

User's Guide

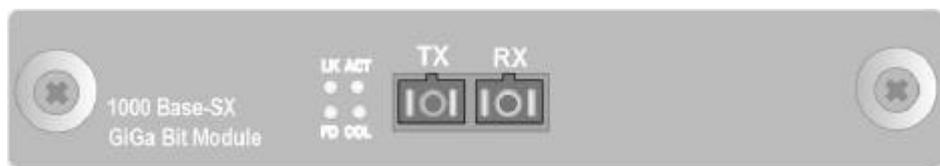
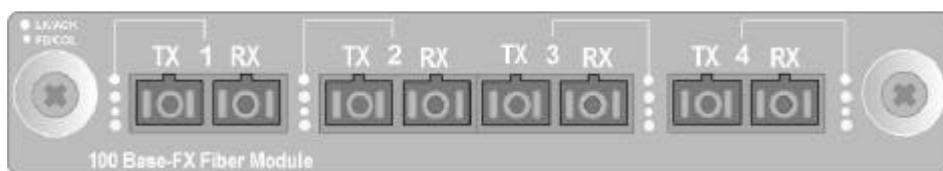
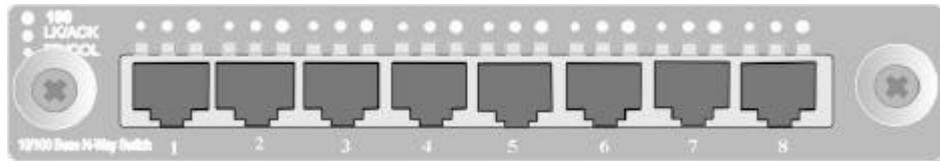
Modules for Managed/Unmanaged Modular Switch

8-Port 10/100Base-TX Intelligent Switch Module

1000Base-T Intelligent Gigabit Switch Module

**100Base-FX Intelligent Fiber Module
(2/4/8-Port, SC/ST/MT-RJ/VF-45 Connector)**

1000Base-SX/LX Intelligent Gigabit Fiber Module



******* Note: these intelligent modules work with
Managed/Unmanaged Modular Switch**

8-Port 10/100 N-Way Intelligent Switch Module

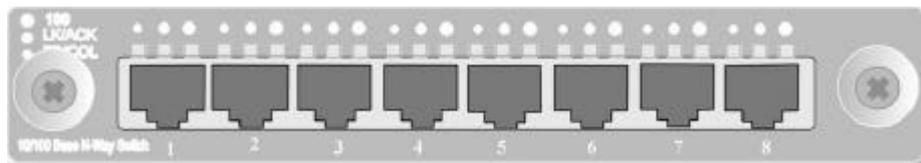


Figure 1. 8-port 10/100 N-Way Module Front View

Features:

- ☞ 8X10/100Mbps N-Way auto-negotiation switch ports
- ☞ Up to 2.4Gbps Backplane forwarding rate
- ☞ 256KB memory buffer
- ☞ 4K-entry MAC Address Table
- ☞ Store-and-forward technology for abnormal packet filtering
- ☞ Half-duplex and full-duplex modes supported
- ☞ LED-indicators for 100M, LK/ACT, FD/COL status

LED Indicators

There are three types of LED indicators for each of the RJ-45 Ports. If there is no connection to a port, the corresponding LED indicators are not lit.

☞ **100M** The LED indicator is **green** when the corresponding port is connected to a 100Mbps devices. This LED indicator is not lit when the corresponding port is connected to a 10Mbps.

☞ **LK/ACT** The LED indicator is **green** when there is a connection secured to a device (Link) to the corresponding port . This LED indicator blinks when there is a data transmission (Activity) taking place at the corresponding port.

 **FD/COL** The LED indicator is **yellow** when the corresponding port is operating in Full-duplex mode. When the corresponding port is operating in Half-duplex mode, the LED indicator is not lit. When collisions are occurring at the corresponding port, the LED indicator blinks.

Gigabit 1000Base-T Intelligent Switch Module



Figure 2. Gigabit 1000Base-T Switch Module Front View

Features:

- ☞ Compliant Gigabit Media Independent Interface (GMII)
- ☞☞ 1 X 100/1000Mbps N-Way auto-negotiation switch port
(Note: the Gigabit port also works with 10Mbps connection, but we do not recommend user to connect the Gigabit port to 10Mbps connection.)
- ☞☞ Automatic MDI crossover function
- ☞ Up to 2.4Gbps Backplane forwarding rate
- ☞ 128KB memory buffer sharing
- ☞ 4K-entry Mac Address Table
- ☞ Store-and-forward technology for abnormal packet filtering
- ☞☞ Half-duplex and full-duplex modes supported
- ☞☞ LED-indicators for 1000M Link, 100M Link, Activity, and Full-duplex statuses

LED Indicators

There are 4 LED indicators for one RJ-45 connection port. If there is no connection to a port, the corresponding LED indicators are not lit.

 **LK1000** The LED indicator is **green** when the Port is linking with 1000Mbps mode. When the port is operating in 10Mbps mode or not connected, the LED indicator is not lit.

 **ACT** This LED indicator **blinks green** when the port is transmitting or receiving packets. When the device is not attached, the LED indicator is not lit.

 **LK100** The LED indicator is **green** when the Port is linking with 100Mbps mode. When the port is operating in 10Mbps mode or not connected, the LED indicator is not lit.

 **FD** The LED indicator is **yellow** when the port is operating in Full-duplex mode. When the port is operating in Half-duplex mode, the LED indicator is not lit.

100Base-FX Fiber Intelligent Module Series

1. 2/4-Port 100Base-FX (SC) Intelligent Fiber Module

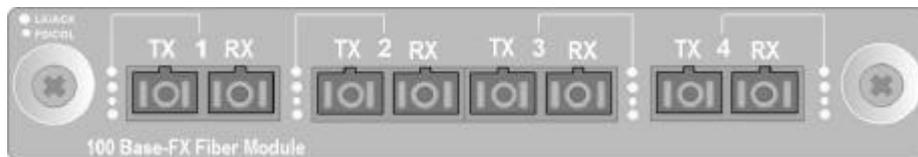


Figure 3. 4 port 100Base-FX (SC) Module Front View

Features:

- ☞ 2/4 X 100Mbps fiber ports (SC connectors)
- ☞ Up to 2.4Gbps Backplane forwarding rate
- ☞ 5MB memory buffer
- ☞ 12K-entry MAC Address Table
- ☞ Store-and-forward technology for abnormal packet filtering
- ☞ Half-duplex and full-duplex modes supported
- ☞ LED-indicators for LK/ACT, FD/COL statuses
- ☞ For establishing fiber links cable distance up to 2 Km (multi-mode) or 60 Km (single-mode)

2. 2/4-Port 100Base-FX (ST) Intelligent Fiber Module

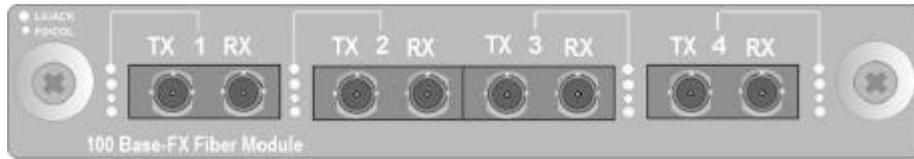


Figure 4. 4-port 100Base-FX (ST) Module Front View

Features:

- ☞ 2/4 X 100Mbps fiber ports (ST connectors)
- ☞ Up to 2.4Gbps Backplane forwarding rate
- ☞ 5MB memory buffer
- ☞ 12K-entry MAC Address Table
- ☞ Store-and-forward technology for abnormal packet filtering
- ☞ Half-duplex and full-duplex modes supported
- ☞ LED-indicators for LK/ACT, FD/COL statuses
- ☞ For establishing fiber links cable distance up to 2 Km (multi-mode)

3. 2/4/8-Port 100Base-FX(MT-RJ) Intelligent Fiber Module

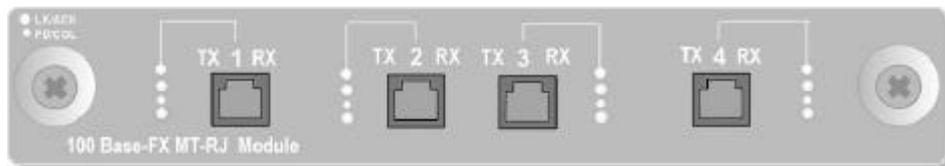


Figure 5. 4-port 100Base-FX (MT-RJ) Module Front View

Features:

- ☞ 2/4/8 X 100Mbps fiber ports (MT-RJ connectors)
- ☞ Up to 2.4Gbps Backplane forwarding rate
- ☞ 5MB memory buffer
- ☞ 12K-entry MAC Address Table
- ☞ Store-and-forward technology for abnormal packet filtering
- ☞ Half-duplex and full-duplex modes supported
- ☞ LED-indicators for LK/ACT, FD/COL statuses
- ☞ For establishing fiber links cable distance up to 2 Km (multi-mode)

4. 2/4/8 Port 100Base-FX(VF-45) Intelligent Fiber Module

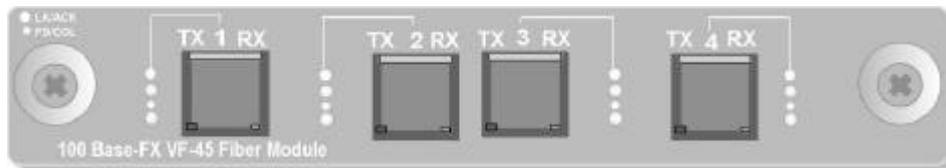


Figure 6. 4-port 100Base-FX (VF-45) Module Front View

Features:

- ☞ 2/4/8 X 100Mbps fiber ports (VF-45 connectors)
- ☞ Up to 2.4Gbps Backplane forwarding rate
- ☞ 5MB memory buffer
- ☞ 12K-entry MAC Address Table
- ☞ Store-and-forward technology for abnormal packet filtering
- ☞ Half-duplex and full-duplex modes supported
- ☞ LED-indicators for LK/ACT, FD/COL statuses
- ☞ For establishing fiber links cable distance up to 2 Km (multi-mode)

LED Indicators (for 100Base-FX Fiber Module Series)

There are two LED indicators for each of the Fiber connection ports. If there is no connection to a port, the corresponding LED indicators are not lit.

- ✍✍ **LK/ACT** The LED indicator is **green** when there is a connection secured to a device (Link) to the corresponding port . This LED indicator blinks when there is a data transmission (Activity) taking place at the corresponding port.
- ✍✍ **FD/COL** The LED indicator is **yellow** when the corresponding port is operating in Full-duplex mode. When the corresponding port is operating in Half-duplex mode, the LED indicator is not lit. When collisions are occurring at the corresponding port, the LED indicator blinks.

Gigabit 1000Base-SX/LX Intelligent Fiber Modules



Figure 7. Gigabit 1000Base-SX/LX Module Front View

Features

- ☞ 1 X 1000Mbps fiber port (SX/LX connectors)
- ☞ Up to 2.4Gbps Backplane forwarding rate
- ☞ 128KB memory buffer
- ☞ Dynamic address learning with 4K-entry
- ☞ Store-and-forward technology for abnormal packet filtering
- ☞☞ Half-duplex and full-duplex modes supported
- ☞ LED-indicators for LK, ACT, FD, COL statuses
- ☞☞ For establishing fiber links cable distance up to 500 m (1000Base-SX SC multi-mode), 10 or 15 Km (1000Base-LX SC single mode).

LED Indicators

There are four LED indicators for one Gigabit Fiber connection port. If there is no connection to a port, the corresponding LED indicators are not lit.

☞☞ **LK** The LED indicator is **green** when there is a connection securely to a device (Link) to the corresponding port.

☞☞ **ACT** This LED indicator blinks **green** when there is a data transmission (Activity) taking place at the corresponding port.

☞☞ **FD** The LED indicator is **yellow** when the corresponding port is operating in Full-duplex mode. When the corresponding port is operating in Half-duplex mode, the LED indicator is not lit.

☞☞ **COL** The LED indicator blinks **yellow** when collisions are occurring at the corresponding port

Technical Specifications

| | |
|---|--|
| Standards Compliance | IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX/FX Fast Ethernet, IEEE 802.3z 1000BASE-X Fiber Gigabit Ethernet IEEE 802.3ab 1000BASE-T UTP Gigabit Ethernet ANSI/IEEE standard 802.3 N-Way Auto-negotiation |
| Protocol | CSMA/CD |
| Max Forwarding and Max Filtering Rate (for 64-byte packets) | 14,880 pps to Ethernet port, 148,800 pps to Fast Ethernet port 1,488,000pps to Gigabit Ethernet port |
| LED-Indicators | Per Port: 8 port N-Way: 100M, LK/ACT, FD/COL (3 LEDs) 100M Fiber: LK/ACT, FD/COL (2 LEDs) Gigabit Fiber: LK, ACT, FD, COL (4 LEDs) Gigabit UTP: 1000 LK, 100 LK, ACT, FD (4 LEDs) |
| Network Cables | 10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 (100m) 1000Base-T: 4-pair UTP/STP Cat. 5 or above EIA/TIA-568 (100m) 100Base-FX: 50, 62.5/125 micron multi-mode fiber-optics (2Km) 8,9/125 micron single-mode fiber-optics (up to 60Km) 1000Base-X: 50, 62.5/125 micron multi-mode fiber-optics (SX)(500m) 10/125 micron single-mode fiber-optics (LX)(10 or 15 Km) |
| Dimensions | 178 mm x 152 mm x 25 mm (L x W x H) |
| Weight | 213 ~ 283 g |
| Operating Temperature | 0°C to 45°C (32°F to 113°F) |
| Operating Humidity | 10% to 90% (Non-condensing) |
| Power Supply | Modular Unit: Input rate: 100~240VAC, 50~60Hz Internal universal power supply: 4-Slot Modular Switch - DC 3.3V/13A, 5V/4A 8-Slot Modular Switch - DC 3.3V/25A, 5V/4A |
| EMI | FCC Class A, CE Mark |
| Safety | UL, TUV |

PMAU001490