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Technical Data
HP Fiber–Optic Hub Plus

Product Number
28682A
The HP Fiber–Optic Hub Plus is a multiport, fiber–optic repeater for use in Ethernet and IEEE 802.3 local area networks. It is a ░plug and play▓ 8–port hub that gives you a fully manageable, scalable, and flexible networking solution for 10–Mbit/s fiber–optic connections. The HP Fiber–Optic Hub Plus conforms to the IEEE 802.3 FOIRL standard for fiber–optic inter–repeater links.

The HP Fiber–Optic Hub Plus is well suited to both backbone applications and direct system connections. Choose fiber–optic networking for high data security, noise immunity, long distance, and future expansion. Choose the HP Fiber–Optic Hub Plus for HP reliability and the confidence you need for your network applications.

The HP Fiber–Optic Hub Plus is part of the HP EtherTwist family of network components. These LAN components ¬ hubs, bridges, adapter cards, and transceivers ¬ provide your network with high performance in a low–cost hardware solution. Easily racked together and connected with a thin coaxial cable between their integrated BNC ports, the hubs merge with one another along a virtual extended backplane. This gives you full cardcage–like functionality without the expense and limitations of a cardcage design. Using only a few different hardware components, each designed for optimum price/performance, you can build a network that ranges from a few nodes to thousands.

Features

┤   Provides eight fiber–optic ports using ST connectors. The built–in AUI port can be converted into a ninth fiber–optic port using a fiber–optic transceiver (HP 28683A).
┤   Complies with IEEE 802.3 FOIRL standard.
┤   Supports 10–Mbit/s link speed.

- Supports both 62.5/125 µm and 50/125 µm optical fiber.
- Supports 1 km of fiber–optic cable. Greater distances are possible depending on network configuration.
- Includes BNC and AUI ports for simultaneous connection to both thin coaxial cable and (via transceiver) thick coaxial, fiber–optic, or twisted–pair cable.
- Supports both IEEE 802.3 and Ethernet 1.0 and 2.0 standards.
- Isolates network faults by automatically segmenting ports disturbing the network.
- Includes LEDs for a quick visual check of port status, collisions, activity, and power.
- Provides console (RS–232) port, which allows users to read network statistics and configure ports in the hub. This port connects to a terminal or terminal emulator either directly or via modem.
- Includes diagnostics for checking port functionality and loopback test for trouble–shooting cable problems.
- Is transparent to network operating system software.
- Follows simple design rules for maximum topological flexibility.
- Supports SNMP/IP–based network management. Specifically, the hub can be managed from a centralized network management station on the LAN using HP OpenView Hub Manager (HP 28686D).
- Mounts on wall (flat or on end) or mounts in 19–inch Telco rack with cables facing front or back.

Fiber–Optic LAN Solutions

Networking applications for fiber–optic cabling have evolved from primary uses as a backbone between buildings in a campus setting to include building backbones and, with increasing frequency, direct connection to systems at the desk.

Backbone applications
Acting as an active star repeater, the HP Fiber–Optic Hub Plus is ideal for use in campus or building backbones.

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By supporting eight fiber–optic segments of up to 1 km, backbones from a single hub can span a 2–km distance. To increase the segment count, one more fiber–optic port can be added to the hub by simply plugging an HP Fiber–Optic Transceiver into the AUI port. Alternatively, more hubs can be added by multi–dropping them from a coaxial backbone cable.

System connections

A fiber–optic connection can be made directly to a system through a fiber–optic transceiver (HP 28683A) attached to the AUI port of the system's LAN adapter card. Each fiber–optic port on the HP Fiber–Optic Hub Plus will support one node. The hub's AUI port can be transformed into an additional fiber–optic port by attaching a fiber–optic transceiver. For larger networks, multiple hubs can be multi–dropped or cascaded to increase the port count.

Flexible Cabling

HP's versatile hardware architecture provides the HP Fiber–Optic Hub Plus with flexible connections to both subnets and backbones. You can multi–drop several hubs on a thin coaxial backplane via their ThinLAN (BNC) ports. In addition, you can cascade hubs with fiber–optic cabling using either a direct connection between fiber–optic ports on each hub or using a fiber–optic to AUI connection through a fiber–optic transceiver (HP 28683A).

Maximum Reliability Through Diagnostics and Fault Isolation

To ensure network integrity for critical backbone applications, an HP Fiber–Optic Hub Plus automatically identifies any segment disturbing the network and disconnects it from the rest of the network (autosegmentation). Once the problem is corrected, the hub automatically reconnects the segment.

Visual diagnostic LEDs on the hub aid in troubleshooting the network. Status LEDs indicate power, data activity, faults, and collisions; and port LEDs indicate normally functioning ports. If a port has been autosegmented, its status is communicated via a flashing port LED and a fault LED.

Control of Your Network With Hub Management

The HP Fiber–Optic Hub Plus supports SNMP/IP and can communicate over the LAN with HP OpenView Hub Manager for DOS (HP 28686D). From a single network management station, a network administrator can monitor and control any hub ¬ an HP EtherTwist Hub Plus or an HP Fiber–Optic Hub Plus ¬ on the network. The HP OpenView Bridge Manager product allows similar monitoring and control of HP bridges on the network. These device manager programs continuously update HP OpenView Windows' graphical network map to display the current state of the network and notify the network administrator of network events. Configuring, monitoring, and controlling the entire network is made easy with the HP OpenView network managers.

Basic hub management features are also available through the hub's out–of–band console (RS–232) port either locally or remotely via modem. Management features available through the console port include enabling and disabling of ports, reading of port status and counters, link test, hub reset, loopback test, and Internet protocol (IP) configuration.

Coupled with HP OpenView Resource Manager, HP Fiber–Optic Hubs are capable of providing instrumentation–like functions across your network. This will eliminate the need for a LAN analyzer per segment. HP EASE (Embedded Advanced Sampling Environment) is a breakthrough technology that allows HP EtherTwist devices to do protocol analysis. This will identify top talkers, heavy users, errors, communications pairs.

Specifications

Environmental Characteristics

Operating Temperature:
0ßC to 55ßC (32ßF to 131ßF)
Relative Humidity:
15% to 95% at 40ßC (104ßF) noncondensing

Optical Characteristics for 62.5/125 ▒m Fiber
Wavelength: 820 nm
Optical budget: 10 dB
Transmitter power:
–   12 dBm nominal
–   17 dBm minimum
Receiver sensitivity:
–   30 dBm nominal
–   27 dBm minimum

Optical Characteristics for 50/125 ▒m Fiber
Wavelength: 820 nm
Optical budget: 6 dB
Transmitter power:
–16.5 dBm nominal,
–21 dBm minimum
Receiver sensitivity:
–30 dBm nominal,
–27 dBm minimum

Physical and Electrical Characteristics

Dimensions: 42.55 cm by 23.50 cm by 4.37 cm (16.75 in by 9.25 in by 1.72 in)
Weight: 2.72 kg (6.0 lb)

Power Consumption:

ac Voltage	100–120 V	220–240 V
Current	0.5 A max	0.4 A max
Frequency	50/60 Hz	50/60 Hz

Standards

Communications:
IEEE 802.3 FOIRL
IEEE 802.3 Type 10BASE2

Emissions:
FTZ 1046/84
VCCI Class 1
FCC Part 15 Class A
CISPR–22 Level A

Safety:
UL 1950
IEC 950/EN60950
CSA 220
CSA 950

Radiated Emission Immunity: IEC 801–2.3.4

Warranty

The HP 28682A Fiber–Optic Hub Plus is warranted for one year against defects. Check with your local Hewlett–Packard Sales and Support Office or your Authorized HP LAN Dealer for more information.

Ordering Information

HP 28682A Fiber–Optic Hub Plus