



APPENDIX **B**

Monitor Port Requirements

This appendix provides information about the specifications of fiber optical cables, XFP modules, and optical tap devices supported on the Cisco NAM 2220 appliances.

This appendix contains the following sections:

- [XFP Modules](#)
- [Cables, page B-2](#)
- [Optical Tap Devices, page B-3](#)

XFP Modules

The Cisco NAM 2220 appliance uses up to two 10 GB Ethernet XFP modules to connect fiber optical cables as monitoring input sources. The XFPs can both be long range (LR) or both be short range (SR), or you can install one of each. Depending on the type of XFP you use, you must use the correct fiber optical cables.

The XFP module uses the bail clasp latching mechanism as shown unlatched in [Figure 4-2](#) and latched in [Figure 4-3](#). See the label on the XFP for technology type and model.

XFP dimensions are:

- Height 0.33 inches (8.5 mm)
- Width 0.72 inches (18.3 mm)
- Depth 3.1 inches (78 mm)

XFP temperature ranges are:

- COM—Commercial operating temperature range between 23 degrees Fahrenheit to 158 degrees Fahrenheit (-5 degrees Celsius to 70 degrees Celsius)
- EXT—Extended operating temperature range between 23 degrees Fahrenheit to 185 degrees Fahrenheit (-5 degrees Celsius to 85 degrees Celsius)
- IND—Industrial operating temperature range between -40 degrees Fahrenheit to 185 degrees Fahrenheit (-40 degrees Celsius to 85 degrees Celsius)



Caution

Do not add labels or markings to the XFPs.

Table B-1 lists third-party 10 GBASE XFP modules that have been tested for use in the Cisco NAM 2220 appliance.

**Note**

Third-party XFP transceiver modules that meet the specifications of Cisco NAM 2220 appliance XFP modules can be used in place of Cisco XFPs. However, Cisco TAC will not support third-party XFPs.

Table B-1 Qualified OEM 10GBASE XFP Modules

Vendor	Model Number	Type
Finisar	FTLX1411D3	LR
MergeOptics	TRX10GVP2001	SR
	TRX10GDP0x01	LR
Picolight	PL-XXL-SC-S43-C1	SR
Sumitomo (ExceLight)	SXP3101LX	LR

Cables

The Cisco NAM 2220 appliance uses two types of fiber optical cables depending upon the XFP transceiver module you use. For short range XFPs, the appliance uses multi-mode (MM) fiber optical cables. For long range XFPs, the appliance uses single-mode (SM) fiber optical cables.

**Note**

Fiber optical cables are not included with the Cisco NAM 2220 appliance.

Table B-2, [XFP Port Cable Specifications](#), provides cable specifications for the Cisco NAM 2220 appliance monitoring ports.

Table B-2 XFP Port Cable Specifications

XFP Module	Wavelength	Cable Type	Core Size (micron)	Mondal Bandwidth (Mhz *km)	Cable Distance
(XFP-10GBASE-SR)	850 nm	MMF	62.5	160	26 m
			62.5	200	33 m
			50.0	400	66 m
			50.0	500	82 m
			50.0	2000	300 m
(XFP-10GBASE-LR)	1310 nm	SMF	G.652	-	10 km (10 Gigabit Ethernet)

Optical Tap Devices

You can use an optical tap device to get a copy of traffic flows between two network devices. Passive taps, such as optical tap devices, ensure that the flowing traffic is not altered regardless of its connection to the NAM appliance and provide a very low point of failure.

Traffic flows will be interrupted while you connect an optical tap, but doing so should take less than a minute and can be done during a network maintenance window.

NAM appliances are designed to receive tapped network traffic from both directions, from multiple links simultaneously, and to accurately merge received traffic to a single stream for high precision analysis.

Although passive optical taps do not alter the network characteristics and dynamics of flowing traffic, an optical tap does reduce the signal strength, so care should be taken to follow the tap specifications including your network link length and tapping location.



Note

Pay attention to the optical split ratio of your passive taps with regard to your optical cable lengths. If the cable between the two devices or the cable from the tap to your NAM appliance is very long, you might need to select a different split ratio other than 50/50 to make sure the receive side signals on your two devices and NAM appliance are all strong enough to not introduce any line errors. Refer to user instructions of your optical tap device for more information.

Table B-3 lists the 10 GE optical tap devices that have been successfully tested with the Cisco NAM 2220 appliance in a tap configuration.

Table B-3 10 Gb Optical Taps

Vendor	Product Description	Model
NetOptics	10 GigaBit Fiber Tap (MM50:50 850 nm SC)	TP-SR4-SCSLM
	10 GigaBit Fiber Tap (MM50:50 850 nm SC)	TP-SR5-SCSLM
	10 GigaBit Fiber Tap (SM50:50 1310 nm SC)	TP-LR5-SCSLM
DataCom Systems	Single channel 10 Gb passive Tap	F50/50/9-S-10G
Network Critical	SMF 9 850/1300NM supports 1000 base-LX, 10 Gig-LR, 10 Gig-ER	FO-S15002-LC
	MMF 50 850/1300NM supports 1000 base-SX, 10 Gig-SR	FO-M35002-LC

Breakout Mode Configuration

To use breakout mode configuration, use an optical tap to split the Tx and Rx signals of two connected devices so the NAM appliance receives the Tx of both devices to observe the transmitted output of each device.

There are two breakout mode configurations:

- Tx of one direction of the monitored data traffic is replicated on Tx of one breakout port and Tx of the other direction of the monitored data traffic is replicated on Tx of the other breakout port.

This case provides two output replicated ports: one for Tx in one direction and one for Tx of the other direction. Each replicated port is an input to a different monitoring port of the appliance to monitor both directions of traffic.

- Tx of one direction of the monitored data traffic is replicated in one Tx connection of the breakout port and Tx of the other direction of the monitored data traffic is replicated on the other Tx connection of the same breakout port.

This case provides only one replicated port which has Tx of both directions. This case requires you to split the connectors of one fiber optical cable and put one connector into one appliance monitoring port and put the other connector into a different appliance monitoring port.