



# Understanding the Cisco SM-2GE-SFP-CU Service Module

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This document provides information on the Cisco SM-2GE-SFP-CU service module, its features, and the platforms the module supports. It includes cross-references to relevant documentation on hardware installation and software configuration for customer guidance.

This document contains the following sections:

- [Cisco SM-2GE-SFP-CU Service Modules, page 2](#)
- [Installation, page 4](#)
- [Configuration, page 5](#)
- [Additional References, page 10](#)



**Caution**

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The information in this document was created from the devices in a specific laboratory environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

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# Cisco SM-2GE-SFP-CU Service Modules

This section describes the features of the Cisco SM-2GE-SFP-CU service module and support provided to ISR G2 platforms.

The following are discussed in this section:

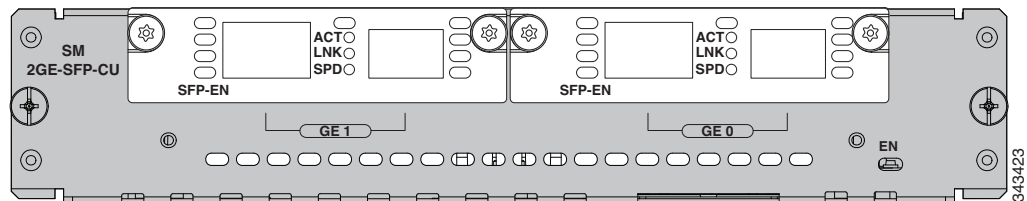
- [Overview, page 2](#)
- [Features, page 3](#)
- [Platform Support, page 3](#)

## Overview

The Cisco SM-2GE-SFP-CU is a service module with two SFP slots that can be plugged into ISR-G2 SM slots providing additional copper and optical Gigabit Ethernet ports for the ISR G2 routers.

[Figure 1](#) shows the Cisco SM-2GE-SFP-CU service module faceplate.

**Figure 1** The Cisco SM-2GE-SFP-CU service module



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## Features

The Cisco SM-2GE-SFP-CU supports the following interfaces:

- LC/LC Duplex Fiber Optic cable
- Single-mode Fiber Optic for longer reach (yellow)

## Feature Limitations

The following features are currently not supported on this module:

- Online insertion and removal (OIR) feature for the Cisco SM-2GE-SFP-CU
- Energy-wise



**Note**

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The SM-2GE-SFP-CU is field replaceable as a complete unit only.

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## Throughput

SM-2GE-SFP-CU supports up to 100 Mbps bi-directional IMIX traffic per SM module

## Platform Support

The Cisco SM-2GE-SFP-CU service module increases the SFP port density in the Cisco 3900 and Cisco 3900E ISR G2 product family.

The service module also carries the following:

- Support for SM module in any SM slot
- Support for two Ethernet High-Speed SFP ports per SM card

Table 1 lists the Cisco 3900/3900E ISR G2 series routers supported by the Cisco SM-2GE-SFP-CU module and the IOS software releases required to support the platforms.

**Table 1** Cisco SM-2GE-SFP-CU 3900/3900E ISR G2 Routers

ISR G2	Routers	Release
3900/3900E Series	3925, 3945, 3925E, 3945E	15.1(4)M3, 15.2(3)T



**Note**

The Cisco IOS software releases provided are typically the minimum version required to support the platform, module, or feature in question. Use the [Software Advisor](#) (available to [registered customers](#) only) to choose the appropriate software for your Cisco product.

## Installation

Service modules and network modules can be installed either before or after mounting the router.

Always make sure that the router is OFF when installing the Cisco SM-2GE-SFP-CU.

For important tips, safety warnings, and other information you need to know before and during installation of the Cisco SM-2GE-SFP-CU service module, see *Installing Cisco Network Modules and Service Modules in Cisco Access Routers* at the following URL:

<http://www.cisco.com/en/US/docs/routers/access/interfaces/nm/hardware/installation/guide/InstNetM.html>



**Warning**

**To comply with the Telcordia GR-1089 NEBS standard for electromagnetic compatibility and safety, connect the Gigabit Ethernet ports only to intrabuilding or unexposed wiring or cable. The intrabuilding cable must be shielded and the shield must be grounded at both ends. The intrabuilding port(s) of the equipment or subassembly must not be metallicly connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intrabuilding interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallicly to OSP wiring.** Statement 7003

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# Configuration

This module is managed using existing IOS CLI commands and also using external management tools such as [Cisco Configuration Professional \(CCP\)](#).

For configuration instructions, see the [Configuring Ethernet, Fast Ethernet, or Gigabit Ethernet Interfaces](#) chapter of *Configuring LAN Interfaces*. The guidelines in this chapter apply to all Cisco modular access routers.

For more configuration instructions and other related documents, see the [“Related Documents and Links”](#) section on page 10.

**Note**

Use the **show diag** command to check the hardware information of the Cisco SM-2GE-SFP-CU module.

This section contains the following topics:

- [Sample Configurations, page 5](#)
- [Port Numbering, page 9](#)
- [EN LED, page 9](#)

## Sample Configurations

The following configuration displays the output when two SFP ports are plugged into slot 1 and slot 2:

```
Show running
-----

interface GigabitEthernet2/0
 ip address 200.1.1.3 255.255.255.0
 media-type sfp
!
interface GigabitEthernet2/1
 ip address 11.11.11.2 255.255.255.0
 media-type sfp
!
```

The following configuration displays the **show diag** command output:

```
c3900# show diag
Platform mid-plane:
  Hardware Revision       : 1.0
  Part Number             : 73-11686-01
  Top Assy. Part Number   : 800-30488-01
  Board Revision         : 01
  Deviation Number       : 0-0
  PCB Serial Number      : FHH123000F9
Product (FRU) Number     : CISCO3945
Version Identifier       : N/A
CLEI Code                : CLEI CODE
Asset Identifier         : REV01
EEPROM format version 4
EEPROM contents (hex):
  0x00: 04 FF 40 06 1B 41 01 00 82 49 2D A6 01 C0 46 03
  0x10: 20 00 77 18 01 42 30 31 80 00 00 00 00 C1 8B 46
  0x20: 48 48 31 32 33 30 30 30 46 39 CB 89 43 49 53 43
  0x30: 4F 33 39 34 35 89 4E 2F 41 20 C6 8A 43 4C 45 49
```

```

0x40: 20 43 4F 44 45 00 CC 85 52 45 56 30 31 FF FF FF
0x50: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x60: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

Slot 0:

CISCO3900-MPE140 Mother board 3GE, integrated VPN and 4W Port adapter, 3 ports  
Port adapter is analyzed

Port adapter insertion time 00:57:29 ago

EEPROM contents at hardware discovery:

```

PCB Serial Number      : FHH123000HZ
Hardware Revision     : 1.0
Part Number           : 73-11594-02
Top Assy. Part Number : 800-30390-01
Board Revision        : 00
Deviation Number      : 97713
Fab Version           : 02
Product (FRU) Number  : CISCO3900-MPE140
Version Identifier    : V00
CLEI Code             : CLEI CODE
Processor type        : C3
Chassis Serial Number : FHH1231P04M
Chassis MAC Address   : 0024.c49e.a32b
MAC Address block size : 128
Asset Identifier      : REV2F CPU1.1

```

EEPROM format version 4

EEPROM contents (hex):

```

0x00: 04 FF C1 8B 46 48 48 31 32 33 30 30 30 48 5A 40
0x10: 06 13 41 01 00 82 49 2D 4A 02 C0 46 03 20 00 76
0x20: B6 01 42 30 30 88 00 01 7D B1 02 02 CB 90 43 49
0x30: 53 43 4F 33 39 30 30 2D 4D 50 45 31 34 30 89 56
0x40: 30 30 20 D9 03 40 C1 CB C6 8A 43 4C 45 49 20 43
0x50: 4F 44 45 00 09 C3 C2 8B 46 48 48 31 32 33 31 50
0x60: 30 34 4D C3 06 00 24 C4 9E A3 2B 43 00 80 CC 8C
0x70: 52 45 56 32 46 20 43 50 55 31 2E 31 FF FF FF FF
0x80: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x90: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xA0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xB0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xC0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xD0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xE0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xF0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

Internal Power Supply 2 information

```

Top Assy. Part Number  : 341-0238-01
Deviation Number      : 0
PCB Serial Number     : SON12230015
RMA Test History      : 00
RMA Number            : 0-0-0-0
RMA History           : 00
Version Identifier    : V01
Product (FRU) Number  : PWR-3945-AC
CLEI Code             : 0000000000

```

IDPROM FIELD FORMAT ERROR, index 0x43

EEPROM format version 4

EEPROM contents (hex):

```

0x00: 04 FF 40 05 E9 DF 45 01 55 00 EE 01 88 00 00 00
0x10: 00 C1 8B 53 4F 4E 31 32 32 33 30 30 31 35 03 00
0x20: 81 00 00 00 00 04 00 89 56 30 31 20 CB 8B 50 57
0x30: 52 2D 33 39 34 35 2D 41 43 C6 8A 30 30 30 30 30
0x40: 30 30 30 30 30 00 00 00 00 00 00 00 00 00 00
0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x80: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```

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```

0x90: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0xA0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0xB0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0xC0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0xD0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0xE0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0xF0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
    
```

Slot 1:

```

SM-32A Port adapter
Port adapter is analyzed
Port adapter insertion time 00:57:14 ago
EEPROM contents at hardware discovery:
Board Revision      : 1.
Hardware Revision   : 1.0
Part Number         : 73-14369-01
Deviation Number    : 0
Fab Version         : 05
PCB Serial Number   : FOC12355UQB
RMA Test History    : 00
RMA Number          : 0-0-0-0
RMA History         : 00
Product (FRU) Number : SM-32A
Version Identifier   : V01
CLEI Code           : TBD
EEPROM format version 4
EEPROM contents (hex):
0x00: 04 FF 40 07 72 42 31 2E 41 01 00 82 49 38 21 01
0x10: 88 00 00 00 00 02 05 C1 8B 46 4F 43 31 32 33 35
0x20: 35 55 51 42 03 00 81 00 00 00 00 04 00 CB 86 53
0x30: 4D 2D 33 32 41 89 56 30 31 00 D9 03 40 C1 CB C6
0x40: 8A 54 42 44 00 00 00 00 00 00 00 00 00 FF FF FF FF
0x50: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x60: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    
```

Slot 2:

```

SM-2GE-SFP-CU Port adapter
Port adapter is analyzed
Port adapter insertion time 00:56:58 ago
EEPROM contents at hardware discovery:
Board Revision      : 1.
Hardware Revision   : 1.0
Part Number         : 73-14369-01
Deviation Number    : 0
Fab Version         : 05
PCB Serial Number   : FOC15182RY4
RMA Test History    : 00
RMA Number          : 0-0-0-0
RMA History         : 00
Product (FRU) Number : SM-2GE-SFP-CU
Version Identifier   : V01
CLEI Code           : TBD
EEPROM format version 4
EEPROM contents (hex):
0x00: 04 FF 40 07 72 42 31 2E 41 01 00 82 49 38 21 01
0x10: 88 00 00 00 00 02 05 C1 8B 46 4F 43 31 35 31 38
0x20: 32 52 59 34 03 00 81 00 00 00 00 04 00 CB 8D 53
0x30: 4D 2D 32 47 45 2D 53 46 50 2D 43 55 89 56 30 31
0x40: 00 D9 03 40 C1 CB C6 8A 54 42 44 00 00 00 00 00
0x50: 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x60: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    
```

Embedded Service Engine 0/0 :

```

Total platform memory : 1048576K bytes
Total 2nd core memory : 262144K bytes
Start of physical address for 2nd core : 0x20000000
Number of blocks of memory for 2nd core : 1
2nd core configured enabled
L2 cache ways for 2nd core : 1
CF1 for 2nd core
Mac address of interface is 0024.c49e.a330
Mac address of 2nd core is 0024.c49e.a331

```

The following configuration displays the **show inventory** command output to show the SFP information:

```

c3900# show inventory
NAME: "CISCO3945", DESCR: "CISCO3945"
PID: CISCO3945 , VID: N/A , SN:

NAME: "CISCO3900-MPE140 Mother board 3GE, integrated VPN and 4W on Slot 0", DESCR:
"CISCO3900-MPE140 Mother board 3GE, integrated VPN and 4W"
PID: CISCO3900-MPE140 , VID: V00 , SN: FHH123000HZ

NAME: "Enhanced High Speed WAN Interface Card-1 Port Gigabit Ethernet SFP/Cu on Slot 0
SubSlot 0", DESCR: "Enhanced High Speed WAN Interface Card-1 Port Gigabit Ethernet SFP/Cu"
PID: EHWIC-1GE-SFP-CU , VID: V00, SN: FOC15080YF3

NAME: "1000BASE-SX SFP", DESCR: "1000BASE-SX SFP"
PID: QFBR-5798L , VID: , SN: A50018152

NAME: "1000BASE-SX SFP", DESCR: "1000BASE-SX SFP"
PID: FTRJ-8519-7D-CSC , VID: , SN: P4S1AWS

NAME: "100BASE-FX_MM SFP", DESCR: "100BASE-FX_MM SFP"
PID: HFBR-57E0APZ-CS , VID: , SN: AGP1528A6TF

NAME: "2 SFP GE SM on Slot 2", DESCR: "2 SFP GE SM"
PID: SM-2GE-SFP-CU , VID: V01 , SN: FOC154862NK

NAME: "C3900 AC-POE Power Supply 2", DESCR: "C3900 AC-POE Power Supply 2"
PID: PWR-3945-AC , VID: V01 , SN: SON12230015

```



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## Port Numbering

For external interfaces, two tuple numbering is followed. The interface will be addressed as **GigabitEthernet** <slot/port>.

Use the **show diag** CLI command to display the hardware information of the Cisco SM-2GE-SFP-CU service module.

**Note**

On the Cisco 3900 series routers, some slots are built into the chassis and some are external. Slots that are part of a network module have numbers that begin with “1”. See the "[Slot, Port, and Interface Information](#)" section of *Cisco 3900 Series and Cisco 2900 Series Hardware Installation Guide*.

## EN LED

The Cisco SM-2GE-SFP-CU service module has an EN LED located on the right side of the module. This LED indicates that the module has passed its self-test and is available to the router.

[Table 2](#) lists the EN LED colors and their meanings.

**Table 2**      **EN LED Colors and What They Indicate**

State	System Status
Off	Cisco SM-2GE-SFP-CU service module is not yet operational.
Green	Cisco SM-2GE-SFP-CU service module is operational.
Amber	Error has occurred.

## Additional References

The following sections provide references related to hardware installation, software configuration, and regulatory compliance information.

## Related Documents and Links

Related Topic	Document Title
Configuration support information and instruction in connecting a Cisco Gigabit Ethernet	<a href="#">Connecting Gigabit Ethernet High-Speed WAN Interface Cards</a>
Information on Cisco Gigabit Transceiver Modules	<a href="#">Cisco Gigabit Ethernet Transceiver Modules Compatibility Matrix</a>
Additional information on EHWICs and supported SFP	<a href="#">Cisco Enhanced High-Speed WAN Interface Cards [Cisco 3900 Series Integrated Services Routers]</a>
General information about the Cisco Gigabit Ethernet	<a href="#">Cisco Enhanced High-Speed WAN Interface Cards</a>
Hardware installation instructions for routers and network modules	<a href="#">Cisco 2900 Series and 3900 Series Hardware Installation Guide</a> <a href="#">Installing Cisco Network Modules and Service Modules in Cisco Access Routers</a>
General information about configuration and command reference	<a href="#">Cisco 3900 Series, 2900 Series, and 1900 Series Integrated Services Routers Software Configuration Guide</a> <a href="#">Cisco Configuration Professional</a> <a href="#">Software Advisor</a>
Regulatory compliance information for Cisco network modules and interface cards	<a href="#">Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information</a>
Regulatory compliance information for Cisco 3900 series routers	<a href="#">Regulatory Compliance and Safety Information for Cisco 3900 Series Integrated Services Routers</a>

## MIBs

Description	Link
Use Cisco MIB Locator to locate and download MIBs for selected platforms, Cisco software releases, and feature sets.	<a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

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## Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<p><a href="http://www.cisco.com/techsupport">http://www.cisco.com/techsupport</a></p>

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