



4-Port Gigabit Ethernet Interface Module (GBIC) Quick Start Guide

For the CoreBuilder® 9000 Enterprise Switch

Interface Module Description

The 4-port Gigabit Ethernet (GEN) Interface Module (GBIC) (Model Number 3CB9LG4) is an interface for gigabit rate data between the CoreBuilder® 9000 Enterprise chassis backplane and other 802.3z-compliant Gigabit Ethernet devices. The module provides four Gigabit Ethernet fiber-optic connections on the front panel, using plug-in Gigabit Interface Converter (GBIC) transceivers.

Key Features

The 4-port Gigabit Ethernet Interface Module (GBIC) supports the following key features:

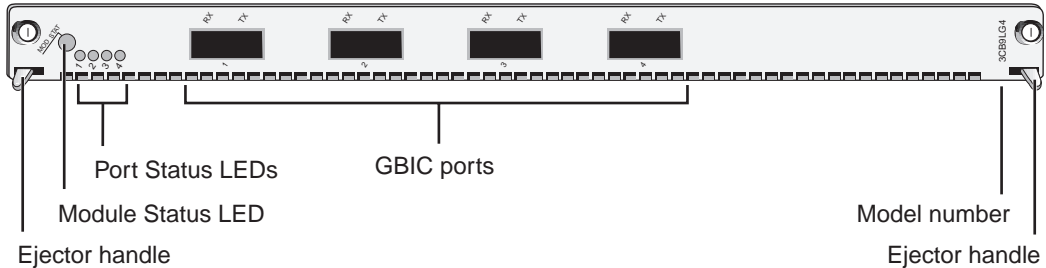
- Four front panel IEEE 802.3z-compliant Gigabit Ethernet fiber-optic ports, each of which connects to a dedicated, non-blocking, redundant Gigabit Ethernet backplane channel
- Module or GBIC installation or removal while the chassis is powered on (known as *hot-swapping*)
- Management using the CoreBuilder 9000 Administration Console (a command line interface), through the Web Management suite of applications, or from Simple Network Management Protocol (SNMP) applications by connecting through a Gigabit Ethernet Switch Fabric Module

The module supports the following GBIC transceivers:

- 1000BASE-SX (Model Number 3CGBIC91)
- 1000BASE-LX (Model Number 3CGBIC92)

Each module has four ports on the front panel. Figure 1 shows the location of the components on the front panel of the Gigabit Ethernet Interface Module.

Figure 1 Front Panel of the 4-port Gigabit Ethernet Interface Module (GBIC)



In the 7-slot chassis, you install the module horizontally with the LEDs at the left. In the 8-slot chassis and 16-slot chassis, you install the module vertically with the LEDs at the top.

Audience Description

This guide is intended for *trained technical personnel* only. Do not attempt to install, remove, or replace a CoreBuilder 9000 Gigabit Ethernet Interface Module if you have not had the proper training from 3Com. For training information in the United States and Canada, call 1-800-NET-3COM. For training information in other countries, visit the 3Com Web site:

<http://www.3com.com>

Safety Precautions

When you handle components in a CoreBuilder 9000 system, be sure that you follow all safety precautions. To avoid electric shocks, burns, or equipment damage, read and follow these warnings:



WARNING: Allow only trained service personnel to install, remove, or replace a Gigabit Ethernet Interface Module.



WARNING: Hazardous energy exists within the system. Use extreme caution when you install, remove, or replace any module when the system is on:

- Never insert metal objects such as a screwdriver or a finger with jewelry into open module slots.
- Do not touch any connections within the chassis with your hands or fingers.



WARNING: To ensure optical safety when installing Gigabit Ethernet Interface Modules, comply with the following precaution:

Although the data communication lasers used in this product meet the regulatory requirements for casual exposure to the eye, as with any source of bright light, it is advised that you do not look into the light source.



Laser Safety Information: IEC 825 and EN60825, Class 1 Laser Device. For connection only to Class 1 Laser Devices.



FDA Class 1 Laser Device

This product complies with U.S. Department of Health and Human Services Rules 21 CFR Subchapter J applicable at date of manufacture.

ESD Safety Information

Electrostatic discharge (ESD) can damage components of the module. ESD, which occurs when a Gigabit Ethernet Interface Module is improperly handled, can cause complete or intermittent failures.



CAUTION: To prevent ESD-related damage:

- Always wear an ESD wrist strap (not provided) when you handle a Gigabit Ethernet Interface Module, ensuring that the strap makes good skin contact and is properly grounded.
- Keep the Gigabit Ethernet Interface Module in its antistatic bag until you are ready to install it.

Handling Precautions

When you handle a Gigabit Ethernet Interface Module, follow these precautions:

- Always handle the module by its front panel only.
- Do not touch the components, pins, leads, or solder connections.
- Do not twist or otherwise force the module into the chassis when you insert it into the module slot guides.
- Before you push the module into the chassis, make sure that the module ejector handles are open.
- When you slide the module into the 7-slot chassis, match the left and right module guides. When you slide the module into the 8-slot chassis and 16-slot chassis, match the upper and lower module guides.

Unpacking Instructions

Use the following procedure when you unpack a Gigabit Ethernet Interface Module:

- 1 Verify that the Gigabit Ethernet Interface Module is the correct model by matching the 3C number that is listed on the shipping box label to the 3C number that is listed on your order documentation (3CB9LG4).
- 2 Remove the module, in its antistatic bag, from the shipping box.
- 3 Remove the module from its antistatic bag and inspect it for physical damage.



CAUTION: Handle the module by the front panel only. Do not touch any components, pins, leads, or solder connections.

If the module appears to be damaged, replace it in its antistatic bag and shipping box, and contact your network supplier.

- 4 Ensure that the box also contains:
 - *CoreBuilder 9000 Release Notes for Gigabit Ethernet (GEN) Switch Fabric Modules and GEN Interface Modules*
 - *4-Port Gigabit Ethernet Interface Module (GBIC) Quick Start Guide for the CoreBuilder 9000 Enterprise Switch* (this guide)

If the listed contents are not in the shipping box, contact your network supplier.



All shipping boxes are reusable. After you remove the contents, replace the packing materials in the box and store it for future use.

Installation Prerequisites

Before you install your 4-port Gigabit Ethernet Interface Module (*GBIC*), comply with the following prerequisites:

- Verify that the chassis is properly installed in a rack, on a table, or on a shelf, according to the instructions in either of these guides:
 - *7-Slot Chassis Quick Installation Guide for the CoreBuilder 9000 Enterprise Switch*
 - *Chassis Quick Installation Guide for the CoreBuilder 9000 Enterprise Switch 8-slot Chassis and 16-slot Chassis*
- Have a flat-blade torque screwdriver available to secure the module to the chassis after you install it.
- Read the *CoreBuilder 9000 Release Notes for Gigabit Ethernet (GEN) Switch Fabric Modules and GEN Interface Modules* that is included in your module shipping box for important upgrade procedures for other modules in an existing chassis or in a new chassis.



CAUTION: All modules in a CoreBuilder 9000 chassis must operate at compatible software levels. You must verify the software release on all new and existing modules in your chassis and upgrade as necessary. See the CoreBuilder 9000 Release Notes for Gigabit Ethernet (GEN) Switch Fabric Modules and GEN Interface Modules for a module software compatibility requirements table, mandatory upgrade procedures, and other important information.

Module Placement in the Chassis

Note the following chassis slot restrictions and recommendations when you choose a chassis slot for a Gigabit Ethernet Interface Module:

- In the CoreBuilder 9000 7-slot chassis:
 - Install the module in slot 1, 2, 3, 4, 5, or 6.
 - Do not install the module in slot 7. This slot is reserved for a GEN Switch Fabric Module.
- In the CoreBuilder 9000 8-slot chassis:
 - Install the module in slot 1, 2, 3, 4, 5, or 6.
 - Do not install the module in slot 7 or slot 8. These slots are reserved for GEN Switch Fabric Modules.
- In a CoreBuilder 9000 16-slot chassis:
 - To optimize backplane performance, install the module in slot 1, 2, 3, 4, 5, 6, 7, 10, 11, or 12.
 - Do not install the module in slot 8 or slot 9. These slots are reserved for GEN Switch Fabric Modules.

Table 1, Table 2, and Table 3 list the relationship between switch fabric modules and the interface module slots in the 7-slot chassis, the 8-slot chassis, and the 16-slot chassis, respectively. Use the information to help select a slot for your module, as well as for administration purposes after you have completed the installation.

Table 1 Mapping the 24-Port Series GEN Switch Fabric Module (SFM) and GEN Interface Module to the 7-slot Chassis

Chassis Slot No.	Number of SFM Backplane Ports Allocated to Slot	Gigabit Ethernet Interface Module Port Numbers	SFM Backplane Port Numbers Assigned to Chassis Slot	SFM LED Numbers Assigned to Backplane Port Numbers
1	4	1	1	1
		2	2	2
		3	3	13
		4	4	14
2	4	1	5	3
		2	6	4
		3	7	15
		4	8	16
3	4	1	9	5
		2	10	6
		3	11	17
		4	12	18
4	4	1	13	7
		2	14	8
		3	15	19
		4	16	20
5	4	1	17	9
		2	18	10
		3	19	21
		4	20	22
6	4	1	21	11
		2	22	12
		3	23	23
		4	24	24
7	Not applicable. Switch fabric module slot only.			

Table 2 Mapping the 24-Port Series GEN Switch Fabric Module (SFM) and GEN Interface Module to the 8-slot Chassis

Chassis Slot No.	Number of SFM Backplane Ports Allocated to Slot	Gigabit Ethernet Interface Module Port Numbers	SFM Backplane Port Numbers Assigned to Chassis Slot	SFM LED Numbers Assigned to Backplane Port Numbers
1	4	1	1	1
		2	2	2
		3	3	13
		4	4	14
2	4	1	5	3
		2	6	4
		3	7	15
		4	8	16
3	4	1	9	5
		2	10	6
		3	11	17
		4	12	18
4	4	1	13	7
		2	14	8
		3	15	19
		4	16	20
5	4	1	17	9
		2	18	10
		3	19	21
		4	20	22
6	4	1	21	11
		2	22	12
		3	23	23
		4	24	24
7	Not applicable. Switch fabric module slot only.			
8	Not applicable. Switch fabric module slot only.			

Table 3 Mapping the 24-Port Series GEN Switch Fabric Module (SFM) and GEN Interface Module to the 16-slot Chassis

Chassis Slot No.	Number of SFM Backplane Ports Allocated to Slot	Gigabit Ethernet Interface Module Port Numbers	SFM Backplane Port Numbers Assigned to Chassis Slot	SFM LED Numbers Assigned to Backplane Port Numbers
1	2	1	1	1
		2	2	2
2	2	1	3	3
		2	4	4
3	2	1	5	5
		2	6	6
4	2	1	7	7
		2	8	8
5	2	1	9	9
		2	10	10
6	2	1	11	11
		2	12	12
7	2	1	13	13
		2	14	14
8	Reserved for an SFM	Not applicable	Not applicable	Not applicable
9	Reserved for an SFM	Not applicable	Not applicable	Not applicable
10	2	1	15	15
		2	16	16
11	2	1	17	17
		2	18	18
12	2	1	19	19
		2	20	20
13	1	1	21	21
14	1	1	22	22
15	1	1	23	23
16	1	1	24	24

Installing the Gigabit Ethernet Interface Module

Follow this procedure to install a Gigabit Ethernet Interface Module:

- 1 Before you start the installation process, read “Safety Precautions” and “Handling Precautions” earlier in this guide.
- 2 Select a chassis slot for your module, following the restrictions and recommendations in “Module Placement in the Chassis” earlier in this guide.
- 3 To expose the selected chassis slot, remove the blank faceplate that covers the slot.

Save this faceplate in case you need to cover an empty slot in the future. Empty slots must always be covered to ensure proper air flow and cooling in the chassis.



3Com recommends that you install only one module at a time and that you remove the faceplate only for the slot where you intend to install the module. Having either a module or a faceplate on each side of the module that you are installing helps ensure that the spring-loaded screws on the module align properly with the holes in the chassis.

- 4 Open the module ejector handles.
- 5 Begin to insert the module:
 - In the 7-slot chassis, hold the module horizontally with the LEDs on the left and insert the module using the guides on the left and the right of the slot. See Figure 2.
 - In the 8-slot chassis and 16-slot chassis, hold the module vertically with the LEDs at the top and insert the module using the guides on the top and the bottom of the slot. Figure 3 shows the installation in an 8-slot chassis.



CAUTION: Be careful not to twist or bend the module when you insert it into the chassis.



WARNING: Hazardous energy levels exist inside of the chassis. Do not place hands or objects into the chassis or touch components on an inserted module.

Figure 2 Installing the Gigabit Ethernet Interface Module in the 7-slot Chassis

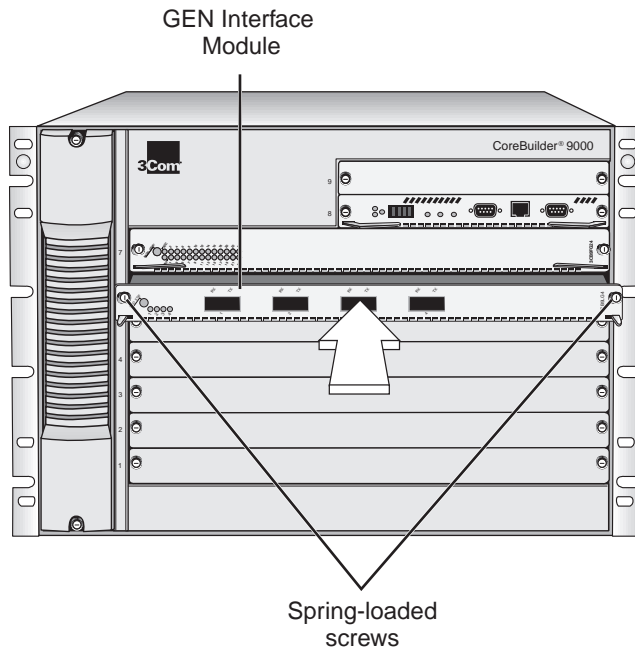
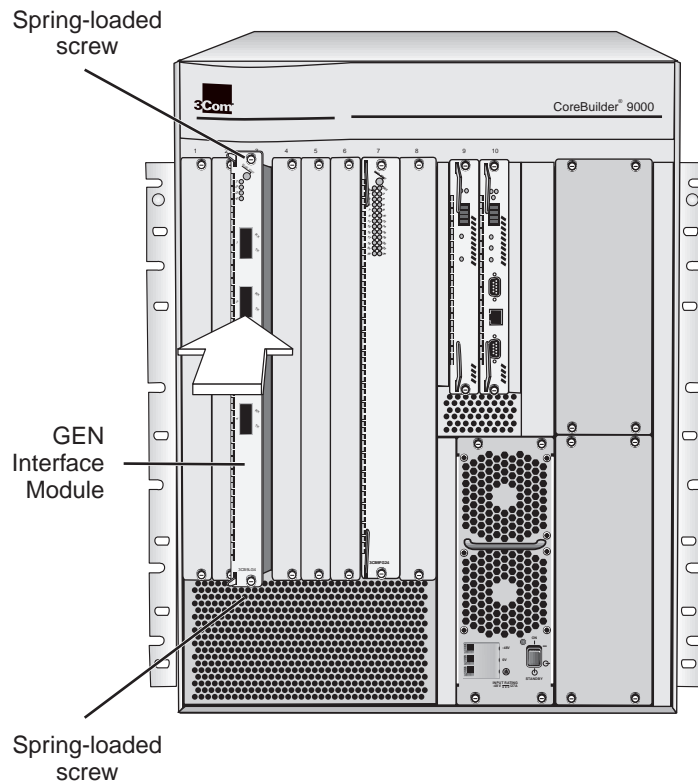


Figure 3 Installing the Gigabit Ethernet Interface Module in the 8-slot Chassis

- 6 Install the module into the chassis using both hands.
 - a Push firmly at the two ends of the front panel near the ejector handles until you feel the module connectors make firm contact with the backplane connectors.
 - b Put your left thumb on the left or top ejector handle and your right thumb on the right or bottom ejector handle. Simultaneously push the ejector handles in toward the front panel until each handle is parallel with the front panel.

You feel a slight resistance as the connectors fully engage.



CAUTION: If the resistance is too great, the module may not be installed correctly. Forcing the module into place can damage the module connectors and backplane connectors. If necessary, remove and reinsert the module. Do not tighten the spring-loaded screws to seat the module.

- 7 To secure the module front panel in the chassis, tighten the spring-loaded screws at each end of the front panel to a torque specification of 3–5 inch-pounds.



CAUTION: To prevent damage to the module or to the chassis, make sure that the screws are centered (aligned) with the holes in the chassis before you tighten them.

If the slot to the right (in an 8-slot chassis or 16-slot chassis) or top (in a 7-slot chassis) of the module does not have a faceplate or a module installed, gently push the module to the left (in the 8-slot chassis or 16-slot chassis) or downward (in the 7-slot chassis) to compress the electromagnetic shielding gasket and properly align the screws with the holes in the chassis.



WARNING: To ensure adequate cooling air flow and continued product safety agency compliance, install blank faceplates over all empty slots.

Verifying Module Operation

The Gigabit Ethernet Interface Module has one Module Status LED and four Port Status LEDs. Watch the LEDs during system power-on to verify proper module operation. During the power-on diagnostic test, both the Module Status and Port Status LEDs flash for approximately 1 second, and then reflect the active status of the module as described in Table 4.

Table 4 Module and Port Status LED Indicators

LED	State and Color	Description
Module Status	Green	Power is on (normal operation).
	Yellow	Module error.
	Off	No power.
Port Status	Green	Port is enabled and link is up.
	Flashing Green	Port is receiving or transmitting packets.
	Yellow	Port is cabled, but the switch fabric module is down or unavailable.
	Off	Link is disabled or port is not cabled.

GBIC Transceivers

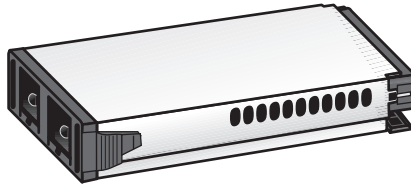
This section describes how to install Gigabit Interface Converter (GBIC) transceivers in the front ports of the Gigabit Ethernet Interface Module.



Do not install GBICs until after the Gigabit Ethernet Interface Module is installed and has powered on successfully. (See “Verifying Module Operation” in the previous section.)

The GBIC ports on your system connect to Gigabit Ethernet networks through a GBIC transceiver (Figure 4), which provides a high-speed connection over fiber-optic cable. The transceiver connects to the network using a duplex SC fiber-optic connector. You can remove and replace the transceiver while the system is on.

Figure 4 Example of a GBIC Fiber-optic Transceiver



To ensure optimal performance, compatibility, and regulatory compliance, use only GBIC transceivers that 3Com supports. For a list of currently supported GBICs, see this 3Com Web site:

http://www.3com.com/gigabit_ethernet/gbics

1000BASE-SX GBIC Transceivers

The 1000BASE-SX transceiver supports a direct connection to 62.5-micron or 50-micron multimode fiber-optic cable.

Table 5 lists the transmission ranges for each connection.

Table 5 1000BASE-SX GBIC Multimode Transmission Ranges

Fiber Type	Diameter (microns)	Modal Bandwidth (MHz*km)	Transmission Range in meters (feet)
Multimode	62.5	160	2 – 220 (6.6 – 721.8)
Multimode	62.5	200	2 – 275 (6.6 – 902.3)
Multimode	50	400	2 – 500 (6.6 – 1640.5)
Multimode	50	500	2 to 550 (6.6 to 1804.6)

1000BASE-LX GBIC Transceivers

The 1000BASE-LX transceiver supports these connections:

- Direct connection to single-mode fiber-optic cable
- Connection to multimode fiber through a conditioned launch cable



To ensure optimal performance, compatibility, and regulatory compliance, use only conditioned launch cables that 3Com supports. For a list of currently supported conditioned launch cables, see this 3Com Web site:

http://www.3com.com/gigabit_ethernet_gbics

Table 6 lists the transmission ranges for each connection.

Table 6 100BASE-LX GBIC Multimode and Single-mode Transmission Ranges

Fiber Type	Diameter (microns)	Modal Bandwidth (MHz*km)	Transmission Range in meters (feet)
Multimode	62.5	500	2 – 550 (6.6 – 1804.6)
Multimode	50	400	2 – 550 (6.6 – 1804.6)
Multimode	50	500	2 – 550 (6.6 – 1804.6)
Single-mode	9	–	2 – 10,000 (6.6 – 32,810)

Safety Precautions

Be sure to follow all safety precautions when you replace a 1000BASE GBIC transceiver in the module. To avoid electric shocks and burns to yourself and damage to the equipment, read and follow this warning:



WARNING: *When the system is on, never insert a metal object such as a screwdriver or a finger with jewelry into open GBIC slots.*

Fiber-optic Safety Precautions

The GBIC ports on your system use lasers. To ensure your safety when you install or work with these GBIC systems, read and comply with the precautions in this section.



WARNING: *The fiber-optic lasers that are used in 3Com GBIC ports meet the regulatory requirements for casual exposure to the eye. As with any source of bright light, however, 3Com recommends that you do not look into the laser light source.*

IEC 825, Class 1 Laser Devices are for connection only to Class 1 Laser Devices. Multimode and single-mode fiber-optic interfaces use lasers.

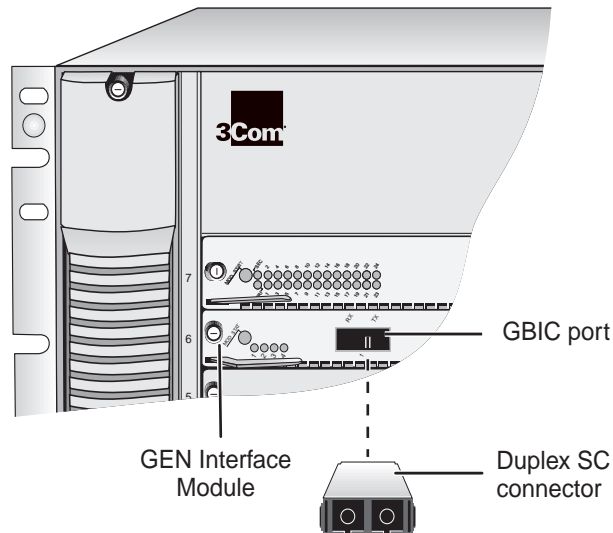
CLASS 1
LASER PRODUCT

Inserting the Transceiver

Before you connect the system to the Gigabit Ethernet network, first insert the transceiver into the GBIC port on the module:

- 1 Orient the transceiver so that the duplex SC connector is toward you (Figure 5).

Figure 5 Inserting the GBIC Transceiver



- 2 Compress the side tabs and gently slide the transceiver into the GBIC port until it clicks into place.



CAUTION: *The transceiver is keyed so that you can only install it one way. If you insert the transceiver and it does not slide in all the way, do not try to force it into place. Remove the transceiver, turn it over, and then reinsert it into the module.*

Removing the Transceiver

If you need to replace a GBIC transceiver, remove the old one by compressing the side tabs and gently pull the transceiver out of the port.

Troubleshooting GBICs

After you insert the GBIC transceiver into the port, the system software verifies whether the transceiver is working properly.



To ensure optimal performance, compatibility, and regulatory compliance, use only GBIC transceivers that 3Com supports. For a list of currently supported GBICs, see this 3Com Web site:

http://www.3com.com/gigabit_ethernet/gbics

If the transceiver is not working properly, an error message is displayed on the EME Console, as described in the following sections.

Unqualified GBIC Error

If the system detects that there is an unqualified GBIC installed or there is a problem with the integrity of the GBIC, it sets the port type to `Unqualified GBIC`, displays a short description at the EME Console (`Unqual.GBIC`), and captures the error in the event log.

WARNING

The GBIC in Port xx is NOT approved by 3Com & may violate electromagnetic emission or safety requirements for your country. Refer to 3Com's web page (www.3com.com/gigabit_ethernet/gbics) for our current approved list.

The following informational messages are shown in the event log:

- `Unqualified GBIC: I2C read error`

A transceiver that is not properly connected to the module can cause this problem. The transceiver connects to the module host board through a 20-pin connector. If the transceiver is not seated properly, a clean connection cannot be established.

Corrective Action

To correct this problem, completely remove the transceiver and then reinsert it. If the problem persists, contact 3Com Technical Support. For contact information, see the Technical Support appendix in the *CoreBuilder 9000 Enterprise Switch Getting Started Guide*.

- **Unqualified GBIC: Checksum match error**

The system also uses checksum error detection to verify the integrity of the GBIC data that it reads. If the system detects a problem with the data, the EME Console displays an error message that indicates a checksum failure.

Corrective Action

Although this condition does not necessarily indicate that the GBIC transceiver will not function in the system, replace the transceiver to ensure proper operation.

- **Unqualified GBIC: MODDEF Value - xx**

- **Unqualified GBIC: Transceiver byte(s) error**

The value (xx) of this GBIC type is not a Module Definition 4 GBIC (Serial Identification) as defined by the Gigabit Interface Converter specification.

Corrective Action

Replace this transceiver with a 3Com qualified GBIC.

GBIC Disable Error

If the system detects that the transceiver cannot emit the proper laser signal, it sets the port type to `disabled`, displays a short description at the EME console (`GBIC Disable`), and captures the error in the event log.

The following informational message is shown in the event log:

- `Due to excessive TxFault conditions, GBIC Port xx has been disabled.`

Excessive Tx Fault conditions indicate a faulty GBIC.

Corrective Action

Replace the transceiver with another one. If the problem persists, contact 3Com Technical Support. For contact information, see the Technical Support appendix in the *CoreBuilder 9000 Enterprise Switch Getting Started Guide*.

Unapproved GBIC Error

Supported transceivers are those that 3Com has specifically tested and qualified for use with 3Com GBIC systems. Pretesting at 3Com ensures proper functionality and compatibility with the system.

If the system detects a transceiver that 3Com does not support, it sets the port type to `Unqualified GBIC`, displays a short description at the EME console (`Unappr. GBIC`), and captures the error in the event log.

WARNING

The GBIC in Port xx is NOT approved by 3Com & may violate electromagnetic emission or safety requirements for your country. Refer to 3Com's web page (www.3com.com/gigabit_ethernet/gbics) for our current approved list.

The following informational message is shown in the event log:

- Unqualified GBIC: Unqualified vendor part number

Corrective Action

Although this report does not necessarily indicate that the GBIC transceiver will not function properly with the system, it does indicate that 3Com has not qualified the transceiver and does not support it.

Managing the Module

You can access and manage your Gigabit Ethernet Interface Module using several methods:

- The Administration Console
- The Web Management suite of applications
- An external SNMP-based network management application such as 3Com's Transcend[®] Network Control Services

The Administration Console and most of Web Management are embedded parts of the software and are available for immediate use to manage your module.

Administration Console Access

You can configure and manage the front panel ports on the Gigabit Ethernet Interface Module using the Administration Console, which is a command line interface that you access from a terminal that is connected through the Enterprise Management Engine (EME).

At the Administration Console command prompt, you do not connect directly to the Gigabit Ethernet Interface Module; you manage the module by connecting to the primary GEN Switch Fabric Module backplane ports that correspond to where you have installed the Gigabit Ethernet Interface Module in the chassis. To learn how GEN Switch Fabric Module backplane ports are assigned to chassis slots, see Table 1, Table 2, and Table 3 earlier in this guide.

To manage Gigabit Ethernet Interface Module ports from the Administration Console:

1 Log in to the EME.

For information about logging in to the EME, see the *CoreBuilder 9000 Enterprise Management Engine User Guide*.

2 At the prompt, enter:

```
connect <slot>.1
```

Where <slot> is the slot number of the module that you want to manage, and the number after the decimal point is a subslot number (which is always 1).

Because you manage the Gigabit Ethernet Interface Module through the GEN Switch Fabric Module, you always connect to slot 7 in the CoreBuilder 9000 7-slot chassis, slot 7 or slot 8 (if a redundant switch fabric module is installed) in the CoreBuilder 9000 8-slot chassis, and to slot 8 or slot 9 (if a redundant switch fabric module is installed) in the CoreBuilder 9000 16-slot chassis.

This command connects you to the primary GEN Switch Fabric Module, and the Administration Console displays the top-level menu prompt.

3 To manage a Gigabit Ethernet Interface Module port, enter commands for the corresponding backplane port on the primary GEN Switch Fabric Module.

For information about Administration Console module commands, see the *Command Reference Guide*.

Web Management Access

Web Management applications are an embedded part of the CoreBuilder 9000 system software image. They include WebConsole, DeviceView, and Performance monitoring tools. Also available is a Help system. After you have set up the IP address for your CoreBuilder 9000 system, you can access the Web Management applications directly by entering its IP address in your Web browser.

See the *Web Management User Guide for the CoreBuilder 9000 Enterprise Switch* for additional information about Web Management.

Specifications The following tables list specifications for the Gigabit Ethernet Interface Module (3CB9LG4):

Environmental Requirements

Operating temperature	0 to 50 °C (32 to 122 °F)
Operating humidity	10% to 90% relative humidity, noncondensing
Storage temperature	-30 to 70 °C (-22 to 158 °F)
Storage humidity	10% to 95% relative humidity, noncondensing

Physical Specifications

Dimensions	Weight
25.4 mm x 340.36 mm x 388.112 mm (1 in. x 13.4 in. x 15.28 in.)	1.04 kg (2.3 lb)

Power Specifications

Voltage	Wattage
+5.2 V	5 W
+3.5 V	10 W
+12 V	3 W

Total Wattage = 18 W

Regulatory Compliance

Safety

- CSA 22.2 No. 950
- EN60950
- IEC950
- UL1950

Emissions

- FCC 47 CFR Part 15 Class A
- ICES003 Class A
- VCCI Class 1
- EN55022 Class A
- EN50082-1
- AS3548
- CISPR 22 Class A

Related CoreBuilder 9000 Documents

For detailed information about using and managing your GEN Interface Module, see the following documents:

- *CoreBuilder 9000 Implementation Guide*
- *Command Reference Guide*
- *CoreBuilder 9000 Enterprise Management Engine User Guide*
- *Web Management User Guide for the CoreBuilder 9000 Enterprise Switch*

To obtain the software code installation procedure as well as known problem information for your GEN Interface Module, see the *CoreBuilder 9000 Release Notes for Gigabit Ethernet (GEN) Switch Fabric Modules and GEN Interface Modules*.

For information about installing and powering on the system, see the following documents:

- *CoreBuilder 9000 Enterprise Switch Getting Started Guide*
- *7-Slot Chassis Quick Installation Guide for the CoreBuilder 9000 Enterprise Switch*
- *7-Slot Chassis Power Supply Installation Guide for the CoreBuilder 9000 Enterprise Switch*
- *Chassis Quick Installation Guide for the CoreBuilder 9000 Enterprise Switch 8-slot Chassis and 16-slot Chassis*
- *Power Supply Installation Guide for the CoreBuilder 9000 Enterprise Switch 8-slot Chassis and 16-slot Chassis*

You can view and print these and other CoreBuilder 9000 documents from the:

- 3Com Web site
<http://support.3com.com/nav/switches.htm>
- *CoreBuilder 9000 Documentation CD-ROM*
The Documentation CD-ROM is included in each chassis shipping box. You can also order copies separately using order number 3CB9DB.

3Com Corporation LIMITED WARRANTY

4-Port GBIC Gigabit Ethernet Interface Module (3CB9LG4) for the CoreBuilder® 9000 Enterprise Switch

HARDWARE

3Com warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for one (1) year from the date of purchase from 3Com or its authorized reseller.

3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, 3Com may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of 3Com. Replacement products may be new or reconditioned. 3Com warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

SOFTWARE

3Com warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from 3Com or its authorized reseller. 3Com warrants the media containing software against failure during the warranty period. No updates are provided. 3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable 3Com published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. 3Com makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third-party products listed in the 3Com software product documentation or specifications as being compatible, 3Com will make reasonable efforts to provide compatibility, except where the noncompatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with 3Com's published specifications or user manual.

THIS 3COM PRODUCT MAY INCLUDE OR BE BUNDLED WITH THIRD-PARTY SOFTWARE, THE USE OF WHICH IS GOVERNED BY A SEPARATE END-USER LICENSE AGREEMENT. THIS 3COM WARRANTY DOES NOT APPLY TO SUCH THIRD-PARTY SOFTWARE. FOR THE APPLICABLE WARRANTY, PLEASE REFER TO THE END-USER LICENSE AGREEMENT GOVERNING THE USE OF SUCH SOFTWARE.

YEAR 2000 WARRANTY

In addition to the Hardware Warranty and Software Warranty stated above, 3Com warrants that each product sold or licensed to Customer on and after January 1, 1998, that is date sensitive will continue performing properly with regard to such date data on and after January 1, 2000, provided that all other products used by Customer in connection or combination with the 3Com product, including hardware, software, and firmware, accurately exchange date data with the 3Com product, with the exception of those products identified at 3Com's Web site, <http://www.3com.com/products/yr2000.html>, as not meeting this standard. If it appears that any product that is stated to meet this standard does not perform properly with regard to such date data on and after January 1, 2000, and Customer notifies 3Com before the later of April 1, 2000, or ninety (90) days after purchase of the product from 3Com or its authorized reseller, 3Com shall, at its option and expense, provide a software update which would effect the proper performance of such product, repair such product, deliver to Customer an equivalent product to replace such product, or, if none of the foregoing is feasible, refund to Customer the purchase price paid for such product.

Any software update or replaced or repaired product will carry a Year 2000 Warranty for ninety (90) days after purchase or until April 1, 2000, whichever is later.

OBTAINING WARRANTY SERVICE

Customer must contact a 3Com Corporate Service Center or an Authorized 3Com Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from 3Com or its authorized reseller may be required. Products returned to 3Com's Corporate Service Center must be preauthorized by 3Com with a Return Material Authorization (RMA) number or User Service Order (USO) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. Responsibility for loss or damage does not transfer to 3Com until the returned item is received by 3Com. The repaired or replaced item will be shipped to Customer, at 3Com's expense, not later than thirty (30) days after 3Com receives the defective product.

3Com shall not be responsible for any software, firmware, information, or memory data of Customer contained in, stored on, or integrated with any products returned to 3Com for repair, whether under warranty or not.

Dead- or Defective-on-Arrival. In the event a product completely fails to function or exhibits a defect in materials or workmanship within the first forty-eight (48) hours of installation but no later than thirty (30) days after the date of purchase, and this is verified by 3Com, it will be considered dead- or defective-on-arrival (DOA) and a replacement shall be provided by advance replacement. The replacement product will normally be shipped not later than three (3) business days after 3Com's verification of the DOA product, but may be delayed due to export or import procedures. The shipment of advance replacement products is subject to local legal requirements and may not be available in all locations. When an advance replacement is provided and Customer fails to return the original product to 3Com within fifteen (15) days after shipment of the replacement, 3Com will charge Customer for the replacement product, at list price.

Advance Replacement is provided for ninety (90) days, after which time it may be available for a specified fee. 3Com will make commercially reasonable efforts to ship the replacement product not later than five (5) business days after receiving the request for advance replacement, but may be delayed due to product availability or export or import procedures. The shipment of advance replacement products is subject to local legal requirements and may not be available in all locations. When an advance replacement is provided and Customer fails to return the original product to 3Com within fifteen (15) days after shipment of the replacement, 3Com will charge Customer for the replacement, at list price. This advance replacement is different from the fee-based Advance Hardware Replacement Service, which is available as a contracted service offering.

INCLUDED SERVICES:

Telephone Support, with coverage for basic troubleshooting only, will be provided for ninety (90) days from the date of purchase, on a commercially reasonable efforts basis. Please refer to the Technical Support appendix in the Getting Started Guide for telephone numbers.

3Com's Web and Bulletin Board Services provide 3Knowledgebase, bug tracking, documentation, release notes, and some software maintenance releases at no charge.

WARRANTIES EXCLUSIVE

IF A 3COM PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY FOR BREACH OF THAT WARRANTY SHALL BE REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT 3COM'S OPTION. TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, TERMS, OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS, OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NONINFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. 3COM NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, OR USE OF ITS PRODUCTS.

3COM SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT OR MALFUNCTION IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLIGENCE, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO OPEN, REPAIR, OR MODIFY THE PRODUCT, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, POWER CUTS OR OUTAGES, OTHER HAZARDS, OR ACTS OF GOD.

LIMITATION OF LIABILITY

TO THE FULL EXTENT ALLOWED BY LAW, 3COM ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCTS, EVEN IF 3COM OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT 3COM'S OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

DISCLAIMER

Some countries, states, or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers, or the limitation of liability for personal injury, so the above limitations and exclusions may be limited in their application to you. When the implied warranties are not allowed to be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This warranty gives you specific legal rights which may vary depending on local law.

GOVERNING LAW

This Limited Warranty shall be governed by the laws of the State of California, U.S.A., excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.

3Com Corporation, 5400 Bayfront Plaza, P.O. Box 58145, Santa Clara, CA 95052-8145 (408) 326-5000

EMISSIONS COMPLIANCE STATEMENTS FOR CLASS A PRODUCTS

- Federal Communications Commission Notice This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.
- Canadian Emissions Requirements This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.
- VCCI Class A Compliance

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

EMC DIRECTIVE STATEMENT

- EMC Directive Compliance This equipment was tested and found to conform to the Council Directive 89/336/EEC for electromagnetic compatibility. Conformity with this Directive is based upon compliance with the following harmonized standards:
- | | |
|------------|---|
| EN 55022 | Limits and Methods of Measurement of Radio Interference |
| EN 50082-1 | Electromagnetic Compatibility Generic Immunity Standard:
Residential, Commercial, and Light Industry |

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case you may be required to take adequate measures.

LOW VOLTAGE DIRECTIVE STATEMENT

- Low Voltage Directive Compliance This equipment was tested and found to conform to the Council Directive 72/23/EEC for safety of electrical equipment. Conformity with this Directive is based upon compliance with the following harmonized standard:
- | | |
|----------|--|
| EN 60950 | Safety of Information Technology Equipment |
|----------|--|

GENERAL APPROVAL STATEMENT FOR UK

- UK General Approval Statement This equipment is manufactured to the international Safety Standard EN60950 and is approved in the UK under the General Approval Number NS/G/12345/J/100003 for indirect connection to the public telecommunication network.

AUSTRALIAN EMC FRAMEWORKS STATEMENT

- Australian EMC Frameworks Compliance This product conforms to the EMC Frameworks and meets the Class A limits of AS3548.

3Com Corporation
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Santa Clara, California
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