



CHAPTER 3

Overview of Cisco uBR10012 Router SIPs

This chapter provides an overview of the SIPs and Management Information Base (MIB) support for the Cisco Wideband SIP and Cisco SIP-600.

This chapter includes the following sections:

- [SIP Summary, page 3-1](#)
- [Supported SIP Features and Restrictions, page 3-2](#)
- [Supported MIBs, page 3-5](#)
- [Displaying the SIP Hardware Type, page 3-5](#)

SIP Summary

[Table 3-1](#) shows summary descriptions of the SIPs that are supported on the Cisco uBR10012 router.

The Description column indicates the aggregate bandwidth supported by the SIP across all subslots—not per SPA subslot.



Note

For release history information about the introduction of SPA support on the SIPs, see the [“Release History”](#) section on page 7-1.

Table 3-1 SIP Summary

SIP	Product Number	Description	Maximum Number of Cisco Wideband SPAs	Minimum Cisco IOS Release
Cisco Wideband SIP	UBR10-2XDS-SIP	2.5Gbps (ingress and egress bandwidth) SPA interface processor for the Cisco Wideband SPA.	2 ¹	12.3(21)BC
Cisco SIP-600	10000-SIP-600	1x10Gbps SPA interface processor	PRE2 setup - 4 PRE4 setup - 6	12.2(33)SCB

1. The Cisco Wideband SIP supports not more than two Cisco Wideband SPAs.

Supported SIP Features and Restrictions

This section provides a list of some of the primary features supported by the SIP hardware and software. For information about configuring these features, see [Chapter 4, “Configuring a SIP.”](#)

This section contains the following topics:

- [Cisco Wideband SIP Features, page 3-2](#)
- [Cisco Wideband SIP Restrictions, page 3-2](#)
- [Cisco SIP-600 Features, page 3-3](#)
- [Cisco SIP-600 Restrictions, page 3-4](#)
- [WAN Slot Restrictions, page 3-4](#)

Cisco Wideband SIP Features

The Cisco Wideband SIP is a high-performance SPA interface processor that functions as a carrier card for shared port adapters (SPAs) on the Cisco uBR10012 router. For more information on SPA compatibility, see the [“SIP and SPA Compatibility” section on page 2-2](#).

The Cisco Wideband SIP has the following features:

- Support for two single-wide, half-height Cisco Wideband SPAs
- Two 1/4-rate System Packet Interface Level 4 Phase 2 (SPI4.2) interfaces
- Up to nine SPI4.2 channels per SPA: eight active total channels to and from the PRE module and one active channel to and from the SIP main processor
- Channel counters for various SIP-related statistics: packets transmitted, bytes transmitted, error packets, dropped packets, and dropped bytes
- OIR support for the Cisco Wideband SIP and the Cisco Wideband SPAs located on the SIP
- MIB support (ENTITY-MIB)
- NEBS 3-compliant

Cisco Wideband SIP Restrictions

The Cisco Wideband SIP has the following restrictions:

- On the Cisco uBR10012 router, the Cisco Wideband SIP requires the Cisco uBR10012 Performance Routing Engine 2 (PRE2). The Cisco Wideband SIP is not supported on PRE4.
- When the Cisco uBR10012 router is used as a wideband Cable Modem Termination System (CMTS), half-height Gigabit Ethernet (HHGE) line cards and the associated slot splitters must be installed in slot 3 or slot 4 of the router. Therefore, the Cisco Wideband SIP must be installed in slots 1/0 and 2/0 in the router.

**Note**

The Cisco Wideband SIP occupies two adjacent slots.

- The Cisco Wideband SIP cannot be installed in slots 2/0 and 3/0 in the router.

Cisco SIP-600 Features

The Cisco SIP-600 is a high-performance, feature-rich SPA interface processor (SIP) that functions as a carrier card for shared port adapters (SPAs) on the Cisco uBR10012 router. The SIP is compatible with one or more platform-independent SPAs. For more information on SPA compatibility, see the “[SIP and SPA Compatibility](#)” section on page 2-2.

The Cisco SIP-600 has the following features:

- Support for two Cisco SIP-600 jacket cards on a Cisco uBR10012 router
- Support for the following SPAs:
 - 5-Port Gigabit Ethernet SPA
 - 1-Port 10-Gigabit Ethernet SPA (supported only with the PRE4 configuration)
 - Cisco Wideband SPA
- Support for PRE2 and PRE4 configurations
- Support for On-Board Failure Logging (OBFL) with the PRE4 configuration
- Support for Minimum Disruptive Restart (MDR) with the Cisco Wideband SPA and Gigabit Ethernet SPAs

For more information about MDR, see the *Cisco IOS In Service Software Upgrade Process* feature guide at the following URL:

http://www.cisco.com/en/US/docs/ios/cable/configuration/guide/sb5_issu.html

On-Board Failure Logging

The On-Board Failure Logging (OBFL) feature enables storage and collection of critical failure information in the nonvolatile memory of a field replaceable unit, like a route processor (RP) or line card. The Cisco uBR10012 router supports OBFL only on the Cisco SIP-600 with the PRE4 configuration.

The OBFL stored data assists in understanding and debugging field failures upon Return Material Authorization (RMA) of an RP or line card at repair and failure analysis sites.

OBFL records operating temperatures, hardware up and down time, and any other important events that assist board diagnosis in case of hardware failures.

For more information about this feature, see the *On-Board Failure Logging* feature guide at the following URL:

http://www.cisco.com/en/US/docs/ios/12_2sx/12_2sxh/feature/guide/sxhobfl.html#wp1053048

**Note**

The sample output documented in the *On-Board Failure Logging* feature guide might slightly vary for the Cisco uBR10012 router.

Cisco SIP-600 Restrictions

The Cisco SIP-600 has the following restrictions:

- The Cisco Wideband SIP and the Cisco SIP-600 cannot co-exist on a Cisco uBR10012 router.
- The Cisco SIP-600 can be configured in slots 1 and 3 only.
- For a PRE4 setup, all SPAs share a 11.2Gbps ironbus connection.
- A PRE2 setup allows the typical ironbus connection in which bays 0 and 2 share a 2.8Gbps ironbus connection and bays 1 and 3 also share a 2.8Gbps ironbus connection.

WAN Slot Restrictions

Slots 1, 2, 3, and 4 in the Cisco uBR10012 router are referred to as WAN slots. These slots are capable of accepting various combinations of the Cisco SIP-600, Cisco Wideband SIP, and Half-Height Gigabit Ethernet line cards (HHGE). In addition, the Cisco SIP-600 accepts various combinations of the Cisco Wideband SPA, 5-Port Gigabit Ethernet SPA, and 1-Port 10-Gigabit Ethernet SPA.

This section explains restrictions for the WAN slots and the supported SPA and line card combinations.

Following are the restrictions for the WAN slots:

- Limit of six Cisco Wideband SPA cards per chassis.
- The Cisco Wideband SIP and Cisco SIP-600 cannot co-exist on a Cisco uBR10012 router.
- The Cisco SIP-600 supports only the following SPAs:
 - Cisco Wideband SPA
 - 5-Port Gigabit Ethernet SPA
 - 1-Port 10-Gigabit Ethernet SPA (PRE4 only)
- The Cisco Wideband SIP supports only the Cisco Wideband SPA.
- Half-Height Gigabit Ethernet line cards cannot be inserted in slot 1 or 2 because full reset capabilities are not available.
- With a PRE2 setup, a Gigabit Ethernet SPA cannot be horizontally adjacent to a Cisco Wideband SPA.
- For a PRE2 configuration with the Cisco 5-Port Gigabit Ethernet SPA, total bandwidth of GE ports per SPA should be limited to 2Gbps. If more than two GE ports are enabled, total inbound or outbound aggregate bandwidth should be kept at 2Gbps. If the bandwidth exceeds 2Gbps, the support for Quality of Service (QoS) functionality cannot be guaranteed.

For details on the supported PRE2 and PRE4 WAN slot configurations, see the *Cisco uBR10012 Universal Broadband Router SIP and SPA Hardware Installation Guide* at the following URL:

http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/install_upgrade/uBR10012/hwsipspa.html

Supported MIBs

The following MIBs are supported in Cisco IOS Release 12.3(21)BC and later for the Cisco uBR10012 router, the Cisco Wideband SIP, and the Cisco SIP-600:

- IF-MIB
- ENTITY-MIB

For complete information about MIB support on a Cisco uBR10012 router, see the *Cisco CMTS Universal Broadband Router MIB Specifications Guide*.

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

<http://www.cisco.com/register>

Displaying the SIP Hardware Type

To verify the SIP hardware type that is installed in your Cisco uBR10012 router, you can use the **show diag** command. There are other commands on the Cisco uBR10012 router that also provide SIP hardware information, such as the **show inventory** command.

Table 3-2 shows the hardware description that appears in the **show diag** and **show inventory** commands output for each type of SIP that is supported on the Cisco uBR10012 router.

Table 3-2 Hardware Description

SIP	Description in show diag Command	Description in show inventory Command
Cisco Wideband SIP	2jacket-1 card	2-bay I/O slot SPA Interface Processor
Cisco SIP-600	4jacket-1 card	4-bay Cisco 10000 SPA Jacket Card

Example of the show diag Command

The following example shows output from the **show diag** command on the Cisco uBR10012 router with a Cisco Wideband SIP installed in slot 1/0. The output includes the SIP hardware type and SIP serial number.



Note

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

```
Router# show diag 1/0
```

```

Slot/Subslot 1/0:
    2jacket-1 card, 0 ports
    Card is full slot size
    Card is analyzed
    Card detected 12:16:52 ago
    Card uptime 0 days, 12 hours, 16 minutes, 53 seconds
    Card idle time 0 days, 11 hours, 3 minutes, 46 seconds
    Voltage status: 3.3V Nominal 2.5V Nominal 1.5V Nominal 12V Nominal
EEPROM contents, slot 1/0:
    Hardware Revision      : 1.0
    Top Assy. Part Number  : 800-22843-04
    Board Revision         : 01
    Deviation Number       : 0-0
    Fab Version            : 04
    PCB Serial Number      : CSJ09030613
    RMA Test History       : 00
    RMA Number             : 0-0-0-0
    RMA History            : 00
    CLEI Code              :
LCMON version, slot 1/0
    LCDOS (Ferrari-BOOT : DEVELOPMENT BUILD xxxxxx-flot_spa_lc_2

/vob/lcdos/obj-c10k-pq2-lcmon2 104)
    Built by xxxxxx at Mon Apr 17 13:49:38 2006.
    Reset reason 0x00000003/0x2 (PRE hard reset).
Operational Image version, slot 1/0
    LCDOS (C10000 2 Bay SPA Jacket (JACKET2) Image : DEVELOPMENT BUILD xxxxxx

/vob/lcdos/obj-c10k-jacket 101) major version 1147325083.
    Built by xxxxxx at Wed May 10 22:24:44 2006.

```