# Fast / Gigabit Ethernet Switch Module

## MII series

## User's Manual

## Trademarks



Contents subject to revision without prior notice.



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## FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio

communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

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To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

## Revision

User's manual for Fast / Gigabit Ethernet Switch Module

For model: MII-VSC / MII-VST / MII-VS15 / MII-VSA20 / MII-VSB20 / MII-GT/ MII-SX / MII-LX / MII-L40 / MII-L70 / MII-SFP / MII-LA15 / MII-LB15

Rev: 7.0 (JULY, 2008)

Part No: 2010-000021-007

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# Chapter 1 OVERVIEW

Thank you for purchasing PLANET MII family Fast / Gigabit Ethernet module. The MII family Fast / Gigabit Ethernet module can install into PLANET FNSW / FGSW family Switch. The distance can be extended from 100 meters (TP), 2 kilometers (Multi-mode, SC or ST), up to 120 kilometers (Single-mode, SC/LC).

# Chapter 2 MODEL LIST

Your MII family Fast / Gigabit Ethernet module comes with one of the following models.

| Model | Interface | Fiber connector and distance |
|---|---|---|
| **Fast Ethernet** | | |
| MII-VSC | 100Base-FX Module | (SC, MM, 2km) |
| MII-VST | 100Base-FX Module | (ST, MM, 2km) |
| MII-VS15 | 100Base-FX Module | (SC, SM, 15km) |
| MII-VSA20 | 100Base-FX Module | (SC, SM, 20km) |
| MII-VSB20 | 100Base-FX Module | (SC, SM, 20km) |
| **Gigabit Ethernet** | | |
| MII-GT | 10/100/1000Base-T Module | (RJ-45, 100m) |
| MII-SX | 1000Base-SX Module | (SC, MM, 550m) |
| MII-LX | 1000Base-LX Module | (SC, SM, 10km) |
| MII-L40 | 1000Base-LX Module | (SC, SM, 40km) |
| MII-L70 | 1000Base-LX Module | (SC, SM, 70km) |
| MII-SFP | 1000Base-T/Mini-GBIC Module | (RJ-45, 100m) |
| MII-LA15 | 1000Base-LX Module | (SC, SM, 15km) |
| MII-LB15 | 1000Base-LX Module | (SC, SM, 15km) |

Models with LX or last two numbered characters indicate the fiber-port is with **"Single-Mode"** optic fiber connector and the number indicates the maximum distance in km. The rest will be **"Multi-Mode"** optic fiber models.

## *Chapter 3 CHECKLIST*

Your MII carton should contain the following items:

⇨ The MII family Fast / Gigabit Ethernet module

⇨ This user's manual

If any item is missing or damaged, please consult the dealer from whom you purchased your MII family Fast / Gigabit Ethernet module.

# *Chapter 4 INTRODUCTION*

## 4-1 1-Port 100Base-FX Fast Ethernet Modules - MII-VSC / MII-VST / MII-VS15 / MII-VSA20 / MII-VSB20

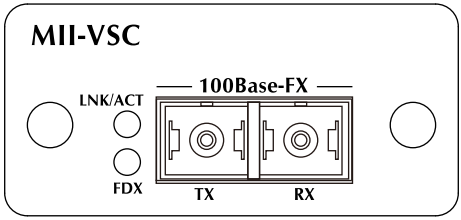


**Figure 1.** 1-Port 100Base-FX (SC, Multi-mode) Module Front View

**Features:**

- Comply with IEEE 802.3u, 100Base-FX Fast Ethernet standard
- 1 x 100Base-FX fiber ports (SC/ST/single SC fiber connectors)
- Store-and-Forward technology for abnormal packet filtering
- For establishing fiber link with cable length up to 2km (Multi-mode module) and 15/20km (Single-mode module) or 412m (half-duplex mode)
- Slide switch for Half /Full-Duplex selection (default in full-duplex)
- Plug and Play Installation

Note

1. The fiber connector and distance support will be different by various models.
2. The MII-VSA20/VSB20 should runs in pair. It means you must connect MII-VSA20 in one end and another MII-VSB20, for example, in the other end.

**LED DEFINITION**

| LED | Color | Function |
|---|---|---|
| LNK/ ACT | Green | **Lit:** indicate the link through that port is successfully established.<br>**Blink:** indicate that the switch is actively sending or receiving data over that port. |
| FDX | Orange | **Lit:** indicate that port is operating in full-duplex mode.<br>**Off:** indicate that port is operating in half-duplex mode.<br>**Blink:** if a collision is detected when the port is in half-Duplex mode. |

**Table 1.** LED definition of 100Base- FX module

**Slide switch settings:**

Figure 2 shows the 100Base-FX module slide switch overview and the screen in Figure 3 appears shows the web settings for working under 100Mbps full-duplex mode and half-duplex mode.

Please make sure you have correctly configured the 100Base-FX module in the same duplex mode between the module's slide switch and web interface speed duplex mode settings of module slots before physically installing the modules.

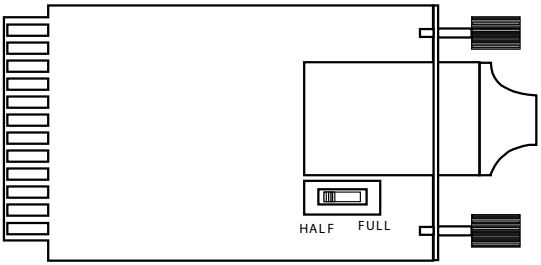


**Figure 2.** Slide switch overview of 100Base- FX module

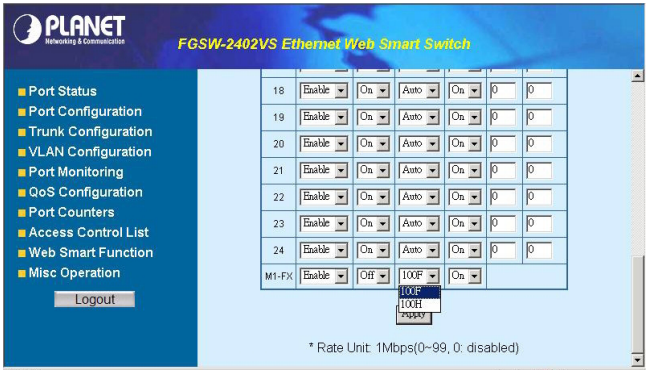


**Figure 3.** 100Base- FX module duplex mode setting of web interface

Table 2 below shows the settings for working under 100Mbps full-duplex mode and half-duplex mode. Both module (slide-switch) and the switch (web interface) should be fixed on the same mode.

| Speed/duplex | 100Full-duplex mode | 100Half-duplex mode |
|---|---|---|
| Hardware (module) | Full-duplex mode | Half-duplex mode |
| Software (firmware) | 100 Full | 100 Half |

**Table 2.** Settings of 100Base-FX module

Table 3 below shows the slide switch operation for full duplex and half duplex mode.

| Slide Switch Description | |
|---|---|
| FDX | The module works on full duplex mode. The other side must be also configured on full duplex mode. This provides up to 2km distance by multi-mode module and 15/20km by single-mode module. |
| HDX | The module works on half duplex mode. The other side must be also configured on half duplex mode. This provides up to 412m distances. |

**Table 3.** Slide switch settings of 100Base-FX module

## 4-2 1-Port 1000Base-T Gigabit Ethernet Module-MII-GT

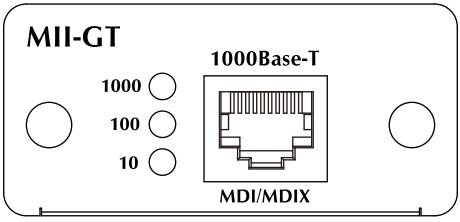


**Figure 4.** 1-Port 1000Base-T Module Front View

**Features:**

- Comply with IEEE 802.3 Ethernet, IEEE 802.3u Fast Ethernet, IEEE 802.3ab Gigabit Ethernet standard
- 1 x 10/ 100/1000Mbps N-Way auto-negotiation switch port
- Automatic MDI/MDI-X crossover function
- Store-and-Forward technology for abnormal packet filtering
- Non-blocking and full wire speed forwarding rate
- LED indicators for Speed status
- Up to 100m over 4-pair UTP Cat.5e cable
- Plug & Play Installation

**LED DEFINITION**

| LED | Color | Function |
|---|---|---|
| LNK/ACT 1000 | Green | **Lit:** indicate that the port is operating at 1000Mbps.<br>**Off:** indicate that the port is operating at 10 Mbps or 100Mbps.<br>**Blink:** indicate the traffic sending or receiving over that port. |
| LNK/ACT 100 | Green | **Lit:** indicate that the port is operating at 100Mbps.<br>**Off:** indicate that the port is operating at 10 Mbps or 1000Mbps.<br>**Blink:** indicate the traffic sending or receiving over that port. |
| LNK/ACT 10 | Green | **Lit:** indicate that the port is operating at 10Mbps.<br>**Off:** indicate that the port is operating at 100 Mbps or 1000Mbps.<br>**Blink:** indicate the traffic sending or receiving over that port. |

**Table 4.** LED definition of 1000Base-T Module

## 4-3 1-Port 1000Base-SX/LX Gigabit Ethernet Modules- MII-SX / MII-LX / MII-L40 / MII-L70 / MII-LA15 / MII-LB15

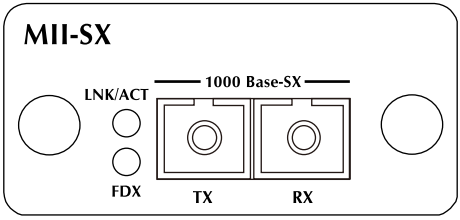


**Figure 5.** 1-Port 1000Base-SX Module Front View

**Features:**

- Comply with the IEEE 802.3z Gigabit Ethernet standard
- 1 X 1000Mbps fiber port (SX/LX/single SC fiber connectors)
- Store-and-Forward technology for abnormal packet filtering
- Full-duplex mode supported
- Plug and Play Installation
- LED indicators for LNK/ACT, FDX status
- MII-SX provide distance up to 220m over 62.5/125μm fiber cable and 500m over 50/125μm fiber cable
- MII-LX provide distance up to 550m over multimode fiber cable and 10km over 9/125μm single mode fiber cable
- MII-L40 provide distance up to 550m over multimode fiber cable and 40km over 9/125μm single mode fiber cable
- MII-L70 provide distance up to 550m over multimode fiber cable and 70km over 9/125μm single mode fiber cable
- MII-LA15 / LB15 provide distance up to 550m over multimode fiber cable and 15km over 9/125μm single mode fiber cable


1. The fiber connector and distance support will be different by various models.
2. The MII-LA15/LB15 should runs in pair. It means you must connect MII-LA15 in one end and another MII-LB15, for example, in the other end.

**LED DEFINITION**

| LED | Color | Function |
|---|---|---|
| LNK/ACT | Green | **Lit:** indicate the link through that port is successfully established.<br>**Blink:** indicate that the switch is actively sending or receiving data over that port. |
| FDX | Orange | **Lit:** indicate that port is operating in full-duplex mode. |

**Table 5.** LED definition of 1000Base-SX/LX Module

## 4-4 1-Port 1000Base-T/Mini GBIC interface Module-MII-SFP

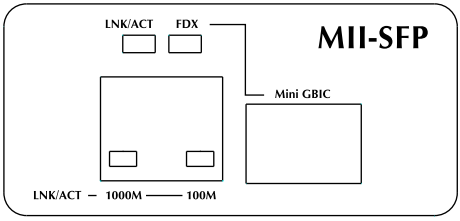


**Figure 6.** 1-Port 1000Base-T/Mini GBIC Module Front View

**Features:**

- Comply with the IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standard
- 1-Port 1000Base-T/Mini GBIC interface module
- High performance Store-and-Forward architecture
- Auto-MDI/MDI-X on 1000Base-T port
- Mini-GBIC interface for optional Mini GBIC module
- Plug and Play Installation
- LED indicators for LNK/ACT status on 1000Base-T port
- LED indicators for LNK/ACT, FDX status on Mini GBIC interface

Note

The MII-SFP module does not supports the 1000Base-T port and Mini-GBIC interface operate at the same time.

**LED DEFINITION**

**Mini GBIC interface**

| LED | Color | Function |
|---|---|---|
| LNK/ACT | Green | **Lit:** indicate the link through that port is successfully established.<br>**Blink:** indicate that the switch is actively sending or receiving data over that port. |
| FDX | Orange | **Lit:** indicate that port is operating in full-duplex mode. |

**Table 6.** LED definition of Mini GBIC interface from MII-SFP Module

**1000Base-T port**

| LED | Color | Function |
|---|---|---|
| 1000 LNK/ACT | Green | **Lit:** indicate the link through that port is successfully established.<br>**Blink:** indicate that the switch is actively sending or receiving data over that port. |
| 100 LNK/ACT | Orange | **Lit:** indicate the link through that port is successfully established.<br>**Blink:** indicate that the switch is actively sending or receiving data over that port. |

**Table 7.** LED definition of 1000Base-T port from MII-SFP module

# Chapter 5 Installing Optional Modules

You can purchase optional modules separately to meet the needs of your network. The process of installing optional modules is the same.

Follow these steps to install the optional module:

1. Power the Switch off before installing the optional module.
2. Place the Switch on a flat surface. Grasp the thumbscrew on the sides of the optional module or blank bracket and turn counter-clockwise to unscrew them. You can also use a screwdriver. Remove the old module or the blank bracket and set aside. Do not discard the module or blank bracket. Put the module or blank bracket back in if you remove the new module.
3. Install the new module by inserting it into the guides and sliding it in until it stops (See **Figure 7**). Press it firmly until you feel the module snap into place. Never force, twist or bend the optional module. The optional module slides in smoothly.
4. Gently push the thumbscrews in and turn clockwise to tighten. Do not over tighten the thumbscrews.
5. Power the Switch on after you have installed the new module. The Switch will automatically detect the new module.

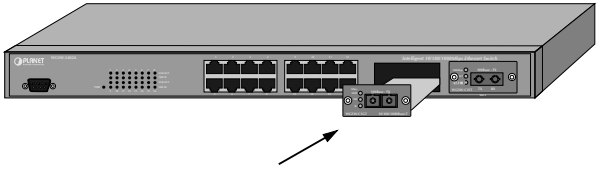

**Figure 7.** Insert the modules

6. Take off the dust cover from the transceiver and plug the cable in, if you are installing a fiber optic module.
7. Check the LEDs to verify that if there is a link and a proper connection at the port.

Please refer to the Switch's user's manual for more about Switch or module's management.