



1- and 2-Port Fast Ethernet High-Speed WAN Interface Cards

Revised: 6/7/07, OL-12851-01

Overview

This document describes Cisco 1- and 2-Port Fast Ethernet high-speed WAN interface cards (HWICs) and how to connect Cisco 1- and 2-Port Fast Ethernet HWICs to the network, and contains the following sections:

- [Cisco 1- and 2-Port Fast Ethernet HWICs, page 1](#)
- [Connecting Fast Ethernet HWICs to a Network, page 4](#)
- [Additional References, page 4](#)
- [Obtaining Documentation, Obtaining Support, and Security Guidelines, page 5](#)

For an overview of Cisco interface cards used for Cisco access routers see the [Cisco Interface Cards for Cisco Access Routers](#) document.

Cisco 1- and 2-Port Fast Ethernet HWICs

The Cisco Fast Ethernet HWICs are single-wide interface cards, available as a 1-port HWIC (HWIC-1FE) and as a 2-port HWIC (HWIC-2FE), that provide Cisco modular and integrated services routers with additional line-rate Layer 3 routed ports. (See the [“Fast Ethernet HWICs Supported Platforms” section on page 2.](#))

Fast Ethernet HWICs Standards

The Fast Ethernet HWICs are designed in accordance with IEEE 802.3 10BASE-T Ethernet and IEEE 802.3u 100BASE-TX Fast Ethernet standards.

The following IEEE standards are also supported:

- 802.1p
- 802.1u
- 802.1x

Fast Ethernet HWICs Restrictions

The following features are *not supported* on the Fast Ethernet HWICs:

- Cisco Interswitch Link (ISL) tagging
- Connectivity fault management (CFM)
- Flow control
- Online insertion and removal (OIR)

Fast Ethernet HWICs Supported Platforms

Install the Fast Ethernet HWICs in the following Cisco routers:

- Cisco 1841 integrated services router
- Cisco 2800 series integrated services routers
- Cisco 3800 series integrated services routers



Note

Insert Fast Ethernet HWICs into HWIC slots only. They do not fit into WIC/VIC slots.

[Table 32](#) shows the maximum number of each type of HWIC that may be installed, the slot locations, and slot numbering for each platform.

Table 32 *Supported Platforms for the Fast Ethernet HWICs*

Chassis	HWIC-1FE	HWIC-2FE	Slot Locations	HWIC slots
Cisco 1841	1 may be installed	—	See Figure 7 on page 4	Slot 0 and slot 1 for HWIC-1FE only
Cisco 2801	1 to 2 may be installed	—	See Figure 9 on page 5	Slot 1 and slot 3 support HWICs
Cisco 2811	1 to 2 may be installed	—	See Figure 10 on page 6	Slot 0 to slot 3
Cisco 2821	1 to 2 may be installed	—	See Figure 10 on page 6	Slot 0 to slot 3
Cisco 2851	1 to 2 may be installed	—	See Figure 10 on page 6	Slot 0 to slot 3
Cisco 3825	1 to 4 may be installed	1 to 2 may be installed	See Figure 13 on page 7	Slot 0 to slot 3
Cisco 3845	1 to 4 may be installed	1 to 2 may be installed	See Figure 13 on page 7	Slot 0 to slot 3

Fast Ethernet HWICs Port Numbering

Port numbers identify the interfaces on the modules and interface cards installed in the router. Modules and interface cards are identified by three digits: slot number/subslot number/port number.

For example, HWIC port 0 in HWIC subslot 1 of router slot 0 is represented as:

```
interface FastEthernet 0/1/0
```

Fast Ethernet HWICs LEDs

The Fast Ethernet HWICs use three LEDs per port to indicate full- or half-duplex operation, collisions, speed, transmit/receive activity, and link status. [Figure 113](#) and [Figure 114](#) show the HWIC-1FE and HWIC-2FE faceplates, and [Table 33](#) describes the functions of the LEDs.

Figure 113 HWIC-1FE Faceplate

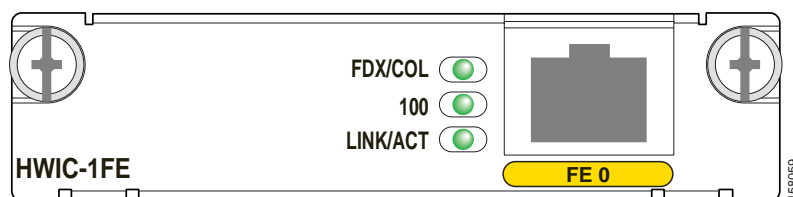


Figure 114 HWIC-2FE Faceplate

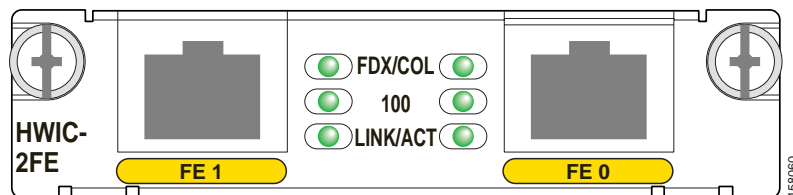


Table 33 Fast Ethernet HWIC LEDs

LED	Meaning	States
FDX/COL	Duplex/Collision	On = Full-duplex Off = Half-duplex Blinking = Collision activity
100	Speed	On = 100 Mbps Off = 10 Mbps
LNK/ACT	Link Status	On = Link pulses detected Off = No link pulses detected Blinking = Transmit or receive activity

Connecting Fast Ethernet HWICs to a Network

To connect a Fast Ethernet HWIC to the network, do the following procedure:

Step 1 Confirm that the router is powered down.



Warning

To comply with the Telcordia GR-1089 NEBS standard for electromagnetic compatibility and safety, connect the HWIC-1FE and HWIC-2FE interface cards only to intra-building or unexposed wiring or cable. The intrabuilding cable must be shielded and the shield must be grounded at both ends. The intra-building 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 intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 4) 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.

Step 2 Insert the Fast Ethernet HWIC into an HWIC slot on the router. (See [Chapter , “Installing Cisco Interface Cards in Cisco Access Routers.”](#))



Note

Insert Fast Ethernet HWICs into HWIC slots only. They do not fit into WIC/VIC slots.

Step 3 Using the appropriate cables, connect the HWIC to your system.



Caution

To comply with the Telcordia GR-1089 NEBS standard for electromagnetic compatibility and safety, connect the 1-port HWIC (HWIC-1FE) and 2-port HWIC (HWIC-2FE) only to intrabuilding or nonexposed wiring or cabling.

- For 10BASE-T operation, Category 3, 4, or 5 UTP cable may be used, for distances of up to 328 feet (100 meters).
- For 100BASE-TX operation, Category 5 UTP cable is required, for distances of up to 328 feet (100 meters).
- The HWICs support Auto-MDIX, so either straight-through or crossover cable can be used.

Step 4 Power up the router.

Additional References

For additional information, see the following documents and resources.

Related Topic	Document Title
Regulatory compliance and safety information	Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information

Related Topic	Document Title
Cisco IOS software website and reference documentation	<i>Cisco IOS Software</i> http://www.cisco.com/en/US/products/sw/iosswrel/tsd_products_support_category_home.html
Technical documentation, including feedback and assistance	<i>What's New in Cisco Product Documentation</i> (including monthly listings of new and revised documents) at http://www.cisco.com/univercd/cc/td/doc/abtunicd/136957.htm

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

CCVP, the Cisco logo, and Welcome to the Human Network are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networkers, Networking Academy, Network Registrar, PIX, ProConnect, ScriptShare, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0711R)

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

© 2007 Cisco Systems, Inc. All rights reserved.

