D-Link®

DFE-908x
DFE-908
Ethernet/Fast Ethernet
Dual-Speed Stackable Hubs
User's Guide

Wichtige Sicherheitshinweise

1. Bitte lesen Sie sich diese Hinweise sorgfältig durch.

2. Heben Sie diese Anleitung für den spätern Gebrauch auf.

3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Vervenden Sie keine Flüssig- oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.

4. Um eine Beschädigung des Gerätes zu vermeiden sollten Sie nur Zubehörteile verwenden, die vom Hersteller zugelassen sind.

5. Das Gerät is vor Feuchtigkeit zu schützen.

6. Bei der Aufstellung des Gerätes ist auf sichern Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen. Verwenden Sie nur sichere Standorte und beachten Sie die Aufstellhinweise des Herstellers.

7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.

8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.

9. Die Netzanschlußsteckdose muß aus Gründen der elektrischen Sicherheit einen Schutzleiterkontakt haben.

10. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollete auch nichts auf der Leitung abgestellt werden.

11. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.

12. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.

13. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. Elektrischen Schlag auslösen.

14. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.

15. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:

    a– Netzkabel oder Netzstecker sind beschädigt.

    b– Flüssigkeit ist in das Gerät eingedrungen.

    c– Das Gerät war Feuchtigkeit ausgesetzt.

    d– Wenn das Gerät nicht der Bedienungsanleitung ensprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.

    e– Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.

    f– Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.

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Product Type	Warranty Period
Complete products	One year
Spare parts and spare kits	90 days

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telephone/fax list of D-Link offices is provided in the back of this manual.

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FCC Warning

Class B for Model DFE-908/DFE-908x
FCC ID No: KA2ED2908DH

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by user's authority to operate this equipment.

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取扱説明書に従って正しい取り扱いをして下さい。

TABLE OF CONTENTS

ABOUT THIS GUIDE

This guide discusses how to install and use the DFE-908 series stackable dual-speed Fast Ethernet/Ethernet Hubs.

Conventions

References in this manual to the DFE-908 and DFE-908x hubs are frequently written simply as "hub" or "hubs" where the text applies to all models. Model numbers are normally used only to differentiate between the two where necessary.

Unless differentiated by model number, all information applies to all models.

Overview of the User's Guide

♦ Chapter 1, *Introduction*. Provides information on Fast Ethernet networks, and introduces the features of the DFE-908 series hubs.

♦ Chapter 2, *Unpacking and Setup*. Helps you get started in setting up the hub.

♦ Chapter 3, *Understanding Indicators*. Describes all LED indicators on the hub's front panel. Understanding these indicators is essential to effectively using the hub.

♦ Chapter 4, *Making Connections*. Provides information on connect-
ing to the hub's twisted-pair, stacking hubs, and linking with other
100BASE-TX hubs.

♦ Appendix A, *Cables and Connectors*. Provides specifications on the
cables and connectors used with the hubs.

♦ Appendix B, *Specifications*. Lists the hubs' specifications.

1

INTRODUCTION

This chapter introduces the DFE-908 series stackable dual-speed Fast Ethernet/Ethernet Hubs, as well as giving some background information about the technology the hubs use.

Product Description

The D-Link DFE-908 series stackable dual-speed Fast Ethernet/Ethernet Hubs are designed to allow easy migration and integration between 10Mbps Ethernet and 100Mbps Fast Ethernet, while providing flexibility in cable connections.

The DFE-908 series hubs can operate with either IEEE 802.3 10BASE-T connections (twisted-pair Ethernet operating at 10 megabits per second), or IEEE 802.3u 100BASE-TX connections (twisted-pair Fast Ethernet operating at 100 megabits per second). All of the twisted-pair ports support Auto-Negotiation (NWay), allowing the hub to automatically detect the speed of a network connection. This means you can connect all of your Ethernet and Fast Ethernet hosts to a DFE-908 series hub stack, without any rewiring required when a host is upgraded from 10Mbps to 100Mbps.

The DFE-908 series hubs, available in 8-port models, can be stacked with up to five hubs in a stack. A stack of five 8-port hubs gives a total of 40 Ethernet or Fast Ethernet ports. A DFE-908 series hub stack operates as a

Class II Fast Ethernet repeater, allowing it to be linked to another Class II Fast Ethernet stack in the same collision domain.

On the DFE-908, the 10Mbps and 100Mbps segments are separate and do not intercommunicate. The DFE-908x contains a built-in switch, making it possible to transparently bridge between the 10 Mbps and 100 Mbps segments.

Product Features

The list below highlights the features and specifications of the DFE-908 series hubs:

♦ Compatible with the IEEE 802.3 10BASE-T Ethernet and 802.3u 100BASE-TX Fast Ethernet industry standards for interoperability with other Ethernet/Fast Ethernet network devices.

♦ Ethernet connections support Category 3 or better twisted-pair cables.

♦ Fast Ethernet connections support both shielded twisted pair and Category 5 unshielded twisted-pair cables.

♦ Fast Ethernet connections support a maximum distance of 100 meters from end-station to hub, and a total network diameter of 205 meters.

♦ Eight NWay RJ-45 ports for connecting stations to the network.

♦ Built-in switching function (DFE-908x only) supports bridging between 10Mbps and 100Mbps segments. **Only one DFE-908x is needed per stack.**

♦ A stack can contain various D-Link dual-speed hub models.

♦ LED indicators for power, collisions, link, network activity, switch capability (DFE-908x only), partitioning status, operating speed (10 or 100 Mbps) and network utilization.

♦ Auto-partition protection.

♦ Data collision detection and handling.

♦ Preamble regeneration, signal retiming.

♦ Two proprietary daisy-chain ports for cascading up to five hubs to form one logical hub.

♦ Uplink port allows easy linking of two Fast Ethernet or four Ethernet hub stacks to further expand your network.

♦ Built-in power supply. Automatic voltage selection (100V to 240V, 50 or 60Hz) without fuses to change or a voltage switch to set.

♦ Stackable to five units, or total 40-port capability.

♦ Scaleable expansion up to two stacks, or a total of 78 ports.

Dual-speed Fast Ethernet/Ethernet Hub Technology Overview

Dual-speed Ethernet hubs have been developed to make it simpler to plan networks containing both 10Mbps Ethernet and 100Mbps Fast Ethernet technologies, especially when network hosts are being gradually migrated to new Fast Ethernet connections.

A dual-speed hub is actually two repeaters in one enclosure. The 10Mbps repeater receives Ethernet transmissions from any of its ports, and retransmits them to all other ports operating at 10Mbps. Similarly, the 100Mbps

repeater retransmits Fast Ethernet transmissions from ports operating at 100Mbps to all other ports operating at the same speed.
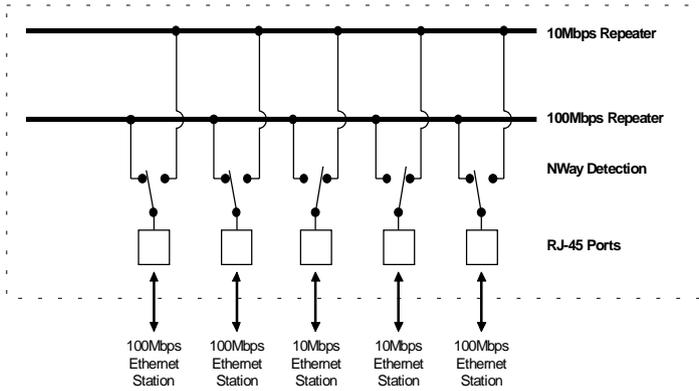
If there is a DFE-908x hub present in the stack, its built-in switch serves as a bridge between the two independent segments.
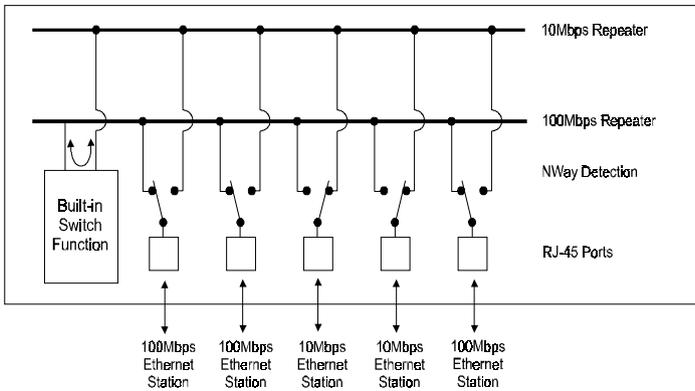
100BASE-TX Technology Overview

100Mbps Fast Ethernet Introduction

Computers today have become increasingly powerful, with the capability to accommodate very sophisticated uses such as multimedia applications, video-conferencing, and CAD/CAM. To utilize these technologically advanced applications more efficiently, there is also a growing demand for faster networks that can handle heavy network traffic.

Recognizing this need for greater bandwidth and lower latency, a variety of technologies such as FDDI, ATM, and Fast Ethernet (100Mbps) have been adopted by many vendors. Fast Ethernet technology stands out as the most inexpensive and smoothest migration path for existing 10Mbps Ethernet users in part because it does not require a protocol translation when sharing data with 10Mbps Ethernet.

Fast Ethernet is a relatively new standard specified by the IEEE 802.3 LAN committee. It is an extension of the 10Mbps Ethernet standard with the ability to transmit and receive data at 100Mbps, while maintaining the CSMA/CD Ethernet protocol. Since Fast Ethernet is compatible with all 10Mbps Ethernet environments, it provides a straightforward upgrade without wasting the company's existing investment in hardware, software, and trained personnel.

Cables and Connectors

Category 5 unshielded twisted-pair (UTP) cables and shielded twisted-pair (STP) cables are both supported. Cat 5 UTP cable uses the same RJ-45 connector used with 10BASE-T, wired in the same configuration. Please note that the punch-down blocks in the wiring closet must also be Category 5 certified. Where these blocks do not meet the standard, an upgrade is necessary.

Topology

A Fast Ethernet workgroup is configured in a star topology and is built around a maximum of two repeaters. Each workgroup forms a separate LAN (also known as a segment or collision domain), and these workgroups can be easily interconnected through switches, bridges, or routers to form one LAN large enough to encompass a high-rise building or campus environment. Recent innovations in LAN hub technology such as stackable hubs, coupled with the decreasing cost of switches, bridges, and routers, allow the design of low-cost, efficient Fast Ethernet workgroups and enterprise LANs.

The following factors strongly influence the architecture of Fast Ethernet networks:

- The EIA/TIA 568 Wiring Standard imposes a 100 meter limit on horizontal runs of twisted-pair cables; that is, connections from the wiring closet to the end-station.

- Fast Ethernet's increased operational speed reduces the maximum distance between all elements of the LAN (see below).

- The EIA/TIA 568 Wiring Standard does not support the use of co-axial cables for horizontal wiring.

Network Diameter

Network diameter, which is the distance between two end-stations in the same collision domain, is the primary difference between traditional Ethernet and Fast Ethernet. Due to the increased speed in Fast Ethernet and adherence to the EIA/TIA 568 wiring rules, the network diameter of a Fast Ethernet collision domain is limited to 205 meters; in contrast, the maximum 10BASE-T Ethernet collision domain diameter can be up to 500 meters.

Hub Types

Unlike 10BASE-T hubs, which are all functionally identical, Fast Ethernet hubs are divided into two distinct types: Class I and Class II. A Class I hub repeats all incoming signals on one port to the other ports by first translating them to digital signals and then retranslating them back to line signals. These translations are necessary when connecting various network media to the same collision domain, such as when combining two wire-pair 100BASE-TX media with four wire-pair 100BASE-T4 media. Only one Class I hub can exist within the same collision domain; thus, this type of hub cannot be directly interlinked. A Class II repeater, on the other hand, immediately repeats all incoming line signals on one port to the other ports; no translations are performed. This type of hub connects identical media within the same collision domain; for example, TX to TX. At most, two Class II hubs can exist within the same collision domain.

As mentioned earlier, stackable Class II hubs can be used to increase the number of available nodes in a collision domain. An entire hub stack counts as a single repeater. DFE-908 series hubs are Class II devices.

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UNPACKING AND SETUP

This chapter provides information on the unpacking and initial installation of your hub stack.

Unpacking

Open the shipping carton of your hub and carefully unpack the contents. The carton should contain the following items:

♦ One dual-speed stackable hub

♦ One AC power cord, suitable for your area's electrical power connections

♦ One daisy-chain cable

♦ Four rubber feet to be used for shock cushioning

♦ This *User's Guide*

Inspect the hub and all accompanying items. If any item is damaged or missing, report the problem immediately to your D-Link dealer.
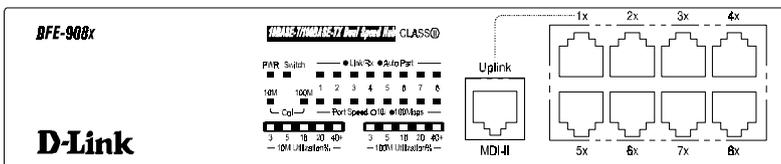
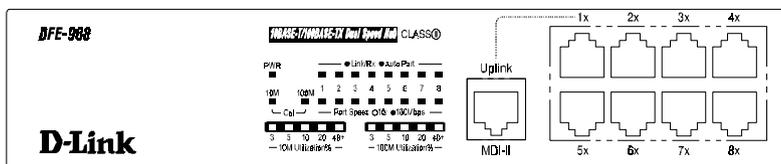# Identifying External Components

This section identifies all the major external components of the hub. Both the front and rear panels are shown, followed by a description of each panel feature. The indicator panel is described in detail in the next chapter.

Front Panel

♦ **LED Indicator Panel**

Refer to the next chapter, *Understanding Indicators*, for detailed infor-
mation about each of the hub's LED indicators.

♦ **Twisted-Pair Ports**

Use any of these ports to connect stations to the hub. The ports are
MDI-X ports, which means you can use ordinary straight-through
twisted-pair cable to connect the hub to PCs, workstations, or servers
through these ports. If you need to connect to another device with MDI-
X ports such as another hub or an Ethernet switch, you should use a
crossover cable, or connect using the Uplink port (described below).
For more information about crossover connection, see the *Crossover
Cables* section on page 24.

♦ **Uplink Port**

The Uplink port is an MDI port, which means you can connect the hub
(or hub stack) to another device with MDI-X ports using an ordinary
straight-through cable, making a crossover cable unnecessary.

Port 1 and the Uplink port are really the same port, except that their
pinouts are different. **Do not use both Port 1 and the Uplink port at
the same time.**

Rear Panel

♦ **Daisy-Chain IN Port**

When cascading a set of D-Link's stackable dual-speed hubs, this port should be connected to the Daisy-Chain OUT port of the previous hub in the stack (usually placed immediately above it). A cascade of five hubs can be created in this way. The first and last hubs in the stack use only one of the daisy-chain ports, while the others use both.

♦ **Daisy-Chain OUT Port**

Works in conjunction with the Daisy-Chain IN Port (see above). Con-nect this port to the Daisy-Chain IN Port of the next hub in the stack (usually placed immediately below it), using the enclosed daisy-chain cable.

♦ **Fan**

Provides air circulation and heat dissipation. Be sure to leave adequate space around the area of the unit for proper ventilation.

♦ **AC Power Connector**
For the power cord.

Installing the Hub

Installation

The site where you install the hub stack may greatly affect its performance. When installing, consider the following pointers:

♦ Install the hub stack in a fairly cool and dry place. See Appendix B, *Specifications*, for the acceptable temperature and humidity operating ranges.

♦ Install the hub stack in a site free from strong electromagnetic field generators (such as motors), vibration, dust, and direct exposure to sunlight.

♦ Leave at least 10cm of space at the front and rear of the hub for ventilation.

♦ Install the hub on a sturdy, level surface that can support its weight.

When installing the hub stack on a level surface, attach the rubber feet to the bottom of each device. The rubber feet cushion the hub and protect the hub case from scratches and prevent it from scratching other surfaces.

3

UNDERSTANDING INDICATORS

Before connecting network devices to the hub, take a few minutes to look over this section and familiarize yourself with the front panel LED indicators of your dual-speed hub, depicted below.
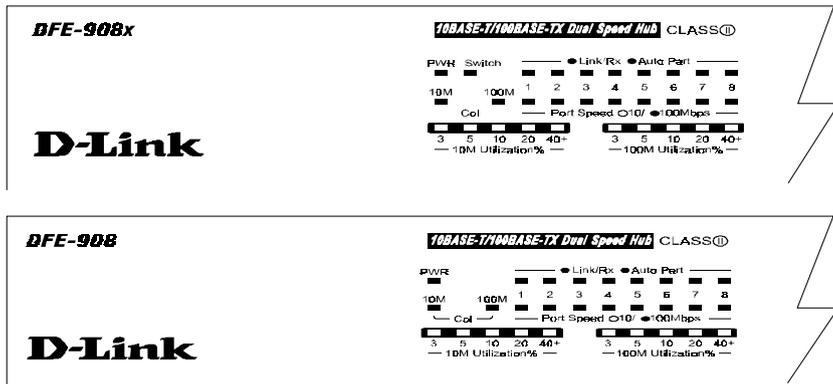
Hub State Indicators

♦ **Power Indicator (PWR)**

This indicator lights green when the hub is receiving power; otherwise, it is off.

♦ **Collision Indicators (Col 10M/ Col 100M)**

These indicators indicate data collisions on the respective 10Mbps Ethernet or 100Mbps Fast Ethernet segments connected to the hub. (If several hubs are stacked or linked together, all of them should detect and indicate the same collision, since collisions span the entire network segment.) Whenever a collision is detected, the respective COL indicator will briefly blink amber.

♦ **10Mbps and 100Mbps Utilization Indicators**

The utilization bar graphs provide a quick reference on the current traffic load relative to the total available 10Mbps or 100Mbps network bandwidth. The graphs display a measure of the percentage of bandwidth in use on the respective network segment. All data packets are counted, whether valid or not.

Port State Indicators

There is one port state indicator for each of the twisted-pair ports on the hub. Each port's LED status indicator reports the port's link and activity status, and shows whether or not the port has been partitioned.

The following describes each indicator and the meaning of each condition:

♦ **Link (steady green)**

The indicator of a port lights green when the port is connected to a powered Ethernet or Fast Ethernet station. If the station to which the hub is connected is powered off, or if there is a problem with the link, the LED will remain off.

♦ **Receive (Rx) (blinking green)**

When information is received on a port, its indicator will blink off briefly. Upon reception, the data will be transmitted to all other connected ports.

♦ **Auto-partition (Auto-part) (steady amber)**

The indicator of a port lights amber when the port is automatically partitioned due to an abnormal network condition.

The hub will temporarily partition a port when too many collisions are detected on the port. While the segment is automatically partitioned, the port will be isolated from the rest of the network segment. When the problem is corrected or a valid data packet is received through the port, the port is automatically reconnected.

Port Speed Indicators

There is also a port speed indicator for each of the twisted-pair ports on the hub. A port's speed indicator should light green when a 100BASE-TX device is connected to the port, and remain dark if the port is unconnected or if a 10BASE-T device is connected.

Switch Indicator (DFE-908x Only)

The DFE-908x's Switch indicator shines a steady green when the hub's built-in switch is functioning correctly. The indicator should shine whenever the hub has power.

4

MAKING CONNECTIONS

This chapter discusses how to make connections to the hub's twisted-pair ports, cascading hubs to create a stack, and linking with other hubs (or hub stacks).

Hub Cascading/Building a Stack

You can stack up to five hubs using the daisy-chain ports to form one logical hub. In this configuration, the interconnected hubs constitute a single logical unit, providing a maximum of 40 twisted-pair ports.

Use the provided daisy-chain cable to connect the Daisy-Chain OUT port on the rear panel of one hub to the Daisy-Chain IN port on the hub below it, as shown in the figure below. Repeat this procedure for each hub to be included in the stack.
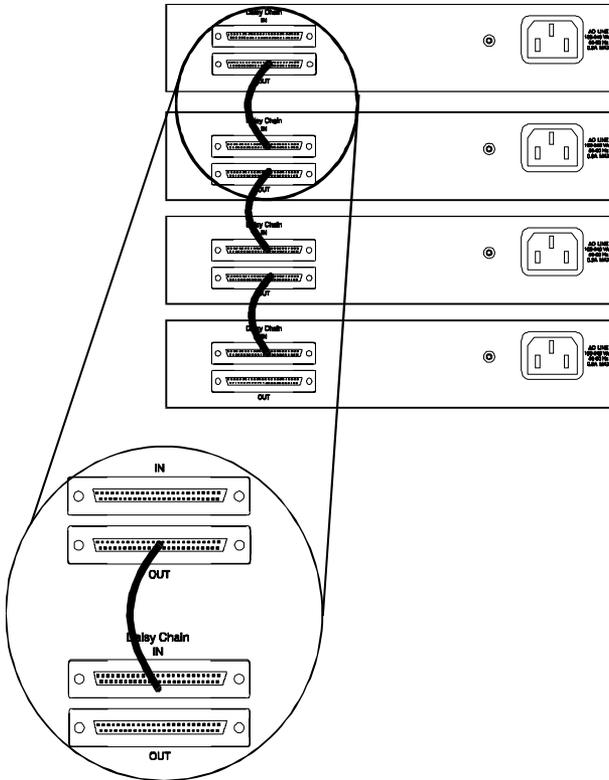
Hubs should not be added to the stack or removed from the stack while the power is on to any hub in the stack. **Always turn off power to the entire stack before adding or removing hubs.**

Connectivity Rules

Ethernet (10Mbps) networks need to respect the following connectivity rules:

♦ The maximum length of a twisted-pair cable segment is 100 meters. Cabling should be Category 3 or better.

♦ Between any two end-stations in a collision domain, there may be up to five cable segments and four intermediate repeaters (hubs, hub stacks, or other repeaters).

♦ If there is a path between any two end-stations containing five segments and four repeaters, then at least two of the cable segments must be point-to-point link segments (e.g., 10BASE-T, 10BASE-FL), while the remaining segments may be populated (mixing) segments (e.g., 10BASE-2 or 10BASE-5).

Fast Ethernet (100Mbps) networks need to respect the following connectivity rules:

♦ The maximum length of a twisted-pair segment (that is, the distance between a port in the hub to a single-address network device such as a PC, server, or Ethernet switch) is 100 meters. Cabling and other wiring should be certified as Category 5 or shielded twisted pair (STP).

♦ The maximum diameter in a collision domain is about 205 meters using two Class II hubs (or hub stacks).

♦ Between any two end-stations in a collision domain, there may be up to three cable segments and two Class II hubs or hub stacks.
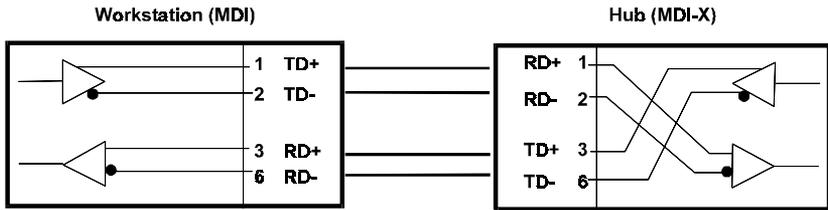
Hub to End-Station Connection

After the hub properly installed, it can support up to eight end-station connections. Fast Ethernet connection requires either a Category 5 UTP cable or an STP cable. These cables can be up to 100 meters long.

Ethernet connection requires a Category 3 or better UTP cable. It is recommended that you use Category 5 cabling for all connections, in order to make it easier to transition all stations to 100Mbps.

You can connect any combination of PCs, servers, and other single-address network devices to the eight twisted-pair ports using straight-through twisted-pair cables. These cables should not be crossed over. The following figure illustrates the pin assignments for a straight-through cable:

When connecting a PC or a server, the system being connected should have an Ethernet or Fast Ethernet network interface card with a twisted-pair port. The following figure shows a typical connection between the hub and end-stations:
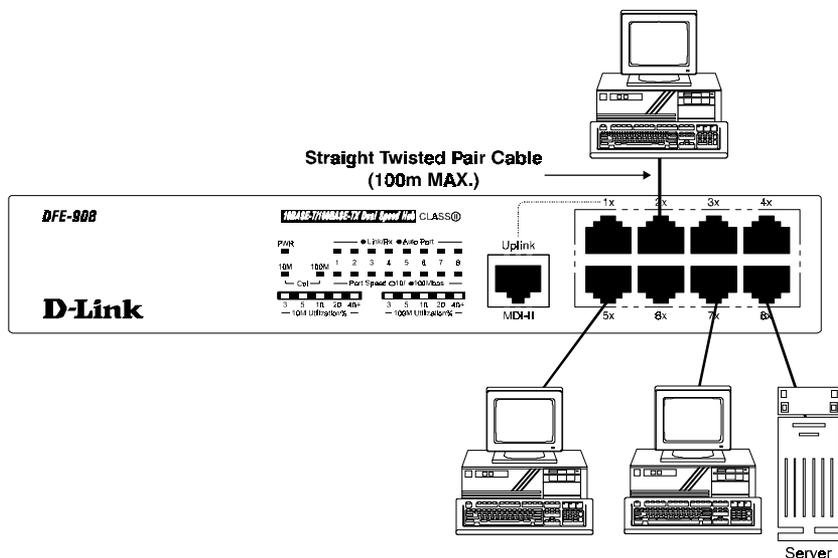
# Hub-to-Hub Uplink

You can link two hubs or hub stacks to each other using any of the twisted-pair ports or the Uplink port. Linking hubs using ordinary twisted-pair ports requires crossover twisted-pair cables; linking using one ordinary twisted-pair port and the Uplink port requires an ordinary straight-through twisted-pair cable. The Uplink port is shared with Port 1, and you should not use both Port 1 and the Uplink port at the same time.

When connecting two hubs or hub stacks in this fashion, the maximum distance between any two end-stations in a collision domain is 205 meters. If each link between the hub and an end-station is 100 meters, then the hub-to-hub connection is limited to 5 meters. However, if the longest hub-to-end-station connection is less than 100 meters, then the hub-to-hub connection can be up to 100 meters long as long as the 205-meter total network diameter rule is followed.

The following table describes different methods of linking hubs (or hub stacks):

HUB PORT USED	DEVICE	PORT TYPE	CABLE TO USE
Normal	Switch or Hub	Non-Uplink	Crossover (X)
		Uplink	Straight-Through (‖)
	Server (or PC)		Straight-Through (‖)
Uplink	Switch or Hub	Non-Uplink	Straight-Through (‖)
		Uplink	Crossover (X)
	Server (or PC)		Crossover (X)

A crossover cable is a straight-through twisted-pair cable in which the wires have been crossed. The figure below shows the pin assignments for an Ethernet or Fast Ethernet crossover cable:
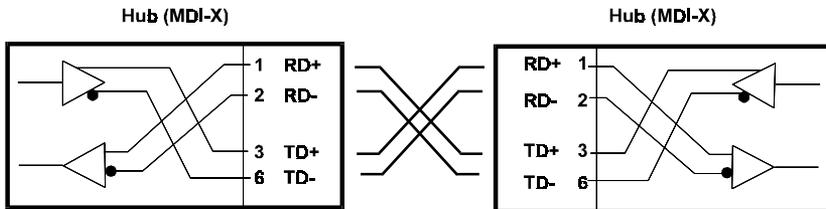
NOTE: *The first twisted-pair port (Port 1) is shared with the Uplink port. If you connect a hub to the Uplink port, then do not use Port 1.*

A

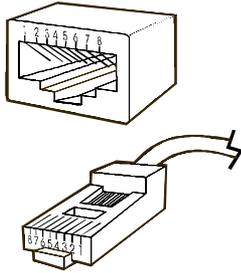## *C*ABLES AND *C*ONNECTORS

100BASE-TX Ethernet Cable and Connectors

♦ Cable characteristics: 0.4 to 0.6 mm (22 to 26 AWG) 4-pair (only two pairs or four wires are used for 100BASE-TX); Category 5 un-shielded twisted-pair or EIA/TIA-568 compliant, 100-ohm shielded twisted-pair

♦ Maximum segment length: 100 meters

♦ Maximum network diameter: 205 meters

♦ Connector: RJ-45

Contact	MDI-X Signal	MDI Signal
1	RD+ (receive)	TD+ (transmit)
2	RD- (receive)	TD- (transmit)
3	TD+ (transmit)	RD+ (receive)
4	Not used	Not used
5	Not used	Not used
6	TD- (transmit)	RD- (receive)
7	Not used	Not used
8	Not used	Not used
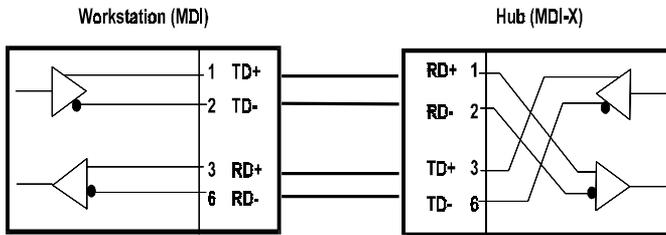
Crossover Cables

When cascading or connecting the hub to another switch, bridge, or hub through the UTP port, a modified crossover cable is necessary. With a crossover cable, two pairs of wires are switched at one connector end. Carry out the following steps to create a customized, crossover twisted-pair cable:

1. Leave one end of the cable as is, with the RJ-45 connector intact. The wiring at just one end of the cable needs to be modified.

2. At the other end of the cable, connect wires 1 and 2 to contacts 3 and 6, respectively. Likewise, connect wires 3 and 6 to contacts 1 and 2. Refer to the following diagram:

B
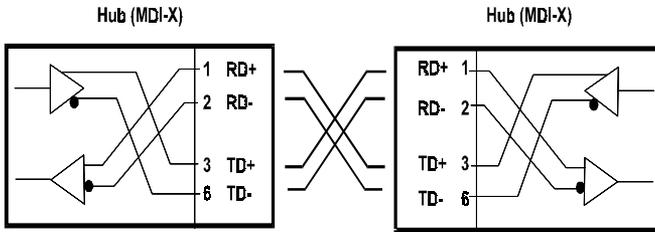
SPECIFICATIONS

General

Standards: IEEE 802.3 10BASE-T Ethernet repeater

IEEE 802.3u 100BASE-TX Fast Ethernet repeater (Class II)

ANSI X3T9.5 Twisted-Pair Transceiver

Topology: Star

Protocol: CSMA/CD

Network Data Transfer Rate: Ethernet: 10Mbps;

Fast Ethernet: 100 Mbps

Number of Ports per Hub: 8, all dual-speed (10Mbps/100Mbps)

Network Cables:

10BASE-T: 2-pair UTP Cat. 3, 4, 5 (100 m); EIA/TIA-568 100-ohm screened twisted-pair (STP) (100 m)

100BASE-TX: 2-pair UTP cat. 5 (100 m); EIA/TIA-568 100-ohm screened twisted-pair (STP) (100 m)

Hub-to-Hub Cascading

Number of Daisy-Chained Hubs: Maximum of 5 hubs per stack

Daisy-Chain Port: MiniSCSI-type connector $\times$ 2

Daisy-Chain Cable: SCSI-type cable (supplied)

LED Indicators

Hub Status: Power, 10Mbps collision, 100Mbps collision, 10Mbps utilization, 100Mbps utilization

Port Status (per port): Link/Receive/Auto Partition, Speed (10/100Mbps)

Environmental and Physical

Power Supply:
100 to 240 VAC, 50 or 60 Hz internal universal power supply

Power Consumption:
DFE-908x: 10 watts max.; DFE-908: 10 watts max.

Dimensions: 233mm $\times$ 141mm $\times$ 44mm (9.2 $\times$ 5.6 $\times$ 1.7 inches)

Weight: 1.2 kg (2.6 lb)

Operating Temperature: -10° to 55°C (14°-131°F)

Storage Temperature: –25° to 55°C (-13°-131°F)

Humidity: 5% to 95% non-condensing

DC Fan: 40mm $\times$ 40mm DC Fan $\times$ 1

Emissions: FCC Class B, CE Mark, VCCI Class B, C-Tick

Safety: UL (UL 1950); CSA (CSA 950); TÜV/GS (EN60950)

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	Mississauga Ontario, L5L 5M8, Canada	
	TEL: 1-905-828-0260 FAX: 1-905-828-5669	

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	Singapore Science Park Singapore 118256	
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	15th Floor, Science & Technology Tower	
	No. 11, Baishiqiao Road, Haidian District Beijing 100081, China	
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	10F, 8-8-15 Nishigotanda, Shinagawa-ku Tokyo 141 Japan	
	TEL: 81-3-5434-9678 FAX: 81-3-5434-9868	

INDIA	**D-LINK (INDIA) PVT. LTD.**	
	Bombay Office : Plot No.5, Kurla-Bandra Complex Rd.	
	Off Cst Rd., Santacruz (E) Bombay - 400 098 India	
	TEL: 91-22-6172478 FAX: 91-22-6172476	

TAIWAN	**D-LINK TAIWAN**	
	2F, No.233-2 Pao-Chiao Rd, Hsin-Tien, Taipei,Taiwan, R.O.C.	
	TEL: 886-2-916-1600 FAX: 886-2-914-6299	

Registration Card

Print, type or use block letters.

Your name: Mr./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 486)	* Product installed in computer serial No.

(* Applies to adapters only)

Product was purchased from:

Reseller's name: _____
Telephone: _____ Fax:_____
Reseller's full address: _____
_____
_____

Answers to the following questions help us to support 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 ☐Other_____

4. What network operating system(s) does your organization use ?
☐D-Link LANsmart ☐Novell NetWare ☐NetWare Lite ☐SCO Unix/Xenix ☐PC NFS ☐3Com 3+Open
☐Banyan Vines ☐DECnet Pathwork ☐Windows NT ☐Windows NTAS ☐Windows '95
☐Other_____

5. What network management program does your organization use ?
☐D-View ☐HP OpenView/Windows ☐HP OpenView/Unix ☐SunNet Manager ☐Novell NMS
☐NetView 6000 ☐Other_____

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 ☐Other_____

7. What applications are used on your network?
☐Desktop publishing ☐Spreadsheet ☐Word processing ☐CAD/CAM
☐Database management ☐Accounting ☐Other_____

8. What category best describes your company?
☐Aerospace ☐Engineering ☐Education ☐Finance ☐Hospital ☐Legal ☐Insurance/Real Estate ☐Manufacturing
☐Retail/Chainstore/Wholesale ☐Government ☐Transportation/Utilities/Communication ☐VAR
☐System house/company ☐Other_____

9. Would you recommend your D-Link product to a friend?
☐Yes ☐No ☐Don't know yet

10.Your comments on this product?
_____
_____

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D-Link®