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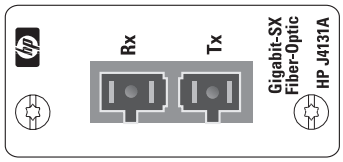
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HP ProCurve Gigabit Transceivers Installation Guide

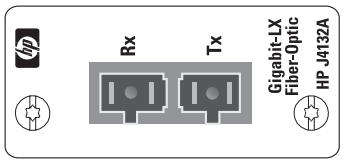
Introduction

The HP ProCurve Gigabit Transceivers are used to provide 1000 Mbps connections to other compatible network devices for the HP ProCurve Switch 2424M Gigabit Stacking Module and other HP networking devices that are designed to accept these transceivers. The transceivers are installed into the transceiver slots of the HP networking device or device module.

This document describes how to install, verify, and troubleshoot the following two HP ProCurve Gigabit Transceivers:



HP J4131A ProCurve Gigabit-SX Transceiver



HP J4132A ProCurve Gigabit-LX Transceiver

The Gigabit-SX transceiver complies with the 1000Base-SX standard and is used with multimode fiber-optic cable. The Gigabit-LX transceiver complies with the 1000Base-LX standard and is used with either single-mode or multimode fiber-optic cable. For more information on the cables used with these transceivers and the supported cable lengths, see page 4.

Note:

The illustrations in this document show the above listed units being used with the HP J4130A ProCurve Switch 2424M Gigabit Stacking Module. The procedures described in this document also pertain to using these units in other *Gigabit* HP networking devices that are designed to accept them.

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Caution

To avoid possible damage to the transceiver circuitry, turn off power to the device before installing the transceiver into it. If you are installing the transceivers in the Switch 2424M Gigabit Stacking Module, you can leave the power on to the switch, but remove the module from the switch before installing transceivers into it.

To install the HP Gigabit Transceivers, follow these steps:

1. Insert the transceiver into an HP networking device's Gigabit transceiver slot and secure the retaining screws.
2. If the Gigabit transceiver slot is in a module, install the module into the switch.
3. As necessary for the type of networking device into which the transceivers are installed, apply power to the device.
4. Connect the network cable to the transceiver and check the transceiver and network device for correct operation.

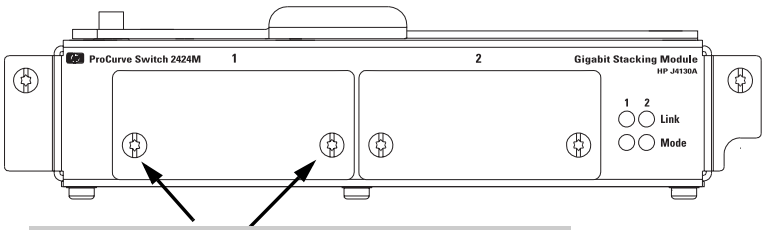
Details on these steps are provided in the rest of this document.

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Insert the Transceiver Into the Slot

The transceivers are installed into an HP networking device, as follows:

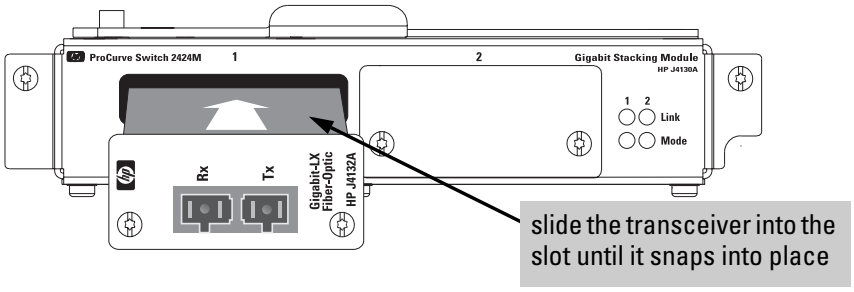
1. Unplug the HP networking device from the AC power source, or remove the module with the transceiver slots from the networking device. Then, using a flat-bladed or Torx T-10 screwdriver, unscrew the two retaining screws on the slot cover plate or existing transceiver, and remove it from the HP networking device or device module.



loosen these screws and remove the cover plate

2. Touch a grounded, metal object (such as a powered-on switch) to discharge any static electricity on your body, then carefully remove the transceiver from its protective anti-static packaging. Hold the transceiver by its bulkhead or edges, taking care not touch any of its board components or metal connectors.

3. Slide the transceiver firmly into the Gigabit transceiver slot as far as it will go. The transceiver will “snap” into place, and the transceiver's faceplate should touch the face of the device. The following illustration shows a transceiver sliding into an HP ProCurve Gigabit Stacking Module.



slide the transceiver into the slot until it snaps into place

4. Using the flat-bladed or Torx T-10 screwdriver, tighten the retaining screws on the transceiver until they are secure, but *be careful that you do not overtighten the screws.*

5. Reinstall the module into the networking device and make sure the device is powered on, or if the transceiver is installed directly into a networking device, power the device on.

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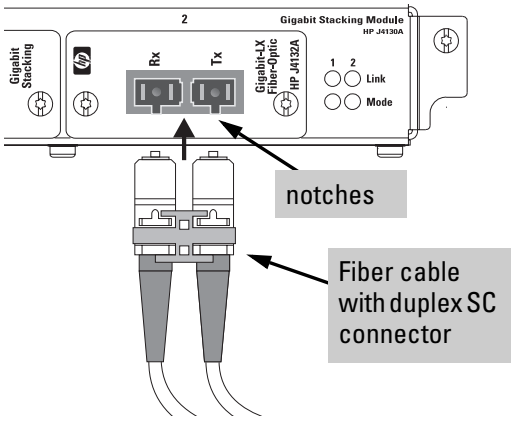
Connect Network Cables to the Transceiver Port

The following network cables should be used with the Gigabit-SX and Gigabit-LX transceivers.

Port Type	Cable Type	Length Limits
Gigabit-SX	62.5/125 µm or 50/125 µm core/ cladding diameter, graded-index, **multimode** fiber-optic cables that are fitted with SC connectors—the cables must comply with the ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a standards.	• 62.5 µm cable: – 160 MHz*km = 220 meters – 200 MHz*km = 275 meters • 50 µm cable: – 400 MHz*km = 500 meters – 500 MHz*km = 550 meters
Gigabit-LX	**single-mode** cables fitted with SC connectors—the cables must comply with the ITU-T G.652 and ISO/IEC 793-2 Type B1 standards. The multimode cables specified for the Gigabit-SX Transceiver may also be used, but a **mode conditioning patch cord** may be needed — see the *Installation Guide* that came with the module for more information.	• single-mode cable - 5 kilometers • multimode cable - 550 meters

To connect a fiber-optic cable to a transceiver:

1. Remove the plastic dust covers from the cable connectors and from the transceiver port.
2. Press the connector into the jack so that the tabs on the connector slide into the notches in the jack and the connector snaps securely into place.

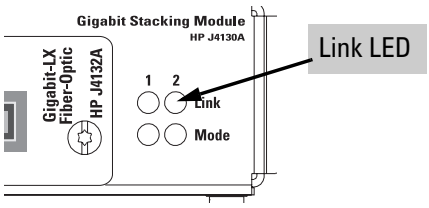


3. If you are using cable with SC duplex connectors, as shown in the illustration, both cables are connected simultaneously. If the cable has simplex connectors, install them one at a time and make sure that the cable connected into the Tx (transmit) port on the transceiver is connected into the *receive* port on the device at the other end of the cable; similarly, make sure the Rx (receive) port on the transceiver is connected to the *transmit* port on the other device.

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4. When power is applied to this transceiver and an active network cable is connected to the transceiver port, the Link LED for the port should be ON.

   If the LED is off, see “Troubleshooting”, below.



Troubleshooting

The following problems may exist:

- **The Link LED for the transceiver is not on, even though the transceiver is receiving power and the network cable is connected.** Check the following:
  - Verify that the networked device at the other end of the cable is on.
  - Verify that the cable fibers are connected correctly to the transceiver ports. See step 3 in the installation instructions.
  - Verify that the cable length does not exceed the maximum distances listed on page 4.
  - Check all cabling and connections (including patch panels) to make sure that all connections are secure, no connectors are damaged, and that none of the connectors have a dust buildup or other object in the way that may cause interference to the light transmission. If all connections are OK, try a different cable.
  - Verify that the networked device connected to the transceiver is the correct type for the transceiver used: Gigabit-SX or Gigabit-LX.
  - Try resetting or cycling power (turn the power off and then back on) on the networking device in which the transceivers are installed. If the transceiver is being used in a Gigabit Stacking Module and the module has been “hot swapped” into the Switch 2424M, the resulting self test does not test the transceivers. Resetting the switch causes a complete self test to be performed, which *does* test the transceivers.
- **The switch Fault LED and Link LED for the transceiver port are flashing.** Turn off the power and reinstall the transceiver into the module or networking device and verify the transceiver screws are tightened. Turn the device power back on, and if the flashing persists, the transceiver may be faulty.

For additional troubleshooting, you can also use the device's console interface, the switch’s web browser interface, or HP Top Tools for Hubs & Switches to troubleshoot and configure the Gigabit transceiver port. See the switch's *Management and Configuration Guide* for more information.

If you are still having trouble, see the “Customer Support Services” on page 7.

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Specifications for the HP ProCurve Gigabit Transceivers

Laser

The Gigabit-SX and Gigabit-LX transceivers are Class 1 Laser Products.
Laser Klasse 1
They comply with IEC 825-2: 1993

Environmental

	Operating	Non-Operating
Temperature:	0°C to 55°C (32°F to 131°F)	-40°C to 70°C (-40°F to 158°F)
Relative humidity: (non-condensing)	15% to 95% at 40°C (104°F)	15% to 90% at 65°C (149°F)
Maximum altitude:	4.6 km (15,000 ft)	4.6 km (15,000 ft)

Electromagnetic

Emissions

FCC part 15 Class A
EN55022 / CISPR-22 Class A
VCCI Class A
Complies with Canadian EMC Class A requirements

These transceivers are designed for operation with the HP ProCurve Switch 2424M or other HP networking products with compatible transceiver slots and are listed in the Declaration of Conformity for those products. See the *Installation Guide* for the network products, or contact your HP-authorized dealer or reseller for a copy of the declaration.

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Standards

- The **Gigabit-SX Transceiver** is compatible with the IEEE 802.3z Gigabit-SX standard. It transmits at 850 nm wavelength and accepts the multimode fiber-optic cables for Gigabit-SX described on page 4.
- The **Gigabit-LX Transceiver** is compatible with the IEEE 802.3z Gigabit-LX standard. It transmits at 1300 nm wavelength and accepts the single-mode or multimode fiber-optic cables for Gigabit-LX described on page 4.

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Customer Support Services

If you are having any trouble with your transceiver, Hewlett-Packard offers support 24 hours a day, seven days a week through the use of a number of automated electronic services. See the Customer Support/Warranty booklet that came with your transceiver for information on how to use these services to get technical support. The HP networking products World Wide Web site, *http://www.hp.com/go/procurve* also provides up-to-date support information and contact phone numbers. Click on the Support button on that web page.

Additionally, your HP-authorized network reseller can also provide you with assistance, both with services that they offer and with services offered by HP.

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