



2-Port 1000BASE-SX and 2-Port 1000BASE-LX Gigabit Ethernet Interface Modules Quick Start Guide

For the CoreBuilder™ 9000 Enterprise Switch

Interface Modules Description

The 1000BASE-SX and 1000BASE-LX Gigabit Ethernet (GEN) Interface Modules are 2-port interface modules for the CoreBuilder™ 9000 Enterprise Switch. These GEN Interface Modules serve as a 2-Gigabit data channel between the Gigabit Ethernet Switch Fabric Module and other IEEE 802.3z-compliant Gigabit Ethernet devices.

Key Features

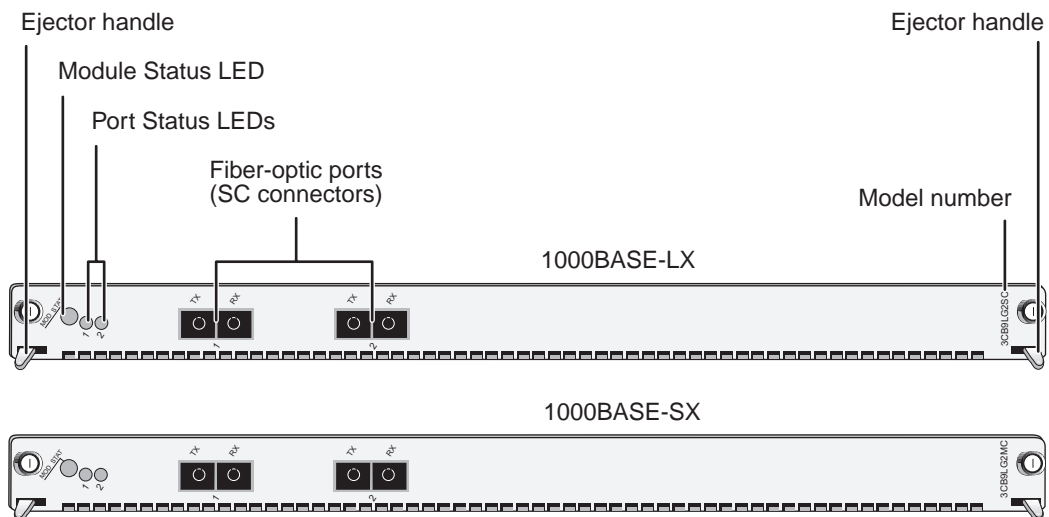
The GEN Interface Modules support the following key features:

- Two front panel IEEE 802.3z-compliant Gigabit Ethernet fiber-optic ports that connect to a dedicated, non-blocking, redundant Gigabit Ethernet backplane channel
- 850nm multimode support on the 1000BASE-SX GEN Interface Module
- 1300nm single-mode support on the 1000BASE-LX GEN Interface Module
- Management using the CoreBuilder 9000 Administration Console (a command line interface) or Simple Network Management Protocol (SNMP) applications by connecting through the Gigabit Ethernet Switch Fabric Module

As shown in Figure 1, GEN Interface Modules are available in two models:

- 1000BASE-LX (order number 3CB9LG2SC). Ports on this module use a 1300-nanometer, multimode/single-mode, optical transceivers (colored blue) and SC connectors.
- 1000BASE-SX (order number 3CB9LG2MC). Ports on this module use an 850-nanometer, multimode, optical transceivers (colored black) and SC connectors.

Figure 1 Front Panels of the GEN Interface Modules



Each GEN Interface Module has two ports on the front (see Figure 1) as well as two ports on the rear of the module (not shown in Figure 1) that connect to the chassis backplane. Because the front ports have a pass-through function to the rear ports, they share port numbers 1 and 2 with the rear ports.

In the 16-slot chassis, you install modules vertically with the LEDs at the top. In the 7-slot chassis, you install modules horizontally, as shown in Figure 1.

Audience Description This guide is intended for *trained technical personnel* only. Do not attempt to install, remove, or replace a CoreBuilder 9000 GEN Interface Module if you have not had the proper training from 3Com. For training information, call 1-800-NET-3COM.

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 GEN Interface Module.



WARNING: Hazardous energy exists within the CoreBuilder system. Use extreme caution when you install, remove, or replace a GEN Interface Module.

When the system is on, never insert metal objects such as a screwdriver or a finger with jewelry into open module slots.

When the system is on, do not touch any connections within the chassis with your hands or fingers. Do not insert metal objects into the backplane.



WARNING: To ensure optical safety when installing GEN 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 GEN 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 GEN Interface Module, ensuring that the strap makes good skin contact.
- Keep the GEN Interface Module in its antistatic bag until you are ready to install it.

Handling Precautions

When you handle a GEN 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.
- To slide the module into the 16-slot chassis, match the upper and lower module guides; in the 7-slot chassis, match the left and right module guides.

Unpacking Instructions

Use the following procedure when you unpack a GEN Interface Module:

- 1 Verify that the GEN Interface Module is the correct product by matching the order number that is listed on the shipping box label to the order number that is listed on your sales invoice (3CB9LG2MC or 3CB9LG2SC).
- 2 Remove the module, in its antistatic bag, from the shipping box.
- 3 Ensure that the box also contains:
 - *CoreBuilder 9000 GEN Switch Fabric and GEN Interface Modules Release Notes*
 - *2-Port 1000BASE-SX and 2-Port 1000BASE-LX Gigabit Ethernet Interface Modules Quick Start Guide for the CoreBuilder 9000 Enterprise Switch* (this guide)

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



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

- 4 Remove the GEN Interface 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 supplier.

Installation Prerequisites

Before you install a GEN Interface Module, make sure that the CoreBuilder 9000 chassis is properly installed in a rack, on a table, or on a shelf, according to the instructions in the *CoreBuilder 9000 Enterprise Switch Getting Started Guide* and the *16-Slot Chassis Quick Installation Guide* or *7-Slot Chassis Quick Installation Guide*.

You need a flat-blade screwdriver to complete the module installation.

Order of Installation Activities

3Com recommends that you install CoreBuilder 9000 modules in the following order:

1 Management Modules

One Enterprise Management Engine (EME) is required (order number 3CB9EME). A second EME or an Enterprise Management Controller (EMC) is optional (order number 3CB9EMC). By installing the management modules first, you can complete the required system-level setup procedures before you add other modules to the chassis. For more information, see the following documents:

- *Enterprise Management Engine User Guide*
- *Enterprise Management Engine Quick Start Guide*
- *Enterprise Management Controller Quick Start Guide*

2 Switch Fabric Modules

Because you manage a GEN Interface Module through the primary GEN Switch Fabric Module, you must install one GEN Switch Fabric Module first. In the 16-slot chassis, a second GEN Switch Fabric Module is optional. See the *Gigabit Ethernet Switch Fabric Module Quick Start Guide* for more information.

3 Interface Modules

Install all interface modules, such as the 2-port 1000BASE-SX GEN Interface Module, the 2-port 1000BASE-LX GEN Interface Module, or the 36-port 10/100BASE-TX Fast Ethernet RJ-45 Layer 2 Switching Module, last. You can install interface modules in any order, but see your module documentation for chassis slot restrictions and recommendations. For restrictions and recommendations for the GEN Interface Modules, see “Module Placement in the Chassis” next in this guide.

Module Placement in the Chassis

Note the following chassis slot restrictions and recommendations when you choose a chassis slot for a GEN Interface Module.

In the CoreBuilder 9000 7-slot chassis:

- Do not install the module in slot 7. This slot is reserved for a GEN Switch Fabric Module.
- Install the module in slot 1, 2, 3, 4, 5, or 6.

In a CoreBuilder 9000 16-slot chassis:

- Do not install the module in slot 8 or 9. These slots are reserved for GEN Switch Fabric Modules.
- To optimize backplane performance, install the module in slot 1, 2, 3, 4, 5, 6, 7, 10, 11, or 12.
- 3Com recommends that you do not install the module in slot 13, 14, 15, or 16, because these slots only have one connection to the backplane and the GEN Switch Fabric Modules (see Table 2). If you install a GEN Interface Module into one of these slots, you can only use one of the module's front panel ports. The GEN Switch Fabric Module automatically disables the second port.

Table 1 and Table 2 list the relationship between the 24 Gbps Gigabit Ethernet (GEN) Switch Fabric Module (3CB9FG24) and the interface module slots in the 7-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 GEN SFM* and the 2-port GEN Interface Module to the 7-slot Chassis

Chassis Slot Number	Number of SFM Backplane Ports Allocated to Slot	2-port GEN Interface Module Port Numbers	SFM Backplane Port Numbers Assigned to Chassis Slot	SFM LED Numbers Assigned to Backplane Port Numbers
1	4; only 2 are accessed by this module	1 2	1 2	1 2
2	4; only 2 are accessed by this module	1 2	5 6	3 4
3	4; only 2 are accessed by this module	1 2	9 10	5 6
4	4; only 2 are accessed by this module	1 2	13 14	7 8
5	4; only 2 are accessed by this module	1 2	17 18	9 10
6	4; only 2 are accessed by this module	1 2	21 22	11 12
7	Reserved for an SFM	Not applicable	Not applicable	Not applicable

* SFM = Switch Fabric Module

Table 2 Mapping the GEN SFM* and the 2-port GEN Interface Module to the 16-slot Chassis

Chassis Slot Number	Number of SFM Backplane Ports Allocated to Slot	2-port GEN 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

* SFM = Switch Fabric Module

Installing the GEN Interface Module

Follow this procedure to install a GEN 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, because you may need to cover an empty slot in the future. Empty slots must be covered to ensure proper air flow and cooling 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 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. See Figure 3.



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

- 6 Slide the module into the chassis by pushing firmly at the two ends of the front panel near the ejector handles.



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 GEN Interface Module in the 7-Slot Chassis

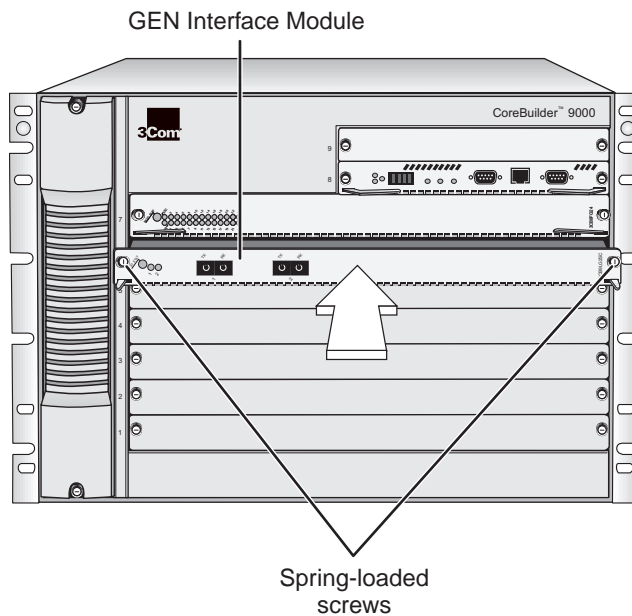
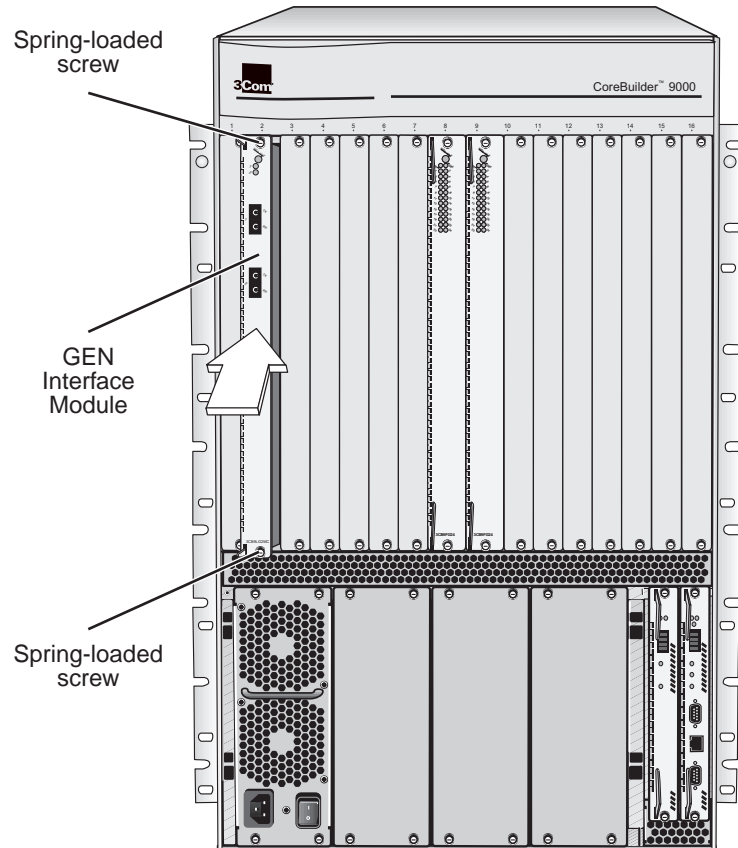


Figure 3 Installing the GEN Interface Module in the 16-Slot Chassis

- 7 To engage the module connectors and the chassis backplane connectors, apply forward pressure to the module front panel.

You feel a slight resistance as the connectors engage.



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

If modules are already installed to the left of this module in a 16-slot chassis or installed beneath this module in a 7-slot chassis, you may need to apply sideways or downward pressure on that adjacent module to have your module line up correctly in its slot. Applying this pressure compresses the thin strip of rubber-like material (which exists for electromagnetic interference purposes) at the edge of the front panel of the adjacent module.

- 8 Ensure that the module remains fully seated in the backplane connectors while you close the ejector handles.

Use one hand to hold the module in place, and use your other hand to close one ejector handle at a time until the handles are parallel with the front panel.

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



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

Verifying Module Operation

The GEN Interface Modules each have one Module Status LED and two 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 3.

Table 3 Module and Port Status LED Indicators

LED	State and Color	Description
Module Status	Green	Power is on (normal operation).
	Off	No power.
Port Status	Green	Port is enabled and link is up.
	Flashing Green	<ul style="list-style-type: none">■ Port is receiving or transmitting packets.■ Port is cabled but the switch fabric module is down or unavailable.
	Off	Link is disabled or port is not cabled.

Managing the Module

You configure and manage the front panel ports on the GEN 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 command prompt, you do not connect directly to a GEN Interface Module; you manage GEN Interface Modules by connecting to the primary GEN Switch Fabric Module backplane ports that correspond to where you have installed the GEN Interface Module in the chassis. To learn how GEN Switch Fabric Module backplane ports are assigned to chassis slots, see Table 1 and Table 2 earlier in this guide.

To manage GEN 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 (the subslot number is always 1).

Because you manage the GEN Interface Modules through the GEN Switch Fabric Module, you always connect to slot 7 in the CoreBuilder 9000 7-slot chassis and to slot 8 or slot 9 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 GEN Interface Module port, enter commands for the corresponding backplane port on the primary GEN Switch Fabric Module.

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

Specifications The following tables list specifications for the GEN Interface Modules:

1000BASE-SX (3CB9LG2MC) Module Cabling Requirements

Fiber Type	Modal Bandwidth (MHz•km)	Segment Length
62.5/125 microns MMF	160	Up to 220 m (722 ft)
62.5/125 microns MMF	200	Up to 275 m (902 ft)
50/125 microns MMF	400	Up to 500 m (1,640 ft)
50/125 microns MMF	500	Up to 550 m (1,804 ft)
10/125 microns SMF	Not applicable	Not supported

1000BASE-LX (3CB9LG2SC) Module Cabling Requirements

Fiber Type	Modal Bandwidth (MHz•km)	Segment Length
62.5/125 microns MMF	500	Up to 550 m (1,804 ft)
50/125 microns MMF	400	Up to 550 m (1,804 ft)
50/125 microns MMF	500	Up to 550 m (1,804 ft)
10/125 microns SMF	Not applicable	Up to 5 km (16,404 ft)



Due to the dual media (single-mode and multimode) support of the 1000BASE-LX module, an offset-launch mode-conditioning patch cord assembly is required to meet the specifications for multimode (MMF) operation. This patch cord is not required for single mode (SMF) operation. Patch cords come in various lengths and can be ordered from Siecor Operations (800-743-2675, fax: 828-327-5973). The following table lists the part number information:

Patch Cord Cable

Assembly Part Number	Description
39575802KMCXXXM*	Mode-conditioning patch cord for 62.5 micron cables
39575802CMCXXXM*	Mode-conditioning patch cord for 50 micron cables

* XXX = the length of the cable in meters.

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

Module	Dimensions	Weight
1000BASE-SX (3CB9LG2MC)	2.54 cm x 38.81 cm x 33.50 cm 1 in. x 15.28 in. x 13.19 in.	1.81 kg 4.85 lb
1000BASE-LX (3CB9LG2SC)	2.54 cm x 38.81 cm x 33.50 cm 1 in. x 15.28 in. x 13.19 in.	1.81 kg 4.85 lb

Power Specifications

Voltage	Minimum	Maximum	Current
+5 V	4.75 V	5.25 V	1 A
+3.3 V	3.14 V	3.47 V	4.54 A
+12 V	11.4 V	12.6 V	0.125 A

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 GEN Interface Modules, see the following documents:

- *CoreBuilder 9000 Implementation Guide*
- *Command Reference Guide*
- *CoreBuilder 9000 Enterprise Management Engine User Guide*

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

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

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

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 CoreBuilder 9000 Documentation CD-ROM is included when you order a CoreBuilder 9000 Starter Kit (order number 3CB9PG1 or 3CB9PG2). You can also order the CD-ROM separately (order number 3CB9DB).

3Com Corporation LIMITED WARRANTY

The duration of the warranty for the CoreBuilder™ 9000 1000BASE-SX (3CB9LG2MC) and 1000BASE-LX (3CB9LG2SC) Gigabit Ethernet Interface Modules is 1 year.

HARDWARE

3Com warrants its hardware products to be free from defects in workmanship and materials, under normal use and service, for the following lengths of time from the date of purchase from 3Com or its authorized reseller:

Network Interface Cards	Lifetime
Other hardware products *unless otherwise specified above	1 year*
Spare parts and spares kits	90 days

If a product does not operate as warranted above during the applicable warranty period, 3Com shall, at its option and expense, repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or 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. Any replaced or repaired product or part has a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

SOFTWARE

3Com warrants that the software programs licensed from it will perform in substantial conformance to the program specifications therefor 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 with respect to this express warranty shall be (at 3Com's discretion) to refund the purchase price paid by Customer for any defective software products, 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 non-compatibility is caused by a "bug" or defect in the third party's product.

YEAR 2000 WARRANTY

In addition to the Hardware Products Warranty and Software Products Warranty identified above, 3Com warrants that all Heritage 3Com products sold or licensed to Customer on and after January 1, 1998 that are 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 products, including hardware, software, and firmware, accurately exchange date data with the 3Com products, with the exception of those products identified at 3Com's Web site, <http://www.3com.com/products/yr2000.html>, as not meeting this standard. A product is considered a "Heritage 3Com product" if it is a member of a product family which was manufactured by 3Com prior to its merger with US Robotics Corporation. This Year 2000 limited warranty does not apply to Heritage US Robotics Corporation products. If it appears that any such product 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 or until April 1, 2000, whichever is later.

OBTAINING WARRANTY SERVICE

Customer must contact 3Com's Corporate Service Center or an Authorized 3Com Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase may be required. Products returned to 3Com's Corporate Service Center must be pre-authorized by 3Com with a Return Material Authorization (RMA) 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. The repaired or replaced item will be shipped to Customer, at 3Com's expense, not later than thirty (30) days after receipt of the defective product by 3Com.

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. When an advance replacement is provided and Customer fails to return the defective product to 3Com within fifteen (15) days after shipment of the replacement, 3Com will charge Customer for the replacement product, at list price.

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.

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, AND SATISFACTORY QUALITY. 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 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 REPAIR OR MODIFY, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, OR OTHER HAZARD.

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.

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 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
5400 Bayfront Plaza
Santa Clara, California
95052-8145**

Copyright © 1998, 3Com Corporation. All rights reserved. No part of this documentation may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from 3Com Corporation.

3Com Corporation reserves the right to revise this documentation and to make changes in content from time to time without obligation on the part of 3Com Corporation to provide notification of such revision or change.

3Com Corporation provides this documentation without warranty, term, or condition of any kind, either implied or expressed, including, but not limited to, the implied warranties, terms, or conditions of merchantability, satisfactory quality, and fitness for a particular purpose. 3Com may make improvements or changes in the product(s) and/or the program(s) described in this documentation at any time.

Unless otherwise indicated, 3Com registered trademarks are registered in the United States and may or may not be registered in other countries.

3Com and the 3Com logo are registered trademarks of 3Com Corporation. CoreBuilder is a trademark of 3Com Corporation.

Adobe, Acrobat, and Acrobat Reader are registered trademarks of Adobe Systems Incorporated.

All other company and product names may be trademarks of the respective companies with which they are associated.

3Com Corporation, 5400 Bayfront Plaza, Santa Clara, CA 95052-8145 (408) 326-5000

Part No. 10011897

Published December 1998