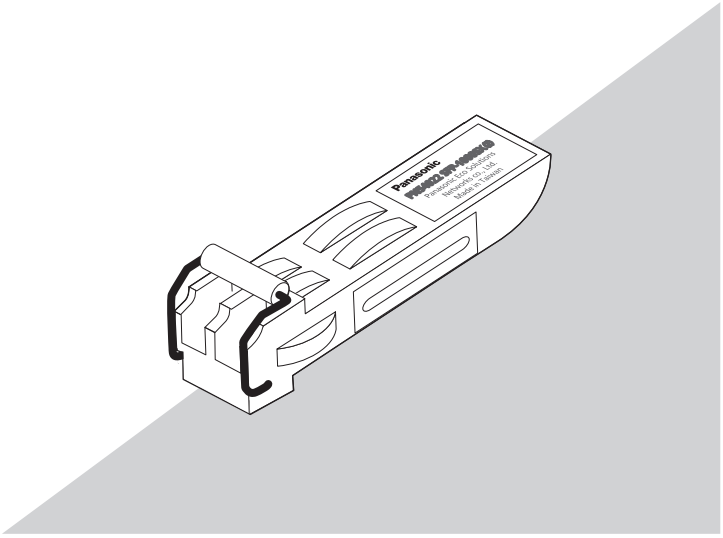
Panasonic

Installation Guide

1000BASE-SX SFP Module (i) (SFP-1000SX (i))
1000BASE-LX SFP Module (i) (SFP-1000LX (i))

Model No. PN54022/PN54024

- Thank you for purchasing our product.
- This document provides important information about safe and proper operations of this SFP Module.
- Please read the **"Important Safety Instructions"**.
- Any problems or damage resulting from disassembly of this SFP Module by customers are not covered by the warranty.



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Important Safety Instructions

This chapter contains important safety instructions for preventing bodily injury and/or property damage. You are required to follow them.

■ Severity of bodily injury and/or property damage, which could result from incorrect use of the SFP Module, are explained below.

⚠WARNING	This symbol indicates a potential hazard that could result in serious injury or death.
⚠CAUTION	This symbol indicates safety instructions. Deviation from these instructions could lead to bodily injury and/or property damage.

■ The following symbols are used to classify and describe the type of instructions to be observed.

This symbol is used to alert users to what they must not do.	This symbol is used to alert users to what they must do.

⚠WARNING

- **Do not handle this SFP Module and connection cables during a thunderstorm.**
  Deviation could lead to electric shock.
- **Do not disassemble and/or modify this SFP Module.**
  Deviation could lead to fire, electric shock, and/or equipment failure.
- **Do not connect or disconnect this SFP Module from the SFP/SFP+ extension slots with wet hands.**
  Deviation could lead to electric shock, or malfunctions.
- **Do not insert, nor drop foreign objects such as metal or combustible things into the inside from the openings.**
  Deviation could lead to fire, electric shock, and/or equipment failure.
- **Do not store or use the SFP Module in places where it might get splashed with liquids such as water, in places with a lot of humidity, in places with conductive dust, or in places where there are corrosive and combustible gases.**
  Deviation could lead to fire, electric shock, and/or equipment failure.
- **Do not place this SFP Module under direct sunlight and/or high temperature.**
  Deviation could lead to high internal temperature and fire.
- **Do not store nor use the SFP Module in unstable places where there are lots of vibrations, or impacts.**
  Deviation could lead to falling, injury and/or equipment failure.

⚠WARNING

- **Do not put the SFP Module into fire.**
  Deviation could lead to explosion and/or fire.
- **If the Product is going to be used in high temperature environments, do not perform the following operations with bare hands.**
  - Moving the product from the installation area, or transporting it
  - Connecting and disconnecting the product, or plugging in or unplugging the fiber optic cables

  Deviation could lead to injuries or burns, etc. because of high temperatures.
- **Do not connect any instruments other than those which conform to the standards for fiber optic ports.**
  Deviation could lead to fire, electric shock, or malfunctions.
- **Do not look at the laser light.**
  Deviation could lead to visual impairment. (Class 1 Laser Product)

⚠CAUTION

- **If fiber optic cables are going to be connected to this product, check that the fiber optic cable connectors are not contaminated with dust, etc.**
  If they are contaminated, the optical signals will not be properly transmitted, which might cause misoperations, or malfunctions. If they are contaminated, be sure to clean them, then connect them to the fiber optic ports.
- **Be careful in handling the product's levers and metal terminals, etc. so that you do not cut your hands.**
- **This SFP Module is to be periodically serviced in order to maintain its performance.**
  Please choose a product administrator, and have them be sure to implement periodic maintenance.
- **When using this SFP Module for applications which require extremely high reliability, be careful to expend all possible means to ensure safety and reliability.**
  This SFP Module was not designed nor manufactured with the intention that it be used for applications (in use with railways, aviation, and medical care, etc. whereas the influence rate due to communications failures is extremely high in regard to systems that directly affect systems and human lives) which require extremely high reliability.
- **Be aware of glitches which are caused in the usage environments such as age-related degradation, etc.**
  This may vary depending upon conditions such as utilization rates and usage environments, but performance might decrease due to the age-related degradation, etc. of components. It is recommended that this SFP Module be replaced about five years after it has been installed.
- **Be careful in regards to environmental restrictions whereby the SFP Module can be used.**
  Please isolate the business power lines and communications lines. Isolate distribution lines and other distribution lines, and low current power lines, fiber optic cables, metallic water conduits, and gas conduits, etc. Noise may be generated in the communications lines which might cause communications glitches.
- **Be careful when performing the following operations since the device will be at high temperatures immediately after it has been energized or the power has been shut off.**
  - Moving the product from the installation area, or transporting it
  - Connecting and disconnecting the product, or plugging in or unplugging the fiber optic cables

  Deviation could lead to injuries or burns, etc. because of high temperatures.

Basic Instructions for the Use of This Product

- **For inspection and/or repair, consult the retailer.**
- **Please properly and firmly connect the devices into the Panasonic Switching Hub's SFP/SFP+ extension slots which are compatible with the SFP Module. If the SFP Module is connected to switching hubs other than Panasonic Switching Hubs which are compatible with the SFP Module, please note that operations are not guaranteed. Check our website for the latest information on the Panasonic Switching Hubs which are compatible with the SFP Module.**
- **If the SFP Module is going to be disconnected from the SFP/SFP+ extension slots, first unlock the cable latches then disconnect the fiber optic cables, lower the SFP Module's levers forward, then with the SFP Module's latches unlocked, pull out the SFP Module.**
- **Remove the SFP Module from the SFP extension slot before cleaning the SFP Module.**
- **If fiber optic cables are going to be connected to this product, check that the fiber optic cable connectors are not contaminated with dust, etc. and if they are contaminated, be sure to clean them, then connect them to the fiber optic ports.**
- **Do not touch the SFP Module's metal terminals, nor allow charged objects to get close to them. Deviation could lead to malfunctions due to static electricity.**
- **Do not put a strong shock, including dropping, to this SFP Module. Deviation could lead to equipment failure.**
- **Use in places where the ambient temperatures are 0°C – 60°C.**
  In addition, do not store and/or use this SFP Module in the environment with the characteristics listed below.
  (Store and/or use this SFP Module in the environment in accordance with the specification.)
  - High humidity. Possible spilled liquid (water).
  - Dusty. Possible static charge (such as carpet).
  - Under direct sunlight.
  - Possible condensation. High/low temperature exceeding the specifications environment.
  - Strong vibration and/or strong shock.
- **Do not use the SFP Module in any condition where the specification limits are exceeded.**
  Deviation could lead to malfunctions.

1. Please note that Panasonic shall not bear any liability whatsoever for any damages (this shall include lost earnings, lost opportunities, etc. but this is not restricted to these things) which were generated in relation to damages caused by operations and usage, or the inability to use this SFP Module, whereby the customer does not follow this Installation Guide.
2. The contents described in this document may be changed without prior notice. For the latest version, please refer to the Panasonic website.
3. For any question, please contact the retailer where you purchased the product.

Product Outline

1000BASE-SX SFP Module (i) and 1000BASE-LX SFP Module (i) are SFP (Small Form-Factor Pluggable) modules to be connected to a Panasonic Switching Hub's SFP extension slot.

Specifications

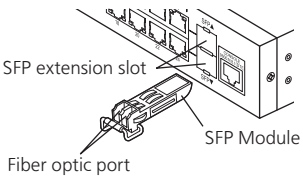
Product name	1000BASE-SX SFP Module (i)	1000BASE-LX SFP Module (i)
Model No.	PN54022	PN54024
Standards	IEEE802.3z 1000BASE-SX	IEEE802.3z 1000BASE-LX
	SFF-8472 (Diagnostic Monitoring Interface)	
Compatible cable	MMF cable	SMF, MMF cable*
Fiber optic port connector type	LC connector (Duplex)	
Optical wavelength	850 nm	1310 nm
Operating voltage	DC 3.3 V	
Power consumption	0.7 W max	0.9 W max
Operating ambient temperature/humidity	0 to 60°C /20 to 80% RH (No dew condensation)	
External dimensions	9 mm (Height) x 14 mm (Width) x 57 mm (Depth) (Excluding protruding sections)	
Mass (Weight)	17 g	
Accessories	Installation Guide (this document) x 1 Protection cap of the fiber optic port (Attached to the module) x 1	

MMF: Multi Mode Fiber SMF: Single Mode Fiber

*If performing IEEE802.3z 1000BASE-LX connecting via the Multi Mode Fiber, the MCP (mode conditioning patch code) is separately required.

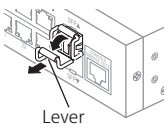
Installation

1. Securely connect the SFP Module to the SFP extension slot of a Panasonic Switching Hub.
2. Remove the protective cap of the SFP Module's fiber optic port.
3. Connect a fiber optic cable that meets the standards specified for the SFP Module.
4. Connect another SFP Module of the same model number on the opposite end.



Removal

1. Unlatch the fiber optic cable and remove it from the SFP Module.
2. Pull down the lever of the SFP Module 90 degrees as shown in the figure to unlatch the SFP Module.
3. Pull out the SFP Module.



Troubleshooting

If you find any problem, please take the following steps to check.

◆ The port LED of the Switching Hub to which the SFP Module connected is not lit.
- Is the Switching Hub powered on?
- Is the SFP Module securely connected to the target SFP extension slot of the Switching Hub?
- Is the connected port of the Switching Hub enabled?
- Is the cable correctly connected to the target port?
- Is a conforming cable used? Is the same type of SFP Module used on the opposite end?
- Is the equipment connected to the target port compliant with the specified standards?
- Ensure that 100BASE-FX or 10GBASE equipment is not connected.