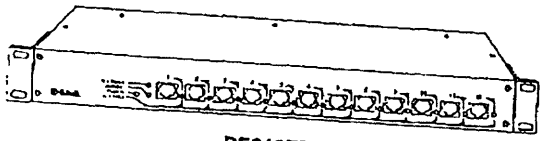
FRO: SUE GREEN

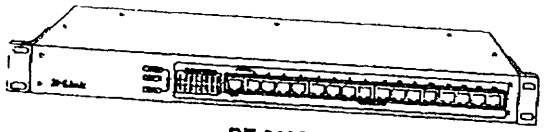
INSTRUCTIONS FOR VIDEK PT Nos 1867 (F.P. No: 129-185)
1868 (F.P. No: 129-197)

About this Guide

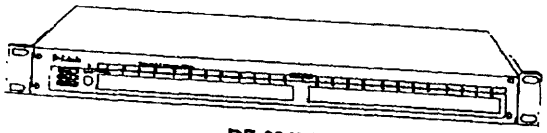
This guide provides instructions for instal-ling all of the products described below. These D-Link® Ethernet Hubs are all Plug and Play compliant for easy installation.



DE812TP+



DE-816TP

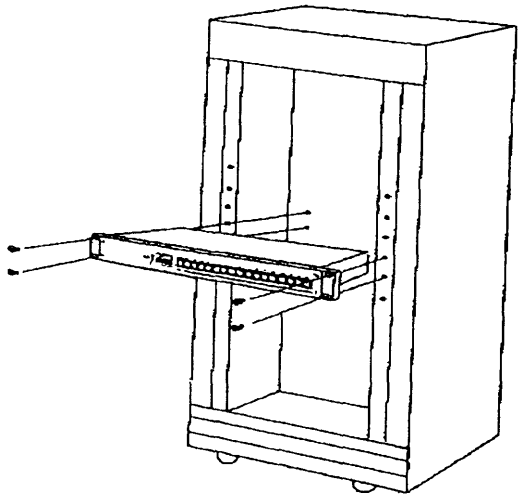


DE-824TP

When designing your cable configuration, it is necessary to strictly observe the Ethernet cabling rules. This manual assumes familiarity with the fundamental Ethernet cabling rules and limits; it only describes the details of cable connection.

Rack Mounting

The Ethernet Hub may stand alone, or may be mounted in a standard 19-inch equip-ment rack. Rack mounting produces an orderly installation when you have a number of related network devices. Use the six supplied screws to fasten the supplied mounting brackets to either end of the hub, then fasten the hub into the rack.



Installing Network Cables

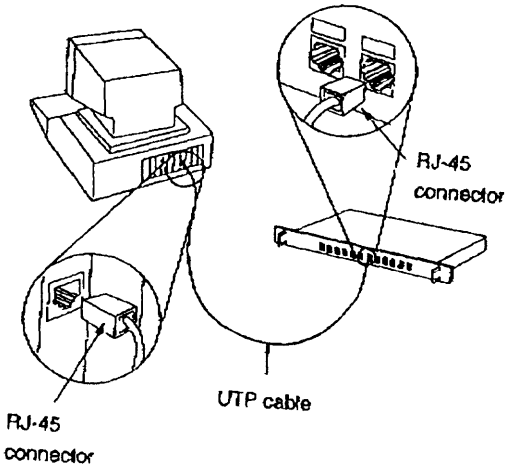
Your Ethernet Hub is denominated as an 12-port, or 16-port, or 24-port Ethernet Hub according to the number of its front-panel 10BaseT ports. Additionally it has two ports whose connectors are on the rear panel: one 10Base2 port (BNC connector), and one 10Base5 port (AUI connector). These two un-numbered rear-panel ports are logically equivalent with the numbered ports on the front panel of the Ethernet Hub.

By using a rear-panel connector of the Ethernet Hub to connect into an existing coaxial network cable, you can add on a star-topology subnet, connected through the Ethernet Hub's numbered front-panel ports. Alternatively, you can connect into an existing star-topology through a front panel port of the Ethernet Hub, and then add on a bus-topology subnet by connecting the subnet bus to a rear-panel connector of the Ethernet Hub (irrespective of any star-topology subnet that may also be supported by the Ethernet Hub's front-panel ports). In either case, the unused rear-panel connector always remains available to connect a second coaxial cable (alternative type of coaxial cable).

When the Ethernet Hub has no coaxial trunk connection, then both of the rear panel connectors remain available for coaxial station-cable connections. It is useful to keep this in mind when you have some station equipment whose adapters have no 10BaseT port (RJ-45 connector), and thus can only be connected to the hub through a coaxial cable.

Station Connections with Twisted-Pair Cable

Connect each station to the Ethernet Hub by means of a twisted-pair straight cable (10BaseT cable, Category 3, 4, or 5). Plug one RJ-45 connector into a front-panel port of the Ethernet Hub, and plug the other RJ-45 connector into the station's Ethernet adapter.



Hub-to-Hub Connections with Twisted-Pair Cable

Hub-to-hub connection between Model DE-812TP+ Ethernet Hubs requires a 10BaseT crossover cable. In making a hub-to-hub

connection involving a Model DE-816TP or Model DE-824 Ethernet Hub, there is the alternative of using a straight cable.

Internal Crossover Features

The Model DE-816TP Ethernet Hub and DE-824TP Ethernet Hub feature internal cross-over alternatives for Port 1:

- **Model DE-816TP Ethernet Hub**

  The port numbered as Port 1 is identical with each of the other numbered ports. But Port 1 is specially equipped with an alternative connector, labeled "Uplink." The Uplink connector is wired to the same conductors as the Port 1 connector, but with certain pin positions interchanged to provide a cross-over, and thus allow use of a straight cable to make a hub-to-hub connection.

  Keep in mind that the Uplink connector is not an independent port. It is only an alternative connector to Port 1, to facilitate hub-to-hub cabling. Port 1 is fully occupied whenever (1) a hub-to-hub connection is made through its Uplink connector, or (2) any kind of connection is made directly through the Port 1 connector

  Below in this manual, the term "Uplink selected" will mean, as to the Model DE-816TP Ethernet Hub in question, that the subject connection is made through the Uplink connector

- **Model DE-824TP Ethernet Hub**

  The connector numbered as Port 1 is equipped with a switch labeled "Uplink" When the Uplink switch is in the "off" (tall) position, the Port 1 connector is wired "straight" to the supporting circuitry, and Port 1 is then identical with each of the twenty-three other numbered ports. When the Uplink switch is in the "on" (depressed) position, a pin interchange is switched into the wiring for the Port 1 connector, to provide a cross-over, and thus allow use of a straight cable to make a hub-to-hub connection.

  Below in this manual, the term "Uplink selected" will mean, as to the Model DE-824TP Ethernet Hub in question, that the subject connection is made through Port 1 and the Uplink switch is in its "on" (depressed) position.

Rules for Using the Uplink Feature

Uplink should never be selected for a station cable connection. And Uplink should never be selected for a hub-to-hub connection through a crossover cable (because the crossover in the connector wiring would cancel out the crossover in the cable).

Uplink should be selected only for making a hub-to-hub connection with a straight cable. When Uplink is selected at one end of a straight cable, Uplink must not be selected at other end of that cable. (If Uplink were selected at both ends of a straight cable, then the built-in crossovers of the

Registration Card

Print, type or use block letters.

Your name: M./Ms. _____

Organization: _____ Dept: _____

Your title at organization: _____

Telephone: _____ Fax: _____

Organization's full address: _____

_____

Country: _____

Date of purchase (Month/Day/Year): _____

Product model	Product Serial No.	* Product installed in type of computer (e.g. Compaq 425)	* Product installed in computer serial No.

* Applied to adapters only

Product was purchased from:

Reseller's name: _____

Telephone: _____ Fax: _____

Reseller's full address: _____

_____

Answers to the following questions facilitate our technical support to your product:

1. *Where and how will the product primarily be used?*
   ☐ Home ☐ Office ☐ Travel ☐ Company Business ☐ Home Business ☐ Personal Use
2. *How many employees work at installation site?*
   ☐ 1 employee ☐ 2 - 9 ☐ 10 - 49 ☐ 50 - 99 ☐ 100 - 499 ☐ 500 - 999 ☐ 1000 or more
3. *What network protocol(s) does your organization use?*
   ☐ XNS/IPX ☐ TCP/IP ☐ DECnet ☐ Others _____
4. *What network operating system(s) does your organization use?*
   ☐ D-Link LANsman ☐ Novell NetWare ☐ NetWare Lite ☐ SCO Unix/Xenix ☐ PC-NFS
   ☐ 3Com 3+Open ☐ Banyan VINES ☐ DEC net PathWorks ☐ Windows NT ☐ Windows NTAS
   ☐ Windows '95 ☐ Others _____
5. *What network management program does your organization use?*
   ☐ D-View ☐ HP OpenView Windows ☐ HP OpenView Unix ☐ SunNet Manager ☐ Novell NMS
   ☐ NetView 6000 ☐ Others _____
6. *What network medium/media does your organization use?*
   ☐ Fiber-optics ☐ Thick coax Ethernet ☐ Thin coax Ethernet ☐ 10BASE-T UTP/STP
   ☐ 100BASE-TX ☐ 100BASE-T4 ☐ 100VGAnyLAN ☐ Others _____
7. *What application(s) are used on your network?*
   ☐ Desktop publishing ☐ Spreadsheet ☐ Word processing ☐ CAD/CAM
   ☐ Database management ☐ Accounting ☐ Others _____
8. *What category best describes your company?*
   ☐ Aerospace ☐ Engineering ☐ Education ☐ Finance ☐ Hospital ☐ Legal
   ☐ Insurance/Real Estate ☐ Manufacturing ☐ Retail/Chain store/Wholesale ☐ Government
   ☐ Transportation/Utilities/Communication ☐ VAR ☐ System house/company ☐ Others _____
9. *Would you recommend your D-Link product to a friend?*
   ☐ Yes ☐ No ☐ Don't know yet
10. *Your comments for this product?*

_____

_____

two connectors would cancel one another, and the hub-to-hub connection would fail.)

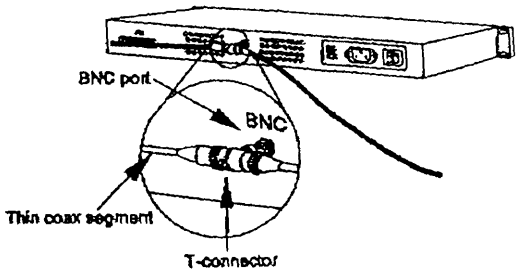
Thus the rule for making a hub-to-hub connection with twisted-pair cable is as follows:

> To make a hub-to-hub connection with a **straight cable**, Uplink *must* be selected at one end of the cable, and Uplink *must not* be selected at the other end of the cable.
>
> To make a hub-to-hub connection with a **cross-over cable**, Uplink *must not* be selected at either end of the cable.

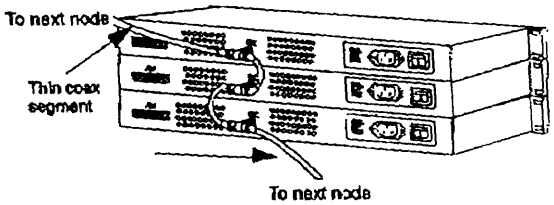
Thin Coaxial Cable Connections

To connect the Ethernet Hub to a thin coaxial cable (10Base2 cable, also known by its wire-standard name, RG58A/U, and a variety of other informal names), first twist a BNC T-connector onto the rear-panel BNC connector of the Ethernet Hub. Then twist the shell of the cable's connector onto either leg of the BNC T.

If the thin coaxial cable continues on to other nodes, then twist the shell of the continuation cable onto the remaining leg of the BNC T. If there is no continuation (the Ethernet Hub is at the end of the coaxial cable), then it is necessary to twist a 50-ohm terminator onto the remaining open leg of the BNC T.

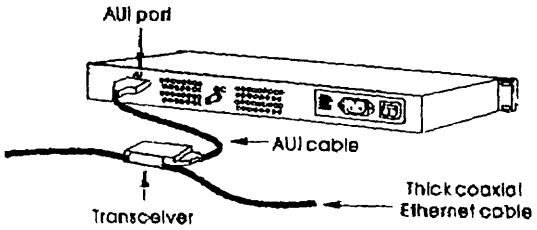


Sometimes several Ethernet Hubs must be co-located to support a larger array of stations than can be handled by a single Ethernet Hub. Then it is useful to stack the Ethernet Hubs by joining their BNC connectors with 0.5 meter patches of thin coaxial cable. Such stacking is just a special case of thin coaxial cable connection as treated above, and the terminator rule is the same: If the stack is at the end of the incoming cable, then a 50-ohm terminator must be substituted for the continuation cable shown in the stacking diagram below.



Thick Coaxial Cable Connections

To connect the Ethernet Hub to a thick coaxial cable (10Base5 cable), it is necessary to have a 10Base5 Ethernet transceiver (tap) on the cable at the Ethernet Hub's position. Then run an AUI cable between the transceiver's AUI connector and the AUI connector on the rear panel of the Ethernet Hub.



Connecting Power

For compatibility with electric service in most areas of the world, the Ethernet Hub's power supply automatically adjusts to line power in the range 100 - 240 VAC and 50 - 60 Hz.

Per ordering option, either a Type 1 (US) or Type 2 (European) power cord is supplied with your Ethernet Hub. See Spefications, below, for power cord details.

Ascertain that the power switch on the rear panel of the Ethernet Hub is in the *off* position. Plug the female end of the power cord firmly into the

receptacle on the rear panel of the Ethernet Hub. Plug the other end of the power cord into an electric service outlet. Turn on power to the Ethernet Hub by switching its rear-panel power switch to the *on* position.

LED Indicators

LED indicators are located on the front panel of the Ethernet Hub.

- **Jabber LED**

  One Jabber LED for all ports. This LED flashes red when the Ethernet Hub detects a data packet that is defective (exceeds allowable length). This kind of error will ordinarily be managed by the offending Ethernet adapter itself, in which case the Jabber LED will return to its normal off (dark) state.

- **Collision LED**

  One Collision LED for all ports. A collision occurs when two stations within a collision domain attempt to transmit at the same time. Intermittent flashing yellow of the Collision LED is normal; the contending adapters resolve each collision by means of a wait-then-retransmit algorithm. Fre-quency of collisions is an indicator of heavy traffic on the network.

- **Link/Rx LEDs**

  One Link/Rx LED for each numbered port. Steady green (*Link* state) indicates that the port has good linkage to its partner device. Flashing green (*Receive* state) indicates that the port is receiving data from its partner device.

  If the port is connected but the Link/Rx LED is dark, check whether (1) the Ethernet Hub and the partner device both have power, (2) the port's cable is firmly seated in its connectors in the Ethernet Hub and in the partner device, (3) the connecting cable is good and is of the correct type, and (4) the partner device, including any network adapter, is functioning.

Specifications

Data transfer rate:	10 Mbps	
Protocol:	CSMA/CD	
Topologies:	Star, Bus	
EMI Certification:	FCC Class A, VCCI 1, CE A	
AC power:	100 - 240 V , 50 - 60 Hz	
Power consumption:	DE-812TP+:	18 W
	DE-816TP:	18 W
	DE-824TP:	20 W

Dimensions:	W x H x L, mm (including mounting brackets):	
	DE-812TP+:	483 x 44 x 125
	DE-816TP:	483 x 44 x 125
	DE-824TP	483 x 44 x 211
Weight:	DE-812TP+:	2.0 kg
	DE-816TP:	2.0 kg
	DE-824TP:	3.03 kg
Operating temperature:	0° - 55° C	
Humidity:	10 - 90 % non-condensing	
Power cord:	Type 1 (US) or Type 2 (Europe) per purchase order	

	Type 1	Type 2
Plug Rating	125V, 7A	250V, 10A
Cord Rating	125V, 7A	250V, 10A
Length	1830mm (6ft)	1830mm (6ft)
Safety Standard	UL, CSA	VDE

D-Link Office

USA 5 Musick, Irvine, CA92618, U.S.A.
Tel. 1-714-455-1688 Fax.1-714-455-2521

Canada 2180 Darwin Driver, Unit#6, Mississauga, Ontario, L5L 5M8, Canada
Tel. 1-905-828-0260 Fax. 1-905-828-5669

UK D-Link House, 6 Garland Road, Stanmore, London HA7 1DP, U.K.
Tel. 44-181-235-5555 Fax. 44-181-235-5500

Germany Auf Der Krautweide 32, 65812 Bad Soden, Germany
Tel. 49-6196-643011 Fax. 49-6196-28049

France Le Floriege 2, Allee de la Fresnerie, 78330 Fontenay Le Fleury, France
Tel. 33-1-30.23.86.88 Fax. 33-1-30-23.86.89

Sweden World Trade Center, P.O.Box 70396, 107 24 Stockholm, Sweden
Tel. 46-08-7006211 Fax. 46-08-219640

Australia Unit 16, 390 Eastern Valley Way, Roseville, NSW 2069, Australia
Tel. 61-2-9417-7100 Fax. 61-2-9417-1077

Denmark Naverland 2 DK-2600 Glostrup Copenhagen, Denmark
Tel. 45-43-96-90-40 Fax. 45-43-42-43-47

Singapore 77 Science Park Drive, #03-03 CINTECH III, Singapore Science Park, Singapore 118256
Tel. 65-7746233 Fax. 65-7746322

Japan 10F, 8-8-15 Nishgotanda, Shinagwa-ku, Tokyo 141, Japan
Tel. 81-3-5434-9678 Fax. 81-3-5434-9868

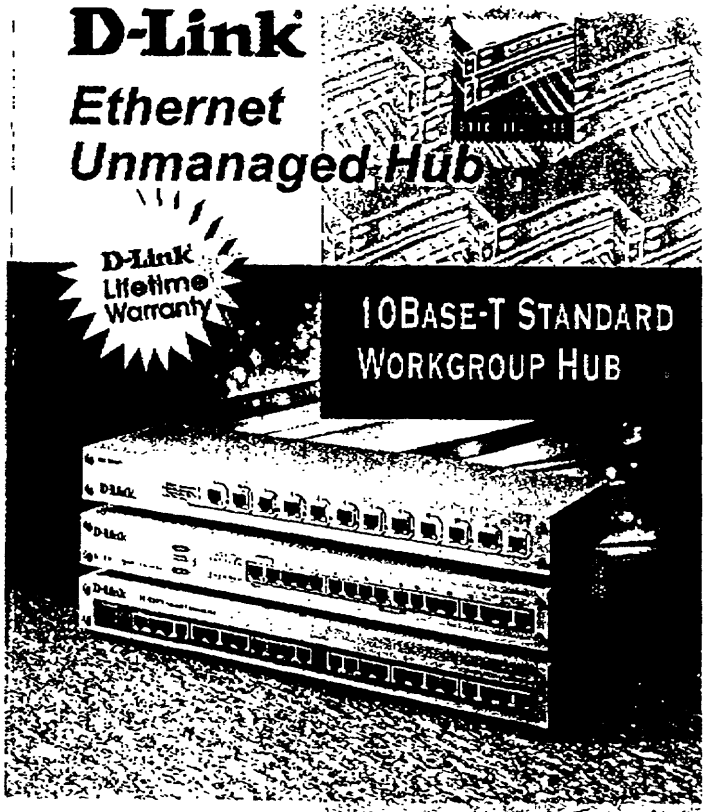
China 15th Floor, Science & Technology Tower1 No. 11 Baishiqiao Road, Haidian District, Beijing 100081, China
Tel. 86-10-68467106 Fax. 86-10-68467110

India Plot No.5, Kurla-Bandra Complex Rd, OFF CST Rd., Santacruz (E) Bombay-400 098 India
Tel. 91-22-611-2788 Fax. 91-22-617-2476

Taiwan 2F, No.233-2, Pao-Chiao Road, Hsin-Tien, Taipei, Taiwan, R.O.C.
Tel. 886-2-9161600 Fax. 886-2-9146299

D-Link

Ethernet Unmanaged Hub



- Simple plug and play installation
- FREE lifetime customer support
- Easy to use with built-in error detection and correction
- Flexible design that's rack-mountable & suitable for desktop use

User's Guide