LANMASTER T16 16-PORT HUB SPECIFICATIONS

Standards

IEEE 802.3

Physical

Dimensions

431 mm x 162 mm x 45 mm

Input Power

Universal Power Supply

Input Range: 90 to 265 VAC at 47 to 63 Hz.

AC Input:

TN PN	Requirement	Location
3344	120 volts, 60 hertz	USA/Canada/Mexico
3344	100 volts, 50-60 hertz	Japan
3347	230 volts, 50 hertz	Europe
3348	240 volts, 50 hertz	Australia
3349	240 volts, 50 hertz	United Kingdom
3522	230 volts, 50 hertz	South Africa

Environment

Temperature:	0-50°C (32° to 122° F)
Humidity	10-90%, non condensing
Altitude	0-10,000 feet

Warranty

5 years

LANMaster™ T16 16-Port Ethernet™ Hub

(E-TBT-HB-1600)

33023.A

For assistance in installing, using, or maintaining the TRANSITION Networks LANMaster T16 16-Port Ethernet™ Repeater Hub, contact TRANSITION Networks Technical Support at:

(800) 260-1312

or contact your local distributor.

CAUTION: RJ connectors are NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentlickes Telekommunikationsnetz in den EG-Mitgliedstaaten verstösst gegen die jeweligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

Compliance Information
UL Listed
C-UL Listed (Canada)
CISPR/EN55022 Class A

FCC Regulations
This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Canadian Regulations
This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

European Regulations
Warning
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Copyright Restrictions

Trademark Notice
All registered trademarks and trademarks are the property of their respective owners.

10BASE-2 Cable Specifications
The physical characteristics of the 10BASE-2 cable must meet or exceed IEEE 802.3 10BASE-2 specifications.

Cable Characteristics:

Cable type:	Stranded Coaxial RG58 (ThinNet)
Impedance:	50 Ω @ 10 MHz
Mutual Capacitance:	24 pF/ft ±20% @ 10 MHz
Maximum Cable Length:	185 meters (610 feet)
Maximum number network connections:	30
Minimum distance between connections:	0.5 meters (1.6 feet)

Terminate 10BASE-2 cable at one end using a 50 ohm terminator and at the other end using a 50 ohm terminator grounded to earth ground.

10BASE-T Cable and Connector Specifications
The physical characteristics of the 10BASE-T cable must meet or exceed IEEE 802.3 10BASE-T specifications.

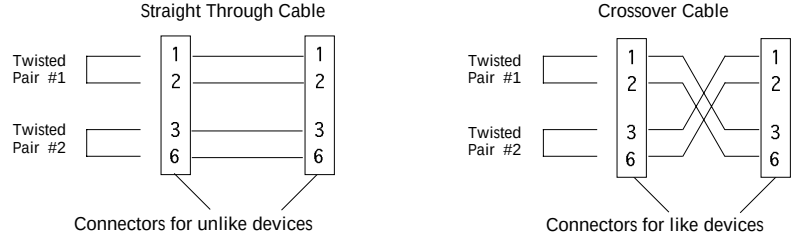
10BASE-T Cable Characteristics:

Category 3 wire or better is required; category 5 wire is recommended. Either shielded twisted pair (STP) or unshielded twisted pair (UTP) can be used. DO NOT USE FLAT OR SILVER SATIN WIRE.

Category 3:	
Gauge	24 to 22 AWG
Attenuation	28 dB/1000' @ 10 MHz
Differential Characteristic Impedance	100 Ω ±10% @ 10 MHz
Category 5:	
Gauge	24 to 22 AWG
Attenuation	20 dB/1000' @ 10 MHz
Differential Characteristic Impedance	100 Ω ±10% @ 10 MHz
Maximum Cable Length:	100 meters (330 feet)

10BASE-T Connector Characteristics:

The two active pairs in a 10BASE-T network are pins 1 & 2 and pins 3 & 6. Use only dedicated wire pairs (such as blue/white & white/blue, orange/white & white/orange) for the active pins. 10BASE-T cable for unlike devices (such as hub to terminal device) must be configured as straight through; 10BASE-T cable for like devices (such as hub to hub or terminal device to terminal device) must be configured as crossover.



ETHERNET CABLE SPECIFICATIONS

Maximum number of terminal devices on Ethernet network: 1024

10BASE-5 Cable and Connector Specifications

The physical characteristics of the 10BASE-5 cable must meet or exceed IEEE 802.3 10BASE-5 specifications.

10BASE-5 Cable Characteristics:

Cable type:	RG8 Solid Coaxial (ThickNet)
Impedance:	50 Ω @ 10 MHz
Capacitance:	26pF/ft
Maximum Cable Length:	500 meters (1650 feet)
Maximum number network connections:	100
Minimum distance between connections:	2.5 meters (8.2 feet)

Terminate 10BASE-5 cable at one end using a 50 ohm terminator and at the other end using a 50 ohm terminator grounded to earth ground.

AUI Cable and Connector Specifications

The cable is a special 4-pair individually shielded with an overall braided shield.

Maximum AUI Cable Length: 50 meters (165 feet)

AUI Connector Characteristics:

AUI Port: Male DB-15 with locking posts.
AUI Connection: Cable shell must be grounded.

Connector Legend:					
1	Logic Ref.	6	Power Return	11	Logic Ref
2	Collision+	7	N/C	12	Receive
3	Transmit+	8	Logic Ref.	13	Power
4	Logic Ref.	9	Collision--	14	Logic Ref.
5	Receive+	10	Transmit-	15	N/C

10BaseFL Cable and Connector Specifications

The physical characteristics of the 10BaseFL cable must meet or exceed IEEE 802.3 10BaseFL specifications.

10BaseFL Cable Characteristics:

Fiber Optic Cable Recommended:	62.5/125 µm multimode fiber
Optional:	100/140 µm multimode fiber 85/125 µm multimode fiber 50/125 µm multimode fiber
Fiber Optic Transmitter Power:	Average power: -15.0 dBm Peak power: -12.0 dBm ±1dBm
Fiber Optic Receiver Sensitivity:	Average sensitivity: -27.4 dBm Bit error rate: $\leq 10^{-10}$
Maximum Cable Length:	2000 meters (6500 feet)

10BaseFL Connector Characteristics:

ST type connectors (SMA type available upon request)

Table of Contents

1. INTRODUCTION

This guide is intended for the system or network administrator responsible for installing and monitoring a TRANSITION Networks LANMaster™ T16 16-Port Ethernet™ Repeater Hub. A working knowledge of local area network (LAN) operations, including familiarity with communications protocols used on interconnected LANs, is assumed.

The LANMaster T16

The TRANSITION Networks LANMaster T16 16-Port Ethernet Repeater Hub is a 10 Mb/s network device that connects 10BASE-T, 10BASE-2, and 10BASE-5 Ethernet segments into a single Ethernet network.

LANMaster T16 Front


LANMaster T16 Back

Features:

- Sixteen fixed RJ-45 twisted-pair connectors at front provide terminal device connections
- RJ-45 uplink port connector at front eliminates need for crossover cable between hubs
- BNC and AUI connectors at back provide optional simultaneous connection to *BOTH* 10BASE-2 *AND* 10BASE-5
- LED indicators at front provide continuous LANMaster T16 network traffic data

The sole purpose of this remedy shall be provided the customer with the replacement or repair of non-conforming goods in the manner described in this Warranty statement. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as TN is willing and able to repair or replace the defective item(s) or refund the purchase price.

TN reserves the right to inspect products claimed to be defective under warranty either at the customer's location or at TN's plant. TN assumes no liability for liability charges incidental to the adjustment, service, repairing, removal or replacement of the product, or other costs, or the expense of repairs made outside of its factory, except when made with TN's prior written consent. Additionally, Transition Networks reserves the right to charge for all testing and shipping incurred, if after testing, a return is classified as "No Problem Found".

TN's total liability in connection with the products and their installation to all persons and from all causes in the aggregate, whether in contract, tort, or strict liability, shall not exceed the amount paid to TN for the product directly related to the alleged damage. However, in no event shall TN have any liability to a customer or any third party for products manufactures according to the customer's specifications.

C. Return Procedure

The customer must follow this procedure for the return of defective items:

1. Locate the serial number(s) of the item(s) to be returned.
2. Determine the date the item(s) was received.
3. Contact Transition Networks Technical Support to determine if the problem can be corrected on site.

If not, and the product is covered by warranty, then:

- Call the distributor directly or contact TN.
- Request a Return Material Authorization (RMA).
- Ship the item, prepaid in original packaging to Transition Networks at the above address.
- Include the RMA number on the outside of the carton and/or on the Packing List.
- Include a copy of the RMA form.
- Include a copy of the original invoice or packing list (if possible) to expedite processing.
- The item(s) may be shipped by the customer or the distributor.
- Transition Networks will repair or replace the unit, at TN's discretion, and cover the cost of the return freight to the distributor or to the customer, whichever requested the RMA number.

If the item(s) was received **more than five years ago**, or if the item(s) is **no longer covered by warranty** for other reasons, then:

- Call the distributor or contact TN.
- Request a Material Repair Authorization number (MRA).
- Ship the item(s), prepaid, in the original packaging to Transition Networks at the above address.
- Include the MRA number on the outside of the carton add/or on the Packing List.
- Include a copy of the MRA form.
- Include a copy of the original invoice or packing list (if possible) to expedite processing.
- Only the customer (end-user) may send the items(s) to TN.
- TN will contact the customer after the item(s) have been received, inspected, and a cost estimate of the repair determined.
- The repair charges may be billed, with customer's approval, though the distributor, or on a prepaid or C.O.D. basis directly to the customer. The charges will include the cost of shipping.

The return authorization numbers are valid only for 90 days from the date issued.

Warranty Statement

A. Five Year Warranty

Transition Networks, Inc. (TN) warrants, for a period of five years, that TN products (with the exception of power supplies and fans that TN warrants for two years) will be free from defects in materials and workmanship, and will be in conformity with TN's specifications.

TN's warranty on products manufactured by or assembled for TN in accordance with a customer's specifications, is a five-year warranty that the goods conform to such specifications.

The warranty is invalidated if the goods have been subject to alterations, misuse, accident, Acts of God (e.g., damage by floods, lightning strikes, Etc.), tampering, improper maintenance, improper installation, or abuse. If the user is unsure about the proper means of installing or using the equipment, contact TN's free Technical Support or Network Design Services, which can be reached by:

Telephone	**1.800.LAN.WANS or 612.941.7600**
Fax	**612.941.2322**
E-mail	**techsupport@transition.com**
Internet	**http://www.transition.com**

THE ABOVE WARRANTY IS EXCLUSIVE AND EXTENDS ONLY TO PRODUCTS ASSEMBLED BY TRANSITION NETWORKS, INC. TO THE EXTENT PERMITTED BY LAW, TN DOES NOT MAKE AND DISCLAIMS ALL OTHER WARRANTIES, EXCEPT TITLE, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF DESCRIPTION, MERCHANTIBILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, AND ANY WARRANTY BASED UPON PRIOR WRITTEN OR ORAL REPRESENTATIONS REGARDING SUCH PRODUCTS MADE BY TN, ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES.

B. Limitations and Exclusions

If the customer believes any goods sold by TN are defective and within the warranty period, the following general procedure will be followed:

1. Locate the serial number and delivery date of the item(s).
2. Notify TN within the warranty period.
3. TN will promptly issue a return authorization form for the goods.
4. Upon receiving the form, the customer will promptly return the item(s) at customers own expense, shipped prepaid, to the distributor from which it was purchased, or directly to TN.

TN will only accept goods for return if the following conditions have been met:

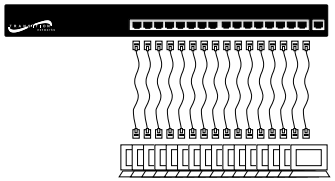
1. A return form is obtained from TN.
2. The freight charges have been prepaid by the customer.
3. Goods are re-packed in their original packaging.

If under warranty TN shall, at its option, (1) repair the goods free of charge (2) replace the goods free of charge, or (3) accept the return of the item(s) and credit the current price to the reseller (within 90 days of purchase), or (4) if the goods are not under warranty, will repair the item(s) at a minimum charge of USD $200 (two hundred U.S. dollars) per item.

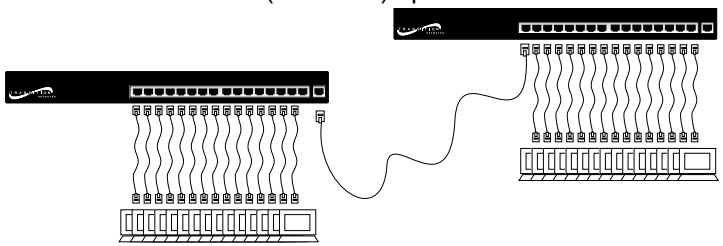
THIS IS THE EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY. IN NO EVENT SHALL TRANSITION NETWORKS BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHETHER FOR BREACH OF ANY CONDITION OF SALE, FOR NEGLIGENCE, ON THE BASIS OF STRICT LIABILITY, CONTRACT, OR OTHERWISE AND IRRESPECTIVE OF WHETHER TN IS INFORMED BY CUSTOMER OF THE POSSIBILITY OF SUCH DAMAGES IN ADVANCE OF THIS SALE.

Networking the LANMaster T16

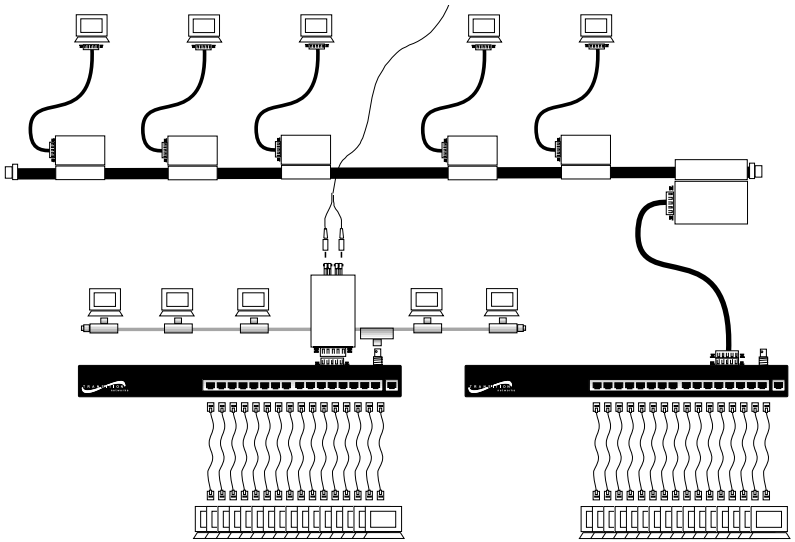
The LANMaster T16 Repeater Hub can be installed in an Ethernet network by connecting 10BASE-T cable between RJ-45 connectors at the front of the LANMaster T16 and various network terminal devices.



Additionally, LANMaster T16 hubs can be cascaded using twisted-pair 10BASE-T cable and the X (crossover) uplink RJ-45 connector.

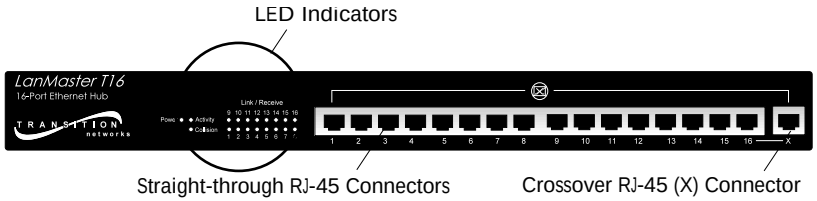


And, BNC and AUI connectors on the back of the LANMaster T16 can be connected to 10BASE-2 and 10BASE-5 Ethernet media or, through a media converter installed on the AUI connector, to 10BASE-FL.



Connectors, Switch, Indicators

CONNECTORS



Sixteen (16) straight-through **RJ-45 connectors**, labeled 1-16, and one (1) crossover **RJ-45 connector**, labeled X, are located on the front of the LANMaster T16.

One (1) **AUI connector**, one (1) **BNC connector**, and one (1) AC **power connector** are located on the back of the LANMaster T16.

SWITCH

One (1) AC **power (ON/OFF) switch** is located on the back of the LANMaster T16.

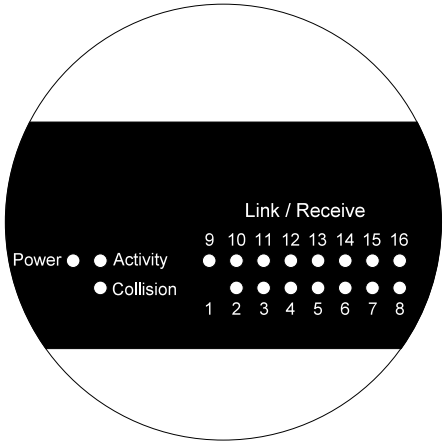
LED INDICATORS

The green **Power LED** indicates connection of the LANMaster T16 to external AC power.

The green **Activity LED** indicates network traffic.

The yellow **Collision LED** indicates a network collision.

Steady green **Link/Receive LEDs** indicate (for each port) the integrity of the network link at the RJ-45 connector. *Blinking* green **Link/Receive LEDs** indicate (for each port) reception of valid data.



5. MAINTENANCE

WARNING: DO NOT, UNDER ANY CIRCUMSTANCES, open and attempt to repair the LANMaster T16. Failure to observe this warning could result in personal injury or death from electrical shock.

NOTE: Failure to observe the above warning will immediately void the warranty.

Fault Isolation

If two network devices fail to communicate through the LANMaster T16, consider the following:

- Are the LEDs described in the previous section functioning properly?
- Is the AC power connector fuse good? (See page 14 for direction for replacing fuse.)
- Do network devices have Link Integrity enabled?
- Do network devices communicate when the LANMaster T16 is not installed between them?
- Is flat or “silver satin” wire used in site internal wiring?
- Are internal wiring patch cords, punch down blocks, and wall jacks properly pinned or configured?
- Is the thinnet cable unbroken and properly connected?
- Are network interface cards properly configured?

Technical Support Contact

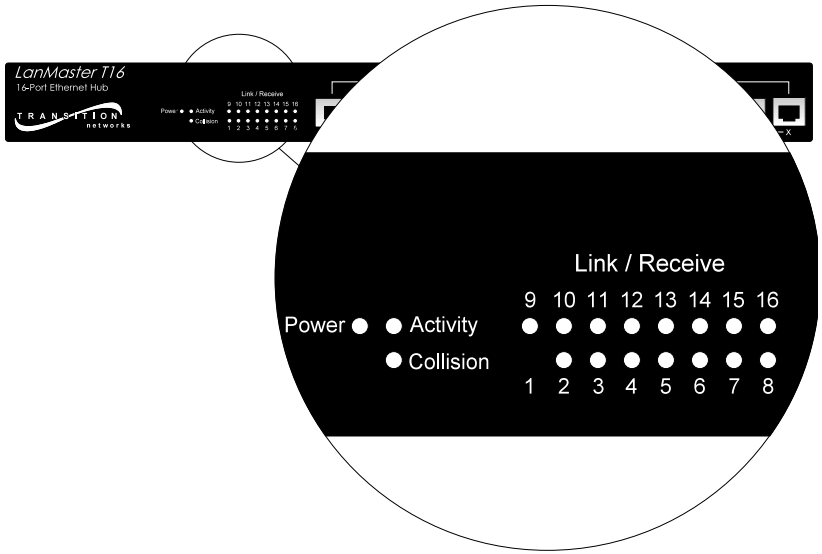
For assistance in fault isolation and in maintaining the LANMaster T16, contact:

Technical Support (800) 260-1312

or your local distributor.

4. OPERATION

The LANMaster T16 requires no intervention beyond occasionally monitoring the Power and Status LEDs.



Monitoring Power LED

The green **Power LED** indicates connection of the LANMaster T16 to external AC power.

Monitoring Status LEDs

The green **Activity LED** indicates network traffic.

The yellow **Collision LED** indicates a network collision.

Steady green **Link/Receive LEDs** indicate (for each port) the integrity of the network link at the RJ-45 connector. *Blinking* green **Link/Receive LEDs** indicate (for each port) reception of valid data.

2. SITE CONSIDERATIONS

The site for the LANMaster T16 must provide:

- AC power outlet for each LANMaster T16
- Adequate ventilation
- Standard environmental conditions
- Isolation from electrical noise, including radio transmitters and broadband amplifiers, motors, high power electrical lines, or fluorescent light fixtures.

Additionally:

- The twisted pair cables should not run in the same conduit with power line cables.
- Phone lines should be separated from data cables.
- Flat or “silver satin” cables should not be used.
- RJ-45 connected cables should be configured as crossover or straight through according to installation requirements.

And:

- Since the LANMaster T16 is an Ethernet repeater, the entire installation should comply with the IEEE Ethernet 802.3 specification

3. INSTALLATION

To install the LANMaster T16:

- Unpack the LANMaster T16
- Install LANMaster T16 at site
- Install Network Cable
- Power the LANMaster T16.

Direction is provided in the pages that follow.

Unpacking the LANMaster T16

The LANMaster T16 packing contents should include the following:

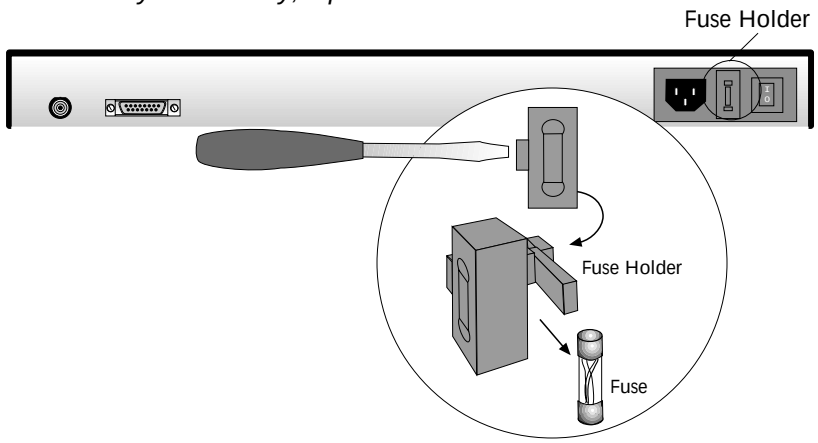
Item	Part Number
LANMaster T16 Hub	E-TBT-HB-1600 (includes mounting brackets and screws, BNC T-connector and terminator, and adhesive-backed rubber feet)
Power Cord	3344, 3347, 3348, 3349, or 3522 (depending upon power configuration in country where installed)
User's Guide	33023

Powering the LANMaster T16

To power ON the LANMaster T16:

1. At LANMaster T16 back, locate the power receptacle and associated fuse.
2. Plug unit end (female) of power cord into LANMaster T16 power receptacle.
3. Plug outlet end (male) of power cord into correct voltage AC wall socket.
4. At LANMaster T16 front, verify that POWER LED is illuminated.

NOTE: Only if necessary, replace fuse as shown:



***DIRECTION**: Disconnect power cord from AC wall socket and from power receptacle. From inside edge of power receptacle, insert small flat blade screwdriver into groove on front inside edge of fuseholder and carefully pry fuse holder (with installed fuse) from unit. Rotate fuse holder to display fuse. Carefully remove fuse from fuse holder. Install same size and rating replacement fuse in fuse holder. Return fuse holder and fuse to installation position. Snap fuse holder into place. Connect power cord to power receptacle. Connect power cord to AC wall socket. Verify that POWER LED at front of LANMaster T16 is illuminated.*

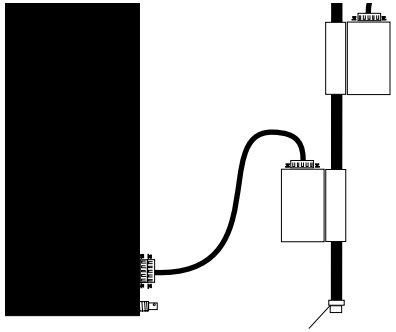
Installing Thicknet 10BASE-5 Cable

The LANMaster T16 provides a female AUI connector at the back for network connection to 10BASE-5 through an AUI drop cable or to 10BASE-2, 10BASE-T, or 10BASE-FL through a transceiver.

CONNECTING TO 10BASE-5 USING AUI DROP CABLE

To connect to 10BASE-5 cable using AUI drop cable:

1. Locate or build IEEE 802.3 compliant AUI drop cable.
2. Connect AUI drop cable male connector to female AUI (DTE) connector on LANMaster T16.
3. Connect AUI drop cable female connector to the AUI port on a 10BASE-5 cable transceiver or media attachment unit (MAU).



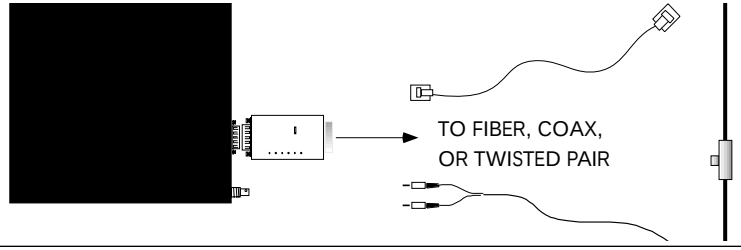
4. Verify that 10BASE-5 segment is terminated at both ends using 50-ohm terminators.

CONNECTING TO NETWORK USING TRANSCEIVER

NOTE: Refer to transceiver documentation for detailed specifications.

To connect to network using transceiver:

1. Locate IEEE 802.3 compliant transceiver with male AUI connector and with required network media connector.
2. Connect transceiver male AUI connector to the female AUI connector on LANMaster T16.
3. Referring to transceiver documentation, connect transceiver network media connector to the network media.

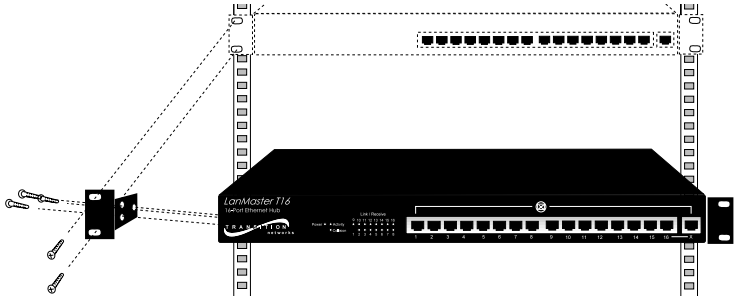


Installing LANMaster T16 at Site

NOTE: Rackmount brackets, screws, and rubber feet are provided.

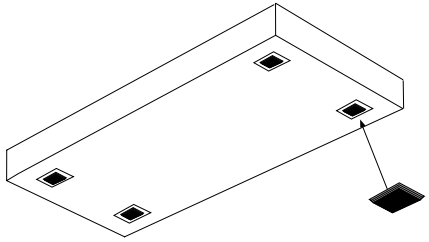
To install the LANMaster T16 **in 19-inch rack cabinet**:

1. Install right and left front brackets on LANMaster T16 by installing three (3) screws through each bracket into LANMaster T16 chassis.



2. Carefully align the LANMaster T16 between the 19-inch rack mounting rails.
3. Install LANMaster T16 by installing two (2) screws through right front bracket and two screws through left front bracket, using clip nuts to secure if necessary.

To install the LANMaster T16 **on table or other flat surface**:



1. Carefully turn LANMaster T16 to side.
2. Install four (4) rubber feet included with packing material:
   - Separate rubber feet.
   - Remove protective paper from adhesive surface on each rubber foot.
   - Position and secure each rubber foot as shown.
3. Return LANMaster T16 to upright position.

Installing Network Cable

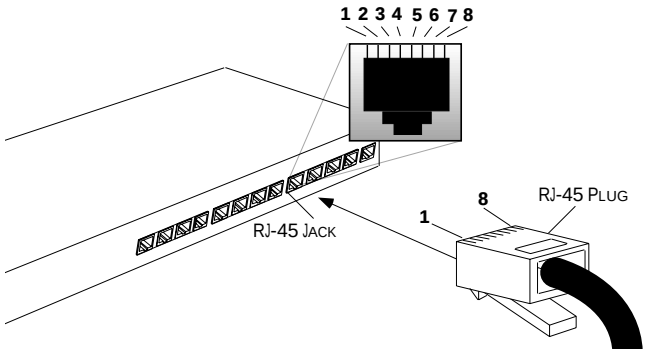
10BASE-T Requirements

STRAIGHT-THROUGH/CROSSOVER CABLE/CONNECTOR

NOTE: The 10BASE-T cable and RJ-45 jacks for **hub to terminal device** connections must be configured as ***straight through***. The 10BASE-T cable and RJ-45 jacks for **hub to hub** connections must be configured as ***crossover***.

The "X" port provided on the LANMaster T16 changes a physical straight through cable configuration to a logical crossover cable configuration for hub to hub connections.

Therefore, ensure that all 10BASE-T cable to be installed is straight-through:



Straight Through Cable at RJ-45 Plug

Hub . . . . . .PC, transceiver, NIC, printer

RJ-45 Male	RJ-45 Male
1	1
2	2
3	3
6	6

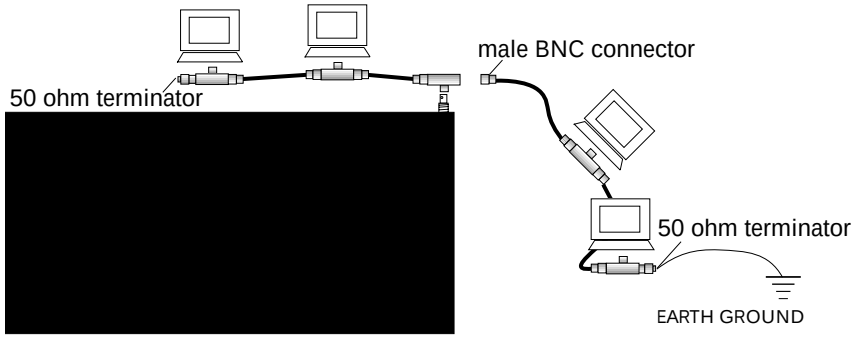
The two active pairs in a 10BASE-T network are pins 1 & 2 and pins 3 & 6. Use only dedicated wire pairs (such as blue/white & white/blue, orange/white & white/orange) for the active pins.

Installing Thinnet 10BASE-2 Cable

The LANMaster T16 has a female BNC MDI connector installed at the back for connection to 10BASE-2 cable and comes with a mating T-connector and a 50-ohm segment terminator for making the cable connection.

To connect to 10BASE-2 network cable:

1. Locate or build IEEE 802.3 compliant 10BASE-2 cable with male BNC connectors installed at both ends.
2. Install the mating T-connector to the female BNC connector on the LANMaster T16.
3. Install 10BASE-2 cable to one side of the T-connector.
4. Install 10BASE-2 cable to other side of the T-connector OR, if the LANMaster T16 is the last network device in the daisy chain, install a 50-ohm terminator.
5. Verify that the 10BASE-2 segment coax cable segment is terminated properly at both ends.

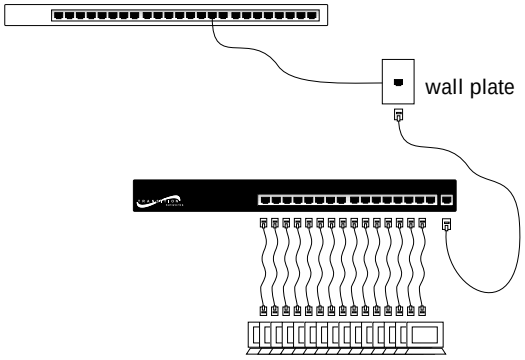


In a coax thinnet installation, the first and last device in the daisy-chain must be terminated with a 50 ohm terminator. Additionally, the 10BASE-2 segment must be grounded to "earth ground" at one end.

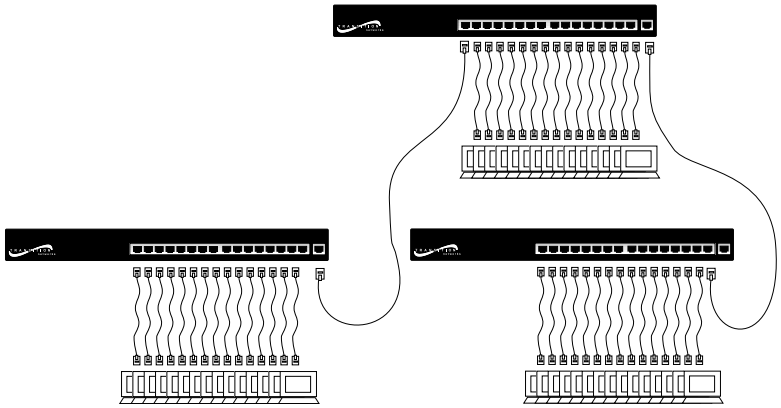
Installing Twisted-Pair 10BASE-T Cable

To connect 10BASE-T Cable to LANMaster T16 RJ-45 connectors:

1. Locate or build 10BASE-T cables that are:
   - 802.3 compliant (See page 20.)
   - with *straight through* connector/cable configuration (See page 7.)
   - with male RJ-45 plug connectors at both ends.
2. Connect male RJ-45 plug connector at one end of 10BASE-T cable to LANMaster T16 RJ-45 jack connector.
3. Connect male RJ-45 plug connector at other end of 10BASE-T cable to DTE terminal RJ-45 jack connector or to RJ-45 jack connector on other hub.



NOTE: Hub-to-hub connections on the LANMaster T16 MUST be from any port 1-16 on one LANMaster T16 hub to the X port on the other LANMaster T16 hub.



NOTE: The IEEE 802.3 standard states that the shield of a coax trunk cable shall make electrical contact with an earth reference once and only once per segment. Failure to provide an earth ground to a 10BASE-2 or 10BASE-5 segment may allow ambient RF energy to couple onto the cable shield, resulting in intermittent network failure. More than one ground per segment may allow a potential difference between the two grounds to cause current to flow, damaging components. And, since Ethernet senses collisions on 10BASE-2 and 10BASE-5 cable by monitoring the shield voltage level, more than one ground could cause false collisions that result in repeater ports partitioning and network traffic beyond the partition ceasing.

10BASE-2 Requirements

Thinnet 10BASE-2 cable “daisy-chains” network devices.

With a maximum segment length of 185 meters and a minimum segment length of 0.5 meters, the coaxial cable must have a 50 ohm characteristic impedance. Standard BNC connectors and "T's" provide access to the media, typically connected directly to the back of network interface cards, eliminating the need for an external transceiver.

Only 30 transceivers can be installed onto a 10BASE-2 Ethernet segment, spaced at least 0.5 meters apart. The first and last device in the daisy-chain must be terminated with a 50 ohm terminator, grounded to “earth ground” at one end.

10BASE-5 Requirements

Thicknet 10BASE-5 cable is the original Ethernet.

With a maximum segment length of 500 meters and a minimum segment length of 1.5 meters,the coaxial cable must have a 50 ohm characteristic impedance.

As many as 100 transceiver can be installed onto a 10BASE-5 Ethernet segment, spaced at least 2.5 meters apart. There must be a type N 50 ohm terminator installed at each end of a thick coaxial cable segment.

10-Mb/s Baseband Network Configuration Guidelines

Ethernet 802.3 specifications define network configuration guidelines for the 10-Mb/s baseband network:

10BASE-T, 10BASE-2, and 10BASE-5 cable segments can be installed as a single Ethernet collision domain if the cable segments are connected using repeaters.

When connecting LANMaster T16 repeater hubs, the transmission path between any two Data Terminating Equipment (DTE) network devices can consist of no more than five segments. (A segment is the independent network cable connection between repeaters or between repeaters and network devices.)

To verify the network configuration by assigning segment numbers to cable connections:

1. Determine the two terminals in the network which are separated by the greatest number of segments.
2. Assign a segment path between the terminals by labeling the cable connected to one of the terminals "segment 1" and the segment connected to the other terminal "segment n" (n = total number of segments ≤ 5).
3. To verify that no segment paths contain more than n segments, assign segment paths and numbers to all other terminals.
4. Verify than no more than three of the segments are 10BASE-2 or 10BASE-5 with multiple stations attached.