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FCC WARNING

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause interference to radio communications. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

TRADEMARKS

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Revision

This user's manual is for PLANET Ethernet hub model --

EH-802, EH-1602R, EH-3200

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Part No: EM-EH802-2

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Chapter 1 Unpacking Information

Unpacking Information

Carefully unpack the package and check its contents against the checklist given below.

Checklist of 8/16/32 port 10Base-2/5/T Hub/Repeater

- 8-port,16-port,32-port 10BASE-2/5/T Ethernet Hub with internal power supply
- BNC T-type Connector
- Rack-mount Accessory
- Power Cord
- User's Manual

Please inform your dealer immediately for any wrong, missing, or damaged part if possible, retain the carton including the original packing materials, and use them against to repack the product in case there is a need to return it to us for repair.



Chapter 2 General Description

Introduction

The 8/16/32 ports 10Base-2/5/T twisted-pair wiring hub. It conforms to both the IEEE 802.3 repeater specification and the 10Base-2, 10Base-5, 10Base-T standard.

There are 8/16/32 RJ-45 twisted-pair ports for shielded or unshielded twisted-pair wiring, two BNC ports for thin cable, two AUI ports for thick cable (EH-802 with only one BNC, one AUI). Workstations are connected to the station ports using shielded or unshielded twisted-pair wire. One special RJ-45 jack ("plink" port) which is converted from the 8th/16th port for cascading two hub together by using one straight cable.

For 16/32 port hub. The two BNC/AUI ports can be used to connecting two coaxial cable segments, the function just like as two port coaxial cable repeater. Using the switch on the rear panel to select either BNC port or AUI port, i.e. either using BNC port or AUI port.

The product has a complete array of LED lights for monitoring not only the status of each port but also the overall hub condition. The hub combines twisted-pair cabling, thin cable wiring, thick cable wiring, and the flexibility of a star configuration to meet both simple and complex network requirements.

Product Features

- Conforms to IEEE802.3 repeater specification and 10BASE-T standard
- Provides 8/16/32 RJ45 station ports, the 8th/16th port is convertible into "plink" port by using a "Straight Cable" link to another hubs' station port.
- Provides two BNC ports or two AUI ports, these ports' function just like a two-port coaxial cable repeater.
- Provides LED lights for monitoring overall hub condition and individual port status
- A bad port partitioning to protect the network
- For desktop or rack-mounted installation

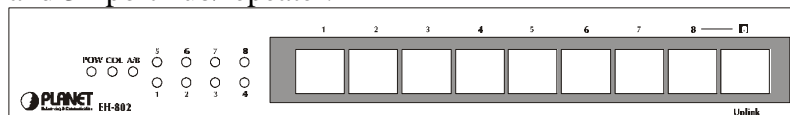
Chapter 3 Before Installation

This section describes the important parts of the 8/16/32 port hub.

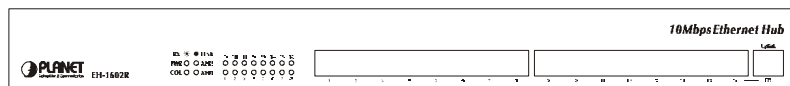
It presents front panel and rear panel drawings of the product showing the LEDs, connectors, and switches.

Front Panel

The following figure shows the front panel of 8-port, 16-port and 32-port hub/repeater.



Front panel of EH-802



Front panel of EH-1602R



Front panel of EH-3200

LEDs Indicator

On the front panel, there are several LED indicators for monitoring the device itself, and the network status. At a quick glance of the front panel, the user would be able to tell if the product is receiving power; if it is monitoring another hub or concentrator; or if a problem exists on the network.

The following describes the function of each LED indicator.

Power LED

Color: Green

Label: PWR

Function: This LED light is located at the left side on the front panel. It will light up(ON) to show that the product is receiving power. Conversely, no light (OFF) means the product is not receiving power.

Port LEDs

Color: Green

Label: No.1 to No.32

Function: Each RJ45 station port on the hub is assigned an LED light for monitoring port "Good Link and Activity". Each LED is normally OFF after the power on operation, but will light up steadily to show "Good Link" and flash to show that transmit and receive signals are passing in and out the hub. The flashing rapidly increases with the network traffic.

BNC/AUI Port LEDs

Color: Green

Label: A1/B1, A2/B2

Function: The BNC1/AUI1 port use the same LED to show the activity of port traffic.

Collision LED

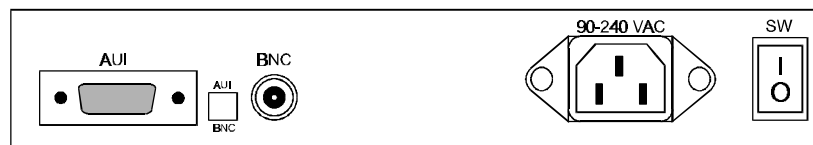
Color: Red

Label: COL

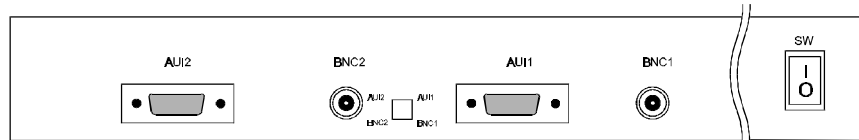
Function: This LED shows the collision and FIFO errors of all Hub.

Rear Panel

On the rear panel there are BNC connector, AUI connector, power cord socket, and power switch. The following describes the function of each connector and switch.



Rear Panel of EH-802



Rear Panel of EH-1602R/EH-3200

BNC Port (10Base-2)

These hubs have a built-in BNC transceiver for connection using thin coaxial cable. The BNC port can link up to 30 hubs on a thin coaxial cable segment. The thin coaxial cable that links the BNC ports may be extended up to 185 meters and have computers of other Ethernet devices attached to it. When connecting two hubs via BNC ports, there should be at least

0.5 meters (about two feet) of coaxial cable between the two BNC ports. If the hub is at the end of an Ethernet cable, plug and lock the 50-ohm terminators to the T-type connector on the BNC port.

AUI Port

The 8/16/32 port hubs also include an AUI trunk port on the rear panel that can be used to expand your network by connection to thick Ethernet cable (10Base-5) or fiber-optic Ethernet cable (10Base-F). Attach an appropriate transceiver directly to the AUI port for fiber-optic connection, or to the backbone itself for thick Ethernet connection. (Connection to thick Ethernet is normally made by running an AUI drop cable from the hub to a 10Base-5 transceiver attached to the backbone.)

Power Cord Socket

Power cord should be plugged into this socket. The power supply accepts AC power equal to 90VAC-240VAC at 50-60Hz.

Power Switch

After plugging the power cord to the inlet socket, use this switch to turn the hub's power to ON or OFF.

Chapter 4 Applications

This section describes the possible network configurations for the product.

Stand-alone Configuration

Connect your workstation to any available RJ-45 port on the hub using shielded or unshielded twisted-pair wire. All end-node devices must be within 100 meters of the connected hub. Using the hub in a stand-alone configuration, you can network up to 16 workstations, depending on the hub model you purchased.

Cascade with another Hub through Straight Cable

Using normal shielded or unshielded twisted-pair wire (Straight Cable), several hubs can be connected in a cascading manner to form a daisy chain configuration. By driving one the end of straight cable to any port (No.1 to No.32) of hub and the other end to another hub's port labeled "Uplink", these two hubs form a daisy chain configuration. A maximum of four hubs can be attached within the path between any two stations.

Note: Straight cable is same as the cable which connects station to hub. That is, user can connect two hubs by straight cable just following the rule described above. The maximum length of straight cable is 100 meter.

Cascade with another Hub through BNC/AUI Port

Using the BNC connector, several hubs can be connected to the backbone thin/thick Ethernet trunk to link a number of computers into a large 10Base-T LAN. The maximum allowable segment length of a thin/thick coaxial trunk is only 185/500 meters. To connect a computer to the hub, use a maximum shielded or unshielded twisted pair wire length of 100 meters.

Multi-media Connection

This configuration combines the use of the repeaters, BNC trunk port and RJ45 port. Hubs can be connected to both backbone coaxial trunks using the BNC connector. Each hub also can be connected to another hub to form a daisy chain configuration using the RJ45 station port and straight cable. Since this configuration requires connection a coaxial trunk, the maximum number of stages in any data path is limited to 4, as specified by the IEEE 802.3 standard.

Power Failure

To prevent costly equipment damage and downtime, please consider installing a surge suppression device or a UPS (Un-interrupted Power Supply).

Chapter 5 Troubleshooting

SYMPTOM: The Link LED is not lit.

SOLUTION: The Link LED is not on after a workstation is connected to the STP/UTP port of the concentrator.

1. Verify if the workstation and the concentrator are powered up.
2. Verify if the network cable has been attached to the workstation.
3. Verify if the network cable from the Hub to workstation is straight-through and is not crossovered.
4. Verify if the wires to the phone jack pins are connected correctly and the connections are not faulty.

SYMPTOM: When port auto-partitioned out.

SOLUTION:

1. Use another Ethernet adapter to verify if the original Ethernet adapter malfunctions.
2. Connect the twisted-pair cable to another concentrator to verify if the twisted-pair cable can work well.

Chapter 6 Product Specifications

Topology	: Tree (Backbone and Stars)
Access Method	: CSMA/CD
Transmission Rate	: 10Mbps
Media Supported	: Shielded or unshielded twisted-pair wire, RG-58A/U cable and thick cable
Connectors supported	: STP RJ45 connector, BNC connector and AUI connector
Number of Ports	: EH-802, 8-port RJ-45/STP, 1-port plink”, 1-port BNC, 1-port AUI EH-1602R, 16-ort RJ-45/STP, 1-port plink”, 2-port BNC, 2-port AUI EH-3200, 32-port RJ-45/STP, 1-port plink”, 2-port BNC, 2-port AUI
Dimension (LxWxHmm):	120 x 212 x 36 (8-port) 120 x 432 x 44 (16/32-port)
Weight	: 0.8 Kg (8-port) 1.9 Kg (16-port) 2.2 Kg (32-port)
Power Supply	: 90-240 VAC, 50-60 Hz, voltage auto-sensing,
Operating Temperature:	0 to 70 degrees Celsius

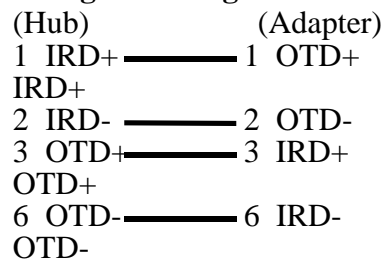
Humidity : Operating 10% to 80%
Storage 5% to 90%
(non-condensing)
Electrical Standards : FCC Rules, Part 15, Class A. EN
55022 (CISPR 22:1985), Class A

Chapter 7 Hub RJ-45 Pin Assignments

Pin	Station Ports 1-16	Uplink Port
1	Input Receive Data +	Output Transmit Data+
2	Input Receive Data -	Output Transmit Data-
3	Output Transmit Data+	Input Receive Data+
6	Output Transmit Data-	Input Receive Data-
4,5,7,8	Not used	Not used

Schematics for both straight and crossover twisted-pair cable are shown below. (Note that crossover cable is only required if you cascade hubs via the RJ-45 station ports; i.e. the Uplink port is not used.)

Straight-Through



Crossover

