## Notice for Safety Operation

The SFP module performs reliably as long as it is used according to the guidance. Artificial damage or destruction of the module should be avoided. Before using the module, read this notice carefully for personal, module, and equipment safety. Please keep the document for further reference. Kyland is not liable to any personal, module, or equipment damage caused by violation of this notice.

● Do not use the module near water sources or damp areas. Keep the ambient relative humidity within the range from 5% to 95% (non-condensing).

● Do not use the module in an environment with high magnetic field, strong shock, or high temperature. Keep the working and storage temperatures within the allowed range.

● Install and place the module securely and firmly.

● Keep the module, connector, and surroundings clean.

● When the module is not in use, place it in an antistatic bag or other protective environment.

● Do not place any irrelevant materials on the module or cables. Ensure adequate heat dissipation and tidy cable layout without knots.

● Avoid any exposed metal wires because they may be oxidized or electrified.

● Before power-on, make sure the power supply is within the allowed range of the device. Overhigh voltage may damage the module.

● Wear antistatic gloves or take other protective measures when handling the module. Do not insert or remove the module with wet hands.

● Do not touch the connecting fingers of the SFP module.

● Removing and inserting an SFP module can shorten its useful life. Do not remove and insert SFP modules more often than is necessary.

● Use compatible connectors and cables. If you are not sure, contact our sales or technical support personnel for confirmation.

● If a module is lost, contact our sales or technical support personnel to purchase the substitute. Do not purchase modules from other channels.

● Dispose of the module in accordance with relevant national provisions, preventing environmental pollution.

## 1    Overview

SFP modules fall into four types: 100M SFP optical module, gigabit SFP optical module, gigabit-to-100M SFP optical module, and gigabit SFP electrical module. The appearances and models of SFP modules are as follows:
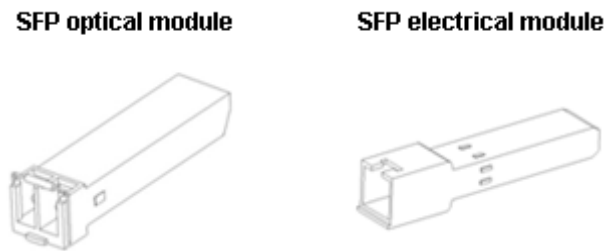


SFP optical module          SFP electrical module

Figure 1 SFP Module

Table 1 Models

| Model | MM/ SM | Connector | Central Wavelength | Transmission Distance | Description | Applicable SFP Slot |
|---|---|---|---|---|---|---|
| IFSFP-M-LX-LC-1310-2 | MM | LC | 1310nm | 2km | 100M SFP optical module | 100M SFP slot |
| IFSFP-S-LH-LC-1310-40 | SM | LC | 1310nm | 40km | | |
| IGSFP-M-SX-LC-850-0.55 | MM | LC | 850nm | 0.55km | Gigabit SFP optical module | Gigabit SFP slot |
| IGSFP-S-LX-LC-1310-10 | SM | LC | 1310nm | 10km | | |
| IGSFP-S-LH-LC-1310-40 | SM | LC | 1310nm | 40km | | |
| IGSFP-S-ZX-LC-1550-80 | SM | LC | 1550nm | 80km | | |
| IG-FSFP-M-LX-LC-1310-2 | MM | LC | 1310nm | 2km | Gigabit-to-100M SFP optical module | |
| IG-FSFP-S-LX-LC-1310-10 | SM | LC | 1310nm | 10km | | |
| IGSFP-10/100/1000BASE-T-RJ45 | -- | RJ45 | -- | 0.1km | Gigabit SFP electrical module | |

> **Note:**
> For the product information listed in this table, we reserve the right to amend it without notice to users.
> To obtain the latest information, you can contact our sales or technical support personnel.

## 2    Installing and Removing an SFP Module

### 2.1    Installing an SFP Module

Align the SFP module in front of the slot opening. Insert the SFP module into the slot gently until you hear a click and feel the connector on the module snap into place in the slot.
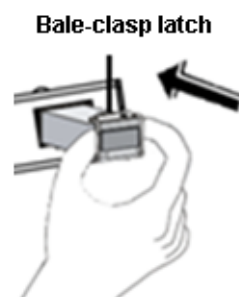


Bale-clasp latch

Figure 2 Installing an SFP Module

**Caution:**
- If the module cannot be pushed into place, remove the module. Rotate it by 180 and insert it again. Do not push it with force, because it may cause damage to the connecting components.
- As shown in the preceding figure, the bale-clasp latch shall be closed when you insert the module into a slot.
- You need to insert the SFP module first and then connect a cable to it. Do not insert an SFP module that has already connected to a cable.

## 2.2 How to Use an SFP Module

After an SFP optical or electrical module is installed, you need to connect fibers (for an optical module) or a twisted-pair cable (for an electrical module) to the SFP module for communication. To ensure proper communication, the SFP modules connected by one cable (fibers) shall be of the same type and the length of the cable (fibers) is within the allowed range.

### 2.2.1 SFP Optical Module

An SFP optical module is equipped with LC connector, and each port consists of a TX (transmit) port and an RX (receive) port. To enable communication between Device A and Device B, connect the TX port of Device A to the RX port of Device B, and the RX port of Device A to the TX port of Device B, as shown in the following figure.
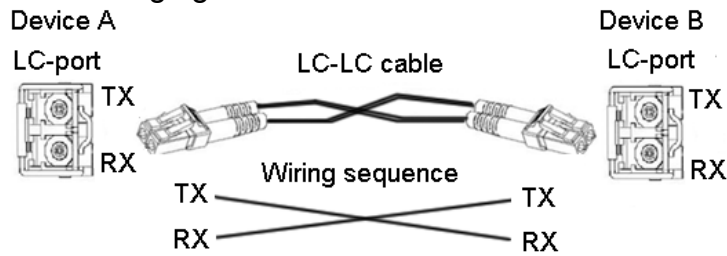
Figure 3 Fiber Connection of an SFP Optical Module

Identify the RX port and TX port of an SFP module:
1. Insert the two connectors in one end of two fibers into the SFP module, and those in the other end into the peer module.
2. View the corresponding connection status LED: If the LED is on, the connection is correct. If the LED is off, the link is not connected. This may be caused by incorrect connection of the TX and RX ports. In this case, swop the two connectors in the one end of the fibers.
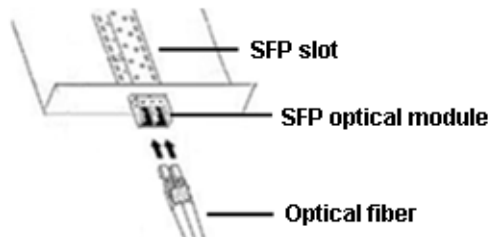
Figure 4 Connecting an SFP Optical Module

**Caution:**
- The device uses laser to transmit signals in fibers. The laser meets the requirements of level 1 laser products. Routine operation is not harmful to your eyes, but do not look directly at the fiber port when the device is powered on.
- If the defined transmission distance of an SFP module is longer than 60km, do not use a short fiber (<20km) for connection. If such a short fiber is used, the module will be burned.

## 2.2.2  SFP Electrical Module

An SFP electrical module is equipped with standard RJ45 connector. Before using an SFP electrical module, you need to insert the module into the SFP slot of a device first and then insert the RJ45 connector of a twisted-pair cable into the SFP module.
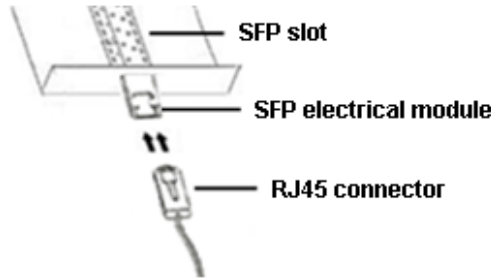


Figure 5 Connecting an SFP Electrical Module

## 2.3   Removing an SFP Module

Step 1: Remove the cable or fibers from the module.
Step 2: Pull the bale-clasp latch out and down to eject the module.
Step 3: Pull out the SFP module gently.
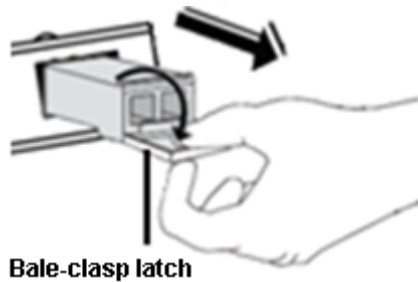Step 4: Place the removed SFP module in an antistatic bag or other protective environment.



Figure 6 Removing an SFP Module 1

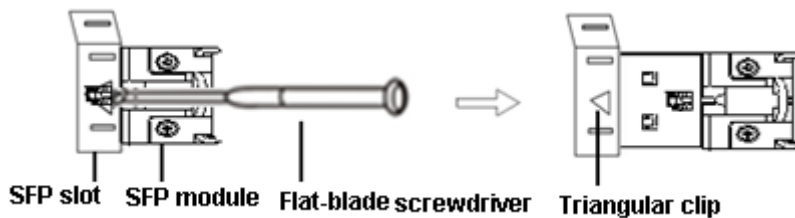| | **Caution:** |
|---|---|
| ⚠ CAUTION | ● If the bale-clasp latch is obstructed and you cannot use your index finger to open it, use a small, flat-blade screwdriver or other long, narrow instrument to open the bale-clasp latch.<br>● If the bale-clasp latch is not available, use a small, flat-blade screwdriver to lift the triangular clip and pull out the SFP module gently. |



Figure 7 Removing an SFP Module 2