channel has not yet been selected, recording will not actually occur.

10 Listen to the song, and at the desired punch-in location, press [SEL] key 1 (monitor channel 1), and start operating the fader.

Punch-in will begin the moment you press the [SEL] key. When you operate the fader, the previously-recorded fader position and the currently-recorded position will both be shown by the bar graph, as shown in the diagram below. The up or down arrow displayed beside the bar graph indicates the direction in which you can move the fader to return to the previously-recorded position.

If you moved below the previously-recorded position

If you moved above the previously-recorded position
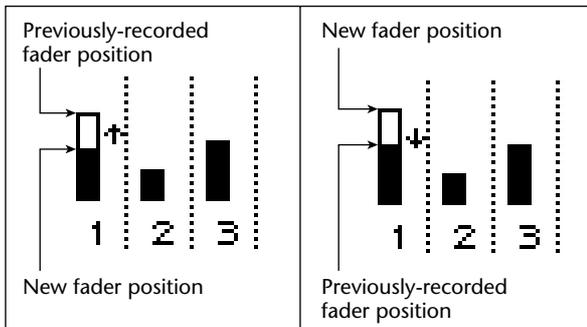
11 When you are finished operating the fader, press [SEL] key 1 once again to punch-out.

12 When you are finished punching-in/out, press the top panel STOP [■] key.

A popup window will ask you whether you want to update the recorded contents. If you want to update, move the cursor to the OK button and press the [ENTER] key.

Editing individual automix events

In the AUTOMIX screen/Event List page, individual events of previously-recorded automix data can be edited while automix is stopped. You can adjust the timing or values of individual events, or delete unwanted events. The following types of events can be edited in this way.

- Fader operations for each channel (including operations of the [RTN 1]/[RTN 2] controls)
- [ON] key operations for each channel
- Pan operations for each channel
- Scene memory and library recall operations
- Operations of faders 1–8 and [ON] keys 1–8 in the REMOTE screen

⚠️

EQ operations and AUX send operations for a channel cannot be edited or deleted as individual events. Use the punch-in/out function to overwrite or delete the appropriate area.

As an example, here's how to edit events that recall a scene or library.

✍️ **Tip!**

The timing of an event is always displayed as the absolute time of the song. For this reason, we recommend that you leave the counter set at absolute time display when you are editing automix events (→P.238).

1 Press the [AUTOMIX] key → [F4] key.

The screen will show the Event List page, which displays a list of the events recorded in automix.

Use the buttons in the screen to select the type of events that will be displayed in the list. Each button corresponds to the following events.
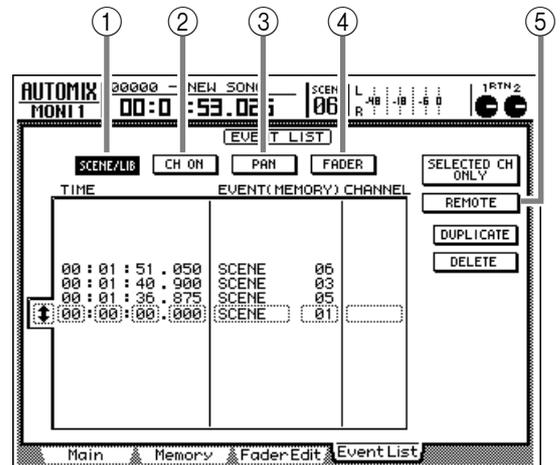
① **SCENE/LIB button**
Operations that recall scenes or libraries.

② **CH ON button**
[ON] key operations of each channel.

③ **PAN button**
Pan operations of each channel.

④ **FADER button**
Fader operations of each channel (including operations of the [RTN 1]/[RTN 2] controls).

⑤ **REMOTE button**
Fader/[ON] key operations in the REMOTE screen.

⚠️

In order to display REMOTE screen fader/[ON] key operations in the list, you must turn on both the REMOTE button and the FADER button, or both the REMOTE button and the CH ON button respectively. Turning on only the REMOTE button will not display these events.

9

Using automix

2 Move the cursor to the SCENE/LIB button, and press the [ENTER] key.

The SCENE/LIB button will turn on, and scene/library recall operations recorded in the automix will be displayed in the list. The row enclosed by a dotted line in the list is the currently selected event.

The columns of the list show the following information when the SCENE/LIB button is on.

- **TIME**
  The time at which the event is executed is displayed as "hours: minutes: seconds: milliseconds."

- **EVENT**
  This indicates the type and value of the event. The type of events that can be selected in this column will depend on which button above the list is turned on. If the SCENE/LIB button is on, the following events will be displayed.

  - **SCENE xx** ..... Recall scene memory number xx

  - **EQ.Lib xxx** .... Recall an EQ library

  - **DY.Lib xxx** .... Recall dynamics library number xxx

  - **EF.Lib xxx** ..... Recall effect library number xxx

  - **CH.Lib xxx** ... Recall channel library number xxx

- **CHANNEL**
  This indicates the channel to which the data will be recalled (input channel 1–8, monitor channel 1-16, stereo output channel, return channels 1/2). This column will be blank if a scene memory is selected in the EVENT column.

Tip!

For details on the displayed content for each event, refer to page 344.

3 Move the cursor to the 🔼 symbol at the left of the list, and turn the [DATA/JOG] dial to select the event that you want to edit.
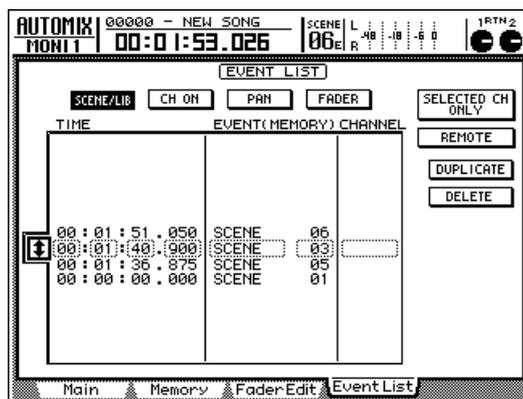
4 Use the CURSOR [◄]/[►] keys to move the cursor to the item that you want to edit, and turn the [DATA/JOG] dial to edit the value.

Tip!

- *If you edit the value in the TIME column (event timing), the cursor may jump over events in the list and move to another location. This is because events are re-ordered by time, and is not a malfunction.*
- *The timing of an event can be adjusted in fine steps of 25 ms.*

5 To add a new event, move the cursor to the DUPLICATE button in the upper right of the screen, and press the [ENTER] key.

The event currently selected for editing will be duplicated at the same timing. Edit the time, event type, and value as necessary.

6 To delete an unwanted event, move the cursor to the DELETE button in the upper right of the screen, and press the [ENTER] key.

The event currently selected for editing will be deleted.

7 If you want to view only the events of a specific channel, move the cursor to the SELECTED CH ONLY button and press the [ENTER] key. Then use the [SEL] keys to select the channel whose events you want to view.

⚠

If the REMOTE button is on, the SELECTED CH ONLY button and the SCENE/LIB and PAN buttons will have no effect. Also, if the SELECTED CH ONLY button is on, the REMOTE button will have no effect.

Storing an automix

You can assign a name to the current automix, and store it in internal automix memory. Data for up to sixteen automixes can be stored in memory.

> **Tip!**
>
> *The automix data you store is saved on the hard disk as part of the current song. In other words, you can create up to sixteen automixes for a single song, and compare these automixes at any time.*

1 Press the [AUTOMIX] key → [F2] key.

The AUTOMIX screen/Memory page will appear. This page is used mainly to manage the internal automix memory.
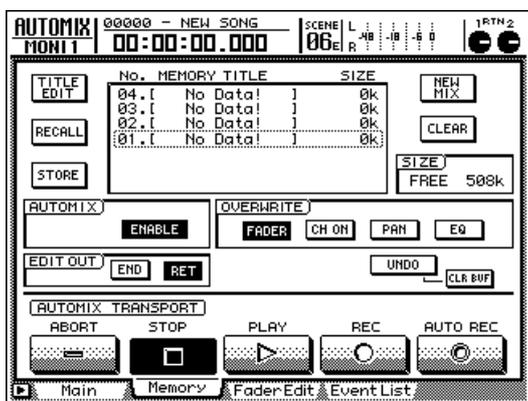
2 Turn the [DATA/JOG] dial to select the store destination automix number.

You can select a store destination automix number in the range of 01–16. Vacant automix numbers will appear in the list as "[No Data!].

> **Tip!**
>
> *When this page is displayed, you can use the [DATA/ JOG] dial to select an automix number in the list regardless of where the cursor is located.*

3 Move the cursor to the STORE button at the left of the list, and press the [ENTER] key.

A popup window will appear, allowing you to input the name. Assign a name of up to sixteen characters. (For details on inputting characters, refer to page 37.)

4 After inputting the name, move the cursor to the OK button and press the [ENTER] key.

The current automix data will be stored in the selected automix number.

> **Tip!**
>
> • *If STORE CONFIRMATION is turned "OFF" in the UTILITY screen/Prefer.1 page, you can save to the specified automix number without having to input a name. This method is convenient when you are repeatedly overwriting an automix to store it in the same automix number.*
> • *The contents of the automixes stored in internal memory and the current automix can be saved on a MIDI sequencer or other external MIDI device by using the MIDI Bulk Dump function. For details on using Bulk Dump, refer to page 212.*

> ⚠️
>
> *The automix memory is used in common by the current automix and the stored (maximum of) sixteen automixes. This means that if the current automix uses a large amount of memory, it may not be possible to store it even though vacant automix numbers are shown in the list. In this case, use the Memory page CLEAR button to delete an unneeded automix, and then execute the Store operation.*

Recalling an automix

Here's how to recall an automix that was stored in internal memory.

1 Press the [AUTOMIX] key → [F2] key.
The AUTOMIX screen/Memory page will appear.
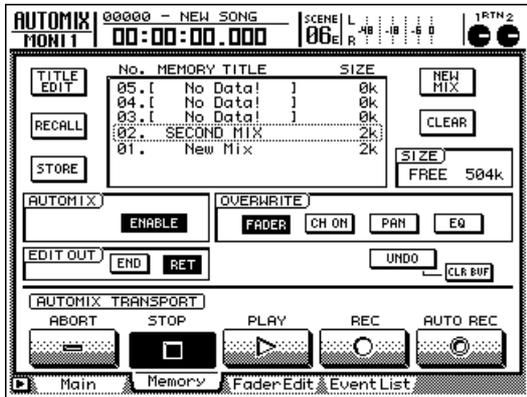
2 Turn the [DATA/JOG] dial to select the automix number that you want to recall.

3 Move the cursor to the RECALL button located at the left of the list, and press the [ENTER] key.
A popup window will ask you to confirm the automix recall operation.

4 Move the cursor to the OK button and press the [ENTER] key.
The selected automix will be recalled, and the current automix will be replaced by the recalled automix data.

Tip!

In the UTILITY screen/Prefer.1 page, you can turn the RECALL CONFIRMATION setting "OFF" so that the popup window of step 3 will not appear, and the specified automix number will be recalled directly.

10 Managing songs

This chapter explains song management operations such as saving, loading, deleting, or copying songs.

About songs

What is a song?

On the AW2816, musical productions you create are saved on the internal hard disk in units called "songs." A song that you saved can be loaded into internal memory at any time to reproduce the state that was saved.

A maximum of 30,000 songs can be saved on the internal hard disk, if capacity allows. However, only the song that is currently loaded (the "current song") can be operated on the AW2816 at any one time.

Tip!

When the AW2816 is powered-on, the most recently operated song will automatically be loaded as the current song.

⚠️

Songs can be saved only on the current drive. An external drive can be used to back up song data, but cannot be used to save/load the current song or record/playback audio data in the same way as the internal hard disk.

Song structure

The AW2816 can use a hard disk of up to 64 GB capacity. However, the capacity that can be used by an individual song is limited to 6.4 GB. Of this 6.4 GB, approximately 2 MB is reserved as the system area for storing various non-audio data, and the audio data is recorded in the remaining area (the data area). The diagram below shows the song structure on the hard disk, and the data that is recorded in each area.

Song recording time

The time that can be recorded in one song (data area of approximately 6.4 GB) will differ depending on the quantization (number of bits) and sampling frequency of the song. The following table shows the recordable time for each track when a 16-track recording is made using the default song settings.

Song	Maximum recording time for one track
16 bit/44.1 kHz	approximately 1 hour 20 minutes
16 bit/48 kHz	approximately 1 hour 13 minutes
24 bit/44.1 kHz	approximately 53 minutes
24 bit/48 kHz	approximately 49 minutes

Please be aware that the data area of a song also contains audio data (i.e., for Undo) that is not actually used in an audio track. For example even when you erase all the audio data after once recording a track, the erased audio data will remain in the song so that Undo can be performed if needed, and this will shorten the available recording time. As necessary, you can execute the Optimize function (→P.154) which deletes only the Undo data from the song.

⚠️

The table shown above does not include the recording time of the stereo track.

• **Song**
(maximum
6.4 GB per song)

**Internal hard disk
(maximum 64 GB/30,000 songs)**

• **System area (fixed at approximately 2 MB)**
- Settings for each of the TRACK screen pages
- Tempo map settings
- Scene memories including the current scene
- Automix memory including the current automix
- Patch libraries
- EQ libraries
- Dynamics libraries
- Channel libraries
- Effect libraries
- SONG screen/Settings page settings
- Settings for each of the REMOTE screen pages

• **Data area**
- Audio data for 16 x 8 virtual tracks
- Audio data of the stereo track
- Audio data for undo/redo

10

Managing songs

Saving the current song

Here's how to save the current song (the song that you are currently operating) on the internal hard disk. Be aware that if you turn off the power of the AW2816 without saving the current song, any changes in the data of the current song will be lost.

Tip!

When turning off the power of the AW2816, you must perform the shut-down operation (→P.12). When you execute shut-down, the current song will be saved automatically.

1 Press the [SONG] key → [F1] key.

The Song List page will appear, in which you can save or load songs. The list in the center of the display shows the songs that are currently saved on the internal hard disk.
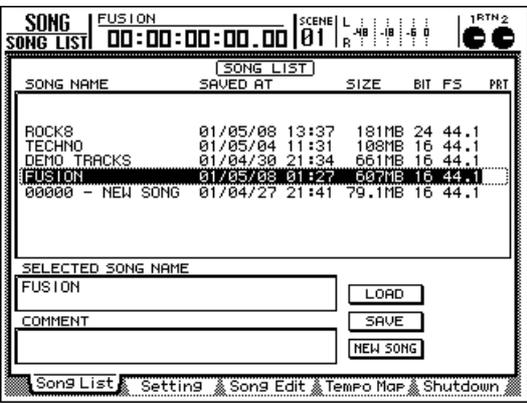
The song that is highlighted in the list indicates the current song. The following information is shown in the columns of the list.

- **SONG NAME** .... The first sixteen characters of the song name
- **SAVED AT**.......... The date and time at which the song was last saved
- **SIZE**.................. The size of the song
- **BIT/FS** .... The number of bits and sampling frequency of the song
- **PRT** .... Protect status

Tip!

- *The SONG NAME column displays the name that was assigned when the new song was created. You can edit this song name as necessary (→P.150).*
- *The size of the song displayed in the SIZE column indicates the size of the audio data stored in the data area of the song (→P.147). (This does not include the size of the system area.)*

2 To save the current song, move the cursor to the SAVE button and press the [ENTER] key.

A popup window will ask you to confirm that you want to save the current song.
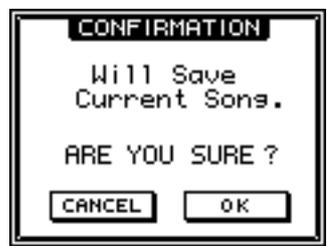
3 To save the song, move the cursor to the OK button and press the [ENTER] key.

To cancel without saving, move the cursor to the CANCEL button and press the [ENTER] key.

Tip!

If instead of pressing the [SONG] key in step 1, you hold down the [SHIFT] key and press the [SONG] key, the Song List page will appear, and the cursor will automatically move to the SAVE button. This method can be used as a shortcut when saving the current song.

⚠

When you save the current song, it will always be overwritten onto the previously-saved song. If you want to keep the previously-saved song, create a duplicate of the current song (→P.152).

Loading a song

Here's how a song saved in the internal hard disk can be loaded as the current song.

1 Press the [SONG] key → [F1] key.

The SONG screen/Song List page will appear.

2 Use the [DATA/JOG] dial to select the song that you want to load.

In the list, the row enclosed by the dotted frame indicates the song that is selected for loading.

```
SONG   | FUSION                    |SCENE|L : : : : : :    1 RTN 2
SONG LIST| 00:00:00:00.00 |01 |R  -40 -18 -6 0

                        [SONG LIST]
        SONG NAME       SAVED AT        SIZE   BIT FS   PRT



        ROCK8           01/05/08 13:37  181MB  24 44.1
        TECHNO          01/05/04 11:31  108MB  16 44.1
        DEMO TRACKS     01/04/30 21:34  661MB  16 44.1
        FUSION          01/05/08 01:27  607MB  16 44.1
        00000 - NEW SONG 01/04/27 21:41 79.1MB 16 44.1

        SELECTED SONG NAME
        TECHNO                          [ LOAD ]

        COMMENT                         [ SAVE ]
        *** Other Song Comment ***      [NEW SONG]

        Song List  Setting  Song Edit  Tempo Map  Shutdown
```

Tip!

In the Song List page, you can turn the [DATA/JOG] dial to select the song for loading regardless of the location of the cursor.

3 Move the cursor to the LOAD button and press the [ENTER] key.

A popup window will ask you whether you want to save the current song.

4 If you want to save the current song before loading the newly selected song, move the cursor to the YES button. If you want to load the newly selected song without saving the current song, move the cursor to the NO button. Then press the [ENTER] key.

The selected song will be loaded.

Editing the song name/comment

Here's how to edit the name (song name) or comment of the current song.

1 Press the [SONG] key → [F2] key.

The SONG screen/Setting page will appear. The SONG NAME area at the top of the screen indicates the song name, and the COMMENT area displays the comment.

Tip!
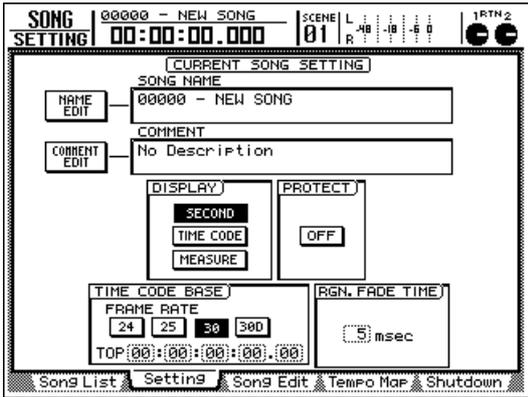
Unless you specify otherwise when newly creating a song, a default song name of "xxxxx - NEW SONG" (xxxxx will be a serial number) and default comment of "No Description" will be assigned.

2 To edit the song name, move the cursor to the NAME EDIT button in the upper left of the screen, and press the [ENTER] key.

The NAME EDIT popup window will appear, allowing you to edit the song name.

⚠️

If the current song is protected, it is not possible to edit the song name or comment. For details on protect, refer to page 151.

The Song List page will display only the first sixteen characters of the song name.

3 Use the character palette to edit the song name. Then move the cursor to the OK button and press the [ENTER] key.

For details on inputting characters, refer to page 37.

You can input a song name up to sixty-four characters long. When you move the cursor to the OK button and press the [ENTER] key, you will return to the SONG screen/Setting page.

4 To edit the comment, move the cursor to the COMMENT EDIT button in the upper left of the screen, and press the [ENTER] key.

The COMMENT EDIT popup window will appear, allowing you to edit the comment.

5 Use the character palette to edit the comment. Then move the cursor to the OK button and press the [ENTER] key.

For details on inputting characters, refer to page 37.

You can input a comment up to sixty-four characters long. When you move the cursor to the OK button and press the [ENTER] key, you will return to the SONG screen/Setting page.

6 To finalize the edited song name and comment, save the current song.

For details on how to save the current song, refer to page 148.

Protecting a song

A song can be protected to preserve its contents. If a song is protected, you will not be able to edit or record tracks, set locate points, or delete the song, etc. We recommend that when you complete a song, you protect it so that it will not be accidentally modified or erased.

1 Load the song that you want to protect as the current song.

2 Press the [SONG] key → [F2] key.

The SONG screen/Setting page will appear.
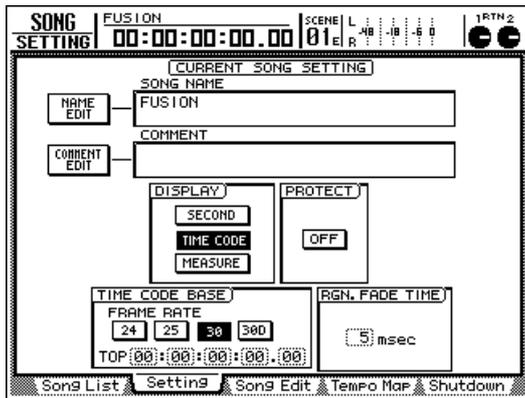
3 Move the cursor to the PROTECT area, and press the [ENTER] key.

The button will change to ON, and the current song will be protected.

⚠️

The current song is now protected. However if you turn off the power or load another song without saving the current song, its protect setting will be defeated. In order to finalize the protect setting for the current song, you must save it.

4 Save the current song.

The protect setting will be finalized for the current song, and the following operations will be prohibited.

- Deleting or optimizing the song
- Editing the song name or comment
- Setting or editing the locate points
- Deleting the stereo track
- Changing the virtual tracks
- Pairing tracks
- Recording or editing tracks

✎ **Tip!**

If you want to defeat the protect setting of a song, turn the PROTECT button OFF in step 3, and save the current song.

Duplicating a song

Here's how to copy (duplicate) a song that is saved on the internal hard disk. This is convenient when you want to keep a duplicate of the original state of a song before performing various edits on the audio tracks.

⚠️ *When you execute the Song Copy operation, the current song will be saved automatically.*

1 Press the [SONG] key → [F3] key.

The SONG screen/Song Edit page will appear, in which you can perform operations on entire songs, such as copying or deleting a song.
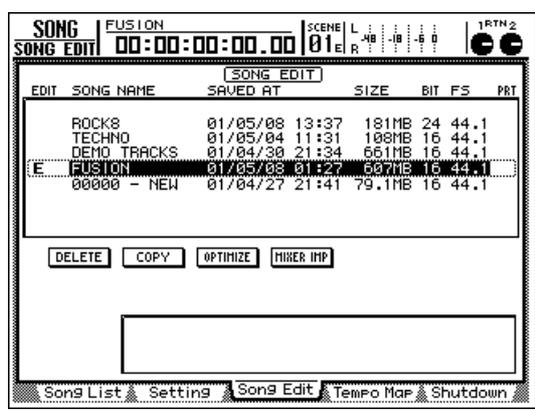
The upper part of the display shows a list of the songs currently saved on the internal hard disk. The highlighted row in the list indicates the current song. An "E" symbol will be displayed in the EDIT column for the song that is currently selected for operations. The other columns of the list display the following information.

- **SONG NAME** .... Song name (the first twelve characters)
- **SAVED AT** .... The date and time at which the song was last saved
- **SIZE** .... The size of the song
- **BIT/FS** .... The number of bits and sampling frequency of the song
- **PRT** .... Protect on/off status

2 Move the cursor to the list in the upper part of the display.

3 Use the [DATA/JOG] dial to select the song that you want to copy, and press the [ENTER] key to assign an "E" symbol at the left side of the list.

Each time you press the [ENTER] key, the "E" symbol will appear or disappear.

✏️ **Tip!**
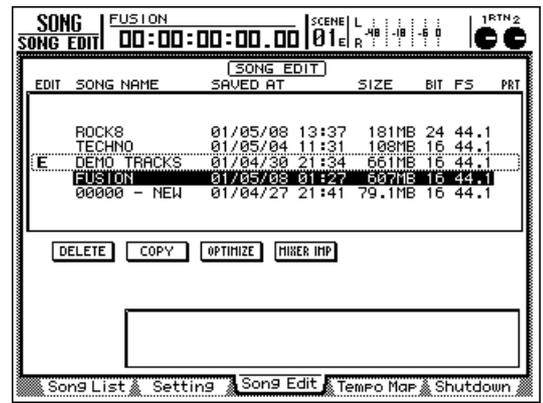
Multiple songs including the current song can be selected for copying.

4 Move the cursor to the COPY button and press the [ENTER] key.

A popup window will ask you to confirm the copy operation.

5 To execute the copy, move the cursor to the OK button and press the [ENTER] key.

The current song will automatically be saved, and then the copy operation will be executed. To cancel the copy, move the cursor to the CANCEL button and press the [ENTER] key.

⚠️ *When the current song is copied, two songs with identical song name, date, and size will exist. So that you do not confuse the original with the copy, we recommend that you edit the song name or comment. (For details on editing the song name, refer to page 150.)*

Deleting an unwanted song

Here's how an unwanted song (except for the current song) can be deleted from the internal hard disk.

⚠️

- *A deleted song will be lost forever. Use great care when executing this operation.*
- *When you delete a song, the current song will be saved automatically.*

1 Press the [SONG] key → [F3] key.

The SONG screen/Song Edit page will appear. The upper part of the display will show a list of the songs currently saved in the internal hard disk.
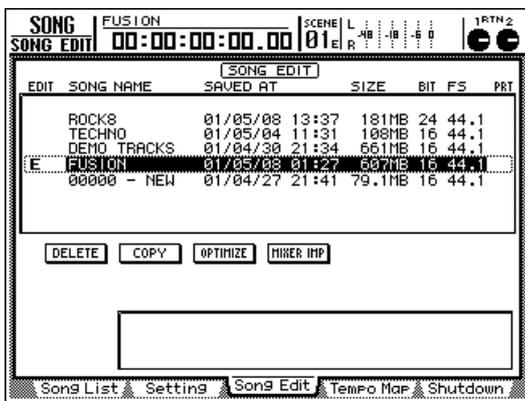
2 Move the cursor to the list in the upper part of the display.

3 Use the [DATA/JOG] dial to select the song that you want to delete, and press the [ENTER] key to assign an "E" symbol at the left side of the list.

Each time you press the [ENTER] key, the "E" symbol will appear or disappear.
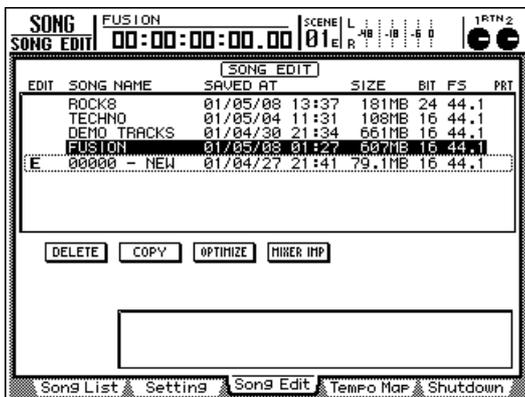
✎ *Tip!*

It is not possible to delete a protected song (a song for which a 🔒 symbol is displayed in the PRT column of the list) or the current song (the song highlighted in the list). If you attempt to execute the Delete operation with an "E" symbol assigned to these songs, an error message will appear.

4 Move the cursor to the DELETE button and press the [ENTER] key.

A popup window will ask you to confirm the Delete operation.

5 If you want to delete the song, move the cursor to the OK button and press the [ENTER] key.

The current song will be saved automatically, and then the specified song will be deleted. To cancel without deleting, move the cursor to the CANCEL button and press the [ENTER] key.

10

Managing songs

Deleting unused audio data from a song (Optimize)

The AW2816 allows you to cancel the results of as many fifteen most recently performed recording or editing operations (Undo), and then to re-execute the cancelled operations (Redo). This is possible because audio data for the Undo function is preserved in the data area even after recording or editing operations are executed.

However, the audio data preserved for Undo can be deleted if you wish. (This action is called "Optimize.") For example if you are finished recording and editing, and will no longer need to use Undo/Redo, you can execute the Optimize operation for that song to increase the available space on the hard disk.

⚠

- *The Undo data that is deleted will be permanently lost. Use great care when executing this operation.*
- *When you execute the Song Optimize operation, the current song will be saved automatically.*

1 Press the [SONG] key → [F3] key.

The SONG screen/Song Edit page will appear. The upper part of the display will list the songs that are saved on the internal hard disk. The song for which an "E" symbol is displayed in the left of the list is selected for the Optimize operation.
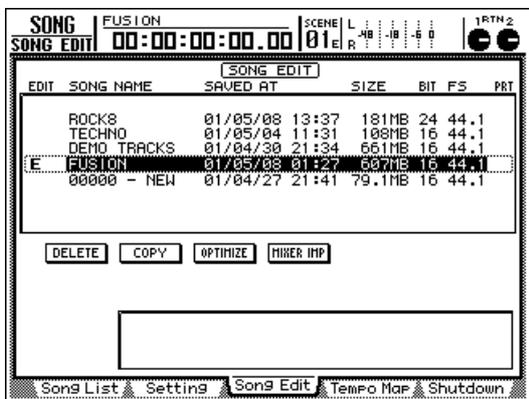
```
SONG      FUSION           SCENE  L
SONG EDIT 00:00:00:00.00   01  R          1 RTN 2

           ┌─SONG EDIT─┐
EDIT  SONG NAME    SAVED AT        SIZE   BIT FS   PRT

      ROCK8        01/05/08 13:37  181MB  24 44.1
      TECHNO       01/05/04 11:31  108MB  16 44.1
      DEMO TRACKS  01/04/30 21:34  661MB  16 44.1
 E    FUSION       01/05/08 01:27  607MB  16 44.1
      00000 - NEW  01/04/27 21:41  79.1MB 16 44.1


   [DELETE]  [COPY]  [OPTIMIZE]  [MIXER IMP]



  Song List  Setting  Song Edit  Tempo Map  Shutdown
```

2 Move the cursor to the list in the upper part of the display.

3 Use the [DATA/JOG] dial to select the song for which you want to execute the Optimize operation, and press the [ENTER] key to assign an "E" symbol in the left side of the list.

Each time you press the [ENTER] key, the "E" symbol will appear or disappear.

```
           ┌─SONG EDIT─┐
EDIT  SONG NAME    SAVED AT        SIZE   BIT FS   PRT

      ROCK8        01/05/08 13:37  181MB  24 44.1
      TECHNO       01/05/04 11:31  108MB  16 44.1
 E    DEMO TRACKS  01/04/30 21:34  661MB  16 44.1
      FUSION       01/05/08 01:27  607MB  16 44.1
      00000 - NEW  01/04/27 21:41  79.1MB 16 44.1


  [DELETE]  [COPY]  [OPTIMIZE]  [MIXER IMP]
```

⚠
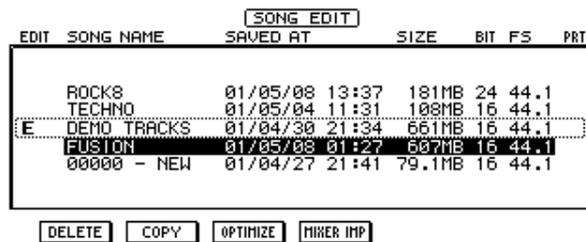
The Optimize operation can be executed on any song except for protect songs. However, only one song can be optimized at a time. If you attempt to execute Optimize when more than one song is marked by the "E" symbol, an error message will be displayed.

4 Move the cursor to the OPTIMIZE button and press the [ENTER] key.

A popup window will ask you to confirm the Optimize operation.

```
┌──CONFIRMATION──┐
│                │
│  Will Optimize │
│  Selected Songs.│
│                │
│  ARE YOU SURE ?│
│                │
│ [CANCEL]  [OK] │
└────────────────┘
```
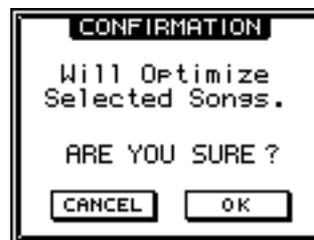
5 To execute the Optimize operation, move the cursor to the OK button and press the [ENTER] key.

The current song will be saved automatically, and then Optimize will be executed. To cancel without executing, move the cursor to the CANCEL button and press the [ENTER] key.

⚠

Executing Optimize will simply delete the unneeded audio data; it has no effect on hard disk fragmentation. (Fragmentation refers to a state in which continuous audio data becomes distributed across separated locations on the hard disk.) To clean up fragmentation, execute the Defrag operation (→P.166).

Importing mixer data from an existing song

On the AW2816, settings such as the scene or library data (referred to as "mixer data") of an existing song can be imported (loaded) into the current song. For example this is convenient when an existing song contains an original effect library that you want to reuse in the current song.

⚠

- *Be aware that when you execute the Mixer Data Import operation, the corresponding mixer data in the import destination song (current song) will be erased, and replaced by the contents of the import source.*
- *Mixer data for libraries includes all channel, EQ, dynamics, and effect libraries.*

1 Load the import destination song as the current song.

2 Press the [SONG] key/[F3] key.

The SONG screen/Song Edit page will appear. The upper part of the screen will list the songs currently saved in the internal hard disk. The current song is highlighted in the list.

```
SONG   | ROCK8                    |SCENE L          |1RTN2
SONG EDIT| 00:00:00.000           |00 E R  -48 -18 -6 0

                    [SONG EDIT]
EDIT  SONG NAME      SAVED AT         SIZE   BIT FS   PRT

  E  ROCK8          01/05/08 13:37  181MB 24 44.1
     TECHNO         01/05/04 11:31  108MB 16 44.1
     DEMO TRACKS    01/04/30 21:34  661MB 16 44.1
     FUSION         01/05/08 01:27  607MB 16 44.1
     00000 - NEW    01/04/27 21:41  79.1MB 16 44.1
  [DELETE] [COPY] [OPTIMIZE] [MIXER IMP]




  Song List  Setting  Song Edit  Tempo Map  Shutdown
```
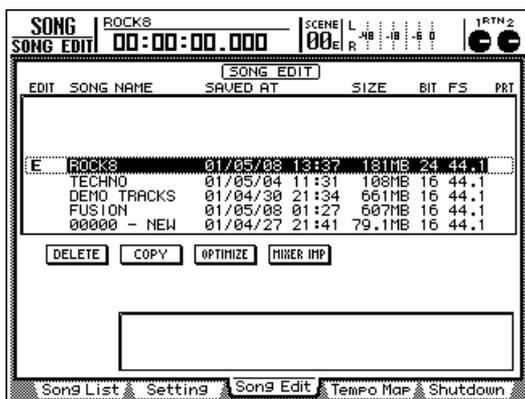
3 Move the cursor to the list in the upper part of the display.

4 Use the [DATA/JOG] dial to select the import source song, and press the [ENTER] key to assign an "E" symbol in the left side of the list.

Each time you press the [ENTER] key, the "E" symbol will appear or disappear.

```
                    [SONG EDIT]
EDIT  SONG NAME      SAVED AT         SIZE   BIT FS   PRT


     ROCK8          01/05/08 13:37  181MB 24 44.1
     TECHNO         01/05/04 11:31  108MB 16 44.1
  E  DEMO TRACKS    01/04/30 21:34  661MB 16 44.1
     FUSION         01/05/08 01:27  607MB 16 44.1
     00000 - NEW    01/04/27 21:41  79.1MB 16 44.1


  [DELETE] [COPY] [OPTIMIZE] [MIXER IMP]
```

⚠
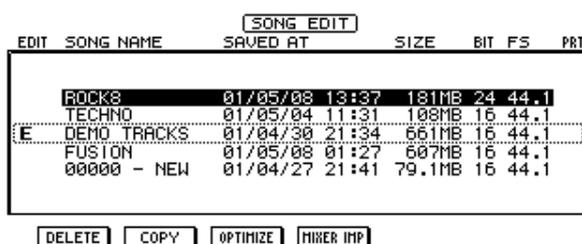
It is not possible to select the current song or multiple songs as the import source. If you attempt to execute Import in such a state, an error message will appear.

5 Move the cursor to the MIXER IMP button and press the [ENTER] key.

The following MIXER DATA IMPORT popup window will appear.

```
        MIXER DATA IMPORT
   Select items of
   MIXER data to import.
  [SCENE MEM.]  [AUTOMIX]   [MIDI REMOTE]

  [TEMPO MAP]   [LIBRARY]

       [CANCEL]      [OK]
```

6 Turn on the button(s) for the mixer data that you want to import. (Multiple buttons may be selected.)

Each button corresponds to the following data.

- **SCENE MEM. button** .... Scene memory data
- **AUTOMIX button** .... Automix memory data
- **TEMPO MAP button** .... Tempo map settings
- **LIBRARY button** .... Library data (channel, EQ, dynamics, effect)
- **MIDI REMOTE button** .. Settings of the REMOTE screen

7 To execute the Import operation, move the cursor to the OK button and press the [ENTER] key.

To cancel the Import operation, move the cursor to the CANCEL button and press the [ENTER] key.

Importing tracks from an existing song

Desired tracks of audio data can be imported (loaded) from an existing song into the current song. This is convenient when you want audio materials recorded in another song to be reused in the current song.

1 Load the import destination song as the current song.

2 Press the [EDIT] key → [F5] key.

The TR Import page will appear, in which you can import tracks from an existing song.
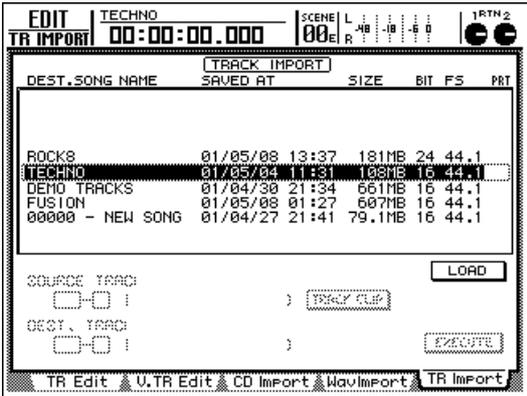
The upper part of the display will list the songs that are currently saved on the internal hard disk. The row that is highlighted in the list is the current song, and the row enclosed in a dotted frame is currently selected as the import source. Each column of the list displays the following information.

- **DEST.SONG NAME** ...... Song name (the first sixteen characters)
- **SAVED AT** .... The date and time at which the song was last saved
- **SIZE** .... The size of the song
- **BIT/FS** .... The number of bits and sampling frequency of the song
- **PRT** .... Protect on/off status

3 Move the cursor to the list, and turn the [DATA/JOG] dial to select the import source song.

4 Move the cursor to the LOAD button and press the [ENTER] key.

A popup window will ask you for confirmation.
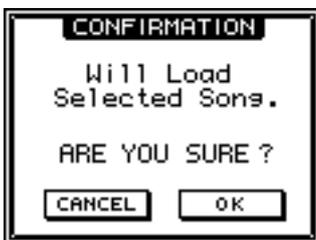
5 Move the cursor to the OK button and press the [ENTER] key.

Track information of the selected song will be loaded, and the SOURCE TRACK area like the following will appear.
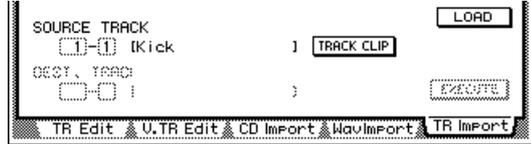
6 Move the cursor to the SOURCE TRACK area, and specify the track number (1–16) and virtual track number (1–8) of the track that you want to import.

7 Move the cursor to the TRACK CLIP button and press the [ENTER] key.

A popup window will ask you for confirmation.

8 Move the cursor to the OK button and press the [ENTER] key.

The track specified in the SOURCE TRACK area will be finalized as the import source, and a display like the following will appear.

⚠️

Once the import source track has been finalized, it will not be possible to change the track in the SOURCE TRACK area. If you want to change the import source track, move the cursor to the song list and turn the [DATA/JOG] dial. Select the OK button in the popup window that asks for confirmation, and you will return to step 2.

9 Move the cursor to the DEST. TRACK area, and specify the track number (1–16) and virtual track number (1–8) of the import destination track.

10 Move the cursor to the EXECUTE button and press the [ENTER] key.

A popup window will ask you for confirmation.

11 To execute the Import operation, move the cursor to the OK button and press the [ENTER] key.

To cancel without importing, move the cursor to the CANCEL button and press the [ENTER] key.

Tip!

When you execute the Import operation, the import destination track will be erased, and replaced by the contents of the import source track. (The import destination name will not be replaced.) However, you can return to the previous state if you press the [UNDO] key immediately after executing Import.

10

Managing songs

Using the internal hard disk/ external storage devices

This chapter explains operations on the AW2816's internal hard disk and on external storage devices (CD-RW drive, MO drive, external hard disk, etc.).

Formatting the internal hard disk

Here's how to format the internal hard disk, returning it to the default condition. If frequent skips occur in the sound during playback, or if errors occur in the file system, try formatting the internal hard disk.

⚠️

When you execute the Format operation, all song saved on the disk will be lost forever. Use extreme caution when executing this operation. If the disk contains any songs you want to keep, you must back them up before executing the Format operation (→P.162).

1 Press the [FILE] key → [F3] key.

The FILE screen/Disk Util. page will appear, in which you can format an internal or external drive, or erase CD-RW media.
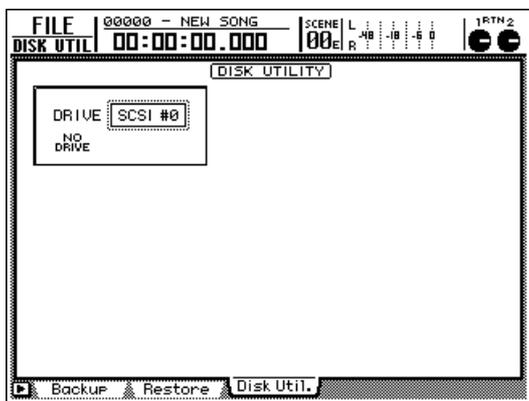
2 Turn the [DATA/JOG] dial to display "INT.IDE" in the DRIVE area, and press the [ENTER] key.

In the DRIVE area of the Disk Util. page you can select the drive that will be the object of the operation. When you select "INT.IDE" (internal hard disk), the display will change as follows.
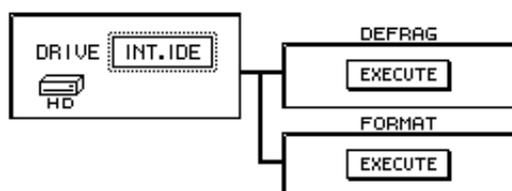
3 Move the cursor to the EXECUTE button in the FORMAT area, and press the [ENTER] key.

A popup window will ask you to confirm execution of the Format operation.

4 Move the cursor to the OK button and press the [ENTER] key.

Once again, a popup window will ask you to confirm the operation.

5 To execute the Format operation, move the cursor to the OK button once again and press the [ENTER] key. To cancel without formatting, move the cursor to the CANCEL button and press the [ENTER] key.

When you move the cursor to the OK button and press the [ENTER] key, formatting will begin. When formatting is completed, an empty song will be created automatically, and selected as the current song.

⚠️

It is not possible to halt the process while formatting is taking place.

Formatting an external drive

Here's how an external drive (external hard disk or MO drive) connected to the SCSI connector can be formatted. Use the following procedure to format an external drive if you want to import/export WAV files via an external drive, or to use an external drive to back up AW2816 song data.

1 Press the [FILE] key → [F3] key.

The FILE screen/Disk Util. page will appear.
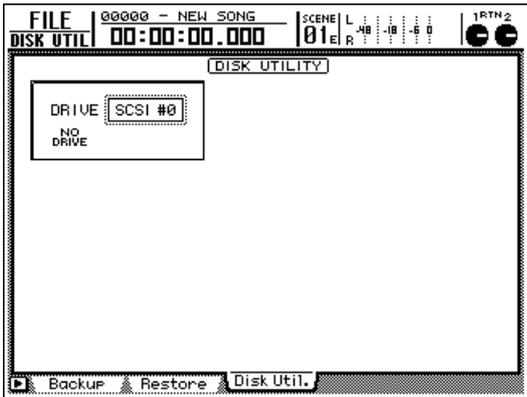
2 Turn the [DATA/JOG] dial to select the SCSI ID of the drive that you want to format, and press the [ENTER] key.

The display will change as follows.
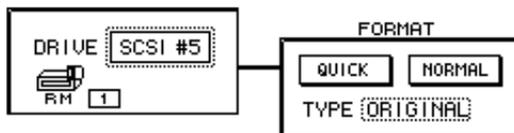
3 Move the cursor to the TYPE area, and use the [DATA/JOG] dial to select one of the following two file systems for which the disk will be formatted.

- **ORIGINAL**
  This is the AW2816's native file system. Select this if you want to use this drive or media for song backup.

- **FAT16**
  This is a file system used by PC operating systems (MS-DOS, Windows 95, 98, Me, etc.). Select this if you want to use this drive or media to exchange files with your computer.

⚠ *The AW2816 does not support the "FAT32" file system used by Windows 95 OSR2 and later.*

✎ Tip! *For details on exchanging files with your computer, refer to page 167.*

4 Move the cursor to either the QUICK or the NORMAL button, and press the [ENTER] key to select the formatting method.

The formatting method will depend on the button you select.

- **QUICK**
  A logical format will be performed on the drive or media. (This is a procedure that writes the directory structure and other information onto the disk. Also called "initializing.") This method can also be used to quickly erase data from a drive or media that has already been physically formatted.

- **NORMAL**
  A physical format will be performed on the drive or media. (This procedure physically prepares the drive or media to accept data.) Depending on the size of the drive or media, this can require a length of time ranging from several minutes to an hour or more. Use this method before using a newly-purchased drive or media.

Regardless of the button you select, pressing the [ENTER] key will display a popup window that asks you to confirm the formatting operation.

5 To execute the format, move the cursor to the OK button and press the [ENTER] key. To cancel without formatting, move the cursor to the CANCEL button and press the [ENTER] key.

When you move the cursor to the OK button and press the [ENTER] key, formatting will begin.

⚠ *It is not possible to halt the process while formatting is taking place.*

Erasing CD-RW media

Here's how to erase CD-RW media inserted into an internal or external CD-RW drive. If CD-RW media has been used for another purpose, we recommend that you use this procedure to completely erase the contents of the CD-RW media before using it on the AW2816.

Tip!

When AW2816 songs are backed up on CD-RW media, or when audio data is written to CD-RW media, the media is erased automatically as necessary. It is not necessary for you to perform the following procedure each time.

1 Press the [FILE] key → [F3] key.
The FILE screen/Disk Util. page will appear.

2 Use the [DATA/JOG] dial to select the desired CD-RW drive, and press the [ENTER] key.
Choose "ATAPI" to select the internal CD-RW drive, or the SCSI ID of an external drive to select an external CD-RW drive. Press the [ENTER] key, and the display will change as follows.
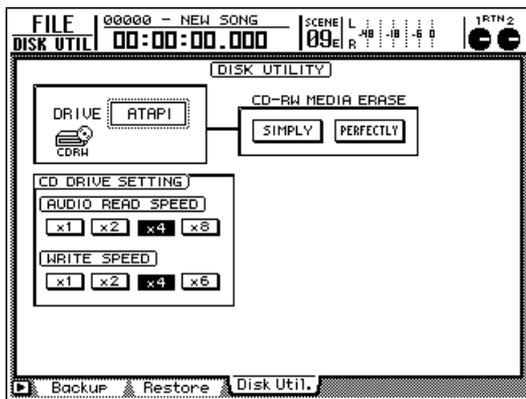
3 Move the cursor to either the PERFECTLY or SIMPLY button in the CD-RW MEDIA ERASE area, and press the [ENTER] key.
Depending on the button you selected, the erasure method will differ as follows.

- **PERFECTLY**
All data written on the CD-RW media will be erased. This will take more time than SIMPLY. It is best to use this method when you first use CD-RW media that was previously used for a different purpose.

- **SIMPLY**
Only the table of contents (TOC) for the data written on the CD-RW media will be erased. This takes less time for the operation to be completed.

Regardless of the button you selected, pressing the [ENTER] key will display a popup window that asks you to confirm the operation.

4 To execute the Erase operation, move the cursor to the OK button and press the [ENTER] key. To cancel without erasing, move the cursor to the CANCEL button and press the [ENTER] key.
When you move the cursor to the OK button and press the [ENTER] key, erasure of the media will begin.

⚠

It is not possible to halt the process while erasure is taking place.

Backing up songs

Song data saved on the internal hard disk can be backed up to a storage device such as an MO drive or CD-RW drive. As a safeguard against accidental damage to the internal hard disk, you should always back up your important song data.

Selecting the backup format for a removable drive

If you use a removable drive such as MO as the song backup destination, you must first specify the backup format.

1 Press the [UTILITY] key → [F4] key.

The UTILITY screen/Prefer.3 page will appear.
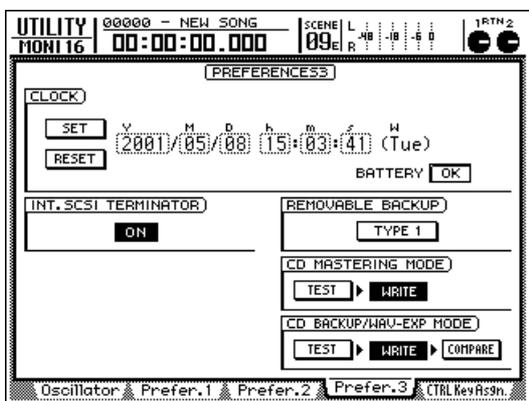
2 Move the cursor to the button in the REMOVABLE BACKUP area, and press the [ENTER] key to select one of the two backup formats (TYPE1/TYPE2).

Each time you press the [ENTER] key, the button will change between "TYPE1" and "TYPE2." Each format has the following features.

• **TYPE1 (default)**
This format uses the full capacity of the removable media to backup some or all of the songs. The advantage of this format is that even if the backup source songs do not all fit on one volume of media, the backup can extend across multiple volumes of media.

If you select this type, the media will automatically be formatted before the backup occurs.

• **TYPE2**
This format stores some or all of the songs as individual files on the removable media. The advantage of this format is that additional song files can be added later to the free area of the media on which other songs have already been backed up in the same format. However, the backup data cannot extend across multiple volumes of media, as for TYPE1.

Before you can use this format to back up on previously-unused media, you must format that media manually.

Tip!

• *The selection of backup format is meaningful only when using a removable drive.*
• *TYPE1 backup format will automatically be selected if the backup destination is a CD-RW drive, and TYPE2 will automatically be selected if the backup destination is an external hard disk.*

Executing the backup

Here's how to back up song data to a CD-RW drive, MO drive, external hard disk, or other storage device.

⚠

Before backing up on an external hard disk, or before using TYPE2 backup format to back up on removable media, you must format the backup destination drive or media (→P.160). At this time, you must select "ORIGINAL" as the type of file system. (It is not possible to back up on a drive or media that is formatted as FAT16.)

1 Press the [FILE] key → [F1] key.

The FILE screen/Backup page will appear, where you can perform song backup operations. The upper part of the display lists the songs currently saved on the internal hard disk. The highlighted row in the list is the current song.
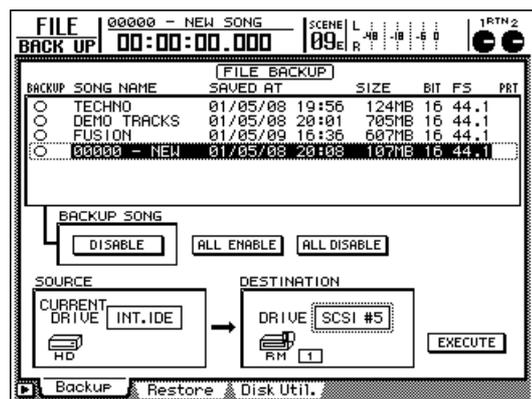
2 Move the cursor to the DESTINATION area in the lower right of the display, use the [DATA/JOG] dial to select the backup destination drive, and press the [ENTER] key.

Select "ATAPI" when backing up on the internal CD-RW drive, or the corresponding SCSI ID number when backing up on an external drive.

3 If you are backing up on a CD-RW drive or MO drive, insert the media into the drive.

If the backup destination is a CD-RW drive, press the [SHIFT] key + [F2] key to open the tray of the CD-RW drive, and insert the CD-R/RW media. Press the [SHIFT] key + [F1] key to close the tray of the CD-RW drive.

If the backup destination is an MO drive, make sure that "write protect" is not engaged for the MO disk, and insert it into the drive.

4 Move the cursor to the upper part of the display, use the [DATA/JOG] dial to select the song that you want to back up, and press the [ENTER] key.

In the BACKUP SONG area, the button will change from "DISABLE" to "ENABLE," indicating that the song has been selected for backup. The "O" symbol at the left side of the list will change to "●" for songs that have been selected for backup.

5 If you want to backup several songs at the same time, repeat step 4.

Tip!
- *If you want to back up all songs, move the cursor to the ALL ENABLE button located in the center of the display, and press the [ENTER] key.*
- *If you want to remove all songs from the selection for backup, move the cursor to the ALL DISABLE button and press the [ENTER] key.*

6 When you are finished making settings, move the cursor to the EXECUTE button and press the [ENTER] key.

A popup window will ask you to confirm the backup operation.

7 To execute the backup, move the cursor to the OK button and press the [ENTER] key. To cancel the backup, move the cursor to the CANCEL button and press the [ENTER] key.

When you move the cursor to the OK button and press the [ENTER] key, the backup operation will occur in one of the following ways, depending on the storage device that you selected as the backup destination.

■ CD-RW drive

If you are backing up on CD-R media or on new CD-RW media, the backup will begin immediately.

If you are backing up on previously-recorded CD-RW media, a popup window will ask you to confirm that you want to erase the media. When you move the cursor to the OK button and press the [ENTER] key, the media will first be erased, and then the backup will be performed.

If the selected song(s) do not fit on a single volume of media, a message will ask you to insert another volume of media. Eject the media and insert a new volume.

■ Removable drive such as MO drive

If "TYPE1" is selected as the backup format, the media will first be formatted, and then the backup will be performed. If the selected song(s) do not fit on a single volume of media, a message will ask you to insert another volume of media. Insert a new volume of media.

If "TYPE2" is selected as the backup format, backup will begin immediately.

■ External hard disk

Backup will begin immediately.

⚠
- *If you back up across multiple volumes of removable media, make a note of the numerical sequence on the label of each media volume.*
- *It is not possible to stop the backup process while it is being executed.*

Tip!
- *The backed-up song data also includes the audio data for Undo.*
- *If you are backing up to a CD-RW drive, you can perform a writing test before the actual backup, or compare the backed-up data with the original data after the backup is performed. To use these functions, access the UTILITY screen/Prefer.3 page, and change the settings of the CD BACKUP/WAV-EXP MODE area (→P.268).*

Restoring backup data

Song data that was backed up on a storage device can be restored (loaded) back into the AW2816's internal hard disk.

1 Press the [FILE] key → [F2] key.

The FILE screen/Restore page will appear, where you can perform Restore operations.
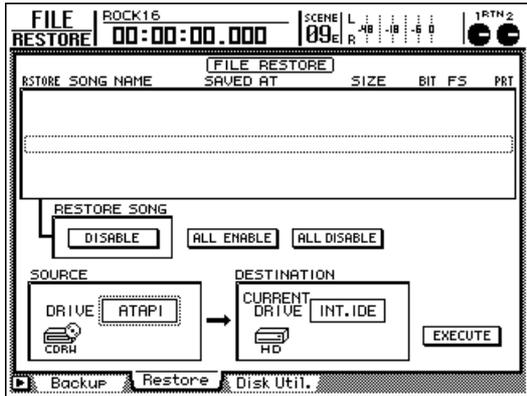
2 Move the cursor to the SOURCE area located in the lower left of the display, and use the [DATA/JOG] dial to select the drive on which the backup data was saved.

Select "ATAPI" when restoring from the internal CD-RW drive, or the corresponding SCSI ID when restoring from an external drive.
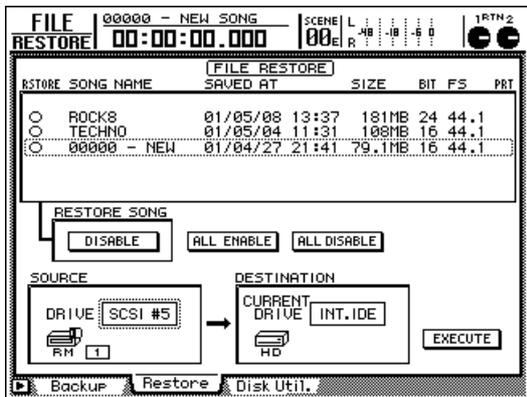
3 If you are restoring from a CD-RW drive or MO drive, insert the media into the drive.

If restoring from a CD-RW drive, hold down the [SHIFT] key and press the [F2] key to open the tray of the CD-RW drive, and insert the CD-R/RW media. Hold down the [SHIFT] key and press the [F1] key to close the tray of the CD-RW drive.

⚠️ ━━━━━━━━━━━━━━━━━━━━

If the backup extended across multiple volumes of media, you must be sure to insert the first volume of media.

4 Press the [ENTER] key.

The list in the upper part of display will show the backup data that has been saved in the selected drive.

5 Move the cursor to the list in the upper part of the display, and use the [DATA/JOG] dial to select the song data that you want to restore. Then press the [ENTER] key.

The RESTORE SONG button will change from DISABLE to ENABLE, indicating that the song data has been selected for restoration. The "O" symbol in the left of the list will change to "●" to indicate song data that has been selected for restoration.

6 If you want to restore the data for multiple songs, repeat step 5.

📝 Tip! ━━━━━━━━━━━━━━━━

- ***If you want to restore all song data, move the cursor to the ALL ENABLE button located in the center of the display, and press the [ENTER] key.***
- ***If you want to exclude all song data from the selection, move the cursor to the ALL DISABLE button and press the [ENTER] key.***

7 When you have finished making settings, move the cursor to the EXECUTE button and press the [ENTER] key.

A popup window will ask you to confirm the Restore operation.

8 To execute the Restore operation, move the cursor to the OK button and press the [ENTER] key. To cancel without restoring, move the cursor to the CANCEL button and press the [ENTER] key.

When you move the cursor to the OK button and press the [ENTER] key, the Restore operation will begin.

⚠ ═══════════════════════════

- *It is not possible to stop the Restore operation while it is in progress.*
- *If the internal hard disk contains a song whose name is identical with the name of a song being restored, two identically-named songs will exist on the hard disk. We recommend that you edit the name of one of the songs to avoid confusion.*
- *Restore cannot be executed if the internal hard disk does not contain enough space to load the backup data.*

Tip! ═══════════════════════════

By formatting the internal hard disk and then restoring the song data, you can make the data occupy consecutive areas of the hard disk, just as when Defrag (→P.166) is executed.

Using the internal hard disk/external storage devices

11

Tidying up the data of the internal hard disk (Defrag)

The Defrag operation re-orders the data on the internal hard disk so that each piece of data is located in physically consecutive areas on the hard disk.

When you record immediately after formatting the internal hard disk, the audio data will be written on physically consecutive areas of the hard disk. However as you continue to record and edit the data, single items of continuous audio data may be written to separate locations that are distributed across the hard disk. (Such a state is referred to as "fragmentation.") If fragmentation becomes severe, the access time will be degraded, causing the audio to "skip" during playback, or it may become impossible to create a new song even though there should be sufficient free space on the disk. You can resolve such problems by executing Defrag.

⚠

- *In rare cases, data may be lost due to read/write errors during the Defrag operation. Important song data on the internal hard disk must be backed up before you use this operation.*
- *Execution of the Defrag operation will require approximately one hour per GB of data. The power of the AW2816 must not be turned off during this time. Doing so may irreparably damage the hard disk and/or data in a way that cannot be recovered. Do not use the Defrag operation if there is a possibility of power failure due to lightning strikes or any other reason.*

Tip!

You can produce essentially the same results as the Defrag operation by backing up all your songs, formatting the internal hard disk, and then restoring the songs. For details on backing up songs, refer to page 162.

1 Press the [FILE] key → [F3] key.

The FILE screen/Disk Util. page will appear.

2 Turn the [DATA/JOG] dial to select "INT.IDE," and press the [ENTER] key.

A display like the following will appear.
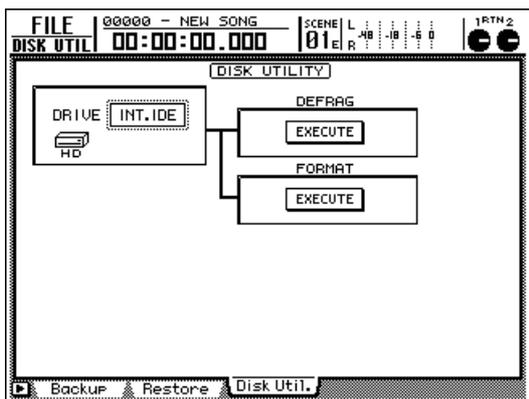
3 Move the cursor to the EXECUTE button in the DEFRAG area, and press the [ENTER] key.

A popup window will ask you to confirm that you want to execute the Defrag operation.

4 To execute Defrag, move the cursor to the OK button and press the [ENTER] key. To cancel without executing, move the cursor to the CANCEL button and press the [ENTER] key.

When you move the cursor to the OK button and press the [ENTER] key, the current song will be saved, and then the Defrag operation will begin. While Defrag is being executed, the state of progress and the estimated remaining time will be displayed in a popup window.

5 If you want to cancel Defrag processing before it is completed, press the [ENTER] key.

The process will be halted, and you will return to the display of step 2.

Tip!

- *The time required for Defrag to be completed will depend on the structure of the song and on the arrangement of data. In some cases, processing may take less time than the remaining time displayed in the popup window.*
- *If the Defrag operation is not necessary, a message of "Defrag Cluster Not Found!" will be displayed when you execute step 4, and Defrag will not be executed.*
- *If an error in the song data is found while Defrag is being processed, that song will be skipped, and Defrag processing will continue. In this case, information about the song in which the error was found will be displayed immediately after Defrag is completed.*
- *If a hard disk read/write error occurs during Defrag processing, the contents of the error will be displayed, and Defrag will be halted.*

Writing a track to a WAV file
(Exporting a WAV file)

The audio data of a desired track/virtual track can be converted into a WAV file and written to a storage device such as a CD-RW drive or MO drive. This function is convenient when you want to use a waveform editing program on your computer to edit audio data that was recorded on the AW2816.

To write track data as a WAV file, use the "EXPORT" audio data editing command that was explained in chapter 7. You can select a Track, Part, or Region as the area of data to be written. (For more information about tracks, parts, and regions, refer to page 108.) As the range of tracks to be written, you can select a specific track, all tracks 1–16, or the stereo track. When writing the data of a Part area, the specified part of either the specified track or of all tracks will be written.

Cautions when writing to a WAV file

- Before you can write WAV files to an external hard disk or MO drive, you must format that drive/media in "FAT16" format (→P.160). WAV files cannot be written to a 640 MB or 1.3 GB MO disk, or to a drive/media that has been formatted in FAT32 format.
- If a single specified track is written, one monaural WAV file will be created. If all tracks are written, a separate monaural WAV file will be created for each track. A stereo WAV file will be created for paired tracks and for the stereo track.
- When writing WAV files to a CD-RW drive, only one file can be written to each volume of CD-R/RW media. For this reason, it is not possible to add new WAV files to media on which a WAV file has already been recorded, or to write multiple tracks simultaneously.
- It is not possible to write a WAV file whose size exceeds the free capacity of the media. The following table shows the capacity that is needed to write WAV files for one minute of audio data.

Quantization bits	Sampling frequency	Per track	Per 16 tracks
16 bit	44.1 kHz	5.2 MB	83 MB
16 bit	48 kHz	5.6 MB	90 MB
24 bit	44.1 kHz	7.8 MB	124 MB
24 bit	48 kHz	8.5 MB	135 MB

* All times shown are approximate.
* A stereo WAV file will occupy the space of two tracks.

- Execution of the WAV file export operation requires a longer time than the actual time of the WAV file. It is not possible to halt the operation while it is taking place.
- Even when writing a WAV file for the same time area, writing in Region units will require less time than writing a Track unit or Part unit.

Checking the free space on the internal hard disk

In order to write a WAV file to an external storage device, the internal hard disk must have as much or more free space as the WAV file that will be written. For example in order to write a WAV file for a five-minute stereo track, there must be enough free space to allow five minutes or more recording on two tracks of the current song.

You can use the following procedure to check the free space on the internal hard disk.

1 Use the REC TRACK SELECT [1]–[16] keys to select record-ready mode for the same number of tracks as the WAV file(s) that you want to write.

If you want to write a WAV file for the stereo track, as in the example above, press the REC TRACK SELECT [1]/[2] keys.

2 Press the [METER] key → [F2] key to display the METER screen/Meter 2 page.

The REMAIN area in the upper left of the display will indicate the remaining time (hours: minutes) that can be recorded on the record-ready tracks. If you want to write a five-minute WAV file, as in the example above, make sure that there is at least five minutes of time remaining.

✎ *Tip!*

If there is not enough free area, you can try executing the Song Optimize operation to delete unused audio data. If there is still not enough free area, back up the song, delete unneeded virtual tracks (i.e., virtual tracks that are not currently assigned to tracks), and then execute the Song Optimize operation. For more information about the Song Optimize operation, refer to "Chapter 10. Managing songs."

Exporting tracks to WAV files

Here's how to use the TR Edit page to export (write) audio data from tracks 1–16 to WAV files.

1 Press the [EDIT] key → [F1] (TR Edit) key.

The EDIT screen/TR Edit page will appear. For details on the contents of the display, refer to page 111.
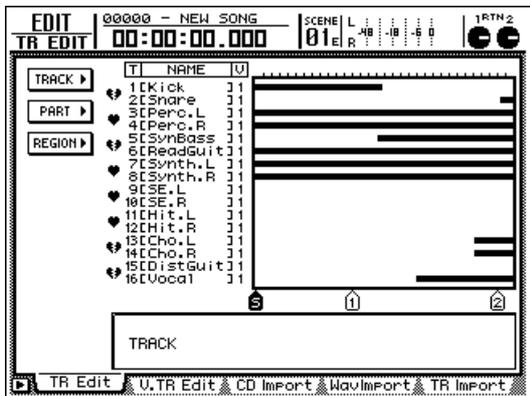
2 Move the cursor to the TRACK menu if you want to write data in Track units, to the PART menu if you want to write data in Part units, or to the REGION menu if you want to write data in Region units. Then press the [ENTER] key.

Tip!

To write the stereo track as a WAV file, select the TRACK menu.

3 Move the cursor to the button of the EXPORT command, and press the [ENTER] key.

The parameters of the EXPORT command will appear.

4 According to the menu that you selected in step 3, move the cursor to the parameter(s) that you want to set, and press the [ENTER] key.

• **If you selected the TRACK menu**

TRACK parameter
Select the track(s) that will be written as a WAV file. You can select 1–16, AL, or ST. If you select a track 1–16, the individual track will be written as a monaural WAV file. (A paired track will be written as a stereo WAV file.) If you select AL, a monaural WAV file for each of the 16 tracks (or a stereo WAV file for each pair of tracks) will be written. If you select ST, the stereo track will be written to a stereo WAV file.

• **If you selected the PART menu**

TRACK parameter
Select the track(s) that will be written as a WAV file. You can select 1–16 or AL. The type of WAV file that will be created is the same as for the TRACK parameter of the TRACK menu.

START parameter
Specify the beginning of the area that will be written as a WAV file.

END parameter
Specify the end of the area that will be written as a WAV file.

• **If you selected the REGION menu**

REGION parameter
Specify the region that will be written as a WAV file.

5 Use the [DATA/JOG] dial or [CURSOR] keys to set the parameters, and then press the [ENTER] key.

6 Move the cursor to the TO DRIVE parameter, and press the [ENTER] key.

The following display will appear.
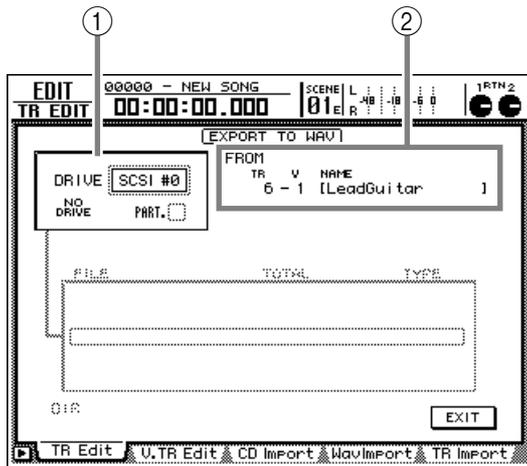
① DRIVE

Select the internal CD-RW drive or an external SCSI device.

② FROM

If you selected the TRACK or PART menu in step 4, the TR area will indicate the track number, the V area will indicate the virtual track number, and the NAME area will indicate the track name. If you selected the REGION menu, the region name will be displayed.

If you selected the PART or REGION in step 4, the selected length will be displayed below.

7 Move the cursor to the DRIVE area, turn the [DATA/JOG] dial to select the writing destination drive, and press the [ENTER] key.

Select "ATAPI" if you want to select the internal CD-RW drive, or select a SCSI ID if you want to select an external SCSI device.

⚠

If all tracks are selected as the writing source, an error message will be displayed if you attempt to select the CD-RW drive as the writing destination.

Tip!

If you select the CD-RW drive as the writing destination, you may perform a data writing test before the data is actually written, or compare the written data with the source data to verify that it was written correctly. These settings are made in the CD BACKUP/ WAV-EXP MODE area of the UTILITY screen/Prefer.3 page. For details refer to page 268.

8 If necessary, insert media into the writing destination drive.

If you are writing to the CD-RW drive, press the [SHIFT] key + [F2] key to open the tray of the CD-RW drive, and insert the CD-R/RW media. Press the [SHIFT] key + [F1] key, and the tray of the CD-RW drive will close.

If you are writing to an MO drive, insert media that has been formatted in FAT16 format.

If you selected an external hard disk or MO drive as the writing destination, the following display will appear if that drive already contains one or more WAV files.

Tip!
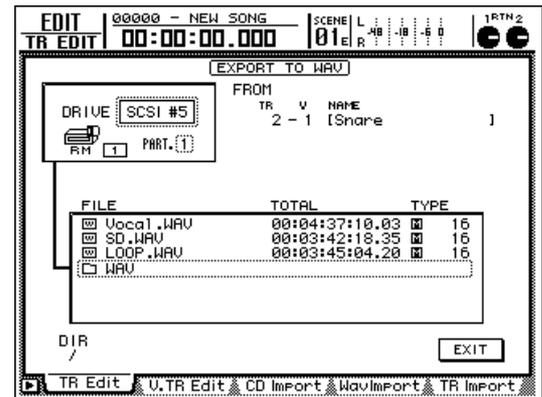
In the above list, "☐xxx" indicates a lower directory (xxx= directory name), and "☐ ‚ ‚" indicates the next higher directory. You can move between directories by moving the cursor to these symbols and pressing the [ENTER] key.

9 Move the cursor to the EXIT button, and press the [ENTER] key.

The writing destination drive will be confirmed, and you will return to the screen for selecting the various parameters of the EXPORT command.

10 If you want to assign a name to the WAV file, move the cursor to the TO FILE button and press the [ENTER] key.

A popup window will appear, allowing you to input a name for the WAV file. Input the filename, move the cursor to the OK button, and press the [ENTER] key. (For details on inputting characters, refer to page 37.)

Characters that can be used in a filename are limited to the following.

- **When writing to CD-R/RW media**
  .... A–Z 0–9 _

- **When writing to media other than CD-R/RW**
  .... A–Z a–z 0–9 _ ! # & + - ( ) .

⚠

- *By default, the track name or region name plus a filename extension of .WAV will be the filename.*
- *It is not possible to use a period at the beginning of the filename.*
- *If you input any characters other than those listed above, they will be converted into an underscore (_).*
- *If you select "AL" for the TRACK parameter, it will not be possible to edit the filename. The track name plus .WAV will be the filename.*
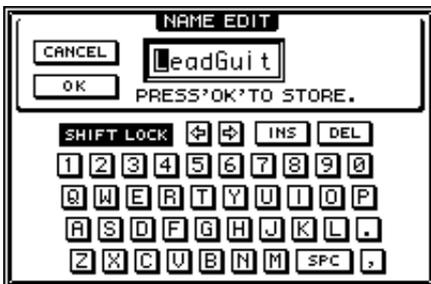
11 If you want 24 bit audio tracks to be converted to 16 bit data when they are written, move the cursor to the TO SIZE button and press the [ENTER] key.

If the current song uses 24 bit quantization, you can specify that the lower 8 bits be discarded and the data written as a 16 bit WAV file. Use the [DATA/JOG] dial to change the setting to 16 (bit), and press the [ENTER] key.

Tip!

- *Omit this step if you want to export the data as a 24 bit WAV file.*
- *If the current song is 16 bit, the setting of the TO SIZE parameter cannot be changed.*

12 Move the cursor to the EXECUTE button, and press the [ENTER] key.

A popup window will ask you to confirm the Export operation.

13 To export the WAV file, move the cursor to the OK button and press the [ENTER] key.

To cancel without exporting, move the cursor to the CANCEL button and press the [ENTER] key.

⚠

It is not possible to halt the operation while the WAV file is being exported.

Tip!

- *If the export destination device (MO or external hard disk) contains an identically-named file, a popup window will ask you whether you want to overwrite the file.*
- *If anything has been stored on the writing destination CD-RW media, a popup window will ask you whether it is ok to erase the media. Move the cursor to the OK button and press the [ENTER] key to erase the media and then export the data.*
- *If you set the TRACK parameter to "AL," WAV files will be written in the order of tracks 1–16.*
- *If the free space on the media is used up while the data is being written, exporting of subsequent tracks will be halted, and they will not be written as WAV files.*

Exporting virtual tracks to WAV files

Here's how to use the V.TR Edit page to export (write) audio data from a virtual track 1–8 of the specified track to a WAV file. The basic procedure is essentially the same as in the TR Edit page.

1 Press the [EDIT] key → [F2] (V.TR Edit) key.

The EDIT screen/V.TR Edit page will appear. For details on the contents of the display, refer to page 116.

2 Use the REC TRACK SELECT [1]–[16] keys to select the track (1–16) that contains the virtual track you want to export.

As you switch tracks, the track names and track view of virtual tracks 1–8 will also change.

3 Move the cursor to the TRACK menu if you want to write data in Track units, to the PART menu if you want to write data in Part units, or to the REGION menu if you want to write data in Region units. Then press the [ENTER] key.

4 Move the cursor to the button of the EXPORT command, and press the [ENTER] key.

The parameters of the EXPORT command will appear.

5 According to the menu that you selected in step 3, move the cursor to the parameter(s) that you want to set, and press the [ENTER] key.

- **If you selected the TRACK menu**

  TRACK parameter
  Select the virtual track that will be written as a WAV file. If the selected virtual track is paired, a stereo WAV file will be written.

- **If you selected the PART menu**

  TRACK parameter
  Select the virtual track 1–8 that will be written as a WAV file. If the selected virtual track is paired, a stereo WAV file will be written.

  START parameter
  Specify the beginning of the area that will be written as a WAV file.

  END parameter
  Specify the end of the area that will be written as a WAV file.

- **If you selected the REGION menu**

  REGION parameter
  Specify the region that will be written as a WAV file.

6 Use the [DATA/JOG] dial or [CURSOR] keys to set the parameters, and then press the [ENTER] key.

7 Move the cursor to the TO DRIVE parameter, and press the [ENTER] key.

8 Move the cursor to the DRIVE area located in the upper left of the display, turn the [DATA/JOG] dial to select the writing destination drive, and press the [ENTER] key.

Select "ATAPI" if you want to select the internal CD-RW drive, or select a SCSI ID if you want to select an external SCSI device.

9 Move the cursor to the EXIT button, and press the [ENTER] key.

The writing destination drive will be confirmed, and you will return to the screen for selecting the various parameters of the EXPORT command.

10 As necessary, use the TO FILE parameter and TO SIZE parameter to change the name of the WAV file and its quantization (number of bits).

For details on the TO FILE and TO SIZE parameters, refer to page 169 to 170.

11 Move the cursor to the EXECUTE button, and press the [ENTER] key.

A popup window will ask you to confirm the Export operation.

12 To export the WAV file, move the cursor to the OK button and press the [ENTER] key.

To cancel without exporting, move the cursor to the CANCEL button and press the [ENTER] key.

Loading a WAV file into a track
(Importing a WAV file)

Here's how a WAV file stored on CD-R/RW or MO media or on an external hard disk can be loaded and assigned to an audio track of the AW2816. For example this provides a convenient way for audio data that was edited using waveform editing software on your computer to be returned to the AW2816, or to use WAV files from a commercially-available CD-ROM in an AW2816 song.

1 Press the [EDIT] key → [F4] key.

The EDIT screen/WavImport page will appear, in which you can load WAV files.
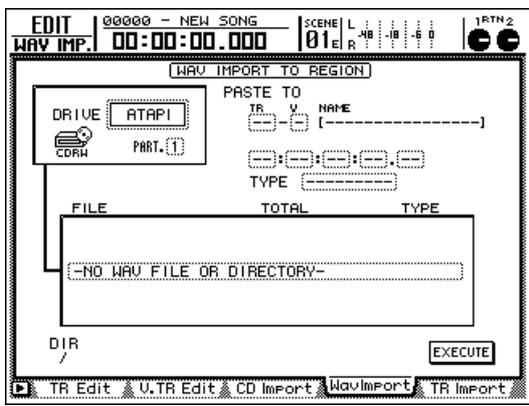
2 Move the cursor to the DRIVE area in the upper left of the display, and turn the [DATA/JOG] dial to select the drive that contains the WAV file. Also, insert media into the load source drive.
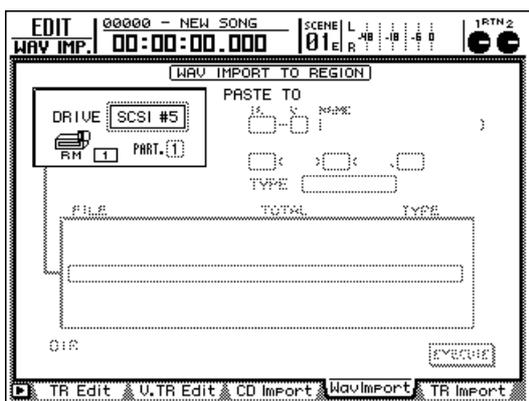
Tip!
- *If you are importing a WAV file from CD-R/RW media, press the [SHIFT] key + [F2] (CD UNLOAD) key to open the tray of the CD-RW drive, and insert the media that contains the WAV file.*
- *It is also possible to load a WAV file from an ISO9660 format CD-ROM or mixed mode CD-ROM (data track). However, Macintosh (HFS) CD-ROMs and CD Extra data sections are not supported.*

3 Press the [ENTER] key.

The AW2816 will recognize the WAV files of the media inserted in the drive, and will display the files as follows.
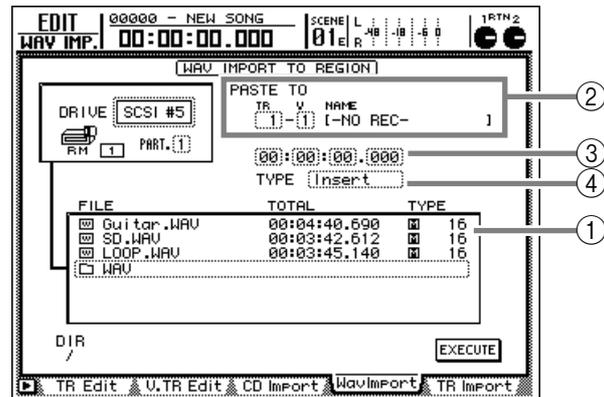
① **File list**
This area lists the WAV files stored on the selected drive. The FILE column shows the filename, and the TOTAL column shows the length of the WAV file. The TYPE column displays a ▯ or ▯ symbol to indicate whether the WAV file is monaural or stereo, and the number at the right indicates the quantization (16/24 bit) of the file.

② **PASTE TO**
Select the track to which the WAV file will be assigned.

③ **Specified point**
Specify the location at which the WAV file will be placed in the track.

④ **TYPE**
Select whether the WAV file will be inserted into the track (Insert) or overwritten (OverWrite).

Tip!
If the CD-RW drive is selected, the tray will close as soon as you press the [ENTER] key, and the AW2816 will recognize the CD-R/RW media.

4 Move the cursor to the file list, and turn the [DATA/JOG] dial to select the WAV file that you want to import.

If the desired WAV file is in another directory, move the cursor to the ☐ symbol and press the [ENTER] key to move to the appropriate directory.

⚠ *The AW2816 will only recognize files that have the same sampling frequency as the current song, and whose filename ends in an extension of ".wav". No other WAV files will be displayed in the file list.*

Tip!
- *Regardless of the quantization (number of bits) of the current song, either 16 bit or 24 bit WAV files can be loaded. If the WAV file has a different quantization than the current song, the quantization will be converted when the data is loaded. WAV files other than 16 bit or 24 bit are not supported.*
- *Move the cursor to the "☐ .." symbol in the file list and press the [ENTER] key to return to the next higher directory.*

5 Move the cursor to the PASTE TO area, and turn the [DATA/JOG] dial to specify the track number (TR area) and virtual track number (V area) for the import destination track.

If you selected a stereo WAV file in step 4, you can select odd-numbered/even-numbered pairs of track numbers. In this case, the same virtual track number will always be assigned.

```
PASTE TO
    TR   V   NAME
   (9)-[2] [-NO REC-        ]

   (00):(00):(00).(000)
   TYPE (Insert....)
```

6 Move the cursor to the location area, and use the [DATA/JOG] dial to specify the location in the track at which the WAV file will be placed.

```
PASTE TO
    TR   V   NAME
   (9)-(2) [-NO REC-        ]

   (00):(01):(10).[015]
   TYPE (Insert....)
```

7 Move the cursor to the TYPE area. Select "Insert" if you want to insert the WAV file into the track, or "OverWrite" if you want to overwrite the existing data.

If you select Insert, the audio data following the specified location will be moved backward by the length of the WAV file.

```
PASTE TO
    TR   V   NAME
   (9)-(2) [-NO REC-        ]

   (00):(01):(10).(015)
   TYPE [OverWrite]
```

8 When you have finished making all settings, move the cursor to the EXECUTE button and press the [ENTER] key.

You will be asked to confirm execution of the Import operation.

```
┌─ CONFIRMATION ─┐
│ Will Import to │
│    Rgn # 9-2.  │
│                │
│  ARE YOU SURE ?│
│                │
│ [CANCEL]  [ OK ]│
└────────────────┘
```

9 To execute the Import operation, move the cursor to the OK button and press the [ENTER] key.

To cancel without executing, move the cursor to the CANCEL button and press the [ENTER] key.

⚠ *It is not possible to halt the operation while a WAV file is being loaded.*

Tip!
After the WAV file has been loaded, you can press the [UNDO] key to return to the state prior to loading.

Using the internal hard disk/external storage devices

11

Loading CD audio into a track
(CD-DA Import)

Audio data (CD-DA) from a CD inserted into the CD-RW drive can be loaded and assigned to a track of the AW2816. This allows you to load materials from a commercially available sampling CD.

⚠

The unauthorized copying or reuse of commercially available music or sound data is forbidden, with the exception of personal use or other use allowed by copyright law.

Tip!

In addition to conventional audio CDs, you can also load audio data from a mixed mode CD-ROM (track 2 or later), or a CD Extra audio track (first session).

Enabling CD-DA loading

When the AW2816 is in the default state, CD-DA loading is prohibited. Use the following procedure to enable CD-DA import operations.

1 Press the [UTILITY] key → [F3] key.

The UTILITY screen/Prefer.3 page will appear.
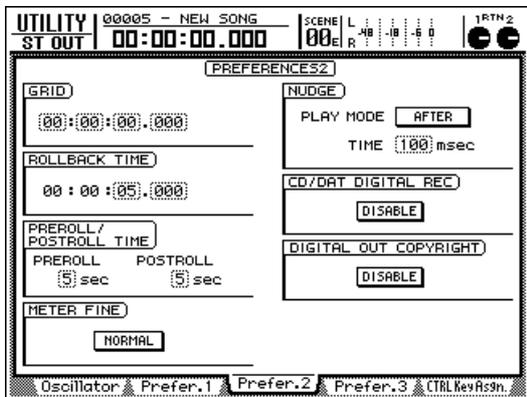
2 Move the cursor to the DISABLE button in the CD/DAT DIGITAL REC area, and press the [ENTER] key.

A warning regarding copyright will be displayed. Move the cursor to the NEXT button and press the [ENTER] key to continue to the second page.
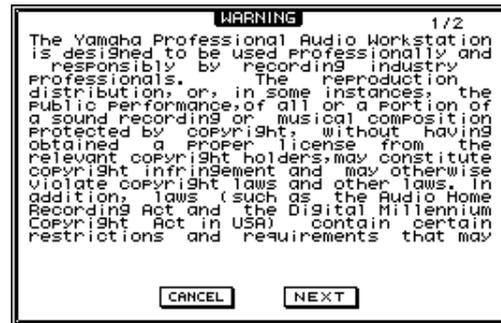
3 After you have read and understood this warning, move the cursor to the YES button in the second page and press the [ENTER] key.

The button display will change to "ENABLE," and CD-DA import operations will be enabled.

Tip!

When you want to input copy-protected digital signals from the DIGITAL STEREO IN jack or a digital I/O card installed in the OPTION I/O slot, you will need to switch the CD/DAT DIGITAL REC button to ENABLE in the same way.

Loading CD-DA data and assigning it to a track

1 Load an existing song from the internal hard disk (or create a new song with a sampling frequency of 44.1 kHz).

CD-DA data can only be assigned to a track of a song whose sampling frequency is 44.1 kHz.

Tip!

You can also import CD-DA data into a 24 bit song. In this case, the CD-DA data will be converted into 24 bit audio data.

2 Press the [EDIT] key → [F3] key.

The EDIT screen/CD Import page will appear, where you can load CD-DA data.
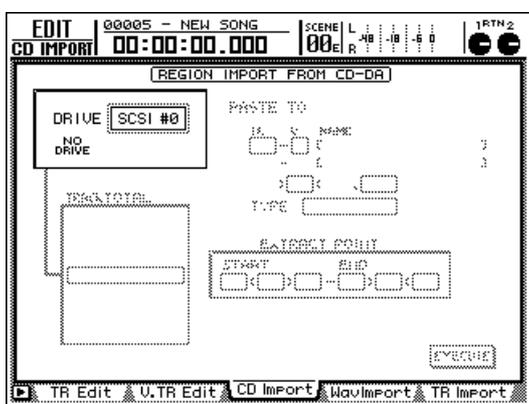
3 Move the cursor to the DRIVE area in the upper left of the display, and turn the [DATA/JOG] dial to select a CD-RW drive.

Select "ATAPI" to select the internal CD-RW drive, or the corresponding SCSI ID to select an external CD-RW drive.
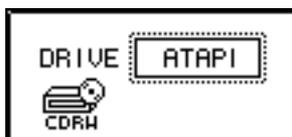
4 Press the [SHIFT] + [F2] (CD UNLOAD).

The tray of the CD-RW drive will open.

5 Insert the media into the tray of the CD-RW drive, and press the [SHIFT] key + [F1] (CD LOAD).

The tray of the CD-RW drive will close, and the display will change as follows.
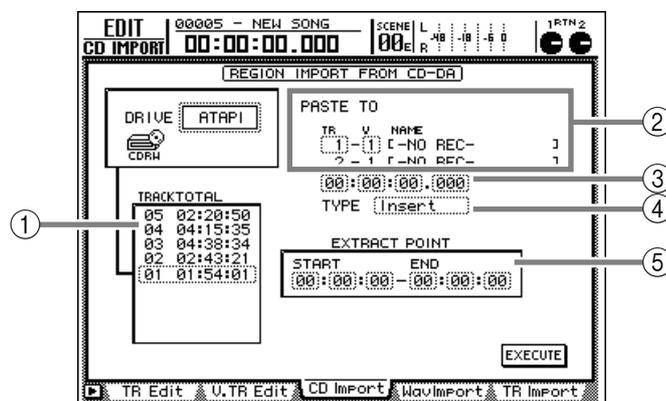
① **Track list**
This lists the audio tracks of the CD inserted in the CD-RW drive.

② **PASTE TO**
Select the track to which the CD-DA data will be assigned.

③ **Specify point**
Specify the location in the track to which the CD-DA data will be assigned.

④ **TYPE**
Specify whether the CD-DA data will be inserted into the track (Insert) or overwritten (OverWrite).

⑤ **EXTRACT POINT**
Use the START and END settings to specify the range that will actually be loaded from the audio selected in ①.

6 Move the cursor to the track list, and turn the [DATA/JOG] dial to select the CD audio track that will be loaded.

7 Move the cursor to the EXTRACT POINT area, and use the CURSOR [◄]/[►] keys and the [DATA/JOG] dial to specify the beginning (START) and end of the range that will be loaded.

START and END can be specified in units of minutes/seconds/frame (1/75 seconds).

8 Move the cursor to the PASTE TO area, and turn the [DATA/JOG] dial to specify the track number (TR area) and virtual track number (V area) of the track into which the data will be loaded.

Since CD-DA data is always loaded in stereo, the track number will be selected as an odd-numbered/even-numbered pair. The same virtual track number will always be assigned for both tracks.

```
PASTE TO
   TR  V  NAME
  (15)-(1) [-NO REC-
   16 - 1  [-NO REC-
  (00):(00):(00).(000)
  TYPE  (Insert)
```

9 Move the cursor to the location point setting, and use the [DATA/JOG] dial to specify the location in the track at which the CD-DA audio data will be placed.

```
PASTE TO
   TR  V  NAME
  (15)-(1) [-NO REC-        ]
   16 - 1  [-NO REC-        ]
  (00):(02):(28).(051)
  TYPE  (Insert)
```

10 Move the cursor to the TYPE area, and select "Insert" if you want to insert the CD-DA data into the track, or "OverWrite" if you want to overwrite the existing data.

If you select "Insert," audio data following the specified location will be moved backward according to the length of the loaded CD-DA data.

11 When you have finished making all settings, move the cursor to the EXECUTE button and press the [ENTER] key.

A popup window will ask you to confirm the CD-DA Import operation.

```
┌─────────────────────┐
│   ■CONFIRMATION■    │
│                     │
│   Will Import to    │
│  Rgn #15-1,16-1.    │
│                     │
│   ARE YOU SURE ?    │
│                     │
│ [CANCEL]  [  OK  ]  │
└─────────────────────┘
```

12 To execute the operation, move the cursor to the OK button and press the [ENTER] key.

To cancel without importing, move the cursor to the CANCEL button and press the [ENTER] key.

⚠️ ═══════════════════════════

It is not possible to halt the CD-DA Import operation while it is being executed.

✍️ **Tip!** ═══════════════════════

• *The time required for loading CD-DA data will depend on the reading speed that is set in the FILE screen/Disk Util. page (→P.248).*
• *After loading is completed, you can press the [UNDO] key to return to the state prior to loading.*

Playing an audio CD (CD Play)

An internal or external CD-RW drive can be used to play back a conventional audio CD or CD-R/RW media to which audio data has been written (CD Play function).

⚠ *It is not possible to play CD-R media that has not been finalized.*

✎ **Tip!**
The CD Play function is also able to play audio from a mixed-mode CD-ROM (only track 2 and later) or CD Extra (first session only).

1 Press the [CD] key → [F2] key.

The CD Play page will appear, where you can use a CD-RW drive to play back an audio CD.
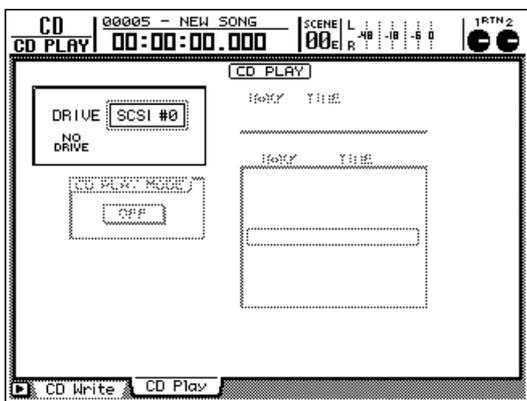
2 Move the cursor to the DRIVE area in the upper left of the display, use the [DATA/JOG] dial to select the CD-RW drive, and press the [ENTER] key.
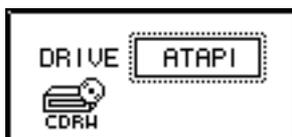
3 Press the [SHIFT] key + [F2] key.

The tray of the CD-RW drive will open.

4 Insert the audio CD that you want to play into the tray, and press the [SHIFT] key + [F1] key.

The tray of the CD-RW drive will close.

5 Move the cursor to the button in the CD PLAY MODE area, and press the [ENTER] key.

The button in the CD PLAY MODE area will change from OFF to ON, and the CD Play function will be on. The display will show track information for the CD that is inserted in the CD-RW drive.
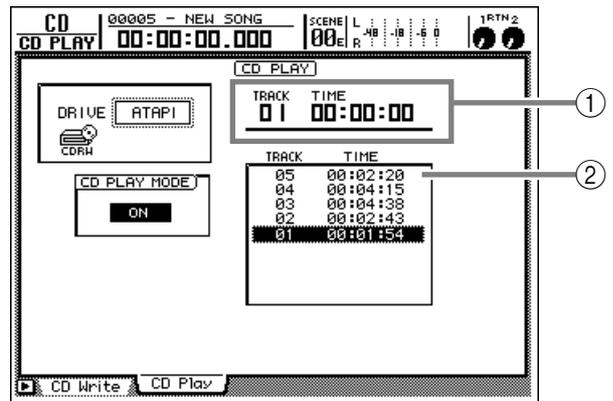
① This area indicates the currently selected track number (TRACK area) and the elapsed time (TIME area).

② This area lists the track numbers on the CD (TRACK area), and the time length of each track (TIME area).

⚠ *It is not possible to switch to another screen while the CD Play function is on.*

6 Press the PLAY [▶] key to play a track, or the STOP [■] key to stop.

During playback, the audio output of the CD-RW drive will be sent directly to the stereo output channel. Use the STEREO fader to adjust the volume.

When the CD Play function is on, the keys of the transport section will have the following functions.

Key	Function
PLAY [▶] key	Play the audio CD
STOP [■] key	Stop the audio CD
FF [▶▶]/REW[◀◀] keys	Fast-forward/rewind
[◀◀]/[▶▶] keys	Select tracks

* The FF [▶▶]/REW[◀◀] keys can be used only when the audio CD is stopped. Fast-forward and rewind operations will be executed only while you continue pressing the FF [▶▶] or REW[◀◀] keys.

✎ **Tip!**
You can also select tracks by moving the cursor to the list in the right side of the display, and using the [DATA/JOG] dial and [ENTER] key.

⚠
• *While the CD Play function is on, no signals other than the audio output of the CD-RW drive will be sent to the stereo bus.*
• *While an audio CD is playing, the access indicator in the display section will blink.*

7 To turn off the CD Play function, move the cursor to the button in the CD PLAY MODE area, and press the [ENTER] key.

Chapter

12 | Mastering

This chapter explains the Mastering function that lets you use a CD-RW drive to create an audio CD.

About mastering

The AW2816 can write audio data from the stereo track of a song to CD-R/RW media in CD-DA format. CD-R/RW media that has been written in this way can be played back on a CD-RW drive or on a conventional CD player in the same way as an audio CD.

⚠

Some CD players or CD-ROM drives that do not support CD-R/RW may be unable to play CD-R/RW media to which audio data has been written.

Stereo tracks that can be mastered

To perform mastering, you select one or more songs that contain the stereo tracks you want to write, and write these stereo tracks to the CD-R/RW media. However in order to be usable for mastering, the song must have a quantization of 16 bits or 24 bits and a sampling frequency of 44.1 kHz, must be saved on the internal hard disk, and the stereo track must be longer than four seconds.

⚠

- *Mastering cannot be performed for a stereo track that is part of a song whose sampling frequency is 48 kHz.*
- *In the case of a 24 bit/44.1 kHz stereo track, the lower 8 bits will be discarded when the data is written, converting the track into 16 bit/44.1 kHz data.*

Media that can be used with the CD-RW drive

A CD-RW drive supports two types of media: "CD-R" which allows data to be stored and only added to, and "CD-RW" which allows the stored data to be erased and rewritten. These two types of media have the following features.

- **CD-R**
  CD-R media allows data to be stored, and additional data to be stored later. Data that has been written cannot be erased and re-written. CD-R media is available mainly in 650 MB and 700 MB capacities.

  CD-R media to which audio data has been written by the AW2816's mastering function can be played on CD-RW drives and on most CD players once the "Finalize" operation has been performed.

- **CD-RW**
  CD-RW media allows all recorded data to be erased and re-written. It does not allow additional increments of data to be stored, as does CD-R. Most CD-RW media is available in a capacity of 650 MB.

  CD-RW media to which audio data has been written by the AW2816's mastering function can be played back on CD-RW drives and on some CD players. However at present, you should be aware that most CD players do not support CD-RW.

Mastering

12

Track At Once and Disc At Once

Data can be written to CD-R/RW media in one of the following two ways.

- **Track At Once**

  This method writes data in units of tracks (areas on the CD to which individual items of audio data are written), and can be used only for CD-R media.

  When the Track At Once method is used to write data to CD-R media, processing will pause after each track is written, and this will create approximately two seconds of silence between each track. CD-R media that was written using this method allows additional audio data to be added later.

  In order for CD-R media written using Track At Once to be playable on a CD-RW drive or a conventional CD player, a process called "Finalize" must be performed on that disc to write information such as track locations. However once the CD-R media has been finalized, no further data can be recorded on it.

- **Disc At Once**

  This method writes data for all tracks at once, and can be used for either CD-R or CD-RW media. Unlike the Track At Once method, processing will not pause between tracks even when multiple tracks are written, but will continue until all data has been written. For this reason, no silence will be created between tracks.

  Since CD-R/RW media written using Disk At Once is automatically finalized, it can be played back without further preparation on a CD-RW drive or on a conventional CD player. However, no additional data can be recorded on CD-RW media, or on CD-R media written using Disc At Once.

The following table shows how CD-R/RW discs on which audio data is recorded are compatible with CD-RW drives and CD players.

Recording			Playback	
			CD-RW drives	CD players
CD-R	Disc At Once (Finalized automatically)		◎ No silence between tracks	O No silence between tracks
	Track At Once	Finalized	◎ Two seconds of silence between tracks	O Two seconds of silence between tracks
		Not yet finalized	× (may add more data)	×
CD-RW	Disc At Once (Finalized automatically)		◎ No silence between tracks	△ No silence between tracks
	Track At Once		CD-RW media does not support Track At Once	

◎: playback possible
O: playback possible on most models
△: playback possible only on some models
×: playback not possible

Checking the free space
on the internal hard disk

In order to execute the Mastering operation, the internal hard disk must have as much or more free space as the data that will be written to the CD-R/RW media. You can use the following procedure to check the free space on the internal hard disk.

1 Load a 16 bit/44.1 kHz song as the current song.

If there is no such song on the hard disk, create a new 16 bit/44.1 kHz song.

2 Press the REC TRACK SELECT [ST] key to put the stereo track in record-ready mode.

3 Press the [METER] key → [F2] key to display the METER screen/Meter 2 page.

The REMAIN area in the upper part of the display will indicate the remaining time that can be recorded on the stereo track (hours/minutes). For example if you want to create a 60-minute CD, make sure that there is at least 60 minutes (1 hour) of time remaining.

Tip!

If there is insufficient free area, try executing the Song Optimize operation to delete unused audio data. If there is still not enough free space, make a backup of all songs, delete any virtual tracks that are not assigned to the current tracks, and then execute the Song Optimize operation. For details on the Song Optimize operation, refer to "Chapter 10. Managing songs."

Setting the mastering mode

The AW2816 allows you to perform a "writing test" before actually the mastering data is actually written, in order to check whether errors will occur during data transfer. With the default settings of the AW2816, the writing test is disabled, but you may change this setting if desired.

1 Press the [UTILITY] key → [F4] key.

The UTILITY screen/Prefer.3 page will appear.
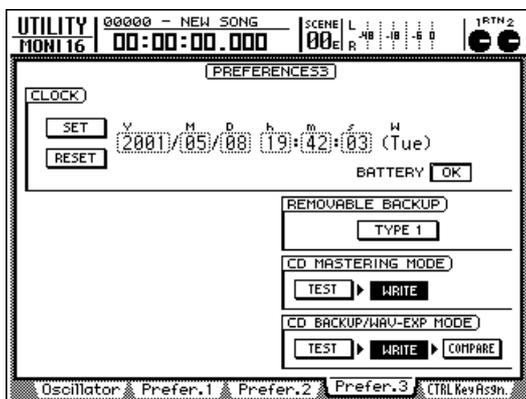
2 If you want to perform a writing test before the mastering operation, turn the TEST button On and the WRITE button On in the MASTERING MODE area.

Tip!
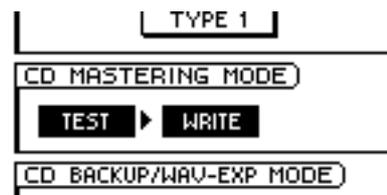
• If you turn the TEST button On and the WRITE button Off, only the writing test will be performed, without performing the mastering operation. It is not possible to turn off both the TEST and the WRITE buttons.
• When using mastering for the first time, we recommend that you turn the TEST button On to check whether there are any problems with the hard disk and whether the writing speed of the CD-RW drive is set appropriately.

12

Executing mastering

Here's how to use the mastering function to write the stereo track data to CD-R/RW media.

⚠️

If you want to write the stereo track to CD immediately after it was recorded, you must first save the current song.

1 Press the [CD] key → [F1] key.
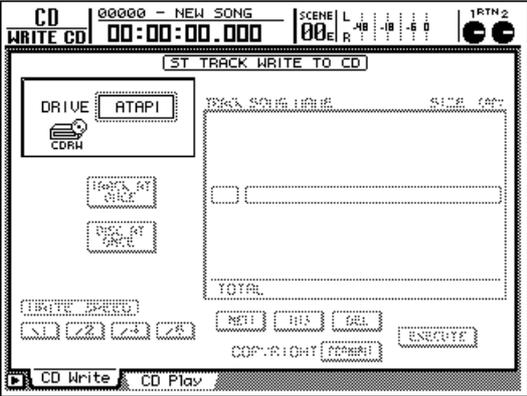
The CD screen/CD Write page will appear.

2 Move the cursor to the DRIVE area in the upper left of the display, use the [DATA/JOG] dial to select the CD-RW drive, and press the [ENTER] key.

Select "ATAPI" if you are using an internal CD-RW drive, or the appropriate SCSI ID if you are using an external CD-RW drive. When you press the [ENTER] key, the TRACK AT ONCE and DISC AT ONCE buttons will become available.
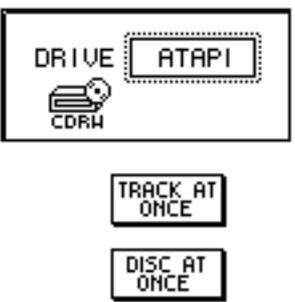
3 Press the [SHIFT] key + [F2] key.

The tray of the selected CD-RW drive will open.

4 Insert CD-R/RW media in the tray, and press the [SHIFT] key + [F1] key.

The tray of the CD-RW drive will close.

5 Move the cursor to the TRACK AT ONCE button if you want to record using the Track At Once method, or to the DISC AT ONCE button if you want to record using the Disc At Once method. Then press the [ENTER] key.

If CD-R media was inserted, both the TRACK AT ONCE and DISC AT ONCE buttons will be available for selection. If CD-RW media was inserted, only the DISC AT ONCE button can be selected. The screen shown below will appear if you insert CD-R media, move the cursor to the TRACK AT ONCE button, and press the [ENTER] key.

💡 Tip!
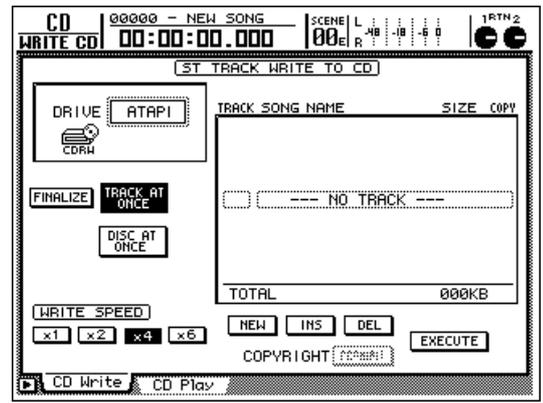
If you insert previously-recorded CD-RW media, move the cursor to the DISC AT ONCE button and press the [ENTER] key, a popup window will appear asking you to confirm erasure of the CD-RW media. If you want to erase the previously-recorded data and continue with the mastering operation, move the cursor to the OK button. If you want to cancel the mastering operation, move the cursor to the CANCEL button. Then press the [ENTER] key.

6 Move the cursor to the NEW button located in the lower part of the display, and press the [ENTER] key.

The list in the right side of the display will show information for the stereo track that will be written to track number 1 of the CD (the name of the song that includes that stereo track, the data size of the stereo track, and the copy protect setting).
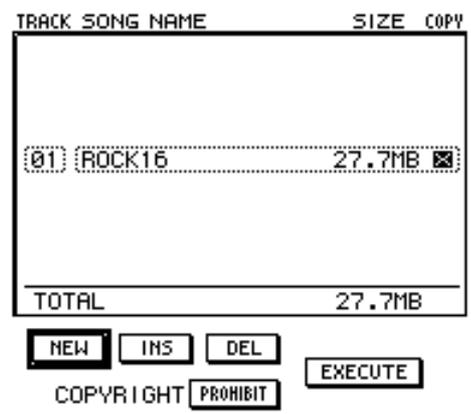
7 Move the cursor to the stereo track information in the list, and use the [DATA/JOG] dial to select the stereo track that will be written to track 1.
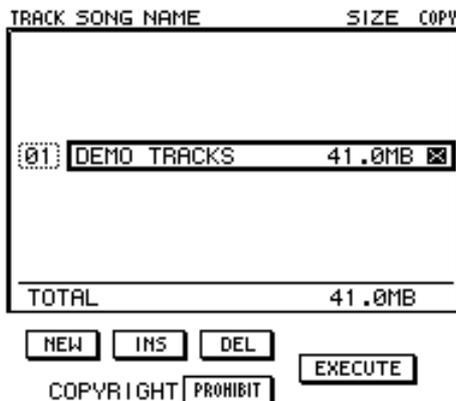
In this list, it is not possible to select stereo tracks that are part of a 48 kHz sampling frequency song, or the stereo track of a current song that has not been saved on the hard disk. In addition, there may be cases in which it will not be possible to select the stereo track of a song that has not been optimized. (For details on the Optimize operation, refer to page 154.)

8 If you want to permit digital copying of the track you selected in step 7, move the cursor to the COPYRIGHT button located in the lower part of the screen, and press the [ENTER] key.

The COPYRIGHT button specifies whether copy-prohibit flags will be written into the sub-code channel of the CD. If the button is set to PROHIBIT, the COPY column of corresponding track will show a ☒ symbol, and digital copying of that track will be prohibited. If you switch the COPYRIGHT button to the PERMIT setting, digital copying of that track will be permitted.

9 Repeat steps 6–8 to select the stereo tracks that you want to write to track numbers 2 and following of the CD.

Tip!
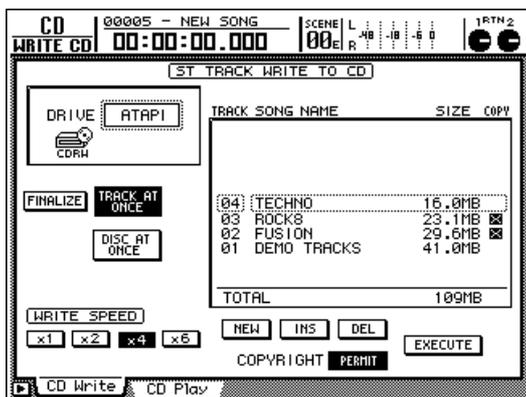
- *If you move the cursor to the NEW button and press the [ENTER] key, a new track will be added following the last track number.*
- *If you use the INS button instead of the NEW button, a new track will be inserted before the currently selected track number.*
- *If you use the DEL button, the currently selected track number will be deleted from the list.*

When you use the NEW button or INS button to add a track number, the same stereo track will be always selected as the initial setting. Be careful that you do not inadvertently select the same stereo track twice.

10 As necessary, use the WRITE SPEED buttons in the lower left of the display to specify the writing speed.

The x1/x2/x4/x6 buttons correspond to single, 2x, 4x, and 6x writing speeds. Normally you should select the fastest speed that your CD-RW drive supports.

If errors occur repeatedly during writing, select a slower writing speed.

11 When you have finished selecting all the stereo tracks that will be written to the CD, move the cursor to the EXECUTE button in the lower right of the display, and press the [ENTER] key.

A popup window will ask you to confirm execution of the mastering operation.

12 To execute the writing operation, move the cursor to the OK button and press the [ENTER] key.

To cancel without executing, move the cursor to the CANCEL button and press the [ENTER] key. While the data is being written, a popup window will display the estimated remaining time and the progress of the operation. When writing is completed, the tray of the CD-RW will open automatically.

Tip!

If the writing test has been turned on, the test will be executed first, and then the data will be written. If a problem is detected during the test, a message will be displayed.

The subsequent steps will differ as follows, depending on whether you are using Track At Once or Disc At Once.

■ When using Track At Once

When writing using Track At Once has been completed, a popup window will ask you whether you want to Finalize the media.

```
┌─────────────────────────┐
│  CONFIRMATION           │
│                         │
│   Will Finalize         │
│    This Media.          │
│                         │
│   ARE YOU SURE ?        │
│                         │
│  [CANCEL]    [  OK  ]   │
└─────────────────────────┘
```

If you want to finalize the disc, move the cursor to the OK button and press the [ENTER] key. The tray of the CD-RW will close automatically, and the disc will be finalized.

If you do not want to finalize the disc, move the cursor to the CANCEL button and press the [ENTER] key. In this case, other audio data can be added later to the ejected CD-R media.

If you selected the CANCEL button, the following popup window will appear, asking you whether you want to write again on other media.

```
┌─────────────────────────┐
│  CONFIRMATION           │
│                         │
│   Will Write            │
│    Once More.           │
│                         │
│   ARE YOU SURE ?        │
│                         │
│  [CANCEL]    [  OK  ]   │
└─────────────────────────┘
```

If you want to create another disc containing the contents of the list in step 9, insert a new CD-R disc, move the cursor to the OK button, and press the [ENTER] key. The CD-RW tray will close automatically, and writing will be executed once again.

■ When using Disc At Once

When writing using Disc At Once has been completed, a popup window will ask whether you want to write once more on new media.

```
┌─────────────────────────┐
│  CONFIRMATION           │
│                         │
│   Will Write            │
│    Once More.           │
│                         │
│   ARE YOU SURE ?        │
│                         │
│  [CANCEL]    [  OK  ]   │
└─────────────────────────┘
```

If you want to create another CD with the same contents, insert a new CD-R/RW disc, move the cursor to the OK button, and press the [ENTER] key. The tray of the CD-RW drive will close automatically, and writing will be executed once again.

Tip!

When writing is executed multiple times in succession, processing of the second and subsequent disc will take less time than for the first disc.

Finalizing a disc

If CD-R media was written using Track At Once, data from other stereo tracks can be added as long as the disc has not been finalized. However, media that has not yet been finalized cannot be played on a CD-RW drive or conventional CD player. To make CD-R media playable on a CD player, use the following procedure to finalize it.

1 Press the [CD] key → [F1] key.

The CD screen/CD Write page will appear. Make sure that the CD-RW is selected in the DRIVE area located in the upper left of the display.
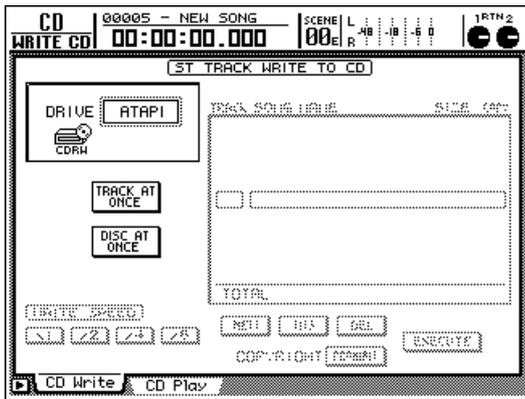
2 Hold down the [SHIFT] key and press the [F2] key to open the tray of the CD-RW drive, and insert the CD-R media to be finalized into the tray.

Hold down the [SHIFT] key and press the [F1] key to close the tray.

3 Move the cursor to the TRACK AT ONCE button, and press the [ENTER] key.

The FINALIZE button will appear at the left of the TRACK AT ONCE button. The list in the right side of the display will show the tracks that have been written to the CD-R media.
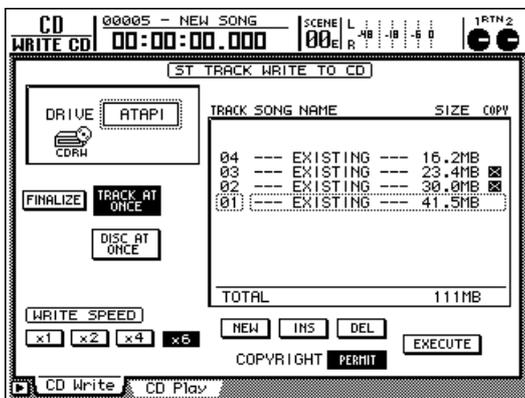
4 Move the cursor to the FINALIZE button, and press the [ENTER] key.

A popup window will ask you to confirm execution of the Finalize operation.

5 To execute the Finalize operation, move the cursor to the OK button and press the [ENTER] key.

To cancel without executing, move the cursor to the CANCEL button and press the [ENTER] key.

⚠️

It is not possible to halt the operation while Finalize is being executed.

This chapter explains how MIDI can be used on the AW2816.

What you can do using MIDI

On the AW2816 you can use MIDI to do the following things.

● **Synchronize operation with external devices**
Synchronization signals such as MTC (MIDI Time Code) or MIDI Clock can be sent from the AW2816 to an external MIDI device such as a computer or MIDI sequencer, to synchronize the operation of the external MIDI device with AW2816 song. (The AW2816 is also able to receive MTC.)

● **Operate the transport/Select recording tracks**
MMC (MIDI Machine Control) messages can be transmitted to the AW2816 from a computer or other external MIDI device, to remotely control the AW2816's transport or to enable/disable tracks for recording.

● **Select scenes**
When a scene is recalled on the AW2816, a program change can be transmitted to an external MIDI device. Conversely, program changes can be transmitted from an external MIDI device to the AW2816 to recall scenes on the AW2816.

● **Control mix parameters**
When you operate internal AW2816 parameters such as fader and pan, control change or system exclusive messages can be transmitted to an external MIDI device. These messages can also be transmitted from an external device to the AW2816, controlling the AW2816's parameters.

● **MIDI Remote functions**
The AW2816's faders 1–8 and [ON] keys 1–8 can be used to transmit previously-assigned MIDI messages to remotely control a MIDI tone generator or other external device.

● **Bulk Dump**
Internal settings such as libraries and scene memories can be output as bulk data, and stored on an external device such as a MIDI sequencer. By transmitting the stored bulk data back to the AW2816, its internal settings can be restored to a prior condition.

MIDI connectors and the TO HOST connector

The AW2816 provides the following connectors for exchanging MIDI messages with external devices.
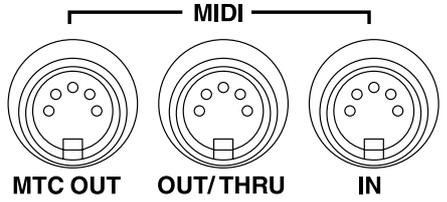
● **MIDI IN connector**
This connector receives MIDI messages such as program changes, control changes, and system exclusive data.

● **MIDI OUT/THRU connector**
By switching an internal setting, you can make this connector function either as a MIDI OUT connector or a MIDI THRU connector. When used as a MIDI OUT connector, this transmits MIDI messages that were produced inside the AW2816, such as program changes, control changes, and MIDI clock. When used as a MIDI THRU connector, this re-transmits the MIDI messages that were received at the MIDI IN connector. (In this case, none of the MIDI messages produced inside the AW2816 will be output.)

● **MTC OUT connector**
This is a dedicated output connector for MTC (MIDI Time Code). MTC will always be transmitted from this connector, regardless of the internal settings.

TO HOST
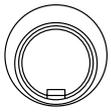
● **TO HOST connector**
A separately sold cable can be used to connect this connector to the serial port of your computer, allowing MIDI messages to be transferred between the AW2816 and your computer. Bi-directional data transfer can be performed over a single cable connected to the TO HOST connector.

⚠ *The TO HOST connector cannot be used at the same time as the MIDI IN and MIDI OUT/THRU connectors.*

Using the MIDI connectors to connect the AW2816 to external devices

Making connections

If you want MIDI messages to be transferred between the AW2816 and an external device that has MIDI connectors, use separately sold MIDI cables to make the following connections.

AW2816

MTC OUT connector — MIDI IN 1
MIDI OUT/THRU connector — MIDI IN 2
MIDI IN connector — MIDI OUT

External MIDI device (e.g., computer)
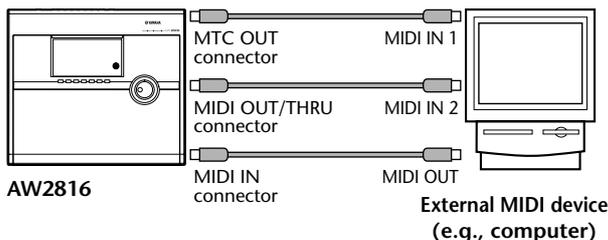
● **To send messages from the AW2816 to an external device**
Connect the AW2816's MIDI OUT/THRU connector to the MIDI IN connector of the external device.

● **To send messages from the external device to the AW2816**
Connect the MIDI OUT connector of the external device to the AW2816's MIDI IN connector.

● **To transmit MTC from the AW2816 to an external device**
Connect the AW2816's MTC OUT connector to the MIDI IN connector of the external device.

> **Tip!**
> *The AW2816's MTC OUT connector is a special MIDI connector used to transmit MTC (MIDI Time Code) when you want the AW2816 and an external device to operate in synchronization.*

Enabling the MIDI IN connector and MIDI OUT/THRU connector

Here's how to change the internal settings so that the AW2816's MIDI IN and MIDI OUT/THRU connectors can be used to transmit and receive MIDI.

> **Tip!**
> *The MTC connector is always enabled, regardless of the internal settings.*

1 Press the [MIDI] key → [F2] key.
The MIDI screen/MIDI Setup 2 page will appear. In this page you can specify how MIDI messages will flow inside the AW2816.
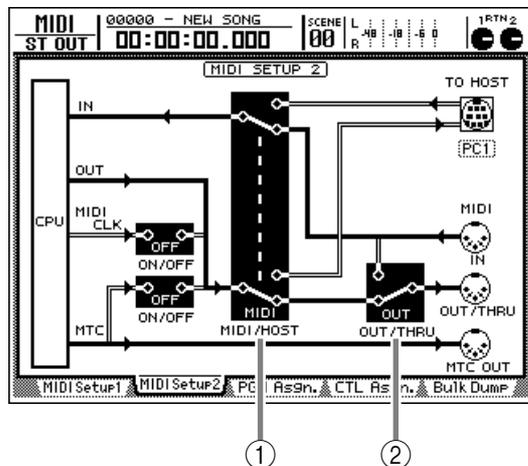
① **MIDI/HOST switch**
This switch selects whether the MIDI connectors (MIDI) or the TO HOST connector (TO HOST) will be used to input and output MIDI messages.

② **OUT/THRU switch**
This switch selects whether the MIDI OUT/THRU connector will function as a MIDI OUT connector (OUT) or MIDI THRU connector (THRU).

2 Move the cursor to the MIDI/HOST switch, and press the [ENTER] key to select "MIDI."
When the AW2816 is in the default state, the MIDI/HOST switch is set to "MIDI."

> **Tip!**
> *In this page, signal routes through which MIDI messages are traveling are indicated by solid lines (|), and signal routes through which MIDI messages are not traveling are indicated by hollow lines (‖).*

3 Move the cursor to the OUT/THRU switch, and press the [ENTER] key to select "OUT."
When the AW2816 is in the default state, the OUT/THRU switch is set to "OUT."

> **Tip!**
> *If you want to use the MIDI OUT/THRU connector as a MIDI THRU connector, set the MIDI/HOST switch = MIDI, and the OUT/THRU switch = THRU.*

Using the TO HOST connector to connect the AW2816 and your computer

Here's how to use the AW2816's TO HOST connector to make connections to your computer.

Making connections

Use a separately sold cable to connect the AW2816's TO HOST connector to the serial port of your computer. Using the TO HOST connector allows MIDI messages to be simultaneously transmitted and received over a single cable.

Connections to an IBM/PC compatible computer

Connection cable
(YAMAHA-CCJ-PC2)

TO HOST
connector

RS-232C
DB-9

AW2816

**IBM/PC
compatible
computer**
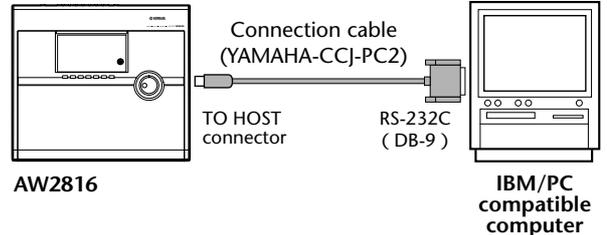
Connections to an Apple Macintosh computer

Connection cable
(YAMAHA-CCJ-MAC)

TO HOST
connector

MODEM
port

AW2816

**Apple
Macintosh
computer**

⚠
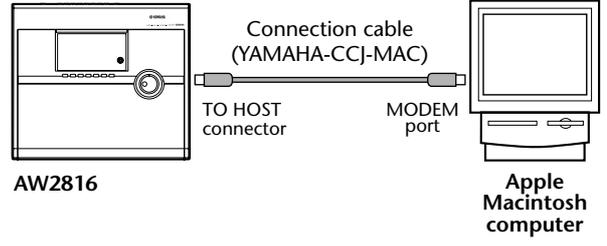
It is not possible to use the AW2816's TO HOST connector to make connections to some Macintosh computers that do not have a modem/printer port. If you are using this type of computer, make connections using the MIDI connectors.

Enabling the TO HOST connector

Change the internal settings so that the AW2816 will use the TO HOST connector to transmit and receive MIDI.

1 Press the [MIDI] key → [F2] key.
The MIDI screen/MIDI Setup 2 page will appear.
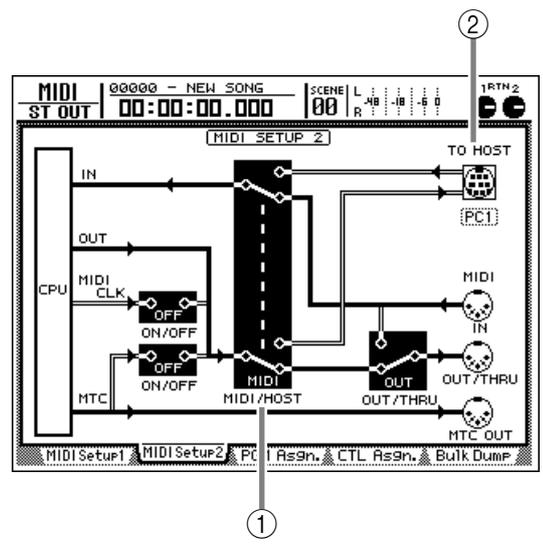
① **MIDI/HOST switch**
This switch selects whether the AW2816 will use the MIDI connectors (MIDI) or the TO HOST connector (TO HOST) to input and output MIDI messages.

② **TO HOST**
Set the transmission speed of the TO HOST connector as appropriate for the type of computer you are using.

2 Move the cursor to the MIDI/HOST switch, and press the [ENTER] key to select "HOST."

3 Move the cursor to the TO HOST setting, and use the [DATA/JOG] dial to select the setting appropriate for your computer.

• **IBM/PC compatible**: PC2 (38.4 kbps)

• **NEC PC-9801/9821 series**: PC1 (31.25 kbps) or PC2 (38.4 kbps)

• **Apple Macintosh series (models with a modem/printer port)**: MAC

⚠

- *To use a serial port connection, you will need to separately provide driver software appropriate for your system.*
- *If you are using an NEC PC-9801/9821 series computer, the TO HOST setting (TO HOST PC1 or TO HOST PC2) will depend on the driver software you are using. For details refer to the manual for your software.*
- *If you are connecting a Macintosh, you must set the MIDI interface setting of your application to 1 MHz.*
- *If you want to transmit MTC from the AW2816 to your computer, we recommend that you separately obtain a MIDI interface, and connect the AW2816's MTC OUT connector to the MIDI IN of your MIDI interface. Although it is not impossible to output MTC from the TO HOST connector, this will mean that MTC and other MIDI messages will be carried on the same cable, and the timing precision will not be as good.*

MIDI

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Using MTC to synchronize the AW2816 and an external device

Here's how MTC (MIDI Time Code) can be transmitted from the AW2816's MTC OUT connector to synchronize the operation of the AW2816 and an external device.

✎ **Tip!**

MTC specifies the current time in units of hours: minutes: seconds: frames by converting time code into MIDI messages. By transmitting MTC from the AW2816 to an external device such as a computer or MIDI sequencer, you can synchronize an external device with the AW2816 song.

1 Use a MIDI cable to connect the AW2816's MTC OUT connector to the MIDI IN connector of the external device (in the case of a computer, the MIDI IN connector of your MIDI interface).

⚠

By changing the internal settings, you can cause MTC messages to be output from the MIDI OUT/THRU connector or TO HOST connector. However with this method, MTC and the other MIDI messages will be carried on the same cable, and timing precision will not be as good. You should use the MTC OUT connector if possible.

2 Press the [MIDI] key → [F1] key.
The MIDI screen/MIDI Setup 1 page will appear.
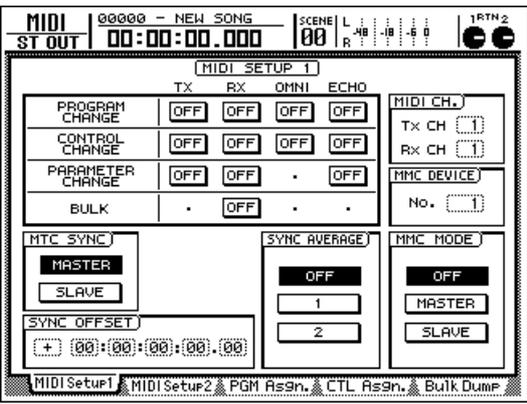
3 Move the cursor to the MASTER button in the MTC SYNC area, and press the [ENTER] key.

When the MASTER button is on, the AW2816 will function as a MTC master (the device that transmits MTC).

4 Press the [SONG] key → [F2] key.
The SONG screen/Setting page will appear. In this page you can select the frame rate of the time code (the smallest unit of time code, indicating the number of frames into which each second is divided).
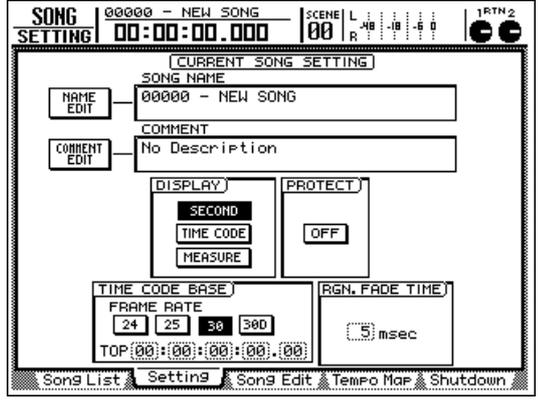
Move the cursor to the TIME CODE area, and turn on one of the following four buttons to select the frame rate.

- **24 button** ..... 24 frames/second
- **25 button** ..... 25 frames/second
- **30 button** ..... 30 frames/second (30 non-drop frame)
- **30D button** .. 29.97 frames/second (30 drop frame)

With the default settings of the AW2816, 30 frames/second is selected.

✎ **Tip!**

The frame rate you select here affects not only synchronization with external devices, but also affects the time code displayed in the counter and elsewhere.

5 To display time code in the counter, move the cursor to the TIME CODE button in the DISPLAY area, and press the [ENTER] key.

6 Make settings on your external device so that it will follow the MTC messages it receives, and put it in playback-ready mode.

At this time, verify that the external device is set to use the same MTC frame rate as you selected in step 4.

7 On the AW2816, begin playing the song.

When the song begins playing, MTC will be transmitted from the MTC OUT connector, and the external device will begin running from the same location. When you stop the AW2816 song, MTC transmission will stop and the external device will also stop.

Tip!

- *Conversely from the above example, it is also possible to send MTC from an external device to the AW2816's MIDI IN connector, and synchronize the AW2816 as the MTC slave (the device that receives MTC). However to stabilize the operation of the recorder, we recommend that you use the AW2816 as the MTC master whenever possible.*
- *You can skew (change the time correspondence between) the running position of the song and the external device by changing the Time Code Top setting (the time code time corresponding to the beginning of the song) in the SONG screen/Setting page.*

MIDI

13

Using MIDI clock to synchronize the AW2816 and an external device

The AW2816 and an external device can also be synchronized by using MIDI Clock as the synchronization data instead of MTC. Use this method if a MIDI sequencer or rhythm machine that does not support MTC needs to be synchronized with the AW2816, or when you want to specify the locate position in units of measures and beats.

Tip!
- *MIDI Clock is timing data that divides each beat into 24 parts.*
- *In order to synchronize the operation using MIDI Clock, you must first use the AW2816's Tempo Map page to make tempo settings and time signature settings.*

1 Connect the AW2816's MIDI OUT/THRU connector to the MIDI IN connector of the external device. (Alternatively, connect the AW2816's TO HOST connector to the serial port of your computer.)

For details on connections and settings, refer to page 189 to 190.

2 Press the [MIDI] key → [F2] key.
The MIDI screen/MIDI Setup 2 page will appear.
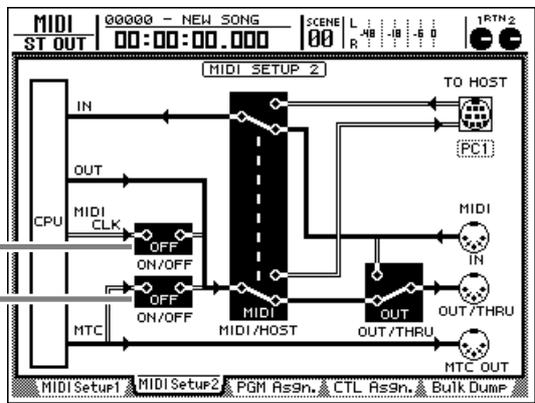
① MIDI CLK ON/OFF switch

② MTC ON/OFF switch

3 Move the cursor to the MIDI CLK ON/OFF switch, and press the [ENTER] key to turn it "ON."

When this switch is ON, MIDI Clock can be transmitted from the MIDI OUT or TO HOST connector.

4 Move the cursor to the MTC ON/OFF switch, and press the [ENTER] key to turn it "OFF."

If both the MIDI CLK ON/OFF switch and MTC ON/OFF switch are ON, both MIDI Clock and MTC data will be output from the MIDI OUT or

TO HOST connector. If you are using MIDI Clock for synchronization, you must be sure to turn the MTC ON/OFF switch OFF.

5 Press the [SONG] key → [F2] key, and turn on the MEASURE button in the DISPLAY area.

The counter display will be in units of measures/beats/ticks (1 tick = 1/960 of a quarter note), and you will be able to specify locate positions in measure/beat units.

6 Press the [SONG] key → [F4] key.
The SONG screen Tempo Map page will appear. This page displays the beat map (METER area) in which you can input time signature for the song, and the tempo map (TEMPO area) in which you can input tempo data. With the default settings, a time signature of 4/4 and tempo data of BPM=120.0 are input.
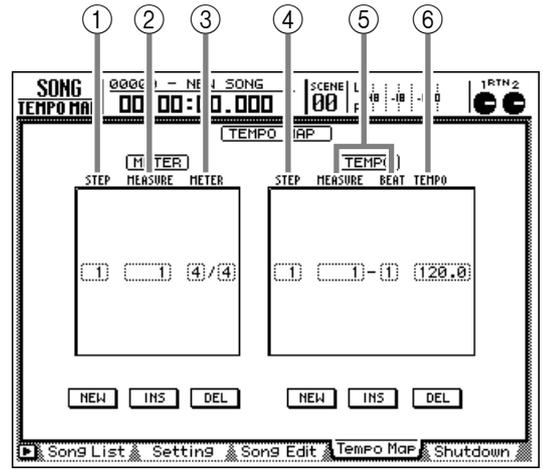
The following information is displayed in the METER area and TEMPO area.

① **STEP**
Displays the number (step number) of the time signature data.

② **MEASURE**
Displays the location (measure number) of the time signature data.

③ **METER**
This is the time signature setting.

④ **STEP**
Displays the number (step number) of the tempo data.

⑤ **MEASURE/BEAT**
Displays the location (measure number/beat) of the tempo data.

⑥ **TEMPO**
This is the tempo data value.

> **Tip!**
> - *In order to use MIDI Clock to synchronize operations with another device, you must first make tempo settings and time signature settings on the AW2816 so that the tempo and current location will be specified correctly. This is done in the SONG screen/Tempo Map page.*
> - *It is difficult to specify the tempo afterward, based on an already-recorded audio track, so if you want to use the counter in measure display mode or to use MIDI Clock to synchronize the operation with another device, you should make Tempo Map settings before you record.*

7 Move the cursor to the METER fields, and use the [DATA/JOG] dial to set the time signature of the first measure.

The numerator can be set in the range of 1–8, and the denominator can be set as 2, 4, or 8.

8 If you want the time signature to change during the song, move the cursor to the NEW button located below the METER area, and press the [ENTER] key.

New time signature data will be added at step 2. Move the cursor to the METER area, and use the [DATA/JOG] dial to specify the measure at which you want the time signature to change (MEASURE setting). Additional time signature data can be added in the same way.
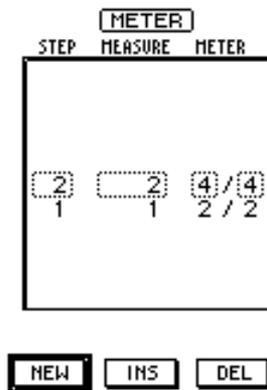
> **Tip!**
> - *A maximum of 26 steps of time signature data can be input in the METER area.*
> - *If you want to edit time signature data that is at a different location, move the cursor to the STEP setting, and turn the [DATA/JOG] dial to select the desired step number.*
> - *To delete the currently selected time signature data, move the cursor to the DEL button located below the METER area and press the [ENTER] key.*

⚠

It is not possible to change the measure location of the time signature at step number 1, or to delete it.

9 Move the cursor to TEMPO in the tempo map, and use the [DATA/JOG] dial to specify the tempo for the first measure.

The tempo (BPM) can be set in a range of 20.0–300.0.

10 If you want the tempo to change during the song, move the cursor to the NEW button located below the TEMPO area, and press the [ENTER] key.

New tempo data will be added at step 2. Move the cursor to the TEMPO area, and use the [DATA/JOG] dial to specify the measure location (MEASURE and BEAT fields) and tempo (TEMPO field) of the desired tempo change. Use the same procedure to add additional tempo data as desired.
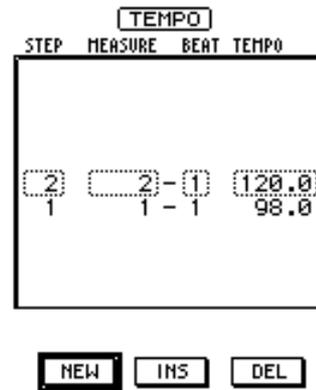
> **Tip!**
> - *A maximum of 26 steps of tempo data can be input in the TEMPO area.*
> - *If you want to edit tempo data that is at a different location, move the cursor to the STEP setting, and turn the [DATA/JOG] dial to select the desired step number.*
> - *To delete the currently selected tempo data, move the cursor to the DEL button located below the TEMPO area and press the [ENTER] key.*
> - *The internal metronome will sound according to the time signature data and tempo data specified in this page.*

⚠

It is not possible to change the measure location of the tempo data at step number 1, or to delete it.

11 Make settings on your external device so that it will follow the incoming MIDI Clock data, and put it in playback-ready mode.

12 Play back the song on the AW2816.

When the AW2816 song begins playing, a MIDI Start message and then MIDI Clock messages will be transmitted from the MIDI OUT/THRU connector or the TO HOST connector, and the external device will begin operation in synchronization with the MIDI Clock tempo. When the AW2816 song stops, a MIDI Stop message will be transmitted, and the external device will also stop running.

When you perform a locate operation on the AW2816, a MIDI Song Position Pointer message will be transmitted to indicate the current location in terms of measure/beat/clock, and the external device will also locate to the corresponding location.

MIDI

13

Using MMC to control the AW2816

MMC (MIDI Machine Control) messages can be used to control the transport of the AW2816 from an external device. Here's how you can synchronize the operation of the AW2816 with an external device such as a computer or MIDI sequencer, and send MMC messages from the external device to the AW2816 to remotely control various operations.

Tip!

• *MMC is a group of MIDI messages used to remotely control operations such as record, playback, stop, or select/defeat record tracks on devices such as audio recorders.*

• *Conversely from the example that is explained below, you can transmit MMC from the AW2816 to an external device, so that the external device is remotely controlled from the AW2816. This method is used when you need to synchronize the operation of two AW2816 units (→P.197).*

1 Connect the AW2816's MTC OUT connector to the MIDI IN connector of the external device, and make settings on both devices so that the external device will follow the MTC that is transmitted from the AW2816.

For details on using MTC synchronization, refer to page 192.

2 Connect the AW2816's MIDI IN connector to the MIDI OUT connector of the external device (or connect the AW2816's TO HOST connector to the serial port of your computer).

For details on connections and settings, refer to page 189 to 190.

In this example, the AW2816 will be the MTC master/MMC slave (the device that receives MMC), and the external device will be the MTC slave/MMC master (the device that transmits MMC).

3 Press the [MIDI] key → [F3] key.

The MIDI screen MIDI Setup 1 page will appear.
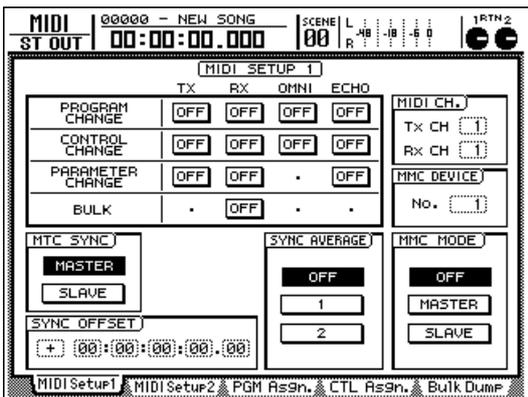
4 Move the cursor to the SLAVE button in the MMC MODE area, and press the [ENTER] key.

The AW2816 will operate as an MMC slave.

5 Move the cursor to the numerical box in the MMC DEVICE area, and use the [DATA/JOG] dial to set the MMC device ID.

The device ID is a number used to distinguish between devices when a system contains more than one MMC-compatible device. The device ID of the AW2816 can be set in a range of 1–127 (default setting= 1).

6 Set the external device to the same MMC device ID that you selected in step 5.

7 Play back the external device.

When you play back the external device, the corresponding command will be transmitted to the AW2816, and the AW2816 will begin playing. Immediately after playback begins, the AW2816 will begin transmitting MTC to the external device, and the external device will begin synchronized operation in accordance with the incoming MTC data.

When you stop the external device, the corresponding MMC command will be transmitted to the AW2816, and the AW2816 will stop.

Tip!
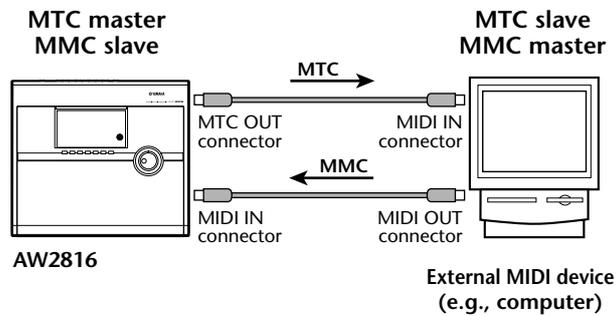
MMC can also be used to specify tracks for recording and to control recording operations from an external device.

Synchronizing two AW2816 units

If you are using two AW2816 units, you can use MMC and MTC to synchronize their operation. In this case, you can cascade the stereo bus of one unit into the stereo bus of the other unit, to mix the stereo buses of the two units and record the result on the stereo track of one unit.

As an example, we will explain how two cascaded AW2816 units can be operated in synchronization and used as though they were a 32-track recorder.

Tip!

"Cascade connection" is a connection method in which the output of one device is connected in series to the input of another device. In this example, it refers to connections by which the stereo bus of one AW2816 is input directly into the stereo bus of another AW2816.

1 Connect the two AW2816 units as shown in the diagram below.
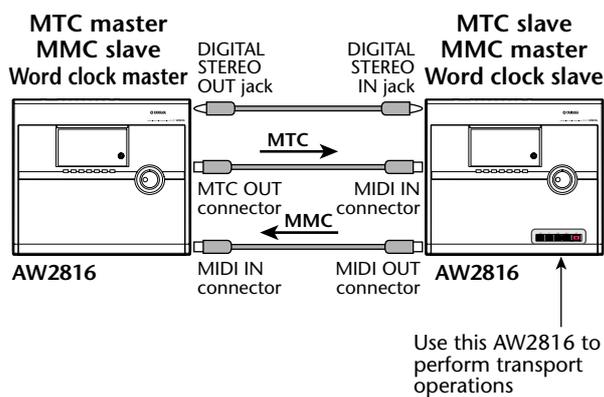
2 On the MTC master AW2816, press the [MIDI] key → [F1] key.

The MIDI screen MIDI Setup 1 page will appear.

3 Make sure that the MASTER button is turned on in the MTC SYNC area.

If it is off, use the cursor and [ENTER] key to turn on the MASTER button of the SYNC area. This AW2816 will function as the MTC master.

4 Move the cursor to the SLAVE button in the MMC MODE area, and press the [ENTER] key to turn it on.

The MTC master AW2816 will be set to function as the MMC slave.
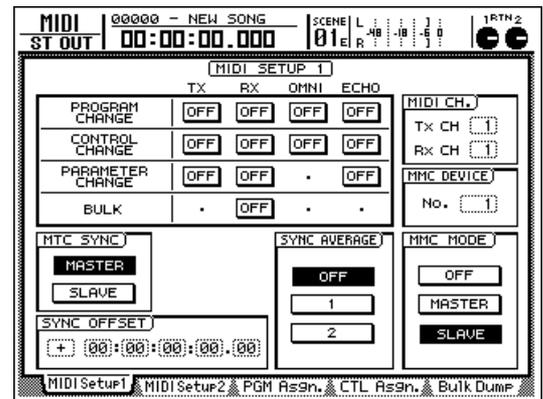
— MTC master unit —

The MTC slave AW2816 cannot function as an MMC slave. When using MTC and MMC for synchronization, the MTC master AW2816 must be the MMC slave.

5 On the MTC master/MMC slave AW2816, press the [SETUP] key → [F1] key to access the SETUP screen/D.In Setup page.

In this page you can select the word clock source to which the AW2816 will synchronize.

6 Make sure that the INT button of the WORDCLOCK SOURCE area is turned on.

If the INT button is on, the MTC master AW2816 will use its own internal clock as the word clock source. If the INT button is off, move the cursor to the button, and press the [ENTER] key to turn it on.
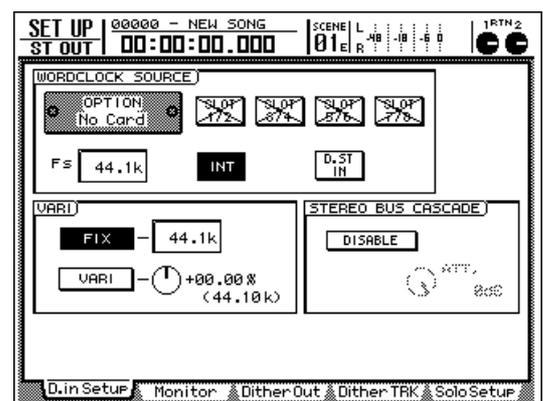
— MTC master unit —

When transferring digital audio signals between two AW2816 units operated in synchronization, the general rule is to set one unit as the MTC master/word clock master (the device that transmits the word clock), and the other unit as the MTC slave/word clock slave (the device that receives the word clock). If other methods are used, synchronization operation may not occur correctly, or the playback pitch may be incorrect.

MIDI

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7 On the MTC slave AW2816, press the [MIDI] key → [F1] key to access the MIDI Setup 1 page.

8 Move the cursor to the SLAVE button of the MTC SYNC area, and press the [ENTER] key to turn it on.

The corresponding AW2816 will be set to function as the MTC slave.

9 Move the cursor to the MASTER button of the MMC MODE area, and press the [ENTER] key to turn it on.

The MTC slave AW2816 will be set to function as the MMC master.
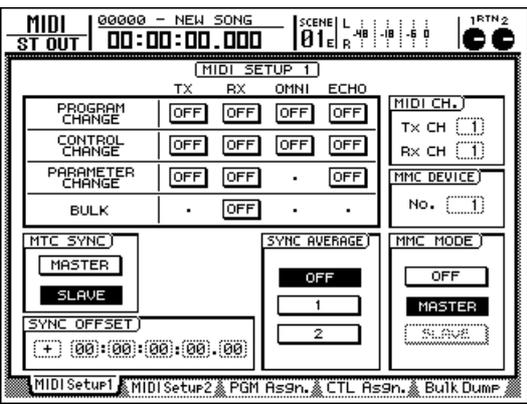
— MTC slave unit —

10 On the MTC slave AW2816, press the [SETUP] key → [F1] key to access the SETUP screen/D.In Setup page.

11 Move the cursor to the D.ST IN button of the WORDCLOCK SOURCE area, and press the [ENTER] key.

The clock data included in the signal that is input from the DIGITAL STEREO IN jack of the MTC slave AW2816 will be selected as the word clock source. In this state, the MTC slave AW2816 will also be the word clock slave.
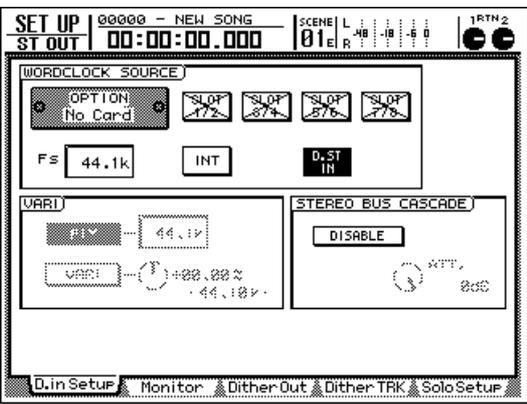
— MTC slave unit —

⚠️ *If the sampling frequency of the two AW2816 units is not the same, the word clock signal will not lock, and playback will not occur correctly on the MTC slave during synchronized playback. If you want two AW2816 units to play back in synchronization, the sampling frequency of both songs must be the same.*

12 Move the cursor to the button marked DIS-ABLE in the STEREO BUS CASCADE area, and press the [ENTER] key.

The button display will change to ENABLE, and the stereo bus signal received from the MTC master/word clock master unit via the DIGITAL STE-REO IN jack will be sent directly to the stereo bus of the MTC slave/word clock slave.

— MTC slave unit —

Tip!

• *If you have cascade-connected two AW2816 units, you should generally set the STEREO fader of the word clock master at nominal level (0 dB).*

• *By using the ATT. encoder in the STEREO BUS CAS-CADE area, you can adjust the input level of the DIGITAL STEREO IN jack (in this case, the level of the signal sent from the MTC master/word clock master AW2816).*

13 On the MTC slave AW2816, press the PLAY [▶] key.

The MTC master/word clock master will begin running, and will output MTC. The MTC slave/word clock slave AW2816 will follow this MTC, and begin running. The stereo channel output of the MTC master/word clock master will be sent directly to the stereo bus of the MTC slave/word clock slave.
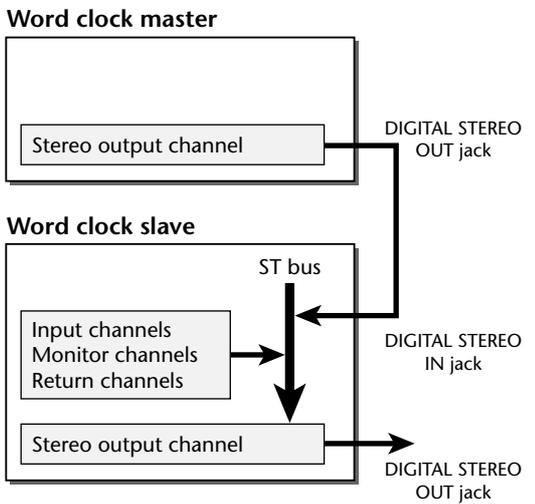
If you perform the stereo track record operation on the MTC slave/word clock slave AW2816, the stereo output channels of both the word clock master and slave units will be mixed, and recorded on the stereo track.

⚠

When you perform recording operations on the stereo track of the MTC slave, press only the REC [●] key. (Do not hold down the REC [●] key and press the PLAY [▶] key.)

Remotely switching AW2816 scenes

By sending program change messages from an external device to the AW2816, you can switch the scene memories of the AW2816. Program change messages can also be transmitted to an external device when you switch scenes on the AW2816.

1 Connect the AW2816's MIDI IN connector to the MIDI OUT connector of the external device, and connect the AW2816's MIDI OUT/THRU connector to the MIDI IN connector of the external device. (Alternatively, connect the AW2816's TO HOST connector to the serial port of your computer.)

For details on connections and settings, refer to page 189 to 190.

2 Press the [MIDI] key → [F1] key.
The MIDI screen/MIDI Setup 1 page will appear.

3 Move the cursor to the TX (transmit) button in the PROGRAM CHANGE area, and press the [ENTER] key to switch the button ON. In the same way, switch the RX (receive) button in the PROGRAM CHANGE area ON as well.

With these settings, program changes can be transmitted and received.

4 Move the cursor to the Tx CH numerical box in the MIDI CH. area, and set the MIDI channel that will be used for transmission. Then move the cursor to the numerical box of the Rx CH, and set the MIDI channel for reception.

Tip!
- *Normally you will use the same setting for the transmit and receive MIDI channels.*
- *If the OMNI button is turned ON in the PROGRAM CHANGE area, program changes on all MIDI channels will be received, regardless of the specified MIDI reception channel.*

5 Press the [F3] key.
The MIDI screen/PGM Asgn. page will appear. In this page you can assign a scene number to each program change number 1–128.
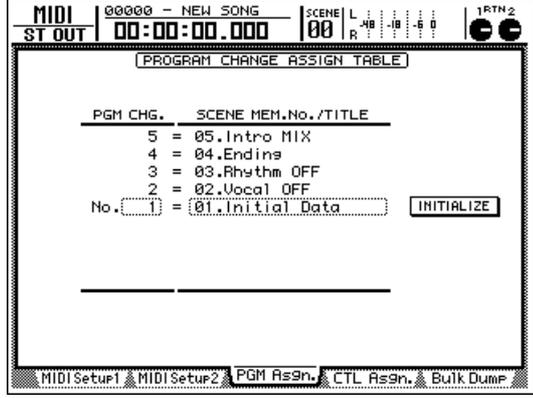
Tip!
- *With the default settings, scene numbers 01–96 are assigned to program numbers 1–96, and scene number 00 is assigned to program number 100. (All other program change numbers will be displayed as "-NO ASSIGN-".)*
- *You can use the INITIALIZE button located in the right of the display to return all program change number assignments to their default setting.*

6 Move the cursor to the PGM CHG. area, and use the [DATA/JOG] dial to select a program change number (1–128).
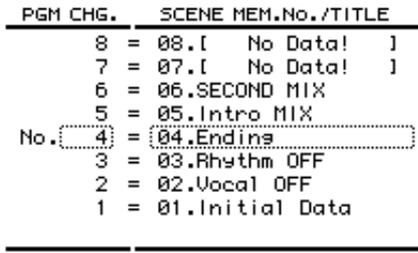
⚠ *If the same scene number is assigned to more than one program change number, recalling the corresponding scene will cause only the lowest-numbered program change message to be transmitted.*

7 Move the cursor to the right, and use the [DATA/JOG] dial to select the scene number (00–96) that you want to assign to the program change number selected in step 6.

⚠ *If you select a scene number in which no scene data has been stored, the TITLE area will indicate "[No Data!]."*

8 Transmit a program change message from the external device.

The AW2816 will recall the scene that corresponds to the program change that was received. If you recall a scene on the AW2816, the corresponding program change message will be transmitted.

⚠

If you recall a scene number to which no program change number has been assigned, no program change will be transmitted.

MIDI

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Controlling AW2816 parameters from an external device

The mix parameters and effect parameters of the AW2816 can be controlled remotely via the MIDI IN connector/TO HOST connector. There are two ways to do this: using control changes or using parameter changes (system exclusive).

Tip!

- *Since most devices are able to handle control change messages, they have the advantage of being easy to use. However caution is necessary if devices other than the AW2816 are being used simultaneously in your system, since external devices that receive control change messages may operate in unexpected ways.*
- *Parameter changes (system exclusive) are MIDI messages used only by the AW2816, and will not cause other devices to behave unexpectedly. However, they may be difficult to use since they occupy a larger amount of data.*
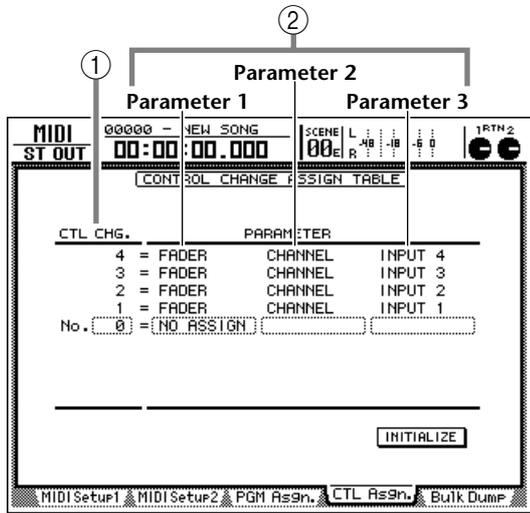
Using control changes to operate parameters

On the AW2816, control change numbers 0–95 and 102–119 are assigned to various parameters, and the corresponding parameter can be controlled by transmitting the appropriate control change from an external device. It is also possible to transmit control changes when you operate a parameter on the AW2816.

This section explains how to assign an AW2816 parameter to a control change, and record/changes of that parameter on a MIDI sequencer.

■ Assigning a parameter to a control change

Here's how the parameter whose operation you want to record can be assigned to a control change number (0–95, 102–119).

1 Press the [MIDI] key → [F4] key.

The MIDI screen/CTL Asgn. page will appear. In this page you can specify the parameter that is assigned to each control change.

① **CTL CHG. No.**

This is the control change number to which a parameter will be assigned.

② **PARAMETER (1–3)**

This area shows the parameter that is assigned to each control change number. Select the parameter group in the left column (parameter 1), and specify the necessary values for that group in the other two columns (parameters 2 and 3). Control change numbers to which no parameter has been assigned will be displayed as "NO ASSIGN."

2 Move the cursor to the CTL CHG. No. row, and use the [DATA/JOG] dial to select the control change number to which a parameter will be assigned.

The row enclosed by a dotted frame indicates the currently selected control change number.

```
         10  =  NO ASSIGN
No.  (  9 )=( NO ASSIGN )  (            )  (            )
          8  =  FADER         CHANNEL       INPUT 8
```

⚠️

Control change numbers 0 and 32 are defined as "Bank Select" (messages used to switch sound banks on a synthesizer). Since some MIDI sequencers handle these bank select messages differently than other control changes, these messages may not be suitable for controlling parameters.

3 Move the cursor to the PARAMETER area, and use the [DATA/JOG] dial to select the parameter that you want to assign.

For example if you want to assign the FADER group parameter "AUX bus 1 master level," set the items of the PARAMETER area to (from left to right) "FADER," "MASTER," "AUX 1."

```
          10 = NO ASSIGN
No.  [  9 ] = [FADER      ] [MASTER     ] [AUX 1    ]
           8 =  FADER         CHANNEL        INPUT 8
```

Tip!

• *For the parameters that are assigned to each control change number by default, refer to page 280.*
• *Of the parameters that can be assigned, channel faders, AUX sends, [ON] keys, EQ, and pan operations can also be recorded in automix. (For details on automix, refer to page 133.) If you use automix to record operations that can be recorded on automix, and record the remaining parameter operations on an external MIDI sequencer, you can minimize the amount of MIDI messages that need to be transmitted between the AW2816 and your MIDI sequencer.*

■ Recording/playing parameter operations on a MIDI sequencer

Here's how you can operate AW2816 parameters to transmit control changes, record these messages on a MIDI sequencer that is synchronized with the AW2816, and then play back the recorded messages.

1 Connect the AW2816 and your MIDI sequencer as shown in the following diagram, and make settings so that the AW2816 and MIDI sequencer will operate in synchronization using MTC.

For details on synchronizing with MTC, refer to page 192.

MTC master **MTC** **MTC slave**

MTC OUT connector **Control changes** MIDI IN 1 connector

MIDI OUT/THRU connector **Control changes** MIDI IN 2 connector

AW2816 MIDI IN connector MIDI OUT connector **External MIDI device (e.g., computer)**

⚠
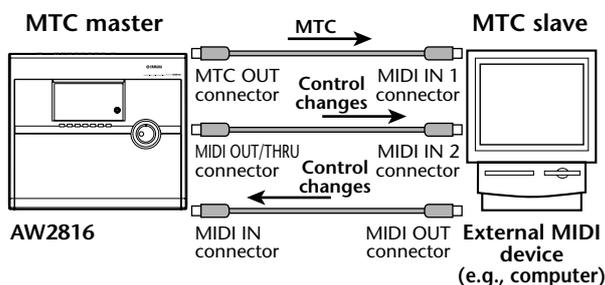
Before you record and play back control change messages on a MIDI sequencer, make sure that the MIDI Thru function (sometimes called "Patch Thru" or "MIDI Echo") of the sequencer is turned off. If this function is on, the control changes transmitted from the AW2816 will be immediately returned to the AW2816, causing malfunctions.

2 Press the [MIDI] key → [F1] key.

The MIDI screen/MIDI Setup 1 page will appear. In this page you can use the TX (transmit) and RX (receive) buttons of the CONTROL CHANGE area to turn control change transmission and reception on/off.
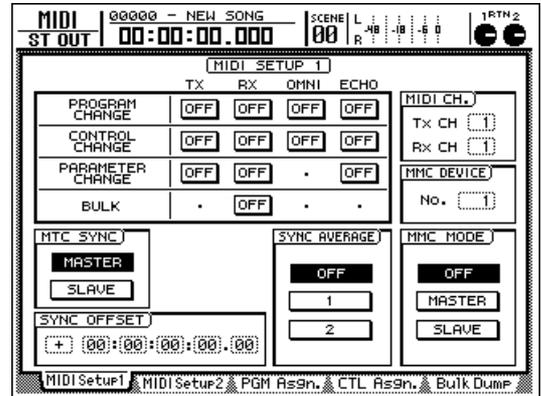
3 Move the cursor to the TX (transmit) button in the CONTROL CHANGE area, and press the [ENTER] key to switch the button ON. In the same way, turn the RX (receive) button of the CONTROL CHANGE area ON.

With these settings, operating a parameter on the AW2816 will transmit the corresponding control change. Also, the corresponding parameter will change when a control change is received from an external device.

4 Move the cursor to the Tx CH numerical box in the MIDI CH. area, and set the MIDI channel that will be used for transmission. Then move the cursor to the numerical box of the Rx CH, and set the MIDI channel for reception.

Tip!

• *Normally you should set the Receive and Transmit channels to the same setting.*
• *If the OMNI button is turned ON in the CONTROL CHANGE area, control changes of all MIDI channels will be received, regardless of the Receive channel setting.*

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5 Put your MIDI sequencer in record-ready mode, and play back the song on the AW2816.

The two devices will run in synchronization.

⚠️

When recording parameter operations on a MIDI sequencer, you must turn automix off (DISABLE). If the automix function is on (ENABLE), control changes will also be transmitted for the parameters operated by automix.

6 Access the screen containing the parameter that you assigned to a control change, and operate that parameter.

Control change messages corresponding to the parameter movements will be transmitted from the MIDI OUT/THRU connector or TO HOST connector, and will be recorded on your MIDI sequencer.
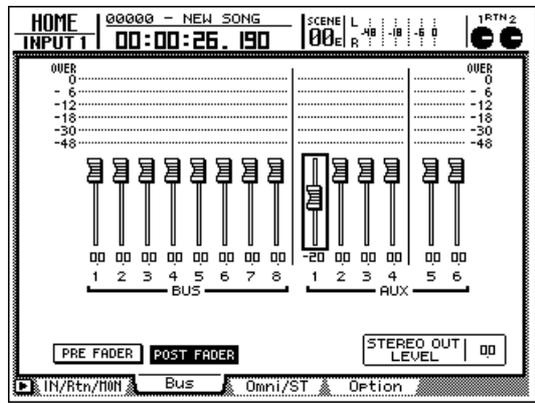
7 When you have finished operating the parameter, press the STOP [■] key to stop the song.

The MIDI sequencer will also stop.

8 Put the MIDI sequencer in playback-ready mode.

9 On the AW2816, locate to a location earlier than where you recorded the parameter operation, and play back the song.

The MIDI sequencer will play back in synchronization with the AW2816. When the AW2816 receives control change messages from the MIDI sequencer, the corresponding parameters will change.

Using system exclusive to operate parameters

On the AW2816 you can use a type of system exclusive messages called "parameter changes" to operate internal parameters, instead of using control changes.

Here's how to record/playback parameter changes on your MIDI sequencer.

✎ **Tip!**

For details on the parameters that can be operated by parameter change messages, refer to "MIDI data format" at the end of this manual.

1 Connect the AW2816 and your MIDI sequencer as shown the diagram on page 203, and make settings so that the AW2816 and MIDI sequencer will operate in synchronization using MTC.

⚠️

Before you record and play back parameter change messages on a MIDI sequencer, make sure that the MIDI Thru function (sometimes called "Patch Thru" or "MIDI Echo") of the sequencer is turned off. If this function is on, the parameter changes transmitted from the AW2816 will be immediately returned to the AW2816, causing malfunctions.

2 Press the [MIDI] key → [F1] key.

The MIDI screen/MIDI Setup 1 page will appear.
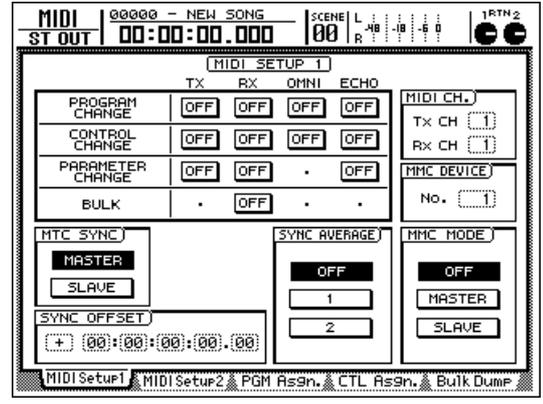
3 Move the cursor to the TX (transmit) button in the PARAMETER CHANGE area, and press the [ENTER] key to turn the button ON. In the same way, switch the RX (receive) button ON in the PARAMETER CHANGE area.

With these settings, operating a parameter will cause the corresponding parameter change to be transmitted. When a parameter change is received from an external device, the corresponding parameter will be controlled.

	TX	RX	OMNI	ECHO
PROGRAM CHANGE	OFF	OFF	OFF	OFF
CONTROL CHANGE	OFF	OFF	OFF	OFF
PARAMETER CHANGE	ON	ON	·	OFF
BULK	·	OFF	·	·

4 **Put your MIDI sequencer in record-ready mode, and play back the AW2816 song.**

Both devices will begin running in synchronization.

5 **Operate a parameter on the AW2816.**

Parameter change messages corresponding to the parameter movements will be transmitted from the MIDI OUT/THRU connector or TO HOST connector, and will be recorded on your MIDI sequencer.

6 **When you have finished operating the parameter, press the STOP [■] key to stop the song.**

The MIDI sequencer will also stop.

7 **Put the MIDI sequencer in playback-ready mode.**

8 **On the AW2816, locate to a location earlier than where you recorded the parameter operation, and play back the song.**

The MIDI sequencer will play back in synchronization with the AW2816. When the AW2816 receives parameter change messages from the MIDI sequencer, the corresponding parameters will change.

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Remotely controlling an external MIDI device

This section explains the "MIDI Remote" function that lets you use faders 1–8 and [ON] keys 1–8 to control an external device.

About the MIDI Remote function

The AW2816 lets you assign a desired MIDI message to each fader 1–8 and [ON] key 1–8, and transmit the assigned MIDI messages by operating the faders and [ON] keys. This is called the "MIDI Remote" function.

The following types of message can be assigned to the faders and [ON] keys.

■ MIDI messages that can be assigned to faders

MIDI messages with a value that changes in a range of 0–127 can be assigned to a fader. For example if you assign control change #7 (volume) to a fader, and make settings so that the control change value changes in the range of 0–127, you will be able to use fader movements to control the volume of a MIDI tone generator in a range of 0–127.

Control change number 7

↑Transmitted

Value= 127
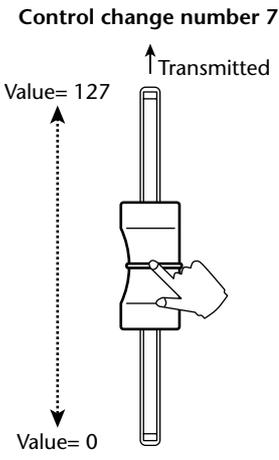
Value= 0

■ MIDI messages that can be assigned to [ON] keys

MIDI messages with a value that switches between 0 and 127 can be assigned to an [ON] key. For example if you assign control change #64 (Hold) to an [ON] key, and make settings so that the [ON] key switches between values of 0 and 127, a control change message of #64 with a value of 127 (Hold On) will be transmitted when you turn the [ON] key on (lit), and the same message with a value of 0 (Hold Off) will be transmitted when you turn the [ON] key off (dark).

Control change number 64 (value=127)   **Control change number 64 (value=0)**

Transmitted ↑   ↑Transmitted

ON → ON → ON
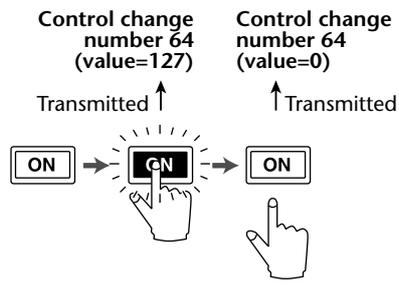
You can also make settings so that a MIDI message with a fixed value is transmitted only when the [ON] key is turned on (lit). For example you can assign a program change #1 message so that the corresponding program change message will be transmitted each time the [ON] key is switched on.

Program change number 1   **Program change number 1**

↑Transmitted   ↑Transmitted

ON → ON → ON → ON → ON → ON
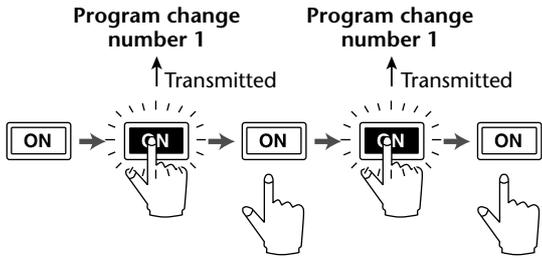
Using the default MIDI Remote settings

When the AW2816 is in the default state, messages are already assigned to faders 1–8 and [ON] keys 1–8. Here's how to use these default MIDI Remote settings.

1 Connect the AW2816's MIDI OUT/THRU connector to the MIDI IN connector of the external device.

For details on connections and settings, refer to page 189.

2 In the FADER MODE section, press the [REMOTE] key.

The REMOTE screen will appear, where you can operate the MIDI Remote function. The REMOTE screen has four pages, Remote A–Remote D, and in each page you can assign different MIDI messages to faders 1–8 and [ON] keys 1–8. The MIDI messages assigned by default to the faders and [ON] keys in the Remote A–Remote D pages are listed in page 317.

⚠ _____

While the REMOTE screen is displayed, the STEREO fader, [RTN 1]/[RTN 2] controls, and the various [ON] keys will function in the same way as when the HOME screen is displayed. (They will control the input/output levels of the stereo output channel and return channels 1/2, and switch them on/off.)

3 Press one of the [F1]–[F4] keys to access the page (Remote A–Remote D) in which the MIDI message you want to transmit has been assigned to a fader/[ON] key.

In this example, the Remote C page has been selected.
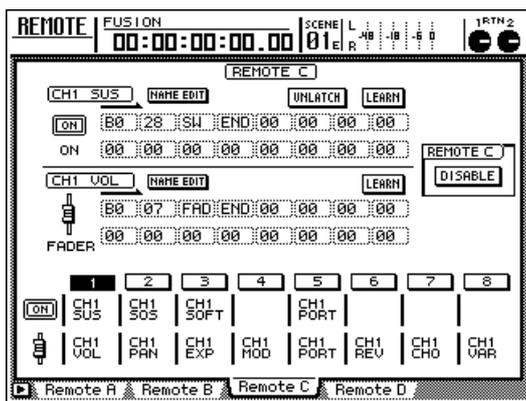
4 Move the cursor to the REMOTE x setting (x is a character A–D) in the right side of the display, and press the [ENTER] key.

The button will change from "DISABLE" to "ENABLE," and the MIDI Remote function will be enabled for the corresponding page (in this example, the Remote C page). In this state, operating the faders 1–8/[ON] keys will transmit the MIDI message assigned to the corresponding controller.

✏️ **Tip!** _____

Each of the Remote A–D pages can be enabled/disabled independently. The MIDI Remote function cannot be used when you have accessed a page that is set to DISABLE.

5 Operate faders 1–8/[ON] keys 1–8.

The MIDI message assigned to the corresponding fader/[ON] key will be transmitted from the MIDI OUT connector.

✏️ **Tip!** _____

Operations of the MIDI Remote faders 1–8/[ON] keys 1–8 can be recorded in the automix. When this function is operated manually, only eight channels of faders and [ON] keys can be operated simultaneously, but by using automix to record operations in each page one after another, you can simultaneously play back 32 channels of fader and [ON] key operations.

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Assigning MIDI messages to faders

A MIDI message of up to 16 bytes can be assigned to each fader/[ON] key used in MIDI Remote. There are two ways to assign a MIDI message to a controller: you can assign a MIDI message that was received at the MIDI IN or TO HOST connector (with or without modifying the message), or you can input each byte individually.

Here's how the control change #10 message received at the MIDI IN connector can be assigned to Remote A fader 1, so that operating fader 1 will remotely control Pan on an external tone generator.

1 Connect the AW2816's MIDI IN connector to the MIDI OUT connector of the external device, and the AW2816's MIDI OUT/THRU connector to the MIDI IN connector of the external device.

For details on connections and settings, refer to page 189.

⚠

- *Make sure that the ECHO button is turned off in the CONTROL CHANGE area of the MIDI screen/MIDI Setup 1 page. If this button is on, receiving a control change from an external device will cause the same message to be re-transmitted back to the external device, which may cause malfunctions.*
- *The TX, RX, and OMNI settings in the MIDI screen/MIDI Setup 1 page do not affect MIDI Remote operations.*

2 Press the [REMOTE] key → [F1] key.

The REMOTE screen/Remote A page will appear. The display will show the MIDI messages (in hexadecimal form) that are assigned to the [ON] key and fader of the currently selected channel.
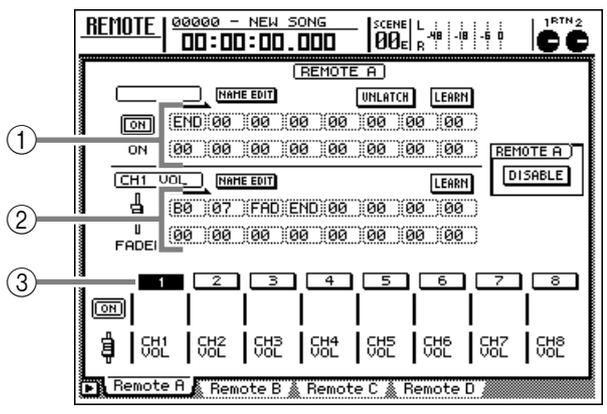
① MIDI message assigned to the [ON] key

② MIDI message assigned to the fader

③ Currently selected channel number (highlighted)

3 Press [SEL] key 1.

The MIDI message assigned to fader 1 will be displayed in the lower line of the display. By default, control change #7 (MIDI Ch=1) will be assigned.

The values in the MIDI message display area have the following significance.

- **00–FF (hexadecimal)** .... This is the MIDI message that is actually transmitted.

- **END** .... This indicates the end of the MIDI message. When you operate the fader, the MIDI message from the beginning to immediately before END will be transmitted.

- **FAD** .... This indicates a value that will correspond to the current position of the fader. When you raise or lower the fader, the "FAD" byte will be transmitted as a value 00–7F (hexadecimal).

4 Move the cursor to the LEARN button in the lower line of the display, and press the [ENTER] key.

The LEARN button will be turned on. While this button is on, channel messages (note-on/off, control change, program change, etc.) or system exclusive messages received at the AW2816's MIDI IN connector will be captured automatically, and input into the MIDI message display area.

Tip!

If multiple messages are received while the LEARN button is on, the last-received MIDI message will be inputed.

5 Transmit a control change #10 MIDI message from your external device.

The captured control change data will be input in the MIDI message display area. If a control change is received, the byte corresponding to the changing value 0–127 (the third byte) will automatically be set to "FAD."
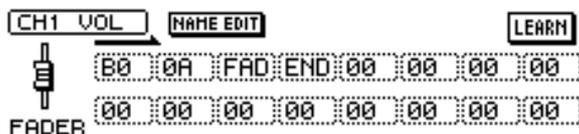
Tip!

When a MIDI message is received while the LEARN button is on, the byte following the last byte of the message will automatically be input as "END."

⚠

- *If a MIDI message longer than 16 bytes is received when the LEARN button is on, the first 16 bytes will be input. In this case, the "END" value will not be input, meaning that no MIDI message will be transmitted when you operate the fader.*
- *If the MIDI message assigned to the fader does not contain a "FAD" byte, no MIDI message will be transmitted when you operate the fader.*

6 Make sure that a control change has been input in the MIDI message area. Then move the cursor to the LEARN button and press the [ENTER] key to turn off the LEARN button.

7 Move the cursor to the REMOTE A area in the right of the display, and press the [ENTER] key to switch the button to "ENABLE."

The remote functions of the Remote A page will be enabled, and MIDI messages will be transmitted when you operate faders 1–8/[ON] keys 1–8.

8 Operate fader 1.

As you raise or lower fader 1, control change #10 messages will be transmitted from the MIDI OUT connector with a value that varies in the range of 0–127.

Tip!

If you used the LEARN button to capture a channel message, the MIDI reception channel will also be used as the MIDI transmission channel.

9 If you want to name the fader to which the MIDI message was assigned, move the cursor to the NAME EDIT button in the lower part of display, and press the [ENTER] key.

The NAME EDIT popup window will appear.

10 Use the character palette to input a name, move the cursor to the OK button, and press the [ENTER] key.

For details on inputting characters, refer to page 37.

The name you input will be shown below the 1–8 buttons in the lower part of the display.

Tip!
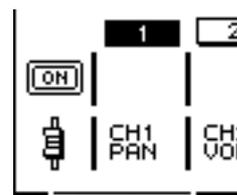
- *The edited contents of the Remote A–Remote D pages are saved as part of the song.*
- *If you want to return the settings of the currently selected page (Remote A–Remote D) to the factory default settings, hold down the [SHIFT] key and press the [F5] key.*

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Assigning MIDI messages to the [ON] keys

As an example, here's how you can use a sustain pedal connected to a MIDI sequencer to assign Hold On (control change #64 with a value of 127) and Hold Off (control change #64 with a value of 0) messages to the Remote A [ON] key 1.

1 Connect the AW2816's MIDI IN connector to the MIDI OUT connector of a synthesizer to which a sustain pedal is connected, and connect the AW2816's MIDI OUT/THRU connector to the MIDI IN connector of the external device.

For details on connections and settings, refer to page 189.

2 Press the [REMOTE] key → [F1] key.

The REMOTE screen REMOTE A page will appear.
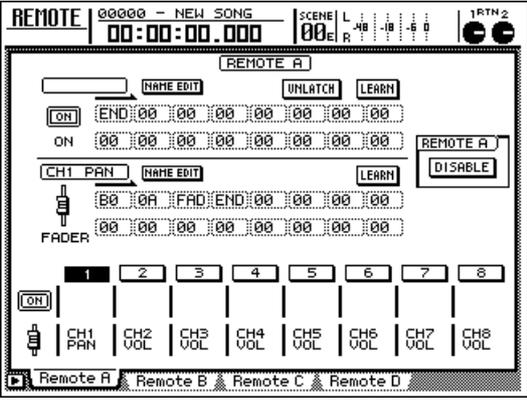
3 Press [SEL] key 1.

The upper line in the display will show the MIDI message currently assigned to [ON] key 1.

⚠️
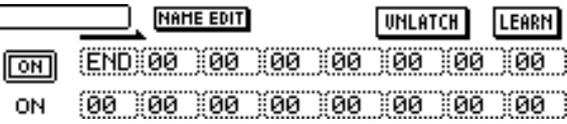
With the default settings, no MIDI message is assigned to [ON] key 1 in the Remote A page. In such cases, a value of "END" will be input at the first byte to indicate the end of the MIDI message.

4 Move the cursor to the LEARN button in the upper line of the display, and press the [ENTER] key to turn the button on.

5 Press the sustain pedal connected to your MIDI synthesizer.

A control change #64 with a value of 127 (7F in hexadecimal; Hold On message) will be input in the MIDI message display area. For this message, the right digit (first place) of the first byte is the MIDI channel number, the second byte is the control number, and the third byte is the actual value.
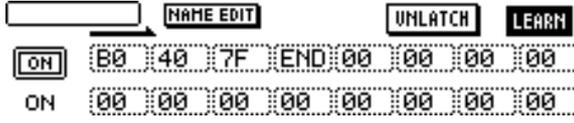
6 Turn off the LEARN button, and release the sustain pedal.

✏️ **Tip!**

If you release the sustain pedal before turning the LEARN button off, a control change #64 with a value of 0 (hexadecimal 00) will be input (Hold Off) in the MIDI message display area. However even in this case, the following procedure will not be affected.

7 Move the cursor to the third byte, and use the [DATA/JOG] dial to change the value to "SW."

The byte whose value is set to "SW" will be transmitted as a value of 127 (hexadecimal 7F) when the [ON] key changes to On, and as a value of 0 (hexadecimal 00) when the [ON] key changes to Off. In this example, the data will be output as a Hold On/Off message.

✏️ **Tip!**
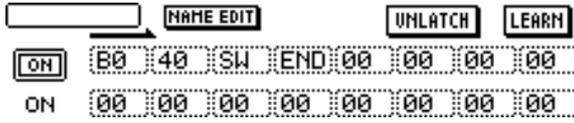
- *The MIDI message to be assigned can also be specified one byte at a time, using the procedure of step 7. In this case, you will need to input the "END" value at the end of the MIDI message.*
- *If you want to transmit a specific MIDI message each time the [ON] key is pressed, you do not need to input the "SW" value.*

⚠️

If you input the MIDI message one byte at a time, it is possible that you may input an invalid MIDI message by accident. Be aware that if this occurs, operating a fader or [ON] key will send this MIDI message from the MIDI OUT connector or TO HOST connector, possibly causing the connected external device to malfunction.

8 Make sure that the REMOTE A button is displayed as "ENABLE," and operate [ON] key 1.

As [ON] key 1 is turned on/off, a Hold On/Off MIDI message will be transmitted from the MIDI OUT connector.

Tip!
- *If desired, your operations of [ON] key 1 can be recorded in the automix.*
- *You can also change the function of an [ON] key so that it switches on/off each time you press the key. For details refer to the explanation of the LATCH/ UNLATCH button on page 315.*

9 If you want to name the [ON] key to which the MIDI message was assigned, move the cursor to the NAME EDIT button in the upper line of the display, and press the [ENTER] key.

The NAME EDIT popup window will appear.

10 Use the character palette to input the desired name. Then move the cursor to the OK button and press the [ENTER] key.

For details on inputting characters, refer to page 37.

The name that you input will be displayed below buttons 1–8 in the lower part of the display.

Tip!
The edited contents of the Remote A–D pages are saved as part of the song.

Sending the AW2816's internal settings via MIDI (Bulk Dump)

The AW2816 is able to convert the settings of the MIDI screen and the contents of the various libraries into MIDI data ("Bulk Data"), and transmit this from its MIDI OUT connector/TO HOST connector (Bulk Dump). By recording this bulk data on a MIDI sequencer or other external device, the internal settings of the AW2816 can be backed up on that device, or copied to another AW2816 unit.

Here's how to record bulk data on a MIDI sequencer.

1 Connect the AW2816's MIDI IN connector to the MIDI OUT connector of the external device, and the AW2816's MIDI OUT/THRU connector to the MIDI IN connector of the external device. (Alternatively, connect the AW2816's TO HOST connector to the serial port of your computer.)

For details on connections and settings, refer to page 189 to 190.

2 Press the [MIDI] key → [F5] key.

The MIDI screen/Bulk Dump page will appear.

①
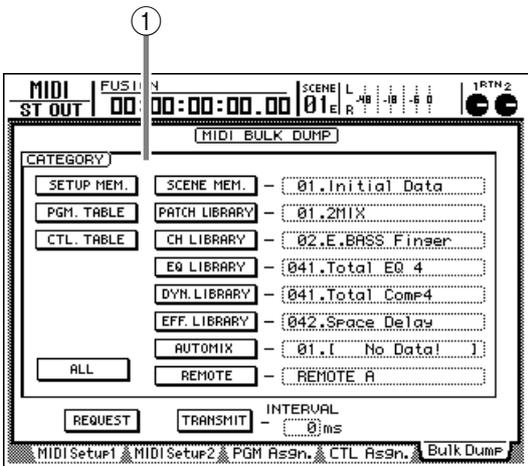
① **CATEGORY**

Here you can select the type of settings that will be transmitted as bulk data.

For details on the settings that correspond to each button, refer to page 281.

3 Move the cursor to the button corresponding to the bulk data you want to transmit, and press the [ENTER] key.

The button will be turned on, indicating that it has been selected for bulk dump.
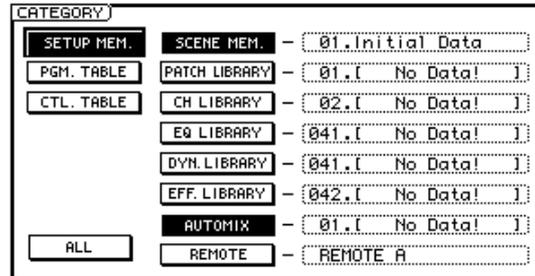
4 If you selected one of the SCENE MEM.–REMOTE buttons, move the cursor to the setting area at the right of each button, and use the [DATA/JOG] dial to edit the setting.

Tip!
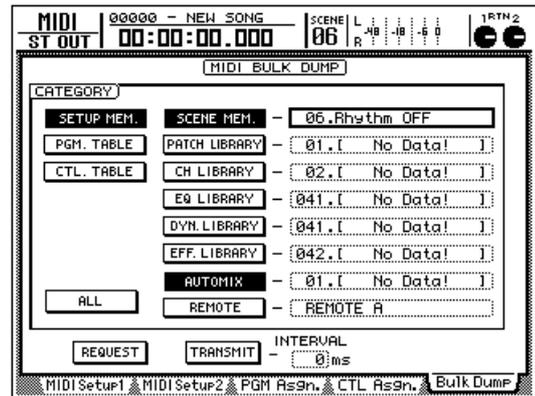
If you move the cursor to the ALL button in the lower left of the display and press the [ENTER] key, the buttons of all categories will be turned on, and the settings for SCENE MEM.–REMOTE categories will be set to "ALL." Use the ALL button when you want to transmit data for all categories via bulk dump.

5 Set your MIDI sequencer to record-ready mode.

⚠️

Before you record bulk data on a MIDI sequencer, make sure that the MIDI Thru function (sometimes called "Patch Thru" or "MIDI Echo") of the sequencer is turned off. If this function is on, the bulk data transmitted from the AW2816 will be immediately returned to the AW2816, causing malfunctions.

6 Move the cursor to the TRANSMIT button, and press the [ENTER] key.

Bulk dump will begin. While bulk dump is being executed, a popup window will show which data is currently being transmitted.

Tip!

When the popup window is displayed, you can abort the bulk dump by pressing the [ENTER] key.

- *The value of the INTERVAL field specifies the length of the time interval that will be left between each block of bulk data transmitted from the AW2816. If an error occurs during the bulk dump, try increasing the INTERVAL value.*
- *The time required to transmit or receive a bulk dump will depend on the category that is selected and the data that is recorded. Particularly in the case of automix, be aware that it may take longer, depending on what has been recorded.*

7 To receive bulk data transmitted from an external device, press the [MIDI] key → [F1] key.

The MIDI screen/MIDI Setup 1 page will appear.

8 Move the cursor to the RX button in the BULK area, and press the [ENTER] key to turn the button ON.

In this state, bulk data can be received.
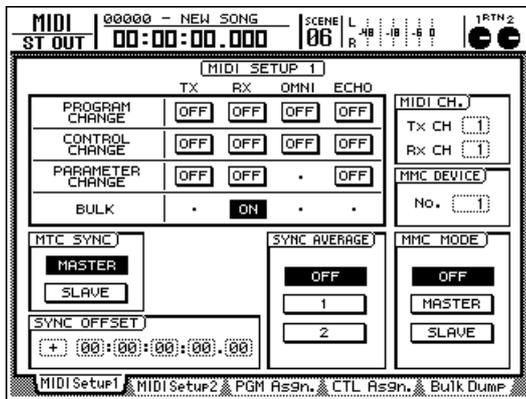
9 With the transport of the AW2816 stopped, transmit bulk data from the MIDI sequencer.

When the AW2816 has received all of the bulk data, the corresponding settings and/or libraries will be updated.

MIDI

13

Chapter
14 Other functions

This chapter explains other convenient functions provided by the AW2816, and how multiple functions can be used in conjunction with each other.

Assigning a functions to the [CTRL] key + function keys

On the AW2816 you can press the [CTRL] key + [F1]–[F5] keys to execute various pre-specified functions. This lets you create your own shortcut keys.

1 In the UNIT section, press the [UTILITY] key → [F5] (CTRL Key Asgn.) key.

The UTILITY screen/CTRL Key Asgn. page will appear. In this page you can assign a function to each combination of the [CTRL] key + [F1] – [CTRL] key + [F5].
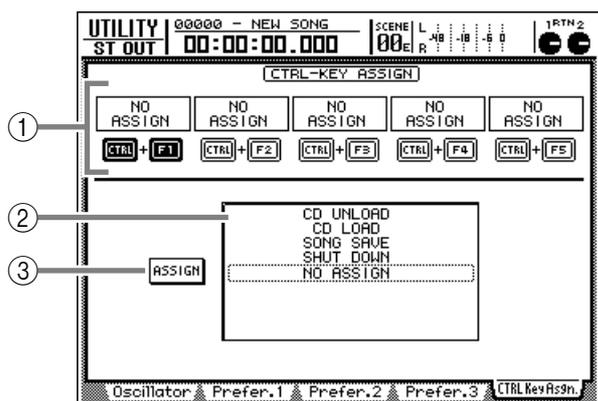
① **CTRL+F1 – CTRL+F5**

② **Function list**

③ **ASSIGN button**

2 Move the cursor to the symbol that indicates the key operation to which you will assign a function, and press the [ENTER] key.

That symbol will be highlighted, allowing you to assign a function.

3 Move the cursor to the function list in the lower part of the display, and use the [DATA/JOG] dial to select the desired function.

The following functions can be assigned.

Display	Function
NO ASSIGN	No function assigned
SHUT DOWN	Display the SONG screen/Shut Down screen (shortcut to shutdown) (*)
SONG SAVE	Display the SONG screen/Song List page, and move the cursor to the SAVE button (shortcut to save the current song) (*)
CD LOAD	Close the tray of the CD-RW drive, and load the CD (*)
CD UNLOAD	Open the tray of the CD-RW drive (*)
AUTOMIX [ENABLE/DISABLE]	Turn automix on (Enable) or off (Disable) (*)
MTC SYNC [MASTER/SLAVE]	Switch the AW2816 between MTC master (Master) and MTC slave (Slave) (*)
SCENE NAME	Display the currently-recalled scene name in the upper right of the screen for a fixed interval
SCENE RECALL NO.xx	Recall scene number xx (use the [DATA/JOG] dial to select the number xx)
DELAY [ON/OFF]	Switch the delay on/off for the currently selected channel
EQ [ON/OFF]	Switch the EQ on/off for the currently selected channel
DYN [ON/OFF]	Switch the dynamics processor on/off for the selected channel
PEAK HOLD [ON/OFF]	Switch peak hold on/off
OSCILLATOR [ON/OFF]	Switch the test tone oscillator on/off

* Depending on the operating mode of the AW2816 (e.g., when the transport is running), it may not be possible to exe-
cute the functions marked by an asterisk (*). In this case, an error message will appear at the bottom of the display.

Tip!

*If you select SCENE NUMBER as the assigned func-
tion, an input field will appear at the right of the func-
tion list, allowing you to specify the scene number.
Move the cursor to this field, and use the [DATA/JOG]
dial to specify the scene number.*

4 Move the cursor to the ASSIGN button at
the left of the function list, and press the
[ENTER] key.

A popup window will ask you to confirm the
assignment.


```
┌─────────────────────┐
│ ▌CONFIRMATION▐      │
│                     │
│   Will Assign       │
│   This Function.    │
│                     │
│   ARE YOU SURE ?    │
│                     │
│  ┌CANCEL┐  ┌  OK  ┐ │
└─────────────────────┘
```

5 To confirm the assignment, move the cur-
sor to the OK button and press the [ENTER]
key.

To cancel, move the cursor to the CANCEL but-
ton and press the [ENTER] key.

6 To execute an assigned function, hold
down the [CTRL] key and press the appro-
priate function key.

Making fine adjustments to the pitch of an entire song (Vari-pitch)

When the AW2816's internal clock is used as the word clock source, you can adjust the sampling frequency of the song to make fine adjustments to the playback pitch (Vari-pitch). For example, you can use this to match the playback pitch of the AW2816 to an acoustic instrument that would be difficult to tune.

1 Press the [SETUP] key → [F1] (D.In SETUP) key.

The SETUP screen/D.In Setup page will appear.
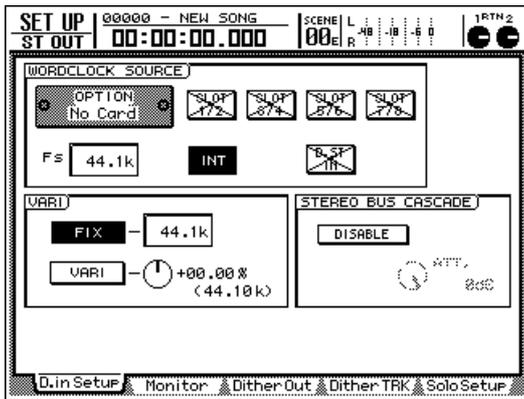
2 In the WORDCLOCK SOURCE area, make sure that the INT button is turned on.

If the INT button is off, move the cursor to the INT button and press the [ENTER] key. When the INT button is on, the internal clock is selected as the word clock source.

3 Move the cursor to the VARI button in the VARI area, and press the [ENTER] key.

Vari-pitch will be enabled.

4 Move the cursor to the knob located at the right of the VARI button, and use the [DATA/JOG] dial to adjust the sampling frequency (playback pitch).

The vari-pitch setting can be adjusted in the range of –5.97% to +6.00. If necessary, you can play back the song while you adjust this.

5 To defeat vari-pitch, move the cursor to the FIX button and press the [ENTER] key.

The sampling frequency will return to the previous value.

⚠

Digital devices that are synchronized to the digital audio signal being output from the AW2816 will also be affected when you use the vari-pitch function. This may cause problems such as failure of the sampling frequency to lock between the AW2816 and the external digital device connected to it.

Other functions

14

Saving channel settings (Channel Library)

The mix parameter settings of a desired channel can be stored in a memory area called the Channel Library. The stored settings can be recalled at any time. The following mix parameters are stored in the channel library.

- Channel on/off
- Attenuator
- Phase
- Equalizer on/off
- Equalizer parameters
- Dynamics processor on/off
- Dynamics processor types
- Dynamics processor parameters
- Delay on/off
- Delay time
- Routing
- Pan
- Fader position
- AUX1–6 on/off
- AUX1–6 pre-fader/post-fader setting
- AUX1–6 send levels

⚠

Of the parameters displayed in the VIEW screen/CH View page ([VIEW] key → [F1] key), channel pairing settings and settings related to effect insertion are not saved in the channel library.

Storing channel settings in a library

1 Use the [SEL] keys to select the channel whose settings you want to store, and press the [VIEW] key → [F2] (Library) key.

The VIEW screen/Library page will appear. The currently selected channel is shown in the upper left of the display.
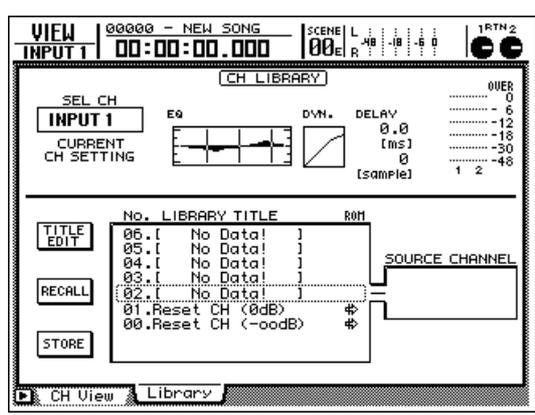
2 Turn the [DATA/JOG] dial to select the library number (02–64) in which you will store the settings.

The row enclosed by a dotted frame is the currently selected library number.

⚠

Library numbers 00 and 01 are recall-only libraries used to reset a channel to default settings. (00 sets faders to -infinity, and 01 sets faders to 0 dB.) Channel settings cannot be stored in these libraries.

3 Move the cursor to the STORE button and press the [ENTER] key.

The TITLE EDIT popup window will appear, allowing you to input the library title.

4 Use the character palette to input the library title.

For details on inputting characters, refer to page 37.

📝

If desired, you can execute the Store operation without inputting the library title. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the STORE CONFIRMATION setting OFF. If you execute the Store operation with this setting, the most-recently recalled library title will be assigned automatically.

5 Move the cursor to the OK button and press the [ENTER] key.

The channel settings will be stored in the library.

⚠

If you overwrite a previously-stored library number, the original data cannot be recovered.

📝

Channel library settings are saved as part of the song. You can also use the MIDI Bulk Dump function to save the contents of the channel library on a MIDI sequencer or other external device.

Recalling channel settings from a library

1 Use the [SEL] key to select the channel for which you want to recall settings, and press the [VIEW] key → [F2] (Library) key.

The VIEW screen/Library page will appear.

2 Use the [DATA/JOG] dial to select the library number that you want to recall.

The SOURCE CHANNEL area at the right of the list shows the original channel from which those settings were stored. If this area indicates ST OUT, the settings are only for the stereo output channel. If this area indicates INPUT 1–8/MONI 1–16/RTN 1–2, the settings are for an input channel/monitor channel/return channel respectively. If this area indicates GENERAL, the settings can be used for any channel.

Tip!

- *Channel settings are not compatible between the stereo output channel and other channels (input channels, monitor channels, return channels).*
- *If the currently selected channel is not compatible with the source channel, an indication of "CONFLICT" will appear below the SOURCE CHANNEL area, and the library cannot be recalled.*

⚠

If you recall to a paired channel, the same settings will be recalled for both channels.

3 Move the cursor to the RECALL button and press the [ENTER] key.

A popup window will ask you to confirm the recall operation.

```
┌─ CONFIRMATION ─┐
│                │
│  Will Recall   │
│  CH Lib. #02.  │
│                │
│  ARE YOU SURE ?│
│                │
│ [CANCEL]  [ OK ]│
└────────────────┘
```

Tip!

It is also possible to recall the library directly without displaying the popup window. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the RECALL CONFIRMATION setting off.

4 To execute the recall, move the cursor to the OK button and press the [ENTER] key.

To cancel, move the cursor to the CANCEL button and press the [ENTER] key.

Tip!

Channel libraries can also be recalled using automix.

Editing the title of a channel library

1 Press the [VIEW] key → [F2] (Library) key.

The View screen/Library page will appear.

2 Use the [DATA/JOG] dial to select the library whose title you want to edit.

3 Move the cursor to the TITLE EDIT button, and press the [ENTER] key.

The TITLE EDIT popup window will appear.

4 Use the character palette to input the desired library title.

For details on inputting characters, refer to page 37.

5 To update the library title, move the cursor to the OK button and press the [ENTER] key.

The library title will be updated.

Saving equalizer settings (EQ Library)

Equalizer settings made for each channel can be stored in a memory area called the EQ Library. The stored settings can be recalled at any time.

Storing EQ settings in a library

1 Use the [SEL] keys to select the channel whose settings you want to store, and press the [EQ] key → [F2] (Library) key.

The EQ/ATT/GRP screen/Library page will appear. In this page you can store or recall equalizer settings for the currently selected channel.

2 Use the [DATA/JOG] dial to select the library number (041–128) into which the settings will be stored.

The row enclosed by the dotted line is the currently selected library.

⚠

- *Library numbers 001–040 contain recall-only libraries with pre-programmed EQ parameters. EQ settings cannot be stored in these libraries.*
- *If you overwrite a previously-stored library number, the original data cannot be recovered.*

3 Move the cursor to the STORE button and press the [ENTER] key.

The TITLE EDIT popup window will appear, allowing you to specify the library title.

4 Use the character palette to input the desired library title.

For details on inputting characters, refer to page 37.

Tip!

If desired, you can store without inputting the library title when you press the STORE button. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the STORE CONFIRMATION setting off. When you store, the title of the most recently recalled library will be assigned automatically.

5 Move the cursor to the OK button and press the [ENTER] key.

The EQ settings will be stored in the specified library.

Tip!

The contents stored in the EQ library are saved on the internal hard disk as part of the current song. You can also use the MIDI Bulk Dump function to save EQ library settings on a sequencer or other external MIDI device.

Recalling EQ settings from a library

1 Use the [SEL] keys to select the channel for which you want to recall settings, and press the [EQ] key → [F2] (Library) key.

The EQ/ATT/GRP screen/Library page will appear, with the recall destination channel selected.

2 Use the [DATA/JOG] dial to select the library number whose settings you want to recall.

The EQ CURVE area at the right of the list will show the currently selected equalizer settings.

3 Move the cursor to the RECALL button, and press the [ENTER] key.

A popup window will ask you to confirm the recall operation.

Tip!

It is also possible to recall the library directly without displaying the popup window. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the RECALL CONFIRMATION setting off.

4 To execute the recall, move the cursor to the OK button and press the [ENTER] key.

To cancel the recall, move the cursor to the CAN-CEL button and press the [ENTER] key.

⚠

If you recall to a paired channel, the same settings will be recalled to both channels.

Tip!

EQ libraries can also be recalled using automix.

Editing the title of an EQ library

1 Press the [EQ] key → [F2] (Library) key.

The EQ/ATT/GRP screen/Library page will appear.

2 Use the [DATA/JOG] dial to select the library whose title you want to edit.

3 Move the cursor to the TITLE EDIT button, and press the [ENTER] key.

The TITLE EDIT popup window will appear.

4 Use the character palette to input the desired library title.

For details on inputting characters, refer to page 37.

5 To update the library title, move the cursor to the OK button and press the [ENTER] key.

To cancel the title you input, move the cursor to the CANCEL button and press the [ENTER] key.

Storing dynamics processor settings (Dynamics Library)

Dynamics processor settings made for each channel can be stored in a memory area called the Dynamics Library. The stored settings can be recalled at any time.

Storing dynamics processor settings in a library

1 Use the [SEL] keys to select the channel whose settings you want to store, and press the [DYN] key → [F2] (Library) key.

The DYN/DLY screen/Library page will appear, with the corresponding channel selected. In this page, dynamics processor settings for the currently selected channel can be stored in or recalled from the library.

Tip!
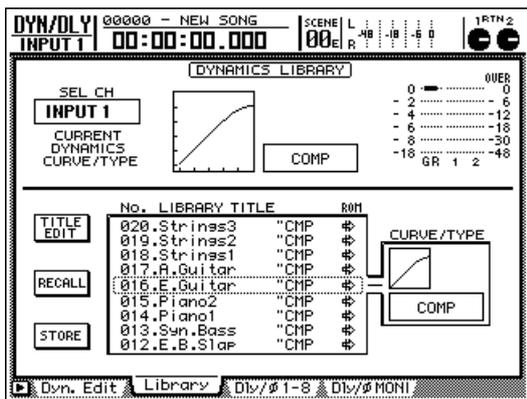
The currently selected channel is indicated in the upper left of the display.

2 Use the [DATA/JOG] dial to select the library number (041–128) into which the settings will be stored.

The row enclosed by the dotted line is the currently selected library.

⚠

- *Library numbers 001–040 contain recall-only libraries with pre-programmed dynamics processor settings. Dynamics settings cannot be stored in these libraries.*
- *If you overwrite a previously-stored library number, the original data cannot be recovered.*

3 Move the cursor to the STORE button and press the [ENTER] key.

The TITLE EDIT popup window will appear, allowing you to specify the library title.

4 Use the character palette to input the desired library title.

For details on inputting characters, refer to page 37.

Tip!

If desired, you can store without inputting the library title when you press the STORE button. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the STORE CONFIRMATION setting off. When you store, the title of the most recently recalled library will be assigned automatically.

5 Move the cursor to the OK button and press the [ENTER] key.

The settings will be stored in the specified library.

Tip!

The contents stored in the dynamics library are saved on the internal hard disk as part of the current song. You can also use the MIDI Bulk Dump function to save dynamics library settings on a sequencer or other external MIDI device.

Recalling dynamics processor settings from a library

1 Use the [SEL] keys to select the channel for which you want to recall settings, and press the [DYN] key → [F2] (Library) key.

The DYN/DLY screen/Library page will appear, with the corresponding channel selected.

2 Use the [DATA/JOG] dial to select the library number whose settings you want to recall.

Tip!

The CURVE/TYPE area at the right of the list will show the currently selected dynamics processor settings.

3 Move the cursor to the RECALL button, and press the [ENTER] key.

A popup window will ask you to confirm the recall operation.

Tip!

It is also possible to recall the library directly without displaying the popup window. To do this, access the UTILITY screen/Prefer.1 page ([UTILITY] key → [F2] key), and turn the RECALL CONFIRMATION setting off.

4 To execute the recall, move the cursor to the OK button and press the [ENTER] key.

To cancel the recall, move the cursor to the CANCEL button and press the [ENTER] key.

⚠

If you recall to a paired channel, the same settings will be recalled to both channels.

Tip!

Dynamics libraries can also be recalled using automix.

Editing the title of a dynamics library

1 Press the [DYN] key → [F2] (Library) key.

The DYN/DLY screen/Library page will appear.

2 Use the [DATA/JOG] dial to select the library whose title you want to edit.

3 Move the cursor to the TITLE EDIT button, and press the [ENTER] key.

The TITLE EDIT popup window will appear.

4 Use the character palette to input the desired library title.

For details on inputting characters, refer to page 37.

5 To update the library title, move the cursor to the OK button and press the [ENTER] key.

To cancel the title you input, move the cursor to the CANCEL button and press the [ENTER] key.

Copying attenuator settings to all channels

Here's how attenuator settings can be copied from one channel to all channels (except the stereo output channel).

1 Use the [SEL] keys to select the copy source channel, and press the [EQ] key → [F1] (EQ/ATT) key.

The EQ/ATT/GRP screen/EQ/ATT page will appear.
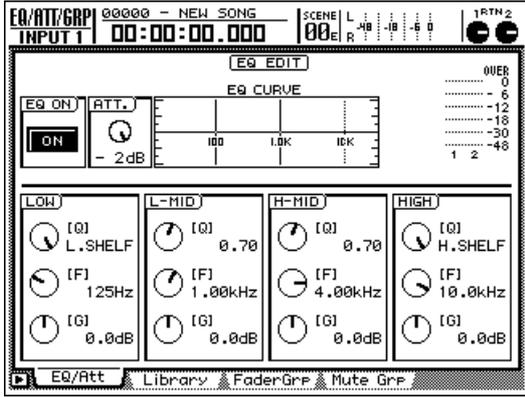
2 Move the cursor to the ATT. area.

3 Press the [SHIFT] key + [F5] (COPY ATT. TO ALL) key.

A popup window will ask you to confirm the copy operation.

4 Move the cursor to the OK button and press the [ENTER] key.

The copy will be executed, and the same attenuator setting will be copied to all channels except the stereo output channel.

⚠

If you copy to paired channels, the same attenuator settings will be copied to both channels.

Copying delay time/phase settings to all channels

Here's how delay time and phase settings (normal/reverse) can be copied from one channel to all channels (except the stereo output channel).

1 Press the [DYN] key → [F3] (DLY/Ø 1-8) key or the [DYN] key → [F4] (DLY/Ø MONI) key.

The phase/delay settings of each channel will be displayed. Press the [F3] (DLY/Ø 1-8) key to view input channels 1–8, or press the [F4] (DLY/Ø MONI) key to view monitor channels 1–16.
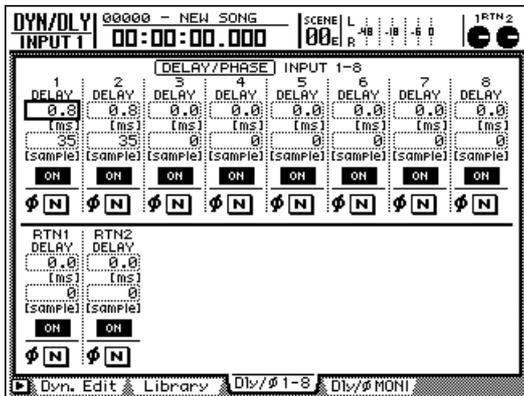
2 Move the cursor to the desired item of the copy source channel (the DELAY numerical box or the Ø button).

Move the cursor to the DELAY setting if you want to copy the delay time, or to the Ø setting if you want to copy the phase setting.

⚠ _____

The copy operation cannot be executed when the cursor is at the delay on/off button.

3 Press the [SHIFT] key + [F5] (COPY TO ALL) key.

A popup window will ask you to confirm the copy operation.

4 To execute the copy, move the cursor to the OK button and press the [ENTER] key.

To cancel the copy, move the cursor to the CANCEL button and press the [ENTER] key.

⚠ _____

When you copy to paired channels, the same delay time/phase setting will be copied to both channels.

Other functions

Copying pan settings to all channels

Here's how pan settings can be copied from one channel to all channels.

1 Press the [PAN] key → [F1] (Pan 1-8) key or the [PAN] key → [F2] (Pan MONI) key.

The pan settings of each channel will be displayed. Press the [F1] (Pan 1-8) key to view input channels 1–8, or press the [F2] (Pan MONI) key to view monitor channels 1–16.
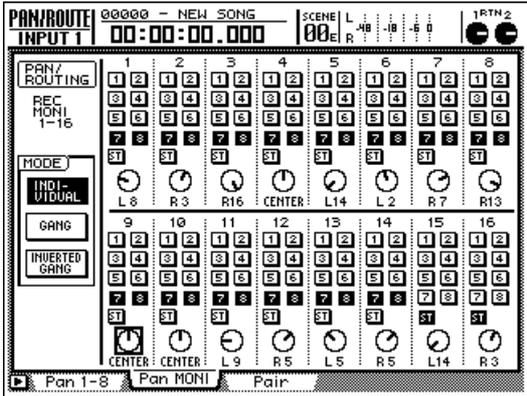
2 Move the cursor to the PAN knob of the copy source channel. (Alternatively, use the [SEL] keys to select the copy source channel.)

3 Press the [SHIFT] key + [F5] (COPY PAN TO ALL) key.

A popup window will ask you to confirm the copy operation.

4 To execute the copy, move the cursor to the OK button and press the [ENTER] key.

To cancel the copy, move the cursor to the CANCEL button and press the [ENTER] key.

⚠

When you copy to paired channels, the same pan setting will be copied to both channels.

Copying fade times to all channels

Here's how fade time settings can be copied from one channel to all channels.

1 Recall the scene whose fade time settings you want to change, and press the [SCENE] key → [F2] (Fade Time) key.

The SCENE screen/Fade Time page will appear. This page displays the fade time settings of each channel.
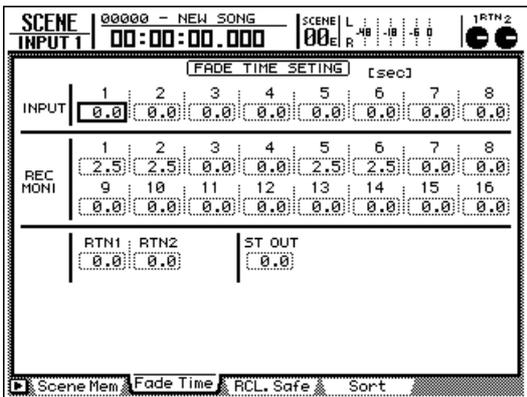
2 Move the cursor to the copy source channel. (Alternatively, use the [SEL] keys to select the copy source channel.)

3 Press the [SHIFT] key + [F5] (COPY TO ALL) key.

A popup window will ask you to confirm the copy operation.

4 To execute the copy, move the cursor to the OK button and press the [ENTER] key.

To cancel the copy, move the cursor to the CANCEL button and press the [ENTER] key.

⚠

When you copy to paired channels, the same fade time setting will be copied to both channels.

Dithering digital signals

When a song recorded with 24 bit quantization is recorded on an external 16 bit recorder via the DIGITAL STEREO OUT jack or a digital I/O card, the lower 8 bits are automatically discarded. As desired, you can apply dithering to the signal that is output at this time.

In this section we will explain how dithering can be applied when the AW2816's DIGITAL STEREO OUT jack is connected to the digital input jack of a DAT recorder, and you mix down a 24 bit to the 16 bit DAT recorder.

AW2816

Tip!
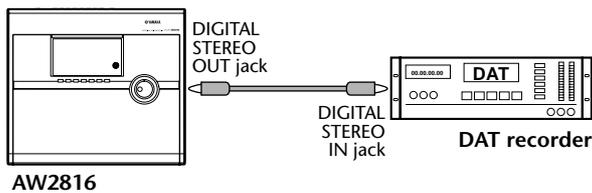
When a digital audio signal is transferred from a higher-resolution system to a lower-resolution system, the quantization noise caused when bits are rounded-off may be objectionable. In such cases, a small amount of random noise can be added to the signal to make the quantization noise less obtrusive. This process is called "dithering."

1 Press the [SETUP] key → [F3] (Dither Out) key.

The SET UP screen/Dither Out page will appear. In this page you can turn dithering on/off and specify the word length (number of bits) of the output signal for the DIGITAL STEREO OUT jack and the output channels of the digital I/O card.
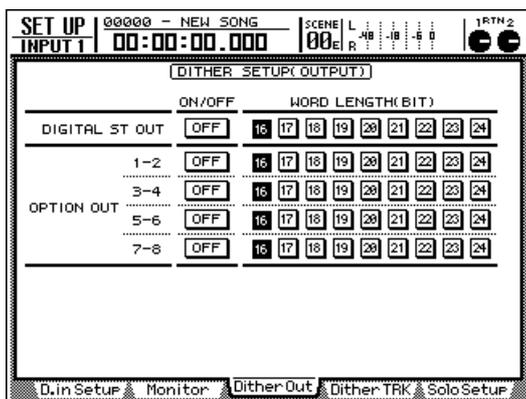
2 Move the cursor to the ON/OFF button in the DIGITAL ST OUT area, and press the [ENTER] key to switch the button ON.

Use the ON/OFF buttons in the Dither Out page to enable/disable dithering for each output jack/output channel.

Tip!

• ***Turning dithering on has no effect if you are transferring from a lower-resolution system to a higher-resolution system (e.g., 16 bit → 24 bit), or transferring between systems of equal resolution (e.g., 16 bit → 16 bit).***
• ***For a digital I/O card, dithering is switched on/off in odd-numbered → even-numbered pairs of output channels (1/2, 3/4 ...)***

3 In the WORD LENGTH (BIT) area of the DIGITAL ST OUT row, move the cursor to the "16" button and press the [ENTER] key.

In the WORD LENGTH (BIT) area you can select the word length (number of bits) of the digital signal that will be output. Normally you will move the cursor to the button for the word length that corresponds to the receiving device, and press the [ENTER] key.

⚠

• ***Changing the word length will have no effect on a channel for which dithering is turned off.***
• ***Be careful that dithering is not applied twice or more to the same source. If this occurs, the effect of dithering will be lost and the S/N ratio will be degraded.***

4 Start recording on your DAT recorder, and then play back the AW2816 song.

The lower 8 bits will be automatically discarded, and the dithered 16 bit audio will be recorded on the DAT recorder.

⚠

Settings in the Dither Out page are common to all songs. If you do not need dithering, be sure to turn OFF all buttons in the ON/OFF area.

Tip!

Dithering can be applied in the same way when recording tracks or the stereo track within the AW2816. For details refer to page 260

Using the test tone oscillator

The AW2816 contains a test tone oscillator that lets you choose between three types of sine wave and noise. The signal of this oscillator can be sent to buses 1–8/AUX buses 1–6/stereo bus, and used for checking levels or measuring the frequency response.

1 Press the [UTILITY] key → [F1] (Oscillator) key.

The UTILITY screen/Oscillator page will appear.

2 In the WAVEFORM area, move the cursor to the button for the waveform that you want to output, and press the [ENTER] key.

The following waveforms can be selected.

- **SINE 100 Hz** ..... 100 Hz sine wave

- **SINE 1 kHz**........ 1 kHz sine wave

- **SINE 10 kHz**...... 10 kHz sine wave

- **NOISE** .... White noise

3 In the BUS ASSIGN area, move the cursor to the button for the bus to which you want to output the signal, and press the [ENTER] key.

Tip!

You can select multiple buses simultaneously.

4 Make sure that the LEVEL knob is set to the minimum (–96 dB). Then move the cursor to the OFF button in the OSC ON area, and press the [ENTER] key.

The button will change to ON, and the signal will be sent to the specified bus.

⚠

Sine waves and white noise have a higher sound pressure level than their perceptual volume, and may damage speakers or cause personal harm if played at a high volume. Please be careful of the output level when using the test tone oscillator.

5 Move the cursor to the LEVEL knob, and use the [DATA/JOG] dial to raise the output level.

6 To turn off the test tone oscillator, move the cursor to the ON button of the OSC ON area, and press the [ENTER] key.

The button will change to OFF, and the oscillator will be turned off.

Using the metronome

The AW2816 has a built-in metronome that can sound a click during song playback/recording according to the tempo and time signature settings of the tempo map.

1 Press the [SONG] key → [F4] (Tempo Map) key.

The SONG screen/Tempo Map page will appear.
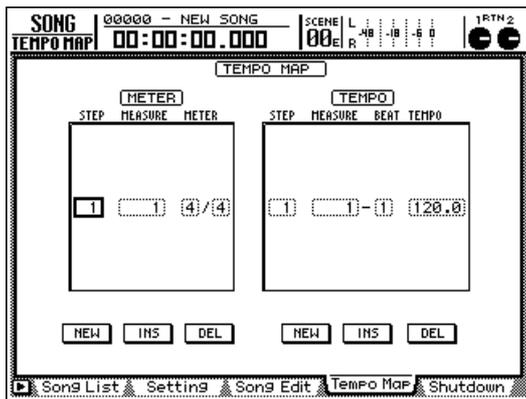
2 Move the cursor to the METER area or TEMPO area, and input the desired time signature data or tempo data.

For details on inputting time signature data and tempo data, refer to page 195.

3 Press the [TRACK] key → [F1] (TR View) key.

The TRACK screen/TR View page will appear. In the METRO. area in the lower right of the display, you can turn the metronome on/off and adjust its volume.
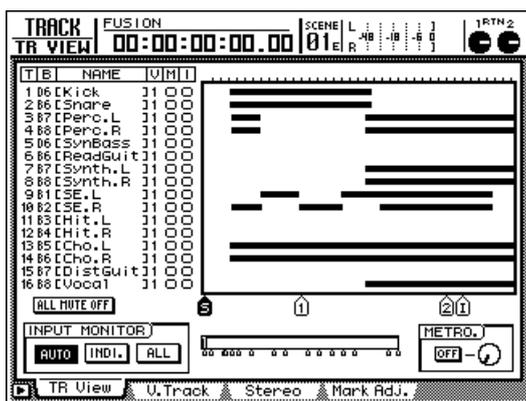
4 Move the cursor to the ON/OFF button in the METRO. area, and press the [ENTER] key.

The button display will change to ON, and the metronome function will be turned on.

5 Move the cursor to the knob in the right of the METRO. area, and use the [DATA/JOG] dial to adjust the volume of the metronome.

6 Play back the song.

A click sound will be output from MONITOR OUTPUT jacks/PHONES jack, according to the tempo map settings.

7 To silence the metronome, move the cursor to the ON button in the METRO. area, and press the [ENTER] key.

The button display will change to OFF, and the metronome will be silenced.

Tip!

With the default settings of the AW2816, the metronome will be output from the MONITOR OUTPUT jacks/PHONES jack mixed with the other signals. However by changing the Input Patch settings, you can assign the metronome output to the desired input channel (→P.71). In this case, the click sound will always be sent to the input channel while the song is playing, regardless of the settings in the METRO. area.

Other functions

14

Mixing and recording multiple channels

Chapter 3 explained how an input channel could be recorded directly onto a track. However in some cases, you may want to mix multiple input channels and record them on one or two tracks. For example this is convenient if you have set up multiple mics for a drum set, and want to mix them to stereo and record the drums on two tracks.

As an example, here's how you can mix the input signals of input channels 1–4 and record them on tracks 1/2.

■ Make patching and routing settings

In order to mix multiple input channels and record them on tracks 1/2, you must change the patching so that the input signals of the input channels are sent to two buses, and the signals of those buses are recorded on tracks 1/2.

1 Connect mics or instruments to INPUT jacks 1–4, and use the [GAIN] controls to adjust the input sensitivity.

2 Press the [PATCH] key → [F1] (Patch IN) key to access the PATCH screen/Patch IN page, and assign the signal of each INPUT jack you are using to an input channel.

For this example, assign INPUT jacks 1–4 (AD 1–AD 4) to input channels 1–4.
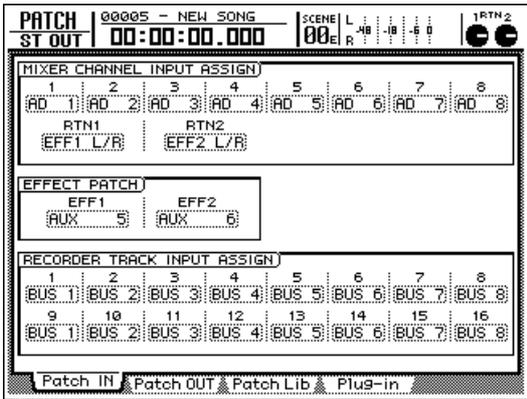
3 Also in the PATCH screen/Patch IN page, assign the desired bus to the recorder inputs of the tracks you want to record.

For this example, assign buses 1/2 (BUS 1/2) to recorder inputs 1/2.

Tip!
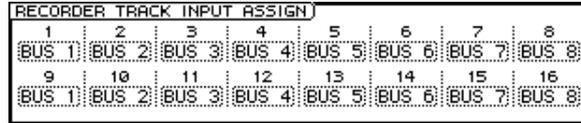
Recalling scene number 00 or patch library number 00 will also produce the above state.

4 Make sure that the [ON] key is turned on for each of the input channels you want to mix, and raise the faders.

5 Press the [PAN] key → [F1] (Pan 1-8) key to access the PAN screen/Pan 1-8 page, and turn the bus assign 1/2 button on and the ST button off for each input channel 1-4. Also set the pan of input channels 1–4.

With these settings, the signal that passes through the fader and pan of input channels 1–4 will be sent to tracks 1/2.

⚠
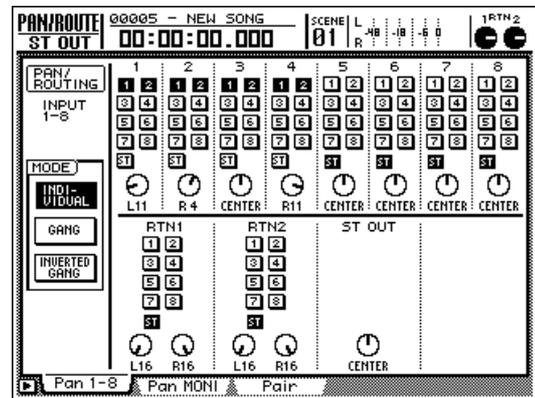
It will not be possible to modify the pan settings of each audio source after recording on tracks 1/2. Make pan settings with care.

■ Monitor the signal

Make settings so that the input signal sent to recorder inputs 1/2 can be monitored via the stereo output channel from the MONITOR OUT jacks/PHONES jack.

6 Press the REC TRACK SELECT [1]/[2] keys.

REC TRACK SELECT [1]/[2] keys will blink, and tracks 1/2 will be in record-ready mode.

7 Press the [PAN] key → [F2] (Pan MONI) key to access the PAN/ROUTE screen/Pan MONI page, and turn the ST button on for monitor channels 1/2. Also turn off all bus assign 1-8 buttons.

The input signal of tracks 1/2 (the bus 1/2 signal) will be sent via monitor channels 1/2 to the stereo bus.

8 Set the monitor channel 1 PAN knob to the far left (L16), and the monitor channel 2 PAN knob to the far right (R16).
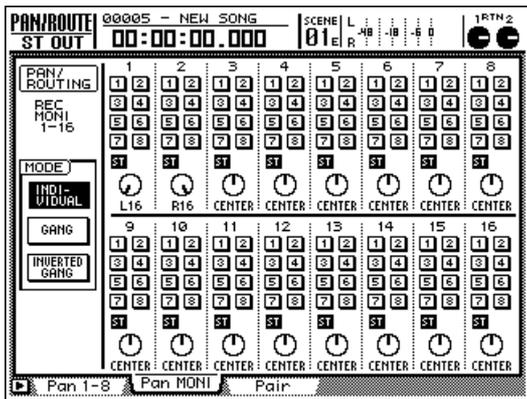
9 Press the RECORDER [1-8] key to select monitor channels 1–8 as the mixing layer.

10 Make sure that the monitor channel 1/2 [ON] keys are turned on, and raise faders 1/2 and the STEREO fader to the 0 dB position.

With these settings, the input signals will pass through monitor channels 1/2 and the stereo output channel, and can be monitored from the MONITOR OUT jacks/PHONES jack.

■ Create a mix and record

Now we will adjust the mix balance of the input channels, and record the result on tracks 1/2.

11 Press the [METER] key.

The METER screen will appear. In this screen you can view the input/output levels of the tracks 1–16 and the output level of the stereo output channel. Play your instrument(s), and verify that the track 1/2 and stereo output channel meters respond.

Tip!
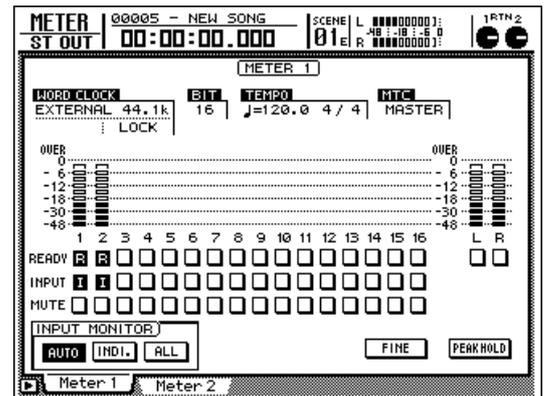
The METER screen contains a Meter 1 page and a Meter 2 page, but you may select either one.

12 Press the INPUT [1-8] key to select input channels 1–8 as the mixing layer.

13 While watching the meters (input level) for tracks 1/2, operate the input channel 1–4 faders to set the mix balance.

It will not be possible to adjust the mix balance of each audio source after they are recorded on track 1/2.

Tip!

If the stereo output channel (L/R) meter clips, lower the monitor channel faders or the STEREO fader.

14 When you have finished setting the balance, press the REC [●] key + PLAY [▶] key to begin recording.

Pingpong-recording multiple tracks to one or two tracks

On the AW2816, multiple previously-recorded tracks can be mixed, and recorded on one or two tracks. This operation is called "ping-pong recording" or "bounce recording." After ping-pong recording, you can assign other virtual tracks to the original tracks and use them to record new parts. This is convenient when you want to record more than 17 parts of audio sources.

As an example, here's how tracks 1–14 can be mixed in stereo and recorded on tracks 15/16.

■ Set the patching and routing

In order to perform ping-pong recording, the monitor channels that will be the ping-pong recording sources must be sent to buses 1–8, and the outputs of those buses must be patched to the inputs of the ping-pong recording destination tracks. In this example, we will make settings to send tracks 1–14 to buses 7/8, and record on tracks 15/16.

1 Press the [PATCH] key → [F1] (Patch IN) key to access the PATCH screen/Patch IN page, and assign buses 7/8 (BUS 7/8) to recorder inputs 15/16.
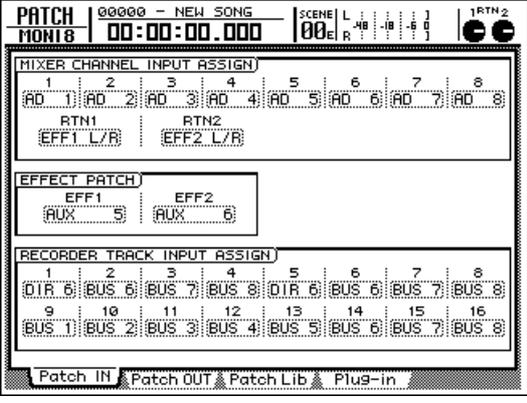
2 Press the RECORDER [1-8]/[9-16] keys to verify that the [ON] keys are turned on for monitor channels 1–14, and raise the faders.

3 Press the [PAN] key → [F2] (Pan MONI) key to access the PAN screen/Pan MONI page. Turn the bus assign 7/8 buttons on and the ST button off for each monitor channel 1–14. Also set the pan for each channel.

With these settings, the signal that has passed through the fader and pan of monitor channels 1–14 will be routed through buses 7/8, and sent to recorder inputs 15/16.
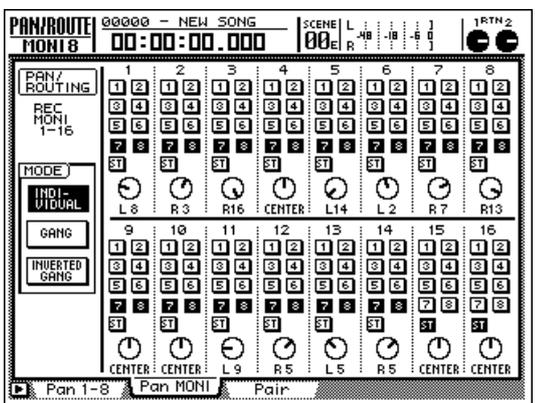
⚠ *It will not be possible to adjust the pan of each audio source after recording to tracks 15/16. Make pan settings carefully.*

■ Monitor the input signals

Now we will make settings so that the signals sent to recorder inputs 15/16 can be monitored via the stereo output channel from the MONITOR OUT jacks/PHONES jack.

4 Press the REC TRACK SELECT [15]/[16] keys.

The REC TRACK SELECT [15]/[16] keys will blink, and tracks 15/16 will be in record-ready mode.

5 Press the [PAN] key → [F2] (Pan MONI) key to access the PAN screen/Pan MONI page. For monitor channels 15/16, turn the ST button on and the bus assign 1–8 buttons off.

6 Set the monitor channel 15 PAN knob to the far left (L16), and the monitor channel 16 pan knob to the far right (R16).

The settings of the Pan MONI page will be as follows.
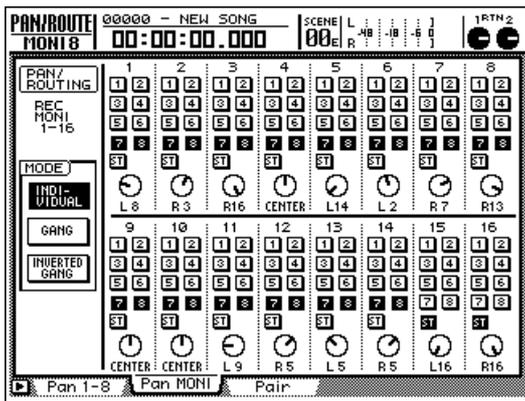
7 Press the RECORDER [9-16] key to select monitor channels 9–16 as the mixing layer, and set faders 7/8 (monitor channels 15/16) and the STEREO fader to the 0 dB position.

8 Press the [METER] key to display the METER screen.

The METER screen will appear, displaying meters for the input/output levels of tracks 1–16.

The METER screen contains a Meter 1 page and a Meter 2 page, but in this example you may select either page.

9 Move the cursor to the INPUT MONITOR area in the lower left of the display, and turn on the INDI. button. At this time, verify that the INPUT buttons are highlighted for the record-ready tracks 15/16.

If the INDI. (individual) button is on, you will always be able to monitor the input signal for tracks whose INPUT button is highlighted as "▣," regardless of the current running mode.

Tip!
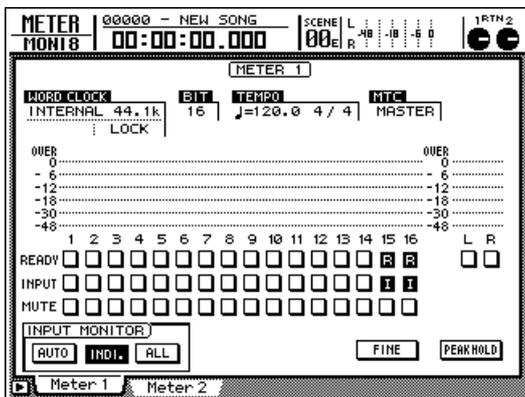
For details on the function of each button in the INPUT MONITOR area, refer to page 352.

■ Create a mix and record

10 Press the PLAY [▶] button to play back the song.

11 Press the RECORDER [1-8]/[9-16] keys to select monitor channels 1–8/9–16 as the mixing layer, and create the mix balance for tracks 1–14.

While you create the mix, make sure that the input level does not clip for tracks 15/16 in the METER screen.

If you want to adjust monitor channel 1–14 parameters other than the faders (e.g., pan, EQ, dynamics processor), you will need to use the [PAN], [EQ], and [DYN] etc. to access other screens. After adjusting pan or EQ, be sure to return to the METER screen to check the input levels, and adjust the faders as necessary.

12 When you have finished creating the mix, hold down the REC [●] key and press the PLAY [▶] key to begin recording on tracks 15/16.

Tip!

When you have finished ping-pong recording on tracks 15/16, you can switch the virtual tracks of tracks 1–14, and record other instruments on tracks 1–14 without losing the original source tracks of the ping-pong recording.

Other functions

14

AW2816

Reference section

The Reference section explains all the screens and pages that appear in the display of the AW2816. You can use this section like a dictionary when you want to learn more about the functions in a display page, or to find out which display page contains the operation you want to use.

How to read the Reference section

This page explains how to read the Reference section.

①

HOME screen

②

IN/Rtn/MONI page

Monitor the input level of each channel

③

Function

This page displays the input level of input
channels 1–8, return channels 1/2, and
monitor channels 1–16.

④

Key operations

• [HOME] key → [F1] (IN/Rtn/MONI) key
• Repeatedly press the [HOME] key until
  the screen shown at the right appears.

①
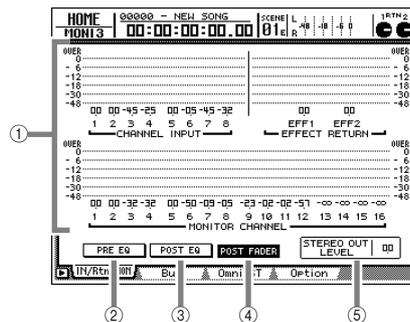
⑤

Screen functions

① **Level meters**
This area indicates the input level of each channel.
Below each level meter, the location of the fader
for that channel is displayed in dB units.

② **PRE EQ button**

③ **POST EQ button**

④ **POST FADER button**
Use these three buttons to select the location
within the signal routing that will be displayed by
the level meters (①). Turning on the PRE EQ but-
ton will display the pre-EQ signal level, the POST
EQ button will display the post-EQ signal level,
and the POST FADER button will display the post-
fader signal level. This is convenient when you
want to see the location at which the input signal
of that channel is clipping.

⑤ **STEREO OUT LEVEL**
This displays the position of the STEREO fader in
dB units.

■ **Additional functions in the IN/Rtn/** ⑥
MONI page
In the IN/Rtn/MONI page, holding down the [SHIFT]
key will assign the following additional function to
the [F1] key.

• **[F1] (PEAK HOLD) key**
Switches the Peak Hold function on/off. When
peak hold is on, a "⌐" symbol indicating the
peak level will be maintained in the level meter
(①). The peak hold setting also affects the level
meters displayed in pages other than in the EQ/
ATT/GRP screen and the DYN/DLY screen.

① **Screen name**

② **Page name/title**

③ **Function**
A brief explanation of the functions available in
this page.

④ **Key operation**
The procedure for accessing this page from the
panel.

→ indicates the order in which keys are to be
pressed.

Example: [SONG] key → [F1] (Song List) key
(After pressing the [SONG] key, press the [F1] key)

+ indicates that you should hold down one key
and press the other key.

Example: [SHIFT]] key + [SONG] key
(Hold down the [SHIFT] key and press the
[SONG] key)

⑤ **Functions in the screen**
Explanations of the functions or displays in this
screen.

⑥ **Additional functions**
Explanations of the additional functions assigned
to the function keys ([F1]–[F5] keys) in this page.
You must hold down the [SHIFT] key in order to
access these additional functions.

SONG screen

Song List page

Save/load/create a song

Function

Load an existing song, save the current song, or create a new song.

Key operation

- [SONG] key → [F1] (Song List) key
- [SHIFT] key + [SONG] key (shortcut)
- Repeatedly press the [SONG] key until the display shown at right appears.
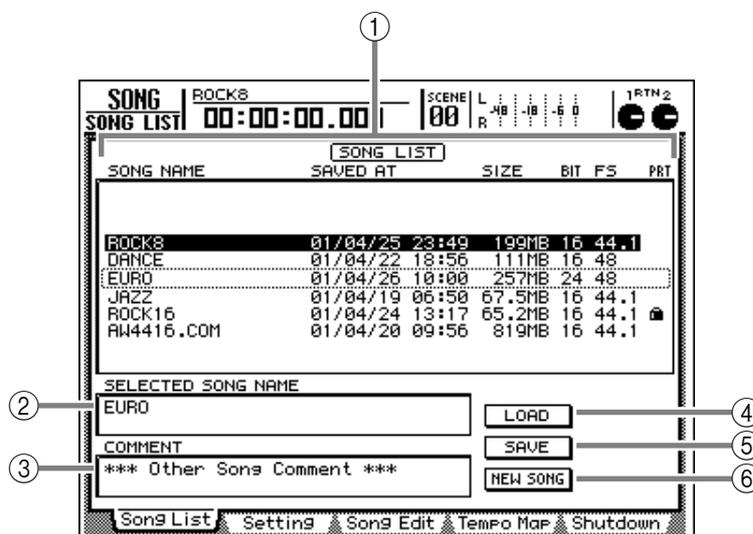
Screen functions

① **Song list**

This is a list of the songs saved on the internal hard disk. The song enclosed by the dotted line is currently selected for loading. Use the [DATA/JOG] dial to select a song. The highlighted line indicates the current song (the currently-loaded song).

The song list displays the following information.

- **SONG NAME** ...... Song name (however, only the first 16 characters)
- **SAVED AT**............ Date and time at which the song was last saved
- **SIZE** .... Size of the song
- **BIT/FS** .... Number of quantization bits/ sampling frequency of the song
- **PRT**...................... Song protect (→P.238) on/off status

Tip!

- *If song protect is on, the PRT column will show "🔒".*
- *In this page, you can turn the [DATA/JOG] dial to select the song for loading regardless of where the cursor is located.*

② **SELECTED SONG NAME**

This displays the name of the song that is currently selected in the song list. This area is for display only, and cannot be edited.

③ **COMMENT**

This displays the comment for the song that is currently selected in the song list. This area is for display only, and cannot be edited.

Tip!

The song name and comment can be edited in the SONG screen Setting page.

④ **LOAD button**

When you move the cursor to this button and press the [ENTER] key, the song selected in the song list will be loaded.

⑤ **SAVE button**

When you move the cursor to this button and press the [ENTER] key, the song will be saved. If you accessed this page by holding down the [SHIFT] key and pressing the [SONG] key, the cursor will automatically move to this button, so you can save the song by simply pressing the [ENTER] key again. (Shortcut for the Song Save operation)

Tip!

When you save a song, it will always be overwritten onto the current song on the hard disk.

⑥ **NEW SONG button**

When you move the cursor to this button and press the [ENTER] key, a new song will be created.

Setting page

Settings for the current song

Function

Make various settings for the current song, such as editing a song name, selecting the counter display method, and selecting the time code frame rate.

Key operation

- [SONG] key → [F2] (Setting) key
- Repeatedly press the [SONG] key until the display shown at the right appears.
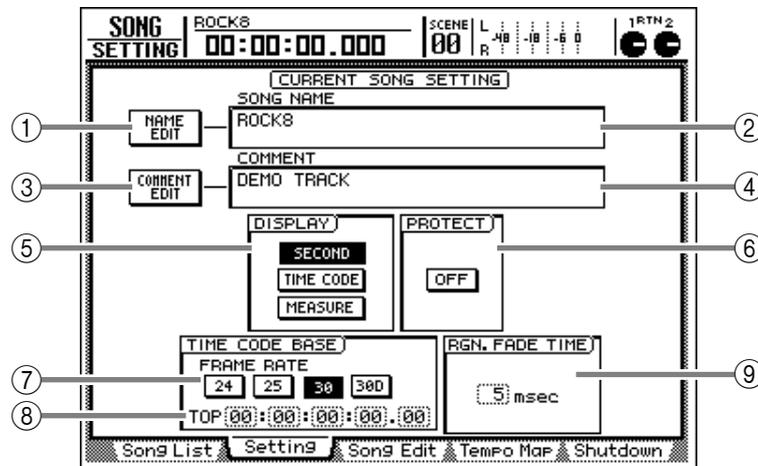
Screen functions

① NAME EDIT button

This button edits the song name of the current song. Move the cursor to this button and press the [ENTER] key, and a popup window will appear, allowing you to input the song name. You can input a song name of up to 64 characters.

② SONG NAME

This displays the name of the current song.

③ COMMENT EDIT button

Move the cursor to this button and press the [ENTER] key, and a popup window will appear, allowing you to input a comment for the current song. You can input a comment of up to 64 characters.

④ COMMENT

This displays the comment of the current song.

⑤ DISPLAY

Use the following three buttons to select the display method for the counter that is shown at the top of the LCD display.

• SECOND button
The counter will be displayed as time (hours/minutes/seconds/milliseconds).

• TIME CODE button
The counter will be displayed as time code (hours/minutes/seconds/frames/sub-frames).

• MEASURE button
The counter will be displayed as measures (measures/beats/ticks).

Tip!

The display method you select here will also affect how the track editing range is specified (EDIT screen TR Edit page etc.), and how locate points are displayed (TRACK screen Mark Adj. page etc.).

⑥ PROTECT

This switches the protect status on/off for the current song. When song protect is "ON," it is not possible to perform track recording or editing, or to change the locate point. This setting is convenient when you have completed a song and want to keep it being modified.

⑦ FRAME RATE

Use the following four buttons to select the frame rate of the time code. The frame rate setting will affect the counter time code display and the MTC that is transmitted and received.

- **24 button** .... 24 frames/second
- **25 button** .... 25 frames/second
- **30 button** .... 30 frames/second (30 non-drop frame)
- **30D button** .... 29.97 frames/second (30 drop frame)

Tip!

If you are using MTC to synchronize the AW2816 and an external device, you must set the frame rate of both devices to match.

⑧ **TOP**

This sets the time code location that corresponds to the beginning of the song (Time Code Top). Move the cursor to the TOP area, and use the [◄]/[►] keys and the [DATA/JOG] dial to adjust the hours/minutes/seconds/frames/subframes value. The range is "00:00:00:00.00"–"24:00:00:00.00" (it is not possible to specify a negative value).

Time code top = 00:00:00:00.00

Time code display	00:00:00:00.00	00:00:05:00.00	00:00:10:00.00
Time display	00:00:00:000	00:00:05:000	00:00:10:000
Song	● ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○

Time code top = 00:00:**05**:00.00

Time code display	00:00:**05**:00.00	00:00:10:00.00	00:00:15:00.00
Time display	00:00:00:000	00:00:05:000	00:00:10:000
Song	● ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○

⚠

- *When you change the Time Code Top, it will affect both the time code display in the screen as well as the MTC that is transmitted and received.*
- *When the Time Code Top is changed, the location of the Start Point and End Point will automatically be moved forward or backward. For the Start Point/End Point, refer to the Track screen/Mark Adj. page (→P.327).*

⑨ **RGN. FADE TIME (Region Fade Time)**

This adjusts the time over which fade-in/fade-out will occur at the beginning and end of a region (Region Fade Time). The range is 3, 5, 10, 20, or 45 (msec), and the default setting is 5 msec.

Tip!

If the level changes abruptly at the start or end of a region, a click or pop may be heard during playback. If this occurs, you can increase the Region Fade Time.

Tip!

The settings in this page are saved on the internal hard disk as part of the current song. After you modify these settings, save the current song as necessary.

Song Edit page

Delete/copy/optimize a song

Function

These operations let you edit songs saved on the internal hard disk by deleting, copying, or optimizing.

Key operation

- [SONG] key → [F3] key (Song Edit) key
- Repeatedly press the [SONG] key until the screen shown at right appears.

Screen functions

① Song list

This is a list of the songs saved on the internal hard disk. The highlighted line indicates the current song, and the song enclosed by the dotted line has been selected in the list for loading.

The "E" symbol displayed in the EDIT column of the song list indicates that the corresponding song has been selected for editing. Use the [DATA/JOG] dial to move the desired song so that it is enclosed by the dotted line, and press the [ENTER] key to add or remove the "E" symbol.

The following information is displayed in the other columns of the song list.

- **SONG NAME** ...... Song name (however, only the first 12 characters)
- **SAVED AT** .... Date and time at which the song was last saved
- **SIZE** .... Size of the song
- **BIT/FS** .... Number of quantization bits/ sampling frequency of the song
- **PRT** .... Song protect (→P.238) on/off status

② DELETE button

This button deletes the song(s) marked by the "E" symbol from the internal hard disk. If you have assigned the "E" symbol to multiple songs, they will be deleted together.

⚠

- *It is not possible to delete the current song.*
- *A deleted song can never be recovered. Use this operation with caution.*

③ COPY button

This button copies the song(s) marked by the "E" symbol within the internal hard disk. If you have assigned the "E" symbol to multiple songs, they will be copied together.
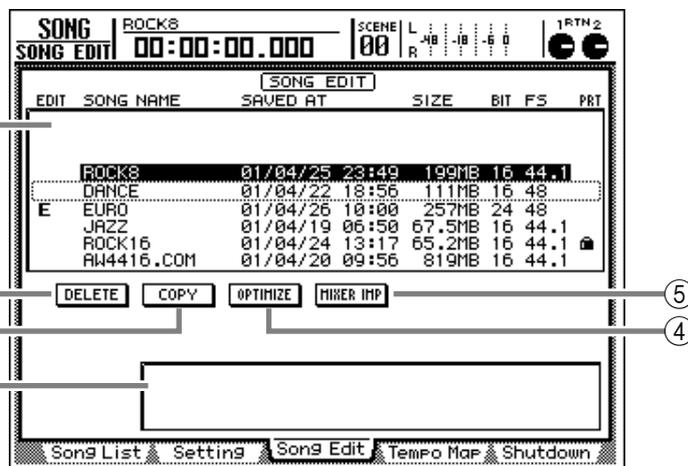
④ OPTIMIZE button

This button executes the Optimize operation for the song marked by the "E" symbol. When you optimize a song, currently-unused data (e.g., Undo data) within that song will be deleted. Use this when you want to increase the free space on the internal hard disk.

⚠

- *After Optimize has been executed, it will not be possible to use the Undo function to return to the previous state.*
- *The Optimize operation does not have any effect on data fragmentation (a state in which a piece of continuous data has become distributed across different areas of the hard disk). To clean up fragmented data, you must use the Defrag function (FILE screen Disk Util. page).*
- *Only one song at a time can be Optimized. It is possible to optimize the current song.*

⑤ MIXER IMP (Mixer Import) button

This button imports mixer data (scene memory and automix, etc.) from the song marked by the "E" symbol into the current song. The data to be imported can be selected from the following types.

- **Scene Memory (SCENE MEM.)**
- **Automix (AUTO MIX)**
- **Tempo Map (TEMPO MAP)**
- **Patch and effect libraries, etc. (LIBRARY)**
- **MIDI Remote settings (MIDI REMOTE)**

⚠

- *Only one song can be selected as the Import source. If you attempt to execute the Import operation when the "E" symbol is displayed for more than one song, an error message will appear.*
- *It is not possible to select the current song as the Import source.*

⑥ Parameter area

When you move the cursor to the ②–⑤ buttons, this area will display the function that can be executed by that button (DELETE/COPY/OPTIMIZE/ MIXER IMPORT).

Tempo Map page

Program the tempo and time signature of a song

Function

Here you can program the tempo data and time signature data for the tempo map, to manage the measures of a song.

Key operation

- [SONG] key → [F4] (Tempo Map) key
- Repeatedly press the [SONG] key until the screen shown at the right appears.
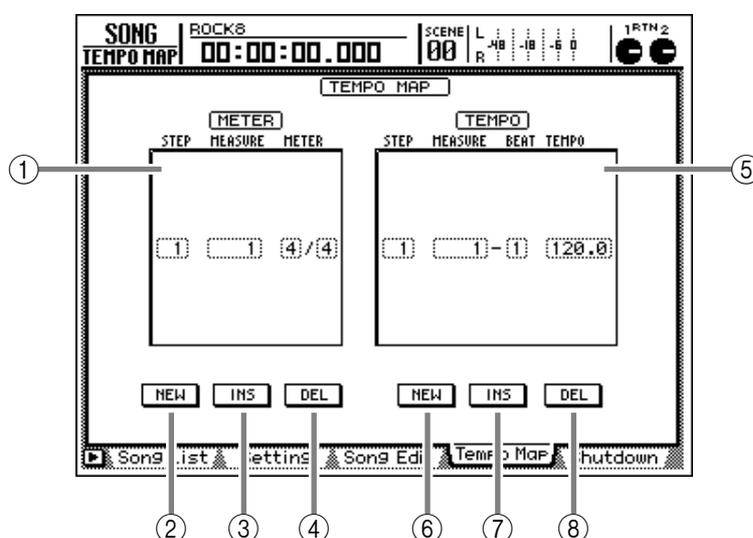
Screen functions

① METER

This area displays a list of the time signature data from the beginning of the song. The line enclosed by the dotted line is the currently selected time signature data.

The time signature data displayed in the METER area contains the following items.

- **STEP** .... Displays the step number of the time signature data. Move the cursor to this area and turn the [DATA/JOG] dial to select the desired time signature data.

- **MEASURE** .... Displays the location (measure number) of the time signature data. Move the cursor to this area and turn the [DATA/JOG] dial to change the measure number (1–1000) of the corresponding time signature data. If you change the location of the time signature data so that it is moved before or after the preceding or following time signature data, the step numbers will automatically be exchanged.

- **METER** .... This is the time signature setting. Move the cursor to this area and turn the [DATA/JOG] dial to specify the time signature (2/1–8/8). The numerator and denominator of the time signature can be set separately.

Tip!

When the AW2816 is in the default state, time signature data of 4/4 is already input at measure 1.

- *It is not possible to move the time signature data of measure 1.*
- *It is not possible to place two time signatures at the same measure. If you move the cursor to the MEASURE area and specify the same measure number as an existing time signature, the previous time signature data will be deleted.*

② NEW button

This button adds new time signature data at the end of the METER area. When you move the cursor to this button and press the [ENTER] key, time signature data will be added after the last step number.

③ INS (Insert) button

This button inserts new time signature data into the METER area. When you move the cursor to this button and press the [ENTER] key, new data will be inserted before the currently selected step number (i.e., the step enclosed by the dotted line).

- *You can input a maximum of 26 steps (step numbers 1–26) of time signature data. It is not possible to add or insert more than this number.*
- *The INS button cannot be used to insert new data before step number 1.*

④ **DEL button**

This button deletes time signature data from the METER area. When you move the cursor to this button and press the [ENTER] key, the currently selected time signature (i.e., the step enclosed by the dotted line) will be deleted. It is not possible to delete the time signature data for step number 1.

⑤ **TEMPO**

This area displays a list of the tempo data that has been input from the beginning of the song. The line enclosed by the dotted line is the currently selected tempo data.

The tempo data displayed in the TEMPO area contains the following items.

- **STEP** .... Displays the step number of the tempo data. Move the cursor to this area and turn the [DATA/JOG] dial to select the desired tempo data.

- **MEASURE/BEAT** .. Displays the location (measure number and beat) of the tempo data. Move the cursor to this area and turn the [DATA/JOG] dial to change the measure number (1–1000) of the corresponding tempo data. If you change the location of the tempo data so that it moved before or after the preceding or following tempo data, the step numbers will automatically be exchanged.

- **TEMPO** .... This is the tempo setting. Move the cursor to this area and turn the [DATA/JOG] dial to specify the tempo (BPM). The BPM value can be set in steps of 0.1 over a range of 20.0–300.0.

⑥ **NEW button**

This button adds new tempo data at the end of the TEMPO area. When you move the cursor to this button and press the [ENTER] key, tempo data will be added after the last step number.

⑦ **INS (Insert) button**

This button inserts new tempo data into the TEMPO area. When you move the cursor to this button and press the [ENTER] key, new data will be inserted before the currently selected step number (i.e., the step enclosed by the dotted line).

⚠

- *You can input a maximum of 26 steps (step numbers 1–26) of tempo data. It is not possible to add or insert more than this number.*
- *The INS button cannot be used to insert new data before step number 1.*

⑧ **DEL button**

This button deletes tempo data from the TEMPO area. When you move the cursor to this button and press the [ENTER] key, the currently selected tempo data (i.e., the data enclosed by the dotted line) will be deleted. It is not possible to delete the tempo data for step number 1.

■ **Additional functions in the Tempo Map page**

In the Tempo Map page, holding down the [SHIFT] key will assign the following additional functions to the [F1]–[F3] keys.
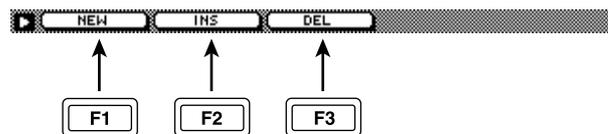
- **[F1] (NEW) key**
  When the cursor is in the METER area, this will add new time signature data at the end of the METER area. When the cursor is in the TEMPO area, this will add new tempo data at the end of the TEMPO area.

- **[F2] (INS) key**
  When the cursor is in the METER area, this will insert new time signature data into the METER area. When the cursor is in the TEMPO area, this will insert new tempo data into the TEMPO area.

- **[F3] (DEL) key**
  When the cursor is in the METER area, this will delete the currently selected time signature data from the METER area. When the cursor is in the TEMPO area, this will delete the currently selected tempo data from the TEMPO area.

Shut Down page

Prepare the AW2816 for powering-off

Function

Shut down the AW2816 so that the power can be turned off.

Key operation

• [SONG] key → [F5] (Shut Down) key
• Repeatedly press the [SONG] key until the screen shown at the right appears.
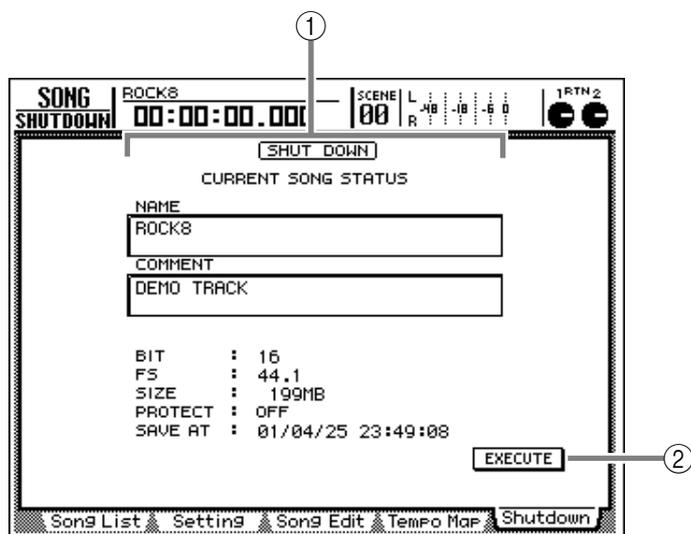
Screen functions

① **Current song status**

This area displays various information for the current song.

• **NAME**.................. Song name of the current song

• **COMMENT** .... Comment of the current song

• **BIT** .... Number of quantization bits for the current song

• **FS** .... Sampling frequency of the current song

• **SIZE**..................... Size of the current song when it was last saved

• **PROTECT** .... Song protect setting

• **SAVE AT** .... Date and time at which the current song was last saved

⚠
• *The SIZE and SAVE AT displays are updated when the current song is saved.*
• *This page is for display only, there are no items that can be edited.*

② **EXECUTE button**

This button shuts down the AW2816. In this page, the cursor will always be located at this button, so you can execute shutdown simply by pressing the [ENTER] key.

⚠
• *If you turn off the power of the AW2816 without performing the shutdown operation, data on the internal hard disk may be lost. You must always execute Shutdown before turning off the power.*
• *Before powering-off the AW2816, the volume of your playback system (power amp etc.) should be turned down to zero (or its power turned off).*

FILE screen

Backup page

Back up a song

Function

In this page, song data on the internal hard disk can be backed up on an internal/external CD-RW drive or SCSI device (e.g., MO drive).

Key operation

- [FILE] key → [F1] (Backup) key
- Repeatedly press the [FILE] key until the screen shown at the right appears.
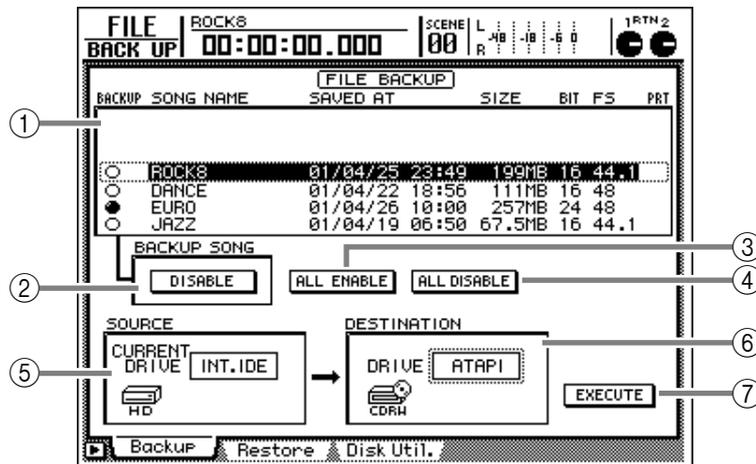
Screen functions

① **Song list**

This is a list of the songs saved on the internal hard disk. The song enclosed by the dotted line is currently selected. The highlighted line indicates the current song (currently loaded song).

In the BACKUP column, the "●" symbol indicates a song that has been selected for backup, and the "○" symbol indicates a song that has been excluded from the backup.

The song list displays the following information.

- **SONG NAME** ...... Song name (however, only the first 12 characters)
- **SAVED AT** .... Date and time at which the song was last saved
- **SIZE** .... Size of the song
- **BIT/FS** .... Number of quantization bits/ sampling frequency of the song
- **PRT** .... Write protect (→P.238) on/off status

② **BACKUP SONG button**

This button switches the song currently selected in the song list between Selected for backup (ENABLE) or Excluded from the backup (DISABLE).

When you move the cursor to this button and press the [ENTER] key, the symbol in the BACKUP column (● or ○) will alternate for the currently selected song.

③ **ALL ENABLE button**

If you move the cursor to this button and press the [ENTER] key, all songs will be selected for backup.

④ **ALL DISABLE button**

If you move the cursor to this button and press the [ENTER] key, all songs will be excluded from the backup.

⑤ **SOURCE**

This shows the backup source drive (internal hard disk). This item is for display only, and cannot be modified.

⑥ **DESTINATION**

This selects the backup destination drive. Move the cursor to this field and use the [DATA/JOG] dial to select a SCSI ID number (external SCSI device/external CD-RW drive) or "ATAPI" (internal CD-RW drive), and press the [ENTER] key to confirm your selection.

⑦ **EXECUTE button**

When you move the cursor to this button and press the [ENTER] key, a popup window will ask you to confirm the operation. Move the cursor to OK and press the [ENTER] key to begin the backup.

Tip!

• *When backing up to removable media such as an MO drive, you can select from two types of backup: "TYPE 1" in which the backup can extend across multiple volumes of media, and "TYPE 2" in which data can be backed up in units of individual songs on one volume of media. The selection of either TYPE 1 or TYPE 2 is made in the UTILITY screen Prefer.3 page (→P.268).*

• *Before backing up to CD-R/RW media, you can select whether to use the "Test writing" function which checks beforehand for writing errors, and the "Compare" function which checks for errors by comparing the written data with the original data (→P.269).*

• *For details on the backup procedure, refer to page 162.*

■ Additional functions in the Backup page

In the Backup page you can press the [SHIFT] key to assign the following functions to the [F1]–[F2] keys.
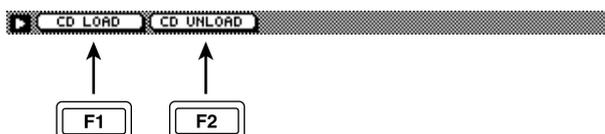
• **[F1] (CD LOAD) key**
Close the tray of the CD-RW drive and load the CD.

• **[F2] (CD UNLOAD) key**
Open the tray of the CD-RW drive.

Restore page

Reload backed-up song data

Function

In this page, song data can be reloaded (restored) from an internal/external CD-RW drive or external SCSI device back into the internal hard disk of the AW2816.

Key operation

- [FILE] key → [F2] (Restore) key
- Repeatedly press the [FILE] key until the screen shown at the right appears.
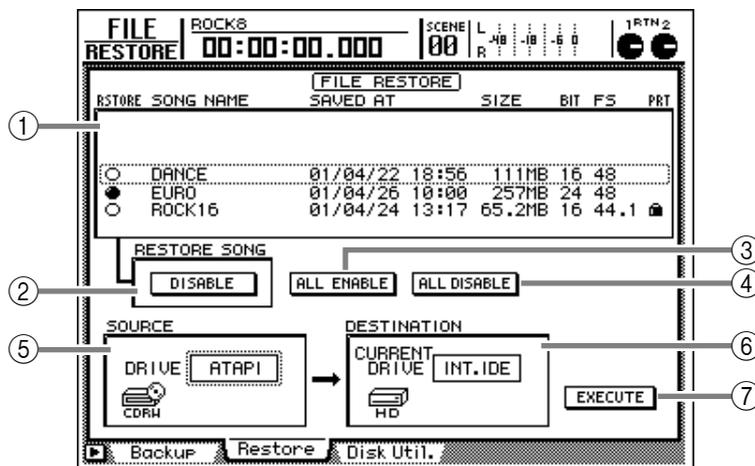
Screen functions

① **Song list**
  This is a list of the songs saved on the backup internal CD-RW drive or external SCSI device. The song enclosed by the dotted line is currently selected.

  In the RESTORE column, the "●" symbol indicates a song that has been selected for restore, and the "○" symbol indicates a song that has been excluded from the restore operation.

  The song list displays the following information.

  - **SONG NAME** ...... Song name (however, only the first 12 characters)
  - **SAVED AT** .... Date and time at which the song was last saved
  - **SIZE** .... Size of the song
  - **BIT/FS** .... Number of quantization bits/ sampling frequency of the song
  - **PRT** .... Song protect (→P.238) on/off status

② **RESTORE SONG button**
  This button switches the song currently selected in the song list between Selected for restore (ENABLE) or Excluded from the restore operation (DISABLE).

  When you move the cursor to this button and press the [ENTER] key, the symbol in the RESTORE column (● or ○) will alternate for the currently selected song.

③ **ALL ENABLE button**
  If you move the cursor to this button and press the [ENTER] key, all songs will be selected for restore.

④ **ALL DISABLE button**
  If you move the cursor to this button and press the [ENTER] key, all songs will be excluded from the restore.

⑤ **SOURCE**
  Select the drive from which the data will be restored. Move the cursor to this field and use the [DATA/JOG] dial to select a SCSI ID number (external SCSI device/external CD-RW drive) or "ATAPI" (internal CD-RW drive), and press the [ENTER] key to confirm your selection.

⑥ **DESTINATION**
  This shows the restore destination drive (internal hard disk). This item is for display only, and cannot be modified.

⑦ **EXECUTE button**
  When you move the cursor to this button and press the [ENTER] key, a popup window will ask you to confirm the operation. Move the cursor to OK and press the [ENTER] key to begin the restore operation.

Tip!

- *Song data backed up on the upper-level model AW4416 can be restored to the AW2816, but only the audio data of each track will be restored.*
- *For details on the Restore procedure, refer to page 164.*

■ Additional functions in the Restore page

In the Restore page you can press the [SHIFT] key to assign the following functions to the [F1]–[F3] keys.
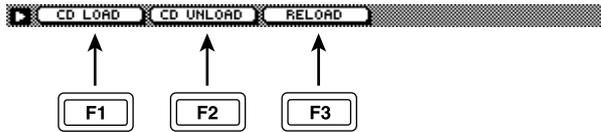
- **[F1] (CD LOAD) key**
  Close the tray of the CD-RW drive and load the CD.

- **[F2] (CD UNLOAD) key**
  Open the tray of the CD-RW drive.

- **[F3] (RELOAD) key**
  Reload (re-read) removable media (such as MO) to update the song list.

Disk Util. page

Format or erase a disk

Function

In this page you can format or defragment the internal hard disk, format an external SCSI device, or erase CD-RW media.

Key operation

- [FILE] key → [F3] (Disk Util.) key
- Repeatedly press the [FILE] key until the screen shown at the right appears.
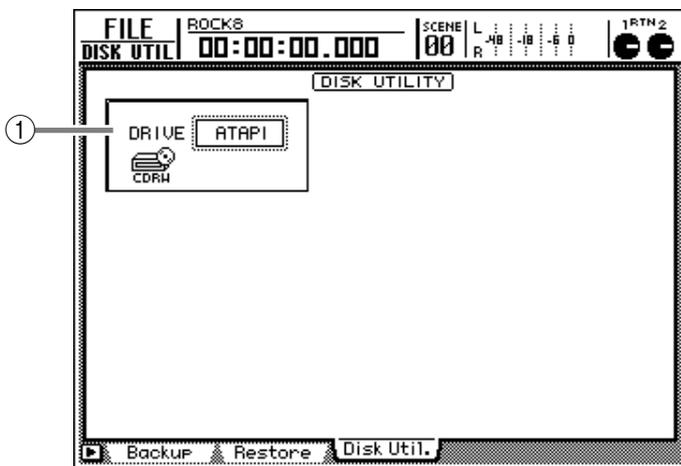
Screen functions

① Drive select

Move the cursor to this area and use the [DATA/JOG] dial to select the desired drive from the following.

- **SCSI ID number** .. Select this when you want to format an external SCSI device (e.g., MO) or to erase CD-RW media in an external CD-RW drive.
- **ATAPI** .... Select this when you want to erase CD-RW media in the internal CD-RW drive.
- **INT.IDE** .... Select this when you want to format or defrag the internal hard disk.

After selecting the desired drive, press the [ENTER] key to confirm your selection.

The display will change as follows, according to the drive you selected.

■ If you selected the internal hard disk
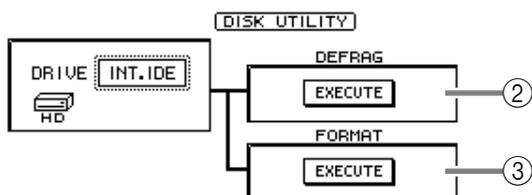
② DEFRAG (Defragment)

This button executes the Defrag operation, which cleans up data fragmentation on the internal hard disk.

- *If read/write errors occur during the Defrag operation, it is possible that the data on the internal hard disk may be lost. If the internal hard disk contains important song data, you should back it up before executing Defrag.*
- *Defrag will require about one hour of processing time for 1 GB of data. During this time, you must not turn off the power of the AW2816. Doing so will cause fatal damage to the hard disk and the data, and may render it irrecoverable.*
- *Avoid executing Defrag if power failure due to lightning strikes etc. is a possibility.*

Tip!

While Defrag is being executed, you can press the [ENTER] key to abort the processing.

③ FORMAT

This button formats the internal hard disk.

When the Format operation is executed, all audio data on the hard disk will be lost forever. Please use this operation with care.

■ If you selected an external SCSI device (MO or external hard disk)
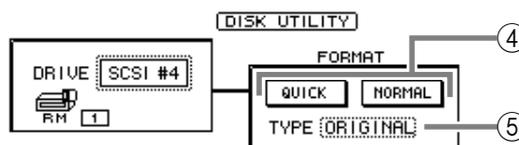
④ QUICK/NORMAL buttons

Use these two buttons to select how the external SCSI device will be formatted.

- **NORMAL** .... Execute normal formatting. Since the disk will be checked for faulty sectors while formatting is performed, some time will be required for the operation to be completed.
- **QUICK** .... Formatting will be executed without checking for faulty sectors. This is convenient when you want to erase the disk and use it immediately. (However, faulty sectors may remain, so this is not recommended if you will be making important recordings.)

⑤ **File system select**

Move the cursor to this area and turn the [DATA/JOG] dial to select which of the following two file systems will be used for formatting.

- **ORIGINAL** .... Format the media with the AW2816's own file system. Select this if you will be using the drive as a song backup destination.
- **FAT16** .... Format the media using a file system used mainly by the Windows operating system. Select this if you will be using the drive to transfer WAV files between the AW2816 and a computer.

⚠️ *Be sure that the appropriate file system is selected before you format an external hard disk or MO disk. It is not possible to switch the file system after formatting.*

■ **If you selected an internal/external CD-RW drive**
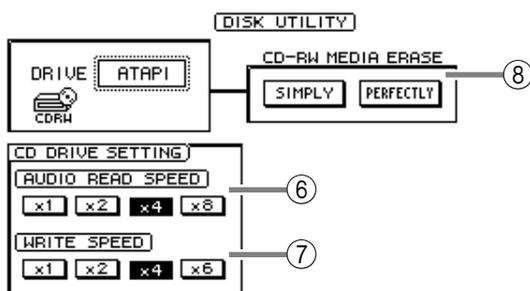
⑥ **AUDIO READ SPEED**

Use the x1, x2, x4, and x8 buttons to select the speed at which audio data will be executed read (single speed/double speed/quad speed/8x speed).

📝 *Tip!* *This setting affects only how audio data is imported from CD. (For other purposes, reading will automatically occur at the fastest speed supported by the CD-RW drive.) Normally you should set this to the fastest speed supported by your CD-RW drive.*

⑦ **WRITE SPEED**

Use the x1, x2, x4, and x6 buttons to select the speed at which data will be written (single speed/double speed/quad speed/6x speed).

📝 *Tip!* *This setting affects the writing speed at which song data is backed up on a CD-RW drive, exported to a WAV file, or written to an audio CD. Normally you should set this to the fastest speed supported by your CD-RW drive.*

⑧ **CD-RW MEDIA ERASE**

Select one of the following two methods by which the CD-RW media will be erased.

- **SIMPLY** .... Only the TOC (Table Of Contents) of the CD-RW media will be erased. With this method, the erasure will happen relatively quickly.
- **PERFECTLY** .... Erase all data from the CD-RW media. With this method, a certain amount of time will be required for the erasure to be completed.

⚠️ *Executing the Erase operation with either method will cause the data on the CD-RW media to be lost forever. Use this operation with caution.*

📝 *Tip!* *For details on erasing CD-RW media, refer to page 161.*

■ **Additional functions in the Disk Util. page**

In the Disk Util. page you can press the [SHIFT] key to assign the following functions to the [F1]–[F2] keys.
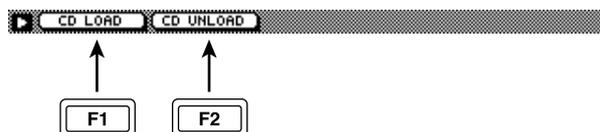
- **[F1] (CD LOAD) key**
  Close the tray of the CD-RW drive and load the CD.

- **[F2] (CD UNLOAD) key**
  Open the tray of the CD-RW drive.

CD screen

CD Write page

Use a CD-RW drive to create an audio CD

Function

Write the stereo track data of the song to CD-R/RW media to create an audio CD (Mastering function).

Key operation

- [CD] key → [F1] (CD Write) key
- Repeatedly press the [CD] key until the screen shown at right appears.
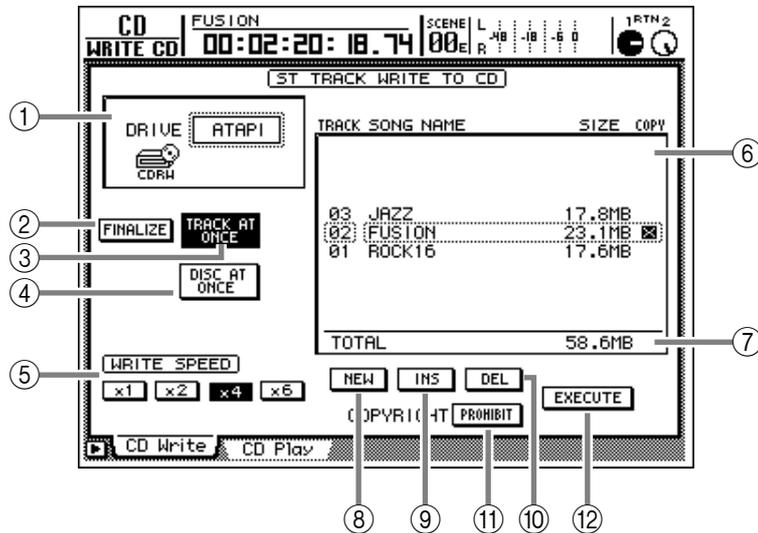
Screen functions

① **DRIVE**
Select an internal or external CD-RW drive. Move the cursor to this area and use the [DATA/JOG] dial to select "ATAPI" (internal CD-RW drive) or a SCSI ID number (external CD-RW drive), and then press the [ENTER] key to confirm your selection.

② **FINALIZE button**
This button writes track locations and other information into the data area to "finalize" CD-R media that was written using the "track at once" method. This button will be displayed only if the TRACK AT ONCE button (③) is turned on.

⚠
CD-R media to which audio data was recorded using the "track at once" method cannot be played on a conventional CD player or by the CD Player function of the AW2816 until the media has been finalized.

③ **TRACK AT ONCE button**

④ **DISC AT ONCE button**
Use these two buttons to select one of the following two methods by which data will be stored on the CD-R or CD-RW media.

- **Track At Once**
This method records audio data as individual tracks on the CD. This can be selected only if the media is CD-R. A CD-R disc that was recorded using this method allows additional data to be written, as long as the disc has not yet been finalized. (However, CD-R media that has not yet been

finalized cannot be played on a conventional CD player or by the CD Player function of the AW2816.)

- **Disc At Once**
This method records all tracks (the entire disc) at once. CD-R/RW media recorded using this method will be finalized automatically.

⑤ **WRITE SPEED buttons**
Use the x1, x2, x4, and x6 buttons to select the writing speed (single speed/double speed/quad speed/6x speed). Normally you will select the fastest speed that your CD-RW drive supports.

⑥ **Track list**
In this area you can view and select the stereo track(s) that will be written to each track of the CD. The line enclosed by the dotted lines is the track that is selected for the current operation. The following information is shown in each column of the track list.

- **TRACK** .... This indicates the CD track number. Move the cursor to this area and use the [DATA/JOG] dial to select the track to which the operation will apply.
- **SONG NAME** ...... This shows the song name of songs that contain a stereo track. Move the cursor to this area and use the [DATA/JOG] dial to select the stereo track that will be written to the corresponding track.

• **SIZE**.................... This indicates the data size of the stereo track. The total data size is shown in the TOTAL line (⑦).

• **COPY** .... This indicates whether copy protection is enabled. Tracks for which you have pressed COPYRIGHT button (⑪) to prohibit digital copying will be indicated by a ▨ symbol (i.e., copy protection enabled).

⚠
• *The track list will display only the stereo tracks of songs with a sampling frequency of 44.1 kHz. Stereo tracks within songs whose sampling frequency is 48 kHz will not be displayed.*
• *A stereo track that has just been recorded will not be displayed in the track list until you save the current song. If you want to write the stereo track of the current song to a CD, you must first save the current song.*

Tip!
• *If you select the stereo track of a 24 bit (44.1 kHz) song, the lower 8 bits will be discarded during mastering, converting it to 16 bit (44.1 kHz) data.*
• *If the CD-RW drive contains CD-R media with data that was recorded using Track At Once, the SONG NAME/SIZE/COPY area will indicate "---EXISTING---".*

⑦ **Total**
This indicates the total of the SIZE column of the track list. A total of approximately 650 Mbytes can be written onto a 74 minute CD-R/RW disc.

⑧ **NEW button**
This button adds a new track to the end of the track list.

⑨ **INS (Insert) button**
This button inserts a new track before the track number that is currently selected in the list.

⑩ **DEL (Delete) button**
This button deletes the currently selected track from the track list.

⑪ **COPYRIGHT button**
This button switches the copy protect setting for the track currently selected in the track list. Move the cursor to this button and press the [ENTER] key to switch between the following two button displays.

• **PROHIBIT** .... Prohibit digital copying of the track (Copy Protect enabled).
• **PERMIT** .... Permit digital copying of the track (Copy Protect disabled).

⑫ **EXECUTE button**
This button executes writing (mastering) to the CD-R/RW media.

Tip!
• *Before you begin actually writing, it is also possible to check whether errors will occur while the data is transmitted (Test Writing function). This setting is made in the UTILITY screen Prefer.3 page (→P.268).*
• *For details on the procedure for writing an audio CD, refer to page 179.*

■ Additional functions in the CD Write page

In the CD Write page you can press the [SHIFT] key to assign the following functions to the [F1]–[F5] keys.
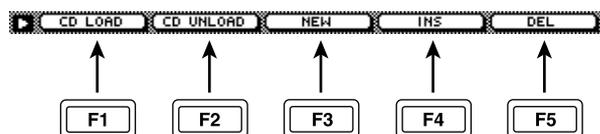
• **[F1] (CD LOAD) key**
Close the tray of the CD-RW drive and load the CD.

• **[F2] (CD UNLOAD) key**
Open the tray of the CD-RW drive.

• **[F3] (NEW) key**
Add a new track to the end of the track list (⑥). This is the same function as the NEW button (⑧).

• **[F4] (INS) key**
Insert a new track after the track number currently selected in the track list (⑥). This is the same function as the INS button (⑨).

• **[F5] (DEL) key**
Delete the track that is currently selected in the track list (⑥). This is the same function as the DEL button (⑩).

CD Play page

Use a CD-RW drive to play an audio CD

Function

Use an internal/external CD-RW drive connected to the AW2816 to play an audio CD (CD Play function).

Key operation

• [CD] key → [F2] (CD Play) key

• Repeatedly press the [CD] key until the screen shown at right appears.
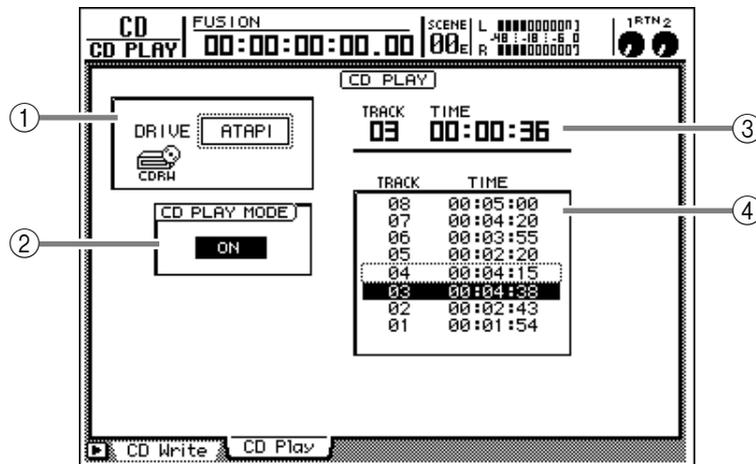
Screen functions

① **DRIVE**

Select an internal or external CD-RW drive. Move the cursor to this area and use the [DATA/JOG] dial to select "ATAPI" (internal CD-RW drive) or a SCSI ID number (external CD-RW drive), and press the [ENTER] key.

② **CD PLAY MODE button**

Move the cursor to this area and press the [ENTER] key to switch the CD Play function on/off. When the CD Play function is on, the keys of the transport section can be used to control audio CD play/stop, etc. When the CD Play function is on, the keys will function as follows.

Key	Function
PLAY [▶] key	Play back the audio CD
STOP [■] key	Stop the audio CD
FF [◀◀]/ REW [▶▶] keys	Rewind/fast-forward
[I◀◀]/[▶▶I] keys	Select tracks

⚠️

• *When the CD Play function is on, the operations of keys other than the above keys, the [CURSOR] keys, the [DATA/JOG] dial, and the [ENTER] key will be ignored.*

• *The CD audio signal is routed through the stereo output channel and output from the STEREO OUT jacks. (Use the STEREO fader to adjust the volume.) During this time, the signals of other channels will not be sent to the stereo output channel.*

Stereo output channel

⚠️
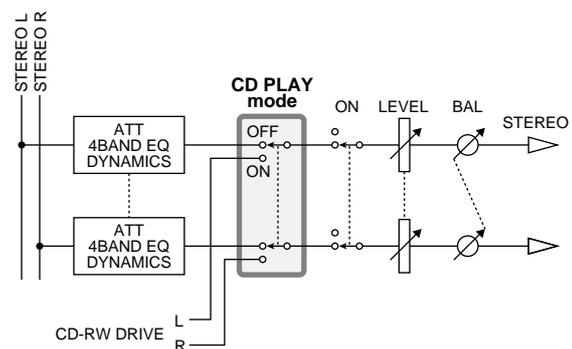
• *While an audio CD is playing, the access indicator in the display section will blink.*

• *For details on using the CD Play function, refer to page 177.*

③ **Counter**

This displays the track number (TRACK column) of the playback track currently selected in the track list (④), and the elapsed time of that track (TIME column).

④ **Track list**

This displays a list of the CD track numbers (TRACK column) and track times (TIME column). The highlighted line is the currently selected playback track. You can also move the cursor to the track list and use the [DATA/JOG] dial and [ENTER] key to select the playback track.

✏️ *Tip!*

The CD Play function is also able to play audio from a mixed-mode CD-ROM (only track 2 or later) or CD Extra (first session only).

■ Additional functions in the CD Play page

In the CD Play page you can press the [SHIFT] key to assign the following functions to the [F1]–[F2] keys.
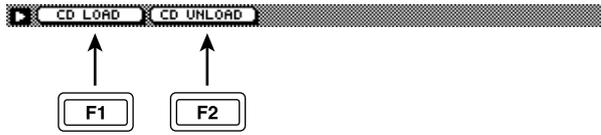
- **[F1] (CD LOAD) key**
  Close the tray of the CD-RW drive and load the CD.

- **[F2] (CD UNLOAD) key**
  Open the tray of the CD-RW drive.

CD screen

QUICK REC screen

Quick Rec page

Visually patch input sources to tracks

Function

While viewing the patch status on the screen, you can assign eight input sources directly to tracks 1–16.

Key operation

• [QUICK REC] key
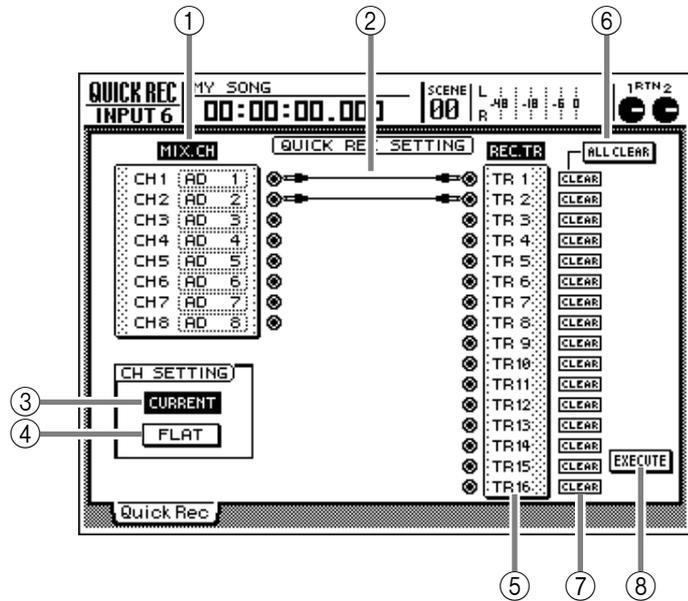
Screen functions

① **MIX. CH (Mixer Channels)**

This area displays the input sources assigned to input channels 1–8. The ⊚ (jack) symbol displayed at the right of this area indicates the direct output of each channel.

If you move the cursor to the jack symbol and press the [ENTER] key, the input channel for that row will be highlighted, indicating that it is selected for operations. If you move the cursor to a selected channel and press the [ENTER] key once again, the selection will be defeated.

Move the cursor to the numerical value box for each input channel, and turn the [DATA/JOG] dial to select the input source from the following.

- **AD 1–AD 8** .... INPUT jacks 1–8
- **SLT-1–SLT-8** .... INPUT 1–8 of an I/O card (OPTION I/O slot)
- **DIN L/DIN R** .... L or R channel of the DIGI-TAL STEREO IN jack
- **MET** .... Internal metronome

② **Patch cable**

Virtual patch cables indicate how the direct outputs of input channels 1–8 (the MIX. CH area) are connected to recorder inputs 1–16 (the REC. TR area).

To connect a patch cable, move the cursor to the jack in the MIX.CH area and press the [ENTER]

key, and then move the cursor to a REC.TR jack and press the [ENTER] key. (Performing these steps in reverse order will produce the same result.)

To cancel an individual patch cable, use the CLEAR button (④). To cancel all patch cables, use the ALL CLEAR button (⑤).

⚠

- *It is possible to connect a single input channel to multiple tracks. However, it is not possible to connect multiple input channels to a single track.*
- *A maximum of eight patch cables can be connected. If all eight have been connected, it will not be possible to change any connections unless you cancel one of the cables.*
- *The patching that you specify in the Quick Rec page will take effect only when you use the EXECUTE button (⑧).*

③ **CURRENT button**

④ **FLAT button**

Use these two buttons to specify whether the settings of the corresponding input channels will be initialized when Quick Rec is executed.

If the CURRENT button is on (highlighted), executing Quick Rec will not change the input channel settings; only the patching will change.

If the FLAT button is on, executing Quick Rec will recall channel library 01 to input channels to which a patch cable is connected, initializing the mix parameters.

⑤ **REC.TR (Recorder Tracks)**

This area displays the connection status of tracks 1–16. The ⊚ (jack) symbol displayed at the left of this area indicates the recorder input of each track. If you move the cursor to the jack and press the [ENTER] key, the track of that row will be highlighted, indicating that it is selected for operations. If you move the cursor to a selected track and press the [ENTER] key once again, the selection will be defeated.

⑥ **ALL CLEAR button**

This button cancels all patch cables.

⑦ **CLEAR button**

This button cancels the patch cable connected to that track.

⑧ **EXECUTE button**

When you move the cursor to this button and press the [ENTER] key, the patching you specified in the Quick Rec page will take effect. When you do this, the input channels/tracks connected by the patch cables will change as follows.

- The signal flow of the corresponding input channels and tracks will change according to the patching you specified in the Quick Rec page.

- Assignments to the stereo bus will be forcibly turned off for the corresponding input channels.

- On the monitor channels for the corresponding tracks, the mix parameters will be reset to the default values.

- All corresponding tracks will be in record-ready mode.

- If the FLAT button is on, the settings of input channels to which a patch cable is connected will be reset to the default settings.

For details on operations in the Quick Rec page, refer to page 80.

⚠

- *Input channels/tracks (monitor channels) to which no patch cables are connected in the Quick Rec page will not be affected in any way.*
- *When you access the Quick Rec page, the patch cables will be displayed according to the settings that you made most recently. However if you have manually modified the input patching or recorder input patching in another screen, the patch cable display may not necessarily match the actual signal flow.*

SETUP screen

D.in Setup page

Word clock and cascade settings

Function

In this page you can select the word clock source to which the AW2816 will synchronize, and make vari-pitch settings. You can also make settings for cascading the digital output of an external device into the stereo bus of the AW2816.

Key operation

- [SETUP] key → [F1] (D.in Setup) key
- Repeatedly press the [SETUP] key until the screen shown at the right appears.
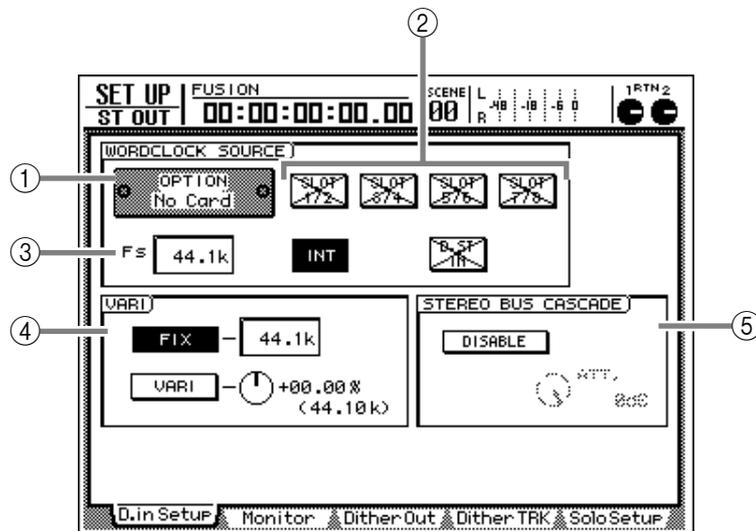
Screen functions

① **Slot**

If an optional I/O card is installed in OPTION I/O slot, a graphic will be displayed to show the type of I/O card. Cards in which no card is installed will be displayed as "No Card."

② **WORD CLOCK SOURCE**

From the following choices, select one of the following clock source to which the AW2816 will synchronize.

• SLOT 1/2–7/8
The input signal from a digital I/O card installed in OPTION I/O slot will be the clock source. One pair of digital I/O card input channels 1/2–7/8 can be selected.

Choose this setting when you want to use an external device such as a digital MTR as the word clock master, so that the AW2816 will synchronize to the clock data included in the digital input signal.

• INT
The internal clock of the AW2816 will be selected as the clock source.

Choose this setting when you are using the AW2816 by itself, or when you want to use the AW2816 as the word clock master to which a digital MTR or other external device will synchronize.

• D.ST IN
The word clock data included in the input signal of the DIGITAL STEREO IN jack will be the clock source.

Choose this setting when cascading the digital output of an external device into the stereo bus of the AW2816, or when you are inputting the signal of a device that cannot act as a slave (e.g., a CD player) via the DIGITAL STEREO IN jack.

INT A highlighted button indicates that it is currently selected as the word clock source.

A button with an X mark indicates that no digital audio signal is being input from the corresponding digital I/O card or connector. A button that is displayed in this way cannot be selected as a clock source.

A button with a/mark indicates that a digital audio source is being input from the corresponding digital I/O card or connector, but is not synchronized with the internal clock of the AW2816.

This indicates that digital audio is being input from the corresponding digital I/O card or connector, and is synchronized with the internal clock of the AW2816.

③ Fs (Sampling frequency)

This displays the sampling frequency of the signal that is currently selected as the clock source.

⚠ ─────────────────────

- *Immediately after the clock source is selected, the AW2816 will display "LOCK" for a time, indicating that it is attempting to synchronize to that clock source.*
- *If "UNLOCK" is displayed, it was for some reason impossible to synchronize to the currently selected clock source. Make sure that the clock source selection is appropriate, and the external device has not malfunctioned.*
- *When you make the AW2816 synchronize to an external clock source, you must make sure that the sampling frequency of the song matches the value displayed in the Fs field. If these values are different, the pitch may change when the clock source is changed back to "INT" (internal clock).*

④ VARI (Vari-pitch)

When "INT" (internal clock) is selected as the clock source, you can use the following two buttons to specify whether the sampling frequency will be variable.

• FIX button

When this button is on, the sampling frequency of the AW2816 will be fixed at the value displayed at the right of the button. Normally you will select this setting.

• VARI (vari-pitch) button

When this button is on, you can use the knob located at right to make fine adjustments to the sampling frequency over a range of –5.97%–+6.00%. This is used mainly to make fine adjustments to the playback pitch or the length of the song.

⑤ STEREO BUS CASCADE

This specifies whether the external device connected to the DIGITAL STEREO IN connector will be cascade-connected to the stereo bus of the AW2816.

Select "D.ST" as the clock source, move the cursor to the button labeled "DISABLE," and press the [ENTER] key. The button will change to "ENABLE." In this state, the signal that is input from the DIGITAL STEREO IN connector will be sent directly to the stereo bus of the AW2816. At this time you can use the ATT. knob to adjust the level (attenuation) of the input signal.

⚠ ─────────────────────

If you attempt to enable cascade connection when a clock other than "D.ST IN" is selected as the clock source, a message of "CANNOT ASSIGN DIGITAL ST-IN" will appear, and it will not be possible to set the button to "ENABLE."

Monitor page

Monitor the digital input signals

Function

Monitor the state of the digital audio signals being input from the DIGITAL STEREO IN jack or from digital I/O card installed in the OPTION I/O slot.

Key operation

- [SETUP] key → [F2] (Monitor) key
- Repeatedly press the [SETUP] key until the screen shown at the right appears.

①

```
SET UP  FUSION                    SCENE L           1RTN2
ST OUT  00:00:00:00. 10   00    R

              CHANNEL STATUS MONITOR
                      DIGITAL   OPTION    OPTION
                      ST IN     INPUTS    No Card

                                CH1-2  | CH3-4 | CH5-6 | CH7-8

            Fs    44.1k         ......   ......   ......   ......

    EMPHASIS      Off           ......   ......   ......   ......

    CATEGORY   D/D Conv          ......   ......   ......   ......

        COPY      OK            ......   ......   ......   ......


         D.in Setup  Monitor  Dither Out  Dither TRK  Solo Setup
```
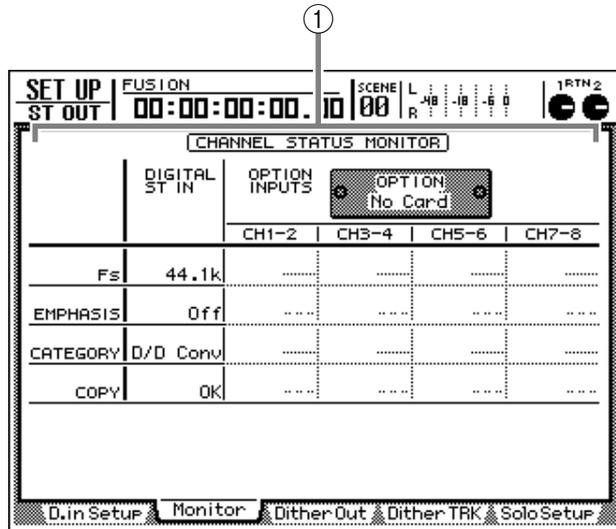
Screen functions

① CHANNEL STATUS MONITOR

Here you can monitor the status of the digital signals that are input from the DIGITAL STEREO IN connector and from a digital I/O card installed in OPTION I/O. Each display item has the following significance.

• Fs (frequency)
Indicates the sampling frequency of the input signal.

Display	Meaning
44.1k	Sampling frequency = 44.1 kHz
48k	Sampling frequency = 48 kHz
None	Unknown sampling frequency
UNLOCK	No signal is being input, or an invalid signal is being input

• EMPHASIS
This shows whether the input signal has been processed by emphasis.

Display	Meaning
ON	Emphasis on
OFF	Emphasis off
???	Unknown

• CATEGORY
This shows the category of the digital input signal.

Display	Meaning
GEN	General use
LASER OPTICAL	Optical laser device such as a CD player
D/D Conv	D/D converter or signal processor
D.Broadcast	Digital broadcast
Instrument	Instrument or sound module
AD Conv	A/D converter (without copyright data)
A/D Conv with (c)	A/D converter (with copyright data)
Solid Memory	Solid-state memory device
Experimental	Experimental device
Unknown	Unknown device

• COPY (copy permit)
This shows the copy permit/prohibit status of the digital input signal.

Display	Meaning
OK	Copying permitted
Prohibit	Copying prohibited

Tip!

- *Processing that pre-emphasizes the high-frequency portion of the signal is called "emphasis," and processing that attenuates this portion to restore the original flat response is called "de-emphasis." Even if the AW2816 receives a signal to which emphasis has been applied, it will not perform de-emphasis.*
- *Digital input signals from option I/O are displayed in pairs of adjacent odd-numbered → even-numbered input channels (channels 1/2, 3/4, ...)*

Dither Out page

Dithering and word length settings for digital output

Function

When digitally outputting a 24 bit song, you can turn dithering on/off and specify the word length for dithering.

Key operation

- [SETUP] key → [F3] (Dither Out) key
- Repeatedly press the [SETUP] key until the screen shown at the right appears.
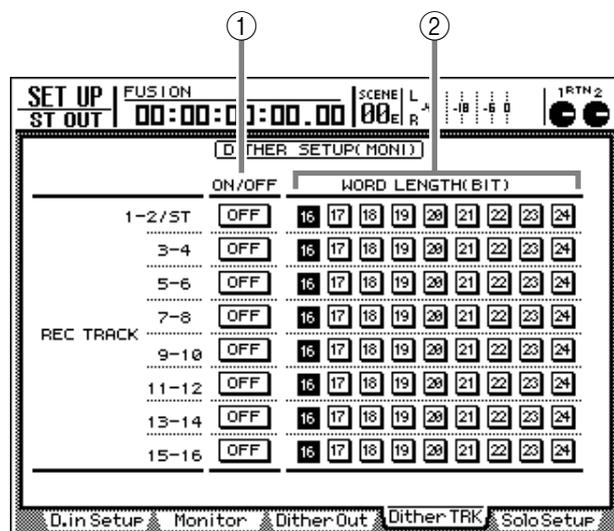
Screen functions

① **ON/OFF (Dithering on/off)**

Turn dithering on/off for the DIGITAL STEREO OUT connector (DIGITAL ST OUT) and the output channels of the OPTION I/O slot (OPTION OUT SLOT).

Tip!

- *When sending digital audio from a system with a high number of bits to a lower system (e.g., 24 bits → 16 bits), "round-off" of the bits may cause unpleasant quantization noise. This is the reason that dithering is applied to add a very small amount of noise to the signal, so that quantization noise will not be as obtrusive.*
- *When sending audio from a lower-resolution system to a higher-resolution system (e.g., 16 bits → 24 bits) or when sending audio between systems of identical resolution (e.g., 16 bits → 16 bits), turning dithering on will have no effect.*
- *For digital I/O cards, dithering is switched on/off by pairs of adjacent odd-numbered → even-numbered channels (1/2, 3/4, ...).*

② **WORD LENGTH (BIT)**

Specify the word length (number of bits) of the signal that is sent from channels for which dithering is turned on.

Tip!

For example if you want to send a 24 bit song to a 16 bit external recorder with dithering applied, you would set the corresponding channels to Dither = on, Word Length = 16.

⚠

Changing the word length of a channel for which dithering is turned off will have no effect.

Dither TRK page

Dithering and word length settings for recording tracks

Function

When recording tracks 1–16 and the stereo track of a 24 bit song, you can turn dithering on/off and specify the word length for dithering.

Key operation

• [SETUP] key → [F4] (Dither TRK) key

• Repeatedly press the [SETUP] key until the screen shown at the right appears.
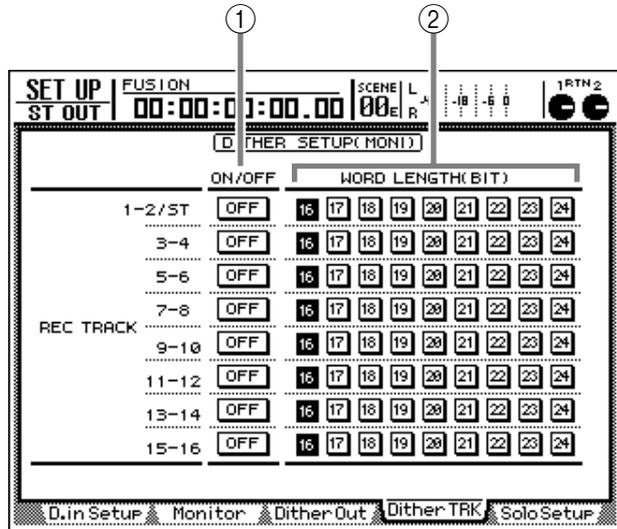
Screen functions

① **ON/OFF (Dithering on/off)**

Turn dithering during recording on/off for adjacent odd-numbered → even-numbered pairs of tracks (tracks 1/2, 3/4, ...). (The settings of the stereo track are shared with tracks 1/2.)

Tip!

For details on what dithering does, refer to the Dither Out page (→P.259).

② **WORD LENGTH (BIT)**

Specify the word length (number of bits) used when recording a track for which dithering is turned on.

Tip!

For example if you have recorded a song at 24 bit/44.1 kHz, and want to write it to an audio CD with dithering applied, you would set the stereo track to Dither = on and Word Length = 16 at the time of mixdown.

⚠

• *You must be careful not to apply dithering two or more times to the same source. Doing so will eliminate the effect of dithering, and will also degrade the S/N ratio.*

• *Since the settings within the pages of the SETUP screen are common to all songs, they will not be reset when you switch songs. If you have turned dithering on, we recommend that you always turn it off when you finish recording.*

Solo Setup page

Settings for the Solo function

Function

Here you can make various settings for the Solo function.

Key operation

- [SETUP] key → [F5] (Solo Setup) key
- Repeatedly press the [SETUP] key until the screen shown at the right appears.
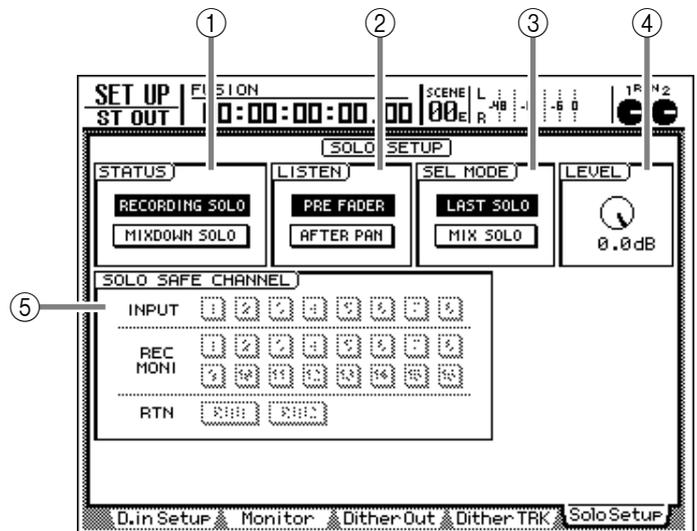
Screen functions

① **STATUS**

Use the following two buttons to select the operating mode in which the Solo function will be used.

- **RECORDING SOLO button**

When this button is on, the solo signal will be routed through the dedicated SOLO bus and output from the MONITOR OUT jacks/PHONES jack. (It will not affect the signals sent to the stereo bus or to buses 1–8.) You will also be able to monitor channels that are not assigned to the stereo bus or to buses 1–8.

This mode is convenient when you want to monitor an input source during recording without affecting the signals sent to the stereo bus or buses 1–8.

- **MIXDOWN SOLO button**

When this button is on, the solo signal will be routed through the stereo bus and output from the MONITOR OUT jacks/PHONES jack. When the Solo function is turned on, only the soloed channel will be sent to the stereo bus, and other channels will be muted. For this reason, it is not possible to monitor channels that are not assigned to the stereo bus.

This mode is convenient when you want to solo a specific channel during mixdown.

② **LISTEN**

When the RECORDING SOLO button is turned on in the STATUS area (①), you can use the following two buttons to select the location from which the signal will be sent from each channel to the SOLO bus.

- **PRE FADER button**

When this button is on, the signal from immediately before the fader will be sent to the SOLO bus. Since the pan setting of each channel will have no effect, the signal being monitored from the MONITOR OUTPUT jacks/PHONES jack will be monaural.

- **AFTER PAN button**

When this button is on, the signal that has passed through the fader and pan will be sent to the SOLO bus. The fader and pan settings will affect the signal that is monitored in the MONITOR OUT jacks/PHONES jack.

③ **SEL MODE (Select Mode)**

When the Solo function is on ([SOLO] key lit), you can use the following two buttons to choose how the monitor signal will be selected.

- **LAST SOLO button**

When this button is on, only the channel whose [ON] key was pressed last will be monitored.

- **MIX SOLO button**

When this button is on, you can use the [ON] keys to select two or more channels for monitoring.

SETUP screen

④ **LEVEL**

When the RECORDING SOLO button is turned on in the STATUS area (①), this adjusts the level of the signal that is sent to the SOLO bus.

⑤ **SOLO SAFE CHANNEL**

When the MIXDOWN SOLO button is turned on in the STATUS area (①), you can specify channels that will be excluded from the Solo function. Channels that are turned on in this area will not be muted even when the [SOLO] key is pressed. For example, this is convenient when you will always want to monitor the return channels 1/2.

Tip!

When you press a [SEL] key, the cursor will move to the corresponding channel in the SOLO SAFE CHANNEL area.

UTILITY screen

Oscillator page

Using the test tone oscillator

Function

Select the waveform of the test tone oscillator built into the AW2816, and send it to the desired bus.

Key operation

• [UTILITY] key → [F1] (Oscillator) key
• Repeatedly press the [UTILITY] key until the screen shown at the right appears.

UTILITY screen
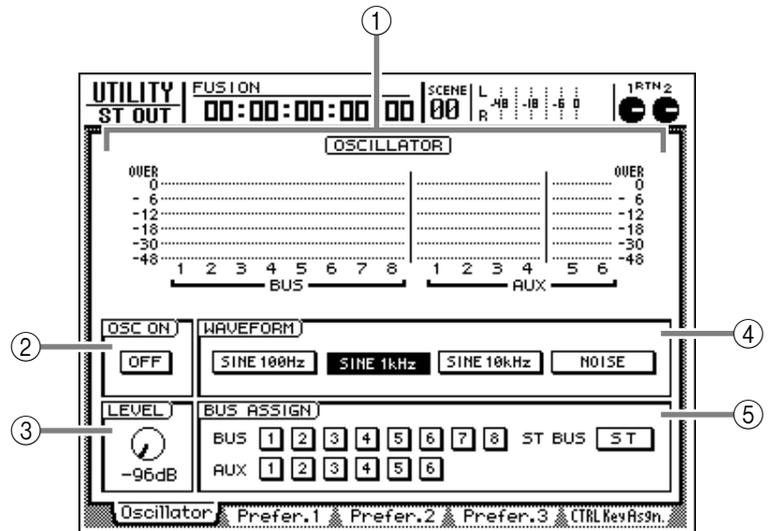
Screen functions

① **Level meter**
    This shows the oscillator output level that is being sent to buses 1–8 and AUX buses 1–6.

② **OSC ON (Oscillator On) button**
    This button turns the oscillator on/off (default setting= off). When you move the cursor to this button and press the [ENTER] key, the button display will change to "ON," and the oscillator signal will be sent to the bus(es) you selected in the BUS ASSIGN area (⑤). The oscillator level is controlled by the LEVEL knob (③), and the waveform is selected in the WAVEFORM area (④).

> **Tip!**
>
> • *Sine waves and white noise have a higher sound pressure level than they appear to your ears. Use caution, since they may damage your speakers if played back at a high volume.*
> • *If you press the OSC ON button when the LEVEL knob (③) is raised, high-volume sound may be output suddenly. We recommend that you make sure that the LEVEL knob is lowered before you turn on the oscillator.*

③ **LEVEL knob**
    This knob adjusts the output level (–96 dB to 0 dB) of the oscillator.

④ **WAVEFORM**
    Use the following buttons to select the waveform of the test tone oscillator.
    • **SINE 100 Hz button** .... 100 Hz sine wave
    • **SINE 1 kHz button** .... 1 kHz sine wave
    • **SINE 10 kHz button** .... 10 kHz sine wave
    • **NOISE** .... White noise

⑤ **BUS ASSIGN**
    Use the following buttons to specify the bus to which the oscillator signal will be sent.
    • **BUS 1–8 buttons** .... Buses 1–8
    • **AUX 1–6 buttons** .... AUX buses 1–6
    • **ST BUS button** .... Stereo bus

AW2816
Reference section

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Prefer.1 page

Make overall settings for the AW2816 (1)

Function

Enable/disable warning messages, and specify the point from which direct output will be taken.

Key operation

- [UTILITY] key → [F2] (Prefer.1) key
- Repeatedly press the [UTILITY] key until the screen shown at the right appears.
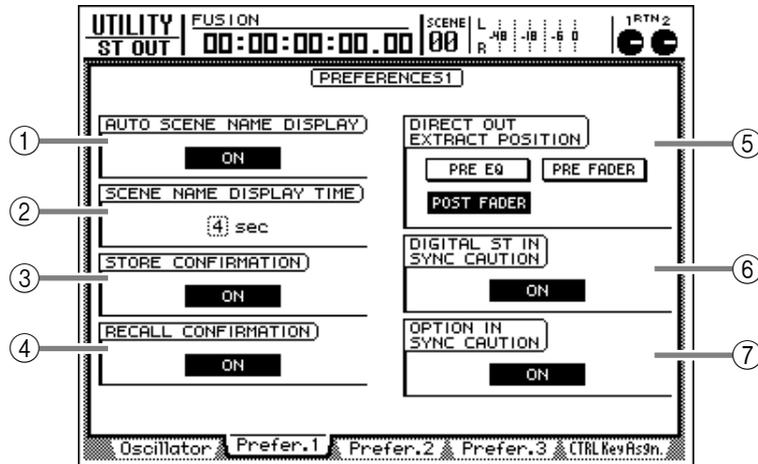
Screen functions

① AUTO SCENE NAME DISPLAY

If this button is on, operating any of the keys in the SCENE MEMORY section ([STORE] key, [▼]/[▲] keys, etc.) will cause the scene name to be displayed for a time in the upper right of the screen (Default setting= on).

② SCENE NAME DISPLAY TIME

This setting specifies the length of time that the scene name will be displayed when the AUTO SCENE NAME DISPLAY button (①) is on. This can be set in one-second increments over a range of 1 to 9 seconds (Default setting= 4 seconds).

③ STORE CONFIRMATION

If this button is on, a popup window will ask you for confirmation when you store a scene or library (Default setting = on).

④ RECALL CONFIRMATION

If this button is on, a popup window will ask you for confirmation when you recall a scene or library (Default setting = on). You can turn this off if you want to switch scenes quickly.

⑤ DIRECT OUT EXTRACT POSITION

Use the following three buttons to select the location from which the signal will be sent when you use direct output from input channels 1–8.

- **PRE EQ** .... Before the EQ
- **PRE FADER** .... Before the fader
- **POST FADER** .... After the fader (default setting)

Input channel
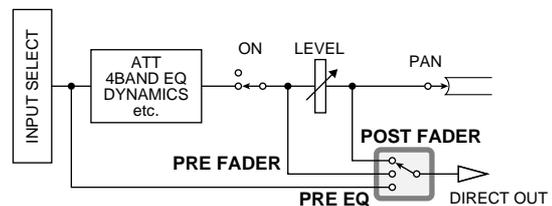
⑥ **DIGITAL ST IN SYNC CAUTION**

When this button is on, an error message will be displayed in the lower part of the screen if a signal not synchronized with the word clock source is being input to the DIGITAL STEREO IN connector. (Default setting = on)

⑦ **OPTION IN SYNC CAUTION**

When this button is on, an error message will be displayed in the lower part of the screen if a signal not synchronized with the word clock source is being input to a digital I/O card installed in the OPTION I/O slot. (Default setting = on)

Prefer. 2 page

Make overall settings for the AW2816 (2)

Function

Set the rollback time, pre-roll/post-roll time, and the nudge playback method etc.

Key operation

• [UTILITY] key → [F3] (Prefer.2) key
• Repeatedly press the [UTILITY] key until the screen shown at the right appears.
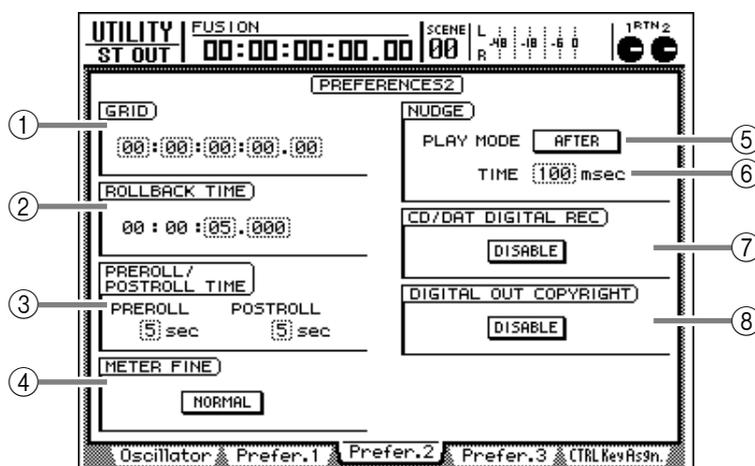
Screen functions

① GRID

This sets the minimum unit when you specify an area in the EDIT screen TR Edit page or V.TR Edit page. For example if the grid value is set to "00:00:00.010," the specified location will move in 10 millisecond increments for each click of the [DATA/JOG] dial. (Default= 00:00:00.000)

⚠

• *If measure units are selected as the counter display method, the GRID setting will be ignored.*
• *The GRID setting has no effect on adjustment of the locate points (TRACK screen/Mark Adj. page) or on using the [NUM LOCATE] key to specify the locate points.*

② ROLLBACK TIME

This specifies the time of the rewind that will occur when the [ROLL BACK] key is pressed. You can set this time in 1 millisecond increments over a range of 0–30 seconds (default setting= 5 seconds). For details on using Rollback, refer to page 98.

③ PREROLL/POSTROLL TIME

These settings specify the pre-roll time (the playback time that precedes punch-in) and post-roll time (the playback time that follows punch-in). Each can be set in 1 second increments over a range of 0–5 seconds (default setting= 5 seconds). For details on using auto punch-in/out, refer to page 64.

④ METER FINE

This selects the resolution of the level meters displayed in the METER screen Meter1/Meter2 page. Move the cursor to the button and press the [ENTER] key to switch between the following two settings.

• NORMAL

The full range of the level meter will correspond to values of –48 dB to 0 dB.

• FINE

The full range of the level meter will correspond to values of –18 dB–0 dB. This setting is convenient when you want to perform detailed level adjustments near 0 dB.

🎵 Tip!

• *This setting does not affect the level meters displayed in pages other than the METER screen.*
• *The level meter resolution can also be selected in the METER screen Meter1/Meter2 page.*

⑤ PLAY MODE

This selects the play mode of the Nudge function (a function that lets you use the [JOG ON] key and the [DATA/JOG] dial to search for a location). Move the cursor to this button and press the [ENTER] key to switch between the following two settings.

• AFTER

Playback will be repeated for the specified nudge time (⑥) starting at the current location.

• BEFORE

Playback will be repeated for the specified nudge time (⑥) ending at the current location.

⑥ **TIME**

This specifies the interval of playback (Nudge Time) that is repeated by the Nudge function. This can be adjusted in 1 millisecond increments over a range of 25–800 milliseconds (default setting= 100 milliseconds).

For details on using the Nudge function, refer to page 96.

⑦ **CD/DAT DIGITAL REC**

This setting specifies whether digital recording from a CD player or DAT recorder connected to the DIGITAL STEREO IN connector, or importing from an audio CD inserted in the CD-RW drive will be allowed (ENABLE) or prohibited (DISABLE). If the button is displayed as "DISABLE," moving the cursor to the button and pressing the [ENTER] key will display the following warning message.
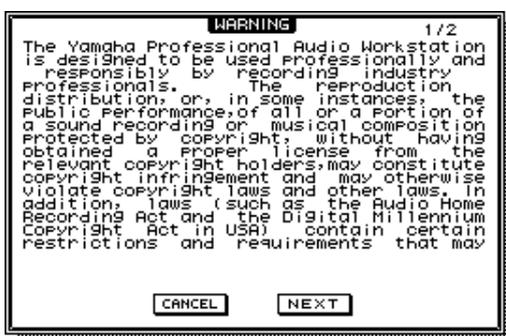
When you move the cursor to the NEXT button and press the [ENTER] key, the second page of the warning message will be displayed.

If you move the cursor to the YES button and press the [ENTER] key, the warning message will disappear, and the button will change to "ENABLE."

⑧ **DIGITAL OUT COPYRIGHT**

This setting specifies whether SCMS (Serial Copy Management System) copy protect data will be enabled (ENABLE) or not (DISABLE) for the digital signal output from the DIGITAL STEREO OUT jack. When you move the cursor to this button and press the [ENTER] key, the setting will alternate between ENABLE/DISABLE.

Even if this is set to ENABLE, it will be possible to digitally record onto a DAT/MD recorder connected to the DIGITAL STEREO OUT connector, but it will not be possible to make second-generation digital copies.

• **If DIGITAL OUT COPYRIGHT is set to ENABLE**
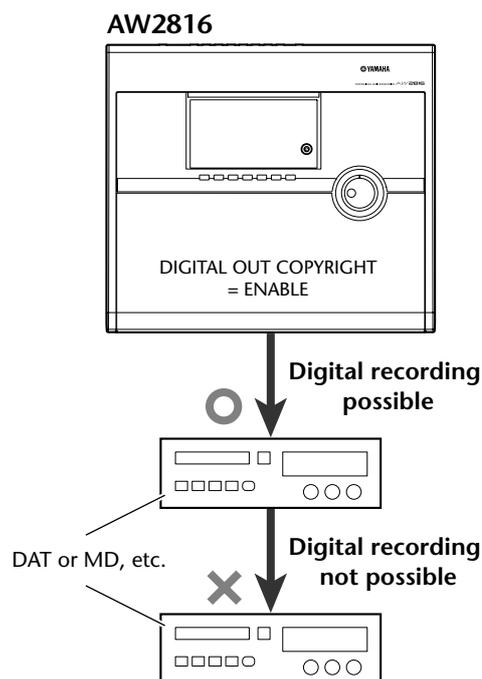
Prefer. 3 page

Make overall settings for the AW2816 (3)

Function

Here you can set the internal clock of the AW2816, and specify the backup method for removable media, etc.

Key operation

- [UTILITY] key → [F4] (Prefer.3) key
- Repeatedly press the [UTILITY] key until the screen shown at the right appears.
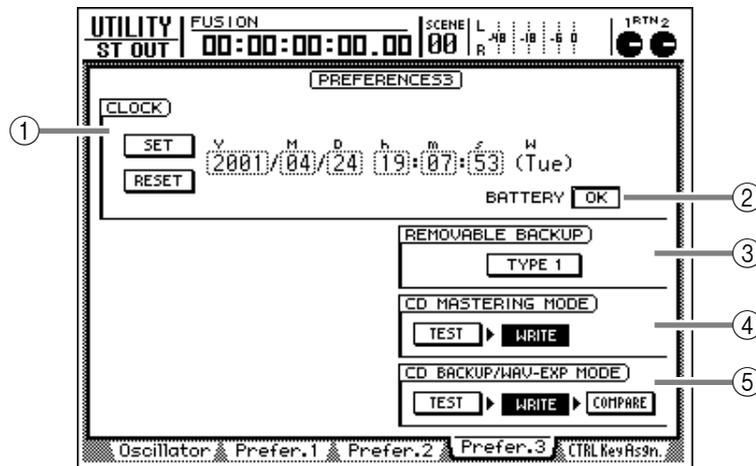
Screen functions

① **CLOCK**

This area sets the internal clock of the AW2816. Use the [DATA/JOG] dial to set the year (Y), month (M), day (D), hour (h), minute (m), and second (s), and use the SET button to finalize the date and time. If you use the RESET button instead of the SET button, the settings you input will be cancelled, and the previous date and time will reappear.

Tip!

- *When you save a song, date and time data according to this clock will be saved on the hard disk along with the song data.*
- *When the AW2816 is shipped, its internal clock is set to Japan time.*

② **BATTERY**

This shows the state of the battery that powers the internal clock of the AW2816. If the battery has sufficient capacity remaining, this will indicate "OK." If the battery has run down, this will indicate "LOW." If the "LOW" indication appears, please contact your dealer to have the battery replaced. (A fee will be charged.)

③ **REMOVABLE BACKUP (Removable media backup method)**

This selects the backup method used when backing up a song on removable media such as MO. Move the cursor to this button and press the [ENTER] key to switch between the following two settings.

• TYPE 1 (default setting)

This backup method allows the capacity of the removable media to be used to its fullest potential. This method is suitable when you are backing up multiple songs at once. Even if the data does not fit on a single volume of media, you can backup across multiple volumes of media. If this method is selected, the media will be formatted automatically before backup is executed.

• TYPE 2

This backup method uses only as much space on the removable media as occupied by the data being backed up. This method is suitable when you are backing up individual songs at a time. As long as there is space remaining on the media, you can back up other songs later. However, it is not possible to backup data that spans multiple volumes of media (as you can using TYPE 1). Before using the TYPE 2 method to back up on a new volume of media, you must format the media.

For details on how to back up songs, refer to page 162.

④ **MASTERING MODE**
Select the operation of the Mastering function that creates audio CDs.

• TEST button
If this button is on, a "writing test" will be performed before mastering is executed, to check whether errors occur during writing (default= off). The writing test will require approximately as much time as the actual writing.

• WRITE button
Use this button to turn the actual mastering operation on/off (default=on). If the TEST button is on and the WRITE button is off, only the writing test will be performed.

⚠

If an error occurs during the writing test, the mastering operation will be aborted immediately. Check whether the writing speed is set appropriately, and whether the hard disk has sufficient free space for the mastering operation.

⑤ **CD BACKUP/WAV-EXP MODE (CD backup/WAV export mode)**
Use the following three buttons to specify how songs will be backed up to CD-R/RW media, and how audio data will be exported (written) to a WAV file.

• TEST button
If this button is on, a "writing test" will be performed before backup/export is executed, to check whether errors occur during writing (default= off). The writing test will require approximately as much time as the actual writing.

• WRITE button
Use this button to turn the actual backup/export operation on/off (default=on). If the TEST button is on and the WRITE button is off, only the writing test will be performed.

• COMPARE button
If this button is on, the data on the CD-R/RW media will be compared with the original data on the internal hard disk immediately after the data has been written (default= off). If for some reason the data was not recorded accurately on the CD-R/RW media, an error message will appear during the Compare operation. Compare will require approximately as much time as writing the data.

CTRL Key Asgn. page

Assign additional functions to the [CTRL] key + function keys

Function

Select the functions that will be exe-
cuted when you hold down the [CTRL]
key and press a function key [F1]–[F5].

Key operation

- [UTILITY] key → [F5] (CTRL Key
  Asgn.) key
- Repeatedly press the [UTILITY] key
  until the screen shown at the right
  appears.
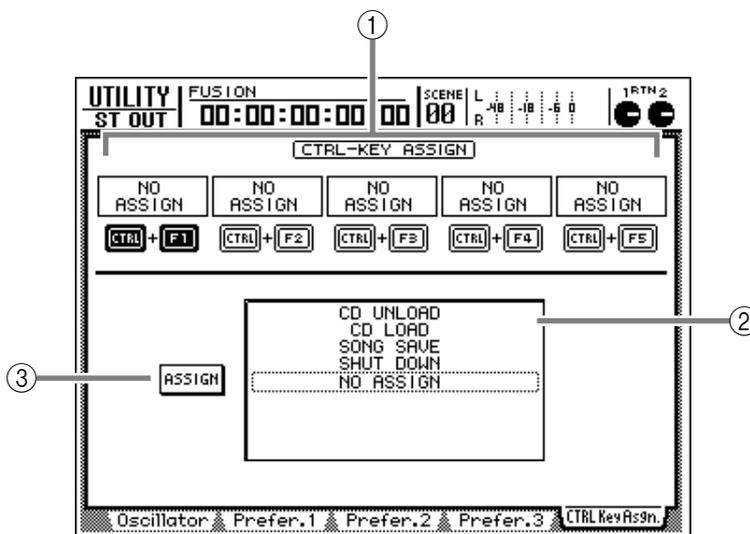
Screen functions

① CTRL+F1–CTRL+F5

This area displays the function that is currently
assigned to each combination of the [CTRL] key
and the [F1]–[F5] keys. When you move the cursor
to the desired combination and press the [ENTER]
key, the corresponding graphic of the [CTRL] key
and [F1]–[F5] keys will be highlighted, and will be
selected for assignment.

② Function list

Here you can specify the function that will be
assigned to the key combination you selected in
(①). The line enclosed by the dotted frame is the
currently selected function. The following func-
tions can be assigned.

Display	Function
NO ASSIGN	No assignment
SHUT DOWN	Display the SONG screen/ Shut Down page (shortcut to shutdown)*
SONG SAVE	Display the SONG screen/ Song List page, and move the cursor to the SAVE but- ton (shortcut to save the current song)*
CD LOAD	Close the tray of the CD-RW drive and load the CD*
CD UNLOAD	Open the tray of the CD-RW drive*
AUTOMIX [ENABLE/DISABLE]	Switch automix on (Enable) or off (Disable)*

Display	Function
MTC SYNC [MAS- TER/SLAVE]	Switch the AW2816 between MTC master (Mas- ter) or MTC slave (Slave)*
SCENE NAME	Display the currently- recalled scene name in the upper right of the screen for a fixed length of time
SCENE RECALL NO.xx	Recall scene number xx (use the [DATA/JOG] dial to select xx)
DELAY [ON/OFF]	Switch delay on/off for the selected channel
EQ [ON/OFF]	Switch EQ on/off for the selected channel
DYN [ON/OFF]	Switch the dynamics proces- sor on/off for the selected channel
PEAK HOLD [ON/ OFF]	Switch peak hold on/off
OSCILLATOR [ON/ OFF]	Switch the test tone oscilla- tor on/off

* Depending on the operating state of the
AW2816, functions marked with an asterisk may
not be executed (such as when the transport is
running). In such cases, an error message will
appear at the bottom of the display.

③ ASSIGN button

This button executes the function assignment. When you move the cursor to this button and press the [ENTER] key, a popup window will ask you for confirmation. Move the cursor to the OK button and press the [ENTER] key to execute the assignment.

Tip!

While you hold down the [CTRL] key, the functions currently assigned to the [F1]–[F5] function keys will be displayed in the lower part of the screen.

If the CD-RW drive is not selected in pages such as the CD screen CD Write/CD Play page or the EDIT screen CD Import page, "CD LOAD" or "CD UNLOAD" functions assigned to the [CTRL] + function keys cannot be executed.

MIDI screen

MIDI Setup 1 page

Basic MIDI settings (1)

Function

Make settings for MIDI transmit/ receive channels, turn message reception on/off, and make MIDI synchronization settings.

Key operation

- [MIDI] key → [F1] (MIDI Setup 1) key
- Repeatedly press the [MIDI] key until the screen shown at the right appears.
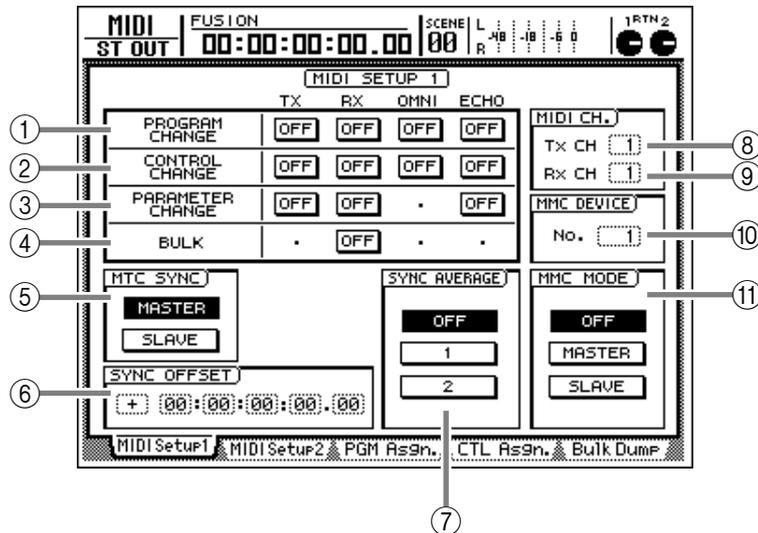
Screen functions

① PROGRAM CHANGE

Use the following buttons to make transmission/ reception settings for program change messages.

- **TX (transmission)** ... Turns program change transmission on/off. When this button is on, recalling a scene on the AW2816 will cause the program change assigned to that scene number to be transmitted.

- **RX (reception)** ..... Turns program change reception on/off. When this button is on, receiving a program change will cause the AW2816 scene assigned to that program change number to be recalled.

- **OMNI**.................. When this button is on, program changes on all MIDI channels will be received, regardless of the Rx CH (Receive MIDI channel).

- **ECHO**................... When this button is on, the identical message will be re-transmitted from the MIDI OUT/ TO HOST connectors when a program change is received.

Tip!

The scene number assigned to each program change number 1–128 can be changed in the MIDI screen PGM Asgn. page.

② CONTROL CHANGE

Use the following buttons to make transmission/ reception settings for control change messages.

- **TX (transmission)** ... Turns control change transmission on/off. When this button is on, operating a parameter on the AW2816 will cause the control change message assigned to that parameter to be transmitted from the MIDI OUT/TO HOST connector.

- **RX (reception)** ..... Turns control change reception on/off. When this button is on, receiving a control change will cause the AW2816 parameter assigned to that control change number to be modified.

- **OMNI**.................. When this button is on, control changes on all MIDI channels will be received, regardless of the Rx CH (Receive MIDI channel).

- **ECHO**................. When this button is on, the identical message will be re-transmitted from the MIDI OUT/TO HOST connector when a control change message is received.

Tip!

A parameter can be assigned to each control change number in the MIDI screen CTL Asgn. page.

③ PARAMETER CHANGE

Use the following buttons to make transmission/reception settings for the system exclusive messages (parameter changes) that control the AW2816's parameters.

- **TX (transmission)** ... Turns parameter change transmission on/off. When this button is on, operating a AW2816 parameter will cause the parameter change message assigned to that parameter to be transmitted.

- **RX (reception)** ..... Turns parameter change reception on/off. When this button is on, receiving a parameter change message will cause the corresponding parameter of the AW2816 to change.

- **ECHO** .... When this button is on, the identical message will be re-transmitted from the MIDI OUT/TO HOST connectors when a parameter change message is received.

④ BULK

This button turns bulk data reception on/off, as well as reception of messages that requires a bulk dump (Bulk Dump Request).

Tip!

Bulk Dump data consists of system exclusive messages containing various internal memory settings of the AW2816 (scene memory, library, and automix data), as well as MIDI settings. By recording bulk data on an external device such as a MIDI sequencer, you can backup the internal settings of the AW2816. Bulk data transmission is performed in the MIDI screen Bulk Dump page.

⑤ MTC SYNC

When using MTC (MIDI Time Code) to synchronize the AW2816 and an external MIDI device, this setting selects whether the AW2816 will function as the MTC master or as an MTC slave.

• MASTER button

When this button is on, the AW2816 will be the MTC master, and MTC will be transmitted from the MTC OUT connector when the transport of the AW2816 is operated. Use this setting when you want an external MIDI device to follow the AW2816, or when using the AW2816 by itself.

• SLAVE button

When this button is on, the AW2816 will be an MTC slave. When MTC is received from the MIDI IN/TO HOST connector when the AW2816 is in playback-ready mode, the AW2816 will run in accordance with the MTC messages. Use this setting when you want two AW2816 units to operate in synchronization, or when you want the AW2816 to synchronize with a device that can only function as the MTC master.

Tip!

The MTC generated within the AW2816 can also be transmitted from the MIDI OUT/TO HOST connector as well as from the MTC OUT connector. This setting is made in the MIDI screen/MIDI Setup2 page.

⑥ SYNC OFFSET

When the AW2816 is used as an MTC slave, you can shift the absolute time of the AW2816 relative to the MTC that is received. The range is "–24:00:00:00.00"–"+24:00:00:00.00".

Sync offset = 00:00:00:00.00

Received time code	00:00:10:00.00	00:00:15:00.00	00:00:20:00.00
Time code display (ABS)	00:00:10:00.00	00:00:15:00.00	00:00:20:00.00
Song			

Sync offset = +00:00:05:00.00

Received time code	00:00:10:00.00	00:00:15:00.00	00:00:20:00.00
Time code display (ABS)	00:00:15:00.00	00:00:20:00.00	00:00:25:00.00
Song			

Sync offset = –00:00:05:00.00

Received time code	00:00:10:00.00	00:00:15:00.00	00:00:20:00.00
Time code display (ABS)	00:00:05:00.00	00:00:10:00.00	00:00:15:00.00
Song			

Tip!

The Sync Offset setting does not affect the MTC that is transmitted from the AW2816's MTC OUT connector. If you want the MTC that is transmitted from the MTC OUT connector to be shifted relative to the AW2816's absolute time, you must change the Time Code Top (→P.239).

⑦ SYNC AVERAGE

When the AW2816 is used as an MTC slave, this setting specifies the range of tolerance for irregularities in MTC timing. Select one of the following three settings.

• OFF button

When this button is on, the range of tolerance will be narrowest, and the AW2816 will synchronize to the incoming MTC with the highest precision. However if there is significant instability in the received MTC, synchronization may be lost or may become unstable. This setting is appropriate when you are synchronizing two AW2816 units.

• 1 button/2 button

Turning the 1 button on will increase the range of tolerance, and turning the 2 button on will specify the maximum tolerance. These settings are appropriate when an external device with greater MTC instability (such as a tape recorder or computer-based sequencer) is being used as the MTC master.

When the AW2816 is synchronized as an MTC slave to an external device, and the accuracy of the received MTC becomes unstable, the AW2816 will attempt to follow by making fine adjustments to the playback pitch. The SYNC AVERAGE parameter sets the range of tolerance for this type of variance in MTC.

The SYNC AVERAGE setting is valid only when the word clock source is set to "INT" (internal clock).

⑧ **Tx CH (Transmit channel)**
This sets the channel (1–16) on which MIDI messages are transmitted from the AW2816.

⑨ **Rx CH (Receive channel)**
This sets the channel (1–16) on which MIDI messages are received by the AW2816.

⑩ **MMC DEVICE**
When MMC (MIDI Machine Control) is used to perform remote control between the AW2816 and an external MIDI device, this setting specifies the device ID (1–127) that is used to distinguish each device. (Default setting= 1)

⑪ **MMC MODE**
Use the following three buttons to make settings for MMC reception and transmission.

• **OFF button**
When this button is on, the AW2816 will not receive or transmit MMC. Turn this button on when you are using the AW2816 by itself.

• **MASTER button**
When this button is on, operating the transport of the AW2816 will cause the corresponding MMC command to be transmitted from the MIDI OUT/TO HOST connector. Use this setting when you are using the AW2816 as the MMC master to control external MIDI devices.

• **SLAVE button**
When this button is on, the AW2816 will obey MMC commands received at the MIDI IN/TO HOST connector. Use this setting when you want to use the AW2816 as an MTC slave, so that an external MIDI device can remotely control the AW2816's transport and select or defeat recording track selections.

In order to use MMC, the device ID of the AW2816 and the external MIDI device must match. The device ID of the AW2816 is set by the MMC DEVICE setting (⑩).

The AW2816 cannot simultaneously operate as a slave for both MTC and MMC. For this reason if the SLAVE button in the MTC SYNC area is turned on, the SLAVE button in the MMC MODE area will not be available.

MIDI Setup 2 page

Basic MIDI settings (2)

Function

Select the port used for MIDI transmission/reception, and select the synchronization messages that will be output from the MIDI OUT connector/TO HOST connector.

Key operation

- [MIDI] key → [F2] (MIDI Setup 2) key
- Repeatedly press the [MIDI] key until the screen shown at right appears.
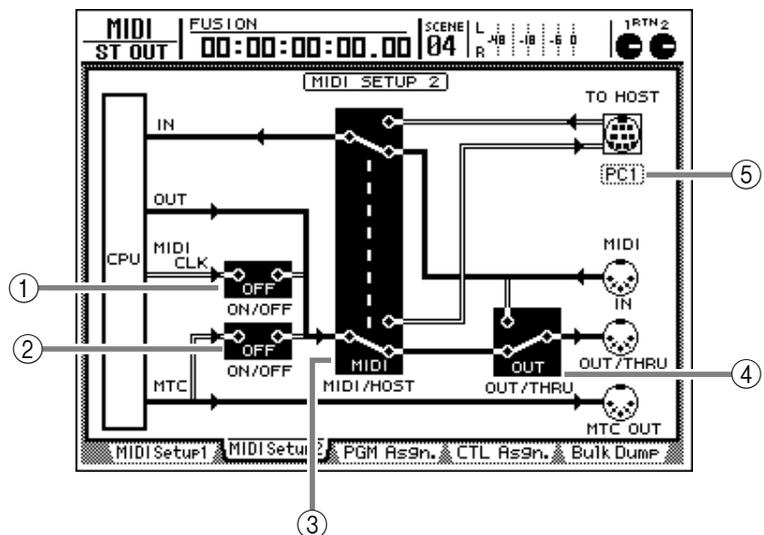
Screen functions

① MIDI CLK ON/OFF (MIDI clock on/off)

This is an on/off switch for the MIDI clock that is sent to the MIDI OUT connector/TO HOST connector. When you move the cursor to this button and press the [ENTER] key, the setting will alternate between on/off. When this is on, MIDI clock will be transmitted from the MIDI OUT connector/TO HOST connector according to the MIDI/HOST setting (③). In order to transmit MIDI Clock from the MIDI OUT connector, the OUT/THRU switch (④) must be set to "OUT."

② MTC ON/OFF switch

This is an on/off switch for the MTC messages sent to the MIDI OUT connector/TO HOST connector. When you move the cursor to this graphic and press the [ENTER] key, the setting will be switched on/off. If this is on, MTC will be transmitted to the MIDI OUT connector or TO HOST connector according to the MIDI/HOST (③) setting. In order to transmit MTC from the MIDI OUT connector, the OUT/THRU switch (④) must be set to "OUT."

Tip!

Regardless of this setting, MTC will always be transmitted from the MTC OUT connector.

③ MIDI/HOST switch

This selects the port that will transmit and receive MIDI messages. When you move the cursor to this graphic and press the [ENTER] key, the setting will alternate between "MIDI" (use the MIDI IN/MIDI OUT connectors) and "HOST" (use the TO HOST connector).

Tip!

Regardless of which is selected, receiving a MIDI message will cause "MIDI" to be displayed below the CPU "IN" area.

④ OUT/THRU switch

This selects the function of the MIDI OUT/THRU connector. When you move the cursor to this screen and press the [ENTER] key, the setting will alternate between "THRU" (MIDI messages received at the MIDI IN connector will be re-transmitted without change) and "OUT" (MIDI messages generated within the AW2816 will be transmitted).

⚠️

If this is set to "THRU," none of the MIDI messages generated within the AW2816 (MIDI Clock, MMC, program change, etc.) will be transmitted.

Tip!

In this page, signal routes over which MIDI messages flow are shown as solid lines (|), and signal routes over which MIDI messages do not flow are shown as hollow lines (‖).

⑤ TO HOST

This sets the transmission speed of the TO HOST connector, as appropriate for the computer you are using. Move the cursor to the TO HOST connector and turn the [DATA/JOG] dial to select one of the following transmission speeds.

Setting	Platform	Speed
PC1	NEC PC-9800/9821 series[1]	31.25 kbps
PC2	IBM PC compatible, NEC PC-9800/9821 series[1]	38.4 kbps
MAC	Apple Macintosh series[2]	31.25 kbps

[1] Select PC1 or PC2 according to the driver you are using.

[2] Only for models that provide a modem/printer port. On the software you are using, set the clock to "1 MHz."

PGM Asgn. page

Assign AW2816 scene numbers to program change numbers

Function

Assign scene numbers 0–96 to program numbers 1–128.

Key operation

- [MIDI] key → [F3] (PGM Asgn.) key
- Repeatedly press the [MIDI] key until the screen shown at the right appears.
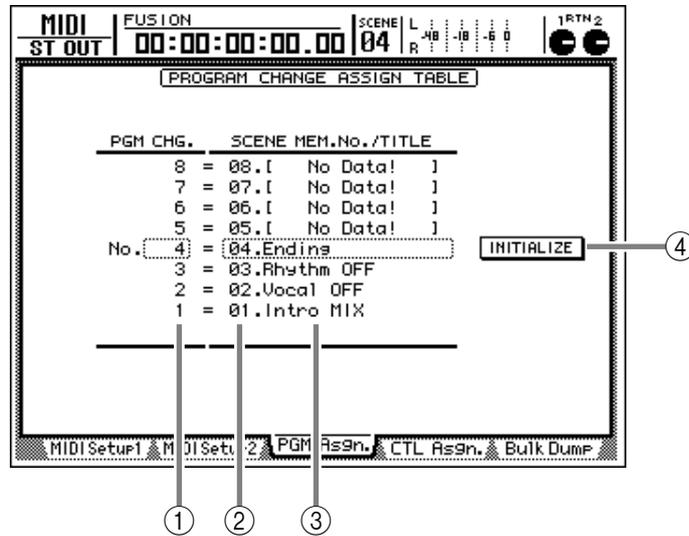
Screen functions

① **PGM CHG. (Program change number)**
This column displays program change numbers 1–128. Move the cursor to this column, and turn the [DATA/JOG] dial to select the program number to which you want to assign a scene number.

② **SCENE MEM. No. (Scene memory number)**
This column displays the scene number assigned to each program change number. Move the cursor to this column, and turn the [DATA/JOG] dial to select a scene number.

③ **SCENE MEM. TITLE (Scene memory title)**
This column displays the scene name of each scene number. Scene numbers for which no scene has been stored will indicate "No Data!"

④ **INITIALIZE**
When you move the cursor to this button and press the [ENTER] key, the scene number assignments will be reset to the following settings.

Program change number	Scene number
1–96	1–96
97–99/101–128	No assignment
100	0 (Initial data)

Tip!

The settings of the PGM Asgn. page can be transmitted as bulk data from the MIDI OUT/TO HOST connectors, and saved on an external MIDI device (→P.212).

CTL Asgn. page

Assign parameters to control change numbers

Function

Assign various internal parameters of the AW2816 to control change numbers (0–95, 102–119).

Key operation

- [MIDI] key → [F4] (CTL Asgn.) key
- Repeatedly press the [MIDI] key until the screen shown at the right appears.
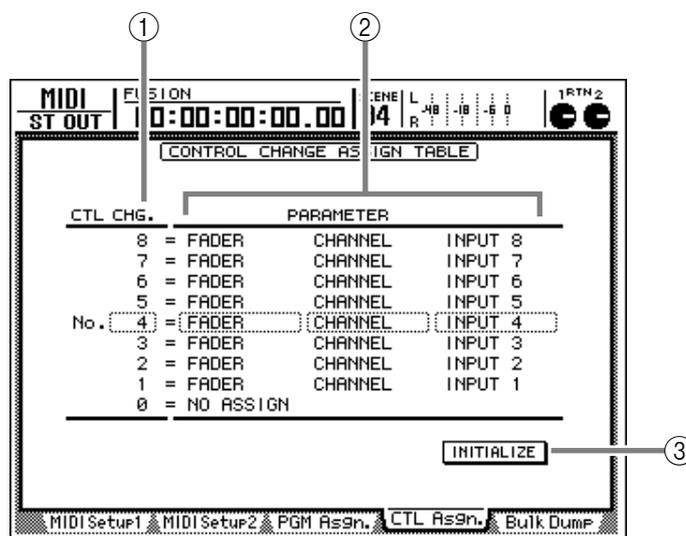
Screen functions

① **CTL CHG. No. (Control change number)**
This column displays control change numbers to which parameters can be assigned. Move the cursor to this column and use the [DATA/JOG] dial to select a control change number 0–95 or 102–119.

⚠️
Parameters cannot be assigned to control change numbers 96–101, since these are used for NRPN and RPN messages.

② **Parameter**
These columns display the parameter that is assigned to each control change number. Select the parameter group in the left column, and select other necessary values in the remaining two columns.

③ **INITIALIZE button**
This button resets the control change number assignments to the initial settings, refer to page 280.

- **List of parameters that can be assigned**

Parameter 1	Parameter 2	Parameter 3	Content
NO ASSIGN			No parameter assigned

Parameter 1	Parameter 2	Parameter 3	Content
FADER	CHANNEL		Control the fader of the specified channel
		INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN 1/2	Effect return 1/2
	MASTER		Control the stereo output channel fader or the master level of AUX bus 1–6/bus 1–8
		ST OUT	Stereo output channel
		AUX 1–6	AUX bus 1–6
		BUS 1–8	Bus 1–8
	AUX 1 SEND | AUX 6 SEND		Control the send level sent from the channel to an AUX bus 1–6. Parameter 2 specifies the AUX bus, and parameter 3 specifies the desired channel.
		INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN 1/2	Return channel 1/2

Parameter 1	Parameter 2	Parameter 3	Content
ON			Control the on/off status of the channel [ON] key. Use parameters 2 and 3 to specify the desired channel.
	CHANNEL	INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN 1/2	Return channel 1/2
	MASTER	ST OUT	Stereo output channel

Parameter 1	Parameter 2	Parameter 3	Content
PHASE			Switch the phase (normal/reverse) of the specified channel.
	NOM/REV	INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN 1/2	Effect return 1/2

Parameter 1	Parameter 2	Parameter 3	Content
PRE/POST	AUX 1 SEND | AUX 6 SEND		Switch the pre-fader/post-fader settings of the signal that is sent from each channel to AUX buses 1–6. Use parameter 2 to specify the bus, and parameter 3 to select the desired channel.
		INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN 1/2	Effect return 1/2

Parameter 1	Parameter 2	Parameter 3	Content
DELAY			Control the delay of each channel. Use parameter 2 to select the parameter to be controlled, and parameter 3 to select the desired channel.
	ON/OFF		Delay on/off
	TIME HIGH		Delay time ... (1)
	TIME LOW		Delay time ... (2)
		INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN 1/2	Effect return 1/2

- *Parameters marked as (1) or (2) in this table use the combination of two control changes to control one parameter. For example if you want to control the HOLD parameter of the dynamics processor, you must specify different control change numbers for "REL/HLD H" and REL/HLD L."*

- *When using control changes to control parameters, it is not possible to switch the HIGH band EQ and LOW band EQ parameters to shelving or low-pass/high-pass filter.*

Parameter 1	Parameter 2	Parameter 3	Content
EQ			Control the channel EQ and attenuation. Use parameter 2 to select the type of parameter that you want to control, and use parameter 3 to specify the desired channel.
	ON/OFF		EQ on/off
	Q LOW		Q of the LOW band EQ
	F LOW		F (frequency) of the LOW band EQ
	G LOW		G (gain) of the LOW band EQ
	Q L-MID		Q of the L-MID band EQ
	F L-MID		F (frequency) of the L-MID band EQ
	G L-MID		G (gain) of the L-MID band EQ
	Q H-MID		Q of the H-MID band EQ
	F H-MID		F (frequency) of the H-MID band EQ
	G H-MID		G (gain) of the H-MID band EQ
	Q HIGH		Q of the HIGH band EQ
	F HIGH		F (frequency) of the HIGH band EQ
	G HIGH		G (gain) of the HIGH band EQ
	ATT.		Attenuation
		INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN 1/2	Return channel 1/2
		ST OUT	Stereo output channel

Parameter 1	Parameter 2	Parameter 3	Content
DYNAMICS			Control the dynamics processor of the channel. Use parameter 2 to select the type of parameter that you want to control, and use parameter 3 to select the desired channel.
	ON/OFF		Dynamics processor on/off
	THRESHOLD		THRESHOLD
	ATTACK		ATTACK
	G/RANGE		GAIN or RANGE
	REL/HLD H		RELEASE ... (1) or HOLD ... (2)
	REL/HLD L		RELEASE ... (1) or HOLD ... (2)
	RAT/DEC H		RATIO, or DECAY ... (1)
	K/DEC L/W		RATIO, DELAY ...(2), or WIDTH
		INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		ST OUT	Stereo output channel

Parameter 1	Parameter 2	Parameter 3	Content
EFFECT			Control the parameters of internal effect 1/2. Use parameter 2 to select effect 1 or 2, and use parameter 3 to select the desired effect parameter.
	EFFECT1 H	PARAM 1–15	Internal effect 1 ...(1)
	EFFECT1 L	PARAM 1–15	Internal effect 2 ...(2)
		PARAM 1–15	Parameter number 1–15
	EFFECT1	MIX BAL	MIX BAL parameter of internal effect 1
	EFFECT2 H	PARAM 1–15	Internal effect 2 ...(1)
	EFFECT2 L	PARAM 1–15	Internal effect 2 ...(2)
		PARAM 1–15	Parameter number 1–15
	EFFECT2	MIX BAL	MIX BAL parameter of internal effect 2

Parameter 1	Parameter 2	Parameter 3	Content
PAN			Control the channel pan (or balance). Use parameters 2 and 3 to specify the desired channel.
	CHANNEL	INPUT 1–8	Input channel 1–8
		MONI 1–16	Monitor channel 1–16
		RETURN1 L/R	L/R of effect return 1
		RETURN2 L/R	L/R of effect return 2
	BALANCE	ST OUT	Balance of the stereo output channel

• **Default parameters for each control change number**

CTL CHG.	PARAMETER		
119	NO ASSIGN		
|			
110	NO ASSIGN		
109	FADER	AUX5 SEND	INPUT 8
108	FADER	AUX5 SEND	INPUT 7
107	FADER	AUX5 SEND	INPUT 6
106	FADER	AUX5 SEND	INPUT 5
105	FADER	AUX5 SEND	INPUT 4
104	FADER	AUX5 SEND	INPUT 3
103	FADER	AUX5 SEND	INPUT 2
102	FADER	AUX5 SEND	INPUT 1
95	NO ASSIGN		
94	NO ASSIGN		
93	NO ASSIGN		
92	PAN	BALANCE	ST OUT
91	PAN	CHANNEL	RETURN2 R
90	PAN	CHANNEL	RETURN2 L
89	PAN	CHANNEL	RETURN1 R
88	PAN	CHANNEL	RETURN1 L
87	NO ASSIGN		
|			
72	NO ASSIGN		
71	PAN	CHANNEL	INPUT 8
70	PAN	CHANNEL	INPUT 7
69	PAN	CHANNEL	INPUT 6
68	PAN	CHANNEL	INPUT 5
67	PAN	CHANNEL	INPUT 4
66	PAN	CHANNEL	INPUT 3
65	PAN	CHANNEL	INPUT 2
64	PAN	CHANNEL	INPUT 1
63	ON	MASTER	ST OUT
62	ON	CHANNEL	RETURN 2
61	ON	CHANNEL	RETURN 1
60	NO ASSIGN		
|			
49	NO ASSIGN		
48	ON	CHANNEL	INPUT 8
47	ON	CHANNEL	INPUT 7

CTL CHG.	PARAMETER		
46	ON	CHANNEL	INPUT 6
45	ON	CHANNEL	INPUT 5
44	ON	CHANNEL	INPUT 4
43	ON	CHANNEL	INPUT 3
42	ON	CHANNEL	INPUT 2
41	ON	CHANNEL	INPUT 1
40	FADER	MASTER	BUS 8
39	FADER	MASTER	BUS 7
38	FADER	MASTER	BUS 6
37	FADER	MASTER	BUS 5
36	FADER	MASTER	BUS 4
35	FADER	MASTER	BUS 3
34	FADER	MASTER	BUS 2
33	FADER	MASTER	BUS 1
32	NO ASSIGN		
31	NO ASSIGN		
30	NO ASSIGN		
29	FADER	MASTER	AUX 6
28	FADER	MASTER	AUX 5
27	FADER	MASTER	AUX 4
26	FADER	MASTER	AUX 3
25	FADER	MASTER	AUX 2
24	FADER	MASTER	AUX 1
23	FADER	MASTER	ST OUT
22	FADER	CHANNEL	RETURN 2
21	FADER	CHANNEL	RETURN 1
20	NO ASSIGN		
|			
9	NO ASSIGN		
8	FADER	CHANNEL	INPUT 8
7	FADER	CHANNEL	INPUT 7
6	FADER	CHANNEL	INPUT 6
5	FADER	CHANNEL	INPUT 5
4	FADER	CHANNEL	INPUT 4
3	FADER	CHANNEL	INPUT 3
2	FADER	CHANNEL	INPUT 2
1	FADER	CHANNEL	INPUT 1
0	NO ASSIGN		

Tip!

• *For details on the procedure for assigning a control change to a parameter, refer to page 202.*
• *The settings of the CTL Asgn. page can be transmitted as bulk data from the MIDI OUT/TO HOST connectors, and saved on an external MIDI device such as a MIDI sequencer (→P.212).*

Bulk Dump page

Transmit the AW2816's internal settings via MIDI

Function

In this page, the contents of the AW2816's various memories (scene memory, library, automix, etc.) as well as MIDI-related settings can be transmitted as bulk data from the MIDI OUT/TO HOST connectors.

Key operation

- [MIDI] key → [F5] (Bulk Dump) key
- Repeatedly press the [MIDI] key until the screen shown at the right appears.
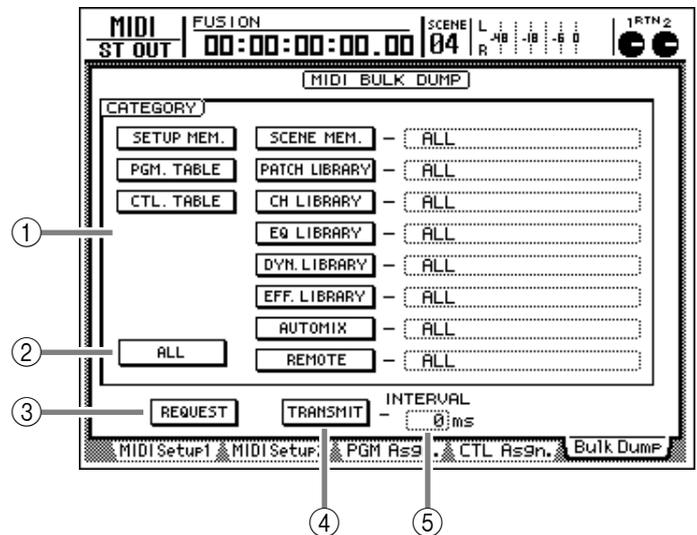
Screen functions

① CATEGORY

Select the type of information that will be transmitted as bulk data. If you have selected a category SCENE MEM. – REMOTE, move the cursor to the field at the right of the button, and turn the [DATA/JOG] dial to select the contents from that category that you want to transmit. Each button corresponds to the following information.

Category		Values	
SETUP MEM.	AW2816 settings other than the following items	—	
PGM. TABLE	Settings of the MIDI screen PGM Asgn. page	—	
CTL. TABLE	Settings of the MIDI screen CTL Asgn. page	—	
SCENE MEM.	The specified scene memory	01–96	Scene number 1–96
		EDIT BUFFER	Current scene (current mixing settings)
		ALL	All scene numbers 1–96 + current scene
PATCH LIBRARY	The specified patch library	01–20	Library number 1–20
		ALL	All library numbers 1–20
CH LIBRARY	The specified channel library	02–64	Library number 2–64
		ALL	All library numbers 2–64
EQ LIBRARY	The specified EQ library	41–128	Library number 41–128
		ALL	All library numbers 41–128
DYN. LIBRARY	The specified dynamics library	41–128	Library number 41–128
		ALL	All library numbers 41–128
EFF. LIBRARY	The specified effect library	42–128	Library number 42–128
		ALL	All library numbers 42–128
AUTO MIX	The specified automix	1–16	Memory number 1–16
		BUFFER	Current automix
		ALL	All memory numbers 1–16 + current automix
REMOTE	Settings of the REMOTE screen	REMOTE A–REMOTE D	Settings of the REMOTE A–REMOTE D page
		ALL	Settings of all pages REMOTE A–REMOTE D

② **ALL button**

When you move the cursor to this button and press the [ENTER] key, all of the buttons in the (①) area will be on. In addition, categories for which the transmitted content can be specified (SCENE MEM.–REMOTE) will be set to the "ALL" selection.

③ **REQUEST button**

When you move the cursor to this button and press the [ENTER] key, a "Bulk Dump Request" message will be sent from the MIDI OUT/TO HOST connector, requesting the bulk dump data that you selected in (①).

Use this function when you have connected the MIDI IN/MIDI OUT connectors of two AW2816 units to each other, and want to copy scene memories or libraries from one AW2816 to the other.

AW2816

Bulk dump: reception on

MIDI OUT   MIDI IN

Bulk dump data   **Request message**

MIDI IN   MIDI OUT

AW2816

Bulk dump: reception on
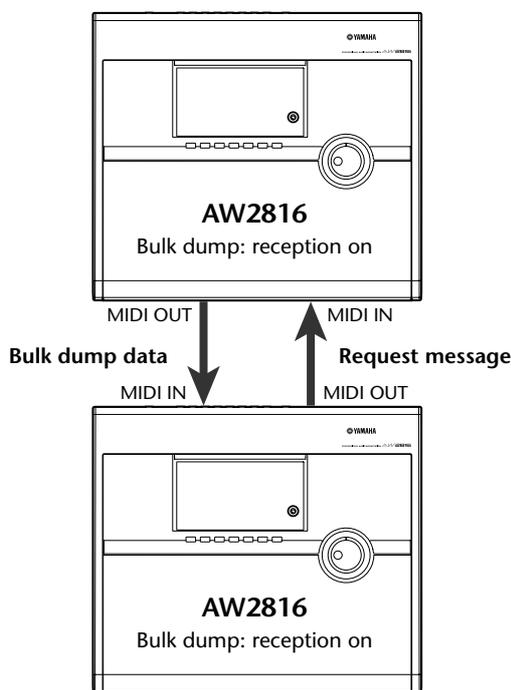
④ **TRANSMIT button**

When you move the cursor to this button and press the [ENTER] key, the bulk dump data selected in (①) will be transmitted from the MIDI OUT/TO HOST connector.

Use this when you want to save bulk dump data on an external device such as a MIDI sequencer.

⚠

Before transmitting bulk dump data or bulk dump request messages to the AW2816, you must turn Bulk Dump Data Reception "on" in the MIDI screen MIDI Setup 1 page.

⑤ **INTERVAL**

This specifies the interval that will be left between data blocks when a bulk dump is transmitted from the AW2816. This setting can be made in 1 millisecond increments over a range of 0–300 milliseconds. (Default setting= 0)

Tip!

Depending on the device that is receiving the bulk dump data, errors may occur during bulk dump reception. If this occurs, try increasing the INTERVAL (⑤) setting. If a bulk dump is being performed between two AW2816 units, leave the INTERVAL setting at zero.

⚠

The time required for receiving or transmitting a bulk dump will depend on the selected category and the recorded data. In particular in the case of automix, be aware that a longer time may be required depending on how much data has been recorded.

PATCH screen

Patch IN page

Patch signals to a channel/track

Function

Assign signals to the inputs of input channels 1–8, return channels 1/2, and recorder tracks 1–16.

Key operation

• [PATCH] key → [F1] (Patch IN) key
• Repeatedly press the [PATCH] key until the display shown at right appears.
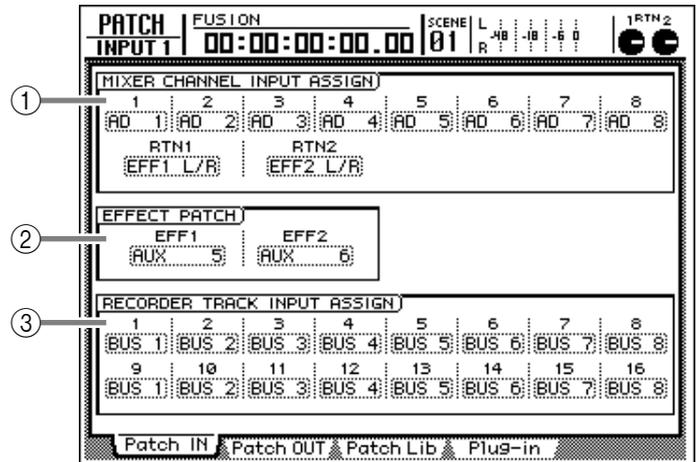
Screen functions

① **MIXER CHANNEL INPUT ASSIGN**

Select the signal that will be assigned to input channels 1–8 and return channels 1/2. The following signals can be assigned.

• **Input channels 1–8**

Display	Signal type
AD 1 – AD 8	INPUT jacks 1–8
SL 1 – SL 8	INPUT 1–8 of an I/O card
DIN L/DIN R	L/R channels of the DIGITAL STEREO IN jack
MET	Internal metronome

• **Return channels 1/2**

Display	Signal type
EFF1 L/R[*1]	Return of internal effect 1
EFF2 L/R[*2]	Return of internal effect 2
AD 1/2 – AD 7/8	INPUT jacks 1/2–7/8
SL 1/2 – SL 7/8	INPUT 1/2–7/8 of an I/O card
DIN L/R	DIGITAL STEREO IN jack (stereo)

*1 Only Return Channel 1 (RTN 1) can be selected
*2 Only Return Channel 2 (RTN 2) can be selected

② **EFFECT PATCH**

Select whether internal effects 1/2 will be used via AUX buses 5/6 (AUX 5/AUX 6) or inserted into the specified channel (INSERT). For details on operation, refer to page 88.

③ **RECORDER TRACK INPUT ASSIGN**

Here you can select the signals to be assigned to the inputs of tracks 1–16. The following signals can be assigned.

• **Recorder inputs 1–16**

Display	Signal type
BUS 1 – BUS 8	Bus 1–8
DIR 1 – DIR 8	Input channel direct out 1–8

Tip!

For details on operations in the Patch IN page, refer to page 71.

Patch OUT page

Patch signals to output jacks/output channels

Function

Assign output signals to the OMNI OUT connectors, STEREO OUT connectors, DIGITAL STEREO OUT connector, and the output channels of I/O card.

Key operation

- [PATCH] key → [F2] (Patch OUT) key
- Repeatedly press the [PATCH] key until the display shown at right appears.
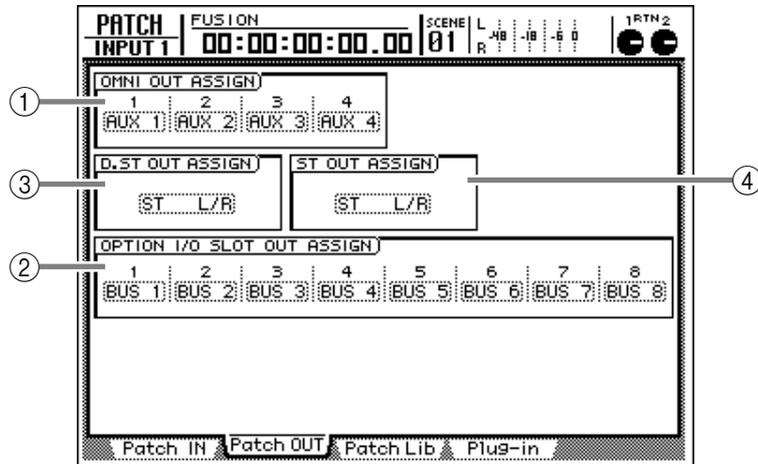
Screen functions

① OMNI OUT ASSIGN

② OPTION I/O SLOT OUT ASSIGN

In these areas you can select the signals that will be assigned to the OMNI OUT 1–4 connectors and to the output channels of an I/O card installed in the OPTION I/O slot, respectively. The following signals can be assigned.

Display	Signal type
ST L/ST R	Stereo output channel L or R
BUS 1 – BUS 8	Bus 1–8
DIR 1 – DIR 8	Direct output of input channels 1–8
AUX 1 – AUX 6	AUX buses 1–6
RDR 1 – RDR 16	Direct output of tracks 1–16

③ D.ST OUT ASSIGN (Digital stereo out assign)

④ ST OUT ASSIGN (Stereo out assign)

In these areas you can select the pairs of output signals that will be assigned to the DIGITAL STEREO OUT connector and STEREO OUT connector, respectively. The following signals can be assigned.

Display	Signal type
ST L/R	Stereo output channel (L/R)
BUS 1/2 – BUS 7/8	Buses 1/2–7/8
DIR 1/2 – DIR 7/8	Direct output of input channels 1/2–7/8
AUX 1/2 – AUX 5/6	AUX buses 1/2–5/6
RDR 1/2 – RDR 15/16	Direct output of tracks 1/2–15/16

If you specify an output jack/output channel as an insert send connector for connecting an external effect to a certain channel, the displays in the Patch OUT page will change as follows. These displays indicate the insert send that has been patched to that output jack/output channel.

■ **OMNI OUT ASSIGN (①)/OPTION I/O SLOT OUT ASSIGN (②) areas**

Display	Signal type
I-I 1–I-I 8	Insert send for input channel 1–8
I-M 1–I-M 16	Insert send for monitor channel 1–16
I-R1L/I-R1R	Insert send for return channel 1 L or R
I-R2L/I-R2R	Insert send for return channel 2 L or R
I-STL/I-STR	Insert send for stereo output channel L or R

■ **D.ST OUT ASSIGN (③)/ST OUT ASSIGN (④) areas**

Display	Signal type
I-I 1/2–I-I 7/8	Insert send for input channels 1/2–7/8
I-M 1/2–I-M 15/16	Insert send for monitor channels 1/2–15/16
I-RT1 L/R	Insert send for return channel 1 (L/R)
I-RT2 L/R	Insert send for return channel 2 (L/R)
I-ST L/R	Insert send for stereo output channel (L/R)

⚠

- *When you change the setting in the Patch OUT page for a output jack/output channel that is patched to an insert send, a popup window will ask you whether you want to cancel that patch.*
- *It is also possible to display insert sends that are not patched to an output jack/output channel. However in this case, the insert send will be grayed, and no signal will be sent. (The operation of assigning an output jack/output channel to an insert send can be performed only in the VIEW screen CH View page.)*

Tip!

- *For details on operations in the Patch OUT page, refer to page 74.*
- *For details on how to insert an external effect into a channel, refer to page 78.*

Patch Lib page

Store or recall patching settings

Function

Store the settings of the Patch IN/Patch OUT pages in the patch library, or recall previously-stored settings.

Key operation

- [PATCH] key → [F3] (Patch Lib) key
- Repeatedly press the [PATCH] key until the display shown at right appears.
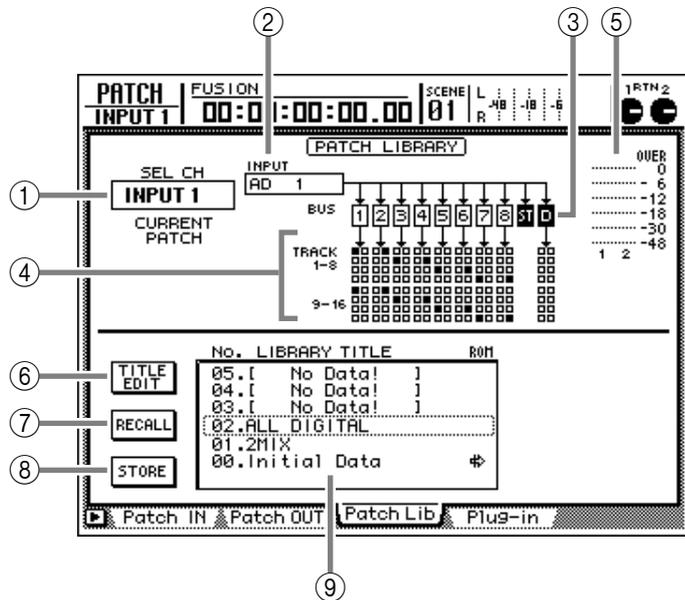
Screen functions

① SEL CH (Select channel)

This indicates the channel that is currently selected by its [SEL] key.

② INPUT/MONI (Input/monitor)

This indicates the input signal that is patched to the input channel/monitor channel (①). For the meaning of the abbreviation that is displayed, refer to the explanation of the Patch IN page (→P.283).

③ BUS

In this area, the buses to which the signal from the channel (①) is sent are highlighted. "1"–"8" indicate bus 1–8, "ST" indicates the stereo bus, and "D" indicates direct output.

⚠

The "D" (direct output) is displayed only while an input channel is selected by its [SEL] key.

④ TRACK 1–8/9–16

In this area, "■" symbols indicate the recorder tracks to which buses 1–8 (and input channel direct outputs) are currently patched.

⑤ Input/output meter

These meters show the input level of the currently selected channel and adjacent odd-numbered → even-numbered channels. If a stereo output channel is selected, these meters show the L/R output level.

⚠

- *Areas (①)–(⑤) are for display only, and contain no items that can be set.*
- *Areas (②)–(④) will not be displayed if a stereo input channel is selected.*

⑥ TITLE EDIT button

This button lets you edit the name (library title) of the patch data stored in the library. Move the cursor to this button and press the [ENTER] key, and a TITLE EDIT popup window will appear, allowing you to edit the library title.

⚠

Library number 0 is a recall-only preset, and therefore its library title cannot be modified. Also, library numbers in which no patch data has been stored are displayed as "No Data!," and it will not be possible to edit the library title.

⑦ RECALL button

This button recalls the patch data that is currently selected in the library list.

⚠

Library numbers in which no patch data has been stored are displayed as "No Data!," and cannot be recalled.

⑧ **STORE button**
This button stores the current patch data into the number selected in the library list. If patch data has already been stored in that number, it will be overwritten by the new patch data.

⚠

Library number 0 is a recall-only preset. New patch data cannot be stored in it.

⑨ **Library list**
This displays a patch library list. The row enclosed by the dotted line is the currently selected library number. Each column of the list displays the following information.

* **NO.**...................... The library number 0–20.
* **LIBRARY TITLE** .... The library title. If nothing has been stored, this indicates "No Data!"
* **ROM** .... Recall-only settings are indicated by a "⊹" symbol.

■ **Additional functions in the Patch Lib page**
In the Patch Lib page you can hold down the [SHIFT] key to assign the following functions to [F1]–[F3].
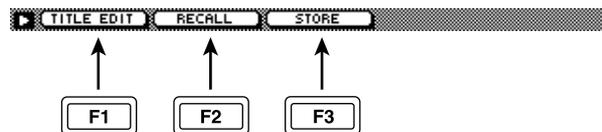
* **[F1] (TITLE EDIT) key**
Edits the name (library title) of the stored patch settings. This is the same function as the TITLE EDIT button (⑥).

* **[F2] (RECALL) key**
Recalls the patch settings that are currently selected in the library list. This is the same function as the RECALL button (⑦).

* **[F3] (STORE) key**
Stores the current patch settings. This is the same function as the STORE button (⑧).

Plug-in page

Make settings for a MY plug-in system-compatible I/O card

Function

Make various settings for a MY plug-in system-compatible I/O card installed in the Option I/O slot.

Key operations

* [PATCH] key → [F4] (Plug-in) key
* Repeatedly press the [PATCH] key until the screen shown at right appears

Screen functions

The contents of the screen will depend on the I/O card that is installed. Please refer to the manual for your card. If no I/O card is installed or if it cannot be recognized, the display will indicate "No Plug-in Card."
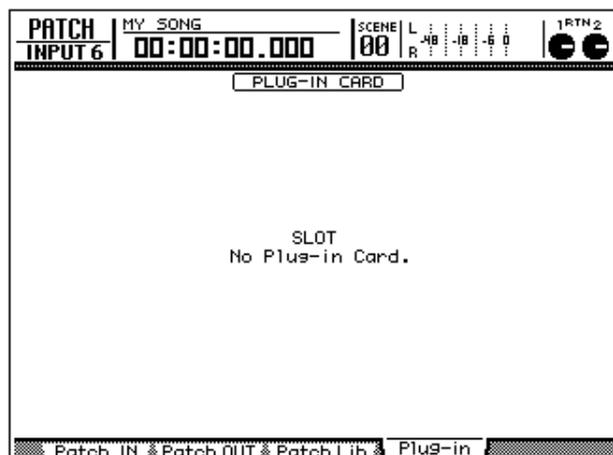
VIEW screen

CH View page

Displays all parameters of a channel

Function

This page displays all mix parameters of the channel selected by its [SEL] key. All parameters (except for EQ and dynamics processor) can also be edited in this page.

Key operation

- [VIEW] key → [F1] (CH View) key
- Repeatedly press the [VIEW] key until the screen shown at the right appears.
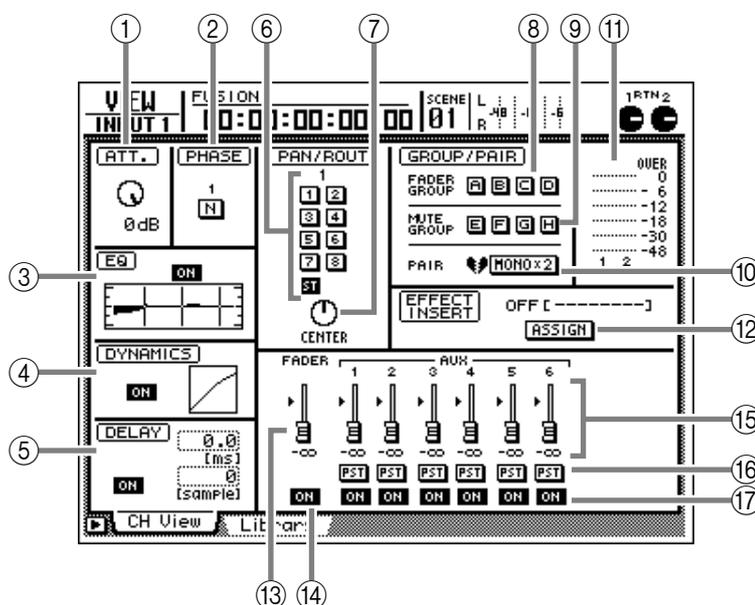
Screen functions

① **ATT. (attenuation)**
Set the attenuation value.

② **PHASE**
Switch between normal (N) and reverse (R) phase.

③ **EQ (equalizer)**
Turn the EQ on/off. This area also displays a graph showing the approximate response of the current EQ settings.

④ **DYNAMICS**
Turn the dynamics processor on/off. This area also displays a graph showing the approximate response of the current dynamics processor settings.

⑤ **DELAY**
This switches delay on/off. By moving the cursor to the numerical boxes located at the right of the button and turning the [DATA/JOG] dial, you can set the delay time in units of milliseconds (ms) or samples (sample).

⑥ **ROUT (Routing)**
Use the 1–8 buttons and the ST button to select the bus (buses 1–8/stereo bus) that will be the output destination for that channel.

⑦ **PAN/BALANCE**
For input channels/monitor channels/return channels, this knob sets the pan (position) between the

L/R channels of the stereo bus or between the odd-numbered → even-numbered buses. For the stereo output channel, this knob sets the L/R volume balance.

> **Tip!**
> *When you move the cursor to the PAN/BALANCE knob and press the [ENTER] key, the knob will be reset to the center.*

⑧ **FADER GROUP**
Use the A–D buttons to register/cancel assignment of this channel to fader groups (A–D).

⑨ **MUTE GROUP**
Use the E–H buttons to register/cancel assignment of this channel to mute groups (E–H).

⑩ **PAIR**
This button sets/cancel pairing of the currently selected channel with the adjacent odd-numbered → even-numbered channel. The operation of most mix parameters such as the fader and the [ON] key will be linked for two paired channels that have been paired. This is convenient when you are handling stereo audio sources.

⑪ **Input/output meters**
These meters indicate the input level of the input channels/monitor channels/return channels, or the output level of the stereo output channel.

⑫ **ASSIGN button**

This button patches the input/output of an internal effect, or the input/output channel of a desired input/output jack or I/O card, to the insert send/return of this channel. Use this when you want to insert an internal effect or external effect into the signal route of this channel.

When you move the cursor to this button and press the [ENTER] key, the following popup window will appear.

```
┌─────────────────────────────────┐
│   ▐EFF.INSERT SETTING▌           │
│ INPUT  1 INSERTION EFF.TYPE      │
│ ▐OFF▌ [INT.EFF1] [INT.EFF2] [EXTERNAL] │
│ SEND [OMNI    1]      [AD     1] RTN. │
│      ─────────↑·········↓──────→  │
│         [CANCEL]    [ OK ]        │
└─────────────────────────────────┘
```
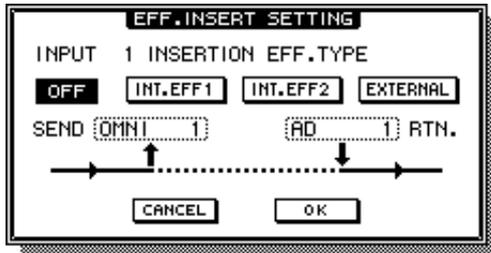
The various areas of the popup window have the following functions.

• **OFF button**
When this button is highlighted, nothing will be patched to the insert send/return of this channel.

• **INT.EFF 1 (Internal effect 1) button**
When this button is turned on, the input/output of internal effect 1 will be patched to the insert send/return of the corresponding channel.

• **INT.EFF 2 (Internal effect 2) button**
When this button is turned on, the input/output of internal effect 2 will be patched to the insert send/return of the corresponding channel.

⚠

- *In order to insert an internal effect 1/2 into a channel, you must first set the EFFECT PATCH field EFF1/EFF2 parameter to "INSERT" in the PATCH screen Patch IN page. If this parameter is not set to "INSERT," it will not be possible to turn on the INT.EFF 1/INT.EFF 2 button.*
- *It is not possible to insert the same internal effect into multiple channels. For example even in the case of paired channels, if internal effect 1 or 2 is patched to one channel, it will not be possible to patch the same internal effect into the other channel.*

• **EXTERNAL button**
When this button is turned on, the input/output connector/input/output channel selected in the SEND/RTN. field will be patched to the input send/return of the corresponding channel.

• **SEND**
When the EXTERNAL button is on, select one of the following choices as the output jack/output channel that will be patched to the insert send.

■ **For an input channel/monitor channel**

Display	Meaning
OMNI 1–OMNI 4	OMNI OUT jacks 1–4
SLT-1 – SLT-8	OPTION I/O slot output channels 1–8
D STO L/D STO R	L or R channel of the DIGITAL STEREO OUT jack
ST OUT L/ST OUT R	L or R channel of the STEREO OUT jack

■ **For a return channel/stereo output channel**

Display	Meaning
OMNI 1/2 – OMNI 3/4	OMNI OUT jacks 1/2–3/4
SLT-1/2 – SLT-7/8	OPTION I/O slot output channels 1/2–7/8
D ST OUT	DIGITAL STEREO OUT jack (L/R)
ST OUT	STEREO OUT jack (L/R)

• **RTN. (Return)**
When the EXTERNAL button is on, select one of the following choices as the input jack/input channel that will be patched to insert return.

■ **For an input channel/monitor channel**

Display	Meaning
AD 1 – AD 8	INPUT 1–8 jacks
SLT-1 – SLT-8	OPTION I/O slot input channels 1–8
D STIN L/D STIN R	L or R channel of the DIGITAL STEREO OUT jack

■ **For a return channel/stereo output channel**

Display	Meaning
AD 1/ 2– AD 7/8	INPUT 1/2–7/8 jacks
SLT-1/2 – SLT-7/8	OPTION I/O slot input channels 1/2–7/8
DSTI L/R	DIGITAL STEREO IN jack (L/R)

⚠

- *An external effect can be inserted into multiple channels. (However, it is not possible for the same input/output jack/input/output channel to be shared by the insert send/return of multiple channels.)*
- *If you want to insert an external effect into two paired channels, you must make insert send/return settings independently for each channel.*

✎ Tip!

VIEW screen

⑬ **FADER**

The current location of the fader is shown graphically and numerically. You can also edit the fader value in this page.

⑭ **ON/OFF**

This indicates the on/off status of the channel. The on/off status can also be switched in this page.

⑮ **AUX**

This area shows the send level of the signals sent from this channel to AUX buses 1–6, both graphically and numerically. You can also edit the settings in this page.

⑯ **PRE/PST (Pre/Post)**

This area shows whether pre-fader or post-fader has been selected as the routing for the signal sent from this channel to AUX buses 1–6. You can also edit the settings in this page.

⑰ **AUX ON/OFF**

This area shows the on/off status of the signals sent from this channel to AUX buses 1–6. You can also edit the settings in this page.

⚠

When a stereo output channel is selected, parameters (②), (⑤), (⑥), (⑧), (⑨), (⑩), and (⑮) will not be displayed. When a return channel is selected, parameters (④), (⑧), (⑨), and (⑩) will not be displayed.

■ **Additional functions in the CH View page**

In the CH View page, holding down the [SHIFT] key will assign the following additional functions to the [F1]–[F5] keys.
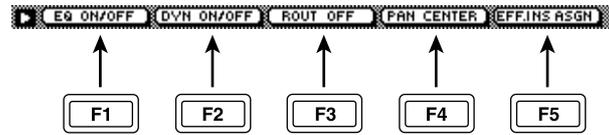
- **[F1] (EQ ON/OFF)**
  Switches the EQ on/off. This is the same function as the button in the EQ area (③).

- **[F2] (DYN ON/OFF)**
  Switches the dynamics processor on/off. This is the same function as the button in the DYNAMICS area (④).

- **[F3] (ROUT OFF) key**
  Turns off all buttons 1–8 in the ROUT area (⑥). (This does not affect the ST button.)

- **[F4] (PAN CENTER) key**
  Sets the PAN/BALANCE knob (⑦) to the center position.

- **[F5] (EFF.INS ASGN) key**
  Accesses a popup window in which you can patch an internal effect or input/output jack or input/output channel to the insert send/return of the channel. This is the same function as the ASSIGN button (⑫).

Library page

Store or recall channel settings

Function

Store the settings of the currently selected channel into the channel library, or recall stored settings.

Key operation

- [VIEW] key → [F2] (Library) key
- Repeatedly press the [VIEW] key until the screen shown at the right appears.
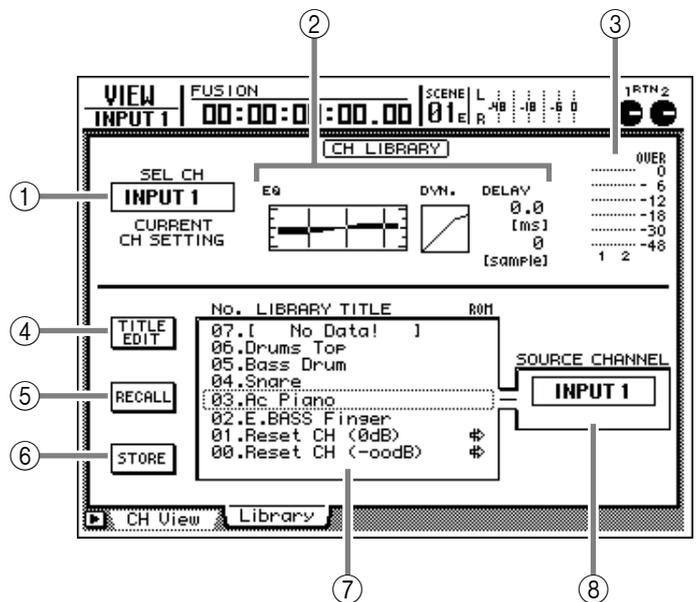
Screen functions

① SEL CH (Select channel)

This indicates the channel that is currently selected by its [SEL] key. The displayed abbreviation has the following meaning.

- **INPUT 1–8** .... Input channel 1–8
- **MONI 1–16** .... Monitor channel 1–16
- **RTN 1/2** .... Return channel 1/2
- **ST OUT** .... Stereo output channel

② EQ/DYN./DELAY settings

This area displays the EQ, dynamics processor, and delay settings of the currently selected channel.

③ Input/output meters

These indicate the input level of the currently selected channel and the adjacent odd-numbered → even-numbered channel. If a stereo output channel is selected, the L/R output level will be displayed.

⚠

Areas (①)–(③) are only for display, and have no editable items.

④ TITLE EDIT button

This button lets you edit the name (library title) of the channel data stored in the library. When you move the cursor to this button and press the [ENTER] key, the TITLE EDIT popup window will appear, allowing you to edit the library title.

⚠

Library numbers 0 and 1 are recall-only preset programs, and their names cannot be edited. Also, numbers in which channel settings have not been stored will be displayed as "No Data!," and their title cannot be edited.

⑤ RECALL button

This button recalls the channel data that is currently selected in the library list.

Channel data is compatible between input channels, monitor channels, and return channels, and can be recalled between these types of channels. However, parameters that are not common to both will be treated as follows when recalled.

■ When the settings of return channel 1 are recalled to an input channel/monitor channel

Parameter	Behavior of recall destination channel
Pan	L channel setting of the return channel will be applied.
Dynamics processor	All parameters will be reset to the default values.
AUX Send 5	Set to AUX Send 5 = on, Send Level = –∞.
AUX Send 6	The recall source setting will be applied without change.

■ **When the settings of return channel 2 are recalled to an input channel/monitor channel**

Parameter	Behavior of recall destination channel
Pan	L channel setting of the return channel will be applied.
Dynamics processor	All parameters will be reset to the default values.
AUX Send 5	The recall source setting will be applied without change.
AUX Send 6	Set to AUX Send 6 = on, Send Level = –∞.

■ **When the settings of an input channel/ monitor channel are recalled to return channel 1**

Parameter	Behavior of recall destination channel
Pan	The recall source setting will be applied to both L/R channels.
Dynamics processor	Ignored.
AUX Send 5	Ignored.
AUX Send 6	The recall source setting will be applied without change.

■ **When the settings of an input channel/ monitor channel are recalled to return channel 2**

Parameter	Behavior of recall destination channel
Pan	The recall source setting will be applied to both L/R channels.
Dynamics processor	Ignored.
AUX Send 5	The recall source setting will be applied without change.
AUX Send 6	Ignored.

⚠

Libraries numbers in which no channel data has been stored (displayed as "No Data!") cannot be recalled.

⑥ **STORE button**

This button stores the channel settings into the number that is selected in the library list. If channel data has already been stored in that number, it will be overwritten by the new channel data.

⚠

- *It is not possible to store in the recall-only library numbers 0/1.*
- *Pairing settings and effect insert settings are not stored in the library. Nor will the pairing or effect insert settings of the recall destination be affected when you recall a library.*

⑦ **Library list**

This displays a channel library list. The row surrounded by a dotted line indicates the library number that is currently selected by the [DATA/ JOG] dial. The following information is displayed by the columns of the list.

- **NO.** .... The library number 0–64.
- **LIBRARY TITLE** .... The library title. If channel data has not been stored, this indicates "No Data!"
- **ROM** .... Recall-only settings are indicated by a "⊕" symbol.

⑧ **SOURCE CHANNEL**

This indicates the channel from which that library number was stored. The meaning of the abbreviation is the same as for SEL CH (①). For library numbers 0/1, this will display "GENERAL."

⚠

- *Channel data is not compatible between the stereo output channel and other channels (input channels, monitor channels, return channels).*
- *If the currently selected channel is not compatible with the source channel, "CONFLICT" will be displayed below the SOURCE CHANNEL area, and Recall will not be possible.*

■ **Additional functions in the Library page**

In the Library page you can hold down the [SHIFT] key to assign the following additional functions to [F1]–[F3].
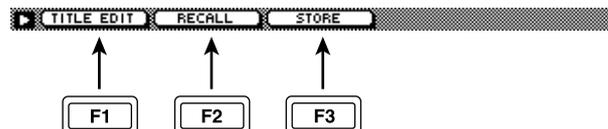
- **[F1] (TITLE EDIT) key**

Edits the name (library title) of the stored channel settings. This is the same function as the TITLE EDIT button (④).

- **[F2] (RECALL) key**

Recalls the channel currently selected in the library list. This is the same function as the RECALL button (⑤).

- **[F3] (STORE) key**

Stores the settings of the channel selected by its [SEL] key. This is the same function as the STORE button (⑥).

PAN/ROUTE screen

Pan 1–8/Pan MONI page

Set pan and routing for each channel

Function

Set pan and routing for the input channels, return channels and monitor channels, and set the balance of the stereo output channel.

Key operation

- [PAN] key → [F1] key (Pan 1–8)/[PAN] key → [F2] key (Pan MONI)
- Repeatedly press the [PAN] key until one of the screens shown at the right appear.
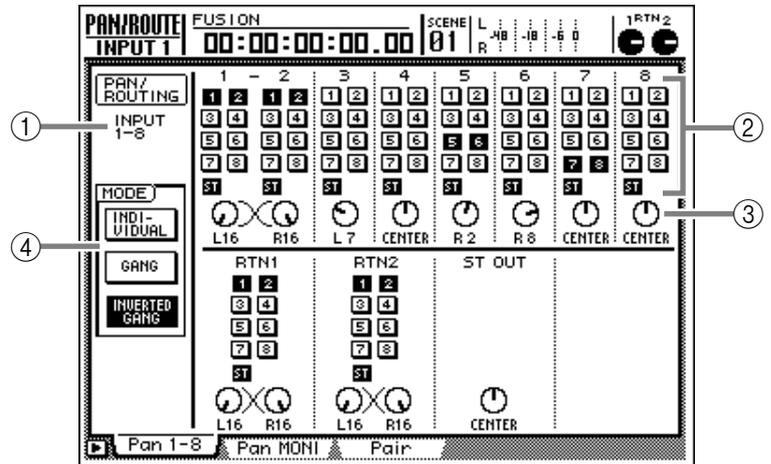
Screen functions

① **PAN/ROUTING**
This indicates the channel that is currently selected for operations.

② **Bus assign**
Use the 1–8 buttons and the ST button to select the bus (bus 1–8/stereo bus) to which the signal of that channel will be assigned.

③ **PAN knob**
These knobs set the L/R balance of the stereo bus or the pan (position) between odd-numbered/even-numbered buses. When a stereo output channel is selected, this knob sets the balance between the left/right channels. To edit the setting, move the cursor to the knob and turn the [DATA/JOG] dial. The range is L16 (far left) – CENTER – R16 (far right).

Tip!

When you move the cursor to the PAN knob and press the [ENTER] key, the knob will be reset to the center.

④ **MODE**
Use the following three buttons to select how the PAN knobs will function between paired channels.

• INDIVIDUAL button
When this button is on, the PAN knobs will operate independently for each channel. (Default setting)

• GANG button
When this button is on, the PAN knobs of two paired channels will be linked to maintain the distance of spread.

• INVERTED GANG button
When this button is on, the PAN knobs of two paired channels will be linked in the opposite direction.

⚠

If you select "GANG" when the pan knobs of two paired channels are set to far left and far right respectively, it will be impossible to move the pan knobs. The same will apply if you select "INVERTED GANG" when both pan knobs of two paired channels are set to far left or far right. In such cases, temporarily set one channel to "INDIVIDUAL" before adjusting the pan settings.

■ Additional functions in the Pan 1–8/Pan MONI page

In the Pan 1–8/Pan MONI page, holding down the [SHIFT] key will assign the following additional functions to [F1]–[F5].
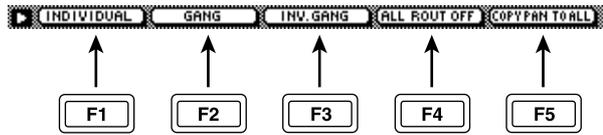
- **[F1] (INDIVIDUAL) key**
  The PAN knobs of two paired channels will operate independently. This is the same function as the INDIVIDUAL button in the MODE area (③).

- **[F2] (GANG) key**
  The PAN knobs of two paired channels will be linked to maintain the distance of spread. This is the same function as the GANG button in the MODE area (③).

- **[F3] (INVERTED GANG) key**
  The PAN knobs of two paired channels will be linked in the opposite direction. This is the same function as the INVERTED GANG button in the MODE area (③).

- **[F4] (ALL ROUT OFF) key**
  All bus assign buttons 1–8 in the currently displayed page will be turned off. (The ST button will not be affected.)

- **[F5] (COPY PAN TO ALL) key**
  Copy the pan setting of the channel selected by the cursor to all channels, including those in other pages.

Pair page

Set pairing of channels/buses

Function

Set/defeat pairing for input channels 1–8, monitor channels 1–16, buses 1–8, and AUX buses 1–4.

Key operation

- [PAN] key → [F3] (Pair) key
- Repeatedly press the [PAN] key until the screen shown at the right appears.
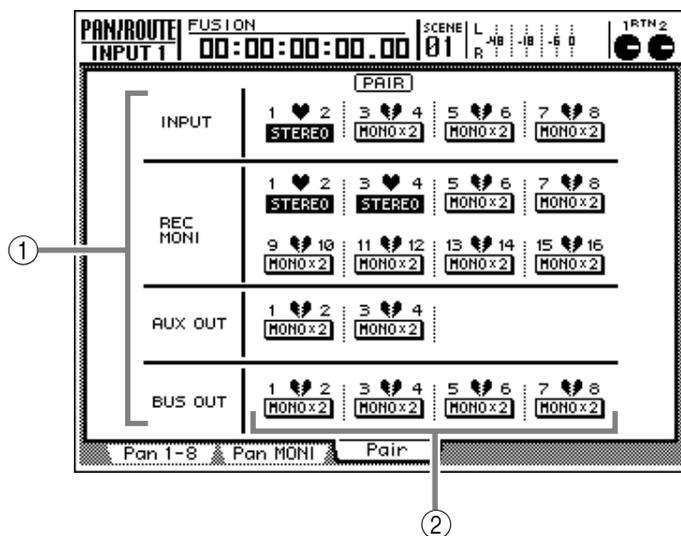
Screen functions

① **Channel/Bus**

This area indicates the channel/bus for which pairing will be set/defeated.

② **Pairing**

Move the cursor to a button in this area and press the [ENTER] key to set/cancel pairing for adjacent odd-numbered → even-numbered channels or buses. When pairing is set, the heart symbol will be connected, and the button will indicate "STEREO." When pairing is cancelled, the heart symbol will be divided, and the button will indicate "MONO x 2."

Tip!

- *For paired channels, all mix parameters other than phase, pan and effect insert settings will be linked.*
- *For buses that are paired, the master level (HOME screen/Bus page) will be linked.*
- *For AUX buses that are paired, the master level (HOME screen/Bus page) and the send level of the signals sent from each channel to the corresponding AUX bus will be linked.*

PAN/ROUTE screen

EQ/ATT/GRP screen

EQ/Att page

EQ and attenuation settings

Function

Make four-band EQ and attenuation settings for the selected channel.

Key operation

- [EQ] key → [F1] key (EQ/Att) key
- Repeatedly press the [EQ] key until the screen shown at the right appears.
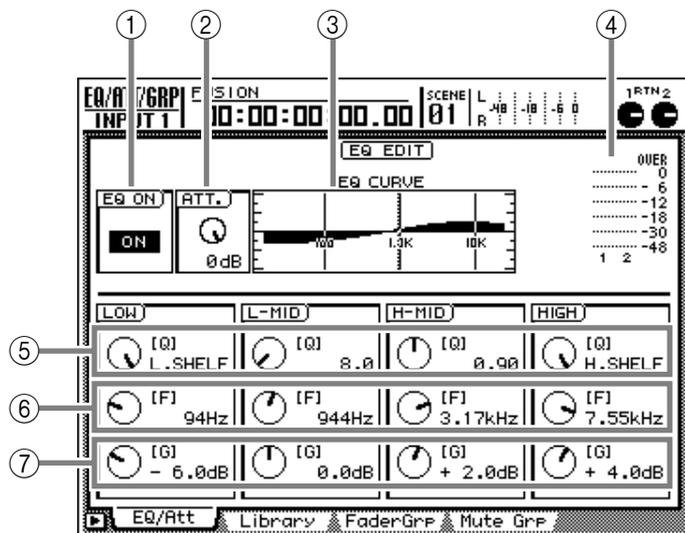
Screen functions

① **EQ ON button**

This button turns EQ on/off. In this page, you can use the [ENTER] key to switch the EQ on/off regardless of the cursor location.

② **ATT. (Attenuation) knob**

This knob adjusts the amount of attenuation of the signal before it is input to the EQ, in the range of –96– 0 dB. This is used mainly to prevent the signal from clipping when the EQ is used to boost a specific frequency range.

③ **EQ CURVE**

This graph indicates the approximate response of the EQ.

④ **Output meter**

This meter indicates the signal level after passing through the EQ.

⑤ **Q knob**

This knob adjusts the Q (sharpness) at which the center frequency specified by the F knob (⑥) will be boosted or cut. The range is 10–0.10, and smaller values will produce a more abrupt curve.

For the LOW band EQ, turning the Q knob fully clockwise will make the indication read "L.SHELF," switching to a shelving type EQ. Turning the Q knob fully counterclockwise will make the indication read "HPF," switching to a high pass filter.

For the HIGH band EQ, turning the Q knob fully clockwise will make the indication read

"H.SHELF," switching to a shelving type EQ. Turning the Q knob fully counterclockwise will make the indication read "LPF," switching to a low pass filter.

⑥ **F (Frequency) knob**

This knob sets the center frequency at which the boost/cut will occur, in a range of 21 Hz–20.1 kHz.

⑦ **G (Gain) knob**

This knob sets the amount of boost/cut, in a range of –18 dB–+18 dB. if the LOW band EQ is set to "HPF" or the HIGH band EQ is set to "LPF," this knob will switch the corresponding filter on/off.

■ Additional functions in the EQ/Att page

In the EQ/Att page you can press the [SHIFT] key to assign the following additional functions to the [F1], [F2] and [F5] keys.
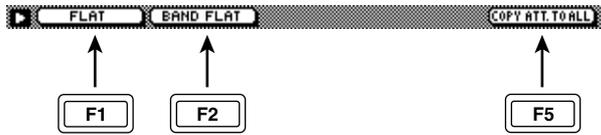
- **[F1] (FLAT) key**
  Reset all bands to a boost/cut amount of 0.0 dB (off if HPF/LPF is selected).

- **[F2] (BAND FLAT) key**
  This button resets the boost/cut amount to 0.0 dB (or OFF for the HPF/LPF) for the LOW, L-MID, M-MID, or HIGH bands whose title is highlighted.

- **[F5] (COPY ATT. TO ALL) key**
  Copy the attenuation setting of the selected channel to all channels. (However, the stereo output channel is excepted.)

Library page

Store/recall EQ settings

Function

Store EQ settings in the EQ library, or recall the stored settings.

Key operation

- [EQ] key → [F2] (Library) key
- Repeatedly press the [EQ] key until the screen shown at the right appears.
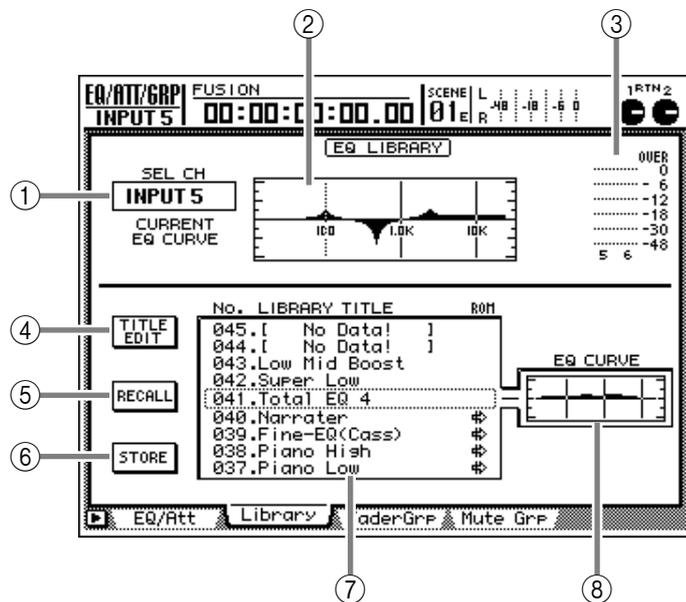
Screen functions

① SEL CH (Select channel)

This indicates the channel that is currently selected by its [SEL] key. The abbreviations have the following meaning.

- **INPUT 1–8** .... Input channel 1–8
- **MONI 1–16** .... Monitor channel 1–16
- **RTN 1/2** .... Return channel 1/2
- **ST OUT** .... Stereo output channel

② CURRENT EQ CURVE

This graph indicates the approximate response of the EQ for the selected channel.

③ Output meter

This meter indicates the signal level after passing through the EQ.

④ TITLE EDIT button

This button edits the name (library title) of the EQ settings stored in the library. When you move the cursor to this button and press the [ENTER] key, a TITLE EDIT popup window will appear, allowing you to edit the library title.

⚠

Library numbers 1–40 are recall-only preset memories, and their names cannot be changed. Numbers in which no EQ program has been stored are displayed as "No Data!," and their title cannot be changed.

⑤ RECALL button

This button recalls the EQ settings currently selected in the library list.

⚠

Library numbers in which no EQ settings have been stored will be displayed as "No Data!," and cannot be recalled.

⑥ STORE button

This button stores the current EQ settings into the number selected in the library list. If EQ settings have already been stored in that number, they will be overwritten by the new EQ settings.

⚠

It is not possible to store into the recall-only library numbers 1–40.

⑦ Library list

This displays the EQ library list. The row enclosed by a dotted line indicates the library number that is currently selected by the [DATA/JOG] dial. The columns of the list display the following information.

- **NO.** .... The library number 1–128.
- **LIBRARY TITLE** .... The library title. If no data has been stored, this will indicate "No Data!"
- **ROM** .... Recall-only EQ settings are indicated by the "⊕" symbol.

⑧ EQ CURVE

This graph indicates the approximate response of the EQ settings currently selected in the library list.

■ Additional functions in the Library page

In the Library page you can press the [SHIFT] key to assign the following functions to the [F1]–[F3] keys.
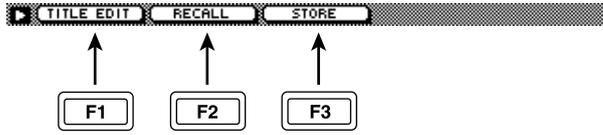
- **[F1] (TITLE EDIT) key**
  Edits the name (library title) of the stored EQ settings. This is the same function as the TITLE EDIT button (④).

- **[F2] (RECALL) key**
  Recalls the EQ settings that are selected in the library list. This is the same function as the RECALL button (⑤).

- **[F3] (STORE) key**
  Stores the EQ settings of the channel that is currently selected by its [SEL] key. This is the same function as the STORE button (⑥).

EQ/ATT/GRP screen

Fader Grp page

Assign/cancel fader groups

Function

Assign input channels 1–8 and monitor channels 1–16 to fader groups A–D. When you operate the fader of a channel that belongs to a fader group, all channels belonging to that fader group will be controlled together.

Key operation

- [EQ] key → [F3] (FaderGrp) key
- Repeatedly press the [EQ] key until the screen shown at the right appears.
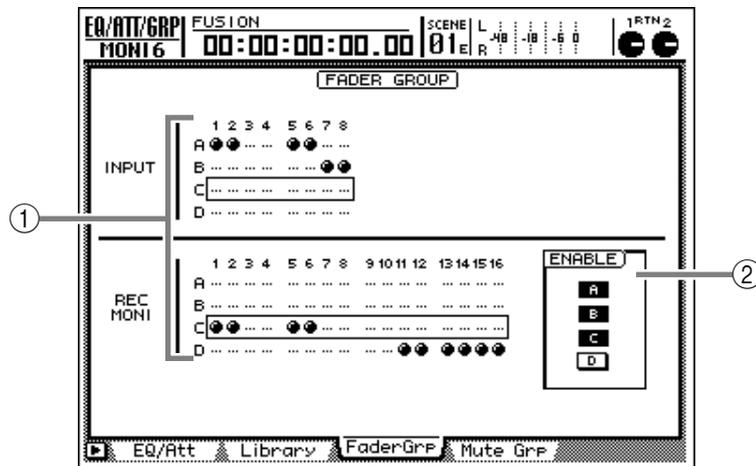
Screen functions

① Fader groups A–D

The ● symbols indicate the fader group A–D to which each input channel 1–8 and monitor channel 1–16 belongs.

When you move the cursor up or down to select group A–D and use the [SEL] key to select a channel, that channel will be assigned to the corresponding fader group. When you press the [SEL] key once again, the channel will be removed from the fader group.

⚠️

A channel cannot belong to more than one fader group.

Tip!

While this page is displayed, the fader group assignment status is also indicated by the lit/dark status of the [SEL] keys.

② ENABLE

These buttons turn fader groups A–D on/off. The A–D buttons will be highlighted to indicate that the corresponding fader group is turned on.

Tip!

- *If you want to adjust the fader location of a channel after that channel has already been assigned to a fader group, turn off the ENABLE button to temporarily defeat that fader group.*
- *If a screen other than the Fader Grp page is displayed, you can hold down the [SEL] key to temporarily exclude a channel from the fader group. By operating the fader while you hold down the [SEL] key, you can operate a desired channel independently of the fader group.*

⚠️

Do not manually operate two or more faders of a group at the same time. Doing so will strain the motor and cause malfunctions.

■ Additional functions in the FaderGrp page

In the FaderGrp page you can press the [SHIFT] key to assign the following additional function to the [F1] key.

- **[F1] (ALL CLEAR) key**
  Cancels all fader group assignments.

Mute Grp page

Assign/cancel mute groups

Function

Assign input channels 1–8 and monitor channels 1–16 to mute groups E-H. When you operate the [ON] key of a channel that belongs to a mute group, all channels belonging to that mute group will be switched on/off together.

Key operation

- [EQ] key → [F4] (Mute Grp) key
- Repeatedly press the [EQ] key until the screen shown at the right appears.
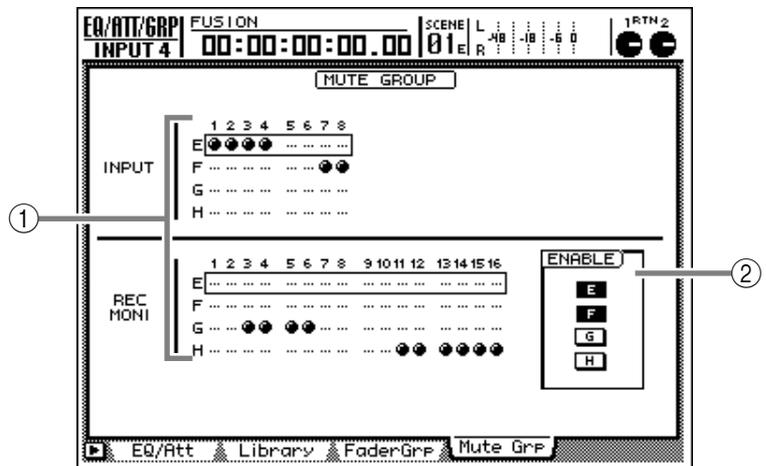
Screen functions

① **Mute groups E–H**

The ● symbols indicate the mute group E–H to which each input channel 1–8 and monitor channel 1–16 belongs.

When you move the cursor up or down to select mute group E–H and use the [SEL] key to select a channel, that channel will be assigned to the corresponding mute group. When you press the [SEL] key once again, the channel will be removed from the mute group.

> 📝 **Tip!**
>
> *Channels that are turned on and channels that are turned off can be assigned to the same mute group. In this case, pressing the [ON] key of a channel that is assigned to that mute group will cause the "on" channels to be turned "off," and the "off" channels to be turned "on."*

> ⚠️
>
> *A channel cannot belong to more than one mute group.*

② **ENABLE**

These buttons turn mute groups E–H on/off. The E–H buttons will be highlighted to indicate that the corresponding mute group is turned on.

> 📝 **Tip!**
>
> *If you want to adjust the on/off setting of a channel after that channel has already been assigned to a mute group, turn off the ENABLE button to temporarily defeat that mute group.*

■ Additional functions in the Mute Grp page

In the Mute Grp page you can press the [SHIFT] key to assign the following additional function to the [F1] key.

- **[F1] (ALL CLEAR) key**
  Clear all mute group settings.

DYN/DLY screen

Dyn. Edit page

Dynamics processor settings

Function

Make dynamics processor settings for the selected channel

Key operation

- [DYN] key → [F1] (Dyn. Edit) key
- Repeatedly press the [DYN] key until the screen shown at the right appears.
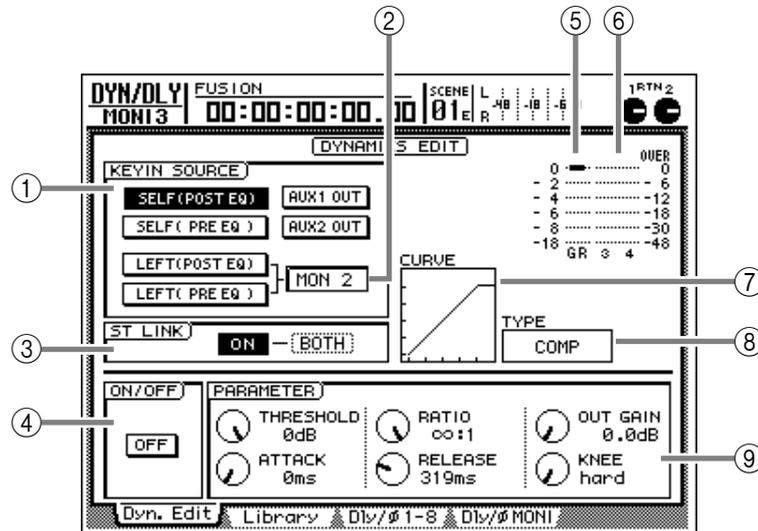
Screen functions

① KEY IN SOURCE

Use the following buttons to select the signal (key-in) that will trigger the dynamics processor.

• SELF (POST EQ) button
The post-EQ signal of the currently selected channel

• SELF (PRE EQ) button
The pre-EQ signal of the currently selected channel

• AUX1 OUT button
The signal immediately before the master send level of the AUX 1 bus

• AUX2 OUT button
The signal immediately before the master send level of the AUX 2 bus

• LEFT (POST EQ) button
The post-EQ signal of the adjacent channel to the left

• LEFT (PRE EQ) button
The pre-EQ signal of the adjacent channel to the left

⚠️

- *If input channel 1, monitor channel 1, or the stereo output channel is selected, the LEFT (POST EQ)/LEFT (PRE EQ) buttons will be unavailable.*
- *Because return channels 1/2 do not have dynamic processors, the items of this page will not be displayed if a return channel is selected.*

② Channel

When the LEFT (POST EQ) or LEFT (PRE EQ) button is turned on in KEY IN SOURCE (①), this displays the key-in source channel.

③ ST LINK (Stereo link)

If the button in this area is turned on, the dynamics processor settings and operation will be linked for adjacent odd-numbered → even-numbered channels. In this case, both channels will operate simultaneously if either channel exceeds the threshold level.

To turn the button on, move the cursor to the box at the right, and select one of the following as the channel(s) for which the dynamic processor will be enabled.

- **BOTH**.................. Both odd-numbered and even-numbered channels
- **L**......................... Only the odd-numbered (left) channel
- **R**......................... Only the even-numbered (right) channel

✍️ Tip!

- *The button in the ST LINK area will always be on for the stereo output channel and for paired channels. (It will not be possible to turn it off.)*
- *When you turn on the button in the ST LINK area, the dynamics processor settings of the odd-numbered channel will be copied to the even-numbered channel.*

④ **ON/OFF**

This button turns the dynamics processor on/off.

✎ **Tip!**

Even when the cursor is in the PARAMETER area (⑨), you can press the [ENTER] key to turn this button on/off.

⑤ **GR (Gain reduction)**

This displays the amount of gain reduction produced by the dynamics processor, in a range of –18 dB–0 dB.

⑥ **Output meter**

This indicates the signal level after passing through the dynamics processor.

⑦ **CURVE**

This shows the approximate response of the current dynamics processor. The horizontal axis of the graph is the input level, and the vertical axis is the output level.

⑧ **TYPE**

This shows the type of the currently selected dynamics processor. The display has the following meaning.

- **COMP** .... Compressor

- **EXPAND** .... Expander

- **GATE** .... Gate

- **COMPANDER (HARD/SOFT)**
                    Compander (hard/soft)

- **DUCKING** .... Ducking

⚠️

It is not possible to change the type of dynamics processor in this page. If you want to use a different type, settings that use the desired type must be recalled from the library. (Recall operations are performed in the DYN/DLY screen/Library page.)

⑨ **PARAMETER**

Here you can set the various parameters of the dynamics processor. The type and range of the parameters will differ depending on the type of dynamics processor. For details on the type and function of the parameters, refer to the appendix at the end of this manual.

Library page

Storing and recalling dynamics processor settings

Function

Store dynamics processor settings in the library, or recall stored programs.

Key operation

- [DYN] key → [F2] (Library) key
- Repeatedly press the [DYN] key until the screen shown at the right appears.
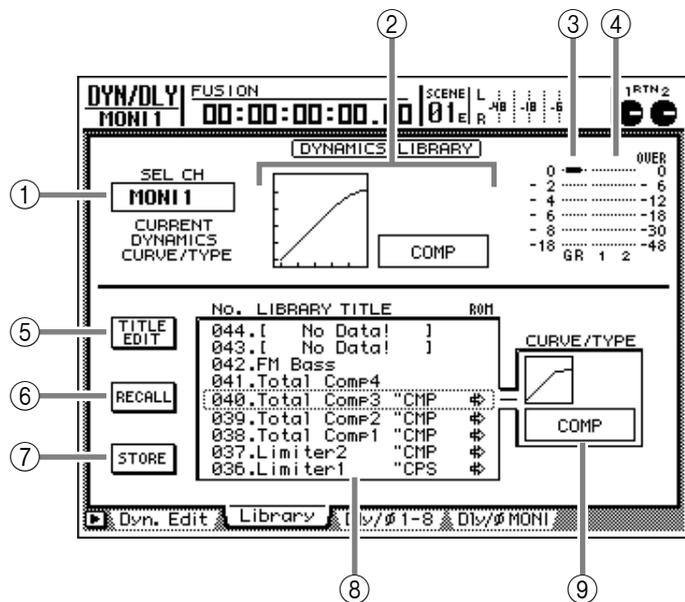
Screen functions

① SEL CH (Select channel)

This indicates the channel that is currently selected by its [SEL] key. The displayed abbreviations have the following meaning.

- **INPUT 1–8** .... Input channel 1–8
- **MONI 1–16** .... Monitor channel 1–16
- **ST OUT** .... Stereo output channel

② CURRENT DYNAMICS CURVE/TYPE

This shows the approximate characteristics and type of the current dynamics processor.

③ GR (Gain reduction)

This displays the amount of gain reduction produced by the dynamics processor, in a range of –18 dB– 0 dB.

④ Output meter

This indicates the signal level after passing through the dynamics processor.

⑤ TITLE EDIT button

This button edits the name (library title) of the settings stored in the library. When you move the cursor to this button and press the [ENTER] key, a TITLE EDIT popup window will appear, allowing you to edit the library title.

⚠

Library numbers 1–40 are recall-only preset programs, and their name cannot be changed. Numbers in which no dynamics program has been stored are displayed as "No Data!," and their title cannot be changed.

⑥ RECALL button

This button recalls the settings currently selected in the library list.

⚠

Library numbers in which no dynamics settings have been stored will be displayed as "No Data!" and cannot be recalled.

⑦ STORE button

This button stores the current dynamics processor settings into the number selected in the library list. If dynamics processor settings have already been saved in that number, they will be overwritten by the new settings.

⚠

It is not possible to store to recall-only library numbers 1–40.

⑧ Library list

This displays the dynamics library list. The row enclosed by the dotted line is the library number currently selected by the [DATA/JOG] dial. The columns of the list display the following information.

- **NO.** .... The library number 1–128
- **LIBRARY TITLE** .... The library title and the type used by the settings. If nothing has been stored, this will indicate "No Data!"
- **ROM** .... Recall-only settings are indicated by the "⊕" symbol.

⑨ **CURVE/TYPE**

This displays the approximate response of the settings selected in the library list, and the type that is used.

⚠

Since return channels 1/2 do not have dynamics processors, the items of this page will not be displayed if a return channel is selected.

■ Additional functions in the Library page

In the Library page you can press the [SHIFT] key to assign the following functions to the [F1]–[F3] keys.
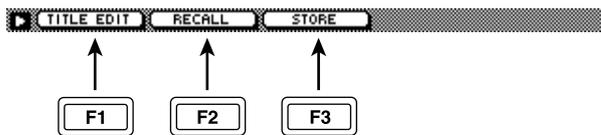
- **[F1] (TITLE EDIT) key**
  Edits the name (library title) of the stored settings. This is the same function as the TITLE EDIT button (⑤).

- **[F2] (RECALL) key**
  Recalls the settings selected in the library list. This is the same function as the RECALL button (⑥).

- **[F3] (STORE) key**
  Stores the current dynamics processor settings. This is the same function as the STORE button (⑦).

Dly/ø1–8/Dly/øMONI page

Delay/phase settings

Function

Set the delay and phase of the input channels, return channels, and monitor channels.

Key operation

- [DYN] key → [F3] (Dly/ø1–8) key, [F4] (Dly/øMONI) key

- Repeatedly press the [DYN] key until the desired page appears.
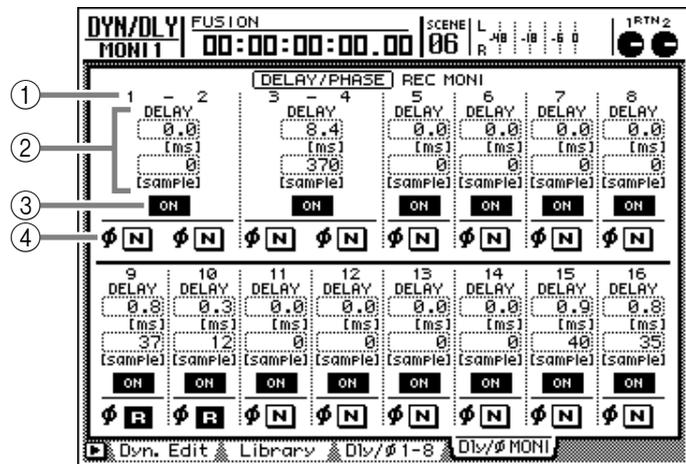
Screen functions

① **Channel**

This area indicates the channel for which delay/phase settings will be made.

② **DELAY**

Here you can specify the time (delay time) by which the input signal of each channel will be delayed. Of the two numerical boxes, the upper box shows the delay time in millisecond units, and the lower box in sample units. Editing either value will cause the other value to correspond.

Tip!

Unlike a conventional delay, the main use of this delay is to correct the timing of the input signal. For example you can use this to apply delay to a monitor channel to make the rhythmic feel "lag," or when recording to compensate for time differences between mics that are placed at a distance from each other.

⚠

The delay time range for the millisecond adjustment will depend on the sampling frequency of the song. The range will be 0–54.2 milliseconds if the sampling frequency is 48 kHz, and 0–59 milliseconds if the sampling frequency is 44.1 kHz. When adjusting in sample units, the range will be 0–2600 samples regardless of the sampling frequency.

③ **On/off**

These buttons switch the delay on/off.

Tip!

For channels that are paired, the delay time and on/off settings will always change in tandem.

④ **ø (Phase)**

These buttons switch the phase of the input signal. The phase is normal when the button indicates N (normal), and reversed when the button indicates R (reverse).

Tip!

- *The phase setting can be made independently even for paired channels.*
- *If you press a [SEL] key when this page is displayed, the cursor will automatically move to the location of the corresponding channel. (The Dly/ø1–8 page and Dly/øMONI page will automatically switch as necessary.)*

■ Additional functions in the Dly/øpages

In the Dly/ø1–8, Dly/øMONI pages you can press the [SHIFT] key to assign the following additional function to the [F5] key.

- **[F5] (COPY TO ALL) key**

Copies the delay time/phase settings of the channel selected by the cursor to all channels including those in other pages.

AUX1–AUX4 screens

Pre/Pst page

Make on/off and pre/post settings for the AUX sends

Function

Make on/off and pre/post settings for the signal sent from the input channels, return channels, and monitor channels to AUX buses 1–4.

Key operation

• [AUX 1]–[AUX 4] keys
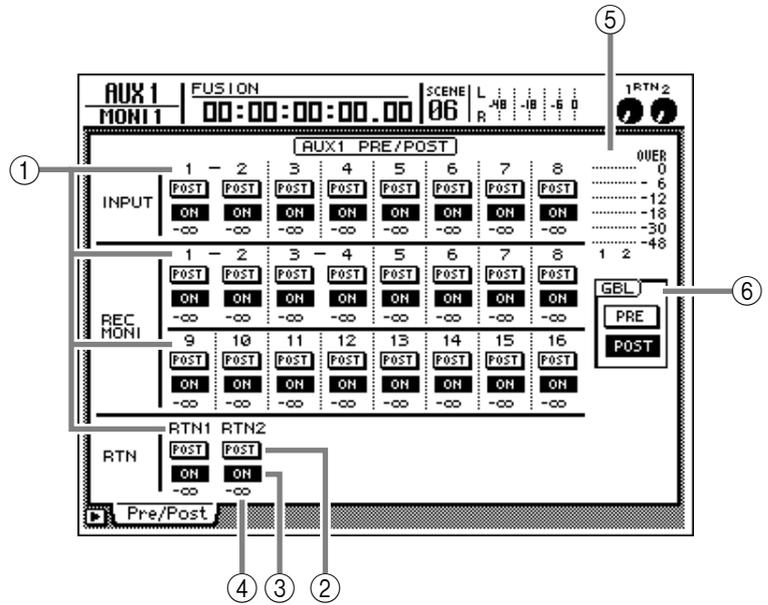
Screen functions

① **Channels**
This area displays the channels that can be edited. For paired channels, a "–" symbol is displayed between the channel numbers. The abbreviations have the following meanings.

• **INPUT 1–8** .... Input channels 1–8
• **REC MONI 1–16** ... Monitor channels 1–16
• **RTN1/RTN2** .... Return channels 1/2

② **PRE/POST buttons**
These buttons select either the pre-fader signal or the post-fader signal as the source of the signal that is sent from each channel to the corresponding AUX bus.

③ **ON/OFF buttons**
These buttons are on/off switches for the signal that is sent from each channel to the corresponding AUX bus.

Tip!

• *You can also use the [SEL] keys to select the channel.*
• *Pre-fader/post-fader and on/off settings are linked for paired channels.*

④ **Send level**
This indicates the send level for each channel. Use the faders for each channel (1–8) to adjust the send level.

⑤ **Output meter**
This indicates the output level for the corresponding AUX bus and the adjacent odd-numbered → even-numbered AUX bus.

⑥ **GBL (Global)**
Use the PRE button or POST button to switch all channels between pre-fader/post-fader.
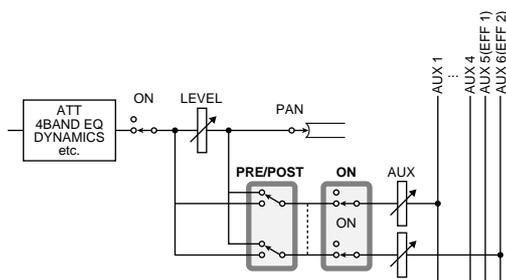
■ Additional functions in the Pre/Pst pages

In the Pre/Pst page, you can press the [SHIFT] key to assign the following functions to the [F1]–[F2] keys.

- **[F1] (GLOBAL PRE) key**
  Sets all channels to pre-fader. This is the same function as the PRE button in the GBL area (⑥).

- **[F2] (GLOBAL POST) key**
  Sets all channels to post-fader. This is the same function as the POST button in the GBL area (⑥).

AUX5/EFF1, AUX6/EFF2 screens

Eff. Edit page

Edit the parameters of internal effects 1/2

Function

Edit the parameters of the effect that is selected for internal effect 1 (AUX5/EFF1 screen) or external effect 2 (AUX6/EFF2).

Key operation

- [AUX 5] key/[AUX 6] → [F1] (Eff. Edit) key
- Repeatedly press the [AUX 5] key or [AUX 6] key until the desired screen appears.
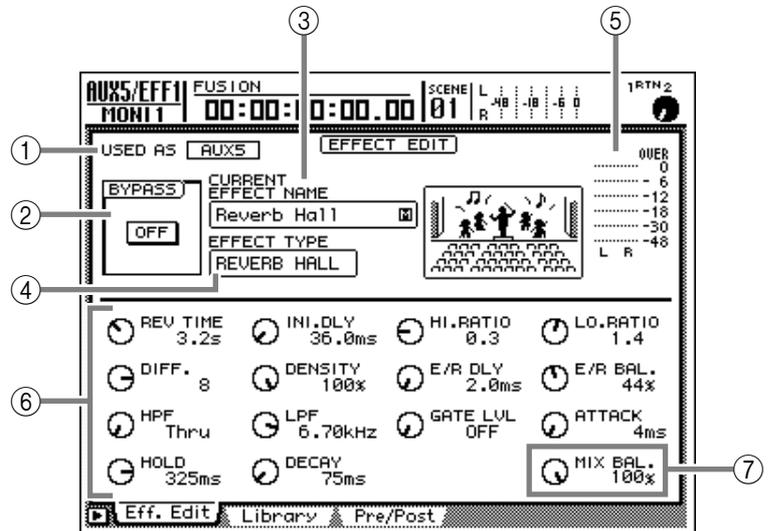
Screen functions

① **USED AS (Effect usage method)**
This indicates the type of connection with which the internal effect is currently being used.

- **AUX5/AUX6** .... The internal effect is being used via AUX send/return.
- **INSERT** .... The internal effect is inserted into a specific channel.

> **Tip!**
> *This area is for display only, and cannot be edited. The selection of whether the internal effect will be used via send/return or inserted can be changed in the EFFECT PATCH area of the PATCH screen/Patch IN page.*

② **BYPASS**
This switches bypass on/off for the internal effect.

> **Tip!**
> *Even when the cursor is not located in the BYPASS area, you can press the [ENTER] key to switch bypass on/off.*

③ **CURRENT EFFECT NAME**
This displays the name (library title) of the currently recalled effect settings. The "M" or "S" symbol displayed at the right indicates whether the type of effect used by these settings is monaural (M) or stereo (S).

④ **EFFECT TYPE**
This displays the type of the currently selected effect. At the right of this area, the type is shown graphically.

> ⚠
> *It is not possible to change the effect type in this page. If you want to use a different effect type, you must recall from the library an effect setting that uses the desired type. Library recall operations are performed in the Library page of the AUX5/EFF1 or AUX6/EFF2 screen.*

⑤ **Output meter**
This indicates the output level of the internal effect.

⑥ **Effect parameters**
Use the knobs displayed in this area to edit the parameters of the effect. The type of parameters and their ranges will depend on the type of the currently selected effect. For details on the parameter types and ranges, refer to the appendix at the end of this manual.

⑦ **MIX BAL. (Mix balance) knob**
This knob sets the mix balance between the effect sound (wet) that is output from the internal effect and the original sound (dry). With a setting of 0% only the original sound will be output. At 50% the effect sound and original sound will be mixed equally, and at 100% only the effect sound will be output. If you are using the internal effect via AUX send/return, set this to 100%. If you are inserting the effect into a specific channel, set it to the appropriate value for your needs.

> **Tip!**
> *The MIX BAL. knob will be displayed in the same location regardless of the effect type that is selected.*

■ Additional functions in the Eff Edit page

In the Eff Edit page you can press the [SHIFT] key to assign the following function to the [F1] key.

▶ BYPASS ON/OFF

↑

F1

- **[F1] (BYPASS ON/OFF) key**
  Switches effect bypass on/off. This is the same function as the button in the BYPASS area (②).

Library page

Store/recall effect settings

Function

Store effect settings in the effect library, or recall the stored settings.

Key operation

- [AUX 5]–[AUX 6] keys → [F2] (Library) key
- Repeatedly press an [AUX 5]–[AUX 6] key until the desired screen appears.
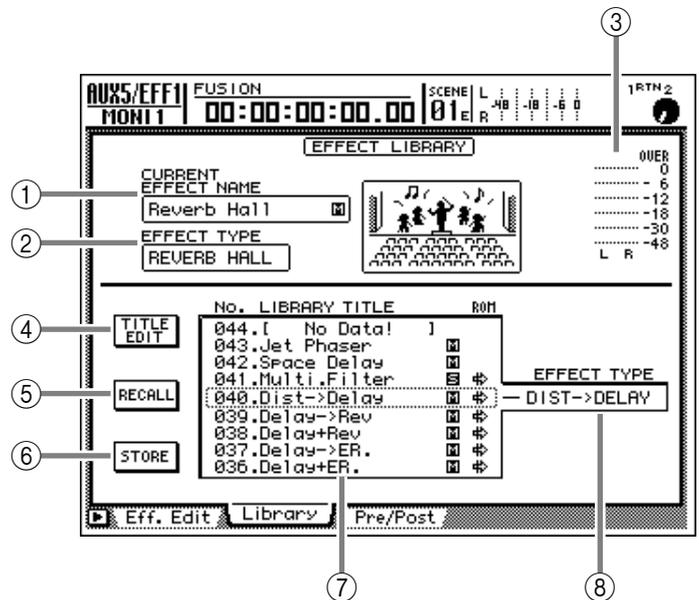
Screen functions

① **CURRENT EFFECT NAME**
This displays the name (library name) of the currently-recalled effect settings. The "M" or "S" symbol displayed at the right indicates whether the type of effect used by these settings is monaural (M) or stereo (S).

② **EFFECT TYPE**
This displays the type of the currently selected effect. At the right of this area, the type is shown graphically.

③ **Output meter**
This indicates the output level of the internal effect.

④ **TITLE EDIT button**
This button edits the name (library title) of the stored effect settings. When you move the cursor to this button and press the [ENTER] key, a TITLE EDIT popup window will appear, allowing you to edit the library title.

⚠ *Since library numbers 1–41 are recall-only presets, their library titles cannot be edited. Also, library numbers for which no settings have been stored are displayed as "No Data!" and their titles cannot be edited.*

⑤ **RECALL button**
This button recalls the effect settings that are currently selected in the library list.

⚠ *Library numbers for which no settings have been stored are displayed as "No Data!" and cannot be recalled.*

⑥ **STORE button**
This button stores the current effect settings into the number that is selected in the library list. If settings have already been stored in that number, they will be overwritten by the new settings.

⚠ *It is not possible to store into recall-only library numbers 1–41.*

⑦ **Library list**
This is the effect library list. The row enclosed by the dotted line is the library number currently selected by the [DATA/JOG] dial. The columns of the list display the following information.

- **NO.** .... The library number 1–128.
- **LIBRARY TITLE** .... The library title. A "M" or "S" symbol indicates whether the effect type used by that library number is monaural or stereo. Numbers for which no effect settings have been stored are displayed as "No Data!"
- **ROM** .... Recall-only settings are indicated by a " ⊕ " symbol.

AUX5/EFF1, AUX6/EFF2 screens

⑧ **EFFECT TYPE**

This indicates the effect type of the settings selected in the library list.

Tip!

In general, the effect libraries are common to both external effects 1 and 2. However, effect settings that use the "HQ.PITCH" effect type can be recalled only for internal effect 2.

■ Additional functions in the Library page

In the Library page, you can press the [SHIFT] key to assign the following functions to the [F1]–[F3] keys.
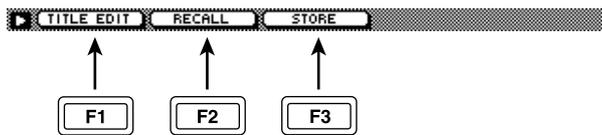
- **[F1] (TITLE EDIT) key**
  Edits the name (library title) of the stored effect settings. This is the same function as the TITLE EDIT button (④).

- **[F2] (RECALL) key**
  Recalls the settings selected in the library list. This is the same function as the RECALL button (⑤).

- **[F3] (STORE) key**
  Stores the current effect settings. This is the same function as the STORE button (⑥).

Pre/Pst page

Turn effect send on/off, and switch between pre/post

Function

In this page, the signal sent from the input channels, return channels, and monitor channels to internal effects 1/2 (AUX buses 5/6) can be switched on/off and between pre-fader/post-fader.

Key operation

- [AUX 5] key/[AUX 6] key → [F3] (Pre/Pst) key

- Repeatedly press the [AUX 5] key or [AUX 6] key until the desired page appears.
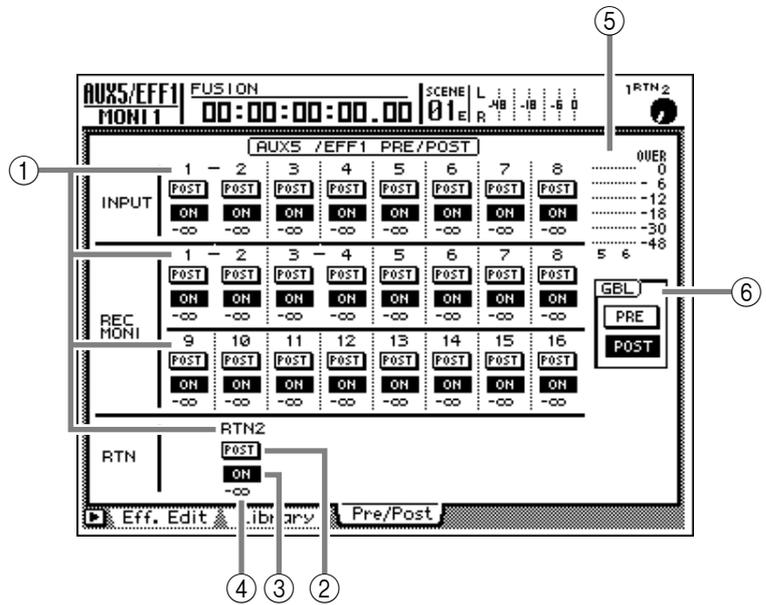
Screen functions

① **Channels**

This area displays the channels that can be edited. For paired channels, a "–" symbol is displayed between the channel numbers. The abbreviations have the following meanings.

- **INPUT 1–8** .... Input channels 1–8

- **REC MONI 1–16**... Monitor channels 1–16

- **RTN1/RTN2** .... Return channels 1/2

⚠

- *It is not possible to send signals from return channel 1 to effect 1 (AUX bus 5), or from return channel 2 to effect 2 (AUX bus 6). This is in order to prevent a loop from occurring between return channels and effects.*
- *Due to the reason described above, return channel 1 (return channel 2) will not be displayed in the AUX5/EFF1 screen (AUX6/EFF2 screen).*

② **PRE/POST buttons**

These buttons select either the pre-fader signal or the post-fader signal as the source of the signal that is sent from each channel to the corresponding internal effect.

③ **ON/OFF buttons**

These buttons are on/off switches for the signal that is sent from each channel to the corresponding effect send.

④ **Send level**

This indicates the send level for each channel. Use the faders for each channel (1–8) to adjust the send level.

✎ **Tip!**

You can also use the [SEL] keys to select a channel.

⑤ **Output meter**

This indicates the output level of the AUX buses 5/6.

⑥ **GBL (Global)**

Use the PRE button or POST button to switch all channels between pre-fader/post-fader.

■ Additional functions in the Pre/Pst page

In the Pre/Pst page, you can press the [SHIFT] key to assign the following functions to the [F1]–[F2] keys.

- **[F1] (GLOBAL PRE) key**
  Sets all channels to pre-fader. This is the same function as the PRE button in the GBL area (⑥).

- **[F2] (GLOBAL POST) key**
  Sets all channels to post-fader. This is the same function as the POST button in the GBL area (⑥).

AUX5/EFF1, AUX6/EFF2 screens

REMOTE screen

Remote A–Remote D pages

Remotely control external MIDI devices

Function

Operate faders 1–8 and [ON] keys 1–8 to transmit specified MIDI messages for controlling external MIDI devices.

Key operation

- [REMOTE] key → [F1] (Remote A)– [F4] (Remote D) keys

- Repeatedly press the [REMOTE] key until the screen shown at the right appears.
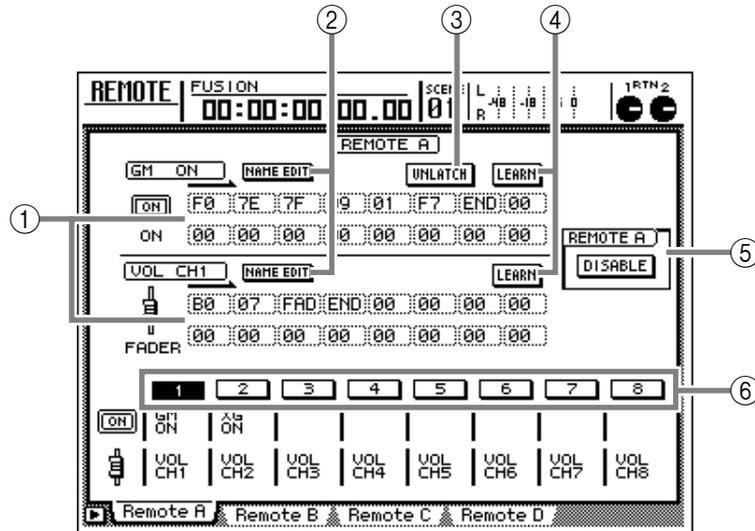
Screen functions

① **MIDI messages**

This area displays (in hexadecimal) the MIDI messages assigned to the fader and [ON] key of the channel selected by its [SEL] key.

Move the cursor to each numerical box, and turn the [DATA/JOG] dial to edit the value of each byte (as a two-digit hexadecimal number). The following settings can be selected.

- **00–FF (hexadecimal)**

    Corresponds to the actual MIDI message that will be transmitted.

- **END** .... Indicates the end of the MIDI message. When you operate the [ON] key or fader, the MIDI message from the beginning to immediately before the END will be transmitted.

- **SW ([ON] switch only)**

    Indicates the on/off status of the [ON] key. The byte that you set to "SW" will be transmitted as a value of 7F (hexadecimal) when the [ON] key changes to "on," and as a value of 00 (hexadecimal) when it changes to "off."

- **FAD (fader only)**.. Indicates the current position of the fader. The byte that you set to "FAD" will be transmitted as a value 00–7F (hexadecimal) when you operate the fader.

Tip!

The MIDI message that can be assigned to one fader or [ON] key is a maximum of 16 bytes including "END."

⚠️

- *When assigning a MIDI message, you must be sure to add "END" at the end of the message. If "END" is not specified, the MIDI message will not be sent.*
- *When assigning a MIDI message to a fader, you must set one of the bytes to "FAD." If "FAD" is not specified, the MIDI message will not be sent when you operate the fader.*
- *When assigning a MIDI message to an [ON] key, you may set one of the bytes to "SW" as desired. In this case, the MIDI message will be transmitted as SW=7F when the [ON] key is turned on, and as SW=00 when the [ON] key is turned off.*
- *If you do not specify "SW," the MIDI message you input in this page will be transmitted only when the [ON] key is turned on.*
- *If you assign a MIDI message manually, it is possible that an illegal MIDI message may be transmitted. As far as possible, we recommend that you assign MIDI messages by using the LEARN button (④). (For details on using the LEARN button, refer to page 208.)*

② **NAME EDIT buttons**

These buttons edit the name (maximum 8 characters) assigned to the fader/[ON] key. When you move the cursor to these buttons and press the [ENTER] key, a popup window will appear, allowing you to input the name.

③ **LATCH/UNLATCH button**

This button selects the mode of operation when the [ON] key is pressed. Move the cursor to this button and press the [ENTER] key to switch between the following two modes of operation.

• **LATCH**

On/off will alternate each time you press the [ON] key.

• **UNLATCH**

The state will be "on" only while you hold down the [ON] key, and will be "off" when you release it.

Tip!

Depending on whether you select Latch or Unlatch, the operation of the [ON] key will be as follows.

• **If "SW" is specified**

LATCH
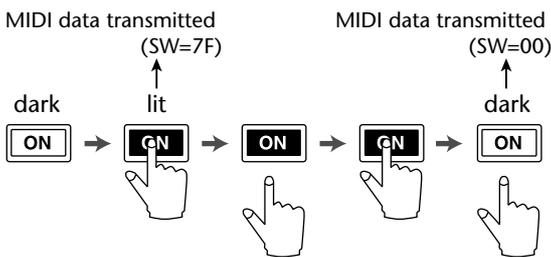
UNLATCH
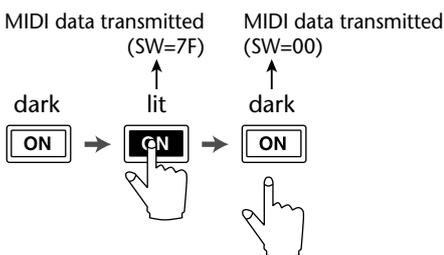
• **If "SW" is not specified**

UNLATCH

Tip!
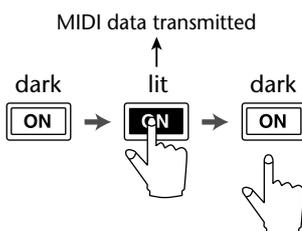
Normally you will use the Unlatch mode when you do not specify "SW."

④ **LEARN button**

When this button is turned on, the channel message or system exclusive message received at the MIDI IN/TO HOST connector will be input into the MIDI message area (①). This function is convenient since it allows MIDI messages received by the AW2816 to be assigned directly (or with modifications) to an [ON] key or fader.

Tip!

• *Normally you will turn on only one of the [LEARN] buttons.*
• *When a channel message or system exclusive is received while the LEARN button is on, the byte following the last byte of the message will automatically be set to "END."*
• *If a system exclusive message longer than 16 bytes is received while the LEARN button is on, the first 16 bytes will be displayed.*
• *If the LEARN button for the fader is on, and a control change message with continuously changing value is received, the byte corresponding to the variable value will automatically be set to "FAD."*

⑤ **ENABLE/DISABLE button**

This button switches whether the Remote functions of the currently displayed page will be enabled (ENABLE) or disabled (DISABLE).

When you access the Remove A–Remote D pages and switch this button to ENABLE, the corresponding MIDI messages will be transmitted when you operate the [ON] keys or faders.

Tip!

• *You can enable/disable the remote function independently for each of the Remote A–Remote D pages.*
• *The on/off state of the [ON] keys and the position of the faders is remembered independently for each of the Remote A–Remote D pages.*
• *The state of the faders/[ON] keys used by the Remote function can be saved in a scene memory, or you can record fader/[ON] key operations in automix. This allows you to use the Remote A–D pages simultaneously.*

⑥ **1–8 buttons**

These indicate channel numbers 1–8. The currently selected channel will be highlighted, and the upper part of the display will show the MIDI messages assigned to the [ON] key and fader of that channel. Below each button, the name of the [ON] key (upper line) and the name of the fader (lower line) is shown for the corresponding channel.

To select a channel, you can press its [SEL] key, move the cursor to a button 1–8 and press the [ENTER] key, or directly operate an [ON] key or fader.

■ Additional functions in the Remote A–Remote D pages

In the Remote A–Remote D pages, holding down the [SHIFT] key will assign the following additional functions to the [F1]–[F5] keys.
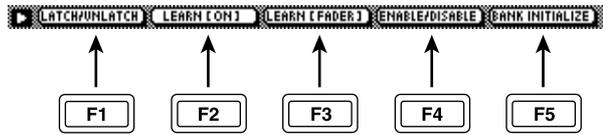
- **[F1] (LATCH/UNLATCH) key**
  Selects latch or unlatch as the operation when the [ON] key is pressed. This is the same function as the LATCH/UNLATCH button (③).

- **[F2] (LEARN [ON]) key**
  The MIDI message received at the MIDI IN/TO HOST connector will be assigned to the [ON] key. This is the same function as the LEARN button (④) for the [ON] key.

- **[F3] (LEARN [FADER] key**
  The MIDI message received at the MIDI IN/TO HOST connector will be assigned to the fader. This is the same function as the LEARN button (④) for the fader.

- **[F4] (ENABLE/DISABLE) key**
  Selects whether to enable (ENABLE) or disable (DISABLE) the settings of the currently displayed page. This is the same function as the ENABLE/DISABLE button (⑤).

- **[F5] (BANK INITIALIZE) key**
  All MIDI messages and names assigned to the [ON] keys and faders of the currently displayed page will be initialized to the default settings.

  The default settings for the MIDI messages and names assigned to the [ON] keys and faders in the Remote A–D pages are as follows.

- **Default parameters for Remote A–D**

Remote A

Channel	[ON] key		Fader	
	Name	Message	Name	Message
1		No assignment	VOL CH1	Control change #7 (MIDI ch=1)
2		No assignment	VOL CH2	Control change #7 (MIDI ch=2)
3		No assignment	VOL CH3	Control change #7 (MIDI ch=3)
4		No assignment	VOL CH4	Control change #7 (MIDI ch=4)
5		No assignment	VOL CH5	Control change #7 (MIDI ch=5)
6		No assignment	VOL CH6	Control change #7 (MIDI ch=6)
7		No assignment	VOL CH7	Control change #7 (MIDI ch=7)
8		No assignment	VOL CH8	Control change #7 (MIDI ch=8)

Remote B

Channel	[ON] key		Fader	
	Name	Message	Name	Message
1		No assignment	VOL CH9	Control change #7 (MIDI ch=9)
2		No assignment	VOL CH10	Control change #7 (MIDI ch=10)
3		No assignment	VOL CH11	Control change #7 (MIDI ch=11)
4		No assignment	VOL CH12	Control change #7 (MIDI ch=12)
5		No assignment	VOL CH13	Control change #7 (MIDI ch=13)
6		No assignment	VOL CH14	Control change #7 (MIDI ch=14)
7		No assignment	VOL CH15	Control change #7 (MIDI ch=15)
8		No assignment	VOL CH16	Control change #7 (MIDI ch=16)

Remote C

Channel	[ON] key		Fader	
	Name	Message	Name	Message
1	CH1 SUS	Control change #40 (MIDI ch=1)	CH1 VOL	Control change #7 (MIDI ch=1)
2	CH1 SOS	Control change #42 (MIDI ch=1)	CH1 PAN	Control change #10 (MIDI ch=1)
3	CH1 SOFT	Control change #43 (MIDI ch=1)	CH1 EXP	Control change #11 (MIDI ch=1)
4		No assignment	CH1 MOD	Control change #1 (MIDI ch=1)
5	CH1 PORT	Control change #41 (MIDI ch=1)	CH1 PORT	Control change #5 (MIDI ch=1)
6		No assignment	CH1 REV	Control change #91 (MIDI ch=1)
7		No assignment	CH1 CHO	Control change #93 (MIDI ch=1)
8		No assignment	CH1 VAR	Control change #94 (MIDI ch=1)

Remote D

Channel	[ON] key		Fader	
	Name	Message	Name	Message
1	PGM CHG1	Program change #1 (MIDI ch=1)	CTL CHG1	Control change #1 (MIDI ch=1)
2	PGM CHG2	Program change #2 (MIDI ch=1)	CTL CHG2	Control change #2 (MIDI ch=1)
3	PGM CHG3	Program change #3 (MIDI ch=1)	CTL CHG3	Control change #3 (MIDI ch=1)
4	PGM CHG4	Program change #4 (MIDI ch=1)	CTL CHG4	Control change #4 (MIDI ch=1)
5	PGM CHG5	Program change #5 (MIDI ch=1)	CTL CHG5	Control change #5 (MIDI ch=1)
6	PGM CHG6	Program change #6 (MIDI ch=1)	CTL CHG6	Control change #6 (MIDI ch=1)
7	PGM CHG7	Program change #7 (MIDI ch=1)	CTL CHG7	Control change #7 (MIDI ch=1)
8	PGM CHG8	Program change #8 (MIDI ch=1)	CTL CHG8	Control change #8 (MIDI ch=1)

REMOTE screen

HOME screen

IN/Rtn/MONI page

Monitor the input level of each channel

Function

This page displays the input level of input channels 1–8, return channels 1/2, and monitor channels 1–16.

Key operation

- [HOME] key → [F1] (IN/Rtn/MONI) key
- Repeatedly press the [HOME] key until the screen shown at the right appears.

Screen functions

① **Level meters**
This area indicates the input level of each channel. Below each level meter, the location of the fader for that channel is displayed in dB units.

② **PRE EQ button**

③ **POST EQ button**

④ **POST FADER button**
Use these three buttons to select the location within the signal routing that will be displayed by the level meters (①). Turning on the PRE EQ button will display the pre-EQ signal level, the POST EQ button will display the post-EQ signal level, and the POST FADER button will display the post-fader signal level. This is convenient when you want to see the location at which the input signal of that channel is clipping.

> **Tip!**
> *The settings of buttons (②)–(④) also affect the input meter display in the VIEW screen CH VIEW/Library page.*

⑤ **STEREO OUT LEVEL**
This displays the position of the STEREO fader in dB units.

■ Additional functions in the IN/Rtn/MONI page

In the IN/Rtn/MONI page, holding down the [SHIFT] key will assign the following additional function to the [F1] key.

- **[F1] (PEAK HOLD) key**
Switches the Peak Hold function on/off. When peak hold is on, a "⌐" symbol indicating the peak level will be maintained in the level meter (①). The peak hold setting also affects the level meters displayed in pages other than in the EQ/ATT/GRP screen and the DYN/DLY screen.

Bus page

Monitor the output levels of buses

Function

Monitor the output level of buses 1–8 and AUX buses 1–6. In this page you can also adjust the master level of each bus.

Key operation

- [HOME] key → [F2] (Bus) key
- Repeatedly press the [HOME] key until the screen shown at the right appears.
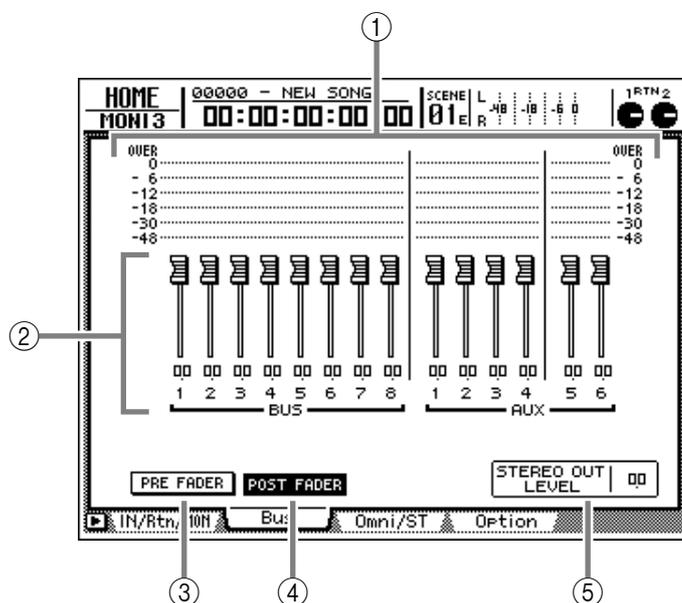
Screen functions

① Level meters

These indicate the output level for each bus.

② Faders

These faders adjust the master level for each bus. To adjust the position of a fader, move the cursor to the desired fader and turn the [DATA/JOG] dial. The position of the fader for each bus is displayed in dB units below each fader.

Tip!

If buses are paired, a heart symbol will be displayed between the corresponding odd-numbered → even-numbered buses. Pairing settings are made in the PAN/ ROUTE screen Pair page.

③ PRE FADER button

④ POST FADER button

Use these two buttons to select the location within the signal routing at which the level will be indicated by the level meters (①). Turning on the PRE FADER button will display the pre-fader (③) signal level, and the POST FADER button will display the post-fader signal level.
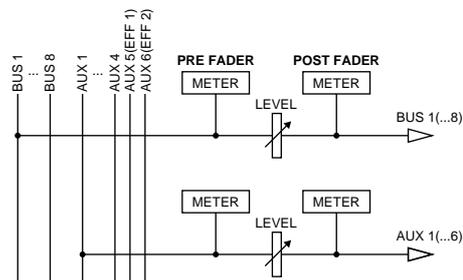
⑤ STEREO OUT LEVEL

This displays the position of the STEREO fader in dB units.

■ Additional functions in the Bus page

In the Bus page you can press the [SHIFT] key to assign the following function to the [F1] key.

- **[F1] (PEAK HOLD) key**
  Switches the Peak Hold function on/off. When peak hold is on, a "⌐" symbol indicating the peak level will be maintained in the level meter (①). The peak hold setting also affects the level meters displayed in pages other than in the EQ/ATT/GRP screen and the DYN/DLY screen.

Omni/ST page

Monitor the output levels of the OMNI OUT jacks and stereo output

Function

Monitor the output levels of OMNI OUT jacks 1–4 and the stereo output channel.

Key operation

- [HOME] key → [F3] (Omni/ST) key
- Repeatedly press the [HOME] key until the screen shown at the right appears
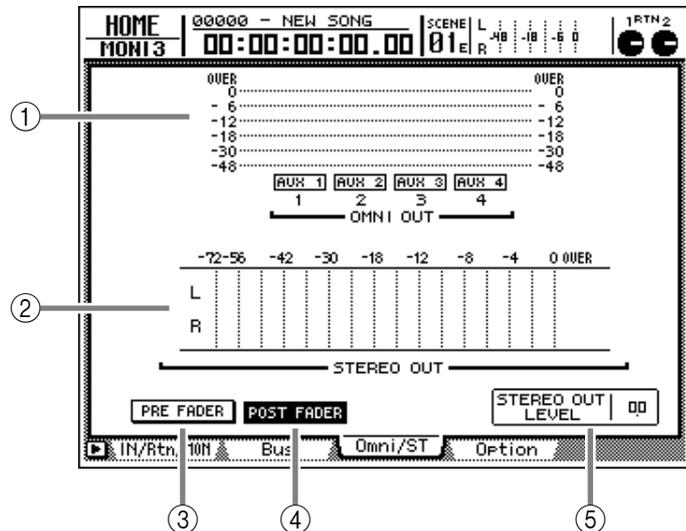
Screen functions

① OMNI OUT level meters

These meters indicate the output level of OMNI OUT jacks 1–4. The type of output signal assigned to each OMNI OUT jack is displayed below the level meters.

Tip!

This page is for display only, and contains no editable items. The type of signal assigned to the OMNI OUT jacks can be changed in the PATCH screen/Patch OUT page.

② STEREO OUT level meter

This meter indicates the output level of the stereo output channel.

③ PRE FADER button

④ POST FADER button

Use these two buttons to select the location within the signal routing at which the level will be indicated by the STEREO OUT level meter (②). Turning on the PRE FADER button will display the signal level before the STEREO fader, and turning on the POST FADER button will display the signal level after the STEREO fader.

⚠

The PRE FADER button/POST FADER button setting will not affect the OMNI OUT level meter display.
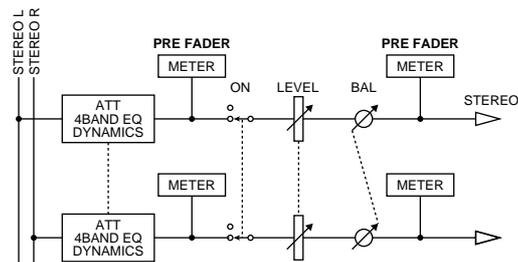
⑤ STEREO OUT LEVEL

This displays the position of the STEREO fader in dB units.

■ Additional functions in the Omni/ST page

In the Omni/ST page you can press the [SHIFT] key to assign the following function to the [F1] key.

- **[F1] (PEAK HOLD) key**

Switches the Peak Hold function on/off. When peak hold is on, a "⌐" symbol indicating the peak level will be maintained in the level meters (①)(②). The peak hold setting also affects the level meters displayed in pages other than in the EQ/ATT/GRP screen and the DYN/DLY screen.

Option page

Monitor the output levels of the I/O card

Function

Display meters that indicate the output levels to an I/O card installed in the option I/O slot.

Key operation

- [HOME] key → [F4] (Option) key
- Repeatedly press the [HOME] key until the screen shown at the right appears
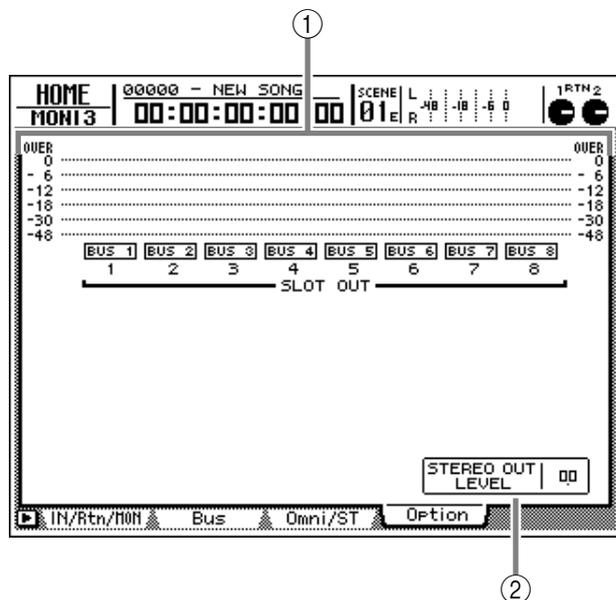
Screen functions

① **Level meters**

These level meters indicate the output levels of the I/O card. The type of signal assigned to each output channel 1–8 is displayed below the level meters.

Tip!

This page is for display only, and contains no editable items. The type of signal assigned to each output channel of the I/O card can be changed in the PATCH screen/Patch OUT page.

② **STEREO OUT LEVEL**

The position of the STEREO fader is shown in dB units.

■ Additional functions in the Option page

In the Option page you can press the [SHIFT] key to assign the following function to the [F1] key.

- **[F1] (PEAK HOLD) key**

Switches the Peak Hold function on/off. When peak hold is on, a "⌐" symbol indicating the peak level will be maintained in the level meters (①). The peak hold setting also affects the level meters displayed in pages other than in the EQ/ATT/GRP screen and the DYN/DLY screen.

TRACK screen

TR View page

View the recorded content for each track

Function

The regions of each track are displayed as bar graphs. In this page you can also set the input monitor for each track, and switch muting on/off.

Key operation

- [TRACK] key → [F1] (TR View) key
- Repeatedly press the [TRACK] key until the screen shown at the right appears.
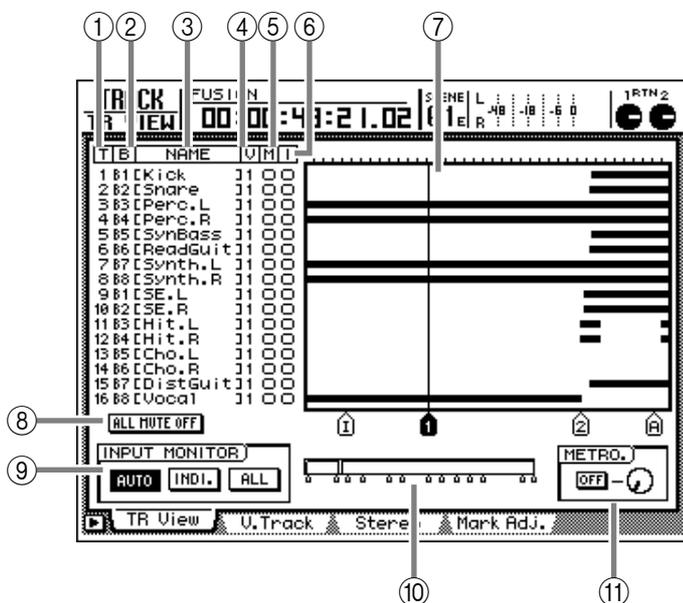
Screen functions

① **T (Track)**

This is the track number 1–16.

② **B (Bus)**

This indicates the type of signal assigned to the input (recorder input) of each track 1–16. The abbreviations have the following meaning.

- **B1–B8**.................. Buses 1–8
- **D1–D16** .... Direct output of input channels 1–8

> **Tip!**
>
> *The signals assigned to the recorder inputs can be specified in the RECORDER TRACK INPUT ASSIGN area of the PATCH screen/Patch IN page (→P.73).*

③ **NAME**

This displays the name of the virtual track selected for each track 1–16. Tracks in which nothing has been recorded will indicate "-NO REC-". When you record something in a track, a name of "V.Tr x-y" (x=track number 1–16, y=virtual track number 1–8) will be assigned automatically.

> **Tip!**
>
> - *A name of up to 16 characters can be assigned to a virtual track, but only the first 8 characters will be displayed in the NAME column (③).*
> - *The name of a virtual track can be edited in the EDIT screen/TR Edit page.*

④ **V (Virtual track)**

This is the virtual track number (1–8) currently selected for each track 1–16.

> **Tip!**
>
> *The virtual track used for each track can be selected in the TRACK screen/V.Track page.*

⑤ **M (Mute)**

This displays the mute on/off status of tracks 1–16 as "●" (mute=on) or "○" (mute=off) symbols. You can also switch mute on/off by moving the cursor to this area and pressing the [ENTER] key.

> **Tip!**
>
> - *The M column is linked with the MUTE buttons of the METER screen (→P.351).*
> - *The mute on/off setting of each track does not affect the [ON] keys of the monitor channels.*

> ⚠
>
> - *On the AW2816, the number of tracks that can be played back simultaneously may be limited by the number of tracks that are set to record-ready mode. In this case, muting will be forcibly turned on for tracks that cannot be played back.*
> - *If you want to defeat muting for a track that was forcibly muted, you must first mute another track. If you attempt to defeat muting without increasing the number of muted tracks, a message of "CANNOT CHANGE MUTE" will be displayed, and muting will not be defeated.*
> - *By pressing the [ALL SAFE] key you can cancel the record-ready and muted status of all tracks.*

⑥ **I (Input monitor)**

This column indicates the type of signal monitored by tracks 1–16. This will indicate "●" when monitoring the track playback, and "○" when monitoring the signal sent to the input of the track (input source). The type of signal being monitored will change depending on the settings of the INPUT MONITOR column (⑨), the state of the REC TRACK SELECT [1]–[16] keys, and the current running mode.

⑦ **Track view**

The regions (continuous audio data recorded in a single operation) included in each track are displayed as bar graphs in this area. The vertical line in this area indicates the current location. The symbols displayed at the bottom of the frame indicate locate points or markers that have been set in those locations. The following types of symbols are displayed.

- **S**.......................... Start point
- **E**.......................... End point
- **I**.......................... In point
- **O**......................... Out point
- **A** .... A point
- **B**.......................... B point
- **1–99**.................... Markers 1–99
- **R**.......................... Relative time zero location

Tip!

The "R" symbol that indicates the relative time zero location will be displayed only if relative time is selected as the counter display method. Relative time can be selected in the METER screen/Meter 2 page.

⑧ **ALL MUTE OFF**

When you move the cursor to this button and press the [ENTER] key, muting will be turned off for all tracks.

⚠

Tracks that have been muted due to limitations in the number of simultaneously playable tracks cannot be unmuted unless you reduce the number of record-ready tracks, or mute other tracks.

⑨ **INPUT MONITOR**

This selects the input monitor mode (the way in which input monitor will be switches for each track). This is the same function as the INPUT MONITOR area of the METER screen. For details refer to page 351.

⑩ **Current position**

The vertical line in this box indicates the approximate current location between the start and end points of the song. The small symbols below the box indicate the approximate location of the locate points and markers.

⑪ **METRO. (Metronome)**

This area turns the metronome on/off (the ON/OFF button) and adjusts the volume of the metronome (the knob). When you turn on the internal metronome and raise the volume, the metronome sound will be output from the MONITOR OUT/PHONES jacks during song playback or recording.

Tip!

- *The tempo and time signature of the metronome are specified in the SONG screen Tempo Map page.*
- *If necessary, you can select the output signal of the internal metronome (MET) as an input source for input channels 1–8. Assignments to input channels are made in the PATCH screen/Patch IN page.*
- *If the internal metronome is selected as an input source for an input channel, the metronome output will be sent to the corresponding input channel without regard to the settings of the ON/OFF button or volume knob in the METRO. area.*

■ Additional functions in the TR View page

In the TR View page you can press the [SHIFT] key to assign the following additional functions to the [F1]–[F4] keys.
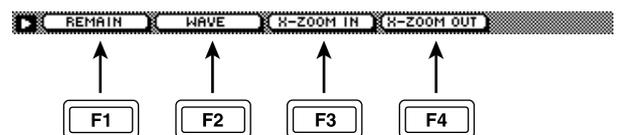
- **[F1] (REMAIN) key**

Displays the remaining available recording time (hours: minutes) in the counter located in the upper part of the screen. Hold down the [SHIFT] key and press the [F1] key once again to return to the normal counter display.

Tip!

The remaining recordable time will differ depending on the number of tracks that are currently in record-ready mode. For example if you increase the number of tracks in record-ready mode from one track to two tracks, the remaining recordable time will be halved.

- **[F2] (WAVE) key**

Displays the audio of the desired track as a waveform. This is convenient when you want to set a locate pointer or marker while viewing the waveform.

- **[F3] (X-ZOOM IN) key**

Each time you press the [SHIFT] key + [F3] (X-ZOOM IN) key, the track view ⑦ will zoom-in horizontally (four levels).

- **[F4] (X-ZOOM OUT) key**

Each time you press the [SHIFT] key + [F4] (X-ZOOM OUT) key, the track view ⑦ will zoom-out horizontally (four levels).

TRACK screen

V. Track page

Select the virtual track for each track

Function

Switch the virtual track assigned to each track 1–16, and set/cancel pairing between tracks.

Key operation

- [TRACK] key → [F2] (V. Track) key
- Repeatedly press the [TRACK] key until the screen shown at the right appears.
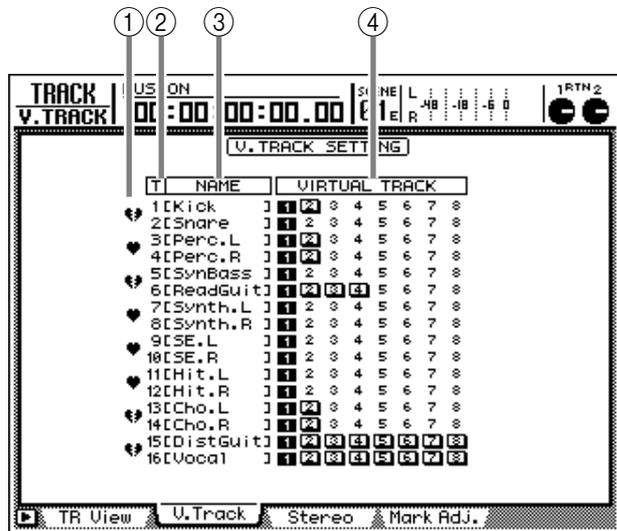
Screen functions

① Pairing

Move the cursor to this area and press the [ENTER] key to enable (or cancel) pairing for adjacent odd-numbered → even-numbered tracks. The "♥" symbol will be displayed when pairing is enabled, and "♥♥" when pairing is disabled.

Tip!

Paired tracks will be linked when you switch virtual tracks, or when you select them for track editing. This is convenient when you want tracks on which stereo sources are recorded to be handled together.

⚠

Enabling/disabling of pairing does not affect the pairing settings of the monitor channels. Pairing of monitor channels is performed in the Pair page of the PAN/ ROUTE screens.

② T (track)

These are the track numbers 1–16.

③ NAME

This area displays the name of the virtual track currently selected for each track 1–16. Tracks on which nothing has been recorded will be displayed as "-NO REC-". When you record something on such a track, a name of "V.Tr x-y" (x= track number 1–16, y= virtual track number 1–8) will be assigned automatically.

Tip!

- *A name of up to 16 character can be assigned to a virtual track, but only the first 8 characters will be displayed in the NAME column (③).*
- *The name of the currently selected virtual track can be edited in the EDIT screen/TR Edit page.*

④ VIRTUAL TRACK

Move the cursor to this area and press the [ENTER] key to select the virtual track that will be used for each track 1–16. The highlighted number indicates the number of the virtual track that is currently selected for each track 1–16. Of the remaining virtual track numbers, tracks that have been recorded will be displayed as "②."

Tip!

For details on using virtual tracks, refer to page 66.

■ Additional functions in the V. Track page

In the V. Track page you can press the [SHIFT] key to assign the following additional function to [F1].

- **[F1] (REMAIN) key**

Displays the remaining available recording time (hours: minutes) in the counter located in the upper part of the screen. Hold down the [SHIFT] key and press the [F1] key once again to return to the normal counter display.

Stereo page

Playing or erasing the stereo track

Function

Play back the stereo track, or erase the recorded contents of the stereo track.

Key operation

- [TRACK] key → [F3] (Stereo) key
- Repeatedly press the [TRACK] key until the screen shown at the right appears.
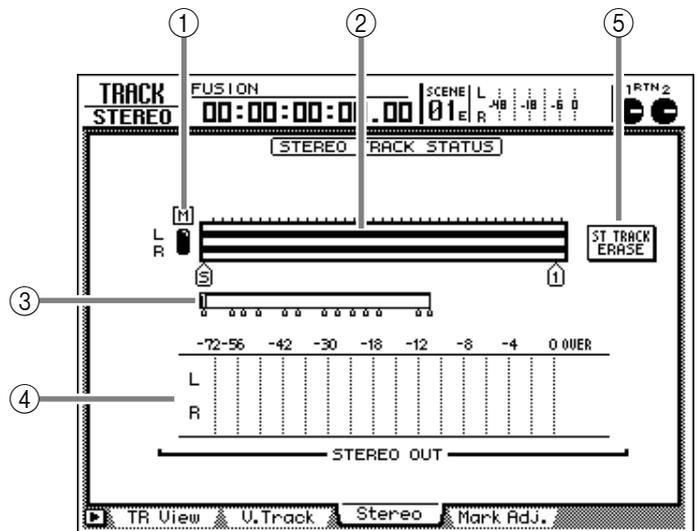
Screen functions

① M (Mute) button

This switches muting on (●)/off (○) for the stereo track. When muting is switched off, the L/R output of the stereo track will be sent directly to monitor channels 1/2, and at the same time, muting will be forced on for tracks 1–16.

By playing back a song in this state, you can monitor the stereo track via monitor channels 1/2 → stereo bus. When you switch muting back on for the stereo track, muting of tracks 1–16 will be defeated, returning to the normal state.

⚠

In order to listen to the stereo track via the stereo bus, monitor channels 1/2 must each be assigned to the stereo bus. Be aware that in this case, the settings of parameters such as pan, EQ, and dynamics processor for monitor channels 1/2 and the stereo output channel will directly affect the playback sound of the stereo track.

Tip!

If you want to hear the stereo track "flat" (unprocessed), you can either press the [TRACK CUE] key → REC TRACK SELECT [ST] key to send the output of the stereo track directly to the MONITOR OUT/PHONES jacks, or you can prepare a scene memory that contains "flat" settings for monitor channels 1/2 and the stereo output channel.

② Track view

This bar graph shows the region of the stereo track. The symbols displayed below the track view indicate locate points and markers that are assigned to those locations. The displayed symbols have the following significance.

- **S**.......................... Start point
- **E**.......................... End point
- **I** .... In point
- **O**.......................... Out point
- **A** .... A point
- **B** .... B point
- **1–99**.................... Markers 1–99
- **R** .... Relative time zero location (displayed only when the counter is switched to relative time)

③ Current position

The vertical line in this box indicates the approximate current location between the beginning of the song and the end point. The small symbols below the box indicate the approximate location of the locate points and markers.

④ STEREO OUT

This meter indicates the output level of the stereo output channel.

Tip!

By using the PRE/POST button in the HOME screen/Omni/ST page, you can select whether the pre-fader level or the post-fader level will be displayed.

⑤ ST TRACK ERASE (Stereo track erase) button

This button erases the recorded content of the stereo track. When you move the cursor to this button and press the [ENTER] key, a confirmation popup window will appear. Move the cursor to the OK button and press the [ENTER] key, and the stereo track will be erased.

TRACK screen

⚠

The stereo track can record only one region, with L/R as a pair. If after recording the stereo track, you record once again, the previously recorded content will automatically be erased. (However, you can use the [UNDO] key to bring back the previous recorded content.)

■ Additional functions in the Stereo page

In the Stereo page you can press the [SHIFT] key to assign the following additional functions to the [F1]–[F3] keys.
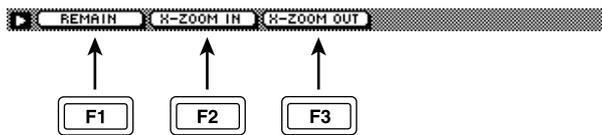
- **[F1] (REMAIN) key**
  Displays the remaining recordable time (hours: minutes) in the counter located in the upper part of the display. Hold down the [SHIFT] key and press the [F1] key once again to return to the normal counter display.

- **[F2] (X-ZOOM IN) key**
  Each time you press the [SHIFT] key + [F2] (X-ZOOM IN) key, the track view ② will zoom-in horizontally in four levels.

- **[F3] (X-ZOOM OUT) key**
  Each time you press the [SHIFT] key + [F3] (X-ZOOM OUT) key, the track view ② will zoom-out horizontally in four levels.

Mark Adj. page

Adjust/delete locate points and markers

Function

Adjust the positions of markers and locate points (e.g., "in" or "out" points), or delete locate points and markers.

Key operation

- [TRACK] key → [F4] (Mark Adj.) key
- Repeatedly press the [TRACK] key until the screen shown at the right appears.

Screen functions

① LOCATE POSITION

This area displays the various locate points listed below. To edit a locate point that has already been set, move the cursor to the desired numerical box, and turn the [DATA/JOG] dial. For locate points that have not yet been set, the numerical box will indicate "--".

• START/END (Start point/End point)

These locate points correspond to the [◄◄] and [►►] keys respectively. The Start point is the absolute time (ABS) zero location, and corresponds to the beginning of the first measure (if measures are used). When you create a new song, the beginning of the song will be set initially as the Start point. When you record a song, the location at which recording ends will be set automatically as the End point.

The Start point and End point displayed in this page are always in time code units. If you edit the Start point, the location of that time code will be absolute time zero.

Start point = 00:00:00:00.00

Start point = 00:00:05:00.00

> **Tip!**
>
> *If the song length changes because a track was erased or moved, the end point will automatically be reset to the ending location of the song.*

• IN/OUT (In point/Out point)

These locate points correspond to the [IN] and [OUT] keys. They are also used as the recording-start and end locations during auto punch-in/out. The In/Out points are automatically set to the locations at which recording was last begun and ended, and can also be set individually by using the [SET] + [IN] keys or [SET] + [OUT] keys.

• A/B (A point/B point)

These locate correspond to the [A] and [B] keys. They are also used to specify the area for A-B repeat playback. The A/B points can also be set individually by using the [SET] + [A] keys or [SET] + [B] keys.

🎵 *Tip!*

If you move the cursor to the button located at the left of the locate point numerical box and press the [ENTER] key, a "◻" symbol will be displayed there, indicating that this point has been selected for deletion. (Pressing the [ENTER] key once again will make the symbol disappear.)
It is not possible to select the start/end points for deletion.

⚠️

- *The units used to display the In/Out points and A/B points will depend on the counter display method setting (time/time code/measures)*
- *If measure display is selected, units of measures/ beats/ticks will be displayed for the locate points. However, only the measure and beat units can be selected for editing. If measure display is selected, it will not be possible to edit In/Out points or A/B points located earlier than the Start point. (In this case, only the beat will be displayed for the corresponding locate point.)*

② **Markers**

This area displays the markers 1–99 that have been set in the song. The row enclosed by the dotted line is the currently selected marker. Move the cursor to the MARKER column and turn the [DATA/ JOG] dial to select a marker number. Then move the cursor to the POSITION column and edit the location of the corresponding marker.

🎵 *Tip!*

If you move the cursor to the button located at the left of the marker number and press the [ENTER] key, a "◻" symbol will be displayed at the left, indicating that the corresponding marker has been selected for deletion. (Pressing the [ENTER] key once again will make the symbol disappear.) If you select a different marker when the "◻" symbol is displayed, the deletion symbol will be cancelled.

⚠️

- *When editing the location of a marker, it is not possible to move it past the preceding or following marker.*
- *The marker number is automatically assigned in sequence, starting from the beginning of the song. For this reason when you delete a marker, the marker numbers will be changed as necessary.*

③ **DELETE button**

This button deletes the locate points or markers that are selected for deletion (i.e., for which the "◻" symbol is displayed).

🎵 *Tip!*

- *The IN/OUT points and A/B points can also be deleted by holding down the [CANCEL] key and pressing the [IN]/[OUT] or [A]/[B] key. If you want to delete a marker using key operations, use the [◀◀ / ▶▶] keys to move to the marker you want to delete, and then hold down the [CANCEL] key and press the [MARK] key.*
- *For details on setting a locate point or marker, refer to page 102 to 103.*

■ **Additional functions in the Mark Adj. page**

In the Mark Adj. page, you can press the [SHIFT] key to assign the following additional function to the [F1] key.

- **[F1] (REMAIN) key**
  Displays the remaining recordable time (hours: minutes) in the counter located in the upper part of the display. Hold down the [SHIFT] key and press the [F1] key once again to return to the normal counter display.

EDIT screen

TR Edit page

Edit tracks

Function

Assign a name to each track, and edit audio data by tracks, parts, or regions.

Key operation

• [EDIT] key → [F1] (TR Edit) key

• Repeatedly press the [EDIT] key until the screen shown at the right appears.
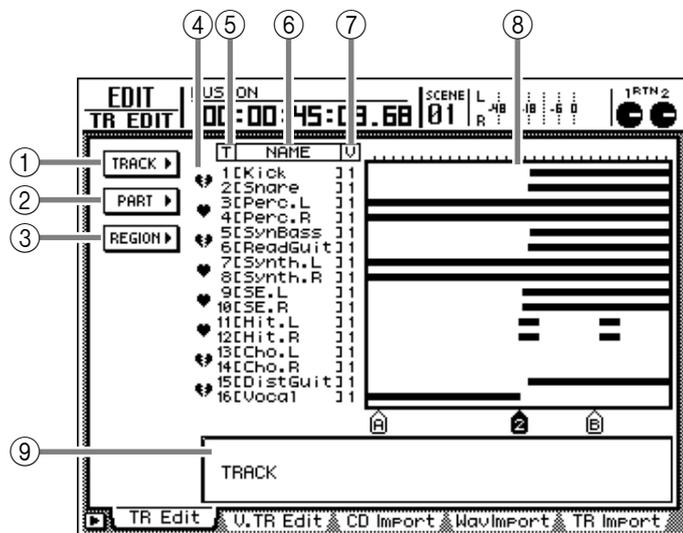
Screen functions

① **TRACK menu**

Here you can select commands to edit tracks of audio data. When you move the cursor to this menu and press the [ENTER] key, a list of buttons for selecting the commands will be displayed (below center). Then move the cursor to the command you want to execute and press the [ENTER] key, and a list of buttons for the parameters of that command will be displayed (below right).

Menu   Command   Parameter
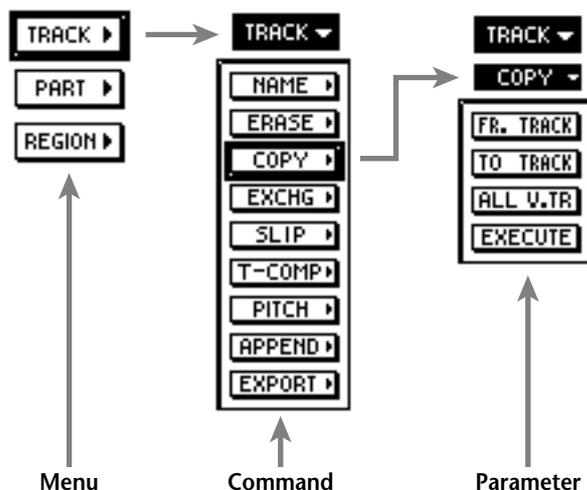
When the parameter buttons are displayed, you can move the cursor to the button of the currently-highlighted command and press the [ENTER] key to return to the list of commands. If you move the cursor to the highlighted menu at the top of the list and press the [ENTER] key, you will return to the first menu list.

② **PART menu**

Here you can select commands to edit the desired range (part) of a track. The method of selecting a command from the PART menu and accessing parameters is the same as for the TRACK menu (①).

③ **REGION menu**

Here you can select commands to edit pieces of audio data that were recorded in a single operation (regions). The method of selecting a command from the REGION menu and accessing parameters is the same as for the TRACK menu (①).

For details on the commands that can be selected from the TRACK/PART/REGION menus and their parameters, refer to page 118.

④ **Pairing**

When you move the cursor to this column and press the [ENTER] key, pairing will be enabled (or cancelled) for adjacent odd-numbered → even-numbered tracks. Paired tracks are indicated by a "♥" symbol, and unpaired tracks are indicated by a "♥♥" symbol. When editing tracks or parts, both tracks of a pair will be affected by your editing.

EDIT screen

Tip!

- *It is possible to move the cursor to the (④) area only if the three menus TRACK/PART/REGION are displayed.*
- *The pairing settings you make in this page are linked with the TRACK screen/V.Track page.*

⑤ **T (Track)**

This column displays the track number 1–16.

⑥ **NAME**

This column displays the name of the virtual track currently selected for each track 1–16. Tracks in which nothing has been recorded are displayed as "-NO REC-". When you record something on such a track, it will automatically be assigned a name of "V.Tr x-y" (x= track number 1–16, y= virtual track number 1–8).

Tip!

A name of up to 16 character can be assigned to a virtual track, but only the first 8 characters will be displayed in the NAME column (③).

⑦ **V (virtual track)**

This shows the virtual track number (1–8) that is currently selected for each track 1–16.

Tip!

Virtual tracks are selected in the TRACK screen/ V.Track page.

⑧ **Track view**

In this area, the regions included in each track are displayed as a bar graph. The vertical line in the track view area indicates the location at which the area for editing has been set. The symbols displayed at the bottom of the track view area indicate locate points and markers.

While editing, the track and area selected for editing will be displayed as follows.

Track to be edited   **Edited area**
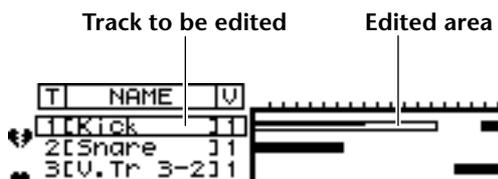
When you specify an editing source and editing destination track/range (e.g., when copying or moving audio data), the display will be as follows.

Edit source track   **Edit source area**

Edit destination track   **Edit destination area**
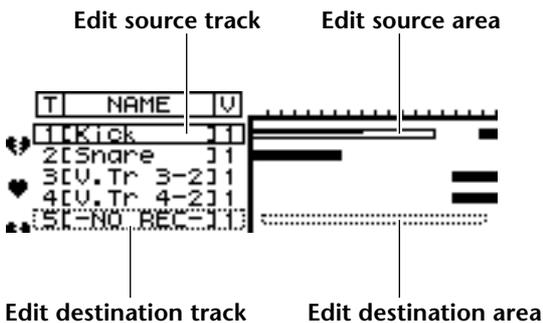
⑨ **Parameter setting area**

In this area you can set the parameters for executing the selected command.

Tip!

- *For details on track editing operations, refer to page 111.*
- *If markers or locate points have been set within the song, you can use the [|◀]/[▶|] keys, LAST REC [IN]/[OUT] keys, and [A]/[B] keys to specify the editing location or editing range.*

⚠

The keys of the transport section will have no effect while the TR Edit page is displayed.

■ **Additional functions in the TR Edit page**

In the TR Edit page you can press the [SHIFT] key to assign the following additional functions to the [F1]–[F3] keys.
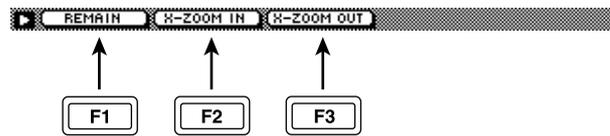
- **[F1] (REMAIN) key**
  Displays the remaining recordable time (hours: minutes) in the counter located in the upper part of the display. Hold down the [SHIFT] key and press the [F1] key once again to return to the normal counter display.

- **[F2] (X-ZOOM IN) key**
  Each time you press the [SHIFT] key + [F2] (X-ZOOM IN) key, the track view ⑧ will zoom-in on the time axis in four levels.

- **[F3] (X-ZOOM OUT) key**
  Each time you press the [SHIFT] key + [F3] (X-ZOOM OUT) key, the track view ⑧ will zoom-out on the time axis in fout levels.

V.TR Edit page

Edit virtual tracks

Function

Edit the virtual tracks 1–8 included in the specified track.

Key operation

- [EDIT] key → [F2] (V. TR Edit) key
- Repeatedly press the [EDIT] key until the screen shown at the right appears.
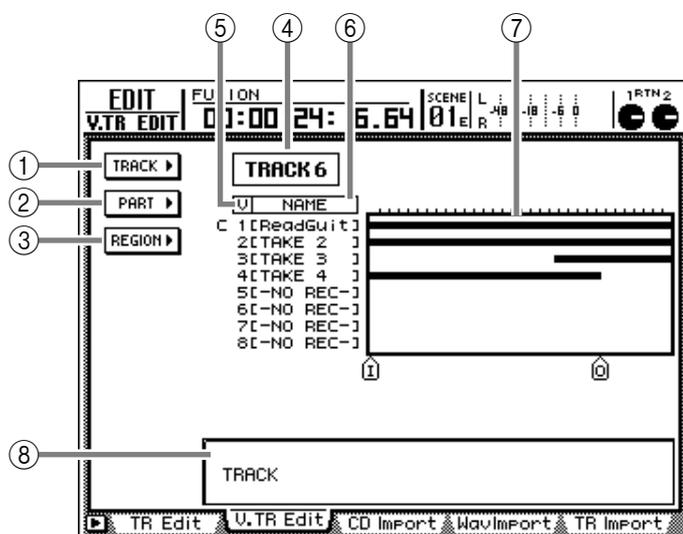
Screen functions

① **TRACK menu**

② **PART menu**

③ **REGION menu**

These are the same as the TR Edit page TRACK menu, PART menu, and REGION menu, with the difference that the editing will apply to virtual tracks 1–8 of the same track. For details refer to the explanation that begins on page 329. For the commands that can be selected in each menu and their parameters, refer to page 118 and following.

⚠

In the V.TR Edit page, it is not possible to select all tracks or all virtual tracks for editing.

④ **Track number**

This is the track number that contains the virtual track you are editing. To change the track number, move the cursor to this area and turn the [DATA/JOG] dial, or press a REC TRACK SELECT [1]–[16] key.

⑤ **V (virtual track number)**

This column shows the virtual track numbers 1–8. The virtual track currently selected is indicated by a "C" (Current) symbol at the left of this column.

⑥ **NAME**

This column displays the names of virtual tracks 1–8. Tracks in which nothing has been recorded are displayed as "-NO REC-". When you record something on such a track, it will automatically be assigned a name of "V.Tr x-y" (x= track number 1–16, y= virtual track number 1–8).

Tip!

A name of up to 16 characters can be assigned to a virtual track, but only the first 8 characters will be displayed in the NAME column (⑥).

⑦ **Track view**

In this area, the regions included in each virtual track are displayed as a bar graph. With the exception that virtual tracks 1–8 are displayed simultaneously, this display is the same as in the TR Edit page.

⑧ **Parameter area**

In this area you can set the required parameters for executing the command.

Tip!

- *For details on editing a virtual track, refer to page 116.*
- *If markers or locate points have been set within the song, you can use the [◄◄]/[►►] keys, LAST REC [IN]/[OUT] keys, and [A]/[B] keys to specify the editing location or editing range.*

⚠

The keys of the transport section will have no effect while the V. TR Edit page is displayed.

■ Additional functions in the V.TR Edit page

In the V.TR Edit page, you can press the [SHIFT] key to assign the following additional functions to the [F1]–[F3] keys.
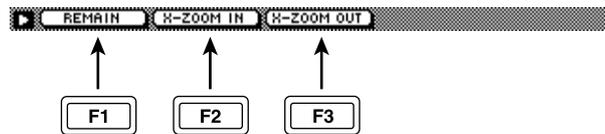
- **[F1] (REMAIN) key**
  Displays the remaining recordable time (hours: minutes) in the counter located in the upper part of the display. Hold down the [SHIFT] key and press the [F1] key once again to return to the normal counter display.

- **[F2] (X-ZOOM IN) key**
  Each time you press the [SHIFT] key + [F2] (X-ZOOM IN) key, the horizontal axis of the track view (⑦) will zoom-in (4 levels).

- **[F3] (X-ZOOM OUT) key**
  Each time you press the [SHIFT] key + [F3] (X-ZOOM OUT) key, the horizontal axis of the track view (⑦) will zoom-out (4 levels).

CD Import page

Import an audio CD to the desired track

Function

Import CD-DA (CD audio) data from an audio CD inserted in the internal or external CD-RW drive, and assign it to the desired track.

Key operation

- [EDIT] key → [F3] (CD Import) key
- Repeatedly press the [EDIT] key until the screen shown at the right appears.
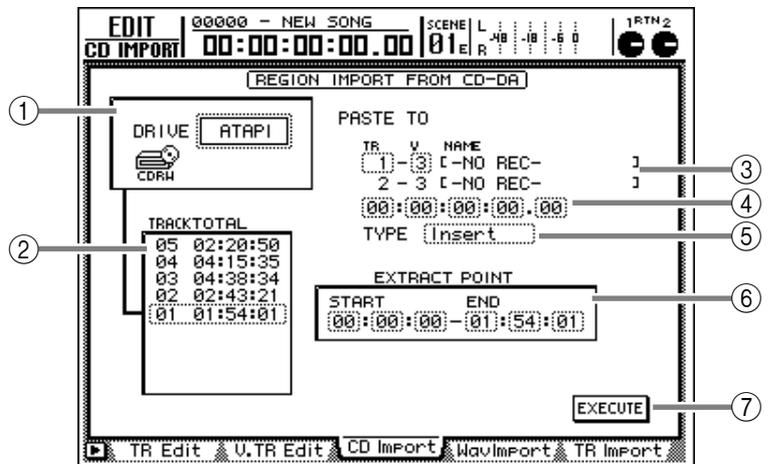
Screen functions

① DRIVE
Select the internal or external CD-RW drive. Move the cursor to this area, use the [DATA/JOG] dial to select the desired CD-RW drive, and press the [ENTER] key to confirm your selection.

② Track list
This lists the tracks of the audio CD inserted in the CD-RW drive. The row enclosed in the dotted line is the track currently selected as the import source. To select the track, move the cursor into the list and turn the [DATA/JOG] dial.

> **Tip!**
>
> *You can also import audio data from a mixed-mode CD-ROM (track 2 or later) or CD-DA data from a CD Extra (first session only), as well as from a conventional audio CD.*

③ PASTE TO
Specify the track/virtual track in which the audio data imported from CD-DA will be placed. Specify the track number in the "TR" numerical box, and the virtual track in the "V" numerical box. (You can also select a virtual track that is not currently assigned to the track.) The NAME area will show the name of the selected track.

> ⚠
>
> *Since the CD-DA audio data is imported in stereo, the track number will always be selected as an odd-numbered/even-numbered pair.*

④ Point setting
Specify the starting location on the track at which the imported CD-DA audio data will be placed.

> **Tip!**
>
> *The units by which this point is specified will depend on the counter display method (hours/time code/measures) selected in the SONG screen/Setting page. If measure display is selected, you can specify the location in "beat" or "measure" units.*

⑤ TYPE
Specify whether the imported CD-DA audio data will be inserted into the track (Insert) or overwritten (OverWrite). If you select "Insert," the data following the specified point (④) in the import destination track will move later in time proportionately to the length of the inserted data.

⑥ EXTRACT POINT
Specify the range that will be imported from the track selected in the track list (②). Move the cursor to the START (starting location) and END (ending location) numerical boxes, and use the [DATA/JOG] dial to input the "minutes:seconds.frames (1/75 second)" units.

⑦ EXECUTE button
This button executes the CD-DA import operation. For details on operation, refer to page 174.

> ⚠
>
> - *The CD Import page can be used only if the current song has a sampling frequency of 44.1 kHz. If the current song has a sampling frequency of 48 kHz, a message of "Current Song is 48 (kHz) Fs Type" will be displayed, and this page will not be available.*
> - *The keys of the transport section will have no effect while the CD Import page is displayed.*
> - *If the CD/DAT DIGITAL REC setting is set to "DISABLE" in the UTILITY screen/Prefer.2 page, it will not be possible to import tracks from an audio CD that prohibits digital copying (→P.266).*

Tip!

If you are using a CD-RW drive with a variable reading speed, the reading speed at which the CD-DA audio data will be imported can be changed in the FILE screen/Disk Util. page (→P.248).

■ Additional functions in the CD Import page

In the CD Import page you can press the [SHIFT] key to assign the following additional functions to the [F1]–[F2] keys.

- **[F1] (CD LOAD) key**
  Close the tray of the CD-RW drive.

- **[F2] (CD UNLOAD) key**
  Open the tray of the CD-RW drive.

WavImport page

Import a WAV file to the desired track

Function

Import WAV format audio files from the internal CD-RW drive or an external SCSI device (e.g., MO drive), and assign them to a track.

Key operation

- [EDIT] key → [F4] (WavImport) key
- Repeatedly press the [EDIT] key until the screen shown at the right appears.

```
EDIT  00000 - NEW SONG   SCENE L |  -48 -18 -6 0      1RTN2
WAV IMP. 00:00:00.000    01 E|R                      ● ●

                         ┌──WAV IMPORT TO REGION──┐
                         │  PASTE TO               │
①─────────              │   TR  V   NAME           │
            DRIVE [ATAPI]│   [1]-[1] [V.Tr 1-1    ]│────④
            ╔═╗          │   (00):(00):(00).000     │────⑤
            CDRW  PART.[1]│   TYPE [Insert]          │────⑥
                         │                          │
②──────── FILE         TOTAL      TYPE            │
            ▥ GTLOOP1.WAV  00:00:07.580  M  16     │
            ▥ BEATS2.WAV   00:00:14.141  M  16     │
            ▥ BEATS1.WAV   00:00:11.111  M  16     │
            □ WAV                                   │
                                                    │
③──────── DIR                        [EXECUTE]────⑦
            /
 ▶ TR Edit  ♣ V.TR Edit  ♠ CD Import ♣WavImport  TR Import
```
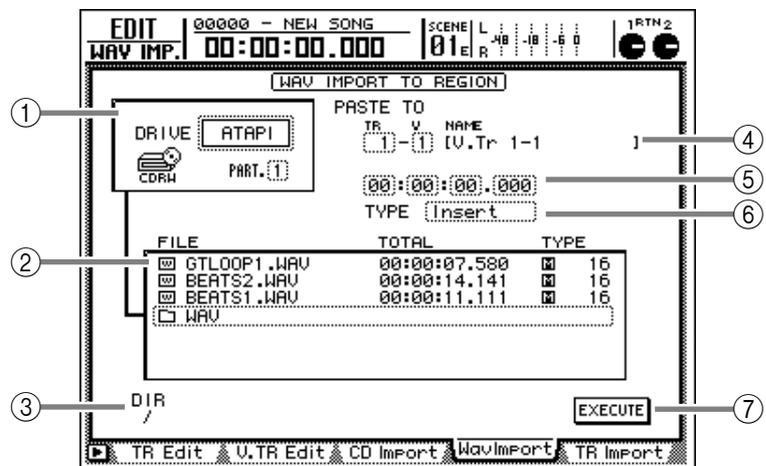
Screen functions

① DRIVE

Select the internal CD-RW or an external SCSI device (e.g., MO drive). Move the cursor to this area, turn the [DATA/JOG] dial to select the desired drive, and press the [ENTER] key to confirm your selection.

⚠️

You can also import WAV files from a CD-ROM (ISO-9660) or a mixed-mode CD-ROM (ISO-9660 data tracks). However, the AW2816 does not support CD-R/RW media that was recorded by packet writing, or CD-ROMs of the Macintosh native file system (HFS).

② File list

This area lists the WAV files stored in the drive you selected in (①). The row enclosed by the dotted line indicates the WAV file currently selected for importing.

The columns of the list display the following information.

• FILE

This is the file name or directory name. "▥" icons indicate WAV files, and "□" icons indicate directories. You can move to the desired directory by selecting the "□" icon and pressing the [ENTER] key.

• TOTAL

This indicates the playback time of the WAV file in hours/minutes/milliseconds.

• TYPE

The "▤" symbol indicates a stereo WAV file, and the "▦" symbol indicates a monaural WAV file.

The number at the right indicates the quantization (bit number) of the WAV file.

⚠️

The AW2816 can recognize only WAV files that have the same sampling frequency as the current song, and have a filename extension of ".WAV" following their name. Other files will not be displayed in the list (②).

📝 **Tip!**

When you have moved downward into another directory from the top directory (which is called the "root directory"), the "□ ." symbol indicates the current directory, and the "□ .." symbol indicates the next higher directory. To go back upward in the directory structure, move the cursor to the "□ .." symbol and press the [ENTER] key.

③ DIR

This area displays "/" symbols and directory names to indicate the current location of the directory selected in the file list (②). For example if you are in the root directory this area will show "/", and if you are in the next lowest directory named WAV, this area will show "/WAV/".

④ PASTE TO

Here you can specify the track into which the imported WAV file will be placed. Select the track number in the "TR" numerical box, and the virtual track number in the "V" numerical box. (You can also select a virtual track that is not currently assigned to a track.) The NAME area will show the track name of the selected track.

If a stereo WAV file is selected in the file list (②), two adjacent odd-numbered → even-numbered tracks will be displayed.

EDIT screen

⑤ **Point setting**

Specify the location on the track at which the imported WAV file will be placed.

Tip!

The units by which this point is specified will depend on the counter display method (hours/time code/measures) selected in the SONG screen/Setting page. If measure display is selected, you can specify the location in "beat" or "measure" units.

⑥ **TYPE**

Specify whether the imported WAV file will be inserted into the track (Insert) or overwritten (Over-Write). If you select "Insert," the data following the specified point (⑤) in the import destination track will move later in time proportionately to the length of the inserted WAV file.

⑦ **EXECUTE button**

This button executes the WAV file import operation. For details on operation, refer to page 172.

The keys of the transport section are disabled while the WavImport page is displayed.

■ Additional functions in the Wav Import page

In the WavImport page you can press the [SHIFT] key to assign the following additional functions to the [F1]–[F2] keys.
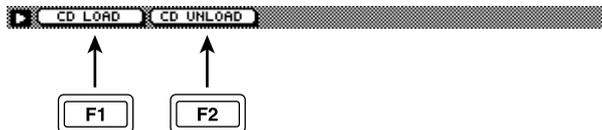
- **[F1] (CD LOAD) key**
  Close the tray of the CD-RW drive.

- **[F2] (CD UNLOAD) key**
  Open the tray of the CD-RW drive.

TR Import page

Import a track from an existing song

Function

Import a track from a song on the internal hard disk into the desired track of the current song.

Key operation

- [EDIT] key → [F5] (TR Import) key
- Repeatedly press the [EDIT] key until the screen shown at the right appears.
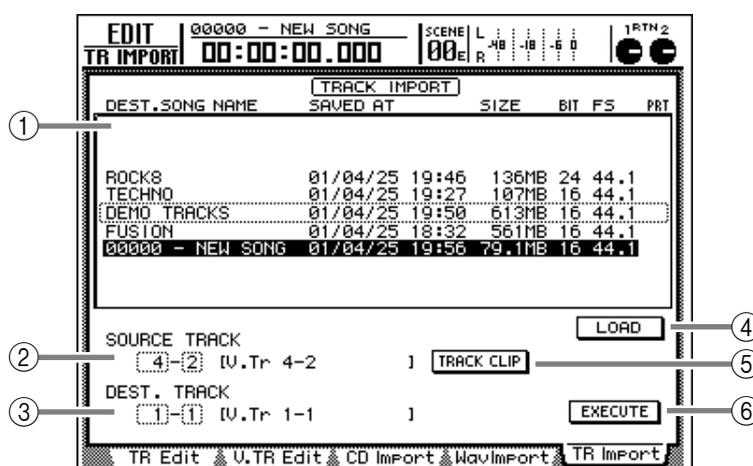
Screen functions

① Song list

This area displays a list of the songs saved in the internal hard disk. The highlighted row indicates the current song, and the row enclosed by a dotted line is the song selected as the import source. To select the import source song, move the cursor into the song list and turn the [DATA/JOG] dial.

The song list displays the following information.

- **DEST. SONG NAME**
  Song name (only the first 16 characters)
- **SAVED AT**............ Date and time at which the song was last saved
- **SIZE**..................... Song data size
- **BIT/FS** .... Song quantization and sampling rate
- **PRT**...................... Song protect on/off (→P.238)

⚠

- *Only a song with the same quantization and sampling rate as the current song can be selected as the import source.*
- *The current song cannot be selected.*

② SOURCE TRACK

From the song selected in the song list (①), select the track number (1–16) and virtual track number (1–8) of the track that you wish to import. The name of the selected track is displayed at the right.

⚠

- *This parameter will be valid only after you have used the LOAD button (④) to load the track information for the selected song.*
- *The track name is not included in the data that is imported.*

③ DEST. TRACK (destination track)

Specify the track number (1–16) and virtual track number (1–8) for the import destination track. The name of the selected track is displayed at the right.

⚠

This display will appear only after you have used the TRACK CLIP button (⑤) to register the desired track from the import source song.

④ LOAD button

When you move the cursor to this button and press the [ENTER] key, track information for the song selected in the track list will be loaded.

⑤ TRACK CLIP button

When you move the cursor to this button and press the [ENTER] key, the track selected in SOURCE TRACK (②) will be registered as the import source.

⚠

This button will be valid only after you have used the LOAD button (④) to load the track information for the song.

⑥ EXECUTE

This button executes the Track Import operation. For details on the procedure, refer to page 156.

⚠

- *This button will be valid only after you have used the TRACK CLIP button (⑤) to register the import source track.*
- *The keys of the transport section will have no effect in the TR Import page.*

EDIT screen

AUTOMIX screen

Main page

Make basic automix settings

Function

Make basic settings for recording and playing automix.

Key operation

- [AUTOMIX] key → [F1] (Main) key
- Repeatedly press the [AUTOMIX] key until the screen shown at the right appears.
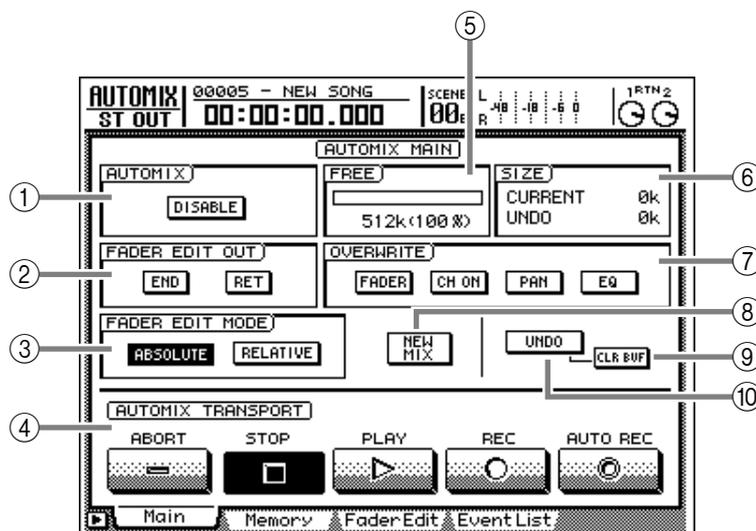
Screen functions

① **AUTOMIX**

Here you can switch automix on (ENABLE) or off (DISABLE). If this button is set to "DISABLE," automix cannot be recorded or played back.

⚠️ *When the song is in the initial state, no current automix exists, and therefore it will not be possible to switch the above button to "ENABLE." When you want to record automix for the first time, you must use the NEW MIX button (⑧) to create a new automix.*

② **FADER EDIT OUT**

Use the following two buttons to specify how the fader positions and parameter values will change when you stop recording automix.

- **END button**
If this button is on, the fader positions and parameter values at the moment you stop recording automix will remain valid until the end of automix.

- **RET button**
If this button is on, the faders will return to the previously-recorded positions when fader editing (operations that re-record previously-recorded fader movements) is ended. The time over which the faders return to their previous positions can be set in the Fader Edit page.

If this button is off, the fader positions at the time that recording ended will be maintained until the fader is moved.

✎ **Tip!**
Even when you are editing the faders, the AW2816 remembers the previously-recorded fader movements. If you leave the RET button turned on, the faders will return to the previously-recorded positions when you stop editing, which is convenient when you are editing just a portion of the fader events.

⚠️ *The on/off setting of the RET button does not affect parameters other than the faders.*

③ **FADER EDIT mode**

Use the following two buttons to select how the faders recorded in the automix will be edited.

- **ABSOLUTE button**
When this button is on, the previously-recorded fader movements will be erased as the new movements are recorded. Normally you will select this setting.

- **RELATIVE button**
When this button is on, the previously-recorded fader movements will be combined with the new fader movements as they are recorded. Use this setting when you want to move the faders up or down relative to the previously-recorded fader movements.

⚠️ *If the RELATIVE button is on and the RET button is on, switching the END button on/off will have no effect.*

FADER EDIT MODE = ABSOLUTE

Previously-recorded fader movement

Newly-recorded fader movement

Start recording   Stop recording

	RET = off	RET = on
END = off		
END = on		
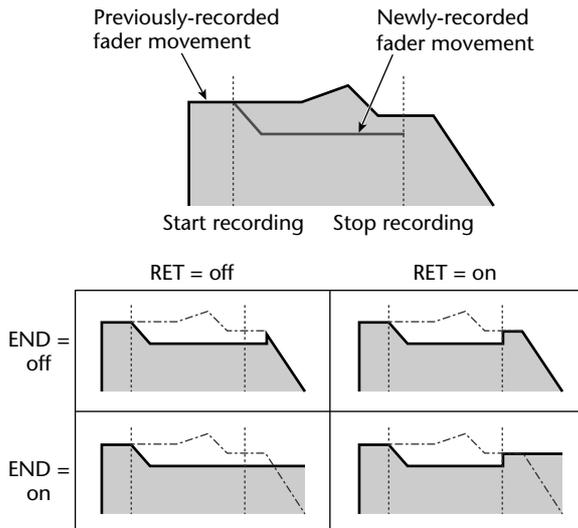
FADER EDIT MODE = RELATIVE

Previously-recorded fader movement

Newly-recorded fader movement

Start recording   Stop recording

	RET = off	RET = on
END = off		
END = on		
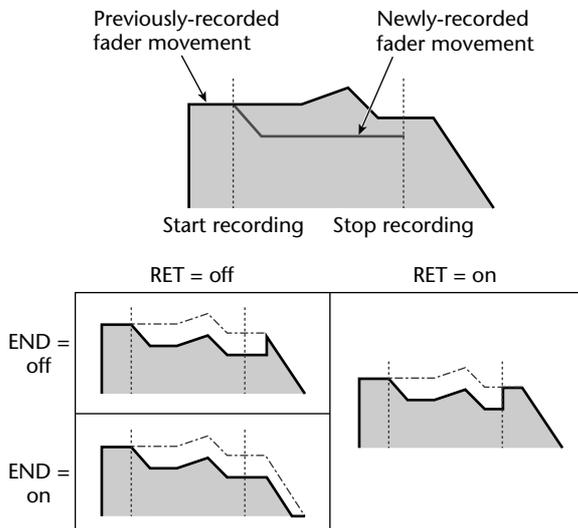
④ AUTOMIX TRANSPORT

Use the following five buttons to control automix recording and playback.

• ABORT button

This button stops recording automix and discards the changes that occurred. If you move the cursor to this button and press the [ENTER] key while recording automix, a popup window will ask you whether you want to discard the contents of the recorded automix. If you use this button while automix is playing, automix will stop.

• STOP button

This button stops recording/playback of automix. If you move the cursor to this button and press the [ENTER] key while recording automix, a popup window will ask you whether you want to update the recorded contents. Even if you use this button to stop the automix, the song will not stop.

• PLAY button

This button indicates the on/off status for automix start/stop. (Operating this button will not cause automix to begin.) If the AUTOMIX button (①) is set to "ENABLE" and automix has already been recorded, automix playback will begin when you press the [PLAY] key of the transport section, and the PLAY button will turn on (will light).

⚠

When automix is in record-ready mode, moving the cursor to the PLAY button during playback and pressing the [ENTER] key will cause automix recording to begin.

• REC (Record) button

When automix is stopped, moving the cursor to this button and pressing the [ENTER] key will cause the REC button to blink, and automix will be in record-ready mode. If you start the recorder running in this state, automix recording will begin. When recording ends, the REC button will also automatically turn off (will go dark). While automix is playing back, you can use this button in conjunction with the PLAY button to punch-in.

• AUTO REC button

When you move the cursor to this button and press the [ENTER] key, the AUTO REC button will light, and automix will be in record-ready mode. If you start the recorder running in this state, automix recording will begin automatically. However unlike the REC button, the AUTO REC button will not turn off (will not go dark) even when automix recording ends. To return to the Off state, move the cursor to this button once again and press the [ENTER] key.

📝 Tip!

For details on automix operation, refer to page 133.

⑤ FREE

This displays the amount of remaining automix memory in kilobytes and as a percentage.

⑥ SIZE

This indicates the size in kilobytes of the current automix (the automix that is currently operating) and of the undo buffer (dedicated memory for automix undo).

📝 Tip!

The undo buffer preserves the previously-recorded automix data. If you want to discard the most recently recorded automix and return to the previous state, use the UNDO button (⑩).

⑦ OVERWRITE

Use the following four buttons to select the parameters that will be recorded in the automix.

• FADER button

If this button is on, fader and AUX send fader operations of each channel will be recorded.

• CH ON (Channel on) button

If this button is on, [ON] key operations of each channel will be recorded.

• PAN button

If this button is on, pan/balance operations of each channel will be recorded.

• EQ button

If this button is on, EQ operations of each channel will be recorded.

Tip!

- *In addition to the above parameters, automix can also record library recall operations and scene recall operations. These recall operations will be recorded in automix regardless of the OVERWRITE (⑦) settings.*
- *If you want the [ON] key and fader operations in the REMOTE screen to be recorded in automix, turn on the FADER button and CH ON button in the OVERWRITE area.*

⑧ **NEW MIX button**

When you move the cursor to this button and press the [ENTER] key, the current automix will be erased and a new automix will be created.

⑨ **CLR. BUF (Clear buffer) button**

When you move the cursor to this button and press the [ENTER] key, the undo buffer will be cleared.

⚠ *When the undo buffer is cleared, it will no longer be possible to use the UNDO button (⑩) to return to the previous state.*

Tip!

If you are unable to record into the current automix because of insufficient automix memory, you may be able to increase the amount of free space by clearing the undo buffer.

⑩ **UNDO button**

When you move the cursor to this button and press the [ENTER] key, the automix will return to the previous state (the state prior to the most recent recording) ("Undo"). At this time, the last-recorded automix data will be saved in the undo buffer. If you execute Undo once again, the last-recorded automix data will return ("Redo").

⚠ *Automix undo/redo cannot be executed using the [UNDO]/[REDO] panel key.*

■ **Additional functions in the Main page**

In the Main page you can press the [SHIFT] key to assign the following functions to the [F1]–[F5] keys.
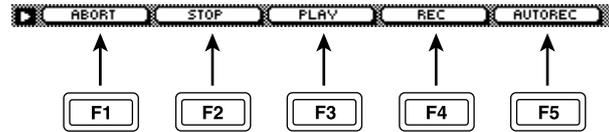
- **[F1] (ABORT) key**
  Stops automix recording and discards the changes. This is the same function as the ABORT button in the AUTOMIX TRANSPORT area (④).

- **[F2] (STOP) key**
  Stops automix recording/playback. This is the same function as the STOP button in the AUTOMIX TRANSPORT area (④).

- **[F3] (PLAY) key**
  Begins automix recording. This is the same function as the PLAY button in the AUTOMIX TRANSPORT area (④).

- **[F4] (REC) key**
  Enters automix record-ready mode. This is the same function as the REC button in the AUTOMIX TRANSPORT area (④).

- **[F5] (AUTOREC) key**
  Performs automatic automix recording. This is the same function as the AUTO REC button in AUTOMIX TRANSPORT area (④).

Memory page

Store/recall an automix

Function

Store automix data into memory, or recall a stored automix.

Key operation

- [AUTOMIX] key → [F2] (Memory) key
- Repeatedly press the [AUTOMIX] key until the screen shown at the right appears.
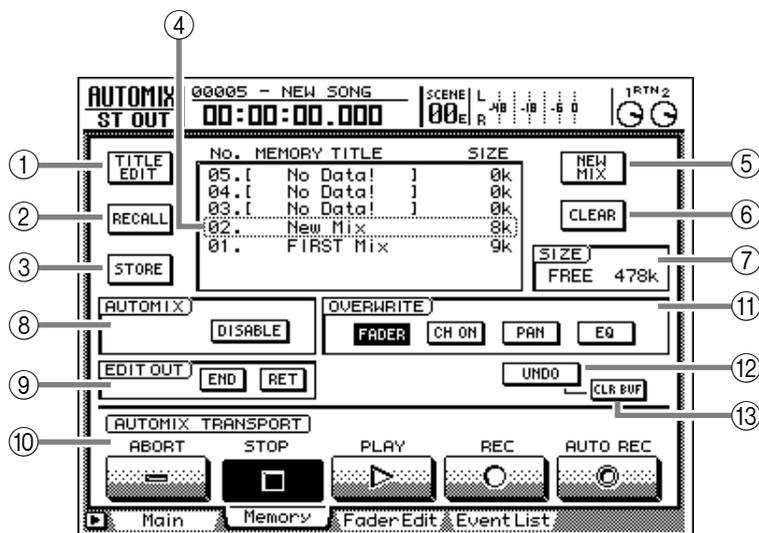
Screen functions

① TITLE EDIT button

This button edits the name (memory title) of an automix that has been stored in memory. When you move the cursor to this button and press the [ENTER] key, a TITLE EDIT popup window will appear, allowing you to edit the memory title.

⚠ *The memory title cannot be edited for a memory number in which no automix has been stored (displayed as "No Data!").*

② RECALL button

Recall the currently selected automix from the list.

⚠ *Memory numbers in which no automix has been stored (displayed as "No Data!") cannot be recalled.*

③ STORE button

This button stores the current automix into the number that is selected in the memory list. If you store into a number in which an automix has already been stored, the previous automix will be erased and overwritten by the new automix.

④ Memory list

This area lists the stored automixes. The line enclosed by the dotted frame is the memory number currently selected by the [DATA/JOG] dial. This list displays the following information.

- **NO.** .... The memory number 1–16.
- **MEMORY TITLE** ... The memory title. If no data has been stored, this will indicate "No Data!"
- **SIZE** .... This displays the size of each automix in kilobytes.

✎ **Tip!**
In this page, you can turn the [DATA/JOG] dial to select the memory number regardless of where the cursor is located.

⑤ NEW MIX button

When you move the cursor to this button and press the [ENTER] key, the current automix will be erased, and a new automix will be created.

⑥ CLEAR button

Erase the automix data that is currently selected in the memory list.

⑦ SIZE

This shows the free area of automix memory in kilobytes.

⑧ **AUTOMIX**

⑨ **EDIT OUT**

⑩ **AUTOMIX TRANSPORT**

⑪ **OVERWRITE**

⑫ **UNDO button**

⑬ **CLR BUF (Clear buffer) button**

These are the same functions as described in the Main page. Refer to the explanation on page 338 to 340.

■ Additional functions in the Memory page

In the Memory page you can press the [SHIFT] key to assign the following functions to the [F1]–[F3] keys.
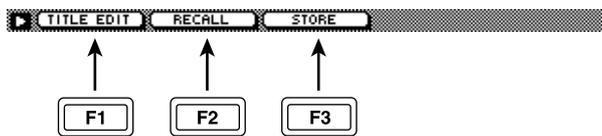
- **[F1] (TITLE EDIT) key**
  Use this to edit the name (memory title) of automix data saved in memory. This is the same function as the TITLE EDIT button (①).

- **[F2] (RECALL) key**
  Recall the automix that is currently selected by the cursor in the list. This is the same function as the RECALL button (②).

- **[F3] (STORE) key**
  Store the current automix data. This is the same function as the STORE button (③).

Fader Edit page

View fader movements as a bar graph

Function

Fader movements recorded in the automix are displayed as a bar graph. This is convenient when you want to re-record fader operations while you watch previously-recorded fader movements.

Key operation

- [AUTOMIX] key → [F3] (Fader Edit) key
- Repeatedly press the [AUTOMIX] key until the screen shown at the right appears.
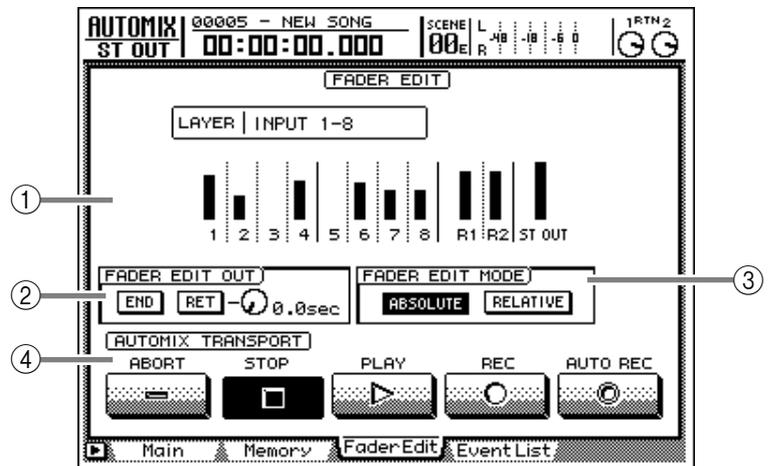
Screen functions

① Bar graph

This area shows the fader position of each channel as a bar graph. (Use the keys of the MIXING LAYER section to select the channels that are displayed.) For the fader being edited, both the previously-recorded position and the edited position are displayed, as shown in the following diagram. At this time, the arrow displayed beside the bar graph indicates the direction in which you can move the fader to return it to the previous position.

If you lower the fader from the previously-recorded position	If you raise the fader from the previously-recorded position
Previously-recorded fader position	New fader position
New fader position	Previously-recorded fader position
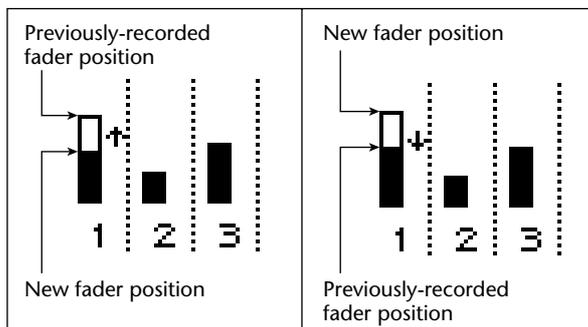
② FADER EDIT OUT

The END button and RET button in this area have the same function as the END/RET buttons in the Main page. Please refer to the explanation on page 338. If the RET button is on, the knob located at the right sets the time over which the faders will return to their original values after fader editing is ended.

③ FADER EDIT MODE

④ AUTOMIX TRANSPORT

These are the same functions as in the Main page. Refer to the explanation on page 338 to 340.

■ Additional functions in the Fader Edit page

In the Fader Edit page you can press the [SHIFT] key to assign the following functions to the [F1]–[F5] keys.
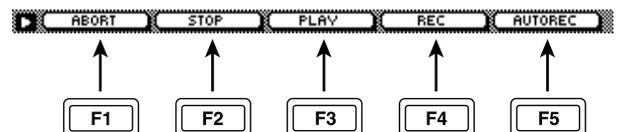
- [F1] (ABORT) key
- [F2] (STOP) key
- [F3] (PLAY) key
- [F4] (REC) key
- [F5] (AUTOREC) key

These are identical to the additional functions of the Main page.

AUTOMIX screen

Event List page

Edit individual events of the recorded automix data

Function

Edit individual events recorded in the automix, such as scene/library recall events or operations of the channel [ON] keys, faders, or EQ.

Key operation

• [AUTOMIX] key → [F4] (Event List) key

• Repeatedly press the [AUTOMIX] key until the screen shown at the right appears.
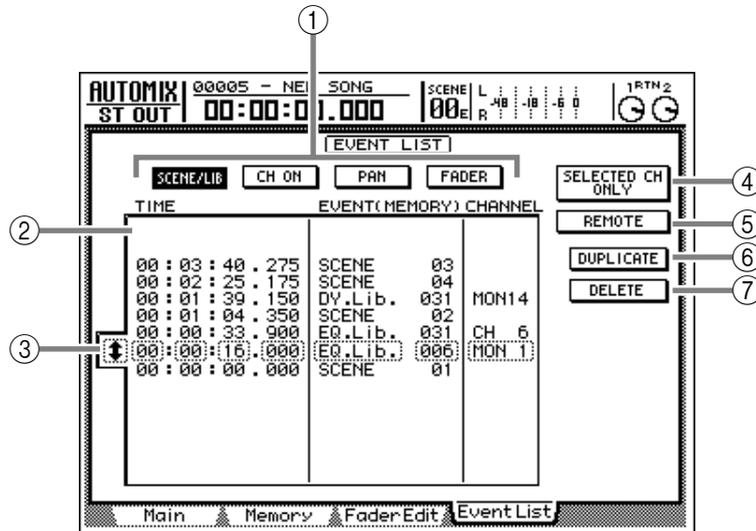
Screen functions

① **Event select buttons**
Use the following four buttons to select the type of recorded automix events that will be displayed in the event list (②).

• **SCENE/LIB (Scene/Library) button**
Scene memory and library recall operations will be displayed.

• **CH ON (Channel on) button**
[ON] key operations of each channel will be displayed.

• **PAN button**
Pan operations of each channel will be displayed.

• **FADER button**
Fader operations of each channel will be displayed.

② **Event list**
This area lists the events selected by the event select buttons (①). The line enclosed by the dotted frame is the event currently selected for edited. The columns of the event list display the following information.

• **TIME**
This column shows the location at which the event is recorded, in units of hours/minutes/seconds/milliseconds (the minimum step is 25 milliseconds). You can move the cursor to the numerical box for each unit and turn the [DATA/JOG] dial to modify the location of the selected event.

• **EVENT**
This column shows the type of recorded event. You can move the cursor to this area and turn the [DATA/JOG] dial to change the type of event. The displayed abbreviations and their meanings are as follows.

■ **Scene/Library events**

SCENE xx .... Scene memory (number xx) recall operation

EQ.Lib.xxx.......... EQ library (number xxx) recall operation

DY.Lib.xxx .... Dynamics library (number xxx) recall operation

EF.Lib.xxx .... Effect library (number xxx) recall operation

CH.Lib.xx .... Channel library (number xx) recall operation

■ **Channel On events**

ON/OFF .... [ON] key on/off operation

■ **Pan events**

L16–C–R16......... Pan position (far left – center – far right)

■ **Fader events**

–∞/x.x–6.0/x.x .... Fader position (dB)/time length of the change from that position to the next position (x.x seconds)

■ CHANNEL

This column shows the channel of each event. (This information is not displayed for scene number events.) You can move the cursor to this area and turn the [DATA/JOG] dial to change the channel. The displayed abbreviations and their meanings are as follows.

ST OUT .... Stereo output channel

CH 1–CH 8 .... Input channel 1–8

MON 1–MON16 . Monitor channel 1–16

RTN 1/RTN 2 .... Return channel 1/2

⚠

- *Events are automatically sorted in order of time from the beginning of the song. Thus, the displayed order of the events may change if you edit the TIME field.*
- *The time (x.x) seconds shown for a fader event indicates the time over which the fader moves (from the location at which fader recording ended) back to its original position, when recording was performed with the FADER EDIT OUT "RET" button turned on. (In normal operation, this will be recorded as 0.0 seconds. Alternatively, if the Fader Edit page FADER EDIT OUT "RET" button is on, and a time has been specified for the fader to return to its original position, that time will be recorded.) To edit this value, move the cursor to the event display area, and hold down the [ENTER] key while you turn the [DATA/JOG] dial.*

③ **Event selection cursor**

Move the cursor to this location and turn the [DATA/JOG] dial to select the event that you want to edit.

④ **SELECTED CH ONLY (Selected channel only) button**

If this button is on, the event list will display only events of the channel selected by its [SEL] key.

⑤ **REMOTE button**

If this button is on, REMOTE screen operations ([ON] key and fader operations) recorded in automix will be displayed as events. The type of events that are displayed can be selected by the CH ON button and FADER button in the event select button area (①).

When the REMOTE button is on, the EVENT/CHANNEL column of the event list will display the following contents.

- **EVENT**

ON/OFF .... [ON] key on/off

00–7F .... Fader position (hexadecimal value corresponding to 0–127)

- **CHANNEL**

A - 1–8 .... Remote A page channels 1–8

B - 1–8 .... Remote B page channels 1–8

C - 1–8 .... Remote C page channels 1–8

D - 1–8 .... Remote D page channels 1–8

⚠

- *The REMOTE screen operations recorded in automix consist only of the operations of the [ON] keys and the faders. Automix does not record the MIDI messages that are transmitted. If, after recording [ON] key and fader operations in the REMOTE screen, you change the MIDI messages that are assigned to the [ON] keys or faders, the new MIDI messages will be used.*
- *When the REMOTE button (⑤) is on, the SELECTED CH ONLY button (④), SCENE/LIB button, and PAN button will have no effect.*

⑥ **DUPLICATE button**

When you move the cursor to this button and press the [ENTER] key, the event selected in the event list will be copied to the same location.

⑦ **DELETE button**

When you move the cursor to this button and press the [ENTER] key, the event selected in the event list will be deleted.

SCENE screen

Scene Mem page

Recall or store a scene

Function

The current settings of the AW2816 can be stored into memory as a scene, and a stored scene can be recalled.

Key operations

- [SCENE] key → [F1] (Scene Mem) key
- Repeatedly press the [SCENE] key until the screen shown at the right appears.
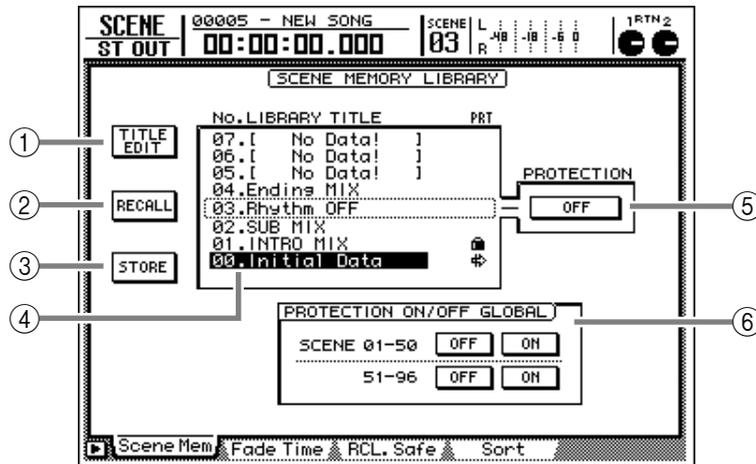
Screen functions

① **TITLE EDIT button**

This button edits the name (scene name) of a stored scene. Move the cursor to this button and press the [ENTER] key, and a TITLE EDIT popup window will appear, allowing you to edit the scene name.

⚠️ *It is not possible to edit the scene name of scene number 0, scene numbers for which PROTECTION is turned on, or scene numbers in which no scene has been stored (displayed as "No Data!").*

② **RECALL button**

This button recalls the scene that is currently selected in the library list. This is the same function as the [RECALL] key in the SCENE MEMORY section.

⚠️ *Scene numbers in which no scene has been stored (displayed as "No Data!") cannot be recalled.*

💡 **Tip!** *If the AUTO SCENE NAME DISPLAY button has been turned on in the UTILITY screen/Prefer.1 page, the scene name will be displayed for a time in the upper right of the screen after the scene is recalled. (The length of time that the name is displayed can be set by the SCENE NAME DISPLAY TIME setting in the same page.)*

③ **STORE button**

This button stores the current scene into the number selected in the library list. If you select a scene number that has already been stored, executing the Store operation will cause the previous scene to be overwritten by the new scene. This is the same function as the [STORE] key in the SCENE MEMORY section.

The following parameters are stored as a scene.

- **Mix parameters**
  - Fader positions of all channels (input channels 1–8, monitor channels 1–16, return channels 1/2, stereo output channel)
  - Send levels sent from all channels to AUX buses 1–6
  - Bus (BUS 1–8, AUX buses 1–16) master levels
  - [ON] key settings of all channels
  - Attenuation settings of all channels
  - Phase settings of all channels
  - EQ settings of all channels
  - Pan/balance settings of all channels
  - Routing settings of all channels
  - Fader group settings of all channels
  - Mute group settings of all channels
  - Pairing settings of all channels
  - Dynamics processor settings of all channels
  - Delay settings of all channels

- **Effect parameters**
  - Parameter settings for effects 1/2
- **Other**
  - Scene name
  - Fader recall fade time
  - Input/output patch and insert settings

⚠ *It is not possible to store to scene number 0, or to a scene for which memory protect has been turned on.*

④ **Library list**

This area lists the stored scenes. The line enclosed by the dotted border is the scene currently selected by the [DATA/JOG] dial, and the high-lighted line is the last-recalled scene. The columns of this list show the following information.

- **NO.**..................... The scene number 0–96.
- **LIBRARY TITLE** .... The scene name. If no scene has been stored, this will indicate "No Data!"
- **PRT**..................... Recall-only scene are indicated by the "⊹" symbol, and scene for which memory protect has been set are indicated by the "🔒" symbol.

✎ **Tip!**

In this page, you can turn the [DATA/JOG] dial to select a scene regardless of where the cursor is located. You can also use the [▼]/[▲] keys of the SCENE MEMORY section to select a scene.

⑤ **PROTECTION**

This button sets/cancels memory protection for the currently selected scene. Scene numbers for which memory protection has been set cannot be modified by Store operations, nor can their scene name be edited.

⚠ *It is not possible to set memory protection for a scene in which nothing has been stored.*

⑥ **PROTECTION ON/OFF GLOBAL**

Turn memory protect on/off for all scene numbers 1–50/51–96.

■ Additional functions in the Scene Mem page

In the Scene Mem page you can press the [SHIFT] key to assign the following functions to the [F1]–[F3] keys.
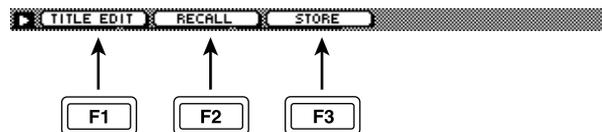
- **[F1] (TITLE EDIT) key**
  Edits the name (scene name) of a stored scene. This is the same function as the TITLE EDIT button (①).

- **[F2] (RECALL) key**
  Recalls the scene that is selected in the library list. This is the same function as the RECALL button (②) and the [RECALL] key of the SCENE MEMORY section.

- **[F3] (STORE) key**
  Stores the current scene. This is the same function as the STORE button (③) and the [STORE] key of the SCENE MEMORY section.

Fade Time page

Specify the fade time

Function

Specify the time over which the faders will reach their new locations when a scene is recalled.

Key operation

• [SCENE] key → [F2] (Fade Time) key

• Repeatedly press the [SCENE] key until the screen shown at the right appears.

①

```
SCENE    00005 - NEW SONG      SCENE  L                    1 RTN 2
ST OUT   00:00:00.000           00    R  -48  -18  -6  0

              ┌──────── FADE TIME SETTING ────────┐ [sec]
              1     2     3     4     5     6     7     8
INPUT       [0.0] [0.0] [0.0] [0.0] [0.0] [0.0] [0.0] [0.0]

              1     2     3     4     5     6     7     8
REC         [0.0] [0.0] [0.0] [0.0] [0.0] [0.0] [0.0] [0.0]
MONI          9    10    11    12    13    14    15    16
            [0.0] [0.0] [0.0] [0.0] [0.0] [0.0] [0.0] [0.0]

            RTN1  RTN2         ST OUT
           [0.0] [0.0]        [0.0]

  ▶ Scene Mem  Fade Time  RCL. Safe   Sort
```
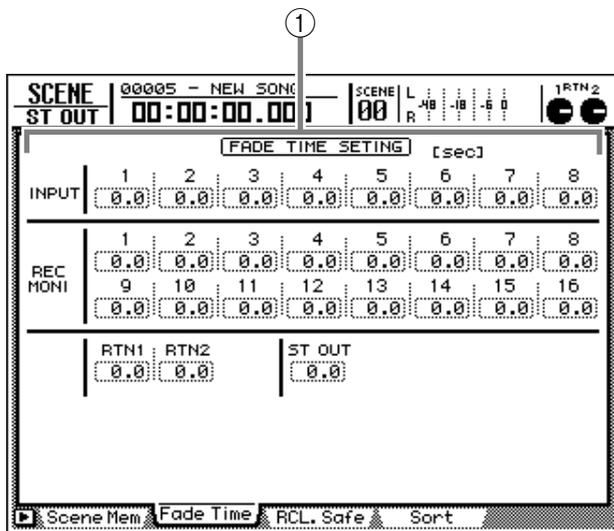
Screen functions

① **FADE TIME SETTING**

This specifies the time over which the faders of each channel will move to their new locations (fade time) when a scene is recalled. The fade time can be set in 0.1 second steps over a range of 0.0–25.0 seconds. Fade time can be specified for the following channels.

• Input channels 1–8

• Monitor channels 1–16

• Return channels 1/2

• Stereo output channel

⚠

• *The fade time is memorized for each scene. After setting the fade time, you must be sure to store the scene.*

• *The fade time must be set for the recall destination scene. Even if the fade time has been specified for the current scene, there will be no effect if the setting of the recalled scene is 0.0 seconds.*

■ Additional functions in the Fade Time page

In the Fade Time page you can press the [SHIFT] key to assign the following additional function to the [F5] key.

```
 ▶                                        COPY TO ALL
                                              ↑
                                           [ F5 ]
```

• **[F5] (COPY TO ALL) key**
Copy the fade time setting selected by the cursor to all other channels.

RCL. Safe page

Fader Recall Safe settings

Function

Exclude the faders of specific channels from recall operations when a scene is recalled.

Key operation

• [SCENE] key → [F3] (RCL. Safe) key

• Repeatedly press the [SCENE] key until the screen shown at the right appears.
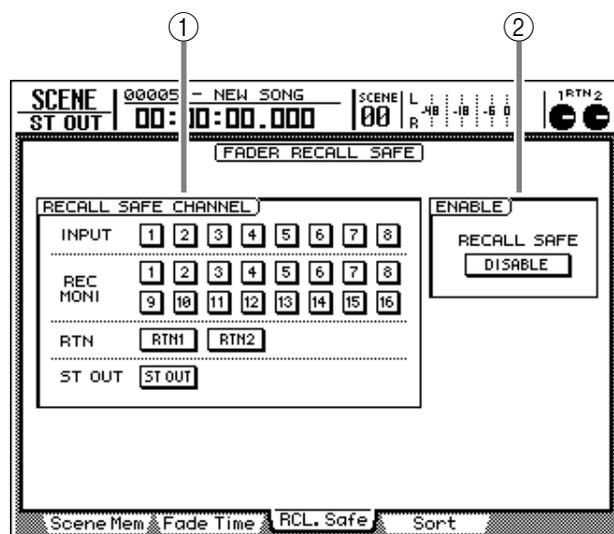
Screen functions

① **RECALL SAFE CHANNEL**
By turning on buttons in this area, you can set the corresponding channels to Recall Safe. The faders of channels set to Recall Safe will maintain their current position even when a scene is recalled. The following channels can be set to Fader Recall Safe.

• Input channels 1–8

• Monitor channels 1–16

• Effect return channels 1/2

• Stereo output channel

Tip!

• *Fader Recall Safe will take effect if the ENABLE area button is set to "ENABLE."*
• *Fader Recall Safe settings are common to all scenes.*

⚠️

• *Recall Safe settings are not linked for paired channels. This means that if one channel of a pair is set to Recall Safe, the faders of the pair may be in different positions immediately after a scene is recalled. However even in this case, moving one of the faders will cause the other fader to follow immediately.*
• *Only the fader of the channel will be excluded from recall operations. Other mix parameters such as pan, EQ, and dynamics processor settings will change according to the scene that is recalled.*

② **ENABLE**
Move the cursor to this button and press the [ENTER] key to specify whether the Fader Recall Safe function will be enabled (ENABLE) or not (DISABLE).

SCENE screen

Sort page

Change the order of scenes

Function

Here you can change the order of the stored scenes. This is convenient when you want to arrange scenes in the order in which they will be recalled.

Key operation

- [SCENE] key → [F4] (Sort) key
- Repeatedly press the [SCENE] key until the screen shown at the right appears.
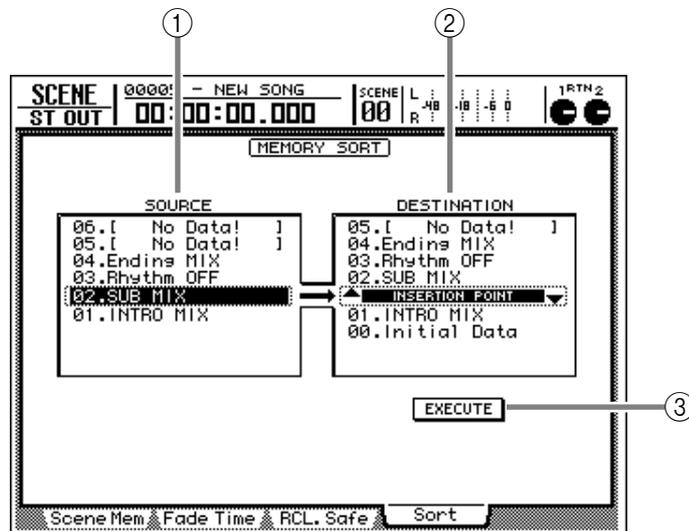
Screen functions

① SOURCE

The list in this area shows the current state of the scene memories. To select the move source scene, move the cursor to this area and turn the [DATA/JOG] dial.

⚠

Scene number 0 cannot be moved.

Tip!

Scenes in which nothing has been stored (displayed as "No Data!") and memory-protected scenes can also be selected as the move source scene.

② DESTINATION

In this area you can select the position to which you want to move the scene that is selected as the move source in the SOURCE list. Move the cursor to this area, and turn the [DATA/JOG] dial to specify the destination (the row displayed as "INSERTION POINT").

③ EXECUTE button

When you move the cursor to this button and press the [ENTER] key, the scene will be moved to the specified position in the list. When the move is executed, the lists in the SOURCE area (①) and DESTINATION area (②) will be updated automatically.

METER screen

Meter 1 page

Monitor the input/output levels of tracks 1–16 (1)

Function

Here you can monitor the input/output levels of tracks 1–16 and the output level of the stereo output channel. In this page you can also select recording tracks and make input monitor settings.

Key operations

- [METER] key → [F1] (Meter 1)
- Repeatedly press the [METER] key until the desired screen appears.
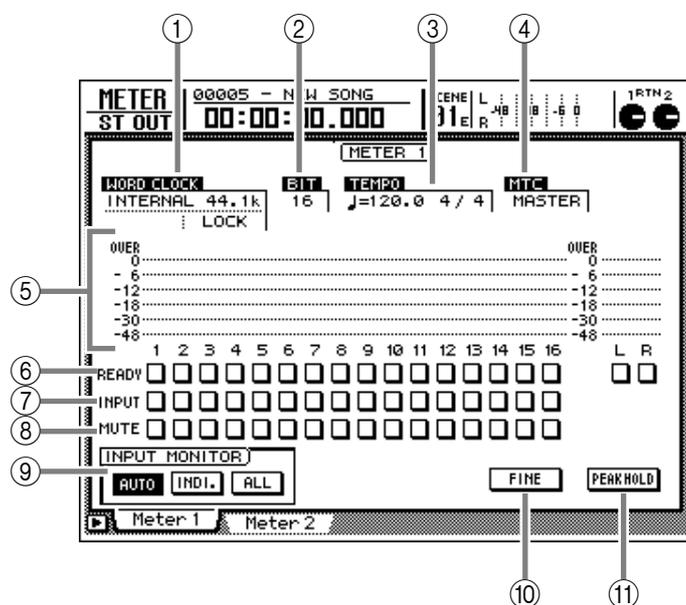
Screen functions

① **WORD CLOCK**
This indicates the word clock source (INTERNAL/EXTERNAL) and sampling frequency (48k/44.1k) on which the AW2816 is currently operating. Immediately below this, the display will indicate "LOCK" if the AW2816 is locked to the word clock source, and "VARI" if vari-pitch (SETUP screen/D.in Setup page) is enabled.

② **BIT**
This indicates the number of quantization bits (16/24) of the current song.

③ **TEMPO**
This displays the current tempo and time signature. The tempo and time signature (tempo map) of the song can be specified in the SONG screen/Tempo Map page.

④ **MTC**
This indicates whether the AW2816 is currently set as the MTC master (MASTER) or MTC slave (SLAVE). The MTC master/slave setting is made in the MIDI screen/MIDI Setup 1 page.

⑤ **Level meters**
This area displays the input/output levels of tracks 1–16, and the output level of the stereo output channel (L/R).

Tip!

- *Whether the track 1–16 level meters will display input or output levels will depend on the settings of the INPUT MONITOR area (⑨), the state of the READY buttons (⑥), and on the current running mode.*
- *The stereo output channel level meters will always display the post-fader output level.*
- *You can use the FINE button (⑩) to select one of two ranges for the level meter display: –48 to 0 dB or –18 to 0 dB.*

⑥ **READY buttons**
These buttons set/cancel record-ready mode for tracks 1–16, and have the same function as the TRACK REC SELECT [1]–[16]/[ST] keys.

When the transport is stopped, you can move the cursor to one of these buttons and press the [ENTER] key to switch the button display between "☐" and "**R**." This indicates that the corresponding track is in record-ready mode. If you then begin recording, the button display will change to "**R**".

⑦ **INPUT buttons**
These buttons indicate the type of signal that can be monitored for tracks 1–16. When the button is displayed as "☐," the track playback sound can be monitored. When the button is displayed as "**I**," the signal sent to the input of the track (the input source) can be monitored. Which of these two signals will be monitored for each track will depend on the settings of the INPUT MONITOR area (⑨),

the state of the REC TRACK SELECT [1]–[16] keys and READY buttons (⑥), and on the current running mode.

Input monitor

Recorder section   Mixer section

Tip!
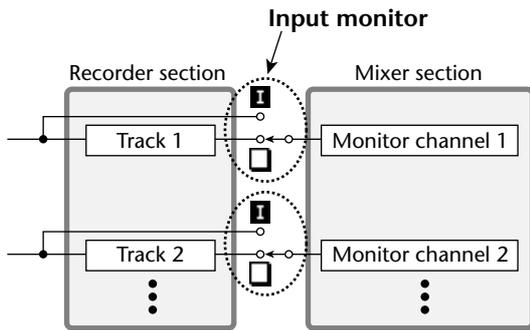
When the INDI. button of the INPUT MONITOR area (⑨) is on, you can move the cursor to these buttons and press the [ENTER] key to select for each track the type of signal that will be monitored.

⑧ **MUTE buttons**

These buttons indicate the mute on/off status of tracks 1–16 as "■" or "□" symbols respectively. You can move the cursor to this area and press the [ENTER] key to switch muting on/off. Track mute on/off settings do not affect the [ON] keys of the monitor channels.

⚠

- *On the AW2816, the number of tracks that can play back simultaneously may be limited depending on the number of tracks that are set to record-ready mode. In this case, muting will forcibly be turned on for tracks that cannot play back.*
- *If you want to defeat muting for a track that was forcibly muted, you must first mute another track. If you attempt to defeat muting without increasing the number of muted tracks, a message of "CANNOT CHANGE MUTE" will appear, and the operation will not occur.*
- *By pressing the [ALL SAFE] key, you can defeat record-ready mode and muting for all tracks.*

⑨ **INPUT MONITOR**

Use the following three buttons to select the input monitor mode (the way in which input monitoring will be switched for each track).

• **AUTO button**

When this button is on, the monitored signal for record-ready tracks will change automatically depending on the running mode, as shown in the following table (Auto Input Monitor). Use this method for normal recording or for punch-in/out recording.

Running mode	Monitored signal
Stopped	Track input source
Playing	Track playback
Recording	Track input source

• **INDI. (Individual) button**

When this button is on, the input monitor setting can be changed for each track individually, regardless of the running mode or the record-ready state (Individual Input Monitor). Move the cursor to an INPUT button (⑦) and press the [ENTER] key to switch the input monitor setting of the corresponding track.

• **ALL button**

When this button is on, the input source will be monitored for all tracks, regardless of the running mode or the state of the REC TRACK SELECT [1]–[16] keys (All Input Monitor).

⚠

When the AUTO button/ALL button are on, it will not be possible to manually change the setting of the INPUT buttons.

⑩ **FINE button**

When this button is on, the level meter (⑤) display range will switch from –48–0 dB to –18–0 dB. This setting is convenient when you want to make detailed level adjustments in the range near 0 dB.

Tip!

The FINE button setting affects only the level meters in the Meter 1/Meter 2 pages.

⑪ **PEAK HOLD button**

This button sets/cancels the peak hold function of the level meters. When this button is turned on, peak hold will be enabled, and a "▭" symbol indicating the peak level will be maintained in the level meter.

Tip!

The peak hold setting affects the level meters displayed in pages other than the EQ/ATT/GRP screen and the DYN/DLY screen.

■ **Additional functions in the Meter 1 page**

In the Meter 1 page, holding down the [SHIFT] key will assign the following additional function to the [F1] key.

- **[F1] (PEAK HOLD) key**

  Sets/cancels peak hold. This is the same function as the PEAK HOLD button (⑪).

Meter 2 page

Monitor the input/output levels of tracks 1–16 (2)

Function

As in the Meter 1 page, you can monitor the input/output levels of tracks 1–16 and the output level of the stereo output channel. In this page you can also select the counter display units (time/time code/measures), and switch between absolute time display (ABS) or relative time display (REL).

Key operations

- [METER] key → [F2] (Meter 2)
- Repeatedly press the [METER] key until the desired screen appears.
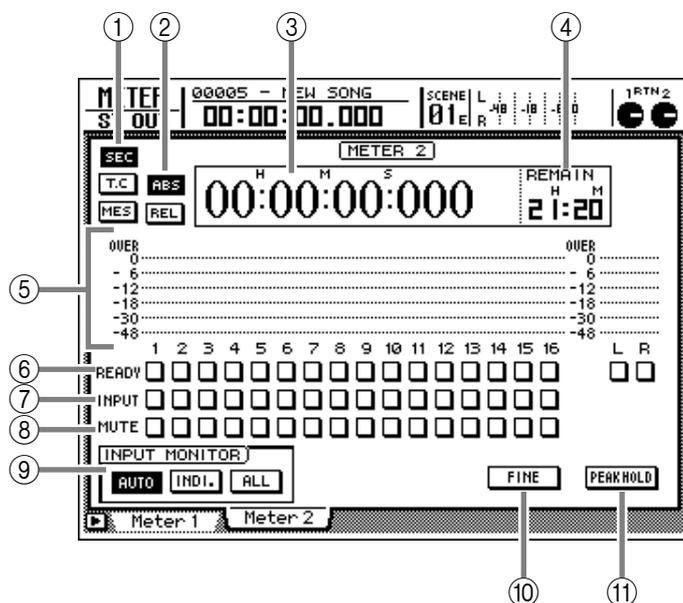
Screen functions

① Counter select
Use the following three buttons to select the counter display units.

• SEC button
The counter will be displayed in time units (hours/minutes/seconds/milliseconds).

• T.C button
The counter will be displayed in timecode units (hours/minutes/seconds/frames/sub-frames).

• MES button
The counter will be displayed in measure units (measures/beats/ticks).

Tip!

- *These buttons are independent of the SECOND/TIME/MEASURE buttons in the DISPLAY area of the SONG screen/Setting page. You can select a display method that is different than the counter displayed at the top of the screen.*
- *When you switch the counter to Measure display, the ABS/REL buttons (②) will be grayed. Even when the ABS/REL buttons are grayed you will still be able to switch them, but the measure display will not be affected. However, since the start point and end point displayed in the TRACK screen/Mark Adj. page are always displayed in time code units, they will be affected by the setting of the ABS/REL buttons.*

② ABS/REL buttons
When time or time code are selected as the counter display units, these buttons let you select either absolute time or relative time. Absolute time display is selected when the ABS button is on, and relative time display is selected when the REL button is on.

Tip!

If you want to set a desired location of the song to be "relative zero," locate to the desired location, and then hold down the [SET] key and press the [RTZ] key. The REL button will automatically be turned on, and the counter will switch to relative time display.

③ Counter
This counter indicates the current location in the song. This is the same function as the counter displayed in the top line of the screen.

④ REMAIN (Remaining time)
This indicates the amount of time remaining for recording (hours: minutes). This time will change according to the number of tracks that are in record-ready mode.

⑤ **Level meters**

⑥ **READY buttons**

⑦ **INPUT buttons**

⑧ **MUTE buttons**

⑨ **INPUT MONITOR**

⑩ **FINE button**

⑪ **PEAK HOLD button**

These are the same functions as in the Meter 1 page.
For details refer to page 351 to 352.

■ **Additional functions in the Meter 2 page**

In the Meter 2 page, holding down the [SHIFT] key
will assign the following additional function to the
[F1] key.

- **[F1] (PEAK HOLD) key**
  Sets/cancels peak hold. This is the same function
  as the PEAK HOLD button (⑩).

AW2816

Appendix

Preset EQ Program Parameters

No	Name		Parameter				Description
			LOW	L-MID	H-MID	HIGH	
001	Bass Drum 1		PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes the low range of the bass drum and the attack created by the beater.
		Q	1.2	10	0.9		
		F	99Hz	265Hz	1.05kHz	5.33kHz	
		G	+3.5dB	−3.5dB	0.0dB	+4.0dB	
002	Bass Drum 2		PEAKING	PEAKING	PEAKING	LPF	Creates a peak around 80Hz, producing a tight, stiff sound.
		Q	1.4	4.5	2.2		
		F	79Hz	397Hz	2.52kHz	12.6kHz	
		G	+8.0dB	−7.0dB	+6.0dB	ON	
003	Snare Drum 1		PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes snapping and rimshot sounds.
		Q	1.2	4.5	0.11		
		F	132Hz	1.00kHz	3.17kHz	5.04kHz	
		G	−0.5dB	0.0dB	+3.0dB	+4.5dB	
004	Snare Drum 2		L.SHELF	PEAKING	PEAKING	PEAKING	Emphasizes the ranges of that classic rock snare drum sound.
		Q		10	0.7	0.1	
		F	177Hz	334Hz	2.37kHz	4.00kHz	
		G	+1.5dB	−8.5dB	+2.5dB	+4.0dB	
005	Tom-tom 1		PEAKING	PEAKING	PEAKING	PEAKING	Emphasizes the attack of tom-toms, and creates a long, "leathery" decay.
		Q	1.4	10	1.2	0.28	
		F	210Hz	667Hz	4.49kHz	6.35kHz	
		G	+2.0dB	−7.5dB	+2.0dB	+1.0dB	
006	Cymbal		L.SHELF	PEAKING	PEAKING	H.SHELF	Emphasizes the attack of crash cymbals, extending the "sparkling" decay.
		Q		8	0.9		
		F	105Hz	420Hz	1.05kHz	13.4kHz	
		G	−2.0dB	0.0dB	0.0dB	+3.0dB	
007	High Hat		L.SHELF	PEAKING	PEAKING	H.SHELF	Use on a tight high-hat, emphasizing the mid to high range.
		Q		0.5	1		
		F	94Hz	420Hz	2.82kHz	7.55kHz	
		G	−4.0dB	−2.5dB	+1.0dB	+0.5dB	
008	Percussion		L.SHELF	PEAKING	PEAKING	H.SHELF	Emphasizes the attack and clarifies the high-range of instruments, such as shakers, cabasas, and congas.
		Q		4.5	0.56		
		F	99Hz	397Hz	2.82kHz	16.9kHz	
		G	−4.5dB	0.0dB	+2.0dB	0.0dB	
009	E.Bass 1		L.SHELF	PEAKING	PEAKING	H.SHELF	Makes a tight electric bass sound by cutting very low frequencies.
		Q		5	4.5		
		F	35Hz	111Hz	2.00kHz	4.00kHz	
		G	−7.5dB	+4.5dB	+2.5dB	0.0dB	
010	E.Bass 2		PEAKING	PEAKING	PEAKING	H.SHELF	Unlike program 009, this emphasizes the low range of the electric bass.
		Q	0.1	5	6.3		
		F	111Hz	111Hz	2.24kHz	4.00kHz	
		G	+3.0dB	0.0dB	+2.5dB	+0.5dB	
011	Syn.Bass 1		PEAKING	PEAKING	PEAKING	H.SHELF	Use on a synth bass with emphasized low range.
		Q	0.1	8	4.5		
		F	83Hz	944Hz	4.00kHz	12.6kHz	
		G	+3.5dB	+8.5dB	0.0dB	0.0dB	

No	Name	Parameter				Description
		LOW	L-MID	H-MID	HIGH	
012	Syn.Bass 2	PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes the attack that is peculiar to a synth bass.
		Q 1.6	8	2.2		
		F 125Hz	177Hz	1.12kHz	12.6kHz	
		G +2.5dB	0.0dB	+1.5dB	0.0dB	
013	Piano 1	L.SHELF	PEAKING	PEAKING	H.SHELF	This is used to make a piano sound brighter.
		Q	8	0.9		
		F 94Hz	944Hz	3.17kHz	7.55kHz	
		G −6.0dB	0.0dB	+2.0dB	+4.0dB	
014	Piano 2	PEAKING	PEAKING	PEAKING	H.SHELF	Emphasize the attack and low range of the piano sound by using a compressor.
		Q 5.6	10	0.7		
		F 223Hz	595Hz	3.17kHz	5.33kHz	
		G +3.5dB	−8.5dB	+1.5dB	+3.0dB	
015	E.G.Clean	PEAKING	PEAKING	PEAKING	H.SHELF	Use for line-recording an electric guitar or semi-acoustic guitar to get a slightly hard sound.
		Q 0.18	10	6.3		
		F 265Hz	397Hz	1.33kHz	4.49kHz	
		G +2.0dB	−5.5dB	+0.5dB	+2.5dB	
016	E.G.Crunch 1	PEAKING	PEAKING	PEAKING	PEAKING	Adjusts the tonal quality of a slightly distorted guitar sound.
		Q 8	4.5	0.63	9	
		F 140Hz	1.00kHz	1.88kHz	5.65kHz	
		G +4.5dB	0.0dB	+4.0dB	+2.0dB	
017	E.G.Crunch 2	PEAKING	PEAKING	PEAKING	H.SHELF	This is a variation on program 016.
		Q 8	0.4	0.16		
		F 125Hz	445Hz	3.36kHz	19.0kHz	
		G +2.5dB	+1.5dB	+2.5dB	0.0dB	
018	E.G.Distortion 1	L.SHELF	PEAKING	PEAKING	H.SHELF	Makes a heavily distorted guitar sound clearer.
		Q	9	10		
		F 354Hz	944Hz	3.36kHz	12.6kHz	
		G +5.0dB	0.0dB	+3.5dB	0.0dB	
019	E.G.Distortion 2	L.SHELF	PEAKING	PEAKING	H.SHELF	This is a variation on program 018.
		Q	10	4		
		F 315Hz	1.05kHz	4.23kHz	12.6kHz	
		G +6.0dB	−8.5dB	+4.5dB	+4.0dB	
020	A.G.Stroke 1	PEAKING	PEAKING	PEAKING	H.SHELF	Emphasizes the bright tones of an acoustic guitar.
		Q 0.9	4.5	3.5		
		F 105Hz	1.00kHz	1.88kHz	5.33kHz	
		G −2.0dB	0.0dB	+1.0dB	+4.0dB	
021	A.G.Stroke 2	L.SHELF	PEAKING	PEAKING	H.SHELF	This is a variation on program 020. You can also use it for the electric gut guitar.
		Q	9	4.5		
		F 297Hz	749Hz	2.00kHz	3.56kHz	
		G −3.5dB	−2.0dB	0.0dB	+2.0dB	
022	A.G.Arpeggio 1	L.SHELF	PEAKING	PEAKING	PEAKING	Corrects arpeggio technique of an acoustic guitar.
		Q	4.5	4.5	0.12	
		F 223Hz	1.00kHz	4.00kHz	6.72kHz	
		G −0.5dB	0.0dB	0.0dB	+2.0dB	

No	Name	Parameter				Description
		LOW	L-MID	H-MID	HIGH	
023	A.G.Arpeggio 2	L.SHELF	PEAKING	PEAKING	H.SHELF	This is a variation on program 022.
		Q	7	4.5		
		F 177Hz	354Hz	4.00kHz	4.23kHz	
		G 0.0dB	−5.5dB	0.0dB	+4.0dB	
024	Brass Section	PEAKING	PEAKING	PEAKING	PEAKING	Use with trumpets, trombones, or sax. With one instrument, adjust the HIGH or H-MID frequency.
		Q 2.8	2	0.7	7	
		F 88Hz	841Hz	2.11kHz	4.49kHz	
		G −2.0dB	+1.0dB	+1.5dB	+3.0dB	
025	Male Vocal 1	PEAKING	PEAKING	PEAKING	PEAKING	Use as a template for male vocal. Adjust the HIGH or H-MID setting according to the voice quality.
		Q 0.11	4.5	0.56	0.11	
		F 187Hz	1.00kHz	2.00kHz	6.72kHz	
		G −0.5dB	0.0dB	+2.0dB	+3.5dB	
026	Male Vocal 2	PEAKING	PEAKING	PEAKING	H.SHELF	This is a variation on program 025.
		Q 0.11	10	5.6		
		F 167Hz	236Hz	2.67kHz	6.72kHz	
		G +2.0dB	−5.0dB	+2.5dB	+4.0dB	
027	Female Vocal 1	PEAKING	PEAKING	PEAKING	PEAKING	Use as a template for female vocal. Adjust the HIGH or H-MID setting according to the voice quality.
		Q 0.18	0.45	0.56	0.14	
		F 118Hz	397Hz	2.67kHz	5.99kHz	
		G −1.0dB	+1.0dB	+1.5dB	+2.0dB	
028	Female Vocal 2	L.SHELF	PEAKING	PEAKING	H.SHELF	This is a variation on program 027.
		Q	0.16	0.2		
		F 111Hz	334Hz	2.00kHz	6.72kHz	
		G −7.0dB	+1.5dB	+1.5dB	+2.5dB	
029	Chorus & Harmony	PEAKING	PEAKING	PEAKING	PEAKING	Use as a template for a chorus. It makes the entire chorus much brighter.
		Q 2.8	2	0.7	7	
		F 88Hz	841Hz	2.11kHz	4.49kHz	
		G −2.0dB	+1.0dB	+1.5dB	+3.0dB	
030	Total EQ 1	PEAKING	PEAKING	PEAKING	H.SHELF	Use on the STEREO bus during mixdown. For more effect, try it with a compressor.
		Q 7	2.2	5.6		
		F 94Hz	944Hz	2.11kHz	16.0kHz	
		G −0.5dB	0.0dB	+3.0dB	+6.5dB	
031	Total EQ 2	PEAKING	PEAKING	PEAKING	H.SHELF	This is a variation on program 030.
		Q 7	2.8	5.6		
		F 94Hz	749Hz	1.78kHz	17.9kHz	
		G +4.0dB	+1.5dB	+2.0dB	+6.0dB	
032	Total EQ 3	L.SHELF	PEAKING	PEAKING	H.SHELF	This is a variation on program 030. Also use these programs for stereo inputs or external effect returns.
		Q	0.28	0.7		
		F 66Hz	841Hz	1.88kHz	15.1kHz	
		G +1.5dB	+0.5dB	+2.0dB	+4.0dB	
033	Bass Drum 3	PEAKING	PEAKING	PEAKING	PEAKING	This is a variation on program 001. The low and mid range is removed.
		Q 2	10	0.4	0.4	
		F 118Hz	315Hz	4.23kHz	20.1kHz	
		G +3.5dB	−10.0dB	+3.5dB	0.0dB	

No	Name	Parameter					Description
			LOW	L-MID	H-MID	HIGH	
034	Snare Drum 3		L.SHELF	PEAKING	PEAKING	PEAKING	This is a variation on program 003. It creates rather thick sound.
		Q		4.5	2.8	0.1	
		F	223Hz	561Hz	4.23kHz	4.00kHz	
		G	0.0dB	+2.0dB	+3.5dB	0.0dB	
035	Tom-tom 2		L.SHELF	PEAKING	PEAKING	H.SHELF	This is a variation on program 005. Emphasizes the mid and high range.
		Q		4.5	1.2		
		F	88Hz	210Hz	5.33kHz	16.9kHz	
		G	−9.0dB	+1.5dB	+2.0dB	0.0dB	
036	Piano 3		PEAKING	PEAKING	PEAKING	H.SHELF	This is a variation on program 013.
		Q	8	10	9		
		F	99Hz	472Hz	2.37kHz	10.0kHz	
		G	+4.5dB	−13.0dB	+4.5dB	+2.5dB	
037	Piano Low		PEAKING	PEAKING	PEAKING	H.SHELF	Use for the low range of the piano sound when it is recorded in stereo. Use with program 038.
		Q	10	6.3	2.2		
		F	187Hz	397Hz	6.72kHz	12.6kHz	
		G	−5.5dB	+1.5dB	+6.0dB	0.0dB	
038	Piano High		PEAKING	PEAKING	PEAKING	PEAKING	Use for the high range of the piano sound when it is recorded in stereo. Use with program 037.
		Q	10	6.3	2.2	0.1	
		F	187Hz	397Hz	6.72kHz	5.65kHz	
		G	−5.5dB	+1.5dB	+5.0dB	+3.0dB	
039	Fine-EQ(Cass)		L.SHELF	PEAKING	PEAKING	H.SHELF	Use for recording to or from cassette tape to make the sound clearer.
		Q		4.5	1.8		
		F	74Hz	1.00kHz	4.00kHz	12.6kHz	
		G	−1.5dB	0.0dB	+1.0dB	+3.0dB	
040	Narrator		PEAKING	PEAKING	PEAKING	H.SHELF	Use for recording a voice reading a text.
		Q	4	7	0.63		
		F	105Hz	707Hz	2.52kHz	10.0kHz	
		G	−4.0dB	−1.0dB	+2.0dB	0.0dB	

Note

The EQ programs were programmed for recording acoustic musical instruments. If you are using them for a sampler, synthesizer, or rhythm machine, adjust the parameters accordingly.

Preset Effects Programs

The following table lists the preset effects programs. See "Effects Parameters" on page 362 for detailed parameter information. Effects programs that use the HQ. PITCH effect can be used only with Effect 2.

Reverb-type Effects

#	Title	Type	Description
01	Reverb Hall	REVERB HALL	Reverb simulating a large space such as a concert hall.
02	Reverb Room	REVERB ROOM	Reverb simulating the acoustics of a smaller space (room) than REVERB HALL.
03	Reverb Stage	REVERB STAGE	Reverb designed with vocals in mind.
04	Reverb Plate	REVERB PLATE	Simulation of a metal-plate reverb unit, producing a feeling of hard-edged reverberation.
05	Early Ref.	EARLY REF.	An effect which isolates only the early reflection (ER) component from reverberation. A flashier effect than reverb is produced.
06	Gate Reverb	GATE REVERB	A type of ER designed for use as gated reverb.
07	Reverse Gate	REVERSE GATE	A reverse-playback type ER.

Delays

#	Title	Type	Description
08	Mono Delay	MONO DELAY	Mono delay with simple operation. Use when you don't need to use complex parameter settings.
09	Stereo Delay	STEREO DELAY	Stereo delay with independent left and right.
10	Mod.delay	MOD.DELAY	Mono delay with modulation.
11	Delay LCR	DELAY LCR	Three-tap delay (L, C, R).
12	Echo	ECHO	Stereo delay with additional parameters for more detailed control. The signal can be fed back from left to right, and right to left.

Modulation-type Effects

#	Title	Type	Description
13	Chorus	CHORUS	Three-phase stereo chorus.
14	Flange	FLANGE	The well-known flanging effect.
15	Symphonic	SYMPHONIC	A Yamaha proprietary effect that produces a richer and more complex modulation than chorus.
16	Phaser	PHASER	Stereo phaser with 2–16 stages of phase shift.
17	Auto Pan	AUTO PAN	An effect which cyclically moves the sound between left and right.
18	Tremolo	TREMOLO	Tremolo
19	HQ.Pitch	HQ.PITCH (Effect 2 only)	Only one note is pitch-shifted, but a stable effect is produced.
20	Dual Pitch	DUAL PITCH	Stereo pitch shift with left and right pitches set independently.
21	Rotary	ROTARY	Simulation of a rotary speaker.
22	Ring Mod.	RING MOD.	An effect that modifies the pitch by applying amplitude modulation to the frequency of the input. On the AW2816, even the modulation frequency can be controlled by modulation.
23	Mod.Filter	MOD.FILTER	An effect which uses an LFO to modulate the frequency of the filter.

Distortion-type Effects

#	Title	Type	Description
24	Distortion	DISTORTION	Distortion
25	Amp Simulate	AMP SIMULATE	Guitar Amp Simulator

Dynamic Effects

#	Title	Type	Description
26	Dyna.Filter	DYNA.FILTER	Dynamically controlled filter. Responds to MIDI Note On velocity when SOURCE set to MIDI.
27	Dyna.Flange	DYNA.FLANGE	Dynamically controlled flanger. Responds to MIDI Note On velocity when SOURCE set to MIDI.
28	Dyna.Phaser	DYNA.PHASER	Dynamically controlled phase shifter. Responds to MIDI Note On velocity when SOURCE set to MIDI.

Combined Effects

#	Title	Type	Description
29	Rev+Chorus	REV+CHORUS	Reverb and chorus in parallel
30	Rev->Chorus	REV->CHORUS	Reverb and chorus in series
31	Rev+Flange	REV+FLANGE	Reverb and flanger in parallel
32	Rev->Flange	REV->FLANGE	Reverb and flanger in series
33	Rev+Sympho.	REV+SYMPHO.	Reverb and symphonic in parallel
34	Rev->Sympho.	REV->SYMPHO.	Reverb and symphonic in series
35	Rev->Pan	REV->PAN	Reverb and auto-pan in parallel
36	Delay+ER.	DELAY+ER.	Delay and early reflections in parallel
37	Delay->ER.	DELAY->ER.	Delay and early reflections in series
38	Delay+Rev	DELAY+REV	Delay and reverb in parallel
39	Delay->Rev	DELAY->REV	Delay and reverb in series
40	Dist->Delay	DIST->DELAY	Distortion and delay in series

Other Effects

#	Title	Type	Description
41	Multi.Filter	MULTI.FILTER	Three-band parallel filter (24 dB/octave).

Effects Parameters

REVERB HALL, REVERB ROOM, REVERB STAGE, REVERB PLATE

Hall, room, stage, and plate simulations, all with gates.

Parameter	Range	Description
REV TIME	0.3–99.0 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
LO.RATIO	0.1–2.4	Low-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left–right reverb spread)
DENSITY	0–100%	Reverb density
E/R DLY	0.0–100.0 ms	Delay between early reflections and reverb
E/R BAL.	0–100%	Balance of early reflections and reverb (0% = ER, 100% = reverb)
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
GATE LVL	OFF, –60 to 0 dB	Level at which gate kicks in
ATTACK	0–120 ms	Gate opening speed
HOLD	*1	Gate open time
DECAY	*2	Gate closing speed
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

*1. 0.02 ms–2.13 s (fs=44.1 kHz), 0.02 ms–1.96 s (fs=48 kHz)
*2. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

EARLY REF.

Early reflections.

Parameter	Range	Description
TYPE	S-Hall, L-Hall, Random, Reverse, Plate, Spring	Type of early reflection simulation
ROOMSIZE	0.1–20.0	Reflection spacing
LIVENESS	0–10	Early reflections decay characteristics (0 = dead, 10 = live)
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
DIFF.	0–10	Reverb diffusion (left–right reverb spread)
DENSITY	0–100%	Reverb density
ER NUM.	1–19	Number of early reflections
FB.GAIN	–99 to +99%	Feedback gain
HI.RATIO	0.1–1.0	High-frequency feedback ratio
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

GATE REVERB, REVERSE GATE

Early reflections with gate, and early reflections with reverse gate.

Parameter	Range	Description
TYPE	Type-A, Type-B	Type of early reflection simulation
ROOMSIZE	0.1–20.0	Reflection spacing
LIVENESS	0–10	Early reflections decay characteristics (0 = dead, 10 = live)
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
DIFF.	0–10	Reverb diffusion (left–right reverb spread)
DENSITY	0–100%	Reverb density
ER NUM.	1–19	Number of early reflections
FB.GAIN	–99 to +99%	Feedback gain
HI.RATIO	0.1–1.0	High-frequency feedback ratio
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

MONO DELAY

Basic repeat delay.

Parameter	Range	Description
DELAY	0.0–2730.0 ms	Delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

STEREO DELAY

Basic stereo delay.

Parameter	Range	Description
DELAY L	0.0–1350.0 ms	Left channel delay time
FB.G L	–99 to +99%	Left channel feedback (plus values for normal-phase feedback, minus values for reverse-phase feedback)
DELAY R	0.0–1350.0 ms	Right channel delay time
FB.G R	–99 to +99%	Right channel feedback (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

MOD.DELAY

Basic repeat delay with modulation.

Parameter	Range	Description
DELAY	0.0–2725.0 ms	Delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
WAVE	Sine, Tri	Modulation waveform
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

DELAY LCR

Three-tap delay (left, center, right).

Parameter	Range	Description
DELAY L	0.0–2730.0 ms	Left channel delay time
DELAY C	0.0–2730.0 ms	Center channel delay time
DELAY R	0.0–2730.0 ms	Right channel delay time
LEVEL L	–100 to +100%	Left channel delay level
LEVEL C	–100 to +100%	Center channel delay level
LEVEL R	–100 to +100%	Right channel delay level
FB.DLY	0.0–2730.0 ms	Feedback delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

ECHO

Stereo delay with crossed feedback loop.

Parameter	Range	Description
DELAY L	0.0–1350.0 ms	Left channel delay time
FB.DLY L	0.0–1350.0 ms	Left channel feedback delay time
FB.G L	–99 to +99%	Left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
DELAY R	0.0–1350.0 ms	Right channel delay time
FB.DLY R	0.0–1350.0 ms	Right channel feedback delay time
FB.G R	–99 to +99%	Right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
L->R FBG	–99 to +99%	Left to right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
R->L FBG	–99 to +99%	Right to left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

CHORUS

Chorus effect.

Parameter	Range	Description
FREQ.	0.05–40.00 Hz	Modulation speed
PM DEP.	0–100%	Pitch modulation depth
AM DEP.	0–100%	Amp modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
EQ F	100–8.00 k [Hz]	Parametric equalizer center frequency
EQ G	–12 to +12 [dB]	Parametric equalizer gain
EQ Q	10–0.10	Parametric equalizer band width
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

FLANGE

Flange effect.

Parameter	Range	Description
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
WAVE	Sine, Tri	Modulation waveform
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
EQ F	100–8.00 k [Hz]	Parametric equalizer center frequency
EQ G	–12 to +12 [dB]	Parametric equalizer gain
EQ Q	10–0.10	Parametric equalizer band width
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

SYMPHONIC

Symphonic efect.

Parameter	Range	Description
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
EQ F	100–8.00 k [Hz]	Parametric equalizer center frequency
EQ G	–12 to +12 [dB]	Parametric equalizer gain
EQ Q	10–0.10	Parametric equalizer band width
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

PHASER

16-stage phaser.

Parameter	Range	Description
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
OFFSET	0–100	Lowest phase-shifted frequency offset
STAGE	2, 4, 6, 8, 10, 12, 14, 16	Number of phase shift stages
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

AUTOPAN

Auto-panner.

Parameter	Range	Description
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
DIR.	*1	Panning direction
WAVE	Sine, Tri, Square	Modulation waveform
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
EQ F	100–8.00 k [Hz]	Parametric equalizer center frequency
EQ G	–12 to +12 [dB]	Parametric equalizer gain
EQ Q	10–0.10	Parametric equalizer band width
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

*1. L<->R, L—>R, L<—R, Turn L, Turn R

TREMOLO

Tremolo effect.

Parameter	Range	Description
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
WAVE	Sine, Tri, Square	Modulation waveform
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
EQ F	100–8.00 k [Hz]	Parametric equalizer center frequency
EQ G	–12 to +12 [dB]	Parametric equalizer gain
EQ Q	10–0.10	Parametric equalizer band width
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

HQ.PITCH (Effect 2 only)

High-quality pitch shifter.

Parameter	Range	Description
PITCH	–12 to +12 semitones	Pitch shift
FINE	–50 to +50 cents	Pitch shift fine
DELAY	0.0–1000.0 ms	Delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
MODE	1–10	Pitch shift precision
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

DUAL PITCH

Twin-voice pitch shifter.

Parameter	Range	Description
PITCH 1	–24 to +24 semitones	Channel 1 pitch shift
FINE 1	–50 to +50 cents	Channel 1 pitch shift fine
PAN 1	L16–1, C, R1–16	Channel 1 panpot
DELAY 1	0.0–1000.0 ms	Channel 1 delay time
FB.G 1	–99 to +99%	Channel 1 feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
LEVEL 1	–100 to +100%	Channel 1 level (plus values for normal phase, minus values for reverse phase)
PITCH 2	–24 to +24 semitones	Channel 2 pitch shift
FINE 2	–50 to +50 cents	Channel 2 pitch shift fine
PAN 2	L16–1, C, R1–16	Channel 2 panpot
DELAY 2	0.0–1000.0 ms	Channel 2 delay time
FB.G 2	–99 to +99%	Channel 2 feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
LEVEL 2	–100 to +100%	Channel 2 level (plus values for normal phase, minus values for reverse phase)
MODE	1–10	Pitch shift precision
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

ROTARY

Rotary speaker simulator.

Parameter	Range	Description
ROTATE	STOP, START	Rotation stop, start
SPEED	SLOW, FAST	Rotation speed (see SLOW and FAST parameters)
DRIVE	0–100	Overdrive level
ACCEL	0–10	Accelation at speed changes
LOW	0–100	Low-frequency filter
HIGH	0–100	High-frequency filter
SLOW	0.05–10.00 Hz	SLOW rotation speed
FAST	0.05–10.00 Hz	FAST rotation speed
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

RING MOD.

Ring modulator.

Parameter	Range	Description
SOURCE	OSC, SELF	Modulation source: oscillator or input signal
OSC FREQ	0.0–5000.0 Hz	Oscillator frequency
FM FREQ	0.05–40.00 Hz	Oscillator frequency modulation speed
FM DEPTH	0–100%	Oscillator frequency modulation depth
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

MOD.FILTER

LFO modulation-type filter.

Parameter	Range	Description
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
TYPE	LPF, HPF, BPF	Filter type: low pass, high pass, band pass
OFFSET	0–100	Filter frequency offset
RESO.	0–20	Filter resonance
PHASE	0.00–354.38°	Left-channel modulation and right-channel modulation phase difference
LEVEL	0–100	Output level
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

DISTORTION

Distortion effect.

Parameter	Range	Description
DST TYPE	DST1, DST2, OVD1, OVD2, CRUNCH	Distortion type (DST = distortion, OVD = overdrive)
DRIVE	0–100	Distortion drive
MASTER	0–100	Master volume
TONE	–10 to +10	Tone
N.GATE	0–20	Noise reduction
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

AMP SIMULATE

Guitar Amp Simulator.

Parameter	Range	Description
AMP TYPE	*1	Guitar amp simulation type
DST TYPE	DST1, DST2, OVD1, OVD2, CRUNCH	Distortion type (DST = distortion, OVD = overdrive)
N.GATE	0–20	Noise reduction
DRIVE	0–100	Distortion drive
MASTER	0–100	Master volume
CAB DEP	0–100%	Speaker cabinet simulation depth
BASS	0–100	Bass tone control
MIDDLE	0–100	Middle tone control
TREBLE	0–100	High tone control
EQ F	99–8.0 kHz	Parametric equalizer frequency
EQ G	–12 to +12 dB	Parametric equalizer gain
EQ Q	10.0–0.10	Parametric equalizer bandwidth
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

*1. STK-M1, STK-M2, THRASH, MIDBST, CMB-PG, CMB-VR, CMB-DX, CMB-TW, MINI, FLAT

DYNA.FILTER

Dynamically controlled filter.

Parameter	Range	Description
SOURCE	INPUT, MIDI	Control source: input signal or MIDI note on velocity
SENSE	0–100	Sensitivity
TYPE	LPF, HPF, BPF	Filter type
OFFSET	0–100	Filter frequency offset
RESO.	0–20	Filter resonance
DIR.	UP, DOWN	Upward or downward frequency change
DECAY	*1	Filter frequency change decay speed
LEVEL	0–100	Output Level
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

DYNA.FLANGE

Dynamically controlled flanger.

Parameter	Range	Description
SOURCE	INPUT, MIDI	Control source: input signal or MIDI note on velocity
SENSE	0–100	Sensitivity
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
OFFSET	0–100	Delay time offset
DIR.	UP, DOWN	Upward or downward frequency change
DECAY	*1	Decay speed
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
EQ F	100–8.00 k [Hz]	Parametric equalizer center frequency
EQ G	–12 to +12 [dB]	Parametric equalizer gain
EQ Q	10–0.10	Parametric equalizer band width
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

DYNA.PHASER

Dynamically controlled phaser.

Parameter	Range	Description
SOURCE	INPUT, MIDI	Control source: input signal or MIDI note on velocity
SENSE	0–100	Sensitivity
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
OFFSET	0–100	Lowest phase-shifted frequency offset
STAGE	2, 4, 6, 8, 10, 12, 14, 16	Number of phase shift stages
DIR.	UP, DOWN	Upward or downward frequency change
DECAY	*1	Decay speed
LSH F	21.2–8.00 k [Hz]	Low-shelving filter frequency
LSH G	–12 to +12 [dB]	Low-shelving filter gain
HSH F	50.0–16.0 k [Hz]	High-shelving filter frequency
HSH G	–12 to +12 [dB]	High-shelving filter gain
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48kHz)

REV+CHORUS

Reverb and chorus effects in parallel.

Parameter	Range	Description
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spread)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
FREQ.	0.05–40.00 Hz	Modulation speed
PM DEP.	0–100%	Pitch modulation depth
AM DEP.	0–100%	Amp modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
REV/CHO	0–100%	Reverb and chorus balance (0% = chorus, 100% = reverb)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

REV->CHORUS

Reverb and chorus effects in series.

Parameter	Range	Description
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spreed)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
FREQ.	0.05–40.00 Hz	Modulation speed
PM DEP.	0–100%	Pitch modulation depth
AM DEP.	0–100%	Amp modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
REV.BAL	0–100%	Reverb and chorused reverb balance (0% = chorused reverb, 100% = reverb)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

REV+FLANGE

Reverb and flanger effects in parallel.

Parameter	Range	Description
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spreed)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
WAVE	Sine, Tri	Modulation waveform
REV/FLG	0–100%	Reverb and flange balance (0% = flange, 100% = reverb)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

REV->FLANGE

Reverb and flanger effects in series.

Parameter	Range	Description
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spreed)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
WAVE	Sine, Tri	Modulation waveform
REV.BAL	0–100%	Reverb and flanged reverb balance (0% = flanged reverb, 100% = reverb)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

REV+SYMPHO.

Reverb and symphonic effects in parallel.

Parameter	Range	Description
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spreed)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
REV/SYM	0–100%	Reverb and symphonic balance (0% = symphonic, 100% = reverb)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

REV->SYMPHO.

Reverb and symphonic effects in series.

Parameter	Range	Description
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spreed)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
MOD.DLY	0.0–500.0 ms	Modulation delay time
WAVE	Sine, Tri	Modulation waveform
REV.BAL	0–100%	Reverb and symphonic reverb balance (0% = symphonic reverb, 100% = reverb)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

REV->PAN

Reverb and auto-pan effects in parallel.

Parameter	Range	Description
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
HI.RATIO	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spread)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
DIR.	*1	Panning direction
WAVE	Sine, Tri, Square	Modulation waveform
REV BAL.	0–100%	Reverb and panned reverb balance (0% = panned reverb, 100% = reverb)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

*1. L<->R, L—>R, L<—R, Turn L, Turn R

DELAY+ER.

Delay and early reflections effects in parallel.

Parameter	Range	Description
DELAY L	0.0–1000.0 ms	Left channel delay time
DELAY R	0.0–1000.0 ms	Right channel delay time
FB.DLY	0.0–1000.0 ms	Feedback delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
TYPE	S-Hall, L-Hall, Random, Revers, Plate, Spring	Type of early reflection simulation
ROOMSIZE	0.1–20.0	Reflection spacing
LIVENESS	0–10	Early reflections decay characteristics (0 = dead, 10 = live)
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
DIFF.	0–10	Reverb diffusion (left-right reverb spread)
DENSITY	0–100%	Reverb density
ER NUM.	1–19	Number of early reflections
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
DLY/ER	0–100%	Delay and early reflections balance (0% = early reflections, 100% = delay)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

DELAY->ER.

Delay and early reflections effects in series.

Parameter	Range	Description
DELAY L	0.0–1000.0 ms	Left channel delay time
DELAY R	0.0–1000.0 ms	Right channel delay time
FB.DLY	0.0–1000.0 ms	Feedback delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
TYPE	S-Hall, L-Hall, Random, Revers, Plate, Spring	Type of early reflection simulation
ROOMSIZE	0.1–20.0	Reflection spacing
LIVENESS	0–10	Early reflections decay characteristics (0 = dead, 10 = live)
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
DIFF.	0–10	Reverb diffusion (left-right reverb spread)
DENSITY	0–100%	Reverb density
ER NUM.	1–19	Number of early reflections
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
DLY.BAL	0–100%	Delay and early reflected delay balance (0% = early reflected delay, 100% = delay)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

DELAY+REV

Delay and reverb effects in parallel.

Parameter	Range	Description
DELAY L	0.0–1000.0 ms	Left channel delay time
DELAY R	0.0–1000.0 ms	Right channel delay time
FB.DLY	0.0–1000.0 ms	Feedback delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
DELAY HI	0.1–1.0	Delay high-frequency feedback ratio
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
REV HI	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spread)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
DLY/REV	0–100%	Delay and reverb balance (0% = reverb, 100% = delay)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

DELAY->REV

Delay and reverb effects in series.

Parameter	Range	Description
DELAY L	0.0–1000.0 ms	Left channel delay time
DELAY R	0.0–1000.0 ms	Right channel delay time
FB.DLY	0.0–1000.0 ms	Feedback delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
DELAY HI	0.1–1.0	Delay high-frequency feedback ratio
REV TIME	0.3–99.9 s	Reverb time
INI.DLY	0.0–500.0 ms	Initial delay before reverb begins
REV HI	0.1–1.0	High-frequency reverb time ratio
DIFF.	0–10	Reverb diffusion (left-right reverb spreed)
DENSITY	0–100%	Reverb density
HPF	Thru, 21.2 Hz–8.0 kHz	High-pass filter cutoff frequency
LPF	50 Hz–16.0 kHz, Thru	Low-pass filter cutoff frequency
DLY.BAL	0–100%	Delay and delayed reverb balance (0% = delayed reverb, 100% = delay)
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

DIST->DELAY

Distortion and delay effects in series.

Parameter	Range	Description
DST TYPE	DST1, DST2, OVD1, OVD2, CRUNCH	Distortion type (DST = distortion, OVD = overdrive)
DRIVE	0–100	Distortion drive
MASTER	0–100	Master volume
TONE	–10 to +10	Tone control
N.GATE	0–20	Noise reduction
DELAY	0.0–2725.0 ms	Delay time
FB.GAIN	–99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
HI.RATIO	0.1–1.0	High-frequency feedback ratio
FREQ.	0.05–40.00 Hz	Modulation speed
DEPTH	0–100%	Modulation depth
DLY BAL	0–100%	Distortion and delay balance (0% = distortion, 100% = delayed distortion)

MULTI FILTER

Three-band parallel filter (24 dB/octave)

Parameter	Range	Description
TYPE 1	HPF, LPF, BPF	Filter 1 type: low pass, high pass, band pass
TYPE 2	HPF, LPF, BPF	Filter 2 type: low pass, high pass, band pass
TYPE 3	HPF, LPF, BPF	Filter 3 type: low pass, high pass, band pass
FREQ. 1	28 Hz–16.0 kHz	Filter 1 frequency
FREQ. 2	28 Hz–16.0 kHz	Filter 2 frequency
FREQ. 3	28 Hz–16.0 kHz	Filter 3 frequency
LEVEL 1	0–100	Filter 1 level
LEVEL 2	0–100	Filter 2 level
LEVEL 3	0–100	Filter 3 level
RESO. 1	0–20	Filter 1 resonance
RESO. 2	0–20	Filter 2 resonance
RESO. 3	0–20	Filter 3 resonance
MIX BAL.	0–100 [%]	Mix balance of the effects and dry sounds

Dynamics Processors

Dynamics processors are generally used to correct or control signal levels. However, you can also use them creatively to shape the volume envelope of a sound. The AW2816 features comprehensive dynamics processors for all the input channels, tape returns, and the bus and stereo outputs. These processors allow you to compress, expand, compress-expand (compand), gate, or duck the signals passing through the mixer, giving you unparalleled sonic quality and flexibility.

Preset Dynamics Programs

These are the preset dynamics programs.

No	Program Name		No	Program Name	
001	A.Dr.BD	"CMP	021	BrassSection	"CMP
002	A.Dr.BD	"EXP	022	Syn.Pad	"CMP
003	A.Dr.BD	"GAT	023	SamplingPerc	"CPS
004	A.Dr.BD	"CPH	024	Sampling BD	"CMP
005	A.Dr.SN	"CMP	025	Sampling SN	"CMP
006	A.Dr.SN	"EXP	026	Hip Comp	"CPS
007	A.Dr.SN	"GAT	027	Solo Vocal1	"CMP
008	A.Dr.SN	"CPS	028	Solo Vocal2	"CMP
009	A.Dr.Tom	"EXP	029	Chorus	"CMP
010	A.Dr.OverTop	"CPS	030	Compander(H)	"CPH
011	E.B.finger	"CMP	031	Compander(S)	"CPS
012	E.B.slap	"CMP	032	Click Erase	"EXP
013	Syn.Bass	"CMP	033	Announcer	"CPH
014	Piano1	"CMP	034	Easy Gate	"GAT
015	Piano2	"CMP	035	BGM Ducking	"DUK
016	E.Guitar	"CMP	036	Limiter1	"CPS
017	A.Guitar	"CMP	037	Limiter2	"CMP
018	Strings1	"CMP	038	Total Comp1	"CMP
019	Strings2	"CMP	039	Total Comp2	"CMP
020	Strings3	"CMP	040	Total Comp3	"CMP
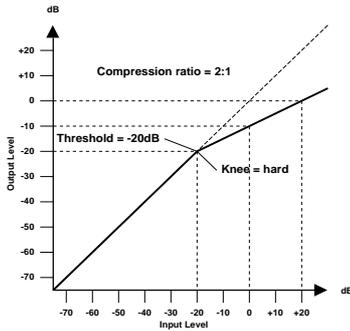
Compressor

A compressor provides a form of automatic level control. By attenuating high levels, thus effectively reducing the dynamic range, the compressor makes it much easier to control signals and set appropriate fader levels. Reducing the dynamic range also means that recording levels can be set higher, therefore improving the signal-to-noise performance.

Compressor (CMP) parameters:

Parameter	Value
Threshold (dB)	−54 to 0 (55 points)
Ratio	1.0, 1.1, 1.3, 1.5, 1.7, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.0, 8.0, 10, 20, ∞ (16 points)
Attack (ms)	0 to 120 (121 points)
Outgain (dB)	0 to +18 (36 points)
Knee	hard,1,2,3,4,5 (6 points)
Release (ms)	5 ms to 42.3 sec[*1], 6 ms to 46.0 sec[*2], 8 ms to 63.4 sec[*3] (160 points)

*1. These values are obtained when the sampling frequency is 48 kHz.
*2. These values are obtained when the sampling frequency is 44.1 kHz.
*3. These values are obtained when the sampling frequency is 32 kHz

Threshold determines the level of input signal required to trigger the compressor. Signals at a level below the threshold pass through unaffected. Signals at and above the threshold level are compressed by the amount specified using the Ratio parameter. The trigger signal is determined using the KEY IN parameter.

Ratio controls the amount of compression—the change in output signal level relative to change in input signal level. With a 2:1 ratio, for example, a 10 dB change in input level (above the threshold) results in a 5 dB change in output level. For a 5:1 ratio, a 10 dB change in input level (above the threshold) results in a 2 dB change in output level.

Attack controls how soon the signal is compressed once the compressor has been triggered. With a fast attack time, the signal is compressed almost immediately. With a slow attack time, the initial transient of a sound passes through unaffected.

Out Gain sets the compressor's output signal level. Compression tends to reduce the average signal level. Out Gain can be used to counter this level reduction and set an appropriate level for the next stage in the audio path.

Knee sets the transition of the signal at the threshold. With a hard knee, the transition between uncompressed and compressed signal is immediate. With the softest knee, knee5, the transition starts before the signal reaches the threshold and gradually ends above the threshold.

Release determines how soon the compressor returns to its normal gain once the trigger signal level drops below the threshold. If the release time is too short, the gain will recover too quickly causing level pumping—noticeable gain fluctuations. If it is set too long, the compressor may not have time to recover before the next high level signal appears, and it will be compressed incorrectly.

Expander
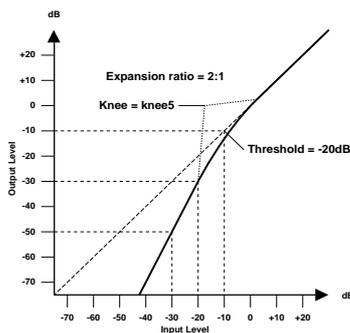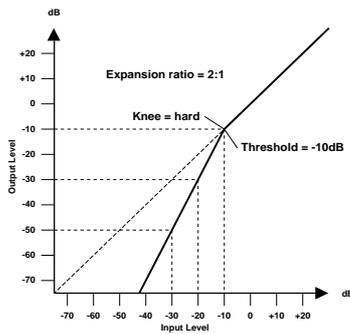
An expander is another form of automatic level control. By attenuating the signal below the threshold, the expander reduces low-level noise and effectively increases the dynamic range of the recorded material.

Expander (EXP) parameters:

Parameter	Value
Threshold (dB)	–54 to 0 (55 points)
Ratio	1.0, 1.1, 1.3, 1.5, 1.7, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.0, 8.0, 10, 20, ∞ (16 points)
Attack (ms)	0 to 120 (121 points)
Outgain (dB)	0 to +18 (36 points)
Knee	hard,1,2,3,4,5 (6 points)
Release (ms)	5 ms to 42.3 sec[*1], 6 ms to 46.0 sec[*2], 8 ms to 63.4 sec[*3] (160 points)

*1. These values are obtained when the sampling frequency is 48kHz.
*2. These values are obtained when the sampling frequency is 44.1 kHz.
*3. These values are obtained when the sampling frequency is 32 kHz

Threshold determines the level of input signal required to trigger the expander. Signals above the threshold pass through unaffected. Signals at and below the threshold level are attenuated by the amount specified using the Ratio parameter. The trigger signal is determined using the KEY IN parameter.

Ratio controls the amount of expansion—the change in output signal level relative to change in input signal level. With a 1:2 ratio, for example, a 5 dB change in input level (below the threshold) results in a 10 dB change in output level. For a 1:5 ratio, a 2 dB change in input level (below the threshold) results in a 10 dB change in output level.

Attack controls how soon the signal is expanded once the expander has been triggered. With a fast attack time, the signal is expanded almost immediately. With a slow attack time, the initial transient of a sound passes through unaffected.

Out Gain sets the expander's output signal level.

Knee sets the transition of the signal at the threshold. With a hard knee, the transition between unexpanded and expanded signal is immediate. With the softest knee, knee5, the transition starts before the signal reaches the threshold and gradually ends above the threshold.

Release determines how soon the expander returns to its normal gain once the trigger signal level drops below the threshold.

Compander
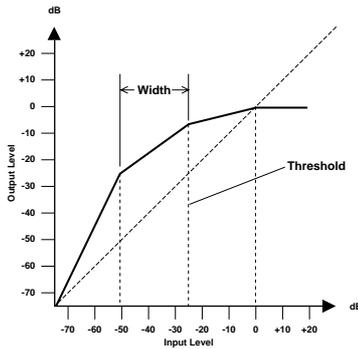
A compander is a compressor-expander—a combination of signal compression and expansion. The compander attenuates the input signal above the threshold as well as the level below the width. For very dynamic material, this program allows you to retain the dynamic range without having to be concerned with excessive output signal levels and clipping.

CompanderH (CPH) and CompanderS (CPS) parameters:

Parameter	Value
Threshold (dB)	–54 to 0 (55 points)
Ratio	1.0, 1.1, 1.3, 1.5, 1.7, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.0, 8.0, 10, 20 (15 points)
Attack (ms)	0 to 120 (121 points)
Outgain (dB)	–18 to 0 (36 points)
Width (dB)	1 to 90 (90 points)
Release (ms)	5 ms to 42.3 sec[1], 6 ms to 46.0 sec[2], 8 ms to 63.4 sec[3] (160 points)

[1]. These values are obtained when the sampling frequency is 48kHz.
[2]. These values are obtained when the sampling frequency is 44.1 kHz.
[3]. These values are obtained when the sampling frequency is 32 kHz

Threshold determines the level of input signal required to trigger the compander. Signals above the threshold pass through unaffected. Signals at and below the threshold level are attenuated by the amount specified using the Ratio parameter. The trigger signal is determined using the KEY IN parameter.

Ratio controls the amount of companding—the change in output signal level relative to change in input signal level. With a 2:1 ratio, for example, a 10 dB change in input level (above the threshold) results in a 5 dB change in output level. The hard compander (CPH) has a fixed ratio of 5:1 for expansion and the soft compander (CPS) has a fixed ratio of 1.5:1 for expansion.

Attack controls how soon the signal is companded once the compander has been triggered. With a fast attack time, the signal is companded almost immediately. With a slow attack time, the initial transient of a sound passes through unaffected.

Out Gain sets the compander's output signal level.

Width is used to determine the distance, in decibels, between the expander and the compressor. With a width of 90 dB, the expander is effectively switched off and the compander is simply a compressor-limiter. With a smaller width (30dB) and a high threshold (0dB), the compander is an expander-compressor-limiter.

Release determines how soon the compander returns to its normal gain once the trigger signal level drops below the threshold.

Gate and Ducking
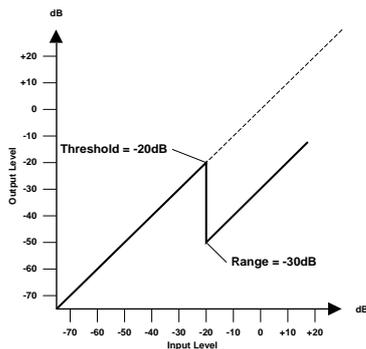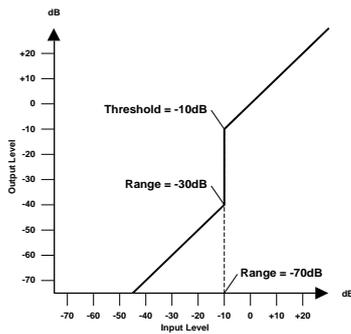
A gate, or noise gate is an audio switch used to mute signals below a set threshold level. It can be used to suppress background noise and hiss from valve (tube) amps, effects pedals, and microphones.

Ducking is used to automatically reduce the levels of one signal when the level of a source signal exceeds a specified threshold. It is used for voice-over applications where, for example, level of background music is automatically reduced, allowing an announcer to be heard clearly.

Gate (GAT) and Ducking (DUK) parameters:

Parameter	Value
Threshold (dB)	–54 to 0 (55 points)
Range (dB)	–70 to 0 (71 points)
Attack (ms)	0 to 120 (121 points)
Hold (ms)	0.02 ms to 1.96s[1], 0.02 ms to 2.13 sec[2], 0.03 ms to 2.94 sec[3] (216 points)
Decay (ms)	5ms to 42.3s [1]., 6 ms to 46.0 sec[2]., 8 ms to 63.4 sec [3]. (160 points)

[1]. These values are obtained when the sampling frequency is 48kHz.
[2]. These values are obtained when the sampling frequency is 44.1 kHz.
[3]. These values are obtained when the sampling frequency is 32 kHz

Threshold sets the level at which the gate closes, cutting off the signal. Signals above the threshold level pass through unaffected. Signals at or below the threshold cause the gate to close.

For ducking, trigger signal levels at and above the threshold level activate ducking, and the signal level is reduced to a level set by the Range parameter.

The trigger signal is determined using the KEY IN parameter.

Range controls the level to which the gate closes. It can be used to reduce the signal level rather than cut it completely. At a setting of –70 dB, the gate closes completely when the input signal falls below the threshold. At a setting of –30 dB, the gate only closes so far allowing an attenuated signal through. At a setting of 0 dB, the gate has no effect. When signals are gated abruptly, the sudden cutoff can sound odd.

For ducking, a setting of –70 dB causes the signal to be virtually cutoff. At a setting of –30 dB the signal is ducked by 30 dB. At a setting of 0 dB, the duck has no effect.

Attack determines how fast the gate opens when the signal exceeds the threshold level. Slow attack times can be used to remove the initial transient edge of percussive sounds. Too slow an attack time makes some signals sound backwards.

For ducking, this controls how soon the signal is ducked once the duck has been triggered. With a fast attack time, the signal is ducked almost immediately. With a slow attack time, ducking fades the signal. Too fast an attack time may sound abrupt.

Hold sets how long the gate stays open or the ducking remains active once the trigger signal has fallen below the threshold level.

Decay controls how fast the gate closes once the hold time has expired. A longer decay time produces a more natural gating effect, allowing the natural decay of an instrument to pass through.

For ducking, this determines how soon the ducker returns to its normal gain after the hold time has expired.

Preset Dynamics Program Parameters

The "Release", "Hold", and "Decay" values shown in the following table are valid when the AW2816 is set at a sampling frequency of 44.1 kHz.

No.	Name		Type	Parameter	Value	Description
001	A.Dr.BD	"CMP	Compressor	Threshold (dB)	−24	Compressor that gives the best results with an acoustic bass drum.
				Ratio (:1)	3	
				Attack (ms)	9	
				Outgain (dB)	5.5	
				Knee	2	
				Release (ms)	58	
002	A.Dr.BD	"EXP	Expander	Threshold (dB)	−23	Expander for the same purpose as program 001.
				Ratio (:1)	1.7	
				Attack (ms)	1	
				Outgain (dB)	3.5	
				Knee	2	
				Release (ms)	70	
003	A.Dr.BD	"GAT	Gate	Threshold (dB)	−11	Gate for the same purpose as program 001.
				Range (dB)	−53	
				Attack (ms)	0	
				Hold (ms)	1.93	
				Decay (ms)	400	
004	A.Dr.BD	"CPH	CompanderH	Threshold (dB)	−11	Hard compander for the same purpose as program 001.
				Ratio (:1)	3.5	
				Attack (ms)	1	
				Outgain (dB)	−1.5	
				Width (dB)	7	
				Release (ms)	192	
005	A.Dr.SN	"CMP	Compressor	Threshold (dB)	−17	Compressor that gives the best results with an acoustic snare drum.
				Ratio (:1)	2.5	
				Attack (ms)	8	
				Outgain (dB)	3.5	
				Knee	2	
				Release (ms)	12	
006	A.Dr.SN	"EXP	Expander	Threshold (dB)	−23	Expander for the same purpose as program 005.
				Ratio (:1)	2	
				Attack (ms)	0	
				Outgain (dB)	0.5	
				Knee	2	
				Release (ms)	151	
007	A.Dr.SN	"GAT	Gate	Threshold (dB)	−8	Gate for the same purpose as program 005.
				Range (dB)	−23	
				Attack (ms)	1	
				Hold (ms)	0.63	
				Decay (ms)	238	

No.	Name		Type	Parameter	Value	Description
008	A.Dr.SN	"CPS	CompanderS	Threshold (dB)	−8	Soft compander for the same purpose as program 005.
				Ratio (:1)	1.7	
				Attack (ms)	11	
				Outgain (dB)	0.0	
				Width (dB)	10	
				Release (ms)	128	
009	A.Dr.Tom	"EXP	Expander	Threshold (dB)	−20	Expander for acoustic toms automatically reduces the volume when the toms are not played, helping to differentiate the bass and snare drums clearly.
				Ratio (:1)	2	
				Attack (ms)	2	
				Outgain (dB)	5.0	
				Knee	2	
				Release (ms)	749	
010	A.Dr.OverTop	"CPS	CompanderS	Threshold (dB)	−24	Soft compander to emphasize the attack and ambience of cymbals using overhead microphones. It automatically reduces the volume when the cymbals are not played, helping differentiate the bass and snare drums clearly.
				Ratio (:1)	2	
				Attack (ms)	38	
				Outgain (dB)	−3.5	
				Width (dB)	54	
				Release (ms)	842	
011	E.B.finger	"CMP	Compressor	Threshold (dB)	−12	Compressor to equalize the attack and volume level of a finger-picked electric bass guitar.
				Ratio (:1)	2	
				Attack (ms)	15	
				Outgain (dB)	4.5	
				Knee	2	
				Release (ms)	470	
012	E.B.slap	"CMP	Compressor	Threshold (dB)	−12	Compressor to equalize the attack and volume level of a slap electric bass guitar
				Ratio (:1)	1.7	
				Attack (ms)	6	
				Outgain (dB)	4.0	
				Knee	hard	
				Release (ms)	133	
013	Syn.Bass	"CMP	Compressor	Threshold (dB)	−10	Compressor to adjust and/or emphasize the level of a synth bass.
				Ratio (:1)	3.5	
				Attack (ms)	9	
				Outgain (dB)	3.0	
				Knee	hard	
				Release (ms)	250	
014	Piano1	"CMP	Compressor	Threshold (dB)	−9	Compressor to brighten the tonal color of a piano.
				Ratio (:1)	2.5	
				Attack (ms)	17	
				Outgain (dB)	1.0	
				Knee	hard	
				Release (ms)	238	
015	Piano2	"CMP	Compressor	Threshold (dB)	−18	A variation on program 014, adjusting the attack and entire level using a deeper threshold.
				Ratio (:1)	3.5	
				Attack (ms)	7	
				Outgain (dB)	6.0	
				Knee	2	
				Release (ms)	174	

No.	Name		Type	Parameter	Value	Description
016	E.Guitar	"CMP	Compressor	Threshold (dB)	−8	Compressor for backing performances, such as electric rhythm guitar playing chords or arpeggios.
				Ratio (:1)	3.5	
				Attack (ms)	7	
				Outgain (dB)	2.5	
				Knee	4	
				Release (ms)	261	
017	A.Guitar	"CMP	Compressor	Threshold (dB)	−10	A variation on program 016, intended for acoustic guitar playing rhythm chords or arpeggios.
				Ratio (:1)	2.5	
				Attack (ms)	5	
				Outgain (dB)	1.5	
				Knee	2	
				Release (ms)	238	
018	Strings1	"CMP	Compressor	Threshold (dB)	−11	Compressor for string instruments. This program was intended for violins.
				Ratio (:1)	2	
				Attack (ms)	33	
				Outgain (dB)	1.5	
				Knee	2	
				Release (ms)	749	
019	Strings2	"CMP	Compressor	Threshold (dB)	−12	A variation on program 018, intended for violas or cellos.
				Ratio (:1)	1.5	
				Attack (ms)	93	
				Outgain (dB)	1.5	
				Knee	4	
				Release (ms)	1.35 S	
020	Strings3	"CMP	Compressor	Threshold (dB)	−17	A variation on program 018, intended for string instruments with a very low range, such as cellos or contrabass.
				Ratio (:1)	1.5	
				Attack (ms)	76	
				Outgain (dB)	2.5	
				Knee	2	
				Release (ms)	186	
021	BrassSection	"CMP	Compressor	Threshold (dB)	−18	Compressor intended for brass sounds with fast and strong attack.
				Ratio (:1)	1.7	
				Attack (ms)	18	
				Outgain (dB)	4.0	
				Knee	1	
				Release (ms)	226	
022	Syn.Pad	"CMP	Compressor	Threshold (dB)	−13	Compressor for synth pad, intended to prevent diffusion of the sound.
				Ratio (:1)	2	
				Attack (ms)	58	
				Outgain (dB)	2.0	
				Knee	1	
				Release (ms)	238	
023	SamplingPerc	"CPS	CompanderS	Threshold (dB)	−18	Compressor for sampled sounds to boost them to be as powerful and clear as the acoustic sounds. This program is for percussion sounds.
				Ratio (:1)	1.7	
				Attack (ms)	8	
				Outgain (dB)	−2.5	
				Width (dB)	18	
				Release (ms)	238	

No.	Name		Type	Parameter	Value	Description
024	Sampling BD	"CMP	Compressor	Threshold (dB)	−14	A variation on program 023, intended for sampled bass drum sounds.
				Ratio (:1)	2	
				Attack (ms)	2	
				Outgain (dB)	3.5	
				Knee	4	
				Release (ms)	35	
025	Sampling SN	"CMP	Compressor	Threshold (dB)	−18	A variation on program 023, intended for sampled snare drum sounds.
				Ratio (:1)	4	
				Attack (ms)	8	
				Outgain (dB)	8.0	
				Knee	hard	
				Release (ms)	354	
026	Hip Comp	"CPS	CompanderS	Threshold (dB)	−23	A variation on program 023, intended for sampled sounds for loops.
				Ratio (:1)	20	
				Attack (ms)	15	
				Outgain (dB)	0.0	
				Width (dB)	15	
				Release (ms)	163	
027	Solo Vocal1	"CMP	Compressor	Threshold (dB)	−20	Compressor suited for a solo vocal source.
				Ratio (:1)	2.5	
				Attack (ms)	31	
				Outgain (dB)	2.0	
				Knee	1	
				Release (ms)	342	
028	Solo Vocal2	"CMP	Compressor	Threshold (dB)	−8	A variation on program 027.
				Ratio (:1)	2.5	
				Attack (ms)	26	
				Outgain (dB)	1.5	
				Knee	3	
				Release (ms)	331	
029	Chorus	"CMP	Compressor	Threshold (dB)	−9	A variation on program 027, intended for chorus vocals.
				Ratio (:1)	1.7	
				Attack (ms)	39	
				Outgain (dB)	2.5	
				Knee	2	
				Release (ms)	226	
030	Compander(H)	"CPH	CompanderH	Threshold (dB)	−10	A template for the hard knee compander program.
				Ratio (:1)	3.5	
				Attack (ms)	1	
				Outgain (dB)	0.0	
				Width (dB)	6	
				Release (ms)	250	
031	Compander(S)	"CPS	CompanderS	Threshold (dB)	−8	A template for the soft knee compander program.
				Ratio (:1)	4	
				Attack (ms)	25	
				Outgain (dB)	0.0	
				Width (dB)	24	
				Release (ms)	180	

No.	Name		Type	Parameter	Value	Description
032	Click Erase	"EXP	Expander	Threshold (dB)	−33	Expander to remove click track sounds that may bleed out of the monitor headphones the musicians are using.
				Ratio (:1)	2	
				Attack (ms)	1	
				Outgain (dB)	2.0	
				Knee	2	
				Release (ms)	284	
033	Announcer	"CPH	CompanderH	Threshold (dB)	−14	Hard compander reduces the level during the interval between the words, making the voice sound even.
				Ratio (:1)	2.5	
				Attack (ms)	1	
				Outgain (dB)	−2.5	
				Width (dB)	18	
				Release (ms)	180	
034	Easy Gate	"GAT	Gate	Threshold (dB)	−26	A template for the gate program.
				Range (dB)	−56	
				Attack (ms)	0	
				Hold (ms)	2.56	
				Decay (ms)	331	
035	BGM Ducking	"DUK	Ducking	Threshold (dB)	−19	Ducking background music for voiceovers, typically keyed from the announcer's channel.
				Range (dB)	−22	
				Attack (ms)	93	
				Hold (ms)	1.20 S	
				Decay (ms)	6.32 S	
036	Limiter1	"CMP	CompanderS	Threshold (dB)	−8	A template for a limiter using the soft compander program. This program has a slow release.
				Ratio (:1)	4	
				Attack (ms)	25	
				Outgain (dB)	0.0	
				Width (dB)	24	
				Release (ms)	180	
037	Limiter2	"CMP	Compressor	Threshold (dB)	0	A template for a limiter using the compressor program. This program is a PEAK STOP type.
				Ratio (:1)	∞	
				Attack (ms)	0	
				Outgain (dB)	0.0	
				Knee	hard	
				Release (ms)	319	
038	Total Comp1	"CMP	Compressor	Threshold (dB)	−8	Compressor intended to reduce the overall volume level. Use for the stereo out during mixdown. It is also interesting on stereo input signals.
				Ratio (:1)	2.5	
				Attack (ms)	60	
				Outgain (dB)	0.0	
				Knee	2	
				Release (ms)	1.12 S	

No.	Name		Type	Parameter	Value	Description
039	Total Comp2	"CMP	Compressor	Threshold (dB)	−18	A variation of program 038. It has a harder compression ratio.
				Ratio (:1)	3.5	
				Attack (ms)	94	
				Outgain (dB)	2.5	
				Knee	hard	
				Release (ms)	447	
040	Total Comp3	"CMP	Compressor	Threshold (dB)	−16	A variation of program 038. It has an extreme compression ratio, almost a limiter in effect.
				Ratio (:1)	6	
				Attack (ms)	11	
				Outgain (dB)	6.0	
				Knee	1	
				Release (ms)	180	

Troubleshooting

If the AW2816 does not operate as you expect, or if you suspect a problem, please refer to the following points and take the appropriate action.

■ **Power does not turn on**

• Is the power cable connected to an AC outlet of the correct voltage?
• Is the POWER switch turned ON?
• If the power still does not turn on, please contact your Yamaha dealer.

■ **Internal hard disk is not detected**

• Is the internal hard disk connected correctly?
• The pins of the internal hard disk may have been deformed.
• Has the internal hard disk been formatted appropriately? *

  * If an unformatted hard disk is installed, a message will appear when the power is turned on, asking you whether you wish to format the hard disk.

■ **LCD display is dim or dark**

• Use the contrast knob located at the lower right of the screen to adjust the contrast.

■ **Input sound is not output**

• Are speakers or headphones connected correctly?
• Is your amp and other external devices turned on?
• Is the signal from the external device being input?
• The connection cable from the external device may be broken.
• Is the [GAIN] control set to an appropriate level?
• Is the fader of the input channel or monitor channel raised?
• Is the [ON] key of the input channel or monitor channel lit?
• Is the fader of the stereo output channel raised?
• Is the [ON] key of the stereo output channel lit?
• Is the option card installed correctly?
• Is the input/output patching set correctly?
• Is the word clock set correctly?
• The jack being used for input may have been assigned as an EFFECT INSERT return.
• Is the attenuator raised in the EQ screen or VIEW screen?

■ **Recorded sound is not output**

• Has audio data been recorded on the recorder?
• Muting may be enabled in the TRACK screen TR View page.
• The input monitor mode may be set to INPUT.
• Is the virtual track set to the track that was recorded?
• A region shorter than the specified region fade time cannot be played.

■ **Can't hear the signal from the INPUT 1/2 jacks**

• An external effect unit may be connected to the INSERT jack, and turned off.

■ **Signal from the INPUT 8 jack is too loud**

• A conventional line-level signal may be connected to the Hi-Z jack.

■ **Sound is too soft**

• Are the speakers or headphones connected correctly?
• Is the volume of your amp or external equipment raised?
• Is the [GAIN] control set correctly?
• Is the fader of the input channel or monitor channel raised?
• Is the fader of the stereo output channel raised?
• The EQ gain may be set to an extremely low value.
• The dynamics processor may be set to an extreme threshold or ratio.
• If you are connecting an electric guitar, is it connected to the Hi-Z jack?
• Check the level in the HOME screen. For details refer to page 318 "HOME screen."
• Is the attenuator of the EQ screen or VIEW screen raised?

■ **Sound is distorted**

• Is the [GAIN] control set correctly?
• The connection cable from the external device may be broken.
• The fader of the input channel or monitor channel may be raised excessively.
• The stereo output channel fader may be raised excessively.
• The stereo output channel attenuator may be raised excessively.
• The EQ gain may be excessively high.
• Did you record at an appropriate level?
• Is the word clock setting correct for both the AW2816 and the external device(s)?
• An effect such as Distortion or Amp Simulate may be in use.

■ **Can't record**

• Is the internal hard disk connected?
• Is there sufficient free space on the internal hard disk?
• The song may be protected.
• Is the [REC TRACK SELECT] key lit?
• The stereo track may be in playback mode.

- Is the input signal routed appropriately to the recorder? *
  - * If the signal is being input appropriately to the recorder, pressing the [REC TRACK SELECT] key will cause the meter to react.
  - * If the signal is being input appropriately to the recorder, pressing the [REC TRACK SELECT] key will cause the meter in the METER screen to react.
- When a file input/output page such as the SONG screen Song List page is displayed, recording and playback are not possible.
- CD/DAT DIGITAL REC in the UTILITY screen Prefer.2 page may be set to DISABLE.
- Please read and understand the copyright warning (→P.174) before using digital input signals.

■Can't record on the STEREO track
- It is not possible to record on the STEREO track while recording on other tracks.

■Can't play back the STEREO track
- Muting may be selected in the TRACK screen Stereo page.
- Are monitor channels 1 and 2 raised? *
  - * For STEREO track playback mode, the signal is output from monitor channels 1 and 2.

■Not all tracks will play back
- There are limitations on the number of tracks that can be simultaneously recorded or played. Refer to Operation section "Audio tracks".

■The volume of a particular channel increases or decreases
- Are the dynamics processor settings appropriate?
- Automix may have been recorded.

■Faders move to the lowest position on their own
- Automix may have been recorded.

■Meters move even though the faders are lowered
- The direct out setting may be PRE EQ or PRE FADER.
- The meter display may be set to PRE FADER.

■Can't store a scene
- Is the scene memory protected?
- A scene cannot be stored in scene number 00.

■Can't reproduce a scene
- One or more channels may be set to Recall Safe.

■Can't recall a scene during recording
- The AW2816 may be set to record the digital input signal.
- Make sure that CD/DAT DIGITAL REC is set to ENABLE.

■Can't change input patches during recording
- The AW2816 may be set to record the digital input signal.
- Make sure that CD/DAT DIGITAL REC in the UTILITY screen Prefer.2 page is set to ENABLE.

■Can't save to a library
- It is not possible to save to the factory-preset libraries.

■Can't recall a channel library to the stereo output channel
- Channel libraries saved from other channels cannot be recalled to the stereo output channel.

■Can't exchange MIDI data
- Are the MIDI cables connected correctly?
- A MIDI cable may be broken.
- Is the power turned on for the transmitting and receiving devices?
- Do the channel settings match for the transmitted and receiving devices?
- Are the MIDI screen/MIDI Setup page settings set appropriately?
- Is a scene assigned to the program change number being transmitted?

■MIDI messages are looped
- In the MIDI screen MIDI Setup page, ECHO may be turned ON.
- Also check the settings of the connected external MIDI devices.

■MTC messages are not transmitted
- Is the MIDI cable correctly connected to the MTC OUT connector?
- If the cable is connected to the MIDI OUT connector, is the MTC ON/OFF setting turned ON?
- Is SYNC OUT set correctly?
- Is MTC SYNC set to MASTER?

■The AW2816 does not synchronize to incoming MTC messages
- Is the MIDI cable connected to the MIDI IN connector?
- In the MIDI screen MIDI Sync page, is MTC Sync set to SLAVE?

■MTC messages are received, but synchronization drifts
- Is a large amount of MIDI data (notes etc.) being received together with the MTC messages?

■MTC synchronization drifts
- Does the frame rate match between the AW2816 and the external device?
- SYNC OFFSET may have been set.
- If jumps occur in the synchronized time, change the SYNC AVE. setting in the MIDI screen MIDI Sync page, and try again.

■Something happens to the sound when the [DATA/ JOG] dial, [SHUTTLE] dial, [FF] key, or [REW] key are operated
- Differences in the number of simultaneously played tracks will affect the way in which the sound is heard when these controls are operated.

■ **MMC messages is not transmitted**
- Is the MIDI cable connected to the MIDI OUT connector?
- MMC messages are not transmitted from the MTC OUT connector.

■ **Can't receive MMC messages**
- Is the MIDI cable connected to the MIDI IN connector?
- MMC messages cannot be received if the AW2816 is functioning as the MTC slave.

■ **MIDI data is not exchanged via the TO HOST connector**
- Is the cable correctly connected to the TO HOST connector?
- PORT SELECT may be set to MIDI.
- Is the PORT SELECT setting appropriate for your computer? *
  * For details on this setting, refer to page 272 "MIDI screen."
- A computer application other than your sequencer may be using the port.

■ **Metronome cannot be heard**
- The metronome sound is normally sent only to the MONITOR OUT and headphones. *
  * Settings can also be made in the SETUP screen Patch IN page to assign the metronome to an output channel.

■ **Moving a fader does not change the level**
- Is the appropriate fader mode and mixing layer selected?
- The fader may be set to PRE FADE in AUX.

■ **The ON key and SEL key select the wrong channel**
- Is the appropriate mixing layer selected?

■ **Noise is present in the recorded signal**
- Does the word clock setting match for the AW2816 and the external device(s)?
- Is an unsynchronized signal being input?
- Is the dither setting appropriate?
- The oscillator may be functioning.
- If the speed of your internal hard disk is slow, problems may occur during recording and playback. Please use only the recommended internal hard disks.

■ **Sound recorded via the digital input sounds grainy**
- Is the dither setting appropriate?

■ **Pairing was specified, but the signal is monaural**
- Is the odd-numbered channel panned far left and the even-numbered channel panned far right?

■ **Pairing was specified, but the signal phase does not match**
- Even when channels are paired, the phase setting is not linked.

■ **Signal is delayed**
- Is the channel delay set correctly?

■ **Automix cannot be recorded**
- Is automix set to ENABLE?
- In the AUTOMIX screen, is the REC or AUTO REC button turned ON?
- Is the [SEL] key lit for the channel you are operating?
- Is OVERWRITE turned ON for the control (e.g., fader or EQ) you are operating?

■ **Can't use the internal effects**
- Effect BYPASS may be turned ON.
- Are the level of EFF.RTN 1, 2 faders raised?
- In the SETUP screen Patch IN page, EFFECT PATCH may be set to INSERT.
- It is not possible to insert one effect into multiple channels.
- 019. HQ. Pitch can be used only with EFFECT 2.

■ **Can't use SOLO**
- The channel may be set to Solo Safe.
- Is the SETUP screen Solo Setup page set appropriately? *
  * For details on the settings, refer to "SETUP screen."

■ **Can't edit a recorded track**
- Have you selected the virtual track that you recorded?

■ **Editing results are not heard in the sound**
- Have you selected the virtual track that you recorded?
- Are you using the appropriate editing command? *
  * For details on editing commands, refer to "EDIT screen."

■ **Playback pitch is wrong**
- VARI may be selected.
- Is the AW2816 operating on the same sampling frequency as the synchronized external device?
- Is the master device operating in a stable way?
- You may have executed the EDIT screen PITCH command.
- Is an effect such as HQ.Pitch or Dual Pitch selected for a monitor channel?

■ **Counter display is not 0 when you return to the beginning of the song**
- The display mode may be set to REMAIN (remaining recording time).
- If the display mode is set to REL (relative time), the start point may be specified.
- The SONG screen Setting page may be set to MEASURE. *
  * For details on this setting, refer to "SONG screen."

■ Can't save a file

- Is there sufficient space on the internal hard disk?
- Did you perform the correct shut-down procedure when you last turned off the power? *
  - * If you turn off the power without performing the shut-down, data may be lost or the hard disk may be damaged.

■ Song file size is unnaturally large

- Even after you use recorder editing to erase a track etc., that sound file will be saved on the disk as an unused file. Execute the optimize operation in the SONG screen Song Edit page.

■ File date is not recorded correctly

- Is the internal clock set to the correct date and time? *
  - * If the date and time of the internal clock has drifted, the internal battery may have run down. Please contact your Yamaha dealer.

■ A device connected to the SCSI connector is not recognized

- The power of the SCSI device may have been turned on after the AW2816.
- Is the SCSI cable connected correctly?
- The pins of the SCSI cable may have been bent.
- Is the ID of the SCSI device set correctly?
- Is termination specified correctly for the SCSI device?

■ Can't save files on a SCSI device

- Is there sufficient free space on the save destination media?
- Has the save destination media been formatted appropriately?

■ Can't load files from a SCSI device

- Is there sufficient free space on the internal hard disk?

■ CD-RW drive is not recognized

- Is the CD-RW drive connected correctly?

■ Can't create an audio CD

- Is CD-R media inserted?
- The inserted CD-R may have already been finalized.
- Is a signal recorded on the stereo track?
- The stereo track must be at least four seconds long.
- Have you saved a song in which a stereo track has been recorded?
- It is not possible to create an audio CD from a song whose Fs (sampling frequency) setting is 48 kHz.
- Does the display indicate DISK FULL?
- Create sufficient space on the hard disk.
- Erase unneeded tracks and then execute Optimize to increase the available space.

■ An audio CD you created does not play back on a conventional player

- An audio CD you created you not play back on a conventional player unless the disc has been finalized.

■ Audio recorded on CD-RW media does not play back on some players

- In order for audio data recorded on CD-RW media to be played back, the player must support CD-RW. Contact the manufacturer of the player regarding CD-RW support.

■ The sound skips while playing an audio CD that you created

- There may be differences in the quality of the completed CD depending on the type of CD-R media you use. If this occurs, try using single speed (normal speed) recording rather than double-speed or faster recording.

■ Can't use the [DATA/JOG] dial to control on-screen parameters

- The [NUM LOCATE] key may be on.
- The [JOG ON] key may be on.

■ The display indicates MEMORY FULL or DISK FULL, and recording or editing is not possible

- Erase unneeded tracks and then execute Optimize to increase the available space.

■ The display indicates DISK BUSY during playback

- It is possible that the reading speed of the internal hard disk is not fast enough, or that the reading speed has slowed down because the recorded data has become fragmented. Try deleting small regions and re-recording. Alternatively, backup the data, and try using one of the recommended hard disks.

Display message list

Messages

AUTOMIX DISABLED.	Automix is not enabled, and cannot be recorded.
AUTOMIX MEMORY FULL!	Automix memory has no free area.
AUTOMIX NOT RUNNING.	Automix has been stopped, so recording is not possible. Pause the recorder, and then playback.
AUTOMIX REC ABORTED.	Automix recording was stopped, and the data was discarded.
AUTOMIX RECORDING.	The operation cannot be executed since automix is being recorded.
AUTOMIX RUNNING.	The operation cannot be executed since automix is being recorded or played.
BULK: BYTE COUNT MISMATCH!	The data length specified within the received system exclusive data did not match the length of the data that was actually received.
BULK: CHECKSUM MISMATCH!	The check sum of the received system exclusive is incorrect.
BULK: MEMORY PROTECTED!	The scene memory you attempted to receive is protected.
CANNOT ASSIGN DIGITAL-ST-IN.	DIGITAL STEREO IN cannot be assigned to the stereo bus cascade.
CANNOT CHANGE THE MUTE	Muting cannot be defeated since this would exceed the number of simultaneously playable tracks.
CANNOT PLAY THIS PAGE	Playback is not possible in this page.
CANNOT RECALL AUTOMIX	Recall is not possible, since automix data has not been stored.
CANNOT REDO	Redo (re-execution of an operation) is not possible.
CANNOT SET MARK	It is not possible to specify a mark at an already-specified position.
CANNOT UNDO	Undo (cancellation of an operation) is not possible.
CD PLAY MODE NOW.	Since the AW2816 is in CD Play mode, this operation is not possible.
DIFFERENT TC FRAME TYPE	MTC of a different frame type than the internal setting is being received.
DIGITAL-ST-IN REC PROHIBIT.	Recording is prohibited for the signal being input from DIGITAL STEREO IN.
DIGITAL-ST-IN SYNC ERROR!	The signal being input from DIGITAL STEREO IN is not synchronized to the word clock master.
DIN TO STEREO BUS REFUSE.	Since the signal was interrupted, cascading from DIGITAL STEREO IN to the stereo bus has been defeated.
DISK BUSY	The reading speed of the internal hard disk is not fast enough, or the reading speed has slowed down because the recorded data has become fragmented.
DRIVE NOT READY	The drive is not ready.
EFF1 INSERT RELEASED	Effect 1 has been released from insertion because a patch library was recalled.
EFF2 INSERT RELEASED	Effect 2 has been released from insertion because a patch library was recalled.
FOR EFFECT2 ONLY.	The selected effect program can be used only with effect 2.
IN/OUT POINTS TOO CLOSE	The auto punch-in/out interval is too short. It cannot be set less than approximately 100 msec.
INT.EFF NOW SELECTED AUX.	The internal effect is connected to the AUX send, and cannot be inserted.
LOW BATTERY!!	The internal battery is running down.

MAKE NEW MIX.	There are no events to be edited. Please create a new mix.
MARK ERASED	The mark has been erased.
MARK SET	The mark has been set.
MEMORY FULL!!	The song has no more free space. One song can use a maximum of 6.4 GB.
MIDI BULK RECEIVED	A bulk data dump was received.
MIDI IN: DATA FRAMING ERROR!	Invalid data may have been received at the MIDI IN connector.
MIDI IN: DATA OVERRUN!	Invalid data may have been received at the MIDI IN connector.
MIDI: RX BUFFER FULL!	Receiving more MIDI data than it can handle.
MIDI: TX BUFFER FULL!	Attempting to transmit more MIDI data than it can handle.
NO CURRENT AUTOMIX.	There is no valid automix data. Please create a new mix.
NO DATA TO PATCH	No Quick Rec patch has been specified.
NO DATA TO RECALL.	Since data has not been stored, it cannot be recalled.
NO MARK LEFT	The allowable number of marks has been exceeded.
NO MEDIA!!	Media has not been inserted.
NO PATCH CORD LEFT	You attempted to patch in excess of what is allowed by Quick Rec.
PLAY TRACK MUTE IS ON	Playback tracks were muted because the allowable number of simultaneously recorded/played tracks was exceeded.
RECORDER BUSY	The operation cannot be executed because the recorder is operating.
RECORDER RUNNING	The operation cannot be executed because the recorder is recording or playing.
REDO COMPLETE	Redo (re-execution of the previous operation) has been completed.
REPEAT POINTS TOO CLOSE	The repeat interval is too short. It cannot be set to less than one second.
SELECTED ALL TRACKS	Since all tracks are selected, it is not possible to export to CD-R/RW media, or to edit the track name.
SELECTED AREA HAS NO DATA.	The selected area contains no trigger data.
SELECTED AREA HAS NO REGION.	The selected area contains no region.
SELECTED CH IS NONE.	The selected channel cannot be selected since it does not exist.
SELECTED CH ONLY MODE.	The channel cannot be changed, since the display mode is set to SELECTED CH ONLY.
SELECTED SONG HAS NO REGION.	The selected song does not contain a region.
SELECTED TRACK HAS NO REGION.	The selected track does not contain a region.
SELECTED TRACK NOT RECORDED.	The selected track does not contain recorded data.
SLOT INPUT SYNC ERROR!	The signal being input to the input jack of a card installed in OPTION I/O slot is not synchronized to the word clock master.
SOLO READY.	The Solo function is ready. Use the [SEL] keys to select the solo channel.
SOLO SLAVE.	The Solo status cannot be changed when the AW2816 is functioning as a cascade slave. Press the Solo key on the master console.
SONG NUMBER FULL.	The maximum number of songs has been reached.
SONG TOP/END OUT OF RANGE	You located outside the top/end range of the song.
STEREO PAIRED.	You are attempting to defeat ST LINK for the dynamics of paired channels.
STEREO TRACK MUTE IS OFF	Since muting is off for the stereo track, track muting cannot be turned off.

THIS SONG IS PROTECTED.	This song is protected, and cannot be edited or recorded.
TO HOST: DATA FRAMING ERROR!	Invalid data may have been received at the TO HOST connector.
TO HOST: DATA OVERRUN!	Invalid data may have been received at the TO HOST connector.
TO HOST: DATA PARITY ERROR!	Invalid data may have been received at the TO HOST connector.
TO HOST: RX BUFFER FULL!	Excessive amounts of data may have been received at the TO HOST connector.
TO HOST: TX BUFFER FULL!	The AW2816 may be attempting to transmit excessive amounts of data from the TO HOST connector.
UNDO COMPLETE	Undo (cancellation of the previous operation) has been executed.
WRONG WORD CLOCK!!	The word clock from a connected device selected for synchronization is not appropriate.

Popup messages

CD Access Error!	A error occurred when accessing the CD.
CD Size Full!	Data exceeding the recordable length of the CD cannot be added.
CD Track Over!	The maximum number of tracks has been reached, and further addition is not possible.
Can't Copy This Parameter!	This parameter cannot be copied.
Can't Create Image File!	Since the disk is full, a CD image file cannot be created.
Can't Delete Current Song!	The currently loaded song cannot be deleted.
Can't Delete Protected Song!	A protected song cannot be deleted.
Can't Edit Multiple Songs!	This editing operation cannot be executed on multiple songs simultaneously.
Can't Optimize Protected Song!	Optimize cannot be executed on a protected song.
Can't REDO	Redo is not possible.
Can't Select Current Song!	The currently loaded song cannot be edited.
Can't UNDO	Undo is not possible.
Can't Write CD-RW by Track At Once!	A CD-RW cannot be written using Track At Once.
Change Media, Invalid Order.	Please exchange the media. The order of media volumes is incorrect.
Change Media, Not 1st Media	Please exchange the media. This is not the first media volume.
Change Media, Not TYPE 1 Backup.	Please exchange the media. This media was not backed up as TYPE 1.
Change Media, Not TYPE 2 Backup.	Please exchange the media. This media was not backed up as TYPE 2.
Change Media, Please	The media is an incorrect type. Please exchange it.
Device Error!	A problem has occurred with the SCSI device.
Directory Name Too Long!	The directory name is too long and cannot be displayed.
Directory Not Found!	The specified directory cannot be found.
Disk Full!	The disk has no free capacity.
File System Error!	An error has occurred in the file system of the internal hard disk.
Finalized Media!	The media has already been finalized.
Invalid Parameter!	The parameter setting exceeds the allowable range.
Media Error!	A problem has occurred on the media.
Media Full!	The media has no free space.
Media Protected!	The media is write-protected.

No Song to Backup!	There is no song to backup.
No Song to Edit!	There is no song has been selected for editing.
No Song to Load!	There is no song to load.
No Song to Restore!	There is no song to restore.
No Song to Save!	There is no song to save.
No Song to Write!	No songs to write to the CD have been selected.
No Song!	No songs can be found.
No Stereo Track!	There is no stereo track.
No Track to Open Wave Display!	There is no track data for waveform display.
Not WAV Drive!	The selected drive contains no WAV files.
Not WAV File!	The file is not a WAV file.
Partition Not Found!	The specified partition was not found.
Recall Channel Data Conflict!	The specified channel library cannot be loaded into this channel.
SCSI Error!	An error has occurred in the SCSI connection.
Selected Drive is not CD Drive!	The selected drive is not a CD drive.
Selected Drive is not Connected!	The selected drive is not connected.
Selected Preset is Effect2 Only!	The selected preset can be used only by effect 2.
Selected Song Status Conflict!	The track cannot be imported, since it is from a song with a different sampling frequency or quantization (bit length).
Selected Track is not Recorded!	The selected track is not recorded.
Too Many Regions!	There are too many regions.
Too Small Region!	Time compression/expansion cannot be executed since the region is too small.

Messages at power-on

Unformatted HDD	The internal hard disk has not been formatted for the AW2816. This message will be displayed if a new hard disk is installed.
Recognized AW4416-Formatted HDD	A hard disk formatted for the AW4416 is installed.
Can not find HDD	No internal hard disk is installed, and the AW2816 cannot start up correctly.
Illegal HDD!	A problem was found with the internal hard disk, and the AW2816 cannot start up correctly.
Format OK? [Y (Enter) /N (Any)]	If you want to format the internal hard disk for the AW2816, press the [ENTER] key. If you want to exchange the internal hard disk without formatting it for the AW2816, make sure that the access indicator is dark, and turn off the power.

Specifications

General Specifications

Frequency Response	0 +1/–3 dB 20 Hz~20 kHz
	(MIC/LINE IN – STEREO OUT)
Total harmonic distortion	Less than 0.02% 1 kHz (LINE IN to STEREO OUT)
(Nominal input/Output level)	Less than 0.2% 1 kHz (MIC IN to STEREO OUT)
20 kHz LPF	
Dynamic range	109 dB typ. DA converter (STEREO OUT)
(Maximum level to Noise level)	103 dB min. DA converter (STEREO OUT)
20 kHz LPF, IHF-A	104 dB typ. AD + DA (LINE IN to STEREO OUT)
	98 dB min. AD + DA (LINE IN to STEREO OUT)
AD converter	24-bit linear, 64-times oversampling
DA converter	24-bit linear, 128-times oversampling
Internal processing	32-bit
Sampling frequency	Internal 44.1 kHz (±6%)/48 kHz (±6%)
	External 44.1 kHz (–6%) to 48 kHz (+6%)

Audio input section
- MIC/LINE — 8 channels
- DIGITAL STEREO IN — 2 channels (stereo × 1)
- mini YGDAI card (option) — max. 8 channels

Audio output section
- STEREO OUT — 2 channels (stereo × 1)
- OMNI OUT — 4 channels
- MONITOR OUT — 2 channels (stereo × 1)
- PHONES — 2 channels (stereo × 1)
- DIGITAL STEREO OUT — 2 channels (stereo × 1)
- mini YGDAI card (option) — max. 8 channels

Mixing layer section — 28 channels
- Input channel — 8 channels
- Internal effect return — 4 channels (stereo × 2)
- Playback — 16 channels (16 track direct out playback), or stereo 2 channels (stereo track playback)

Internal effects section
- Multi-effects × 2

Bus section — 18 channels
- Bus — 8 channels
- Aux — 6 channels
- Stereo — 2 channels (stereo × 1)
- Solo — 2 channels (stereo × 1)

Recorder section

Recording medium	2.5" IDE hard disk drive
Sound file format	AW2816 original format
Recording resolution	16-bit, 24-bit
Sampling frequency	44.1 kHz/48 kHz
Tracks	130 tracks (16 tracks × 8 virtual tracks plus stereo track)
Maximum recording time	Approx. 230 min (44.1 kHz, 16-bit, 16 tracks, 20 GB hard disk)

Power requirements	U.S.A. & Canada 110–120 V 65 W, 50/60 Hz Europe 220–240 V 65 W, 50 Hz

Dimensions (W × H × D)	480.0 × 141.0 × 428.9 mm (18.9 × 5.5 × 16.9 inches)

Weight	9.5 kg (20.9 lbs)

Operating temperature range	5° to 35° C

Options	2.5" hard disk (HDD25-20G/DARA-212000), mini YGDAI cards (MY8-AT, MY8-TD, MY8-AE, MY8-AD, MY4-AD, MY4-DA, AP8-AD, AP8-DA), Footswitch FC5

Mixer section

■ Input/output

MIC/LINE input   Channel 1, 2 (balanced, XLR-type, TRS phone jack)
   +48 V DC phantom powering
   PEAK LED   –3 dB (clipping level)
   Input impedance   3 kΩ
   Nominal input level   –46 dB to +4 dB
   Minimum input level   –52 dB
   Maximum input level   +22 dB

MIC/LINE input   channel 3–8 (balanced, TRS phone jack)
   PEAK LED   –3 dB (clipping level)
   Input impedance   3 kΩ
   Nominal input level   –46 dB to +4 dB
   Minimum input level   –52 dB
   Maximum input level   +22 dB

MIC/LINE input (Hi-Z)   channel 8 (unbalanced, phone jack)
   Input impedance   500 kΩ
   Nominal input level   –46 dB to +4 dB
   Minimum input level   –52 dB
   Maximum input level   +20 dB

STEREO OUT   L, R (unbalanced, phono)
   Output impedance   1 kΩ
   Nominal load impedance   10 kΩ
   Nominal output level   –10 dBV
   Maximum output level   +8 dBV

MONITOR OUT	L, R (balanced, TRS phone jack)
Output impedance	150Ω
Nominal load impedance	10 kΩ
Nominal output level	+4 dB
Maximum output level	+22 dB

OMNI OUT	1–4 (unbalanced, phone jack)
Output impedance	1 kΩ
Nominal load impedance	10 kΩ
Nominal output level	0 dB
Maximum output level	+18 dB

PHONES	(unbalanced, TRS phone jack)
Nominal load impedance	8–40Ω
Maximum output level	100 mW + 100 mW (40 Ω load)

DIGITAL STEREO I/O	Coaxial (phono)

Option card slot	Slot × 1
Digital I/O	MY8-AT (Adat)
	MY8-TD (Tascam)
	MY8-AE (AES/EBU)
Analog input	MY8-AD (TRS phone jack × 8)
	MY4-AD (XLR-type × 4)
	AP8-AD (Apogee)
Analog output	MY4-DA (XLR-type × 4)
	AP8-DA (Apogee)

* 0 dB= 0.775 Vrms, 0 dBV= 1.0 Vrms

■ Digital mixer

Input channel (channel 1–8, playback 1–16)

Attenuator, Phase (normal, reverse), EQ (4-band PEQ), Dynamics, Delay, On/Off, Fader (60 mm motorized), Pan, Bus assign (stereo, bus, aux, solo, direct out)

Internal effects return

Attenuator, Phase (normal, reverse), EQ (4-band PEQ), Delay, On/Off, Fader (60 mm motorized), Pan, Bus assign (stereo, bus, aux, solo)

Bus	
Stereo L, R	Attenuator, EQ (4-band PEQ), Dynamics, On/Off, Fader (60 mm motorized), Balance
Bus 1–8	Attenuator
Aux 1–6	Attenuator
Solo L, R	

Fader	60 mm motorized × 9

Recorder section

■ General

Recording resolution	16-bit, 24-bit (set per song)
Sampling frequency	44.1 kHz, 48 kHz (set per song)
Maximum track of recording/ Playback simultaneously	16 Bit: 8 Tracks, Recording & 16 Tracks, Playback 24 Bit: 16 Tracks, Recording + Playback
Tracks	130 tracks (16 tracks × 8 virtual tracks plus stereo track)

■ Format

File system	AW2816 original format
Internal hard disk drive	2.5" IDE
Max. hard disk capacity	64 GB/6.4 GB per 1 song
Max. songs per hard disk	Approx. 30,000 songs

■ Edit

Song edit	Name, Comment, Delete, Copy, Optimize, Protect, Fade In/Out, Import
Track edit	Name, Erase, Copy, Exchange, Slip, Time Compression/Expansion, Pitch Change, Import, Append, Export
Part edit	Erase, Delete, Copy, Move, Insert, Time Compression/Expansion, Pitch Change, Export, Append
Region edit	Name, Erase, Delete, Copy, Move, Divide, Trim In/Out, Time Compression/Expansion, Pitch Change, Import, Export

■ Others

|		
Locate	Direct locate:	data entry search (time, measure)
	Quick locate:	Start, End, RTZ, A/B, Last REC In/Out, Roll Back
Punch I/O	Manual Punch I/O, Auto Punch I/O	

Controls

Analog section

Input (channel 1–8)   Gain (variable)

Input (channel 1, 2)   +48 V (phantom switch)

Output   Phones level, monitor out level

Mixer section

WORK NAVIGATE buttons   SONG, FILE, CD, QUICK REC

UNIT buttons   SETUP, UTILITY, MIDI, PATCH

MIXER buttons   VIEW, PAN, EQ, DYN

FADER MODE buttons   AUX1, AUX2, AUX3, AUX4, AUX5, AUX6, REMOTE, HOME

MIXING LAYER buttons   1–8 (INPUT), 1–8 (RECORDER), 9–16 (RECORDER)

ON & SEL buttons, Faders   INPUT 1–8, RECORDER 1–8, RECORDER 9–16, STEREO

ON & SEL buttons, Encoder   RTN1, RTN2

SOLO buttons

Function buttons   SHIFT, F1, F2, F3, F4, F5, CTRL

Recorder section

TRACK CUE button

METER button

REC TRACK SELECT buttons   1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, ST, ALL SAFE

RECORDER buttons   TRACK, EDIT

Locate buttons   NUM LOCATE, ◄◄, ►►, MARK, AUTO PUNCH, IN, OUT, SET, REPEAT, A, B, ROLL BACK, ◄◄, RTZ, ►►, CANCEL

Transport buttons   REW, FF, STOP, PLAY, REC

Others

AUTOMATION button   AUTOMIX, SCENE

SCENE MEMORY button   STORE, –, +, RECALL

UNDO button

REDO button

JOG ON button

CURSOR button   ◄, ►, ▲, ▼

DATA ENTRY button   JOG/SHUTTLE dial

       ENTER button

Display   320 × 240 dots graphical LCD (with contrast control)

Control I/O

MIDI IN   5-pin DIN

MIDI OUT/THRU   5-pin DIN

MTC OUT   5-pin DIN

TO HOST   8-pin mini DIN

SCSI   50-pin half pitch D-Sub

Foot switch   Phone jack

Dimensions

480

141

7.6

428.9
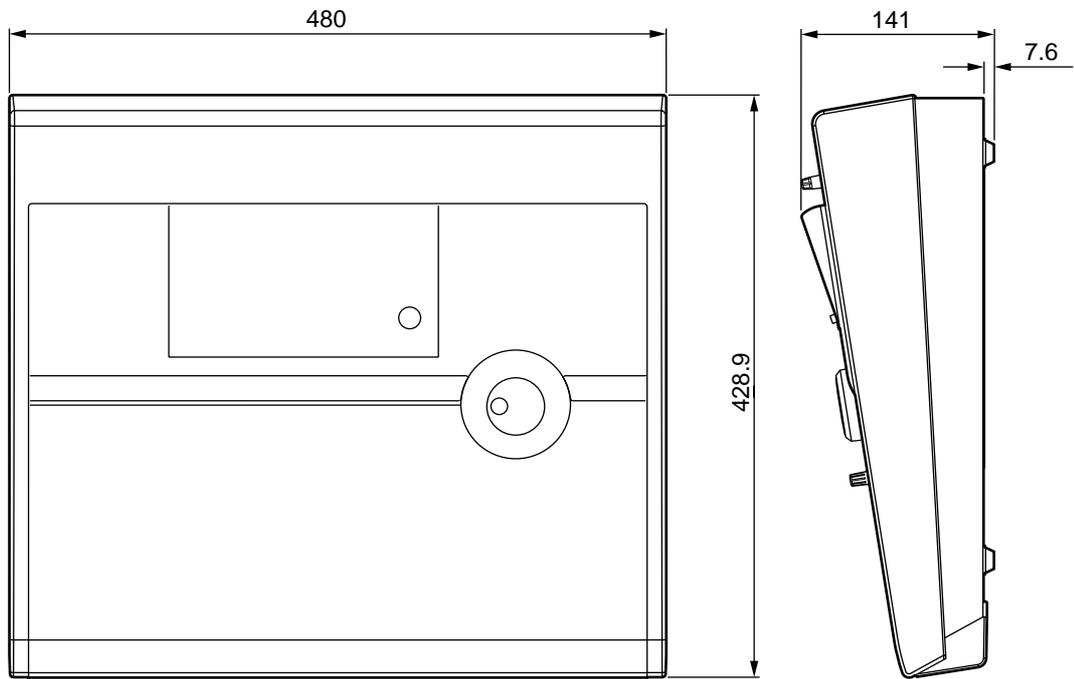
Unit: mm

Specifications and external appearance subject to change without notice.

For European Model

Purchaser/User Information specified in EN55103-1 and EN55103-2.
Inrush Current: 26A
Conformed Environment: E1, E2, E3 and E4

MIDI data format

1. Functions

1.1 MIDI setup

There are two types of serial connector: the MIDI connectors and the TO HOST connector. Each has the same functionality, and you can select either of these to use, depending on the type of device that will be connected. Both types use the MIDI format for communication. When using the TO HOST connector, you must select one of the three transmission methods listed below. Regardless of the type of connector you select, the MTC OUT connector will output MTC.

Since the MTC transmitted from the MTC OUT connector is generated by hardware, its precision is very high. The MIDI OUT/THRU connector can be used as either THRU or OUT. If THRU is selected, the messages arriving at the MIDI IN connector will be re-transmitted without change from the MIDI OUT/THRU connector.

Name	Speed	Applicable to
PC1	31.25k	for NEC PC9800 series
PC2	38.4k	for DOS/V,NEC PC9800 series
Mac	31.25k	for Macintosh (CLOCK=1MHz)

1.2 Scene change

The settings of the [Program Change Assign Table] specify the scene that is recalled when a Program Change message is received.

The settings of the [Program Change Assign Table] specify the program number that is transmitted when a scene is recalled. If more than one program number has been assigned to that scene memory number, the lowest-numbered program number will be transmitted. (If a memory number is recalled for which there is setting in the [MIDI Program Change Assign Table], the Parameter Change (Function Call) listed later in this section will be transmitted.)

1.3 MMC control

These messages allow basic recorder operations such as STOP/PLAY/REC/LOCATE.

If you select the MIDI SETUP menu item MMC MASTER, MMC commands will be transmitted according to the operation of the transport. If you select MMC SLAVE, the internal recorder will operate according to the received MMC commands.

1.4 Effect control

Depending on the type of effect, note-on/off messages can be used for control.

These settings are made for the parameters of each effect.

1.5 MIDI Clock transmission

If the MIDI SETUP menu item [MIDI CLK] is ON, MIDI Clock messages will be transmitted during playback and recording.

In MIDI Clock transmission mode, Song Position Pointer and Start/Stop/Continue commands will also be issued, and during playback or recording, MIDI Clock will be transmitted according to the MIDI Tempo Map.

1.6 MTC master

If the MIDI SETUP menu item [MTC] is ON, MTC will be transmitted during playback and recording.

MTC will always be transmitted from the MTC OUT connector regardless of the [MTC] setting.

1.7 MTC slave synchronization

If the MIDI SETUP menu item [MTC SYNC] is set to SLAVE, the internal recorder will operate in synchronization to MTC messages received from the MIDI IN or TO HOST connector.

1.8 Realtime control of parameters

The internal parameters can be input or output in real-time using control changes or parameter changes.

1.9 Transmission of scene memories or library data

The bulk dump function can be used to send data to another device, or copy settings from another device to the AW2816.

1.10 MIDI Remote

MIDI data created by the user can be transmitted from the AW2816 by operating its faders or ON keys.

2. AW2816 settings and operation

2.1 MIDI Setup

2.1.1 MIDI Channel

2.1.1.1 Transmit channel

This sets the MIDI channel that will normally be used. However, transmission in response to a request will occur on the Receive Channel, in order to specify the desired that transmitted the request.

2.1.1.2 Receive channel

This sets the MIDI channel that will be used for reception. MIDI messages are normally received only if the MIDI channel matches, but if OMNI is ON, they will be received regardless of the channel.

2.1.2 ON/OFF

2.1.2.1 Program change

Enable/disable reception and transmission. If OMNI is turned ON, reception will occur regardless of the MIDI channel. If ECHO is ON, messages will be echoed regardless of the channel.

2.1.2.2 Control change

Enable/disable reception and transmission. If OMNI is turned ON, reception will occur regardless of the MIDI channel. If ECHO is ON, messages will be echoed regardless of the channel.

2.1.2.3 Parameter change

Enable/disable reception and transmission. If OMNI is turned ON, reception will occur regardless of the MIDI channel. If ECHO is ON, messages will be echoed regardless of the channel.

2.1.2.4 Bulk

Enable/disable reception.

2.1.3 MMC Device ID

Specify the ID number used to transmit and receive MMC commands.

2.1.4 MIDI/HOST
Select whether the MIDI IN/OUT connectors of the TO HOST connector will be used for serial transmission. (MTC output data will always be transmitted from the MTC OUT connector.)

2.1.5 OUT/THRU
Select whether the MIDI OUT/THRU connector will function as OUT or as THRU.
If THRU is selected, messages received at the MIDI IN connector will be re-transmitted without change from the MIDI OUT/THRU connector.
Regardless of the MIDI/HOST setting, the connector will function as a THRU connector if the THRU setting is selected. If you want to use the connector as MIDI OUT, the MIDI/HOST setting must be OUT.

2.1.6 TO HOST
If the TO HOST connector is selected, choose one of three settings depending on the type of computer that is connected.

2.1.7 MIDI Clock ON/OFF
Specify whether MIDI Clock will be used.
If this is ON, MIDI Clock will be transmitted from the connector selected by MIDI/HOST.

2.1.8 MTC ON/OFF
Select whether MTC will be used.
If this is ON, MTC will be transmitted from the connector selected by MIDI/HOST.
Regardless of this setting, MTC will always be transmitted from the MTC OUT connector.

2.2 Program change assign table
This table allows you to freely specify the correspondence between Program Change No. and Scene No. This table is used for conversion for both transmission and reception.

2.3 Control change assign table
This table allows you to freely specify the correspondence between Control Change No. and Parameter name.

This table is used for conversion for both transmission and reception.

3. MIDI format list

3.1 CHANNEL MESSAGE
```
     command      rx/tx             function
---------------------+-----+------------------------------------
8n  NOTE OFF      rx    Control the internal effect
9n  NOTE ON       rx    Control the internal effect
Bn  CONTROL CHANGE  rx/tx  Edit parameters (use the Control
                           Change Assign Table)
Cn  PROGRAM CHANGE  rx/tx  Switch scene memories (use the
                           Control Change Assign Table)
```

3.2 SYSTEM COMMON MESSAGE
```
     command      rx/tx             function
---------------------+-----+------------------------------------
F1  MIDI TIME CODE  rx/tx  MTC transmission (when MTC
                           Master), MTC reception (when
                           MTC slave)
F2  SONG POSITION POINTER  tx  SPP reception (when MIDI Clock
                               is used)
```

3.3 SYSTEM REAL TIME MESSAGE
```
     command      rx/tx             function
---------------------+-----+------------------------------------
F8  TIMING CLOCK  tx    MIDI Clock transmission (when
                        MIDI Clock is used)
FA  START         tx    Start command transmission
                        (when MIDI Clock is used)
FB  CONTINUE      tx    Continue command transmission
                        (when MIDI Clock is used)
FC  STOP          tx    Stop command transmit (when
                        MIDI Clock is used)
FE  ACTIVE SENSING rx   Check MIDI cable connections
FF  RESET         rx    Clear running status
```

3.4 SYSTEM EXCLUSIVE MESSAGE
3.4.1 Real Time System Exclusive
3.4.1.1 MMC
```
     command      rx/tx             function
---------------------+-----+------------------------------------
01  STOP           rx/tx  Transport stop
02  PLAY           rx     Transport play
03  DEFERRED PLAY  rx/tx  Transport play
04  FAST FOWARD    rx/tx  Transport fast-forward
05  REWIND         rx/tx  Transport rewind
06  RECORD STROBE  rx     Transport punch-in record
07  RECORD EXIT    rx     Transport punch-out
0F  RESET          rx/tx  MMC reset
40  WRITE          rx     Write data field
44  LOCATE         rx/tx  Transport locate
```

3.4.2 Bulk Dump & Request
```
data
name  rx/tx   function
-----+-------+------------------------------------
'M'   rx/tx   Scene Memory & Request
'S'   rx/tx   Setup Memory & Request
'R'   rx/tx   Remote Memory & Request
'Q'   rx/tx   Equalizer Library & Request
'Y'   rx/tx   Dynamics Library & Request
'E'   rx/tx   Effect Library & Request
'T'   rx/tx   Patch Library & Request
'H'   rx/tx   Channel Library & Request
'A'   rx/tx   Automix Memory & Request
'P'   rx/tx   Program Change Assign Table & Request
'C'   rx/tx   Control Change Assign Table & Request
```

3.4.3 Parameter Change
```
Parameter
type  rx/tx   function
-----+-------+------------------------------------
0x00  rx/tx   edit buffer (byte operation format)
0x01  rx      system memory (byte operation format)
0x02  rx/tx   function call (mem/lib recall,mem/lib
              store)
0x10  rx/tx   edit buffer (7bit operation format)
0x40  rx/tx   edit buffer (bit operation format)
0x41  rx      system memory (bit operation format)
0x43  rx      controller (key remote) (bit opera-
              tion format)
```

4. MIDI format details

4.1 NOTE OFF (8n)

< Reception >
Received when [Rx CH] matches.
Used to control effects. Refer below for details.

```
STATUS     1000nnnn 8n   Note Off Message
DATA       0nnnnnnn nn   Note No.
           0vvvvvvv vv   Velocity (ignored)
```

4.2 NOTE ON (9n)

< Reception >
Received when [Rx CH] matches.
Used to control effects. Refer below for details.
Velocity of 0x00 is equivalent to Note-Off.

```
STATUS     1001nnnn 9n   Note On Message
DATA       0nnnnnnn nn   Note No.
           0vvvvvvv vv   Velocity (1-127:On, 0:off)
```

* Effect control by Note
1: Dynamic Flange/Dynamic Phase/Dynamic Filter
When the SOURCE parameter is set to MIDI, the note
velocity (both note-on and note-off) is used to control the
Modulation frequency width.

4.3 CONTROL CHANGE (Bn)

< Reception >
This message is received when [Control Change RX] is
ON and the [Rx CH] matches. However if [OMNI] is
ON, this is received regardless of the channel.
This message is echoed if [Control Change ECHO] is
ON.
Parameters will be controlled according to the [Control
Change Assign Table] settings.
If a message is received while the [Control Change
Assign Table] is displayed, the cursor will move to that
control number.

< Transmission >
If [Control Change TX] is ON, this message is transmitted
on the [Tx CH] channel when a parameter specified in
the [Control Change Assign Table] is operated.
This message is echoed if [Control Change ECHO] is
ON.

```
STATUS     1011nnnn Bn   Control Change
DATA       0ccccccc cc   Control No. (0-95, 102-
                         119)
           0vvvvvvv vv   Control Value (0-127)
```

The control value is converted into a parameter value
according to the following equation.
C = 128 (byte parameter)
    16384 (word parameter)
S = total number of variable steps for the parameter
C/S = X remainder Y
INT((Y+1)/2) = Z
If (MIDI data - Z) < 0, then → param = 0
If ((MIDI data - Z)/X) > MAX, then → param = MAX
Otherwise → param = INT((MIDI DATA -Z)/X)

4.4 PROGRAM CHANGE (Cn)

< Reception >
This message is received if [Program Change RX] is ON
and [Rx CH] matches. However if [OMNI] is ON, this
message is received regardless of the channel.
This message is echoed if [Control Change ECHO] is
ON.
A scene memory will be recalled according to the [Pro-
gram Change Assign Table] settings.

< Transmission >
If [Program Change TX] is ON, performing a Recall oper-
ation on the AW2816 will cause this message to be trans-
mitted on the [Tx CH] according to the [Program Change
Assign Table] settings. If the recalled memory number
has been assigned to more than one program number,
the lowest-numbered program number will be transmit-
ted.
(If a memory number not specified in the [Program
Change Assign Table] is recalled, the Parameter Change
(Function Call) described below will be transmitted.)
This message is echoed if [Control Change ECHO] is
ON.

```
STATUS     1100nnnn Cn   Program Change
DATA       0nnnnnnn nn   Program No. (0-127)
```

4.5 MIDI TIME CODE QUARTER FRAME(F1)

< Transmission >
When the recorder is in Play or Record status, Quarter
Frame messages are transmitted from the MIDI OUT con-
nector (if [MTC] is ON) and from the MTC OUT connec-
tor.

< Reception >
This message is received if [MTC SYNC] is set to SLAVE.
Quarter Frame messages received in realtime are inter-
nally assembled into time code that controls the
recorder.

```
STATUS     11110001 F1   Quarter Frame Message
DATA       0nnndddd dd   nnn = message type (0-7)
                         dddd = data
```

4.6 SONG POTISION POINTER(F2)

< Transmission >
If [MIDI CLK] is ON, this message is transmitted when
the recorder Stops or Locates, to indicate the song posi-
tion at which the next Start/Continue will begin.

```
STATUS     11110010 F2   Song Position Pointer
DATA       0ddddddd dd0  data( H) high 7 bits of 14
                         bits data
           0ddddddd dd1  data( L) low 7 bits of 14
                         bits data
```

4.7 TIMING CLOCK(F8)

< Transmission >
If [MIDI CLK] is ON, this message is transmitted accord-
ing to the MIDI Tempo Map from when the recorder
begins playing or recording, until it stops.

```
STATUS     11111000 F8   Timing Clock
```

4.8 START(FA)

< Transmission >
If [MIDI CLK] is ON, this message is transmitted when
the recorder begins playing or recording at the first mea-
sure.

```
STATUS     11111010 FA   Start
```

4.9 CONTINUE(FB)

< Transmission >
If [MIDI CLK] is ON, this message is transmitted when
the recorder begins playing or recording at a location
other than the first measure.

```
STATUS     11111011 FB   Continue
```

4.10 STOP(FC)

< Transmission >
If [MIDI CLK] is ON, this message is transmitted when
the recorder stops.

```
STATUS     11111100 FC   Stop
```

4.11 ACTIVE SENSING (FE)

< Reception >

Once this message is received, subsequent failure to receive any message for a period of 300 ms will cause Running Status to be cleared, and MIDI communications to be initialized.

```
STATUS      11111110 FE   Active Sensing
```

4.12 RESET

< Reception >

When a Reset message is received, MIDI communications will be initialized by clearing Running Status etc.

```
STATUS      11111111 FF   Reset
```

4.13 EXCLUSIVE MESSAGE (F0-F7)

4.13.1 MMC

4.13.1.1 MMC STOP

< Transmission>

When the STOP key is pressed, this message is transmitted with a device number of 7F.

< Reception >

If the AW2816 is operating as an MMC Slave, the transport will stop when this message is received with a matching device number or a device number of 7F.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01111111 7F   Real Time System Exclusive
Device ID   0ddddddd dd   Destination (00-7E, 7F:all
                          call)
Command     00000110 06   Machine Control Com-
                          mand(mcc) sub-id
            00000001 01   Stop(MCS)
EOX         11110111 F7   End Of Exclusive
```

4.13.1.2 MMC PLAY

< Reception >

If the AW2816 is operating as an MMC Slave, the transport will begin playback when this message is received with a matching device number or a device number of 7F.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01111111 7F   Real Time System Exclusive
Device ID   0ddddddd dd   Destination (00-7E, 7F:all
                          call)
Command     00000110 06   Machine Control Com-
                          mand(mcc) sub-id
            00000010 02   Play(MCS)
EOX         11110111 F7   End Of Exclusive
```

4.13.1.3 MMC DEFERRED PLAY

< Transmission >

This message is transmitted with a device number of 7F when the PLAY key is pressed.

< Reception >

If the AW2816 is operating as an MMC Slave, the transport will begin playback when this message is received with a matching device number or a device number of 7F.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01111111 7F   Real Time System Exclusive
Device ID   0ddddddd dd   Destination (00-7E, 7F:all
                          call)
Command     00000110 06   Machine Control Com-
                          mand(mcc) sub-id
            00000011 03   Deferred play(MCS)
EOX         11110111 F7   End Of Exclusive
```

4.13.1.4 MMC FAST FORWARD

< Transmission >

This message is transmitted with a device number of 7F when the FF key is pressed or when the Shuttle is rotated toward the right to enter Cue mode.

< Reception >

If the AW2816 is operating as an MMC Slave, the transport will begin fast-forward when this message is received with a matching device number or a device number of 7F.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01111111 7F   Real Time System Exclusive
Device ID   0ddddddd dd   Destination (00-7E, 7F:all
                          call)
Command     00000110 06   Machine Control Com-
                          mand(mcc) sub-id
            00000110 04   Fast Forward(MCS)
EOX         11110111 F7   End Of Exclusive
```

4.13.1.5 MMC REWIND

< Transmission >

This message is transmitted with a device number of 7F when the REWIND key is pressed or when the Shuttle is rotated toward the left to enter Review mode.

< Reception >

If the AW2816 is operating as an MMC Slave, the transport will begin rewind when this message is received with a matching device number or a device number of 7F.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01111111 7F   Real Time System Exclusive
Device ID   0ddddddd dd   Destination (00-7E, 7F:all
                          call)
Command     00000110 06   Machine Control Com-
                          mand(mcc) sub-id
            00000101 05   Rewind(MCS)
EOX         11110111 F7   End Of Exclusive
```

4.13.1.6 MMC RECORD STROBE

< Reception >

This message is received if the AW2816 is operating as an MMC Slave and the device number matches or is 7F. If the transport is stopped, then recording will begin. If the transport is playing, then punch-in will occur.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01111111 7F   Real Time System Exclusive
Device ID   0ddddddd dd   Destination (00-7E, 7F:all
                          call)
Command     00000110 06   Machine Control Com-
                          mand(mcc) sub-id
            00000110 06   Record strobe
EOX         11110111 F7   End Of Exclusive
```

4.13.1.7 MMC RECORD EXIT

< Reception >

This message is received if the AW2816 is operating as an MMC Slave and the device number matches or is 7F. If the transport is recording, then punch-out will occur.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01111111 7F   Real Time System Exclusive
Device ID   0ddddddd dd   Destination (00-7E, 7F:all
                          call)
Command     00000110 06   Machine Control Com-
                          mand(mcc) sub-id
            00000111 07   Record Exit
EOX         11110111 F7   End Of Exclusive
```

4.13.1.8 MMC RESET

< Transmission >

This message is transmitted with a device number of 7F when song loading is finished.

< Reception >

This message is received if the AW2816 is operating as an MMC Slave and the device number matches or is 7F. MMC-related internal settings will be reset to the power-on state.

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01111111 7F   Real Time System Exclusive
Device ID    0ddddddd dd   Destination (00-7E, 7F:all
                           call)
Command      00000110 06   Machine Control Com-
                           mand(mcc) sub-id
             00001101 0D   Reset
EOX          11110111 F7   End Of Exclusive
```

4.13.1.9 MMC WRITE

< Reception >

This message is received if the AW2816 is operating as an MMC Slave and the device number matches or is 7F. Data will be written into the specified information field.

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01111111 7F   Real Time System Exclusive
Device ID    0ddddddd dd   Destination (00-7E, 7F:all
                           call)
Command      00000110 06   Machine Control Com-
                           mand(mcc) sub-id
             01000000 40   Write
             0ccccccc cc   Byte Count
             0nnnnnnn nn   Writeable Information
                           Field name
             0ddddddd dd   Format defined by the
                           Information Filed name
                  :   :
             0nnnnnnn nn   More nn dd... pairs as
                           required..
EOX          11110111 F7   End Of Exclusive
```

4.13.1.9.1 MMC INFORMATION FIELD - TRACK RECORD READY

< Reception >

This message is received if the AW2816 is operating as an MMC Slave and the device number matches. REC SELECT will be switched on/off for the recorder tracks as specified by the Standard Track Bitmap data.

```
             01001111 4F   Track Record Ready (Infor-
                           mation Field name)
             0nnnnnnn nn   Data Length (0:all track
                           off, 3:record track on)
             0aaaaaaa aa   1-2tr rec track On(Stan-
                           dard Track Bitmap)
             0bbbbbbb bb   3-9tr rec track On
             0ccccccc cc   10-16tr rec track On
```

4.13.1.10 MMC LOCATE(TARGET)

< Transmission >

This message is transmitted with a device number of 7F when a locate-related key such as MARK SEARCH/IN/OUT is pressed, a FF/REW/shuttle operation is performed, when the transport returns to the auto-punch pre-roll point, or when repeating.

< Reception >

This message is received if the AW2816 is operating as an MMC Slave and the device number matches. The transport will locate to the time code position specified within the command data.

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01111111 7F   Real Time System Exclusive
Device ID    0ddddddd dd   Destination (00-7E, 7F:all
                           call)
Command      00000110 06   Machine Control Com-
                           mand(mcc) sub-id
             01000100 44   Locate
             00000110 06   byte count
             00000001 01   "target" sub command
```

```
             0hhhhhhh hh   hour (Standard Time Code)
             0mmmmmmm mm   minute
             0sssssss ss   second
             0fffffff ff   frame
             0sssssss ss   sub-frame
EOX          11110111 F7   End Of Exclusive
```

4.13.2 Bulk Dump & Request

This message inputs/outputs the contents of various internal memories.

The unique header is used to distinguish whether the data belongs to the AW2816.

The check sum is calculated by adding the bytes starting after BYTE COUNT (LOW) and ending before CHECK SUM, then inverting the bits and adding 1 (binary complement), and setting bit 7 to 0.

CHECK SUM = (-sum) & 0x7F

< Reception >

This message is received if [Bulk RX] is on, and the [Rx CH] matches the MIDI channel included in the Sub Status.

When a bulk dump is received, it is immediately written into the specified memory.

When a bulk dump request is received, a bulk dump will be transmitted immediately.

< Transmission >

Bulk Dump messages are transmitted on the [Tx CH] in response to key operations in the [MIDI BULK] screen.

Bulk Dump messages are transmitted on the [Rx CH] in response to Bulk Dump Request messages.

4.13.2.1 Scene Memory Bulk Dump Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS   0000nnnn 0n   n=0-15(MIDI Channel No.1-
                           16)
FORMAT No.   01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)       00010110 16   2837(2827+10)bytes
BYTE COUNT
(LOW)        00010101 15
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01001101 4D   'M'
             0mmmmmmm mm   m=0-96,127(Scene Memory
                           No.0-96, edit buffer)
                           Receive is effective No.1-
                           96,127
DATA         0ddddddd ds   Scene Memory(33+(1361*2)
                           bytes)
                  :   :
             0ddddddd de
CHECK SUM    0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                           +...+de)+1) AND 7Fh
EOX          11110111 F7   End Of Exclusive
```

The first 33 bytes are ID + Protect + Title, and are 7 bit. The subsequent 1363 bytes are all divided into 4 bit units.

4.13.2.2 Scene Memory Bulk Dump Request Format

```
STATUS        11110000 F0   System Exclusive Message
ID No.        01000011 43   Manufacturer's ID
                            No.(YAMAHA)
SUB STATUS    0010nnnn 2n   n=0-15(MIDI Channel No.1-
                            16)
FORMAT No.    01111110 7E   Universal Bulk Dump
              01001100 4C   'L'
              01001101 4D   'M'
              00100000 20   ' '
              00100000 20   ' '
              00111000 38   '8'
              01000011 43   'C'
              00110011 33   '3'
              00110110 36   '6'
DATA NAME     01001101 4D   'M'
              0mmmmmmm mm   m=0-97,127(Scene Memory
                            No.0-97, edit buffer)
EOX           11110111 F7   End Of Exclusive
```

4.13.2.3 Setup Memory Bulk Dump Format

```
STATUS        11110000 F0   System Exclusive Message
ID No.        01000011 43   Manufacturer's ID
                            No.(YAMAHA)
SUB STATUS    0000nnnn 0n   n=0-15(MIDI Channel No.1-
                            16)
FORMAT No.    01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)        00000100 04   522(512+10)bytes
BYTE COUNT
(LOW)         00001010 0A
              01001100 4C   'L'
              01001101 4D   'M'
              00100000 20   ' '
              00100000 20   ' '
              00111000 38   '8'
              01000011 43   'C'
              00110011 33   '3'
              00110110 36   '6'
DATA NAME     01010011 53   'S'
              00100000 20   ' '
DATA          0ddddddd ds   Setup Memory(256*2bytes)
                 :  :
              0ddddddd de
CHECK SUM     0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                            +...+de)+1) AND 7Fh
EOX           11110111 F7   End Of Exclusive
```

All data is divided into 4 bit units.

4.13.2.4 Setup Memory Bulk Dump Request Format

```
STATUS        11110000 F0   System Exclusive Message
ID No.        01000011 43   Manufacturer's ID
                            No.(YAMAHA)
SUB STATUS    0010nnnn 2n   n=0-15(MIDI Channel No.1-
                            16)
FORMAT No.    01111110 7E   Universal Bulk Dump
              01001100 4C   'L'
              01001101 4D   'M'
              00100000 20   ' '
              00100000 20   ' '
              00111000 38   '8'
              01000011 43   'C'
              00110011 33   '3'
              00110110 36   '6'
DATA NAME     01010011 53   'S'
              00100000 20   ' '
EOX           11110111 F7   End Of Exclusive
```

4.13.2.5 Remote Memory Bulk Dump Format

```
STATUS        11110000 F0   System Exclusive Message
ID No.        01000011 43   Manufacturer's ID
                            No.(YAMAHA)
SUB STATUS    0000nnnn 0n   n=0-15(MIDI Channel No.1-
                            16)
FORMAT No.    01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)        00001010 0A   1294(1284+10)bytes
BYTE COUNT
(LOW)         00001110 0E
              01001100 4C   'L'
              01001101 4D   'M'
              00100000 20   ' '
              00100000 20   ' '
              00111000 38   '8'
              01000011 43   'C'
              00110011 33   '3'
              00110110 36   '6'
DATA NAME     01010010 52   'R'
              0bbbbbbb bb   b = 0-3(bank no.A-D)
DATA          0ddddddd ds   Remote(Internal Parame-
                            ter) Memory(642*2bytes)
                 :  :
              0ddddddd de
CHECK SUM     0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                            +...+de)+1) AND 7Fh
EOX           11110111 F7   End Of Exclusive
```

All data is divided into 4 bit units.

4.13.2.6 Remote Memory Bulk Dump Request Format

```
STATUS        11110000 F0   System Exclusive Message
ID No.        01000011 43   Manufacturer's ID
                            No.(YAMAHA)
SUB STATUS    0010nnnn 2n   n=0-15(MIDI Channel No.1-
                            16)
FORMAT No.    01111110 7E   Universal Bulk Dump
              01001100 4C   'L'
              01001101 4D   'M'
              00100000 20   ' '
              00100000 20   ' '
              00111000 38   '8'
              01000011 43   'C'
              00110011 33   '3'
              00110110 36   '6'
DATA NAME     01010010 52   'R'
              0bbbbbbb bb   b = 0-3(bank no.A-D)
EOX           11110111 F7   End Of Exclusive
```

4.13.2.7 Equalizer Library Bulk Dump Format

```
STATUS        11110000 F0   System Exclusive Message
ID No.        01000011 43   Manufacturer's ID
                            No.(YAMAHA)
SUB STATUS    0000nnnn 0n   n=0-15(MIDI Channel No.1-
                            16)
FORMAT No.    01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)        00000000 00   58(48+10)bytes
BYTE COUNT
(LOW)         00111010 3A
              01001100 4C   'L'
              01001101 4D   'M'
              00100000 20   ' '
              00100000 20   ' '
              00111000 38   '8'
              01000011 43   'C'
              00110011 33   '3'
              00110110 36   '6'
DATA NAME     01010001 51   'Q'
              0mmmmmmm mm   m= 0-127 (Equalizer
                            Library No.1-128)
                            Receive is effective
                            No.41-128
DATA          0ddddddd ds   Equalizer Library Mem-
                            ory(16+(16*2)bytes)
                 :  :
              0ddddddd de
CHECK SUM     0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                            +...+de)+1) AND 7Fh
EOX           11110111 F7   End Of Exclusive
```

The first 16 bytes are the title, and are 7 bit. The subsequent 17 bytes are all divided into 4 bit units.

4.13.2.8 Equalizer Library Bulk Dump Request Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS   0010nnnn 2n   n=0-15(MIDI Channel No.1-
                           16)
FORMAT No.   01111110 7E   Universal Bulk Dump
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01010001 51   'Q'
             0mmmmmmm mm   m= 0-127 (Equalizer
                           Library No.1-128)
EOX          11110111 F7   End Of Exclusive
```

4.13.2.9 Dynamics Library Bulk Dump Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS   0000nnnn 0n   n=0-15(MIDI Channel No.1-
                           16)
FORMAT No.   01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)       00000000 00   40(30+10)bytes
BYTE COUNT
(LOW)        00101000 28
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01011001 59   'Y'
             0mmmmmmm mm   m= 0-127 (Dynamics Library
                           No.1-128)
                           Receive is effective
                           No.41-128
DATA         0ddddddd ds   Dynamics Library Mem-
                           ory(16+(7*2)bytes)
                 :  :
             0ddddddd de
CHECK SUM    0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                           +...+de)+1) AND 7Fh
EOX          11110111 F7   End Of Exclusive
```

The first 16 bytes are the title, and are 7 bit. The subsequent 7 bytes are all divided into 4 bit units.

4.13.2.10 Dynamics Library Bulk Dump Request Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS   0010nnnn 2n   n=0-15(MIDI Channel No.1-
                           16)
FORMAT No.   01111110 7E   Universal Bulk Dump
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01011001 59   'Y'
             0mmmmmmm mm   m= 0-127 (Dynamics Library
                           No.1-128)
EOX          11110111 F7   End Of Exclusive
```

4.13.2.11 Effect Library Bulk Dump Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS   0000nnnn 0n   n=0-15(MIDI Channel No.1-
                           16)
FORMAT No.   01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)       00000000 00   112(102+10)bytes
BYTE COUNT
(LOW)        01110000 70
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01000101 45   'E'
             0mmmmmmm mm   m= 0-127 (Effect Library
                           No.1-128)
                           Receive is effective 42-
                           128
DATA         0ddddddd ds   Effect Library Mem-
                           ory(16+(43*2)bytes)
                 :  :
             0ddddddd de
CHECK SUM    0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                           +...+de)+1) AND 7Fh
EOX          11110111 F7   End Of Exclusive
```

The first 12 bytes are the title, and are 7 bit. The subsequent 41 bytes are all divided into 4 bit units.

4.13.2.12 Effect Library Bulk Dump Request Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS   0010nnnn 2n   n=0-15(MIDI Channel No.1-
                           16)
FORMAT No.   01111110 7E   Universal Bulk Dump
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01000101 45   'E'
             0mmmmmmm mm   m= 0-127 (Effect Library
                           No.1-128)
EOX          11110111 F7   End Of Exclusive
```

4.13.2.13 Patch Library Bulk Dump Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS   0000nnnn 0n   n=0-15(MIDI Channel No.1-
                           16)
FORMAT No.   01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)       00000000 00   110(100+10)bytes
BYTE COUNT
(LOW)        01101110 6E
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01010100 54   'T'
             0mmmmmmm mm   m= 0-20 (Patch Library
                           No.0-20)
                           Receive is effective No.1-
                           20
```

```
DATA        0ddddddd ds   Effect Library Mem-
                          ory(16+(42*2)bytes)
               :  :
            0ddddddd de
CHECK SUM   0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                          +...+de)+1) AND 7Fh
EOX         11110111 F7   End Of Exclusive
```

The first 12 bytes are the title, and are 7 bit. The subsequent 41 bytes are all divided into 4 bit units.

4.13.2.14 Patch Library Bulk Dump Request Format

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0010nnnn 2n   n=0-15(MIDI Channel No.1-
                          16)
FORMAT No.  01111110 7E   Universal Bulk Dump
            01001100 4C   'L'
            01001101 4D   'M'
            00100000 20   ' '
            00100000 20   ' '
            00111000 38   '8'
            01000011 43   'C'
            00110011 33   '3'
            00110110 36   '6'
DATA NAME   01010100 54   'T'
            0mmmmmmm mm   m= 0-20 (Patch Library
                          No.0-20)
EOX         11110111 F7   End Of Exclusive
```

4.13.2.15 Channel Library Bulk Dump Format

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0000nnnn 0n   n=0-15(MIDI Channel No.1-
                          16)
FORMAT No.  01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)      00000000 00   112(102+10)bytes
BYTE COUNT
(LOW)       01110000 70
            01001100 4C   'L'
            01001101 4D   'M'
            00100000 20   ' '
            00100000 20   ' '
            00111000 38   '8'
            01000011 43   'C'
            00110011 33   '3'
            00110110 36   '6'
DATA NAME   01001000 48   'H'
            0mmmmmmm mm   m= 0-64 (Channel Library
                          No.0-64)
                          Receive is effective No.2-
                          64
DATA        0ddddddd ds   Effect Library Mem-
                          ory(16+(43*2)bytes)
               :  :
            0ddddddd de
CHECK SUM   0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                          +...+de)+1) AND 7Fh
EOX         11110111 F7   End Of Exclusive
```

The first 12 bytes are the title, and are 7 bit. The subsequent 41 bytes are all divided into 4 bit units.

4.13.2.16 Channel Library Bulk Dump Request Format

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0010nnnn 2n   n=0-15(MIDI Channel No.1-
                          16)
FORMAT No.  01111110 7E   Universal Bulk Dump
            01001100 4C   'L'
            01001101 4D   'M'
            00100000 20   ' '
            00100000 20   ' '
            00111000 38   '8'
            01000011 43   'C'
            00110011 33   '3'
            00110110 36   '6'
DATA NAME   01001000 48   'H'
            0mmmmmmm mm   m= 0-64 (Channel Library
                          No.0-64)
EOX         11110111 F7   End Of Exclusive
```

4.13.2.17 Automix Bulk Dump Format

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0000nnnn 0n   n=0-15(MIDI Channel No.1-
                          16)
FORMAT No.  01111110 7E   Universal Bulk Dump
BYTE COUNT
(HIGH)      00010000 10   2078(1024*2+20+10)bytes
BYTE COUNT
(LOW)       00011110 1E
            01001100 4C   'L'
            01001101 4D   'M'
            00100000 20   ' '
            00100000 20   ' '
            00111000 38   '8'
            01000011 43   'C'
            00110011 33   '3'
            00110110 36   '6'
DATA NAME   01000001 41   'A'
            0mmmmmmm mm   m= 0-16 (Channel Library
                          No.1-16, current buffer)
DATA        0xxxxxxx xx   block count (high)
            0xxxxxxx xx   block count (low) [0 -
                          (size-1)]
            0xxxxxxx xx   total block count (high)
            0xxxxxxx xx   total block count (low)
                          [size-1]
            0ttttttt tt   title1
               :  :
            0ttttttt tt   title16
            0ddddddd ds   Automix Memory(1024*2
                          bytes)
               :  :
            0ddddddd de
CHECK SUM   0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                          +...+de)+1) AND 7Fh
EOX         11110111 F7   End Of Exclusive
```

4.13.2.18 Automix Bulk Dump Request Format

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0010nnnn 2n   n=0-15(MIDI Channel No.1-
                          16)
FORMAT No.  01111110 7E   Universal Bulk Dump
            01001100 4C   'L'
            01001101 4D   'M'
            00100000 20   ' '
            00100000 20   ' '
            00111000 38   '8'
            01000011 43   'C'
            00110011 33   '3'
            00110110 36   '6'
DATA NAME   01000001 41   'A'
            0mmmmmmm mm   m= 0-16 (Channel Library
                          No.1-16, current buffer)
EOX         11110111 F7   End Of Exclusive
```

4.13.2.19 Program Change Assign Table Bulk Dump Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS 0000nnnn 0n     n=0-15(MIDI Channel No.1-
                           16)
FORMAT No. 01111110 7E     Universal Bulk Dump
BYTE COUNT
(HIGH)       00000001 01   138(128+10)bytes
BYTE COUNT
(LOW)        00001010 0A
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01010000 50   'P'
             00100000 20   ' '
DATA         0ddddddd ds   Program Change
                           Table(128bytes)
                :  :
             0ddddddd de
CHECK SUM    0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                           +...+de)+1) AND 7Fh
EOX          11110111 F7   End Of Exclusive
```

All data is 7 bit.

4.13.2.20 Program Change Assign Table Bulk Dump Request Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS 0010nnnn 2n     n=0-15(MIDI Channel No.1-
                           16)
FORMAT No. 01111110 7E     Universal Bulk Dump
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01010000 50   'P'
             00100000 20   ' '
EOX          11110111 F7   End Of Exclusive
```

4.13.2.21 Control Change Assign Table Bulk Dump Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS 0000nnnn 0n     n=0-15(MIDI Channel No.1-
                           16)
FORMAT No. 01111110 7E     Universal Bulk Dump
BYTE COUNT
(HIGH)       00000010 02   352(342+10)bytes
BYTE COUNT
(LOW)        01100000 60
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01000011 43   'C'
             00100000 20   ' '
DATA         0ddddddd ds   Control Change
                           Table(114*3bytes)
                :  :
             0ddddddd de
CHECK SUM    0eeeeeee ee   ee=(INVERT('L'+'M'+...+ds
                           +...+de)+1) AND 7Fh
EOX          11110111 F7   End Of Exclusive
```

All data is 7 bit.

4.13.2.22 Control Change Assign Table Bulk Dump Request Format

```
STATUS       11110000 F0   System Exclusive Message
ID No.       01000011 43   Manufacturer's ID
                           No.(YAMAHA)
SUB STATUS 0010nnnn 2n     n=0-15(MIDI Channel No.1-
                           16)
FORMAT No. 01111110 7E     Universal Bulk Dump
             01001100 4C   'L'
             01001101 4D   'M'
             00100000 20   ' '
             00100000 20   ' '
             00111000 38   '8'
             01000011 43   'C'
             00110011 33   '3'
             00110110 36   '6'
DATA NAME    01000011 43   'C'
             00100000 20   ' '
EOX          11110111 F7   End Of Exclusive
```

4.13.3 Parameter Change
4.13.3.1 Basic format

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0pppnnnn pn   p=mode (1:parameter change
                          or response for request
                          3:parameter request)
                          n=0-15(Rx Channel No.1-16)
GROUP ID    00111110 3E   MODEL ID(Digital Mixer)
MODEL ID    00000111 07   Device Code(AW2816)
PARAM TYPE  0ttttttt tt   Parameter type
DATA        0ddddddd dd0  data 0
                :  :
            0ddddddd ddn  data n
EOX         11110111 F7   End Of Exclusive


Parameter
type  rx/tx  function
------+------+---------------------------------
0x00  rx/tx  edit buffer (byte operation format)
0x01  rx/tx  setup memory (byte operation format)
0x02  rx/tx  function call (mem/lib recall,mem/lib
             store)
0x10  rx/tx  edit buffer (7bit operation format)
0x40  rx/tx  edit buffer (bit operation format)
0x41  rx/tx  setup memory (bit operation format)
0x43  rx/tx  controller (key remote) (bit opera-
             tion format)
```

4.13.3.2 Parameter Change (byte operation for type 0x00:edit buffer)
4.13.3.2
< Reception >
This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON.
When this message is received, the specified parameter will be controlled.

< Transmission >
If [Parameter Change TX] is ON, this message will be transmitted on the [Tx CH] MIDI channel when a parameter not specified in the [Control Change Assign Table] is edited.
This message will be echoed if [Parameter Change ECHO] is ON.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0001nnnn 1n   parameter change or
                          response  n=0-15(MIDI
                          Channel No.1-16)
GROUOP ID   00111110 3e   MODEL ID(digital mixer)
MODEL ID    00000111 07   Device code (AW2816)
PARAM TYPE  00000000 00   byte operation for edit
                          buffer (type)
DATA        0aaaaaaa dd1  address( H) high 7 bits of
                          14 bits address
            0aaaaaaa dd2  address( L) low 7 bits of
                          14 bits address
            0000dddd dd3  data( H) high 4 bits of 8
                          bits data
            0000dddd dd4  data( L) low 4 bits of 8
                          bits data
                :  :      continuous address datas
EOX         11110111 F7   End Of Exclusive
```

The range of valid addresses is 0x0000 - 0x0595.

4.13.3.3 Parameter Change (7bit operation for type 0x10:edit buffer)

< Reception >
This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON.
When this message is received, the specified parameter will be controlled.

< Transmission >
If [Parameter Change TX] is ON, this message will be transmitted on the [Tx CH] MIDI channel when a parameter not specified in the [Control Change Assign Table] is edited.
This message will be echoed if [Parameter Change ECHO] is ON.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0001nnnn 1n   parameter change  n=0-
                          15(MIDI Channel No.1-16)
GROUOP ID   00111110 3e   MODEL ID(digital mixer)
MODEL ID    00000111 07   Device code (AW2816)
PARAM TYPE  00010000 10   7bit operation for edit
                          buffer (type)
DATA        0aaaaaaa dd0  address( H) high 7 bits of
                          14 bits address
            0aaaaaaa dd1  address( L) low 7 bits of
                          14 bits address
            0ddddddd dd2  data 7bit
                :  :
EOX         11110111 F7   End Of Exclusive
```

The range of valid addresses is 0x0000 - 0x0595.

4.13.3.4 Parameter Change (bit operation for type 0x40:edit buffer)

< Reception >
This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON.
When this message is received, the specified parameter will be controlled.

< Transmission >
If [Parameter Change TX] is ON, this message will be transmitted on the [Tx CH] MIDI channel when a parameter not specified in the [Control Change Assign Table] is edited.
This message will be echoed if [Parameter Change ECHO] is ON.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS  0001nnnn 1n   parameter change  n=0-
                          15(MIDI Channel No.1-16)
GROUOP ID   00111110 3e   MODEL ID(digital mixer)
MODEL ID    00000111 07   Device code (AW2816)
PARAM TYPE  01000000 40   bit operation for edit
                          buffer (type)
DATA        0aaaaaaa dd0  address( H) high 7 bits of
                          14 bits address
            0aaaaaaa dd1  address( L) low 7 bits of
                          14 bits address
            0ddddddd dd2  data(bit0-2:change bit
                          no.0-7, bit3:0=reset
                          1=set)
                :  :
EOX         11110111 F7   End Of Exclusive
```

The range of valid addresses is 0x0000 - 0x0595.

4.13.3.5 Parameter Change (byte operation for type 0x01:setup memory)

< Reception >

This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON.
When this message is received, the specified parameter will be controlled.

< Transmission >

This message will be echoed if [Parameter Change ECHO] is ON.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS 0001nnnn 1n    parameter change or
                          response  n=0-15(MIDI
                          Channel No.1-16)
GROUOP ID   00111110 3e   MODEL ID(digital mixer)
MODEL ID    00000111 07   Device code (AW2816)
PARAM TYPE  00000001 01   byte operation for system
                          memory (type)
DATA        0aaaaaaa dd0  address( H) high 7 bits of
                          14 bits address
            0aaaaaaa dd1  address( L) low 7 bits of
                          14 bits address
            0000dddd dd2  data( H) high 4 bits of 8
                          bits data
            0000dddd dd3  data( L) low 4 bits of 8
                          bits data
                 :  :     continuous address datas
EOX         11110111 F7   End Of Exclusive
```

The range of valid addresses is 0x0000 - 0x00ff.

4.13.3.6 Parameter Change (bit operation for type 0x41:setup memory)

< Reception >

This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON.
When this message is received, the specified parameter will be controlled.

< Transmission >

This message will be echoed if [Parameter Change ECHO] is ON.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS 0001nnnn 1n    parameter change or
                          response  n=0-15(MIDI
                          Channel No.1-16)
GROUOP ID   00111110 3e   MODEL ID(digital mixer)
MODEL ID    00000111 07   Device code (AW2816)
PARAM TYPE  01000001 41   bit operation for system
                          memory (type)
DATA        0aaaaaaa dd0  address( H) high 7 bits of
                          14 bits address
            0aaaaaaa dd1  address( L) low 7 bits of
                          14 bits address
            0ddddddd dd2  data(bit0-2:change bit
                          no.0-7, bit3:0=reset
                          1=set)
                 :  :
EOX         11110111 F7   End Of Exclusive
```

The range of valid addresses is 0x0000 - 0x00ff.

4.13.3.7 Parameter Value Request(type 0x00:edit buffer, 0x01:setup memory)

< Reception >

This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON and this AW2816 unit did not receive the message.
When this message is received, the value of the specified parameter will be transmitted as a Parameter Change Message.

< Transmission >

This message will be echoed if [Parameter Change ECHO] is ON and this AW2816 unit did not receive the message.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS 0011nnnn 3n    parameter request  n=0-
                          15(MIDI Channel No.1-16)
GROUOP ID   00111110 3e   MODEL ID(digital mixer)
MODEL ID    00000111 07   Device code (AW2816)
PARAM TYPE 00tttttt tt    00:edit buffer, 01:system
                          memory (type)
DATA        0aaaaaaa dd0  address( H) high 7 bits of
                          14 bits address
            0aaaaaaa dd1  address( L) low 7 bits of
                          14 bits address
            0ddddddd dd   count
EOX         11110111 F7   End Of Exclusive
```

The range of valid addresses is edit buffer 0x0000 - 0x0595 and setup memory 0x0000 - 0x00ff.

4.13.3.8 Parameter Change (type 0x02:function call)

< Reception >

This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON.
When this message is received, the corresponding memory or library will be recalled or stored.

< Transmission >

This message will be echoed if [Parameter Change ECHO] is ON.

```
STATUS      11110000 F0   System Exclusive Message
ID No.      01000011 43   Manufacturer's ID
                          No.(YAMAHA)
SUB STATUS 0001nnnn 1n    parameter change  n=0-
                          15(MIDI Channel No.1-16)
GROUOP ID   00111110 3e   MODEL ID(digital mixer)
MODEL ID    00000111 07   Device code (AW2816)
PARAM TYPE  00000010 02   function call
DATA        0ddddddd dd0  function
            0ddddddd dd1  number
            0ddddddd dd2  channel
EOX         11110111 F7   End Of Exclusive
```

```
function                 number                    channel   Tx/Rx
-----------------------+------------------------+---------+---------
0x00 scene recall        0-96(memory 0-96)         0x00      Tx* /Rx
0x01 eq lib recall       0-127(library 1-128)      0-26      Tx/Rx
0x02 dyn lib recall      0-127(library 1-128)      0-23,26   Tx/Rx
0x03 eff lib recall      0-127(library 1-128)      24,25     Tx/Rx
0x04 ch lib recall       0-64(library 0-64)        0-26      Tx/Rx
0x05 patch lib recall    0-20(library 0-20)        0         Tx/Rx
0x10 scene store         1-96(memory 1-99)         0x00      Rx only
0x11 eq lib store        40-127(library 41-128)    0-26      Rx only
0x12 dyn lib store       40-127(library 41-128)    0-23,26   Rx only
0x13 eff lib store       41-127(library 42-128)    24,25     Rx only
0x13 ch lib store        2-64(library 2-64)        0-26      Rx only
0x13 patch lib store     1-20(library 1-20)        0         Rx only

Channel   0-7(INPUT 1-8), 8-23(MONITOR 1-16), 24,25(RTN 1-2/EFF 1-2), 26(st mas)
```

* [0x00: scene recall] is transmitted only when you recall a program that has not been assigned in the [Program change table]. Normally a program change will be transmitted.

4.13.3.9 Parameter Change (type 0x43:controller(key remote))

< Reception >

This message is received if [Parameter Change RX] is ON and the [Rx CH] matches the MIDI channel included in the Sub Status.
This message will be echoed if [Parameter Change ECHO] is ON.
When this message is received, the same processing will be performed as when the specified key (see table below) is pressed (released)

< Transmission >

This message will be echoed if [Parameter Change ECHO] is ON.

```
STATUS      11110000 F0  System Exclusive Message
ID No.      01000011 43  Manufacturer's ID
                         No.(YAMAHA)
SUB STATUS 0001nnnn 1n   parameter change  n=0-
                         15(MIDI Channel No.1-16)
GROUOP ID  00111110 3e   MODEL ID(digital mixer)
MODEL ID   00000111 07   Device code (AW2816)
PARAM TYPE 01000011 43   controller
DATA       00000000 00   control no.(0:key remote)
           0ddddddd dd   No. 0-13(key 1-14)
           0000dddd dd   data(bit0-2:change bit
                         no.0-7, bit3:0=reset
                         1=set)
             :  :
EOX        11110111 F7   End Of Exclusive
```

```
 KEY   key no. rx/tx bit0      bit1      bit2      bit3      bit4      bit5      bit6      bit7
------+-----+-----+---------+---------+---------+---------+---------+---------+---------+---------
key1    0    rx   SONG      PATCH     AUX3      MON9-16   CTRL      SEL7      ON3       ONRTN1
key2    1    rx   CUE       REC6      REC13     AUTOMIX   REDO      NUM       SET       END
key3    2    rx   FILE      VIEW      AUX4      SHIFT     SEL1      SEL8      ON4       ONRTN2
key4    3    rx   METER     REC7      REC14     SCENE     JOGON     MARK<     REPEAT    CANCEL
key5    4    rx   CD        PAN       AUX5      F1        SEL2      SELST     ON5       SOLO
key6    5    rx   REC1      REC8      REC15     STORE     UP        MAEK>     A         REW
key7    6    rx   QUICK     EQ        AUX6      F2        SEL8      RELRTN1   ON6       REMOTE
key8    7    rx   REC2      REC9      REC16     SCENE-    DOWN      MARK      B         FF
key9    8    rx   SETUP     DYN       HOME      F3        SEL4      SELRTN2   ON7       SAFE
key10   9    rx   REC3      REC10     RECST     SCENE+    LEFT      PUNCH     ROLL      STOP
key11   10   rx   UTILITY   AUX1      INPUT     F4        SEL5      ON1       ON8       --------
key12   11   rx   REC4      REC11     TRACK     RECALL    RIGHT     IN        TOP       PLAY
key13   12   rx   MIDI      AUX2      MONI1-8   F5        SEL6      ON2       ONST      FOOT SW
key14   13   rx   REC5      REC12     EDIT      UNDO      ENTER     OUT       RTZ       REC
```

You must transmit Reset (bit 3=0) after transmitting Set (bit 3=1).

Function...		Transmitted	Recognized	Remarks
Basic	Default	1–16	1–16	Memorized
Channel	Changed	1–16	1–16	Memorized
Mode	Default	X	OMNI off/OMNI on	Memorized
	Messages	X	X	
	Altered	**************	X	
Note		X	0–127	
Number	:True Voice	**************	X	
Velocity	Note On	X	X	
	Note Off	X	X	
After	Key's	X	X	
Touch	Ch's	X	X	
Pitch Bend		X	X	
Control Change	0-95,102-119	O	O	Assignable
Prog		0–127	0–127	Assignable
Change	:True#	**************	0–96	
System Exclusive		O	O	*1
System	:Song Pos	O	X	*2
Common	:Song Sel	X	X	
	:Tune	X	X	
System	:Clock	O	X	*2
Real Time	:Commands	O	X	*2
Aux	:Local ON/OFF	X	X	
Messages	:All Notes OFF	X	X	
	:Active Sense	X	O	
	:Reset	X	O	
Notes		MTC quarter frame message is transmitted.(When MTC Sync mode) MTC quarter frame message is recognized.(When MTC Sync mode) *1: MMC *2: When MCLK Sync mode For MIDI remote, ACC messages canbe transmitted.		

Mode 1: OMNI ON, POLY   Mode 2: OMNI ON, MONO   O: Yes
Mode 3: OMNI OFF, POLY   Mode 4: OMNI OFF, MONO   X: No

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YAMAHA