EXHIBIT   C

User Manual

t Port

(handwritten)

FCC Compliance Statement

This device compliance with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE

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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experience radio/TV technician for help.

CE Compliance Statement

We hereby certify that the Ethernet Hub complies with the EN 50081-1 and EN 50082-1 requirements.

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NOTE:

EN 50082-1 standard: IEC 801-2
(Electrostatic Discharge)

  : IEC 801-3
(Radiated Immunity)

  : IEC 801-4
(Electrical Fast Transient/Burst)

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CONTENTS

Chapter 1 Introduction

The 10/100BASE-TX Ethernet Hub is a dual-speed hub that is designed to easily integrate the Fast Ethernet network into your existing 10 Mbps network workgroups. The dual-speed hub consists of two internal network segments, one is for 10BASE-Tnetwork operation, the other one is providing 100BASE-TX Ethernet connection. It also includes an internal switching port to interlink different data transferring between 10 and 100 Mbps networks.

This dual-speed hub provides five (5) RJ-45 ports, supporting auto-negotiation and auto-selection. The MDI-X/MDI switch could swap the last RJ-45 port transmit and receive pin assignment which could enable a daisy-chain connection to another. In addition, the compact chassis allows users to easily setup the dual-speed hub on a desktop or wall-mount operating environment.

Summary of features

- ▫ Compliance with both 10BASE-T and 100BASE-TX specifications of the IEEE 802.3 standards.

- ▫ Equipped with five (5) shielded RJ-45 connectors, supporting automatic selection for 10 or 100 Mbps network operation.

- ▫ Supports 10 Mbps and 100 Mbps network segment collision indication.

- ▫ Built-in switching interface to interlink 10 and 100 Mbps network segments.

- ▫ MDI-X/MDI selection switch allows you to swap the last shielded RJ-45 port transmit and receive pin assignments to daisy-chain to another.

- ▫ Palm size chassis enables you to easily install the hub on a desktop or wall-mount environment.

- ▫ Equipped with a variety of informative LEDs for easy viewing and troubleshooting.

Package Contents

The package of your dual-speed Ethernet hub should contain the following items:

□ Dual-speed Ethernet hub

□ External power adapter

□ User manual

NOTE: If any items is missing or damaged, please contact your dealer for replacement.

Front and Back views of the Hub

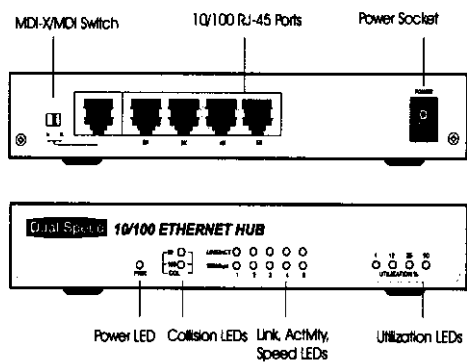Figures 1-1 shows the front and back view of the Dual-speed hub.

Figure 1-1 Front & Back view of the Hub

LED Indicators

The dual-speed Ethernet hub provides a variety of informative LEDs on the front panel for easy viewing and troubleshooting.

PWR LED

The green LED indicates the power status. This green LED will be lit while the hub is receiving power.

COL (10 Mbps) LED

The amber LED displays the 10 Mbps network collision status. If a collision is detected on the internal 10Mbps network segment, the amber LED will flash.

COL (100 Mbps) LED

The amber LED displays the 100 Mbps network collision status. If a collision is detected on the internal 100Mbps network segment, the amber LED will flash.

LNK/ACT LED

The green LED displays the link, activity status. If a good link is established on the given port, this green LED will be continuously lit, indicating a valid network connection between the network node and the dual speed hub. When data is transmitted, this green LED will flash.

100Mbps LED

The green LED displays the speed status. If a good 100Mbps link is established on the given port, this green LED will light, indicating a valid 100Mbps network connection between the network node and the hub. If a 10Mbps connection is detected, this green LED will be unlit.

Utilization LED

The green LEDs displays the network utilization status. The corresponding LEDs (shown as 1% ~ 50%) will light when the network traffic utilization has reached the percentage

*NOTE:*Figure 1-1 shows the front view of the Dual-speed hub's LEDs indication.

MDI-X/MDISwitch

The MDI-X/MDI switch can be easily configuration of last RJ-45 port as a MDI or MDI-X pin assignment. For example, when the port is configured as a MDI pin assignment, the dual-speed hub may be connected to another hub via UTP, without the need of a special crossover cable.
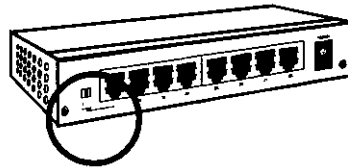
Chapter 2 Installing the Dual-speed Hub

Pre-Installation Requirements

Before you connect the dual-speed Ethernet hub to the network, make sure that you have had the proper operating environment. To provide the proper operating condition, make sure the following installation requirements:

❑ Power Requirement: 100 to 240VAC at 50 to 60 Hz

❑ Cable Requirement: The dual-speed Ethernet hub requires

Category 3, 4, or 5 UTP cable wiring for the 10 Mbps connection.
Category 5 UTP cable wiring for the 100 Mbps connection.

Category 5 Specification:

❑ Two pairs of wiring are required

❑ Cable type:Shield Twisted-Pair (STP) or Unshielded Twisted -Pair (UTP)

❑ Wire gauge: 18 to 26 AWG

❑ Nominal impedance: 100 ohms

❑ Maximum cable length: 300 (100m)

❑ Nominal attenuation: less than 11.5db

RJ-45 Pin Assignments

Pin No.	MDI-X Signal	MDI Signal
1	RD+ Receive from UTP	TD+ Transmit to UTP
2	RD- Receive from UTP	TD- Transmit to UTP
3	TD+ Transmit to UTP	RD+ Receive from UTP
6	TD- Transmit to UTP	RD- Receive from UTP

Connection for a 10 and 100 Mbps Device

The dual-speed hub is equipped with five (5) RJ-45 ports. Be sure to use the proper cable wiring to connect the hub to a 10 or 100 Mbps network device. Verify the following connection requirements.

NOTE: 1. Set the MDI-X/MDI switch to position "MDI-X" while connect this dual-speed hub to a 10 or 100 Mbps server or workstation.

2. Set the MDI-X/MDI switch to position "MDI" while connect this dual-speed hub to a 10 or 100 Mbps Ethernet hub.

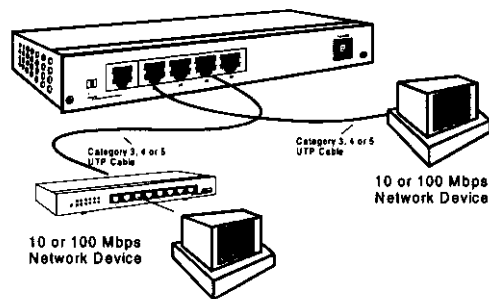Figure 2-1 shows the typical connection for 10 and 100 Mbps device.

Figure 2-1 Connection for 10 or 100 Mbps

Connection for Hubs Cascading

The last RJ-45 port of your dual-speed hub could be configured as MDI pin assignment and enable you to daisy-chain to another 10 or 100 Mbps Ethernet hub. Before cascading the dual-speed hub to another, please make sure the following installation requirements:

10 Mbps Hub Cascading
Use Cetegory 3, 4 or 5 UTP cable to link your dual-speed hub to another 10 Mbps Ethernet hub. Make sure the UTP cable does not exceed 100m.
Based on IEEE 802.3 specification, you may cascade up to four 10 Mbps Ethernet hub.

100 Mbps Hub Cascading
Use Cetegory 5 UTP cable to link your dual-speed hub to another 100 Mbps Ethernet hub. Make sure the Category 5 cascading cable does not exceed 5m while connecting your dual-speed hub to another Fast Ethernet hub.
Based on IEEE 802.3u and Class II specification, you may cascade up to two Fast Ethernet hub.

Figure 2-2 shows the typical connection for Fast Ethernet hub cascading.
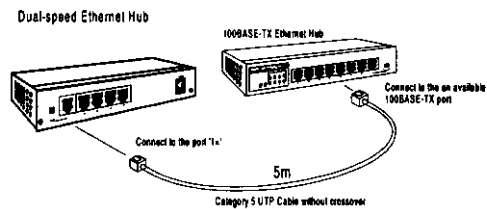

Figure 2-2 Connection for Fast Ethernet hub cascading

Appendix A

Specifications

IEEE 802.3 standards:	10BASE-T, 100BASE-TX
Wiring Connectors:	RJ-45 * 5
Weight:	480g
Dimensions:	6.3" x 3.9" x 0.98"
	(160mm x 100mm x 25mm)
Emission Certifications:	FCC Part 15 Class B
Immunity Certifications:	IEC 801-2
	(Electrostatic Discharge)
	IEC 801-3
	(Radiated Immunity)
	IEC 801-4
	(Electrical Fast Transient/Burst)
Input Voltage:	90~250/12VAC, 1.0A, 50~60Hz
Power Consumption:	5V,@1.3A
Operating Temperature:	0 to 55 degrees Centigrade
Operating Humidity:	10% to 90%, non-condensing
Operating Altitude:	10,000ft (3,000m) maximum

Appendix B

RJ-45 pin assignments

Pin No	Assignment (8X)	Assignment (8=)
1	RD + Receive from UTP	TD + Transmit to UTP
2	RD - Receive from UTP	TD - Transmit to UTP
3	TD + Transmit to UTP	RD + Receive from UTP
6	TD - Transmit to UTP	RD - Receive from UTP
4,5,7,8	Not Used	Not Used

Table A-1: RJ-45 connector pin assignments

RJ-45 pin connector
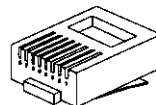
Phone Side   *Plug Side*

Table A-2: RJ-45 connector pin locations