



USER MANUAL

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## Chapter 1 INTRODUCTION

### 1.1 Overview

QSW-8200 series switches are ethernet switch. QSW-8200 series switches are intelligent network management switch used by the network environment which needs the high performance, the bigger port density and the convenient installation.

QSW-8200 series switches include the type are as follows:

Name	Type	Description
QSW-8200 series	QSW-8200-52T-AC	44 copper ports+4 Combo ports+2 10Gb extended ports
	QSW-8200-52T-AC-DC	44 copper ports+4 Combo ports+2 10Gb extended cards +DC power
	QSW-8200-52T-POE-AC-DC	44 copper ports+4 Combo ports+2 10Gb extended cards +PoE
	QSW-8200-28T-AC	20 copper ports+4 Combo ports+2 10Gb extended cards
	QSW-8200-28T-AC-DC	20 copper ports+4 Combo ports+2 10Gb extended cards +DC power
	QSW-8200-28T-POE-AC-DC	20 copper ports+4 Combo ports+2 10Gb extended cards +PoE
	QSW-8200-28F-AC-DC	12 fiber ports+12 Combo ports+2 extended cards +DC power
	QSW-8200-28F-AC	12 fiber ports+12 Combo ports+2 extended cards
	QSW-8200-52F-AC-DC	44 fiber ports+4 Combo ports+2 extended cards +DC power

## 1.2 Introduction to Product

### 1.2.1 Product Overview

QSW-8200 series switches include QSW-8200-52T-AC, QSW-8200-52T-AC-DC, QSW-8200-52T-POE-AC-DC, QSW-8200-28T-AC, QSW-8200-28T-AC-DC, QSW-8200-28T-POE-AC-DC, QSW-8200-28F-AC-DC, QSW-8200-28F-AC and QSW-8200-52F-AC-DC switches. QSW-8200-52T-AC-DC and QSW-8200-52T-POE-AC-DC supply the consistent signal interface with QSW-8200-52T-AC, the difference is QSW-8200-52T-AC-DC implements 48V DC input, QSW-8200-52T-POE-AC-DC supplies 48 ports for exporting PoE power supply, and the max output power of each port is 15W. QSW-8200-28T-AC-DC and QSW-8200-28T-POE-AC-DC supply the consistent signal interface with QSW-8200-28T-AC, the difference is QSW-8200-28T-AC-DC implements 48V DC input, QSW-8200-28T-POE-AC-DC supplies 24 ports for exporting PoE power supply, and the max output power of each port is 30W, Front panel of QSW-8200-28F-AC-DC supplies 12 1000M-fiber-ports and 12 Combo ports. Front panel of QSW-8200-52F-AC-DC supplies 44 1000M-fiber-ports and 4 Combo ports. The back panel of QSW-8200-28F-AC-DC and QSW-8200-28F-AC support 2 slots with extended cards. QSW-8200-28F-AC-DC and QSW-8200-52F-AC-DC, can input 48V DC power; QSW-8200-28F-AC does not have the DC input interface.

### 1.2.2 Features and Benefits

#### ❖ Various Interfaces

QSW-8200-52T-AC, QSW-8200-52T-AC-DC and QSW-8200-52T-POE-AC-DC provide 44 fixed 1000Mb fiber ports, 4 1000Mb COMBO ports (1000Mb fiber SFP ports/1000Mb copper ports) and 2 10Gb slots with 2 ports.

QSW-8200-28T-AC, QSW-8200-28T-AC-DC and QSW-8200-28T-POE-AC-DC provide 20 fixed 1000Mb copper ports, 4 1000Mb COMBO ports (1000Mb fiber SFP ports/1000Mb copper ports) and 2 10Gb slots with 2 ports.

QSW-8200-28F-AC-DC, QSW-8200-28F-AC provides 12 1000Mb fiber ports, 12 1000Mb Combo ports (1000Mb fiber SFP ports/1000Mb copper ports) and 2 slots with the extended cards.

QSW-8200-52F-AC-DC provides 44 fixed 1000Mb fiber ports, 4 1000Mb Combo ports (1000Mb fiber SFP ports/1000Mb copper ports) and 2 slots with the extended cards.

#### ❖ Secure Power Supply

QSW-8200 series switches provide DC power backup, support 220V AC input, 48V DC input or 220V AC, 48V DC input simultaneously.

#### ❖ Support 10Gb Ethernet

10Gb Ethernet which adopts full-duplex technology instead of low-speed, half-duplex CSMA/CD protocol, is a big leap in the evolution of Ethernet. 10Gb Ethernet can be deployed in star or ring topologies. QSW-8200 series switches provide broad bandwidth and powerful processing capacity. It is suitable for metropolitan networks and wide area networks. Using

QSW-8200 series switches, users can simplify network structures and reduce cost of network construction.

#### ❖ Networking Protocols

QSW-8200 series switches support 802.1d/w/s, 802.1Q, 802.1p, 802.3ad, 802.3x, GVRP, DHCP and STP etc; support IPv6 protocol. All these protocols supported enable QSW-8200 series switches to meet the requirements of complex network constructions.

Note: For QSW-8200-28F-AC-DC and QSW-8200-28F-AC, v4 unicast route only support static RIP, multicast route only support IGMP snooping, not support multicast route protocol; v6 unicast route only support static RIPng, multicast only support MLDv1/v2 snooping, not support multicast route protocol.

#### ❖ ACL

QSW-8200 series switches support comprehensively ACL policies. The traffic can be classified by source/destination IP addresses, source/destination MAC addresses, IP protocols, TCP/UDP, IP precedence, time ranges and ToS. And various policies can be conducted to forward the traffic. By implementing ACL policies, users can filter the virus packets such as “Worm.Blaster”, “Worm.Sasser” and “Red Code” etc. QSW-8200 series switch also support IEEE802.1x port based access authentication, which can be deployed with RADIUS, to ensure the port level security and block illegal users.

#### ❖ QoS

QSW-8200 series switches fully support DiffServ Module. Users can specify a queue bandwidth on each port. WDRR/SP/SWDRR scheduling is also supported. QSW-8200 series support the port trust. Users can configure trusted CoS, DSCP, IP precedence and port priority. User can also modify packet’s DSCP and COS values. The traffic can be classified by port, VLAN, DSCP, IP precedence and ACL table. User can also modify packet’s DSCP and IP precedence values. Users can specify different bandwidths for voice/data/video to customize different qualities of service.

#### ❖ Perfect Web Management.

QSW-8200 series support SNMP, In-band and Out-of band Management, CLI and WEB interface and RMON. It can mail the correlative sensitive information to the administrator abide by SMTP protocol. QSW-8200 series support SSH protocol, ensure the configuration management security of the switch. It adopts the Qtech centralized web management system ‘LinkManager’ for unified management expediency and compactly.

## 1.3 Physical Specifications

Item	QSW-8200-28F-AC-DC / QSW-8200-28F-AC	QSW-8200-52F-AC-DC	QSW-8200-28T-AC/ QSW-8200-28T-AC-DC/ QSW-8200-28T-POE-AC-DC	QSW-8200-52T-AC / QSW-8200-52T-AC-DC / QSW-8200-52T-

				POE-AC-DC
Dimension (W * H * D) (mm)	440×324×44			
Weight	<6kg			
Fixed ports	12 SFP fiber ports 12 1000Mb Combo ports 2 interfaces with extended card	44 SFP fiber ports 4 1000Mb Combo ports 2 interfaces with extended card	20 100/1000Base-TX auto negotiation ethernet ports 4 1000Mb Combo ports 2 interfaces with extended card	44 100/1000Base-TX auto negotiation ethernet ports 4 1000Mb Combo ports 2 interfaces with extended card
Management ports	1 Console port			
System power	<p>QSW-8200 series support AC/DC power input:</p> <ul style="list-style-type: none"> <li>▪ AC input: The rating voltage range: 100V~240V AC; 50/60HZ The max voltage range: 90V~264V AC; 47HZ~63HZ</li> <li>▪ DC input: 48V DC input, -48V~-60V/DC; 2.5A</li> </ul>			
Output power supply of PoE	Do not support	Do not support	Support	Support
The max Power Consumption	65W	65W	35W (without PoE)	65W (without PoE)

Fan	Support automatic timing
Operating Temperature	0°C~50°C
Relative Humidity	10%~90%

Table 1-1 Physical Specifications

## 1.4 Description of Hardware

### 1.4.1 Front Panel

QSW-8200-28T-AC series Ethernet switches provide 20 100/1000Base-TX auto negotiation ethernet ports, 4 1000Mb Combo ports, 6 function indicators and 1 Console port.



Fig 1-1 Front Panel of QSW-8200-28T-AC



Fig 1-2 Front Panel of QSW-8200-28T-AC-DC



Fig 1-3 Front Panel of QSW-8200-28T-POE-AC-DC

QSW-8200-52T-AC series Ethernet switches provide 44 100/1000Base-TX auto negotiation ethernet ports, 4 1000Mb Combo ports, 6 function indicators and 1 Console port.





Fig 1-4 Front Panel of QSW-8200-52T-AC



Fig 1-5 Front Panel of QSW-8200-52T-AC-DC



Fig 1-6 Front Panel of QSW-8200-52T-POE-AC-DC

QSW-8200-28F-AC-DC/ QSW-8200-28F-AC Ethernet switch provides 12 1000Mb fiber ports, 12 1000Mb Combo ports, 8 function LEDs and 1 Console port.



Fig 1-7 Front Panel of QSW-8200-28F-AC-DC



Fig 1-8 Front Panel of QSW-8200-28F-AC

QSW-8200-52F-AC-DC ethernet switch provides 44 1000Mb fiber ports, 4 1000Mb Combo ports, 8 function LEDs and 1 Console port.



Fig 1-9 Front Panel of QSW-8200-52F-AC-DC

## 1.4.2 Back Panel

QSW-8200-28T-AC supplies 2 plug-in interfaces, 1 48V DC input power interface, 1 input power interface of PoE and 1 220V input power interface.

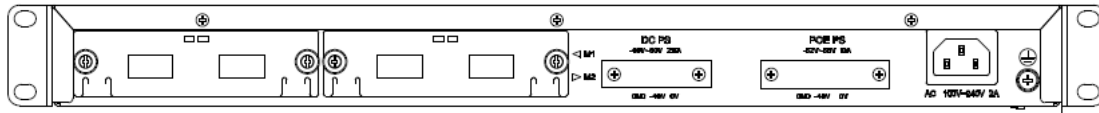


Fig 1-10 Back Panel of QSW-8200-28T-AC

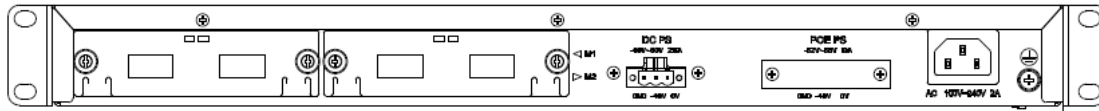


Fig 1-11 Back Panel of QSW-8200-28T-AC-DC

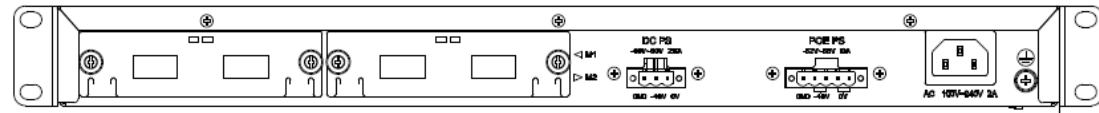


Fig 1-12 Back Panel of QSW-8200-28T-POE-AC-DC

Back Panel of QSW-8200-52T-AC is same with QSW-8200-28T-AC, it supplies 2 plug-in interfaces, 1 48V input power interface, 1 input power interface of PoE and 1 220V input power interface.

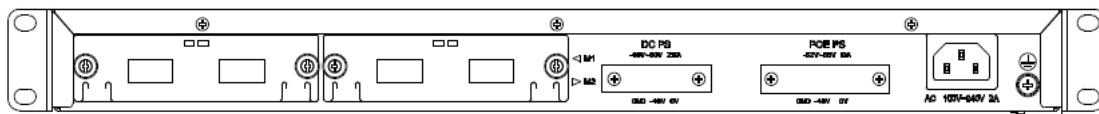


Fig 1-13 Back Panel of QSW-8200-52T-AC

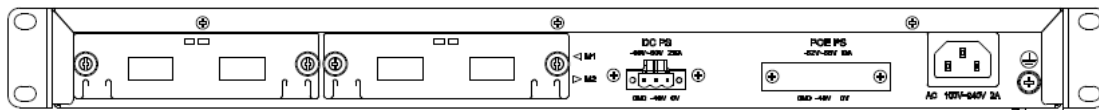


Fig 1-14 Back Panel of QSW-8200-52T-AC-DC

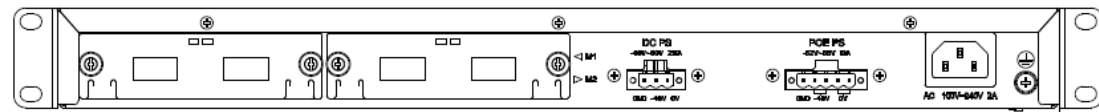


Fig 1-15 Back Panel of QSW-8200-52T-POE-AC-DC

QSW-8200-28F-AC-DC supplies 2 interfaces with the extended card, 1 interface with -48V DC power input and 1 interface with 220V AC power input.

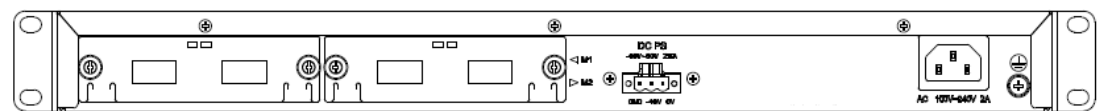


Fig 1-16 Back Panel of QSW-8200-28F-AC-DC

QSW-8200-28F-AC supplies 2 interfaces with the extended card, and 1 interface with 220V AC power input.

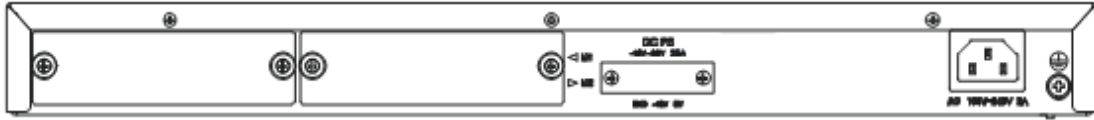


Fig 1-17 Back Panel of QSW-8200-28F-AC

Back Panel of QSW-8200-52F-AC-DC is same with QSW-8200-28F-AC-DC, it supplies 2 interfaces for the extended card, 1 interface with -48V DC power input and 1 interface with 220V AC power input.

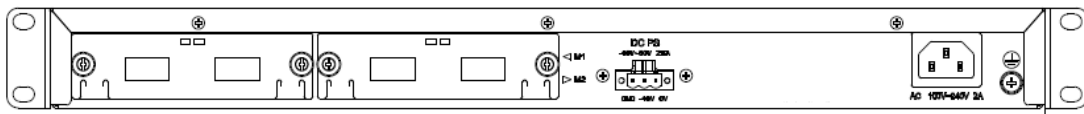


Fig 1-18 Back Panel of QSW-8200-52F-AC-DC

### 1.4.3 DC Power/PoE Power Input

QSW-8200 supports AC/DC input power backup and PoE output power. pin-outs signal of DC power and PoE power are distributed as below:

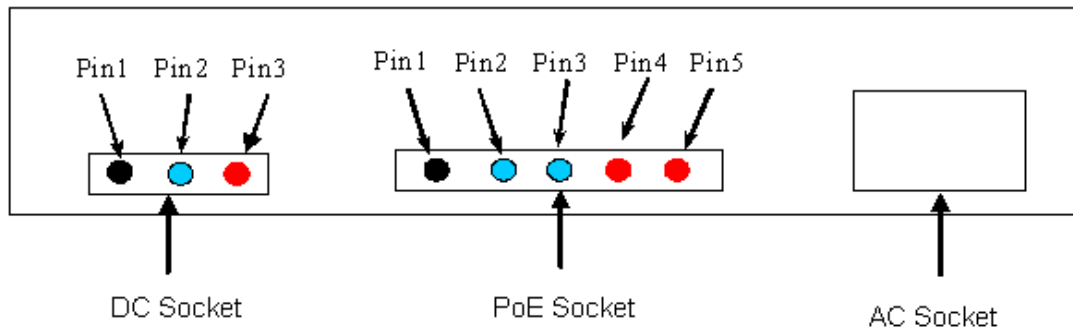


Fig 1-19 Pin-outs Distribution of DC Input and PoE Power Input for QSW-8200

DC power has 3 pin-outs:

- PIN1: GND Ground connection
- PIN2: -48V DC power cathode input
- PIN3: 0V DC power positive electrode input

PoE has 5 pin-outs:

- PIN1: GND Ground connection
- PIN2: -52V DC power cathode input

PIN3: -52V DC power cathode input

PIN4: 0V DC power positive electrode input

PIN5: 0V DC power positive electrode input

#### 1.4.4 Status LEDs

LEDs of QSW-8200 show the corresponding state.

In mainboard of QSW-8200-28T-AC/ QSW-8200-28T-AC-DC/ QSW-8200-28T-POE-AC-DC/ QSW-8200-52T-AC/ QSW-8200-52T-AC-DC/ QSW-8200-52T-AC-DC/ QSW-8200-52T-POE-AC-DC the LEDs include two parts, one is 24/48 1000M interface LEDs, they show each port state at RJ45 plug-in, each port corresponds a LED with double colors.

Table 1-2 Port LEDs

LED	Status	Description
Red	On	PoE power output
	Off	no PoE power output
	Blink	Send or receive the data
Green	On	Port in link state
	Off	Port not in link state
	Blink	Send or receive the data

The other is system LEDs, they are used to show the work status of the system at the right of front panel.

Table 1-3 System LEDs

Panel Symbol	Status	Description
PWR	On (Green)	Power is operating normally
	Off	Power is abnormally
DIAG	On (Green, blink)	System is loading
	On (Green)	System is operating normally
ALM	On (Green)	System is malfunctioning
	Off	System is operating normally
RPS	On (Green)	System is using DC power
	Off	System does not use DC power
M1	On (Green)	M1 is in place
	Off	M1 is not in place
M2	On (Green)	M2 is in place
	Off	M2 is not in place

LEDs of QSW-8200-28F-AC-DC/ QSW-8200-28F-AC / QSW-8200-52F-AC-DC show the corresponding state. There are two kinds of LEDs on front panel, one of its kinds is fiber/copper LEDs of port transceiver, they are at RJ45 linker or SFP linker. Each port of RJ45 linker corresponds a LED with double colors, each port of SFP linker corresponds two LEDs, detailed descriptions are shown in the following tables.

Table 1-4 RJ45 Port LEDs

LED	Status	Description
Green	On	port is at link state
	Off	port is not at link state
	Blink	Send or receive the data

Table 1-5 SFP Port LEDs

LED	Status	Description
Left LED	On	SFP port is at link state
	Off	SFP port is not at link state
	Blink	There is no this state
Right LED	On	There is no this state
	Off	No data is received or sent
	Blink	Send or receive the data

Note: For QSW-8200-52F-AC-DC, there are four LEDs with the number from the bottom up on the left of RJ45 linker, the number is from 1 to 4, and they correspond four ports of RJ45 linker respectively.

The other of its kind is system LEDs, system LEDs of QSW-8200-28F-AC-DC / QSW-8200-28F-AC and QSW-8200-52F-AC-DC are at the right of the front panel. They are corresponding name for system LEDs with 2\*4 array. They are used to show the work state and the port state of the extended card.

Table 1-6 System LEDs

Panel Symbol	Status	Description
PWR	On (Green)	Power is operating normally
	Off	Power is abnormally
DIAG	On (Green, blink)	System is loading
	On (Green)	System is operating normally
ALM	On (Green)	System is malfunctioning
	Off	System is operating normally
DC	On (Green)	System is using DC power
	Off	System does not use DC power
M1-1	On (Green)	Port1 of M1 is at link state

	On (Green, Blink)	Port1 of M1 is receiving or sending the data
	Off	Port1 of M1 is not at link state
M1-2	On (Green)	Port2 of M1 is at link state
	On (Green, Blink)	Port2 of M1 is receiving or sending the data
	Off	Port2 of M1 is not at link state
	On (Orange)	Port2 of M1 is not at link state, but M1 is in place
M2-1	On (Green)	Port1 of M2 is at link state
	On (Green, Blink)	Port1 of M2 is receiving or sending the data
	Off	Port1 of M2 is not at link state
M2-2	On (Green)	Port2 of M2 is at link state
	On (Green, Blink)	Port2 of M2 is receiving or sending the data
	Off	Port2 of M2 is not at link state
	On (Orange)	Port2 of M2 is not at link state, but M2 is in place

### 1.4.5 Front Panel Interface Description

QSW-8200 series switches provide RJ-45 1000Mb copper port and the interface of SFP 1000Mb fiber transceivers.

Each interface description is shown in the following:

Table 1-7 QSW-8200 interface description

Port mode	Spec
RJ-45 port	<ul style="list-style-type: none"> <li>▪ 10/100/1000Mbps auto negotiation</li> <li>▪ MDI/MDI-X cable mode auto negotiation</li> <li>▪ 5 kinds of UTP: 100 m</li> </ul>
SFP	<ul style="list-style-type: none"> <li>▪ SFP-SX-L transceiver 1000Base-SX SFP(850nm,MMF,550m)</li> <li>▪ SFP-LX-L transceiver 1000Base-LX SFP(1310nm, SMF, 10km or MMF, 550m)</li> <li>▪ SFP-LX-20-L transceiver 1310nm lightwave, 9/125um single mode fiber: 20km</li> <li>▪ SFP-LX-40 transceiver 9/125um single mode fiber: 40km</li> <li>▪ SFP-LH-70-L transceiver 9/125um single mode fiber: 70km</li> <li>▪ SFP-LH-120-L transceiver 9/125um single mode fiber: 120km</li> </ul>
SFP-GT	<ul style="list-style-type: none"> <li>▪ SFP-GT module 1000Base-T SFP interface card module, RJ-45 interface</li> </ul>

#### 1.4.6 QSW-2SFP+ / QSW-2GB Extended Module Description

QSW-8200 series switches provide 2 10GB extended slots to install 2 QSW-2SFP+ or QSW-2GB extended modules.

Extended module model	QSW-8200 series switch	Extended module description
QSW-2SFP+	Support 10Gb / 1Gb	Double 10Gb / 1Gb ports compatible module
QSW-2GB	Support	Double 1Gb ports module



Each of the extended modules' panel diagram is shown follows:

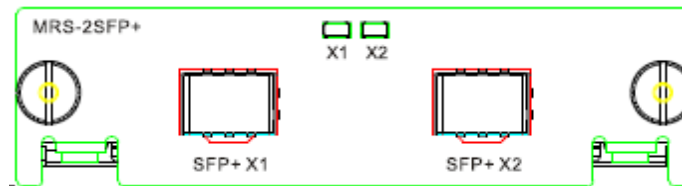


Figure 1-20 panel diagram of QSW-2SFP+

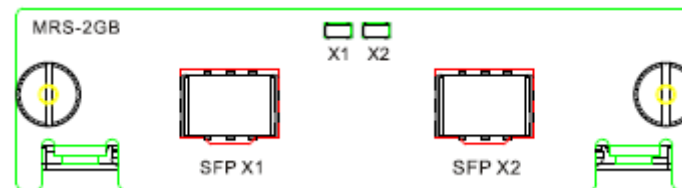


Figure 1-21 panel diagram of QSW-2GB

Back panel diagram of the switch with extended modules is shown in the following:

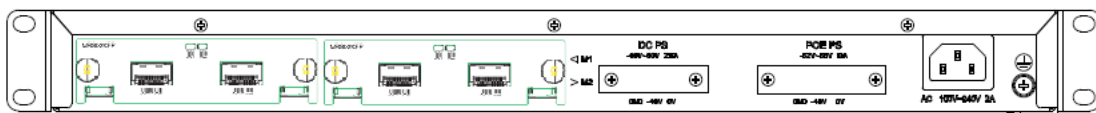


Figure 1-22 The back panel with extended modules for QSW-8200-28T-AC / QSW-8200-52T-AC

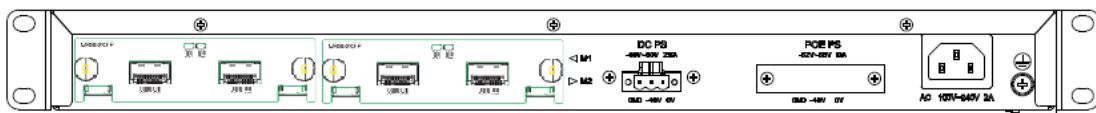


Figure 1-23 The back panel with extended modules for QSW-8200-28T-AC-DC / QSW-8200-52T-AC-DC

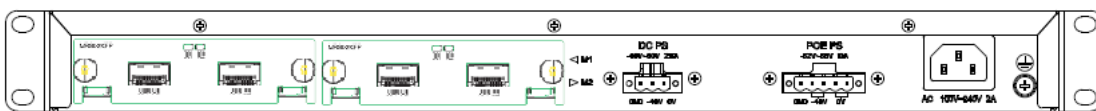


Figure 1-24 The back panel with extended modules for QSW-8200-28T-POE-AC-DC / QSW-8200-52T-POE-AC-DC

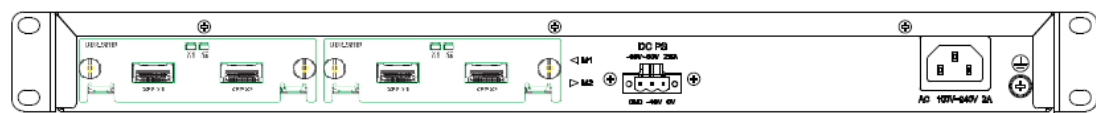


Figure 1-25 The back panel with extended modules for QSW-8200-28F-AC-DC / QSW-8200-28F-AC / QSW-8200-52F-AC-DC

Extended module's LED description is the following:

Table 1-8 10Gb extended module LED description

LED	Status	Description
Link/Activity	Green	Ports are at the link state of 10G
	Blink(Green)	Ports are at the active state of 10G
	Off	No link or the link is failure

QSW-8200 series switch supports the following SFP+ transceivers:

Table 1-9 QSW-8200 series SFP+ transceivers description

	Spec
SFP+	<ul style="list-style-type: none"><li>SFP+-LR transceiver 10GBase-LR SFP+(1310nm, SMF, 10km)</li><li>SFP+-SR transceiver 10GBase-SR SFP+(850nm, 62.5µm MMF 32m, 50µm 500MHz/km MMF 85m, 50µm 2000MHz/km MMF 300m)</li></ul>

## Chapter 2 HARDWARE INSTALLATION

### 2.1 Installation Notice

To ensure the proper operation of QSW-8200 series and your physical security, please read carefully the following installation guide.

#### 2.1.1 Environmental Requirements

- ❖ The switch must be installed in a clean area. Otherwise, the switch may be damaged by electrostatic adherence.
- ❖ Maintain the temperature within 0 to 50 °C and the humidity within 10% to 95%, non-condensing.
- ❖ The switch must be put in a dry and cool place. Leave sufficient spacing around the switch for good air circulation.
- ❖ The switch must work in the right range of power input (AC power: 90 ~ 264V (50Hz), DC power: -40 ~ -60V)
- ❖ The switch must be well grounded in order to avoid ESD damage and physical injury of people.
- ❖ The switch should avoid the sunlight perpendicular incidence. Keep the switch away from heat sources and strong electromagnetic interference sources.
- ❖ The switch must be mounted to a standard 19" rack or placed on a clean level desktop.

##### 2.1.1.1 Dust and Particles

Dust is harmful to the safe operation of QSW-8200 series. Dust can lead to electrostatic adherence, especially likely under low relative humidity, causing poor contact of metal connectors or contacts. Electrostatic adherence will result in not only reduced product lifespan, but also increased chance of communication failures. The recommended value for dust content and particle diameter in the site is shown below:

Max Diameter (μm)	0.5	1	3	5
Max Density (particles/m <sup>3</sup> )	1.4×10 <sup>5</sup>	7×10 <sup>5</sup>	2.4×10 <sup>5</sup>	1.3×10 <sup>5</sup>

Table 2-1 Environmental Requirements: Dust

In addition, salt, acid and sulfide in the air are also harmful to the switch. Such harmful gases will aggravate metal corrosion and the aging of some parts. The site should avoid harmful gases, such as SO<sub>2</sub>, H<sub>2</sub>S, NO<sub>2</sub>, NH<sub>3</sub> and Cl<sub>2</sub>, etc. The table below details the threshold value.

Gas	Average (mg/m <sup>3</sup> )	Max (mg/m <sup>3</sup> )
SO <sub>2</sub>	0.2	1.5
H <sub>2</sub> S	0.006	0.03
NO <sub>2</sub>	0.04	0.15
NH <sub>3</sub>	0.05	0.15
Cl <sub>2</sub>	0.01	0.3

Table 2-2 Environmental Requirements: Particles

### 2.1.1.2 Temperature and Humidity

Although the switch is designed to use 4 fans, the site should still maintain a desirable temperature and humidity. High-humidity conditions can cause electrical resistance degradation or even electric leakage, degradation of mechanical properties and corrosion of internal components. Extreme low relative humidity may cause the insulation spacer to contract, making the fastening screw insecure. Furthermore, in dry environments, static electricity is liable to be produced and cause harm to internal circuits. Temperature extremes can cause reduced reliability and premature aging of insulation materials, thus reducing the switch's working lifespan. In the hot summer, it is recommended to use air-conditioners to cool down the site. And the cold winter, it is recommended to use heaters.

The recommended temperature and humidity are shown below:

Temperature:				Relative humidity			
Long condition	term	Short condition	term	Long condition	term	Short condition	term
15 ~ 30°C		0 ~ 50°C		40 ~ 65%		10 ~ 95%	

Table 2-3 Environmental Requirements: Temperature and Humidity

**Caution!**

A sample of ambient temperature and humidity should be taken at 1.5m above the floor and 0.4m in front of the switch rack, with no protective panel covering the front and rear of the rack. Short term working conditions refer to a maximum of 48 hours of continued operation and an annual cumulative total of less than 15 days. Formidable operation conditions refers to the ambient temperature and relative humidity value that may occur during an air-conditioning system failure, and normal operation conditions should be recovered within 5 hours.

**2.1.1.3 Power Supply**

Before powering on the power supply, please check the power input to ensure proper grounding of the power supply system. The input source for the switch should be reliable and secure; a voltage adaptor can be used if necessary. The building's circuit protection system should include in the circuit a fuse or circuit-breaker of no greater than 240 V, 10 A. It is recommended to use a UPS for more reliable power supplying. .

**Caution!**

Improper power supply system grounding, extreme fluctuation of the input source, and transients (or spikes) can result in larger error rate, or even hardware damage!

**2.1.1.4 Preventing Electrostatic Discharge Damage**

Static electric discharges can cause damage to internal circuits, even the entire switch. Follow these guidelines for avoiding ESD damage:

- ❖ Ensure proper earth grounding of the device;
- ❖ Perform regular cleaning to reduce dust;
- ❖ Maintain proper temperature and humidity;
- ❖ Always wear an ESD wrist strap and antistatic uniform when in contact with circuit boards.

**2.1.1.5 Anti-interference**

All sources of interference, whether from the device/system itself or the outside environment, will affect operations in various ways, such as capacitive coupling, inductive coupling, electromagnetic radiation, common impedance (including the grounding system) and cables/lines (power cables, signal lines, and output lines). The following should be noted:

- ❖ Precautions should be taken to prevent power source interruptions;
- ❖ Provide the system with a dedicated grounding, rather than sharing the grounding with the electronic equipment or lightning protection devices;
- ❖ Keep away from high power radio transmitters, radar transmitters, and high frequency strong circuit devices;
- ❖ Provide electromagnetic shielding if necessary.

### 2.1.1.6 Rack Configuration

The dimensions of the QSW-8200 series is designed to be mounted on a standard 19" rack, please ensure good ventilation for the rack.

- ❖ Every device in the rack will generate heat during operation, therefore vent and fans must be provided for an enclosed rack, and devices should not be stacked closely.
- ❖ When mounting devices in an open rack, care should be taken to prevent the rack frame from obstructing the switch ventilation openings. Be sure to check the positioning of the switch after installation to avoid the aforementioned.

#### Caution !

If a standard 19" rack is not available, the QSW-8200 series can be placed on a clean level desktop, leave a clearance of 100mm around the switch for ventilation, and do not place anything on top of the switch.

### 2.1.2 Installation Notice

- ❖ Read through the installation instruction carefully before operating on the system. Make sure the installation materials and tools are prepared. And make sure the installation site is well prepared.
- ❖ During the installation, users must use the brackets and screws provided in the accessory kit. Users should use the proper tools to perform the installation. Users should always wear antistatic uniform and ESD wrist straps. Users should use standard cables and connectors.
- ❖ After the installation, users should clean the site. Before powering on the switch, users should ensure the switch is well grounded. Users should maintain the switch regularly to extend the lifespan of the switch.

### 2.1.3 Security Warnings

- ❖ When using SFP transceiver, do not stare directly at the fiber bore when the switch is in operation. Otherwise the laser may hurt your eyes.
- ❖ Do not attempt to conduct the operations which can damage the switch or which can cause physical injury.
- ❖ Do not install, move or disclose the switch and its modules when the switch is in operation.
- ❖ Do not open the switch shell.
- ❖ Do not drop metals into the switch. It can cause short-circuit.
- ❖ Do not touch the power plug and power socket.
- ❖ Do not place the tinder near the switch.

- ❖ Do not configure the switch alone in a dangerous situation,
- ❖ Use standard power sockets which have overload and leakage protection.
- ❖ Inspect and maintain the site and the switch regularly.
- ❖ Have the emergence power switch on the site. In case of emergence, switch off the power immediately.

### Caution!

Potential risk include: Electric leakage, Power supply arcing, Power line breakage, Imperfect earth, Overload circuit and Electrical short circuit. If electric shock, fire, electrical short circuit occurs, please cut off the electricity supply and alarm rapidly. Rescue the injured person in the contingency under inherently safe, give the injured person proper first aid treatment according to the injury state, and seek help from the Medical Emergency using various ways.

## 2.2 Installation Preparation

### 2.2.1 Verify the Package Contents

Please unpack the shipping package and verify carefully the contents inside.

### 2.2.2 Required Tools and Utilities

The required tools and utilities are shown below:

- Cross screwdrivers
- Flat-blade screwdriver
- ESD wrist strap
- Antistatic uniform

### Caution!

Users should prepare the required tools and utilities by themselves.

## 2.3 Installation Guide

### 2.3.1 Installing the Switch

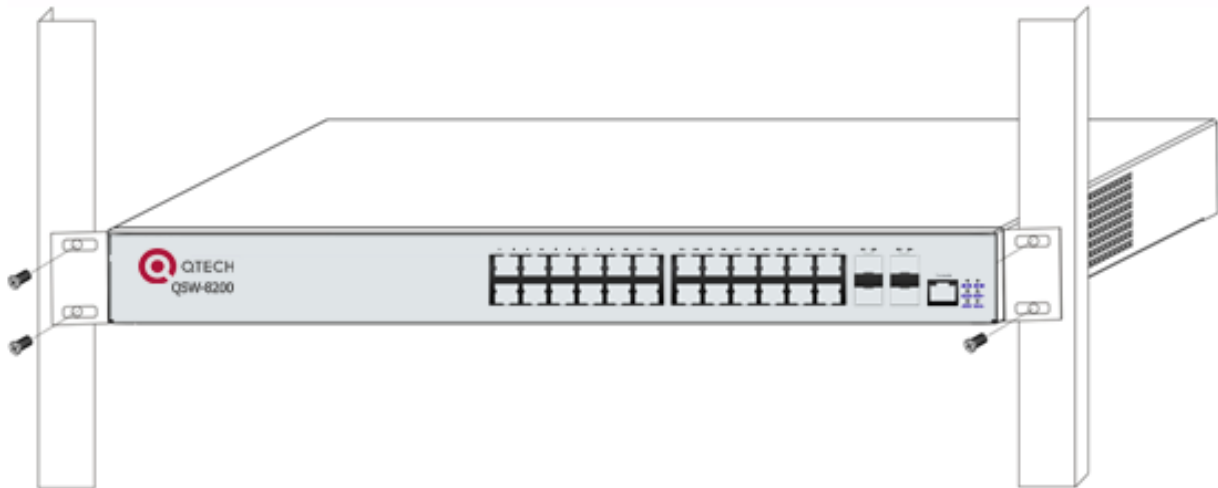


Fig 2-1 QSW-8200-28T-AC series installation sketch map on the rack

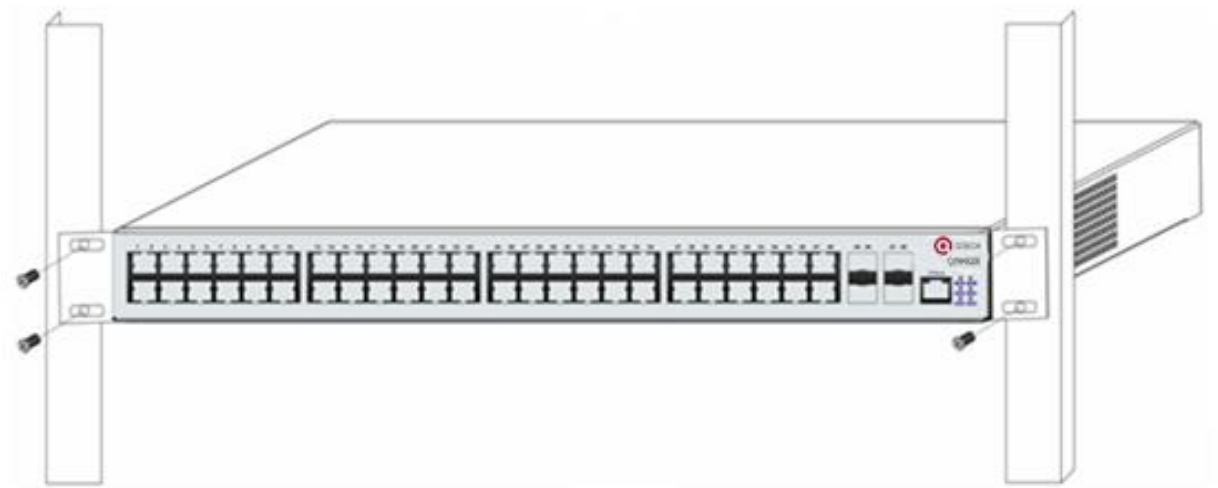


Fig 2-2 QSW-8200-52T-AC series installation sketch map on the rack



Please mount QSW-8200 series on the 19'' rack as below:

1. Attach the 2 brackets on the QSW-8200 series with screws provided in the accessory kit.
2. Put the bracket-mounted switch smoothly into a standard 19'' rack. Fasten the QSW-8200 series to the rack with the screws provided. Leave enough space around the switch for good air circulation.

### Caution!

The brackets are used to fix the switch on the rack. They can't serve as a bearing. Please place a rack shelf under the switch. Do not place anything on top of the switch. Do not block the blowholes on the switch to ensure the proper operation of the switch.

### 2.3.2 Connecting Console

QSW-8200 series provides a Mini-USB serial console port.

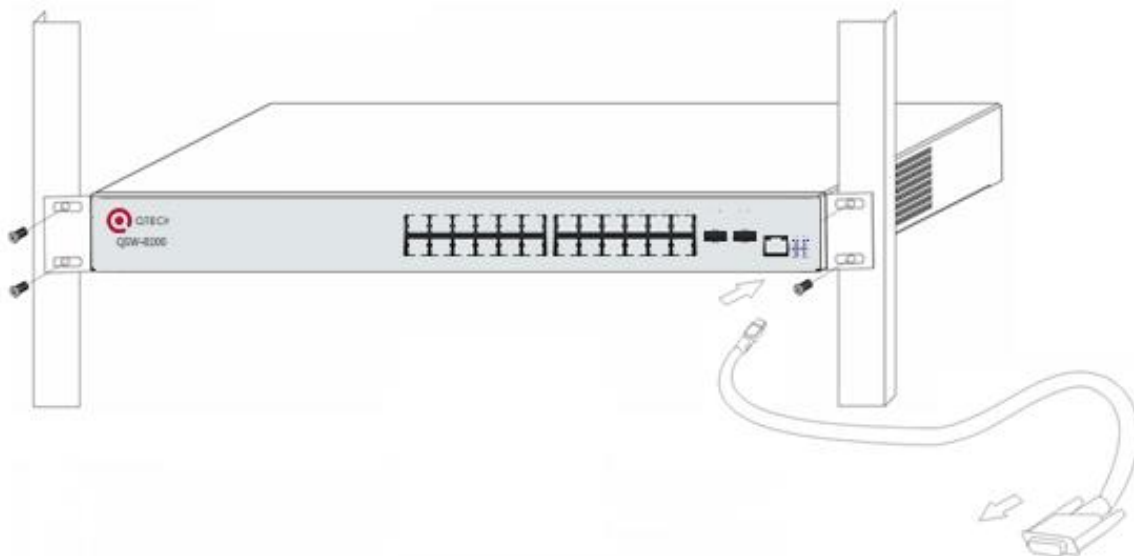


Fig 2-2 Connecting Console to QSW-8200

The connection procedure is listed below:

1. Find the console cable provided in the accessory kit. Attach the Mini-USB end to console port of the switch.
2. Connect the other side of the console cable to a character terminal (PC).
3. Power on the switch and the character terminal. Configure the switch through the character terminal.

### 2.3.3 SFP Transceiver Installation

QSW-8200 series provide multiple 1000Mb SFP transceiver slots.

The procedure for installing the SFP transceiver is shown below:

Step 1: Put on a ESD wrist strap (or antistatic gloves).

Step 2: Insert the SFP transceiver to the guide rail inside the fiber interface line card. Do not put the SFP transceiver up-side-down.

Step 3: Push the SFP transceiver along the guide rail gently until you feel the transceiver snap into place at the bottom of the line card.

Note: the SFP transceiver is hot swappable.

Caution!

Do not stare directly at the 2 fiber bore in the SFP transceiver when the switch is in operation, otherwise the laser may hurt your eyes.

### 2.3.4 QSW-2SFP+ extended module Installation

QSW-8200 series provide 10Gb slots. The procedure for installing the QSW-2SFP+ module and the SFP+ 10Gb fiber transceiver is shown below:

Step 1: Put on an ESD wrist strap (or antistatic gloves).

Step 2: Insert the QSW-2SFP+ module to the guide rail inside the 10Gb module slot.

Step 3: Push the QSW-2SFP+ module along the guide rail gently until it comes into contact with the machine panel.

Step 4: Insert the SFP+ transceiver to the guide rail inside the QSW-2SFP+. Do not put the SFP+ transceiver up-side-down.

Step 5: Push the SFP+ transceiver along the guide rail gently until it comes into contact with the QSW-2SFP+.

Note: the 2SFP+ extended module does not support hot swappable. QSW-2SFP+ extended module can insert SFP+ fiber transceiver.

### 2.3.5 QSW-2GB Extended module Installation

QSW-8200 series provide 10Gb slots. The procedure for installing the QSW-2GB module and the SFP 1Gb fiber transceiver is shown below:

Step 1: Put on an ESD wrist strap (or antistatic gloves).

Step 2: Insert the QSW-2GB module to the guide rail inside the 10Gb module slot.

Step 3: Push the QSW-2GB module along the guide rail gently until it comes into contact with the machine panel.

Step 4: Insert the SFP transceiver to the guide rail inside the QSW-2GB. Do not put the SFP transceiver up-side-down.

Step 5: Push the SFP transceiver along the guide rail gently until it comes into contact with the QSW-2GB.

Note: the 2GB extended module does not support hot swappable.

#### Caution!

Do not stare directly at the 2 fiber bores in the fiber transceiver when the switch is in operation, otherwise the laser may hurt your eyes.

### 2.3.6 Copper Cable/Fiber Cable Connection

Copper cables should be connected as below:

Step 1: Insert one end of the Ethernet cable to the RJ-45 Ethernet port in the switch copper cable line card;

Step 2: Insert the other end of the Ethernet cable to the RJ-45 Ethernet port of other device;

Step 3: Check all status indicators for the corresponding ports; a lighted LED indicates that the link has been established, otherwise the link is not ready and the cable should be examined.

#### Caution!

Please verify the sign above the port to ensure using the right port. Connecting to wrong ports might damage the switch.

Fiber cables should be connected as below:

Step 1: Remove the protective plug from the SFP/SFP+ fiber transceiver bore; Remove the protective cap from one end of the fiber cable. Keep the fiber end clean and neat.

Step 2: Attach one end of the fiber cable to the SFP/SFP+ transceiver, and attach the other end to the transceiver of the corresponding devices. Note: The SFP/SFP+ transceiver's TX port should be connected to the RX port of the corresponding device, and vice versa.

Step 3: Check the fiber port status indicator, a lighted LED indicates that the link has been established; otherwise the link is not ready and should be examined.

#### Caution!

Please verify the sign above the port to ensure using the other ports. Connecting to wrong ports might damage the transceiver or the other ports. When connecting other devices through a fiber cable to the switch, the output power of the fiber cable must not exceed the maximum received power of the corresponding modules. Otherwise, it will damage the fiber transceiver. Do not stare at the fiber bore when the switch is in operation. That may hurt your eyes.

### 2.3.7 AC Power Supply Connection

QSW-8200 use 220V AC power supply by default. Please read the power input specification for the detailed information.

AC Power supply connection procedure is described as below:

1. Insert one end of the power cable provided in the accessory kit into the power source socket (with overload and leakage protection), and the other end to the power socket in the back panel of the switch.
2. Check the power status indicator in the front panel of the switch. The corresponding power indicator should light. QSW-8200 is self-adjustable for the input voltage. As soon as the input voltage is in the range printed on the switch surface, the switch can operate correctly.
3. When the switch is powered on, it executes self-test procedure and startups.

#### Caution!

The input voltage must be within the required range, otherwise the switch can be damaged or malfunction. Do not open the switch shell without permission. It can cause physical injury.

### 2.3.8 DC Power Supply Connection

Please read the power input specification for the detailed information. Connection procedure is described as below:

1. Insert DC power linker provided in the accessory kit into DC power source socket in the back panel of the switch.
2. Check whether the power status indicator is light in the front panel of the switch.
3. When the switch is powered on, it executes self-test procedure and startups.

#### Caution!

The input voltage must be within the required range, otherwise the switch can be damaged or malfunction. Do not open the switch shell without permission. It can cause physical injury.

### 2.3.9 PoE Power Supply Connection

When using PoE function of QSW-8200, it needs to connect the external PoE power with 5 holes socket. The connection procedure is described as below:

1. Insert one end of PoE power cable provided in the accessory kit into the external PoE power (with overload and leakage protection), and the other end to PoE power socket in the back panel of the switch.
2. Connect PD device to the front port of QSW-8200.
3. Check whether PD device is powered and the port indicator status shows the power supply normally.

#### Caution!

The input voltage must be within the required range, otherwise the switch can be damaged or malfunction. PoE power supply of the front port is disabled when the switch is power-off or is not started. If there is any problem, do not open the switch shell without permission. It can cause physical injury.