

8-Port Fast Ethernet Switch w/h 100FX Connectivity

21.14.3139R

Installation Guide



DOC.071203-NS108FB

General

This 8-port Fast Ethernet switch series provides seven 10/100 TP ports and one 100BASE-FX fiber port, each capable of transmitting or receiving information simultaneously at full wire speed to control and allocate the network bandwidth.



Front



Rear

Features

- Seven 10/100BASE-TX auto-negotiation switched ports and one 100BASE-FX port for flexible connections to desktop PCs, servers and Fast Ethernet devices.
- The 10/100BASE-TX switched ports support:
 - auto-negotiation with auto-negotiation devices
 - full-duplex or half-duplex operation

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Specifications

10/100 Ports

IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX std.
Shielded RJ-45 jacks with Auto MDI-X detection
Auto-negotiation capable
Speed for 10Mbps or 100Mbps
Full-duplex or half-duplex mode support

100FX Port

IEEE 802.3u 100BASE-FX compliant
Fixed 100Mbps operation
Duplex mode selector - full duplex or half duplex

Flow control

IEEE 802.3x pause packet for full duplex operation
Back-pressure for half duplex operation

Cables

10BASE-T Cat. 3, 4, 5 or higher (100 meters max.)
100BASE-TX Cat. 5, 5e or higher (100 meters max.)
100BASE-FX multimode or single mode fiber cable

LED indicators

Power status
Per port : Speed, Link, Activity, Duplex, Collision status

Forwarding rate

14,880 pps for Ethernet (10M)
148,800 pps for Fast Ethernet (100M)

Filtering address

Multicast/Broadcast/Unicast address

MAC address

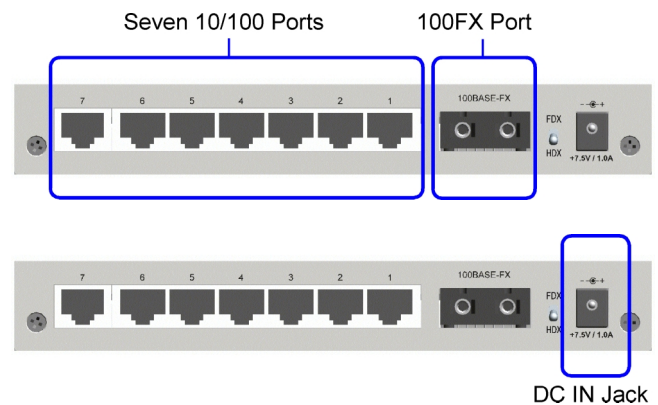
1K entries

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- automatic MDI/MDI-X configuration

- For the 100BASE-FX fiber port, the switch series support variety of fiber connectors for different application needs. The fiber connectors include ST, SC, MT-RJ, and VF-45 types for multimode and single mode fiber cables.
- Supports duplex mode selector for the 100BASE-FX fiber port.
- Self learning for active MAC addresses and address aging
- Store and forward switching to ensure only good packets are forwarded
- Forwarding and filtering at full wire speed
- Supports IEEE 802.3x flow control for full-duplex operation
- Supports back-pressure flow control for half-duplex operation
- Comprehensive LED indicators provide quick, easy to read port and switch information



Aging time

240 seconds

Environment

Operating Temperature 0°C to 40°C
Relative humidity 10% to 90% non-condensing

Dimensions

180 mm x 114 mm x 26 mm (WxDxH)
7.08 x 4.49 x 1.02 inch

DC IN Jack

Rating +7.5V/1A, D6.3mm — — + D2.0mm
Operating voltage range: +6.0V ~ +12.6VDC (DC Input)
DC input power consumption 6.3W @+7.5V

Approval

FCC Part 15 Class A
CE / CISPR 22 Class A

Optical Specification

| | |
|---------------|--------------|
| Model | 21.14.3139R |
| Connector | Duplex SC |
| Fiber | MMF |
| Wavelength | 1310nm |
| Tx Power | -19 ~ -14dBm |
| Sensitivity | -31dBm |
| Ref. Distance | 2km |

Desktop Mounting

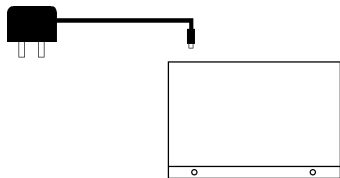
The device can be mounted on a desktop or shelf. Make sure that there is proper heat dissipation from and adequate ventilation around the device. Do not place heavy objects on the device.

Applying Power

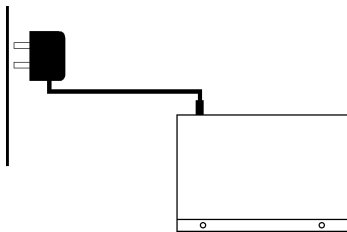
Before you begin the installation, check the AC voltage of your area. The AC power adapter which is used to supply the DC power for the device should have the AC voltage matching the commercial power voltage in your area. Use one of the following rated AC-DC power adapters for your installation.

The steps are:

- 1. Install the switch with the AC power adapter provided.

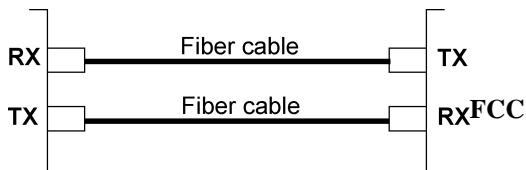


- 2. Connect the power adapter cable to the switch before connecting the adapter to the AC outlet.

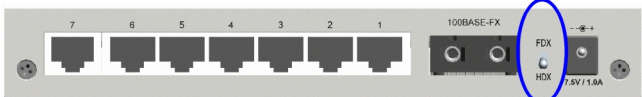


Making Fiber Connection

For different fiber connections, several alternative models can be selected for different fiber connections. The following figure illustrates a connection example between two SC fiber ports:



100FX Duplex Selector



100FX Duplex Selector

| Setting Position | Duplex Mode |
|------------------|-------------|
| FDX | Full duplex |
| HDX | Half duplex |

The following table lists the maximum MM fiber cable length connecting to different devices:

| Connected Device | Distance (MMF cable) |
|---------------------------------------|----------------------|
| Network card half-duplex fiber port | 400 m |
| Network card full-duplex fiber port | 2 km |
| Class I hub half-duplex fiber port | 160 m |
| 2 Class II hub half-duplex fiber port | 112 m |
| Switched half-duplex fiber port | 400 m |
| Switched half-duplex fiber port | 2 km |

Making UTP Connections

10/100 TP Port Configuration

All 10/100 TP ports support configuration as follows:

- Auto-negotiation capable
- Highest capability : 100M Full duplex
- Speed : auto-sensing for 100Mbps or 10Mbps
- Duplex : Full duplex, Half duplex
- Auto MDI-X function

The following table lists the configuration used for the 10/100 port when it connects to different devices:

| Connected Device | Configuration Used |
|-----------------------|--------------------------------|
| 10BASE-T hub port | 10Mbps, half-duplex |
| 100BASE-TX hub port | 100Mbps, half-duplex |
| Auto-negotiation port | Auto-negotiation result |
| Non-auto half-duplex | Auto-speed-sensing half-duplex |
| Non-auto full-duplex | Not supported |

*1 Non-auto : non-auto-negotiation

*2 speed is determined by auto-sensing function

UTP Cables

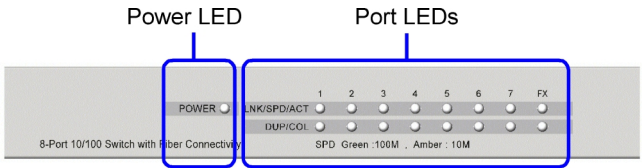
| Speed | Cables used | Distance |
|-------|-----------------------------------|------------|
| 100M | Cat. 5, 5e, or higher grade | 100 meters |
| 10M | Cat. 3, 4, 5, 5e, or higher grade | 100 meters |

Auto-MDI-X Function

An Auto-MDI-X function will automatically detect if a cross-over is required and make the swap of Tx pair and Rx pair internally. With this function, straight-through cable can be used for any connection. MDI to MDI-X connection rule is not necessary anymore. In the switches, all TP ports are equipped with this function. You can use just straight-through type of cables for all your connections.

LED Panel

The switch provides comprehensive LED indicators for diagnosing and monitoring the operation of the switch as illustrated below:



LED Interpretation

| LED | State & Color | Indication |
|-------------|---------------|--------------------------------|
| POWER | Off ----- | No power is supplied. |
| POWER | On / Green | Power is being supplied. |
| LNK/SPD/ACT | On / Green | 100Mbps, link up |
| LNK/SPD/ACT | On / Amber | 10Mbps, link up |
| LNK/SPD/ACT | Blink / Green | 100Mbps, link up, Activities |
| LNK/SPD/ACT | Blink / Amber | 10Mbps, link up, Activities |
| LNK/SPD/ACT | Off ----- | Link down |
| DUP/COL | On / Green | Full duplex mode |
| DUP/COL | Off ----- | Half duplex mode, no collision |
| DUP/COL | Blink / Green | Half duplex mode, collisions |