



CHAPTER 9

Troubleshooting the Cisco Wideband SPA

This chapter describes techniques that you can use to troubleshoot the operation of the Cisco Wideband SPA. It includes the following sections:

- [General Troubleshooting Information, page 9-1](#)
- [Troubleshooting SPA-to-EQAM Communication Problems, page 9-2](#)
- [Preparing for Online Insertion and Removal of a SPA, page 9-3](#)

For information on troubleshooting a wideband cable system, see the *Cisco Cable Wideband Solution Design and Implementation Guide, Release 1.0*.

General Troubleshooting Information

This section describes general information for troubleshooting SIPs and SPAs. It includes the following sections:

- [Interpreting Console Error Messages, page 9-1](#)
- [Using debug Commands, page 9-2](#)
- [Using show Commands, page 9-2](#)

Interpreting Console Error Messages

To view the explanations and recommended actions for Cisco uBR10012 router error messages, including messages related to SPAs, refer to the following document:

- [Cisco IOS CMTS Cable System Messages Guide](#)

System error messages are organized in the documentation according to the particular system facility that produces the messages. The Cisco Wideband SPA error messages use the facility name SPAWBCMTS.

Using debug Commands

The following wideband-specific **debug** commands are supported on the Cisco uBR10012 router along with the other **debug** commands :

- **debug hw-module bay**—Enables debugging information for a SPA.
- **debug cable fn**—Enables debugging information for cable fiber nodes.
- **debug cable wbcmts**—Enables debug information for the wideband CMTS.

The **debug** commands are intended for use by Cisco technical support personnel.

For information about CMTS debugging and the cable-specific **debug** commands supported on the Cisco uBR10012 router, refer to the *Cisco IOS CMTS Cable Command Reference* at the following URL: http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html

Using show Commands

There are several **show** commands that you can use to monitor and troubleshoot the SPAs on the Cisco uBR10012 router. This chapter describes using some Cisco IOS commands that may be helpful in troubleshooting the Cisco Wideband SPA.

Following are some of the **show** commands used to verify and monitor SPAs:

- **show cable mac-domain downstream-service-group**
- **show controllers modular-cable**
- **show hw-module bay**
- **show hw-module bay oir**
- **show interface wideband-cable**

Troubleshooting SPA-to-EQAM Communication Problems

If a Cisco Wideband SPA is unable to communicate with an edge QAM device, check that the RF channels set with the **rf-channel** command match the values required by the edge QAM device. The following example shows how to use the **show hw-module bay** command to see the values that have been configured for an RF channel.



Note

This example shows the syntax supported prior to Cisco IOS Release 12.2(33)SCB.

```
Router# show hw-module bay 1/0/0 config rf-channel 0 verbose

SPA                               : Wideband-Cable 1/0/0
RF channel number                 : 0
Frequency                       : 699000000 Hz
Modulation                       : 64qam
Annex                             : B
IP address                       : 192.168.200.30
MAC address of EQAM             : 000c.3033.2cbf
UDP port number                 : 49152
EQAM headroom                    : 0
```

Check that the following values are correct and match what is configured on the edge QAM device:

- Frequency—The center frequency for this RF channel.
- IP address —The IP address of the edge QAM device for this RF channel.
- MAC address —The MAC address of a next-hop router or edge QAM device for this RF channel.
- UDP port—The UDP port number for the QAM output port for this RF channel.

RF channels are configured with the **rf-channel** command. In the **rf-channel** command, the value used for *mac-address* in the **mac-address** argument is as follows:

- If a Gigabit Ethernet router or Layer-3 switch is used between the Cisco Wideband SPA and the edge QAM device, the value specified for *mac-address* is the MAC address for the next-hop interface on the router or Layer-3 switch.
- If a Gigabit Ethernet router or Layer-3 switch is not used, the value specified for *mac-address* is the MAC address for Gigabit Ethernet interface on the edge QAM device.

The UDP port number set for the RF channel allows mapping an input UDP session to a specific QAM output port. Wideband traffic from different Cisco Wideband SPAs cannot be mixed on the same QAM output ports.

Preparing for Online Insertion and Removal of a SPA

The Cisco uBR10012 router supports online insertion and removal (OIR) of the SIP, in addition to each of the SPAs. Therefore, you can remove a SIP with its SPAs still intact, or you can remove a SPA independently from the SIP, leaving the SIP installed in the router.

This means that a SIP can remain installed in the router with one SPA remaining active, while you remove another SPA from one of the SIP bays (subslots). If you are not planning to immediately replace a SPA into the SIP, then be sure to install a blank filler plate in the bay. The SIP should always be fully installed with either functional SPAs or blank filler plates.

For more information about activating and deactivating SPAs in preparation for OIR, see the [“Preparing for Online Insertion and Removal of SIPs and SPAs”](#) section on page 5-2.

