

## Lifetime Limited Warranty

The duration of the warranty for the 100BASE-FX Distance Extender Module (3C16684) is lifetime.

Advance hardware exchange is available during the first year from your date of purchase in accordance with 3Com's standard terms and conditions for such service. After the first year, the warranty reverts to 3Com's standard lifetime limited warranty.

To qualify for the lifetime limited warranty and the advance hardware exchange, you must submit the appropriate product warranty registration card to 3Com, otherwise this product will be warranted for a period of one (1) year without advance hardware exchange.

**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:

<b>Network adapters:</b>	Lifetime
<b>Other hardware products:</b>	One year unless otherwise specified above
<b>Spare parts and spare kits:</b>	90 days

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# 100BASE-FX DISTANCE EXTENDER MODULE USER GUIDE

## 100BASE-FX Distance Extender Module

The 100BASE-FX Distance Extender Module (3C16684) is designed for use with 3Com's SuperStack® II Dual Speed Hub 500 12- and 24-port versions (3C16610 and 3C16611) units.

When installed in a Dual Speed Hub 500 unit, the Module provides a single 100Mbps Fast Ethernet fiber 802.1D bridged port supporting either full (FD) or half (HD) duplex modes. You can use this port to provide a high-speed long distance (up to 2Km using FD mode) connection to another segment of your network infrastructure, or to a local server or endstation.

The Module also enables you to overcome the Fast Ethernet network design limitations by forming chains of almost limitless numbers of hubs; each fiber link being up to 2Km long.

Examples of network configurations and more information about Fast Ethernet configuration rules can be found in the hub's user guide.

When the Module is fitted in a managed Dual Speed Hub 500 unit, it can provide traffic statistics, link status and duplex mode. You may also enable and disable the port.

## Technical Specification

Forwarding Rate: 148,800 frames per second.

Forwarding Mode: fragment-free.

Operating temperature: 0–50°C (32–122°F).

Humidity: 0–95% non-condensing.

Power consumption: 5W maximum.

The Module is VLAN and LSA compatible. It filters all frames smaller than 64 bytes in size. Frames greater than 1522 bytes are forwarded, unless there is traffic congestion, when they are rejected. It forwards all other traffic, such as normal traffic and multicast frames. No address filtering is performed.

## Standards

<b>Functional</b>	ISO/IEC 8802-3 IEEE 802.1D
<b>Safety</b>	UL 1950 EN 60950 EN 60825-1 CSA 22.2 #950
<b>Environmental</b>	EN 60068
<b>EMC</b>	EN55022 Class B FCC Part 15 Class A ICES-003 Class A EN50082-1 AS/NZS 3548 Class B VCCI Class B

## Electromagnetic Compatibility

### FCC Statement:

This equipment has been tested with a Class A computing device and has been found to comply with part 15 of FCC Rules. Operation in a residential area may cause unacceptable interference to radio and TV receptions requiring the operator to take whatever steps are necessary to correct the interference.

### CSA Statement:

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.

## Handling the Module

**⚠ CAUTION:** *The Module can easily be damaged by electrostatic discharge.*

To prevent damage, please observe the following:

- Do not remove the Module from its packaging until you are ready to install it into the hub.
- Do not touch any of the pins, connections or components on the Module.
- Handle the Module only by its edges and front panel.
- Always wear an anti-static wristband connected to a suitable earth point.
- Always store or transport modules in appropriate anti-static packaging.

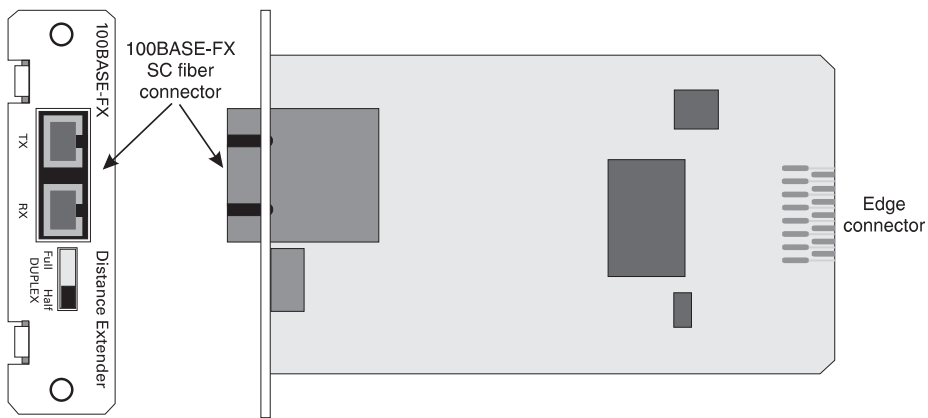


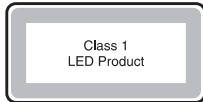
Figure 1 100BASE-FX Distance Extender Module

### Important Safety Information

**WARNING:** Installation and removal of the Module must be carried out by qualified personnel only. Before installing the Module into a hub, you must first disconnect the hub from the mains power supply. For full safety instructions, refer to the user guide that accompanies the hub.

**WARNING: Fiber Optic ports – Optical Safety**

Never look at the transmit LED/laser through a magnifying device while it is powered on. Never look directly at the fiber TX port and fiber cable ends when they are powered on.



### Wichtige Sicherheitsinformationen

**WARNING:** Die Installation und der Ausbau des Moduls darf nur durch Fachpersonal erfolgen. Vor dem Installieren des Moduls in einem Gerät muß zuerst der Netzstecker des Geräts abgezogen werden. Vollständige Sicherheitsanweisungen sind dem Benutzerhandbuch des Geräts zu entnehmen.

**WARNING: Faseroptikanschlüsse – Optische Sicherheit.**

Niemals mit einem Vergrößerungsgerät ein Übertragungs-LED/Laser betrachten, während dieses eingeschaltet ist. Niemals direkt auf den Faser-TX-Anschluß und auf die Faserkabelenden schauen, während diese eingeschaltet sind.



### L'information de Sécurité Importante

**AVERTISSEMENT:** Confiez l'installation et la dépose de ce module à un personnel qualifié. Avant d'installer ce module dans un groupe, vous devez au préalable débrancher ce groupe de l'alimentation secteur. Pour prendre connaissance des consignes complètes de sécurité, consultez le guide utilisateur qui accompagne ce groupe.

**AVERTISSEMENT: Ports pour fibres optiques – sécurité sur le plan optique.**

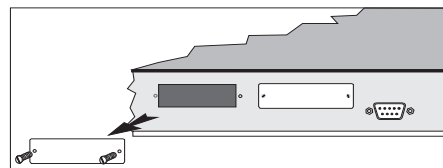
Ne regardez jamais le voyant (DEL) d'émission/le laser en utilisant un dispositif d'agrandissement, tant qu'il est sous tension. Ne regardez jamais directement le port TX (Transmission) à fibres optiques et les embouts de câbles à fibres optiques tant qu'ils sont sous tension.



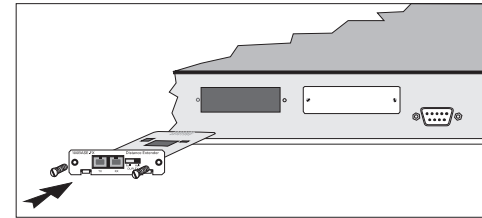
### Installing the Module into a Hub

**CAUTION:** Do not install the Module in unsuitable hubs such as those in the Hub 10, PS Hub, and Hub 100 ranges. Contact your supplier for advice if necessary.

- 1 Ensure that the hub is disconnected from the mains power supply, and you are wearing an anti-static wristband connected to a suitable earth point.
- 2 With the hub on a flat surface, remove the screws of one blanking plate from the rear of the hub. Do not remove any other screws from the rear of the hub.



- 3 Keep the blanking plate in a safe place. If you remove the Module, you must replace the blanking plate to prevent dust and debris entering the hub and maintain cooling air circulation.
- 4 Hold the Module so that the text on the front panel is upright, and slide it into the hub, ensuring the edge connector is fully engaged. The front panel of the Module should lie flush against the rear panel of the hub. Fix the front panel of the Module to the hub using the two screws from the blanking plate.



- 5 Power up the hub.
- 6 Check the LEDs on the hub to ensure that the Module is operating correctly.

### Connecting the Module

- 1 Remove the protective plastic cover from the fiber connector on the Module. Keep the cover and refit it if you unplug the fiber cable from the Module.
- 2 Plug the SC connector on the fiber cable into the fiber socket on the Module.
- 3 Connect the other end of the fiber optic segment to an appropriate device with a 100Mbps Fast Ethernet fiber interface.

The fiber optic segment can be used up to 2Km (6600ft) in length when using full duplex operation. In half duplex (factory setting) mode, this distance is reduced to 412m (1350ft).

### LEDs

LEDs on the front of the hub indicate the Module status. Refer to the user guide that accompanies the Dual Speed Hub 500 unit for a description of the LED behavior.

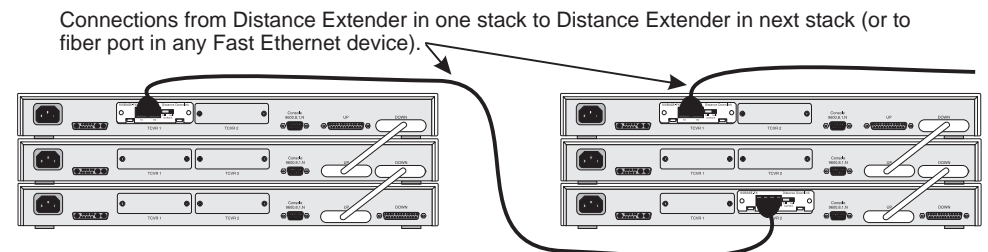


Figure 2 Chaining Dual Speed Hub 500 units with 100BASE-FX Distance Extender Modules

### Duplex Switch

The choice of duplex mode is made with the slide switch on the front of the module. Ensure that the switch is set to the mode you require before connecting any cables. Make sure also that the other device supports the chosen mode.

**▶** When connecting this module to a server, we suggest you use half duplex mode.

### Using the Distance Extender

The Distance Extender will connect to any Fast Ethernet device with a fiber port. If that device supports full duplex operation, the links may be up to 2Km. If not, the distance is 412m.

You can connect two or more Dual Speed Hub 500 units using a Distance Extender at each end of the link to form chains of units or stacks. At full duplex, this gives 2Km for each link. Figure 2 shows the process of chain building.

You may install Distance Extender Modules in any combination of transceiver slots within a Dual Speed Hub 500 stack.

Take care not to create loops in the network.

### Problem Solving

If you suspect a problem, carry out the following checks before contacting your supplier:

- Ensure the hub in which the Module is fitted is powered up.
- Ensure the Module is correctly installed.
- Ensure that the device at the far end of the segment is powered up and operating correctly.
- Try reversing the Tx and Rx connections.
- Check that all connectors on the fiber optic segment are correctly engaged.
- Clean the terminators by wiping them gently with a clean tissue or cotton bud moistened with a little ethanol. Dirty fiber terminators on the fiber optic segment will impair the quality of the light transmitted through the cable.
- Check that the duplex setting at both ends of the link is at the same level.