LMR16TC
Mini 10BASE-T
Repeater

Installation Guide

LMR16TC Ethernet Mini Hub/Repeater Installation Guide

The Lantronix LMR16TC is a multi-port hub that provides multi-media wiring connections for up to sixteen unshielded twisted pair (UTP) ports. In addition, the LMR16TC provides one BNC/AUI auto-selectable port for connections to different media LAN segments.

The LMR16TC constantly monitors each port for signal quality and will automatically disconnect a device producing noise or excessive collisions. The device will automatically be reconnected when the error condition has cleared.

Data packets that exceed the maximum legal length for IEEE 802.3 Ethernet packets are automatically truncated. This prevents a device from blocking the network by transmitting a continuous data stream or extra long packet. The LMR16TC retimes and restores full amplitude wave forms for each retransmitted packet. A full length preamble is also generated ensuring packet integrity across the network.

Features

- The LMR16TC is a cost-effective unmanaged hub that allows the interconnection of 10BASE-T segments with 10BASE2 or 10BASE5 segments
- The LMR16TC accommodates cascaded bus or daisy-chain topologies.
- The LMR16TC has an additional Uplink port for connecting to other hubs
- The LMR16TC includes preamble regeneration, signal retiming and restoration, extension of fragmented packets and jabber function for automatic partitioning
- Power, collision, activity LEDs and individual port link LEDs aid network diagnosis and management
- The LMR16TC complies with IEEE 802.3 10BASE-T twisted pair, 10BASE2 thin coaxial, and 10BASE5 thick coaxial standards
- The LMR16TC's compact size (100mm x 267mm x 26mm) makes it ideal for tabletop placement

Environmental

Temperature	Operating: 0°C to +50°C Storage: -20°C to +70°C
Humidity	Operating: 10% to 80% RH

Cable Requirements

Cable Type	Maximum Segment Length
BNC connector for use with RG-58 thin coaxial bus cable	185 meters
AUI 15-pin DIX connector for use with thick Ethernet cable	50 meters
RJ45 connector for use with 10BASE-T cable	100 meters

Power Requirements

The LMR16TC comes with a 12VDC external power adapter with a frequency range of 47Hz to 63Hz.

Installation

Connecting a 10BASE-T Device

1. Verify that the straight-through modular cable distance between the LMR16TC and the device is not greater than 100 meters, including all patch cables and cross connect wires.
2. When connecting an LMR16TC Mini Hub/Repeater to another, ensure that the Uplink port is used or a crossover twisted pair wire is used.
3. Connect one end of the straight-through modular cable to the RJ45 connector on the LMR16TC and the other end of the modular cable to the station.

Connecting a 10BASE2 Segment

1. Attach the included T-connector onto the BNC connector on the LMR16TC and twist the T-connector sleeve to lock the connection.
2. Make sure that both ends of the Thin Ethernet segment are terminated with a terminator cap.

Connecting a 10BASE5 Segment

1. Verify that the AUI cable distance between transceiver and the LMR16TC is not greater than 50 meters.
2. Disable the SQE test function of the Ethernet external transceiver.
3. Connect the AUI cable to the 15-pin DIX connector on the LMR16TC and connect the other end of the AUI cable to the external transceiver.

Only one coaxial cable port is available on the LMR16TC. This port is equipped with two connectors: A BNC connector and an AUI connector. The LMR16TC will automatically detect the media type that is being used.

Cascading the LMR16TC

1. A crossover cable must be used to interconnect two LMR16TCs and the cable distance between the two LMR16TC repeaters cannot be greater than 100 meters.
2. The LMR16TC may be interconnected as long as the path between any two network stations does not exceed four repeaters and five cable segments. The diagram below demonstrates two cascaded LMR16TCs.

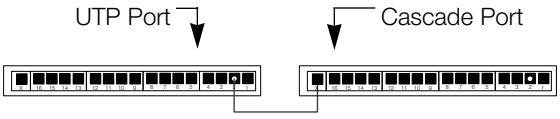

Fig. 1.1 LMR16TCs in cascade configuration.

Modular Jack Pinout

Pin	Signal	Pin	Signal
1	TD+	5	No Connection
2	TD-	6	RD-
3	RD+	7	No Connection
4	No Connection	8	No Connection

AUI Connector Pinout

Pin	Signal	Pin	Signal
1	COL Shield	9	COL -
2	COL +	10	TX -
3	TX +	11	TX Shield
4	RX Shield	12	RX -
5	RX +	13	PWR
6	GND	14	PWR Shield
7	No Connection	15	No Connection
8	No Connection		

LED Explanation

The LMR16TC has 20 LEDs that are visible from the front of the unit. The following chart explains their meanings.

LED Color	LED Name	Meaning When Lit
Green	Power	Lit solidly when LMR16TC is on
Yellow	Collision	When a collision occurs, LED blinks. Unlit when no collisions present.
Green	Link	Lit when normal data packets are received or when link-integrity pulse is detected.
Green	BNC	Blink when there is a data transmission on the BNC port
Green	AUI	Blink when there is a data transmission on the AUI port

Agency Approvals

FCC Class A, TÜV, UL, CSA, CE

Warranty Information

The LMR16TC comes with a limited 5-year warranty. If you experience problems with your unit, check our website (www.lantronix.com) or call Lantronix for assistance.

WARNING!

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including that which may cause undesired operation. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his or her own expense, will be required to take whatever measures may be required to correct the interference.

Note: The RJ45 port is not for telephone use.

CAUTION:

Not for installation in air ducts or plenums or other environmental air handling spaces. Changes or modifications to this device not explicitly approved by Lantronix will void the user's authority to operate this device.

Declaration of Conformity

(according to ISO/IEC Guide 22 and EN 45014)

Manufacturer's Name:	Lantronix
Manufacturer's Address:	15353 Barranca Parkway Irvine, CA 92618 USA

declares, that the product:

Product Name:	Ethernet Repeater
Model Number(s):	LMR16TC

conforms to the following standards:

EMC Directive 89/336/ECC as attested by conformity with the following harmonized standards:

EN 55022: Class B, 1986: Limits and Methods of Measurement of Radio Interference characteristics of Information Technology Equipment and

EN 50082/1: 1992: Generic Immunity Standard - Part 1: Domestic Commercial and Light Industry.

Manufacturer's Contact:

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