



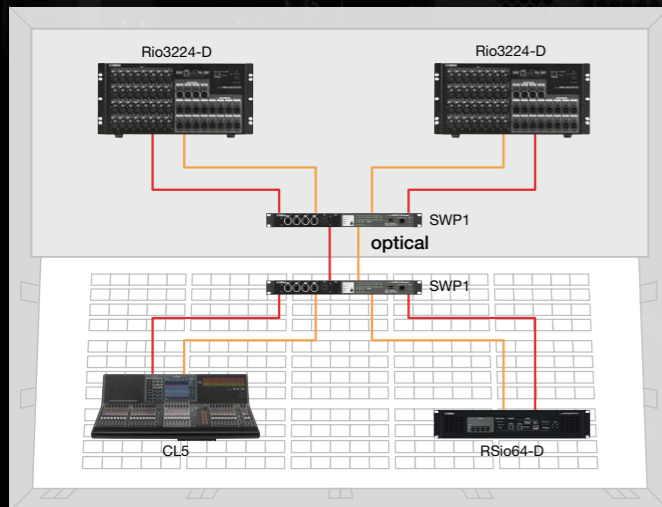
L2 SWITCH

SWP1 SERIES

SWP1-16MMF / SWP1-8MMF / SWP1-8

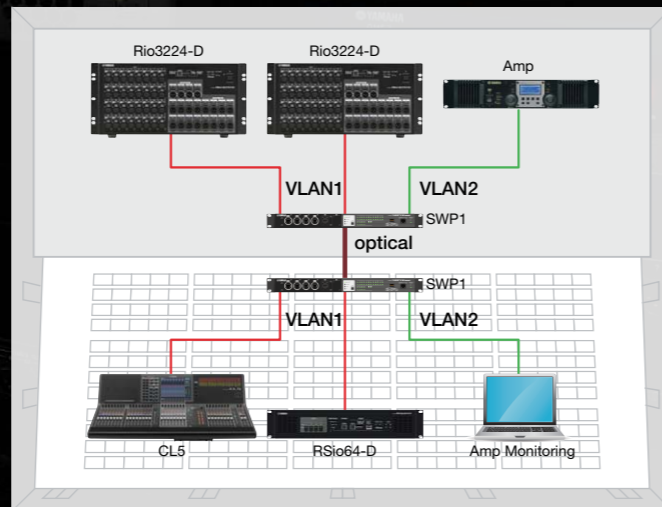
System Examples for Enhanced Convenience and Control

Example 1: Redundant Dante network with VLAN



VLAN Preset: C — Dante Primary — Dante Secondary

Example 2: VLAN for Simultaneous Dante and Amp Protocol



VLAN Preset: A — Dante — Control Network — Trunk

In this example VLAN has been set up on the SWP1 switches, with the Dante primary line assigned to VLAN1 and the secondary line assigned to VLAN2. Only two switches are needed for redundant cable connections. Optional MMF-SWP1 optical modules need to be added to the SWP1 switches to allow optical connections for each line.

In this case VLAN1 handles the Dante network while VLAN2 hosts an amp monitoring and control network. This isolates and protects amp control from Dante multicast communication.

L2 Switches

SWP1-16MMF



etherCON Connectors: 12
RJ45 Connectors: 4
opticalCON Connectors: 1
Optional Slot: 1

SWP1-8MMF



etherCON Connectors: 8
opticalCON Connectors: 1
Optional Slot: 1

SWP1-8



etherCON Connectors: 8
Optional Slots: 2

Option

MMF-SWP1



This optical kit includes components necessary to install multimode optical capability with opticalCON connectors in the dedicated expansion slots provided



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Yamaha Audio Network Monitor

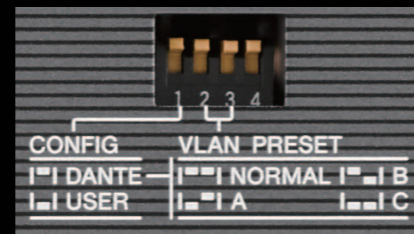
Dante Ready Switches with Visual Network Monitoring



Easy Setup and Comprehensive Network Visibility

DIP Switch Dante Optimization

Simple Dante networks are not difficult to set up and operate, but as network complexity grows the switches used need to be optimized for Dante operation in order to achieve maximum stability. Setting up QoS, IGMP Snooping, and other parameters on an intelligent switch can be a complex task, requiring specialized knowledge that is more the domain of IT technicians than audio engineers. The SWP1 series allows a Dante optimized setup to be recalled by simply flipping one DIP switch. No expertise or training is required.



3 Preset VLAN Types

A truly efficient network should be able to handle multiple services simultaneously: Dante communication, StageMix and other smart device functions, computer software that allows digital mixer or power amplifier control, and perhaps more. But the more communication you combine on one network, the greater the chance for interference and problems. The use of virtual VLAN domains to isolate the various types of data is the ideal solution, but this type of setup also requires some IT expertise. The SWP1 series includes three VLAN presets that can be simply selected via a DIP switch. There's also a USER mode that allows fully customized VLAN setup.



Reliability and Connectivity

etherCON Connectors for Live Sound Reliability

Reliability is essential in live sound applications. Nothing can be allowed to interrupt the show. Conventional network switches usually have RJ45 connectors to match the connectors on the computers to which they will be connected, but the SWP1 series features durable, reliable etherCON connectors that are directly compatible with the etherCON connectors on Yamaha CL/QL series consoles and other Dante capable devices.



Optical Fiber and Network Redundancy Support (option required for redundancy)

The SWP1-8MMF and SWP1-16MMF include multi-mode fiber capable opticalCON connectors. Both models allow transmission over distances of up to 300 meters. The optional MMF-SWP1 optical fiber module can be added to allow two optical fiber cables to be run for redundant connection. Rapid spanning tree protocol (RSTP) is also supported for redundant connections.



EXT DC INPUT for Power Supply Redundancy

SWP1 series switches include an XLR-4-32 type EXT DC INPUT connector in addition to the standard AC IN connector. +24V DC supplied to the EXT DC INPUT connector provides redundant power that can keep the device running if a problem occurs in the AC supply. For further reliability the AC connector is a locking type (V-Lock) that minimizes the possibility of accidental disconnection.



VLAN PRESET	Rear panel ports				Front panel ports					
	1	2	3	4	5	6	7	8	9	10
NORMAL	1	1	1	1	1	1	1	1	1	1
A	1	1	2	2	1	1	2	2	Tr	Tr
B	1	1	2	2	1	2	Tr	Tr	Tr	Tr
C	1	1	2	2	1	1	2	2	1	2

Rear panel ports												Front panel ports					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	2	2	1	1	2	2	1	1	2	2	Tr	Tr
1	1	1	1	1	1	2	2	1	1	2	2	1	2	Tr	Tr	Tr	Tr
1	1	1	1	2	2	2	2	1	1	2	2	1	1	2	2	1	2

* Optional MMF-SWP1 is needed to use the two opticalCON ports.

Tr: Trunk ■ etherCON ■ opticalCON

Front panel (SWP1-16MMF)



Rear panel (SWP1-16MMF)

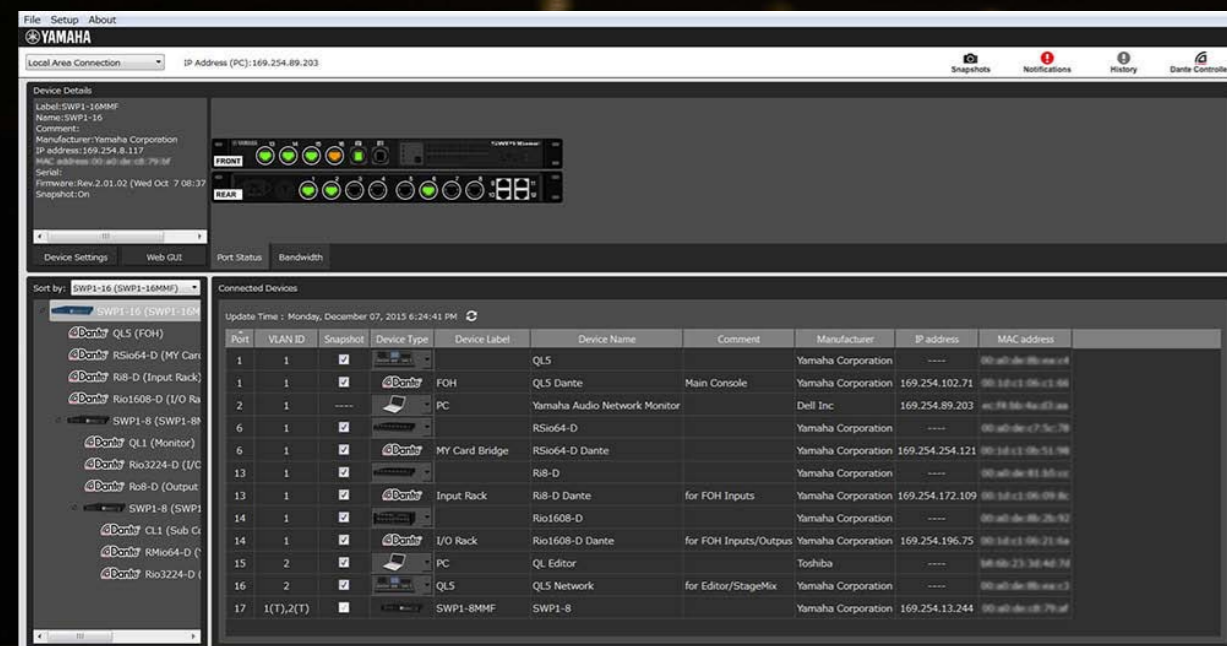


Network Visibility Advantages

Network Visibility

Effective Dante network management hinges on a range of parameters such as network traffic, switch status, and individual Dante device information. The dedicated Yamaha Audio Network Monitor application for Windows computers provides a comprehensive single-screen view of all necessary parameters when used with SWP1 series switches.

We refer to this type of graphical overview as “network visibility.” You can even take a snapshot of the normal network status and set an alarm to warn you if any of the parameters changes, so that problems can be identified and resolved quickly and easily. The Dante Controller application can also be launched from the Yamaha Audio Network Monitor with a single click, providing a total Dante network solution on a single computer.



LAN Mapping for a Complete Network Overview

Understanding how multiple switches installed in different locations are connected, plus how network devices are connected to those switches, can be a difficult, time-consuming task. The Yamaha Audio Network Monitor makes overall network topology clearly visible, giving the user a comprehensive overview of how multiple switches and Dante network devices are interconnected. Simply connect a Windows PC to the nearest SWP1 switch and launch the Yamaha Audio Network Monitor software.

Port Status and Bandwidth Utilization

The Yamaha Audio Network Monitor includes a port status and bandwidth display that clearly shows the connection status of each network switch port, information about the connected devices, the communication speed at each port, and the bandwidth utilization at each port.

Port Status

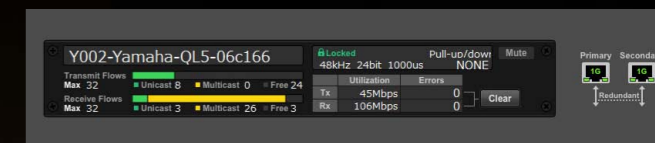


Bandwidth



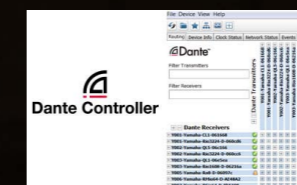
Dante Device Info

Device information and monitoring is also available for any Dante devices connected to SWP1 series switches on the network. The ability to monitor primary and secondary port status as well as transmit and receive flow is important to achieving stable, reliable Dante audio communication. This capability lets you keep an eye on the overall “health” of the network.



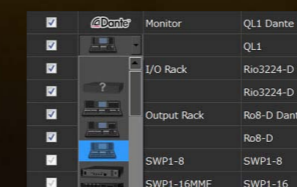
1-click Dante Controller Launch

A Dante Controller button at the top of the Yamaha Audio Network Monitor interface lets you launch the Dante Controller with a single click (the Dante Controller software must be installed on the computer). Seamless switching between the Yamaha Audio Network Monitor and Dante Controller provides total Dante network control from a single computer.



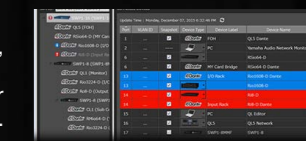
Enhanced Device ID with Icons, Labels, and Comments

Identifying devices connected to a switch by only their IP or MAC address is a difficult and error-prone approach. Connected Dante devices are identified by a Dante icon as well as a device ID previously set up via the Dante Controller software. You can also enter additional info, such as the location of the device, in the Label and Comment fields.



Snapshot Function Makes Troubleshooting Easy

You can take a “snapshot” of the network status when set up as required. The software can then automatically keep track of the settings and alert you to any changes. You could take a snapshot of the network during rehearsal, and then you’d be alerted if a cable is disconnected, if a device is turned off, or if a wrong connection is made prior to the performance, for example.



Detailed Switch Settings and Firmware Updates

The web GUI for each device can be recalled to provide access to “deep” settings and allow firmware updates.

