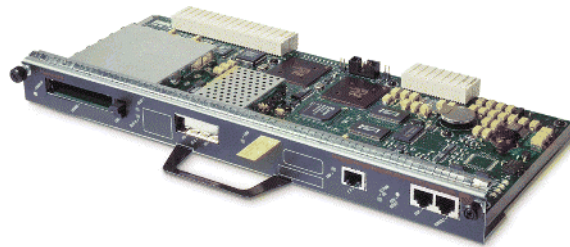


# Cisco 7200 Series **Input/Output Controllers**

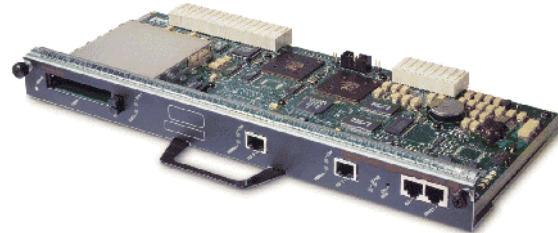
**Figure 1**

Cisco 7200 Series 1-Port Gigabit Ethernet and 1-Port Ethernet Input/Output Controller



**Figure 2**

Cisco 7200 Series 2-Port 10/100 Autosensing Fast Ethernet Input/Output Controller



The Cisco 7200 Series routers offer a choice of input/output (I/O) controllers to support a variety of applications, bandwidth, and performance for the price. They address the growing demand for high-speed LAN connectivity while reducing the cost per port. Table 1 shows the I/O Controllers that are currently available.

**Table 1**

Cisco 7200 Series I/O Controllers

Product Name	Product Number
Cisco 7200 Series Input/Output Controller	C7200-I/O,
Cisco 7200 Series 2-Port 10/100 Auto-Sensing Fast Ethernet Input/Output Controller	C7200-I/O-2FE/E
Cisco 7200 Series 1-Port Gigabit Ethernet and 1-Port Ethernet Input/Output Controller	C7200-I/O-GE+E

All of these I/O controllers provide the following base functions and features:

- An auxiliary port
- A console port
- Environmental monitoring (voltage monitoring and temperature sensing)
- Fixed Flash memory for storage of boot-helper image
- Two PCMCIA Flash memory card slots

In addition to these features, some I/O controllers also offer Ethernet, Fast Ethernet, and Gigabit Ethernet connectivity without the need for a port adapter.

Table 2 describes the primary benefits and the product specifications are shown in Tables 3-6.

**Table 2**

Features and Benefits Overview

Features	Benefits
<b>Integrated Ethernet, Fast Ethernet, or Gigabit Ethernet ports</b>	Increased port density for high-speed LAN connectivity without using a port adapter slot
<b>Gigabit Ethernet using industry-standard gigabit interface converters (GBICs)</b>	Interface flexibility
<b>Additional Flash memory</b>	More storage for additional software and configurations

**Table 3**

Product Specifications: Cards, Ports, and Slots

	C7200-I/O	C7200-I/O-2FE/E	C7200-I/O-GE+E
<b>Auxiliary ports</b>	1	1	1
<b>Console ports</b>	1	1	1
<b>Ethernet ports</b>	NA	2 (FE/E autosensing)	1
<b>Fast Ethernet ports</b>	NA	2 (FE/E autosensing)	NA
<b>Gigabit Ethernet ports</b>	NA	NA	1
<b>PCMCIA slots</b>	2	2	2

## Product Specifications: Connectivity

### Console Port and Auxiliary Port

- Connectors: both are RJ-45
- Network management for the EIA-232 console and auxiliary ports are provided through Cisco IOS<sup>®</sup> Software.

### Gigabit Ethernet Port (on C7200-I/O-GE+E)

- Single-port, full-duplex Gigabit Ethernet port
- Interface flexibility by using industry-standard GBICs, including the following:
  - 1000BASE-SX multimode, compliant with IEEE 802.3z specifications
  - 1000BASE-LX/LH compliant with IEEE 802.3z specifications
  - 1000BASE-ZX
- GBIC connector: 20-pin AMP SCA-2 equivalent
- Supports 802.1q virtual LAN (VLAN) and Inter-Switch Link (ISL) as software selectable features.

### Ethernet Port (on C7200-I/O-GE+E)

- 10-BASE-T Ethernet port
- Connector: RJ-45
- Media Access Control (MAC) with full-duplex operation and flow control
- Hardware address filtering on received frames of up to 128 address entries
- 802.3x flow control
- Ethernet encapsulation formats:
  - Ethernet V2
  - 802.2 SAP
  - 802.2 SNAP
- 802.1q VLAN support is also available on this port

### Fast Ethernet Ports (two on C7200-I/O-2FE/E)

- Autosensing 10/100 Fast Ethernet ports
- Connector: RJ-45
- MAC with full-duplex operation and flow control
- Hardware address filtering on received frames of up to 128 address entries
- 802.3x flow control
- Ethernet encapsulation formats:
  - Ethernet V2
  - 802.2 SAP
  - 802.2 SNAP
- Supports 802.1q VLAN and ISL as software-selectable features.

**Table 4**

Product Specifications: Environmental Conditions

Cisco 7200 Series I/O Controllers	
Operating temperature	41 to 104 F (5 to 40 C)
Storage temperature	38 to 150 F (-40 to 70 C)
Operating temperature, short-term:	23 to 131 F (-5 to 55 C)
Storage relative humidity	5 to 95 percent RH
Operating humidity nominal	5 to 85 percent RH
Operating humidity, short-term:	5 to 90 percent RH
Altitude	-60 to 4000 m

**Table 5**

Product Specifications: Memory

	C7200-I/O	C7200-I/O-2FE/E	C7200-I/O-GE+E
Flash Memory	4 MB	8 MB	8 MB
PCMCIA Flash disk supported	48 MB (default) expandable up to 128 MB	48 MB (default) expandable up to 128 MB	48 MB (default) expandable up to 128 MB

**PCMCIA Slots**—All I/O modules include slots for up to two PCMCIA Flash modules. These modules can be used for nonvolatile storage of Cisco IOS Software images, configurations, or log data files.

### Product Specifications: Network Management

The Cisco 7200 Series routers support Simple Network Management Protocol (SNMP) versions 1 and 2 for standards-based network management. Other configuration options include Telnet and serial access via console or auxiliary port connections.

**Table 6**

Product Specifications: Physical Specifications

	C7200-I/O	C7200-I/O-2FE/E	C7200-I/O-GE+E
Height	1.4 in. (3.5 cm)	1.4 in. (3.5 cm)	1.4 in. (3.5 cm)
Width	13.4 in. (34 cm)	13.4 in. (34 cm)	13.4 in. (34 cm)
Depth	7.3 in. (18.4 cm)	7.3 in. (18.4 cm)	7.3 in. (18.4 cm)
Weight	2.4 lb (1.1 kg)	2.4 lb (1.1 kg)	2.4 lb (1.1 kg)

### Product Specifications: Power

**Power Budget**—30 watts for I/O controller including PCMCIA cards

### Product Specifications: LEDs

- Enabled green indicates the I/O module is powered and recognized by the system.
- Slot0 green indicates that PCMCIA slot0 is in use.
- Slot1 green indicates that PCMCIA slot1 is in use.
- For C7200-I/O-GE+E
  - GBIC EN green indicates that the Gigabit Ethernet GBIC receptacle is initialized and enabled by the system.
  - Link green indicates that the Ethernet RJ-45 receptacle has established a valid link with the network.
  - 10/100 green indicates that the controller is configured for 100-Mbps operation.
- For C7200-I/O-2FE/E
  - Link green indicates that the Ethernet RJ-45 receptacle has established a valid link with the network.
  - 100Mbps green indicates that the port is configured for 100-Mbps operation
- IO PWR OK LED on indicates that the I/O module is receiving power from the midplane

### Product Regulatory Approvals and Compliance

The Cisco 7200 Series I/O controllers conform to the following Safety and Electromagnetic Emissions Certifications:

- UL (Underwriters Laboratories) certified for use in the United States
- CSA (Canadian Standards Association) certified
- EN (European Norm) certified
- IEC (International Electrotechnical Commission) certified
- AS/NZS (Australia/New Zealand Standard) Certified
- FCC (U.S. Federal Communications Commission) Part 15 Class A device for electromagnetic interference limits
- FCC Part 68 for connection to the public telephone network

Immunity:

- Electrostatic Discharge EN61000-4

## Product System Requirements

### Hardware Requirements

**Chassis compatibility**—The C7200-I/O, C7200-I/O-GE+E, and the C7200-I/O-2FE/E are supported on the Cisco 7200 Series VXR chassis. The C7200-I/O is also supported on the Cisco 7200 Series (non-VXR) chassis.

**Processor Compatibility**—With one exception, all Cisco 7200 Series configurations with chassis and processor require an I/O controller. The NPE-G1 does not require an I/O controller because it includes built-in console and auxiliary ports, as well as a slot for Flash memory. However, the Cisco NPE-G1 Network Processing Engine and I/O controllers are compatible as shown in Table 7 and the I/O controller may be ordered as an option.

**Table 7**

Cisco 7200 Series I/O Controller Compatibility with Network Processors

	C7200-I/O	C7200-I/O-2FE/E	C7200-I/O-GE+E
<b>Network Processing Engine (NPE)</b>	All NPEs	NPE-225 and above (see note below)	NPE-300 and above
<b>Network Services Engine (NSE)</b>	NSE-1	NSE-1	NSE-1

**Note:** The C7200-I/O-2FE/E I/O controller only operates with this version of the NPE-225: board label 73-3453-05 rev. A0 or higher, or faceplate label 800-05418-03 rev. A0 or higher. To check for the correct NPE-225 version in software, use the show c7200 command. Under CPU EEPROM, look for Hardware Revision 1.3 or higher.

**Port Adapter compatibility**—In some cases, the LAN ports on the I/O controllers (C7200-I/O-GE+E and C7200-I/O-2FE/E) share the protocol control information (PCI) bus bandwidth with the port adapter ports in all odd-numbered slots on the 7200 series chassis. This condition

occurs when the NPE-225, NPE-400, or NSE-1 processors are used. It does not apply to the NPE-G1. Configuration Guidelines for the Port Adapters and I/O controllers with more detailed information can be found at:

<http://www.cisco.com/Support/Products/Cisco/7200/7200-IO-GE+E.html>

### Software Requirements

The C7200-I/O-GE+E and the C7200-I/O-2FE/E are supported in Cisco IOS Software releases 12.1(3A)E5, 12.1(5)T1, and 12.0(14)S2 or later.

More detailed information about hardware and software compatibility can be found at

<http://www.cisco.com/cgi-bin/Support/CompNav/Index.pl>

### Product Ordering Details: Ordering Instructions

Please visit [http://www.cisco.com/public/ordering\\_info.shtml](http://www.cisco.com/public/ordering_info.shtml) to place an order. See Table 1 for product name and part numbers.

### Product Ordering Details: Migration Program

A Technology Migration Plan has been established for this product.

The Technology Migration Plan is an innovative, industry-first sales program that allows customers to trade in Cisco and competitors' products to receive a trade-in credit toward the purchase of any new Cisco product. The program underscores the Cisco commitment to its customers to provide end-to-end product solutions and effective migration options in the face of ever-changing network requirements.

For details about technology migration, go to [http://www.cisco.com/offer/tic/TMP\\_PA.html](http://www.cisco.com/offer/tic/TMP_PA.html).

### Service and Support

Cisco Systems offers a wide range of service and support options for its customers. More information about Cisco service and support programs and benefits are available at

[http://www.cisco.com/public/Support\\_root.shtml](http://www.cisco.com/public/Support_root.shtml).

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