# 1. Overview

Thank you for purchasing PLANET MFB family SFP 100Base-FX Fast Ethernet module. The MFB family SFP Fast Ethernet module can install into PLANET Switch products with 100Base-FX SFP interface. The distance can be extended from 2km (MM) up to 60 kilometers (Single-mode, LC).

# 2. Model List

Your MFB family SFP Fast Ethernet module comes with one of the following models.

| Fast Ethernet SFP module List | | |
|---|---|---|
| Model | Interface | Fiber connector and distance |
| MFB-FX | SFP-Port 100Base-FX Module | LC, Multi-Mode (1310nm) -2km |
| MFB-F20 | SFP-Port 100Base-FX Module | LC, Single Mode (1310nm) – 20km |
| MFB-F40 | SFP-Port 100Base-FX Module | LC, Single Mode (1310nm) – 40km |
| MFB-F60 | SFP-Port 100Base-FX Module | LC, Single Mode (1310nm) – 60km |
| MFB-FA20 | SFP-Port 100Base-BX Module | LC WDM, Single Mode (TX:1310nm, RX:1550nm) -20km |
| MFB-FB20 | SFP-Port 100Base-BX Module | LC WDM, Single Mode (TX:1550nm, RX:1310nm) -20km |

* Models with last two numbered characters indicate the maximum distance in km.

# 3. Check List

Your MFB carton should contain the following items:

- The MFB family SFP Fast Ethernet module
- This user's manual

If any item is missing or damaged, please consult the dealer from whom you purchased you MFB family SFP Fast Ethernet module.

# 4. Introduction

## 4-1 1-Port 100Base-FX SFP Modules – MFB-FX / MFB-F20 / MFB-F40 / MFB-F60

Features:

- Comply with IEEE 802.3u Fast Ethernet standard
- 1 x 100Mbps fiber port
- Plug and Play Installation
- MFB-FX provides distance up to 2km over 62.5/125μm multi-mode fiber cable
- MFB-F20 provides distance up to 20km over 9/125μm single mode fiber cable
- MFB-F40 provides distance up to 40km over 9/125μm single mode fiber cable
- MFB-F60 provides distance up to 60km over 9/125μm single mode fiber cable

## 4-2 1-Port 100Base-BX WDM SFP Modules – MFB-FA20 / MFB-FB20

Features:

- Comply with IEEE 802.3u Fast Ethernet standard
- 1 x 100Mbps fiber port (Single LC fiber connectors)
- Plug and Play Installation
- MFB-FA20 provides distance up to 20km over 9/125μm single mode fiber cable
- MFB-FB20 provides distance up to 20km over 9/125μm single mode fiber cable

> ⚠ Caution
> The MFB series single mode SFP transceivers provide the optical power budget from 15 dB to 30dB. When shorter distance of single-mode fiber cables is used, you might need to insert an in-line optical attenuator in the link to avoid overloading the receiver:

| In-line Optical Attenuator (SFP Model) | MFB-F20 | MFB-F40 | MFB-F60 | MFB-FA20 | MFB-FB20 |
|---|---|---|---|---|---|
| Optical power budget | 15 dB | 24 dB | 30 dB | 20 dB | 20 dB |
| Fiber Cable Length = 10 Km | 5 dB | 10 dB | 15 dB | 5 dB | 5 dB |
| 15Km ≤ Fiber Cable Length < 60Km | 2 dB | 10 dB | -- | 2 dB | 2 dB |

# 5. Installing SFP Modules

## 5.1 Installing the SFP transceiver

The sections describe how to insert an SFP transceiver into an SFP slot.

The SFP transceivers are hot-pluggable and hot-swappable. You can plug-in and out the transceiver to/from any SFP port without having to power down the Switch/Media Converter. As the Figure -1 appears.
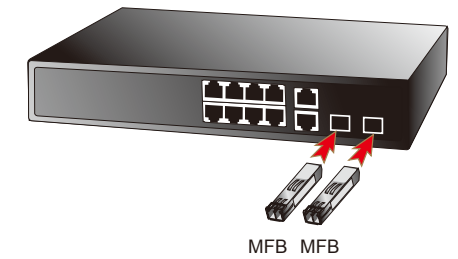


MFB  MFB

**Figure 1** Plug-in the SFP transceiver

Before connect the other switches, workstation or Media Converter.

1. Make sure both side of the SFP transceiver are with the same media type or WDM pair, for example: 100Base-FX to 100Base-FX, 100Base-BX20-U to 100Base-BX20-D.
2. Check the fiber-optic cable type match the SFP transceiver model.
   - To connect to MFB-FX SFP transceiver, use the multi-mode fiber cable- with one side must be male duplex LC connector type.
   - To connect to MFB-F20/F40/F60/FA20/FB20 SFP transceiver, use the single-mode fiber cable-with one side must be male duplex LC connector type.

Connect the fiber cable

1. Attach the duplex LC connector on the network cable into the SFP transceiver.
2. Connect the other end of the cable to a device – switches with SFP installed, fiber NIC on a workstation or a Media Converter.
3. Check the LNK/ACT LED of the SFP slot of the switch / converter. Ensure that the SFP transceiver is operating correctly.
4. Check the Link mode of the SFP port if the link failed. Co works with some fiber-NICs or Media Converters, set the Link mode to "100 Force" is needed.

### 5.2 Remove the module

1. Make sure there is no network activity by consult or check with the network administrator. Or through the management interface of the switch/converter (if available) to disable the port in advance.

2. Remove the Fiber Optic Cable gently.

3. Turn the handle of the MFB module to horizontal.
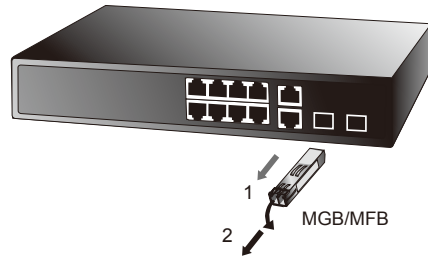
4. Pull out the module gently through the handle.



**Figure-2**  Pull Out the SFP transceiver

| ⚠ Caution | Never pull out the module without pull the handle or the push bolts on the module. Direct pull out the module with violent could damage the module and SFP module slot of the device. |
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## APPENDIX A

### A.1 Fiber Optical Cable Connection Parameters

The wiring details are as below:

Fiber Optical patch Cables:

| Standard | Fiber Type | Cable Specification |
|---|---|---|
| 100Base-FX (1310nm) | Multi-mode | 50/125µm or 62.5/125µm |
| 100Base-FX (1310nm) | Multi-mode | 50/125µm or 62.5/125µm |
| | Single-mode | 9/125µm |
| 100Base-BX-U (TX:1310/RX:1550) 100Base-BX-D (TX:1550/RX:1310) | Single-mode | 9/125µm |

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