



Connector and Cable Specifications

This section includes specifications for the Cisco 1240 Connected Grid Router (CGR 1240 or router) connectors, adapters, and compatible cables.

These topics are discussed:

- [Connector Specifications, page 195](#)
- [Cable and Adapter Specifications, page 200](#)

Connector Specifications

- [Alarm Ports, page 195](#)
- [Console Port, page 196](#)
- [Serial Port, page 197](#)
- [AC Power Supply Connector, page 198](#)
- [Non-Cisco Module Power Connector, page 198](#)

Alarm Ports

For detailed information about the alarm ports, see [Router Hardware Description, page 9](#).

Table 39 Alarm Port Specification

Pin	Signal Description
1	Alarm1_IN
2	Alarm_IN Common
3	Alarm2_IN
4	Alarm1_OUT NC
5	Alarm1_OUT Common
6	Alarm1_OUT NO
7	Alarm2_OUT NC
8	Alarm2_OUT Common
9	Alarm2_OUT NO
10	NC

NOTE: It is recommended that the cable plugged into the alarm port tie all three common signals together. For example, in [Table 39 on page 195](#), tie RJ-50 pins 2, 5, and 8 to each other.

Console Port

For detailed information about the console port, see [Router Hardware Description, page 9](#).

Table 40 Console/Auxiliary Port Specification

Pin	Signal Name	Signal Description
1	RTS	Output
2	DTR	Output
3	TXD	Output
4	GND	-
5	GND	-
6	RXD	Input
7	DSR/DCD	Input
8	CTS	Input

Copper Interface–Combination Port (SFP and GE Ethernet)

For detailed information about the combination ports, see [Router Hardware Description, page 9](#).

Table 41 Combination Port Specification –Copper Interface

Pin	1000Base-T	100Base-TX/10Base-T
1	TX A+	TX DATA+
2	TX A-	TX DATA-
3	RX B+	RX DATA+
4	TX C+	N/C
5	TX C-	N/C
6	RX B-	RX DATA-
7	RX D+	N/C
8	RX D-	N/C

SFP Interface–Combination Port (SFP and GE Ethernet)

For detailed information about the combination ports, see [Router Hardware Description, page 9](#).

Table 42 SFP Port Specification

Pin	Signal Name	Input/Output	Signal Description
1	VeeT	-	GND
2	TxFault	Output	Optical output failure
3	TxDisable	Input	Optical output disable
4	MOD-DEF(2)	Bidir	Bidirectional. Connects to I2C data
5	MOD-DEF(1)	Input	Connects to I2C Clock
6	MOD-DEF(0)	Output	Grounded in SFP, indicates SFP is present
7	Rate Select ¹	-	-
8	LOS	Output	Loss of Receive optical signal indicator

Table 42 SFP Port Specification (continued)

Pin	Signal Name	Input/Output	Signal Description
9	VeeR	-	GND
10	VeeR	-	GND
11	VeeR	-	GND
12	RD-	Output	Differential electrical output to PHY
13	RD+	Output	Differential electrical output to PHY
14	VeeR	-	Gnd
15	VccR	-	3.3V
16	VccT	-	3.3V
17	VeeT	-	GND
18	TD+	Input	Differential input from PHY
19	TD-	Input	Differential input from PHY
20	VeeT	-	GND

¹ Rate Select is an optional SFP input that controls receiver bandwidth when used with Fiber Channel applications. This pin is not connected.

Serial Port

For detailed information about the combination ports, see [Router Hardware Description, page 9](#).

Table 43 Serial Port Specification

RS-232 ¹			RS-485 Full Duplex		RS-485 Half Duplex	
Pin	Signal Description (Abbreviation)	DCE	Signal	Dir	Signal	Dir
1	DCE ready, ring indicator (DSR/RI)	Output	TX+	-	TX/RX+	-
2	Received line signal detector (DCD)	Output	TX-	-	TX/RX-	-
3	DTE ready (DTR)	Input	Not used	-	Not used	-
4	Signal ground (COM)	-	COM	-	COM	-
5	Received data (RxD)	Output	Not used	Output	Not used	Bidirectional
6	Transmitted data (TxD)	Input	RX+	Input	Not used	-
7	Clear to send (CTS)	Output	Not used	Output	Not used	Bidirectional
8	Request to send (RTS)	Input	RX-	Input	Not used	-

¹ The RS232 pinouts use the EIA-561 standard.

AC Power Supply Connector

For detailed information about the hardware described in this section, see [Router Hardware Description, page 9](#).

Table 44 AC Power Supply Connector Specification

Pin	Signal Name	Signal Description
1	L	AC line
2	N	AC neutral
3	Chassis	Chassis ground

Non-Cisco Module Power Connector

This section provides the following information for the power connector for installing external, non-Cisco modules on the router:

- Power wiring specifications in the [Table 45 on page 198](#).

Note: The cable that you provide to connect the module to the 12V power connector must be wired so that Pin 3 (cable presence) and Pin 4 (ground) are connected to each other. If they are not connected, the module will not detect power from the router.

- Power connector parts, and compatible parts in [Table 46 on page 199](#).

For more information about non-Cisco modules, see [Installing External Non-Cisco Modules, page 173](#).

Table 45 Non-Cisco Module Power Connector Specifications

Pin	Signal Name	Signal Description
1	12V	12V power from router
2	GND	System ground
3	CBL_PRSENT_L	Cable presence detect
4	GND	System ground

Table 46 Molex Part Specifications and Mating Connector Requirements

Part	Molex Part Number	Description
Included Module Power Connector Parts		
Micro-Fit 3.0™ Receptacle Housing	43025-0400	Power connector housing installed on the router power harness for connection to an external, non-Cisco module. <ul style="list-style-type: none">■ 0.118 inch (3 mm) pitch■ Dual row■ 4 circuits,■ Halogen free
Micro-Fit 3.0™ Crimp Terminal	43030-0003	Contacts installed on the router power harness for connection to an external, non-Cisco module. <ul style="list-style-type: none">■ Female■ Select gold (Au) plated phosphor bronze contact■ 20-24 AWG■ Reel
Cisco-Recommended Mating Parts		
Pitch Micro-Fit 3.0™ Plug Housing	43020-0401	Cisco recommends this or comparable part as mating connector. Halogen free is a not a requirement for the mating connector. <ul style="list-style-type: none">■ 0.118 inch (3 mm) pitch■ Dual row■ Without panel mount ears■ Halogen free■ 4 circuits
Micro-Fit 3.0™ Crimp Terminal	43031-0003	Cisco recommends this or a comparable part as the crimp terminal. <ul style="list-style-type: none">■ Male■ Select gold (Au) plated tin/brass alloy contact■ 20-24 AWG■ Reel

Cable and Adapter Specifications

SFP Cable

For detailed information about the SFP ports, see [Router Hardware Description, page 9](#).

Table 47 SFP Port Cabling Specification

SFP Module	Wavelength (nm)	Cable Type	Core size/ Cladding Size (micron)	Modal Bandwidth (MHz/km)	Cable Distance
1000BASE-SX	850	MMF	62.5/125	160	722 feet (220 m)
			62.5/125	200	902 feet (275 m)
			50/125	400	1640 feet (500 m)
			50/125	500	1804 feet (550 m) 3281 ft (1000 m)
1000BASE-LX/LH	1310	MMF ¹	62.5/125	500	1804 feet (550 m)
			50/125	400	1804 feet (550 m)
			50/125	500	1804 feet (550 m)
		SMF	G.6522	–	32,808 feet (10,000 km)
1000BASE-EX	1310	SMF	–	–	131,234 feet (40,000 km)
1000BASE-ZX	1550	SMF	G.652 ²	–	43.4 to 62 miles (70 to 100 km) ²
1000BASE-BX-U	1310	SMF	–	–	32,808 ft (10,000 m)
1000BASE-BX-D	1490	SMF	–	–	32,808 ft (10,000 m)

¹ A mode-conditioning patch cord is required. Using an ordinary patch cord with MMF or 1000BASE-LX/LH SFP modules and a short link distance can cause transceiver saturation and an elevated bit error rate (BER). When using the LX/LH SFP module with 62.5-micron diameter MMF, you must also install a mode-conditioning patch cord between the SFP module and the MMF cable on both the sending and receiving ends of the link. The mode-conditioning patch cord is required for link distances greater than 984 feet (300 m).

² 1000BASE-ZX SFP modules can send data up to 62 miles (100 km) by using dispersion-shifted SMF or low-attenuation SMF; the distance depends on the fiber quality, the number of splices, and the connectors.