Cisco XFP QAM Transmitter and 1RU Chassis Installation Guide

Overview

Introduction

The Cisco 10 GHz Small Form-Factor Pluggable (XFP) Radio Frequency QAM Transmitter offers cable operators significant power and operational cost advantages, tunable and fixed wavelengths, and SCTE 195 2013 compliance. Up to 10 transmitter modules can fit into a dedicated Cisco XFP 1 rack-unit (1RU) Chassis. Wavelength setting is software controlled to promote security and ease of use.

Purpose

This guide provides instructions for installing XFP QAM transmitter modules in a Cisco XFP 1RU Chassis and for configuring and managing the transmitters.

Audience

This document is intended for authorized service personnel who have experience working with similar equipment. The service personnel should have appropriate background and knowledge to complete the procedures described in this document.

Document Version

This is the first formal release of this document.

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Getting Started

Front Panel Diagram

Back Panel Diagram

Verifying Chassis Operation

1. Remove the chassis from the shipping container and place it on a flat surface.
2. If required, temporarily attach a ground wire to the GND lug on the chassis back panel.
3. Connect an AC or DC power source to the chassis power supply located on the back panel.

   Note:

   - The chassis AC power supply is rated 105-264 VAC RMS, auto-sensing, 47 to 63 Hz.
   - The chassis DC power supply is rated 48 VDC nominal and accepts 36-76 VDC.
4. Attach a ground wire to the GND lug on the chassis back panel.
5. Apply power and confirm that the chassis fan turns on immediately.

   Front panel LEDs will turn on within 20 seconds, indicating normal operation.

Inserting Modules in the Chassis

1. Remove the module from its shipping container and hold with the module label facing down.
2. Move the latch (green in the accompanying photos) to the front of the module and slide the module into an open slot in the chassis.

3. Move the latch to the top of the module to lock the module into the chassis.

4. Remove the black optical plug from the module and confirm that the front of the XFP-RF has a green insert, indicating an LC/APC connector.
5. Insert a clean LC/APC optical cable into the front panel connector of the XFP-RF module.

   Note: Refer to the optical cable manufacturer's cleaning instructions, if needed.

Making Back Panel Connections

1. If required, attach a secure ground wire to the chassis GND lug.
2. Connect a 75-ohm RF cable to the chassis RF connector.

   Note: Each RF connector number corresponds to a front panel XFP-RF port number (0-9).
3. Apply RF input power of -15 dBm composite power, equivalent to +12 dBmV per channel with 154 QAM channels.
4. Connect the supplied Ethernet cable from the back panel Ethernet port to a computer with Ethernet capability.

Computer Ethernet Configuration

To configure the chassis Ethernet connection, you will need a Microsoft Windows computer and a web browser such as Firefox (preferred) or Internet Explorer.

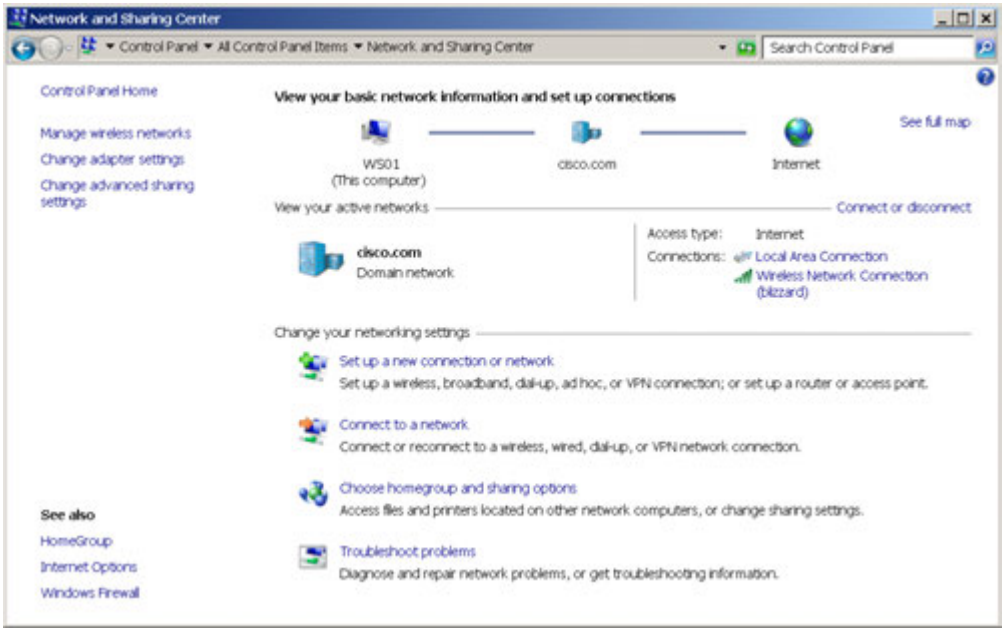
Complete the following steps to configure your computer to access the XFP-RF chassis utility.

Note:

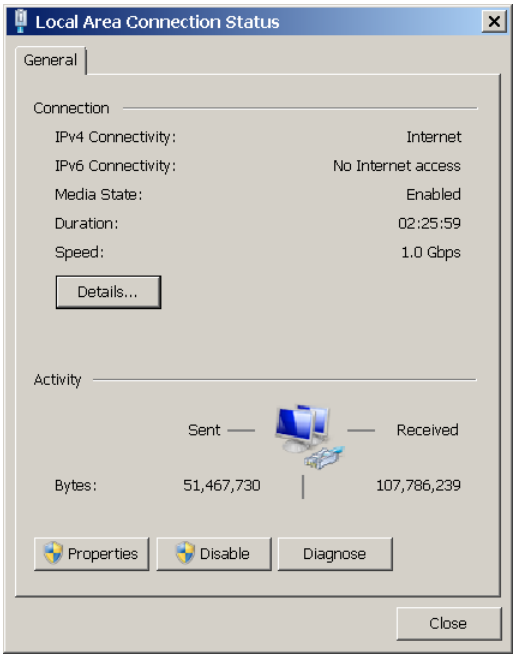
- These steps are only necessary when setting up IP address(es) for the first time.
- The steps shown below are for Windows 7; steps may differ for other Windows versions.

1 Open the Windows Network and Sharing Center window by doing one of the following:

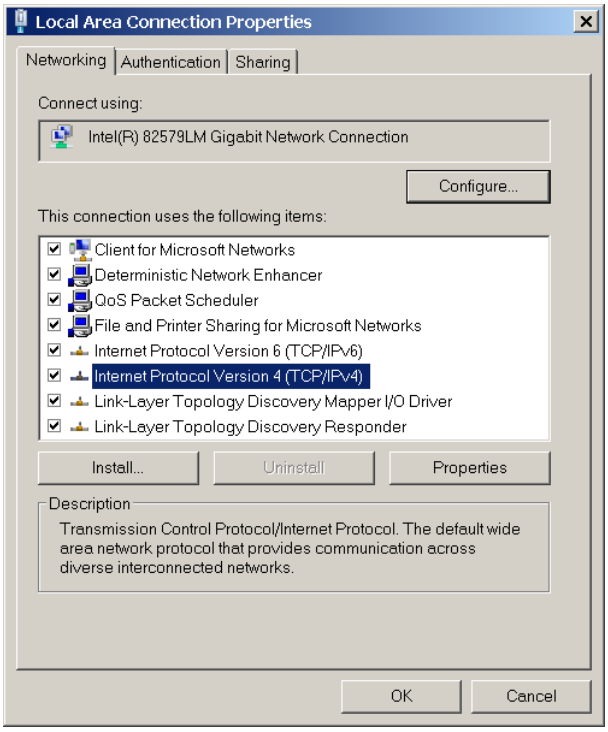
- **Start > Control Panel > Network and Internet > Network and Sharing Center** (if Control Panel is in Category view)
- **Start > Control Panel > Network and Sharing Center** (if Control Panel is in Icons view)



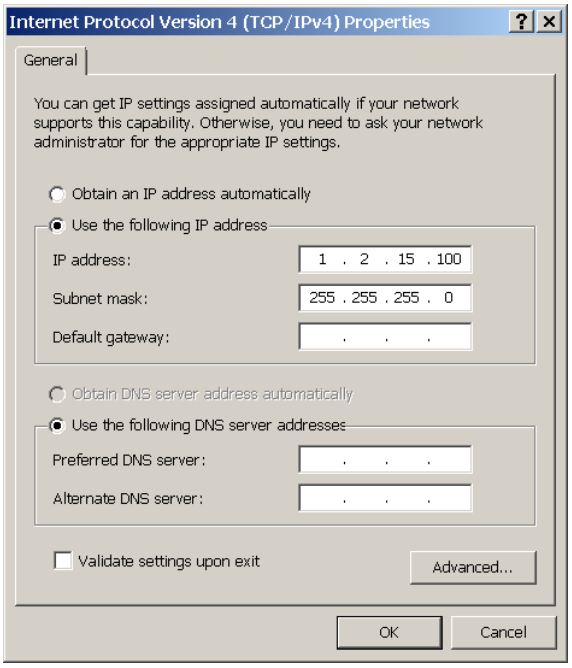
2 In the Network and Sharing Center window, click the **Local Area Connection** icon for your PC to open the Local Area Connection Status window.



3 Click **Properties**, and on the Networking tab, click to highlight **Internet Protocol Version 4 (TCP/IPv4)**.



4 Click **Properties** again to display the TCP/IPv4 properties window.



5 On the General tab, enable **Use the following IP address** and enter the following values:

- In the IP address field, enter **1.2.15.100**.
- In the Subnet mask field, enter **255.255.255.0**.

Note: The IP address entered is for the chassis back panel Ethernet port. To use the chassis front panel Ethernet port instead, use IP address **192.168.15.100**.

6 Click **OK** to save your entries.

7 Click **OK** or **Close** to close the Local Area Connection Properties window.

8 If prompted, restart your computer.

You can now access the XFP-RF Utility.

Using the XFP-RF Chassis Utility

To use the XFP-RF Chassis Utility, you will need a Microsoft Windows computer and a web browser such as Firefox (preferred) or Internet Explorer.

Launching the Utility

1 Open the web browser on your PC and enter one of the following IP addresses in the browser URL window:

- If using the chassis back panel Ethernet port, enter **1.2.15.31**.
- If using the chassis front panel Ethernet port, enter **192.168.15.31**.

This is the management IP address of the XFP-RF chassis.

Note:

- If you receive security alerts about viewing pages over a secure connection, click **Yes** to proceed.
- You must configure your computer to use an IP address on the same subnet (for example, 192.168.15.100 for the front port) to be able to talk to the chassis.

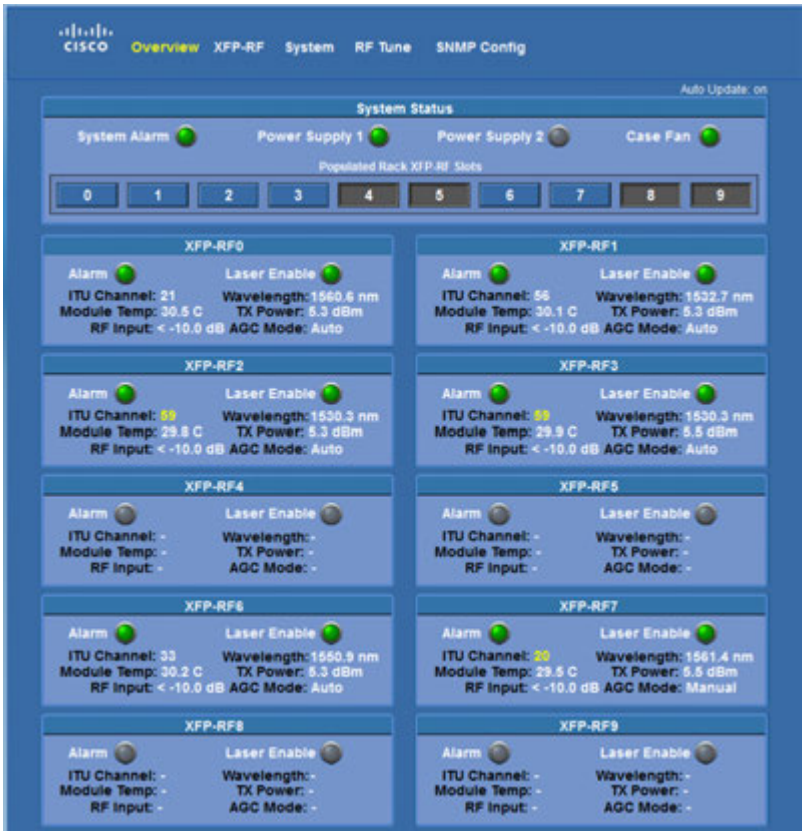
The XFP-RF Utility opening page appears in your web browser.

2 Move your mouse to any location on the page and left click to move to the next page.

Overview Page

The Overview page lets you view the system status as well as the individual XFP-RF modules general operation.

The Auto Update status appears at upper right in the page. Clicking the status display toggles between Auto Update: off and Auto Update: on. When Auto Update is on, the page updates automatically.



Links to XFP –RF, System, RF Tune, and SNMP Config pages appear at upper left in the page. Click to select the page you would like to view.

XFP-RF Page

The XFP-RF page contains all monitors and settings for the individual XFP-RF modules plugged into each port.

Offset	Address	RW	Name	Value
2	2	0	TempHighAlarm	78.0 C
4	4	0	TempLowAlarm	-13.0 C
6	6	0	TempHighWarning	73.0 C
8	8	0	TempLowWarning	-8.0 C
18	18	0	BiasHighAlarm	80.0000 mA
20	20	0	BiasLowAlarm	15.0000 mA
22	22	0	BiasHighWarning	75.0000 mA
24	24	0	BiasLowWarning	20.0000 mA
26	26	0	TXPowerHighAlarm	7.0 dBm
28	28	0	TXPowerLowAlarm	3.0 dBm
30	30	0	TXPowerHighWarning	6.0 dBm
32	32	0	TXPowerLowWarning	4.0 dBm

Using the buttons along the top of the page, click to select the XFP-RF you wish to view.

To refresh the page, click the XFP-RF link that you used to navigate to this page.

System Page

The System page contains all monitors, status, and settings for the XFP-RF chassis.

Note: This page does not auto-refresh. Use your browser's Refresh option to update this page as needed.

You can use this page to change the IP address. We recommend that you establish communication to both Ethernet ports before changing an IP address.

Note: The front and rear panel Ethernet ports need not be on the same subnet. General practice is to use one port locally (connected directly to the computer), and to connect the other port to a network.

RF Tune Page

The RF Tune page contains all tunable parameters for the XFP-RF modules plugged into each port.

Click the buttons along the top of the page to select the port you wish to view.

On this page:

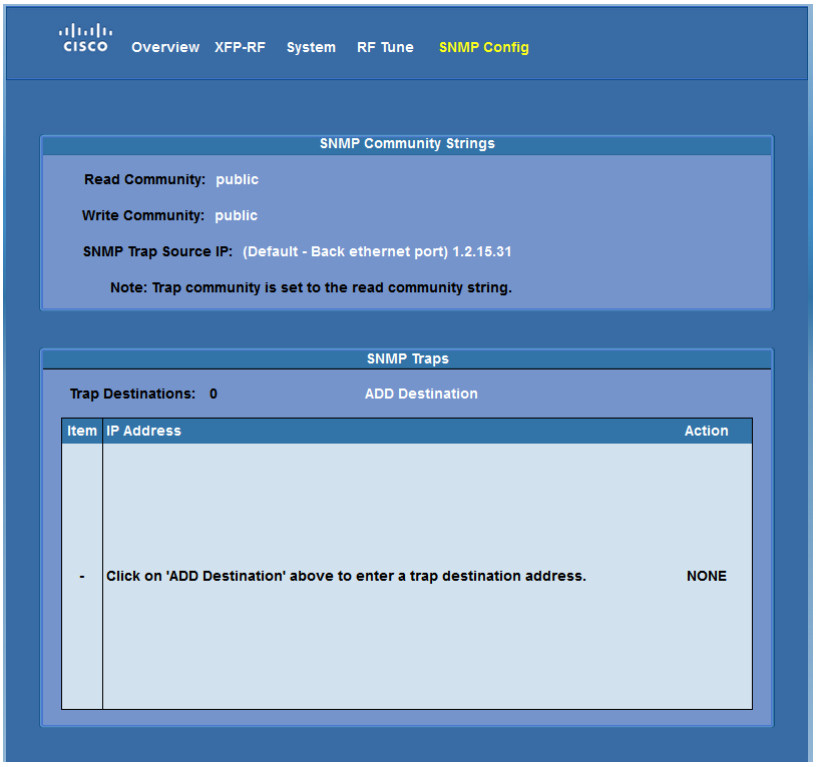
- **RF Input** monitors the RF input to the chassis on the specific port displayed. It should read 0.0 dB assuming a nominal input of 12 dBmV per channel for 154 QAM channels (-15 dBm composite input) as specified in ***Making Back Panel Connections*** (on page 4). With no RF input applied, RF Input should read -10.0 dB.
- **XFP-RF Drive** monitors the RF input to the XFP-RF module. It should read 0.0 dB if RF Input with AGC enabled is within the AGC range (±3 dB), or if RF Input with AGC disabled is adjusted to 0.0 dB.
- **OMI Offset** adjusts the RF drive to the XFP-RF when AGC Mode is set to Auto.
- **Drive Offset** adjusts the RF drive to the XFP-RF when AGC Mode is set to manual mode.

Note: The ideal initial setup is for both the RF Input and XFP-RF Drive to read 0.0 dB. This should be the case if **AGC Mode** is set to Auto, as this automatically sets the XFP-RF Drive to 0.0 dB.

The Auto Update status appears at upper right in the page. Clicking the status display toggles between Auto Update: off and Auto Update: on. When Auto Update is on, the page updates automatically.

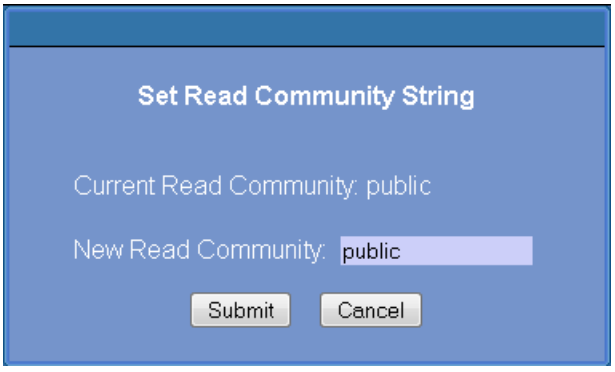
SNMP Config Page

The SNMP Config page displays the current SNMP community strings and lists SNMP traps and trap destinations.



Setting Community Strings

The default community strings are as shown above. To change any string value, click the current community string in the display to open the following edit dialog.



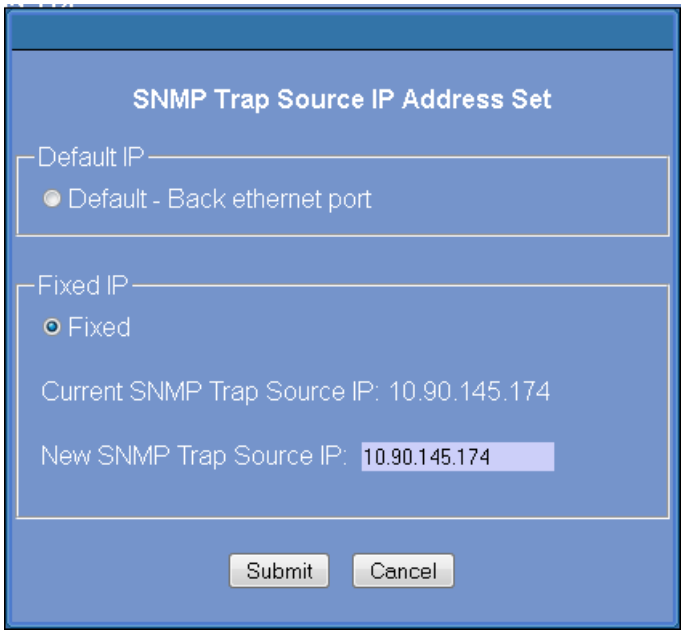
Enter the desired new community string in the space provided and click **Submit**.

Note:

- String values may be up to 32 characters in length.
- Community strings have no encryption and offer very weak protection.

Setting Trap Source IP Addresses

The default chassis trap source IP address is the address assigned to its back-panel Ethernet port. To change the trap source IP address, click the current address in the display to open the following edit dialog.

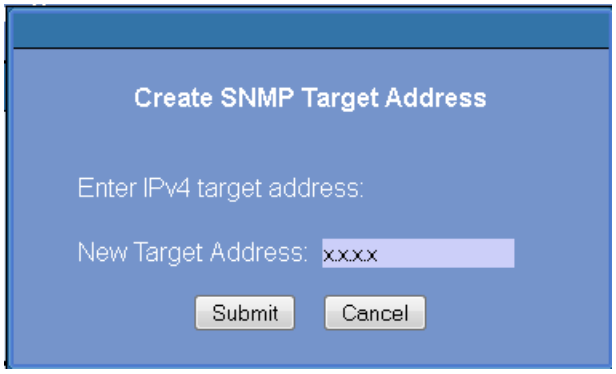


Note: The chassis supports IPv4 addresses only.

Setting Trap Destination IP Addresses

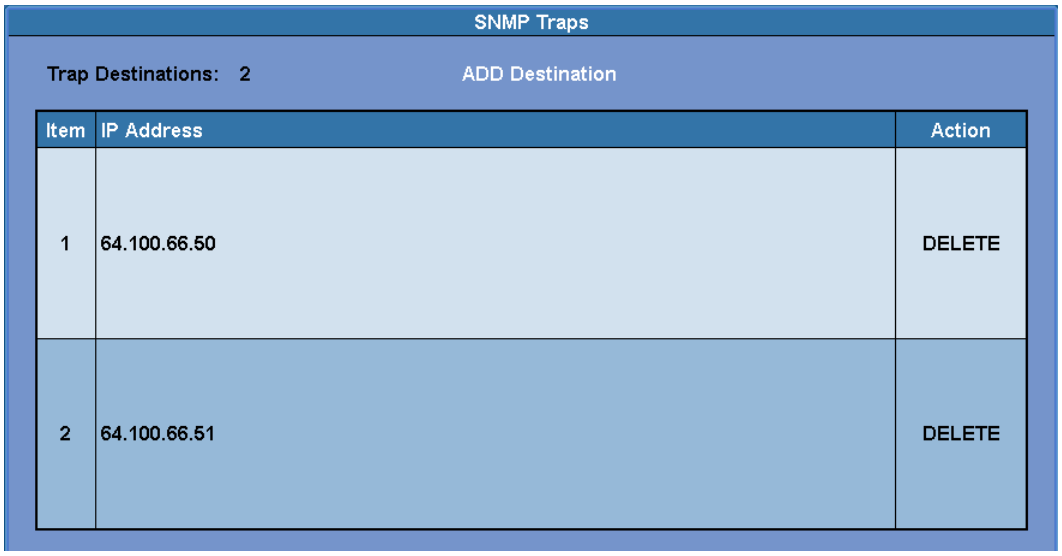
You can use the SNMP Config page to set up to two destination IP addresses for each trap.

To add a trap destination, click **ADD Destination** on the SNMP page to open the following dialog.



In the New Target Address field, enter the trap destination IP address in IPv4 format (xxx.xxx.xxx.xxx).

Each added destination is listed in the Trap Destinations window of the page, as shown in the following example.



To remove a trap destination, click **DELETE** in the Action column for the corresponding trap.

For Information

If You Have Questions

If you have technical questions, contact Cisco Services at the following URL:

http://www.cisco.com/web/services/

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA

http://www.cisco.com
Tel: 408 526-4000
800 553-6387
Fax: 408 527-0883

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