



## Verifying and Troubleshooting SIPs and SPAs

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### Verifying SIP and SPA Status Using LED Indicators

You can verify the SIP and SPA installation by observing the SIP LED states, SPA LED states, and the information displayed on the console terminal.

When the system reinitializes all interfaces, the SIP FAIL LED should be off and the SPA STATUS LEDs should be green (on). The port A/L LEDs may be green (on), depending on your connections and configuration. The console screen also displays a message as the system discovers each interface during its reinitialization.

Observe the console display messages and verify that the system discovers the SIP, while the system reinitializes each interface, as follows:

- When a SIP is initialized, the FAIL LED turns amber, indicating that power is on and the SIP is being initialized. When the SIP is active, the FAIL LED turns off.
- SPAs follow the same sequence after the SIP completes its initialization. The SPA STATUS LEDs illuminate amber, turning to green when the SPAs become active.
- When the SIP FAIL LED is off and the SPA STATUS LEDs are green, all associated interfaces are configurable.



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**Note** New interfaces are not available until you configure them.

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- If a SIP or SPA is replaced with a module of the same type (as in an OIR or hardware swap), the previous configuration is reinstated when the SIP or SPA becomes active.

- If a SIP or SPA has not been previously installed in the same slot or subslot, then the configurations for all associated interfaces remain empty.

## Using show Commands to Verify SIP and SPA Status

Use the following **show** commands to verify if the new SPAs are configured and operating correctly.

### Procedure

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#### Step 1 **show running-config**

##### Example:

```
Router# show running-config
```

Displays the system configuration.

The configuration should include the new SPA interfaces.

#### Step 2 **show diag** and **show hw-module bay all oir**

##### Example:

```
Router# show diag
Router# show hw-module bay all oir
```

Displays all current SPAs and a summary of their status.

Should include the new SPAs and their status summary.

#### Step 3 **show diag**

##### Example:

```
Router# show diag
```

Displays information about the installed SIPs.

#### Step 4 **show version**

##### Example:

```
Router# show version
```

Displays information about the installed SIPs and available interfaces.

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### What to Do Next

For information on commands that you can use to monitor a SIP or SPA, see the [Cisco Cable Wideband Solution Design and Implementation Guide](#) and [Cisco DOCSIS 3.0 Downstream Solution Design and Implementation Guide](#).

## Using show Commands to Display SPA Information

Use the following **show** commands to view SPA information and verify its installation status.

## Procedure

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**Step 1** **show controllers modular-cable****Example:**

Router# **show controllers modular-cable**  
Displays SPA information.

**Step 2** **show diag****Example:**

Router# **show diag**  
Displays SPA type in the mentioned slot, number of ports, hardware revision, part number, and EEPROM contents.

**Step 3** **show hw-module bay****Example:**

Router# **show diag**  
Displays information about the wideband channels or RF channels on a SPA.

**Step 4** **show hw-module bay oir****Example:**

Router# **show hw-module bay oir**  
Displays the operational status of SPAs in the system.

**Step 5** **show running-config****Example:**

Router# **show running-config**  
Displays the running configuration of the router and interfaces available in the system.

**Step 6** **show version****Example:**

Router# **show version**  
Displays Cisco IOS software version, names and sources of configuration files, and boot images.

**Step 7** **show controllers jacket****Example:**

Router# **show controllers jacket**  
Displays register values of a SIP.

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## Using debug Commands

The **debug** command is primarily used by Cisco technical support personnel.



### Caution

Because debugging output is assigned high priority in the CPU process, it can render the system unusable. For this reason, use **debug** commands only to troubleshoot specific problems or during troubleshooting sessions with Cisco technical support staff. Moreover, it is best to use **debug** commands during periods of lower network traffic and fewer users.

Following are some **debug** commands for debugging SIPs and SPAs on the Cisco uBR10012 router:

- **debug c10k-jacket2spa**—Enables debug information for the Cisco Wideband SIP card.
- **debug c10k-jacket4spa**—Enables debug information for the Cisco SIP-600 card.
- **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.
- **debug hw-module subslot**—Enables debug information for a SPA and all of its interfaces.

For information about other **debug** commands supported on the Cisco uBR10012 router, see the [Cisco IOS CMTS Cable Command Reference](#).

To view the explanation and recommended action for the Cisco uBR10012 router system messages, including messages related to Cisco uBR10012 SIPs and SPAs, see the [Cisco IOS CMTS Cable System Messages Guide](#).

## Troubleshooting SIP and SPA

**Problem** SIP FAIL LED transitions repeatedly between amber and off.

**Possible Cause** SIP is not able to proceed beyond bootup stage.

**Solution** This indicates broken hardware. Follow the recommended action for the displayed error message.

**Problem** SIP FAIL LED illuminates amber.

**Possible Cause** SIP is booting up; this is normal operation.

**Solution** Wait 5 seconds until the boot process completes and the FAIL LED turns off. If the SIP FAIL LED stays amber, the SIP has encountered an error.

**Problem** SIP FAIL LED transitions repeatedly between amber and off.

**Possible Cause** SIP is not able to proceed beyond bootup stage.

**Solution** This indicates broken hardware. Follow the recommended action for the displayed error message.

**Problem** Cisco Wideband SPA is deactivated. SPA STATUS LED is off.

**Possible Cause** SPA is not fully seated in the SIP.

**Solution** Remove the SPA from the SIP. Inspect the SIP and the SPA. Verify there are no bent pins or parts and that there is nothing lodged in the two devices that could prevent a good connection. Insert the SPA in the SIP by sliding the SPA all the way into the SIP until the SPA is firmly seated in the SPA interface connector. When fully seated in the SIP, the SPA might be slightly behind the SIP faceplate.

**Problem** Error message indicates that the SPA is not supported. SPA STATUS LED is off.

**Possible Cause** SPA is not supported on the SIP.

**Solution** Check for compatibility and install a SPA supported on the SIP.

**Problem** Cisco Wideband SPA cannot communicate with edge QAM device or the active Gigabit Ethernet port is not up or the wideband channels are not able to transmit packets.

**Possible Cause** Cisco Wideband SPA does not work correctly.

**Solution** For more information on SIP and SPA software configuration, see the [Cisco uBR10012 Universal Broadband Router SIP and SPA Software Configuration Guide](#) and for information on troubleshooting wideband components, see the [Cisco Cable Wideband Solution Design and Implementation Guide](#).

**Problem** Cisco 3 Gbps Wideband Shared Port Adapter is deactivated. SPA STATUS LED is either off or illuminates amber. IOS reports invalid revision for HW. SPI4.2 training fails or loses sync.

**Possible Cause** SPA is not fully seated in the SIP.

**Solution** Remove the SPA from the SIP. Inspect the SIP and the SPA. Verify there are no bent pins or parts and that there is nothing lodged in the two devices that could prevent a good connection. Insert the SPA in the SIP by sliding the SPA all the way into the SIP until the SPA is firmly seated in the SPA interface connector. When fully seated in the SIP, the SPA might be slightly behind the SIP faceplate.

**Problem** Cisco 3 Gbps Wideband Shared Port Adapter is deactivated. SPA is not supported by PRE4. SPA STATUS LED is either off or illuminates amber.

**Possible Cause** SPA is not supported on the SIP.

**Solution** Use PRE5.

**Problem** Cisco 3 Gbps Wideband Shared Port Adapter is not working correctly. SPA cannot communicate or establish link with edge QAM device. The link is not up (A/L LED illuminates amber). No traffic is detected (A/L LED is off). No license is displayed (LICENSE LED is off).

**Possible Cause** SPA does not work correctly.

**Solution** For more information on SIP and SPA software configuration, see the [Cisco uBR10012 Universal Broadband Router SIP and SPA Software Configuration Guide](#).

