AT-270T and AT-440T CentreCOM™ Multiport 10BASE-T Transceivers User Manual

PN 613-10436-00 Rev. A 960209

Introduction

The CentreCOM Multiport Transceivers are two and four port twisted pair transceivers for users of Ethernet Local Area Networks (LANs). These transceivers provide the electronic and physical interface between the Ethernet 10BASE-T cabling and the IEEE 802.3/Ethernet station Data Terminal Equipment (DTE).

The AT-270T transceiver's circuit design supports two Attachment Unit Interfaces (AUIs) with a single circuit board and twisted pair interface. The AT-440T transceiver incorporates the same circuit design but supports four AUIs to the LAN media. CentreCOM Multiport Transceivers are compact and offer superior quality and performance. They are easily and rapidly installed, and their compact design supports installations along narrow raceways.

Preparation

SQE/Heartbeat Test

The AT-270T/AT-440T have SQE/Heartbeat Test enable/disable switch located on the top of the chassis beneath a round access hole. The SQE Test switch will provide the IEEE 802.3 Ethernet SQE Test function enable or disable. If the DTE to which the multiport transceiver is connected requires the SQE/Heartbeat Test function, then place the SQE Test switch into the ON position.

If the DTE to which the multiport transceiver is connected does not require the SQE/Heartbeat Test function, or if the DTE is a repeater, then disable the Heartbeat function by placing the switch to OFF. Heartbeat and repeaters many times do not want the Heartbeat function and, in fact, may cause excessive Collisions if Heartbeat is enabled. It is recommended that the Heartbeat function is disabled whenever an MAU is connected to a repeater unit.

Installation

1. The AT-270T/AT-440T has been designed to install between the UTP RJ45 connection and up to two DTE or workstation AUI connectors.
2. Power on the DTE and check that the Power LED on the transceiver is illuminated.
3. Check the SQE Test LED to verify the correct setting for your equipment.
4. Plug the UTP cable into the RJ45 receptacle located on the transceiver.
5. Ensure the equipment on the opposite end of the UTP link is operational. If so, the Link LED should illuminate.
6. If the Polarity LED is illuminated, no action should be necessary. This indicatates that the AT-270T/AT-440T swapped the RD+ and RD- signals and has corrected the polarity reversal. This function should not be confused with the UTP wiring cross-over which is hard wired into the UTP cable.
7. If you have a good Link LED on both the local and remote tranceivers, your stations will now communicate.

Status Indicators

The twisted pair CentreCOM Multiport Transceivers features seven LEDs. These indicators are as follows:

Power—Illuminates when power is received from the DTE or workstation.

Link—Illuminates when a good link on the RD pair has been established.

Transmit—Indicates packets are transmitted onto the UTP media.

Receive — Indicates packets are received from the UTP media.

Polarity —This LED will extinguish if the auto polarity correction has taken place. This +- signal reversal takes place on the RD- and RD+ signal lines only. This LED is normally ON.

SQE Test—Heartbeat status LED is ON if Heartbeat is enabled and OFF if Heartbeat is disabled.

Collision—Indicates a Collision has occurred.

Twisted Pair Cable

There are several types of twisted pair cables. The IEEE 802.3 specification states that the maximum length of a 10BASE-T link segment is 100 meters (328 ft.) of UTP wiring. For network reliability, these limits should not be exceeded. Remember, if another AT-270T MAU is connected to the opposite end of the link, the UTP cabling must be crossed. i.e., RD- and RD+ signals must be swapped with the TD- and TD+ signals respectively. The UTP cable should be 26 to 22 AWG (0.4 to 0.6 mm) wire in a multi-wire cable with 100Ω impedance. The UTP link segment should have the TD pair and the RD pair crossed as shown below.

Table 1: RJ45 Connector Pin-Out

Pin No.	Signal Name	Pin No.	Signal Name
1	TD+	5	Not Used
2	TD-	6	RD-
3	RD+	7	Not Used
4	Not Used	8	Not Used

Table 2: AUI Pin-Out

Pin No.	Signal Name	Pin No.	Signal Name
1	LOGIC GND	9	COL-
2	COL +	10	TX-
3	TX-	11	LOGIC GND
4	LOGIC GND	12	RX-
5	RX+	13	POWER +12 Vdc
6	POWER RETURN	14	LOGIC GND
7	N/C	15	N/C
8	LOGIC GND		

ATI

950 Kifer Road

Sunnyvale, CA 94086 USA

Tel (800) 424-4284 • Fax (408) 736-0100

Technical Support Tel (800) 428-4835 • Fax (206) 481-3790

International Fax (408) 736-0286