

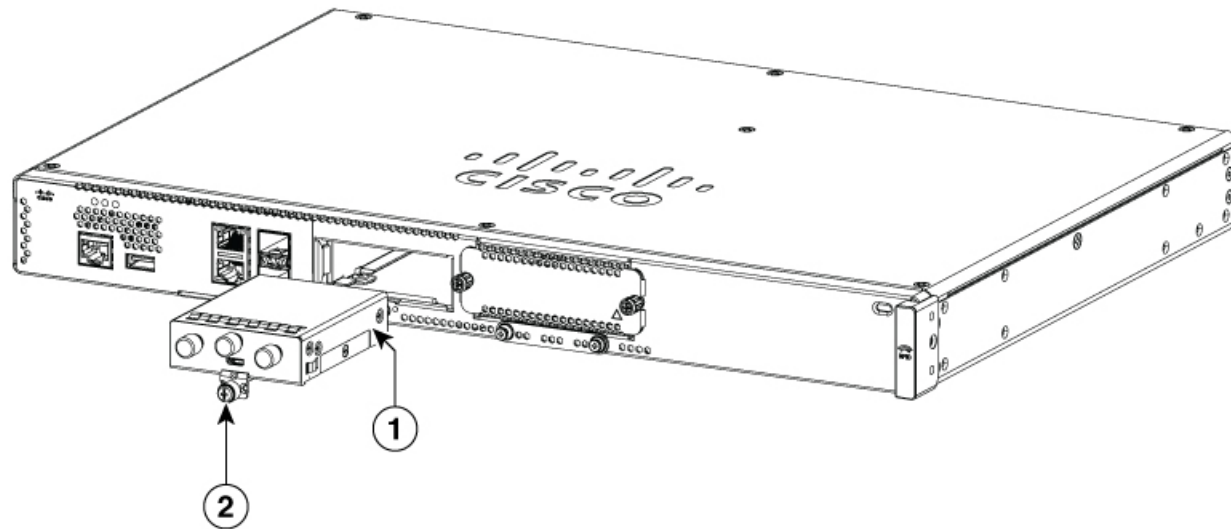


Cisco Catalyst Pluggable Interface Module

This section provides information before and during the installation of Cisco Catalyst Pluggable Interface Module (PIM) on the Cisco Catalyst 8200 Series Edge Platforms.

For additional information on the supported PIMs, see the Cisco Catalyst 8200 Series Edge Platforms' datasheet on cisco.com for a list of supported PIMs on the platforms.

Figure 1: Pluggable Interface Module in a Cisco 8200 Series Chassis



1	Pluggable interface module (PIM)
2	Screw

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Safety Recommendations

To prevent hazardous conditions, follow these safety recommendations while working with this equipment:

- Keep tools away from walk areas where you or others could fall over them.
- Do not wear loose clothing around the router. Fasten your tie or scarf and roll up your sleeves to prevent clothing from being caught in the chassis.
- Wear safety glasses when working under any conditions that might be hazardous to your eyes.
- Locate the emergency power-off switch in the room before you start working. If an electrical accident occurs, shut the power off.
- Before working on the router, turn off the power and unplug the power cord.
- Disconnect all power sources before doing the following:
 - Installing or removing a router chassis
 - Working near power supplies
- Do not work alone if potentially hazardous conditions exist.
- Always check that power is disconnected from a circuit.
- Remove possible hazards from your work area, such as damp floors, ungrounded power extension cables, or missing safety grounds.
- If an electrical accident occurs, proceed as follows:
 - Use caution; do not become a victim yourself.
 - Turn off power to the room using the emergency power-off switch.
 - Determine the condition of the victim and send another person to get medical aid or call for help.
 - Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.

Tools and Equipment Required During Installation

You will need the following tools and equipment while working with the Cisco C-NIM-1X NIM:

- Number 1 Phillips screwdriver or a small flat-blade screwdriver
- ESD-preventive wrist strap

Remove Cisco Catalyst Pluggable Interface Module

To remove a PIM, perform these steps:

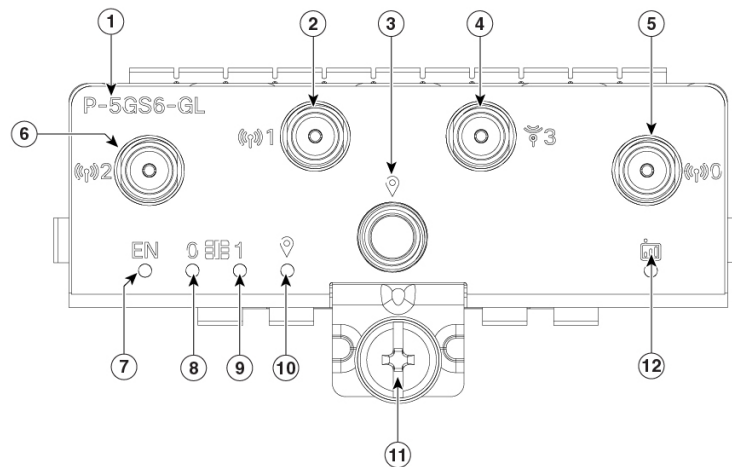
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- Step 1** Read the Safety Warnings before you perform any task.
- Step 2** Power down the unit and remove power from the power supplies.
- Step 3** Loosen the Phillips head screw on the module faceplate, and then pull out the module by gripping the screw.
-

Install a Cisco Catalyst Pluggable Interface Module

To install a PIM, perform these steps:

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- Step 1** Read the Safety Warnings before you perform any task.
- Step 2** Power down the unit and remove power from the power supplies.
- Step 3** If there is a filler faceplate blank in the PIM slot, loosen the Phillips head screw and remove the blank.
- Step 4** Push the module into the slot until you feel the edge connector seat into the connector on the backplane. The module faceplate should contact the chassis panel.
- Step 5** Tighten the Phillips head screw on the module faceplate.
- Step 6** The device may now be powered on.
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Figure 2: 5G Pluggable Interface Module - P-5GS6-GL



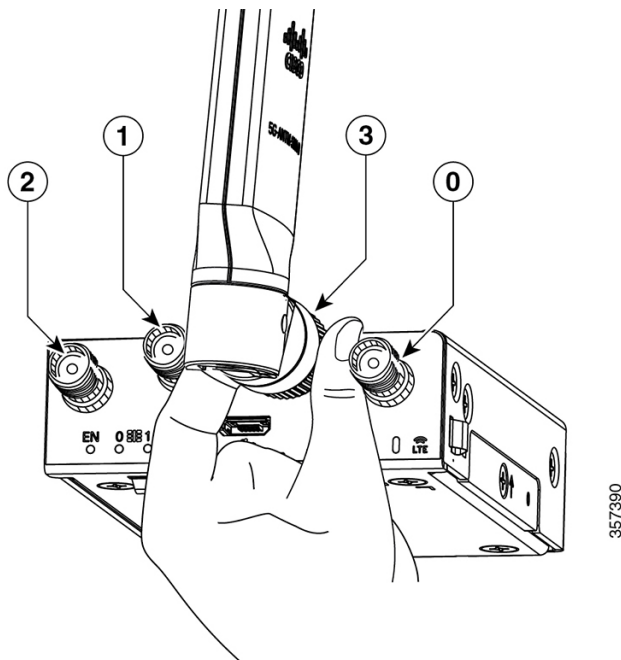
1	PID
2	Antenna 1 (SMA)
3	GPS (SMA)
4	Antenna 3 (SMA, reception only)
5	Antenna 0 (SMA)

6	Antenna 2 (SMA)
7	Enable LED
8	SIM 0 LED
9	SIM 1 LED
0	GPS LED
1	M3.5 thumb-screw
2	Service LED

Configuring a Pluggable Interface Module

To insert the antenna in the Pluggable Interface Module, perform the below steps:

Figure 3: Attaching the Antennas

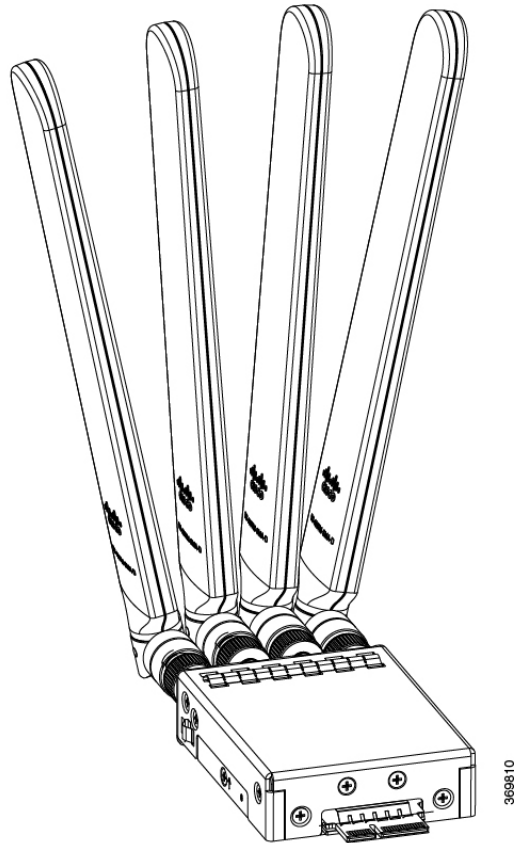


Step 1 Use your thumb and index finger to insert and tighten antenna 1 and antenna 3 in the middle antenna attachment slots as indicated in the figure.

Note While installing the antennas, first install antenna 1 and antenna 3 (this instruction is for the two antenna attachments present in the middle) and secure it completely. If you install antenna 2 and antenna 0 first (this refers to the first and the last antenna attachments), there will be less space to insert your thumb and index finger and therefore you may not be able to secure antenna 1 and 3.

Step 2 Insert antenna 2 and antenna 0 in the first and last antenna attachment slots.

- Step 3** After installing the antennas, adjust the antenna orientation by spacing out each of them equally until they are spread out. This is important as it helps in getting higher RF performance.
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RF Band Mapping for Antenna Ports (For P-5GS6-GL only)

The following table lists the RF band mapping for antenna ports.

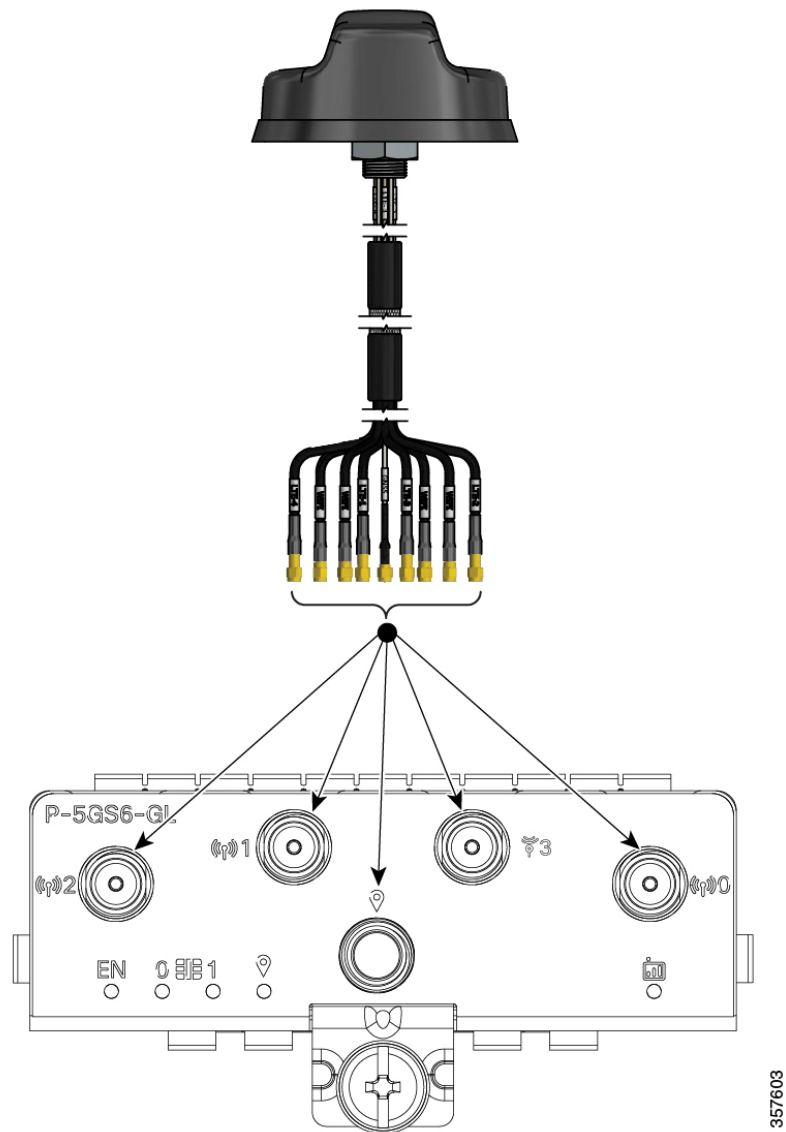
RF Band Mapping for Antenna Ports:

Antenna Port	Technology	TX	RX
ANT 0	3G WDCMA	B1, B2, B3, B4, B5, B6, B8, B9, B19	B1, B2, B3, B4, B5, B6, B8, B9, B19
	LTE	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B30, B34, B38, B39, B40, B41, B66, B71	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, B71
	5G NR FR1	n1, n2, n3, n5, n7, n8, n12, n20, n28, n38, n40, n41, n66, n71	n1, n2, n3, n5, n7, n8, n12, n20, n25, n28, n38, n40, n41, n48, n66, n71, n77, n78, n79
ANT 1	3G WDCMA	-	B1, B2, B3, B4, B5, B6, B8, B9, B19
	LTE	B5, B20, B42, B43, B48, B71	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, B71
	5G NR FR1	n5, n48, n77, n78, n79	n1, n2, n3, n5, n7, n8, n12, n20, n25, n28, n38, n40, n41, n48, n66, n71, n77, n78, n79
ANT 2	3G WDCMA	-	-
	LTE	B1, B2, B3, B4, B7, B41, B66	B1, B2, B3, B4, B7, B25, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66
	5G NR FR1	n1, n2, n3, n7, n25, n41, n66, n77, n78, n79	n1, n2, n3, n7, n25, n38, n40, n41, n48, n66, n77, n78, n79
ANT 3	3G WDCMA	-	-
	LTE	-	B1, B2, B3, B4, B7, B25, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66
	5G NR FR1	-	n1, n2, n3, n7, n25, n38, n40, n41, n48, n66, n77, n78, n79

Attaching the Antennas

To attach the antenna in the Pluggable Interface Module, perform the below steps:

Figure 4: Attaching 5G NR Antenna (5G-ANTM-04-B) to P-5GS6-GL PIM



Note 5G NR Antenna (5G-ANTM-04-B) is supported on both P-LTEAP18-GL and P-5GS6-GL PIMs.

1. Attach each SMA cable to the ports as indicated in the table mappings.
2. Ensure that you tighten and secure each SMA cable into the SMA connector on the PIM.

Table 1: Port Mappings for 5G-ANTM-0-4-B on P-5GS6-GL and P-LTEAP18-GL PIMs

5G-ANTM-0-4-B	P-LTEAP18-GL	P-5GS6-GL
MAIN 0 (LTE1)	Main 0	ANT 0
MAIN 1 (LTE3)	Main 1	ANT 1
DIV 0 (LTE2)	DIV 0	ANT 2
DIV 1 (LTE4)	DIV 1	ANT 3
GNSS	No connection	GPS

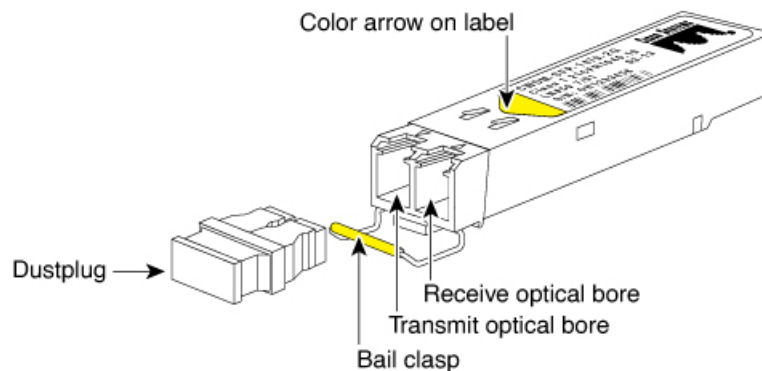
The following link contains the antenna specifications and installation instructions for 5G NR (5G-ANTM-O-4-B):

https://www.cisco.com/c/en/us/td/docs/routers/connectedgrid/antennas/installing-combined/b-cisco-industrial-routers-and-industrial-wireless-access-points-antenna-guide/m-5g-antm-04b.html#Cisco_Generic_Topic.dita_e780a6fe-fa46-4a00-bd9d-1c6a98b7bcb9

CWDM Optic Support for Cisco Catalyst 8200 Series Edge Platforms

The Cisco Coarse Wavelength-Division Multiplexing (CWDM) Small Form-Factor Pluggable (SFP) solution allows enterprise companies and service providers to provide scalable and easy-to-deploy Gigabit Ethernet and Fibre Channel services in their networks. The product set helps enable the flexible design of highly available, multiservice networks.

The CWDM SFPs are hot-swappable, transceiver components that you can plug into standard receptacles in Cisco routers and switches and convert Gigabit Ethernet electrical signals into a single-mode fiber-optic (SMF) interface. You can connect the CWDM SFPs to CWDM passive optical system optical add/drop multiplexer (OADM) or multiplexer/demultiplexer plug-in modules using single-mode fiber-optic cables with standard SC connectors.



The CWDM SFPs come in eight wavelengths that range from 1470 nm to 1610 nm. Color markings on the devices identify the wavelength to which the Gigabit Ethernet channel is mapped. The table lists the SFPs with their wavelengths and color codes.

Table 2: SFP Wavelengths and Color Coding

SFP Product	Number Description	Color Identifier
CWDM-SFP-1470=	Cisco CWDM 1470-nm SFP; Gigabit Ethernet and 1 and 2 Gb Fibre Channel	Gray
CWDM-SFP-1490=	Cisco CWDM 1490-nm SFP; Gigabit Ethernet and 1 and 2 Gb Fibre Channel	Violet
CWDM-SFP-1510=	Cisco CWDM 1510-nm SFP; Gigabit Ethernet and 1 and 2 Gb Fibre Channel	Blue
CWDM-SFP-1530=	Cisco CWDM 1530-nm SFP; Gigabit Ethernet and 1 and 2-Gb Fibre Channel	Green
CWDM-SFP-1550=	Cisco CWDM 1550-nm SFP; Gigabit Ethernet and 1 and 2 Gb Fibre Channel	Yellow
CWDM-SFP-1570=	Cisco CWDM 1570-nm SFP; Gigabit Ethernet and 1 and 2 Gb Fibre Channel	Orange
CWDM-SFP-1590=	Cisco CWDM 1590-nm SFP; Gigabit Ethernet and 1 and 2 Gb Fibre Channel	Red
CWDM-SFP-1610=	Cisco CWDM 1610-nm SFP; Gigabit Ethernet and 1 and 2 Gb Fibre Channel	Brown

Installing and Removing CWDM SFPs

This section describes how to install and remove CWDM SFPs. This section also contains guidelines for handling the CWDM SFPs.

Laser Safety

Warning : CWDM SFPs are equipped with a Class 1 laser, which emits invisible radiation. Do not stare into open optical ports. The following laser warnings apply to CWDM SFPs.

Warning Class 1 laser product.

Warning: Because invisible laser radiation may be emitted from the aperture of the port when no fiber is connected, avoid exposure to laser radiation and do not stare into open apertures.

Warning: Only trained and qualified personnel should be allowed to install or replace this equipment.

Guidelines for Handling SFPs

Follow these guidelines when working with and SFPs:

- CWDM SFP modules are static sensitive. To prevent ESD damage, wear an ESD-preventive wrist strap that is connected to the chassis.
- CWDM SFP modules are dust sensitive. Always store the devices with plugs installed in the optical bores.
- Do not remove and insert a CWDM SFP module more often than is necessary. Repeated removals and insertions of a CWDM SFP module can shorten its useful life.

Installing a CWDM SFP Module

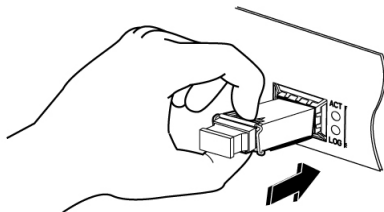
1. Remove the CWDM SFP module from its protective packaging and verify that the CWDM SFP module is the correct model for your network configuration.



Note You can identify CWDM SFP modules by the color arrow on the CWDM SFP module label, which also lists the SFP model number and wavelength, and by the color bar on the bale clasp.

2. Verify that the bale clasp on the front of the SFP module is closed before inserting the SFP module.
3. Align the CWDM SFP module in front of the slot opening and slide the SFP module into the slot until you feel the connector on the module snap into place in the rear of the slot.

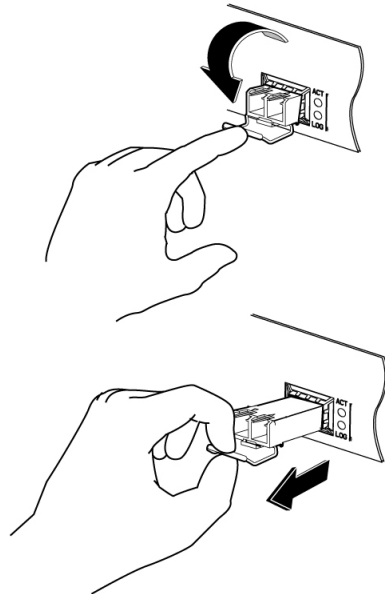
Caution: Do not remove the dust plugs from the optical bore of the CWDM SFP module or the dust caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the CWDM SFP module optical ports and the cable connectors from contamination.



Removing a CWDM SFP Module

1. Disconnect the fiber-optic connector cable from the CWDM SFP module.
2. Pivot the bale out and down to eject the CWDM SFP module. 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.

3. Grasp the CWDM SFP between your thumb and index finger and, carefully slide the module out of the receptacle.
4. Close the CWDM SFP bale-clasp and then insert the dust plug into the optical bores. Place the CWDM SFP in an antistatic bag or other protective environment.



Connecting to the CWDM Passive Optical System

For information on connecting your CWDM SFP modules to a CWDM network, refer to the [Installation Note for the Cisco CWDM Passive Optical System](#).

Supported Platforms

The CWDM Optics transceivers are compatible with the following platforms based on specific customer requests for support.



Note Support is limited to the onboard SFP/SFP+ (1G/10G) ports on these platforms.

- C8200L-1N-4T
 - C8200L-1N-4T
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