C H A P T E R **2**

Overview: Cisco 7304 Router Carrier Cards

This chapter describes the carrier cards that are supported on the Cisco 7304 router and contains the following sections:

- Carrier Card and SPA Compatibility, page 2-1
- Carrier Card Summary, page 2-1
- MSC-100 Overview, page 2-2

Carrier Card and SPA Compatibility

For information on carrier card and SPA compatibility, see the "MSC and SPA Compatibility" section on page 1-2.

Carrier Card Summary

Summary descriptions of the carrier cards that are supported on the Cisco 7304 router are shown in Table 2-1.

Table 2-1   Carrier Card Summary

Carrier Card	Product Number	Description	Number of SPAs	Minimum Cisco IOS Release
MSC-100	7304-MSC-100	Modular Services Card 100	2	Release 12.2(20)S2

Checking Hardware and Software Compatibility

To check the minimum software requirements of Cisco IOS software with the hardware installed on your router, Cisco maintains the Software Advisor tool on Cisco.com. This tool does not verify whether carrier cards or SPAs within a system are compatible, but it does provide the minimum Cisco IOS requirements for individual hardware modules or components.

Note   Access to this tool is limited to users with Cisco.com login accounts.

To access Software Advisor, click **Login** at Cisco.com, type "Software Advisor" in the SEARCH box, and click **GO**. Click the link for the Software Advisor tool.

Choose a product family or enter a specific product number to search for the minimum supported software release needed for your hardware.

SPA Blank Filler Plates

SPA blanks are available to fill and unused SPA slot.

Note   When a SPA slot is not in use, a SPA blank filler plate must fill the empty slot to allow the router or switch to conform to electromagnetic interference (EMI) emissions requirements and to allow proper airflow across the SPAs. If you plan to install a new SPA in a slot that is not in use, you must first remove the SPA blank filler plate.
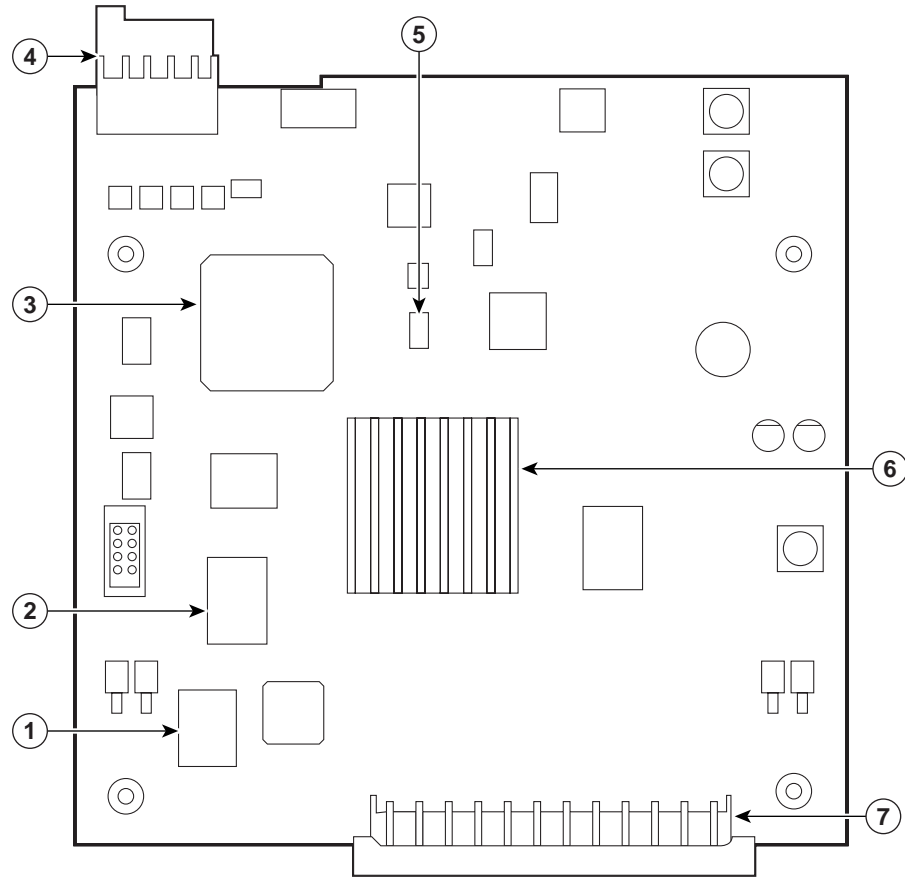
MSC-100 Overview

The following sections describe the MSC-100:

Board Components

The main MSC-100 board components are shown in Figure 2-1.
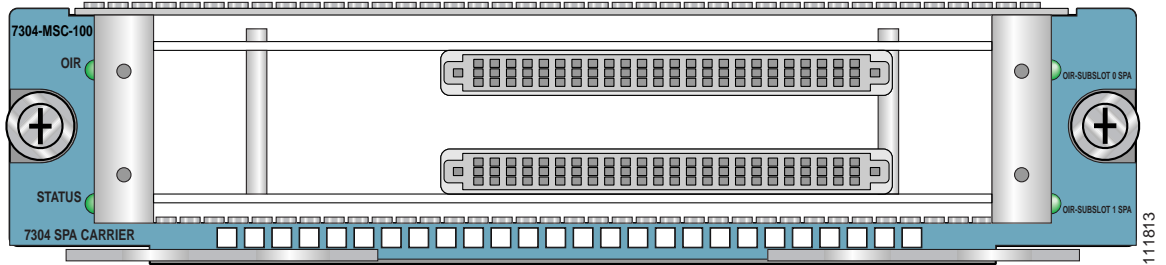
Figure 2-1   MSC-100 Board—Overhead View

1	Flash memory	5	Temperature monitor
2	SRAM	6	FPGA
3	ASIC	7	SPA connector
4	Backplane connector		

LEDs

The MSC-100 has four LEDs, as shown in Figure 2-2.

Figure 2-2   MSC-100 Faceplate

MSC-100 LEDs are described in Table 2-2.

Table 2-2   MSC-100 LEDs

LED Label	Color	State	Meaning
OIR-SUBSLOT 0 SPA	Green	Offline	The SPA in subslot 0 is offline and can be removed.
	Off	Online or Offline	If the STATUS LED is green, the SPA in subslot 0 is online and cannot be removed. If the STATUS LED is off, the SPA in subslot 0 is offline.
OIR-SUBSLOT 1 SPA	Green	Offline	The SPA in Subslot 1 is offline and can be removed.
	Off	Online or Offline	The SPA in subslot 1 is online and cannot be removed. If the STATUS LED is off , the SPA in subslot 1 is offline.
OIR	Green	Offline	The MSC-100 is offline and is ready to be removed.
	Off	Online or Offline	The MSC-100 is online and should not be removed. If the STATUS LED is off, the MSC is offline.
STATUS	Off	Off	The MSC-100 is offline.
	Yellow	Powering up or powering down	The MSC-100 is powering up or powering down.
	Green	On	The MSC-100 is online.

Physical Specifications
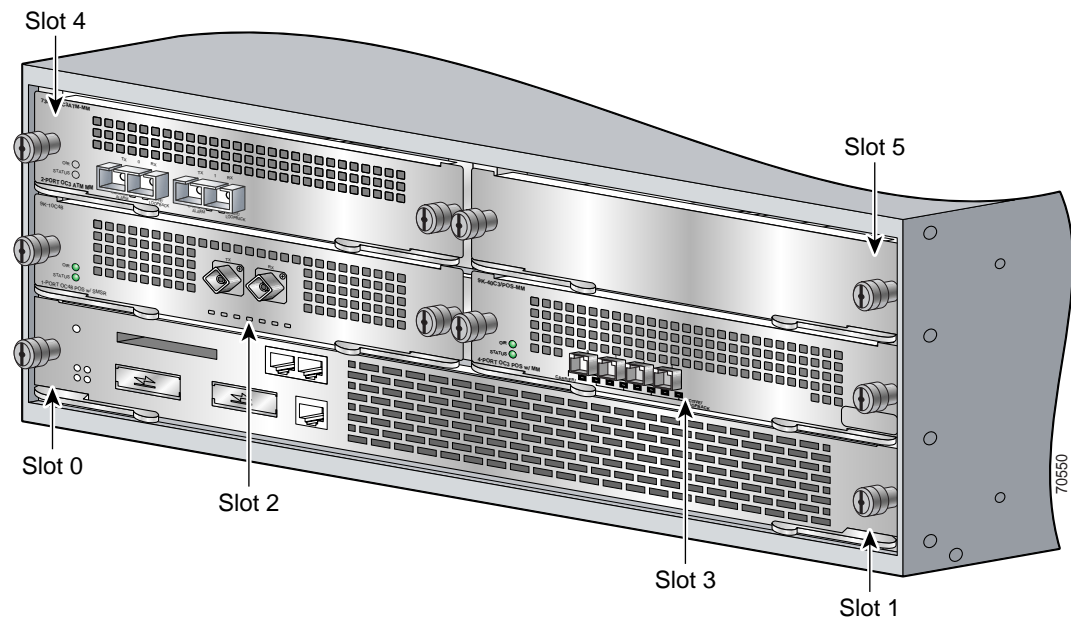
The MSC-100 physical specifications are shown in Table 2-3.

Table 2-3   MSC-100 Physical Specifications

Description	Specifications
Physical Dimensions	2 in. x 8.35 in x 12.75 in (5.1 cm x 21.2 cm x 32.4 cm)
Shipping Weight	3 lbs. (1.37 kg)
Temperature—Operating	32 to 158˚F (0 to 70˚C)
Temperature—Storage	–4 to 158˚F (–20 to 70˚C)
Relative humidity	5 to 90 percent, noncondensing
Altitude—Operating	–500 to 10,000 ft.
Altitude—Storage	–1,000 to 30,000 ft.

Carrier Card Slot Locations on the Cisco 7304 Router

The MSC-100 can be installed in Cisco 7304 router module slots 2 through 5.

Figure 2-3   Module Slots on the Cisco 7304 Router

SPA Slot Numbering on the MSC-100

The MSC-100 accepts two single-height SPAs. The top subslot in the MSC is subslot 0 and the bottom subslot is subslot 1.

SPA Interface Addresses on MSCs

Interface addresses specify the physical location of each interface on a router or switch. Table 2-4 describes how to identify the interface addresses for SPAs supported on the MSC-100.

Table 2-4   Address Format

MSC	Address Format	Description
MSC-100	*router-module-slot/subslot/SPA-port-number*	Router module slot—2 through 5. Specifies the slot on the Cisco 7304 router where the MSC-100 is installed.
		subslot—Top (0) or bottom (1) subslot. Specifies the subslot in the MSC-100 that is holding the SPA.
		SPA-port-number—Varies. Specifies the port number on the SPA to address.