



GarrettCom[®]

Industrial Networking at Its Best™

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Magnum Mini-Transceivers

TP1 / CT1



Installation & User Guide

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TECHNICAL SPECIFICATIONS

PERFORMANCE

Data Rate: 10 Mbits/second

NETWORK STANDARDS

Ethernet V1.0 and 2.0, IEEE 802.3:
10BASE-T, 10BASE2

MECHANICAL

Enclosure: High strength fabricated metal

Dimensions: TP1: 2.35 in x 1.75 in x 0.75 in
(5.95 cm x 4.45 cm x 1.90 cm)
CT1: 3.40 in x 1.75 in x 0.85 in
(8.65 cm x 4.45 cm x 2.15 cm)

Weight: TP1: 3.4 oz. (97.2g)
CT1: 4.2 oz. (120 g)

MEDIA INTERFACES

TP (10BASE-T): RJ-45 mod. 8-pin female connector
BNC (10BASE2): Standard BNC connector, RG-58 ThinNet
AUI: D-Sub 15-pin Male (w/slide lock)

OPERATING ENVIRONMENT

Ambient temperature: 32°- 122 F° (0° - 50° C)
Ambient relative humidity: 10% to 95%
(non-condensing)

SAFETY APPROVALS

UL Listed (UL 1950) EMI: Meets FCC
Class A standard

WARRANTY

Three Years Made in USA

Magnum Mini-Transceivers are equipped with an AUI port and either a 10BASE-T (RJ-45) connector or a BNC (10BASE2) connector. The AUI port can be used to connect directly to the workstation or device in most cases. If this is not possible, an AUI drop cable (which does not exceed 3 feet in length) can be used.

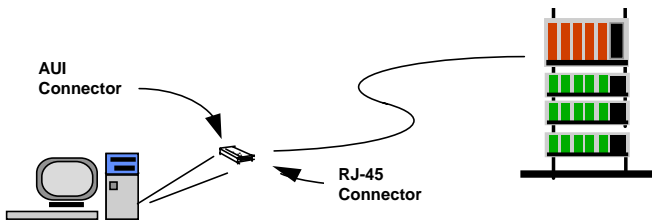


Figure 1: Magnum TP1 Provides Connectivity Between Workstation and 10BASE-T Network

OPERATION

The function of a Magnum Mini-Transceiver converts the station signal to appropriate network media; i.e. it converts traffic signaling between station signaling and 10BASE-T signaling.

The TP1 Twisted Pair Mini-Transceiver is designed to connect an existing AUI device to a 10BASE-T (TP) network. (Note: By using a shielded AUI extension cable, and selecting RED SQUELCH function switch to ON position, the unit can be used on shielded twisted pair (STP) networks.)

The CT1 10BASE2 ThinNet Mini-Transceiver is intended to be used with ThinNet coaxial, 50 Ohm, RG-58 A/U cable. Cable runs should not exceed 180 meters in total length. A 50 Ohm terminator is required at both ends of the segment. Taps should be at least 0.5 meters apart.

LED/SWITCH SETTING DESCRIPTION & OPERATION

Each Magnum Mini-Transceiver is equipped with switches and LEDs to allow for configuration and quick visual assessment of its operating condition.

Magnum TP1

LED	Color	Indication (when lit)
LINK	green	Connectivity established / normal operation
COL	yellow	Collision has occurred
REC	green	Data is being received from attached segment; flashes to indicate data traffic
TRAN	green	Data is currently transmitted by attached station
POL	yellow	Polarity error on the TP segment.
SQE	yellow	SQE Test feature enabled
PWR	green	Unit receiving power

SWITCH SETTING

POL	On=Automatic correction for reversed
RED. SQUELCH	On=Shielded Twisted Pair (STP); Off=Unshielded Twisted Pair (UTP)
LINK	On=10BASE-T; Off=Starlan 10 (ATT) polarity on the segment.
SQE	Enables or Disables the SQE Test feature

FACTORY SETTING OF SWITCHES

RED. SQUELCH	Off
AUTO POL	On
LINK	On
SQE	On

10BASE-T MODULAR JACK PINOUT

RJ45 PIN	SIGNAL	RJ45 PIN	SIGNAL
1	Transmit Data +	5	no connection
2	Transmit Data -	6	Receive Data -
3	Receive Data +	7	no connection
4	no connection	8	no connection

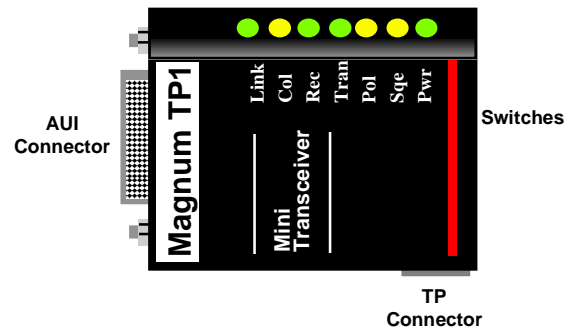


Figure 2: Front View - Magnum TP1

Magnum CT1

LED	Color	Indication (when lit)
SQE	yellow	SQE enabled
PWR	green	Unit receiving power

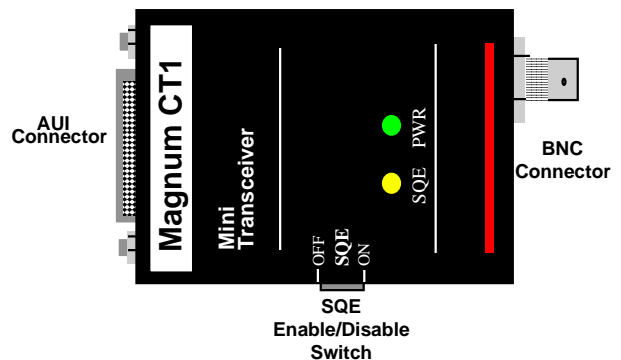
SWITCH SETTING

SQE	Enables or Disables the SQE Test feature
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FACTORY SETTING OF SWITCH

SQE	On
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Figure 3: Front View - Magnum CT1



POWER REQUIREMENTS

The Magnum Mini-Transceiver derives power directly from the AUI port on the device to which it is connected. No external power supply is required.

WORKSTATION INSTALLATION

Magnum Mini-Transceivers attach directly to the AUI connector of the workstation. Note the following table of pin assignments for the AUI connector:

Table 1: Pin Assignments for Ethernet Electrical Connectors

Pin	Function	Pin	Function
1	Control in Circuit Shield	9	Control in Circuit B
2	Control in Circuit A	10	Data out Circuit B
3	Data out Circuit A	11	Data out Circuit shield
4	Data in Circuit Shield	12	Data in Circuit B
5	Data in Circuit A	13	Voltage Plus (+)
6	Voltage Common	14	Voltage Shield
7	Control out Circuit A	15	Control out Circuit B
8	Control out Circuit ShieldSHELL (conductive shell)		Protective Ground

NOTES: 1) Voltage Plus (pin #13) and Voltage Common (pin #6) use a single twisted pair in the AUI cable
2) Pins 4, 8, 11, and 14 may be connected to pin #1

10BASE-T Wiring Connection - Twisted Pair Segment

The following procedure describes how to connect a 10BASE-T twisted pair segment to the Magnum TP1. The procedure is the same for both unshielded and shielded twisted pair segments.

- 1) Using standard 10BASE-T media, insert either end of the cable with an RJ-45 plug into the RJ-45 connector. Note that, even though the TP connector is shielded, either unshielded or shielded 10BASE-T cables and wiring may be used.
- 2) Connect the other end of the cable to the corresponding network device.
- 3) When proper connection and power have been established, the TP1's LINK LED will illuminate GREEN.

BNC Connection - ThinNet Segment

The following procedure describes how to connect a ThinNet (10BASE2) segment to a Magnum CT1.

- 1) Attach a ThinNet BNC "T" connector to the BNC connector of the CT1.
- 2) Attach the ThinNet cable to each side of the "T" connector.
- 3) Ensure that the ThinNet cable segment is terminated with a cable terminator at both ends.

TROUBLESHOOTING

If difficulty is encountered during installation or operation, double check instructions and specifications as mentioned on previous page. Also, verify the following:

- 1) Cables/connectors: Check that they have been properly connected -- wires & cables not crimped or impaired.
- 2) Power to unit: Use PWR LED to verify that unit is receiving power
- 3) Problem isolated to Mini-Transceiver: Replace with a known working device. Verify if the problem has been corrected.

If problem continues after completing all above steps, contact your supplier or GarrettCom, Inc. for assistance.

CALLING FOR ASSISTANCE

Be prepared to have complete information ready when calling for assistance.

- 1) Description of problem:
 - a. Nature & duration of problem
 - b. Situations when problem occurs
 - c. Components involved in problem
 - d. Applications that appear to create problems
 - e. Equipment model & serial numbers
 - f. Date item purchased
 - g. Other equipment hardware or related media used
 - h. Record of changes made to network configuration prior to occurrence of problem & system administration procedures changes should be noted.

RMA (RETURN MATERIAL AUTHORIZATION)/WARRANTY REPAIR

All returns for repair are required to have an RMA number assigned to it. Obtain an RMA number by calling GarrettCom, Inc. at ph: 510-438-9071. You must have the following information ready:

- 1) Name, phone number of contact person
- 2) Company name
- 3) Shipping address
- 4) Product name
- 5) Serial Number
- 6) Sales Order Number
- 7) Date of installation
- 8) Failure symptoms including description of problem

GarrettCom, Inc. will carefully test and evaluate all returned product. If the problem or condition cannot be duplicated, the unit will be returned as: No Problem Found.

GarrettCom, Inc. reserves the right to charge for the testing of non-defective units under warranty. Testing and repair of product that is not under warranty will result in a customer (user) charge.

Should you need to ship the unit back to GarrettCom, Inc., package accordingly:

- 1) Use "bubble wrap" plastic sheet/bag and/or original container.
Retain all connectors and this user guide.

CAUTION: DO NOT pack unit in styrofoam/"popcorn" type material. This may cause electro-static shockdamage to unit.

- 2) Mark RMA number clearly on outside of shipping container.

NOTE: GarrettCom, Inc. is not liable for shipping charges

- 3) Ship to address:

GarrettCom, Inc.
47823 Westinghouse Drive
Fremont, CA 94539
Attn: Customer Service
ph: 510-438-9071 fax: 510-438-9072

WARRANTY INFORMATION

GarrettCom, Inc. warrants its products to be free from defects in materials and workmanship for a period of three (3) years from the date of shipment by GarrettCom, Inc..

During this warranty period, GarrettCom, Inc. will repair or at its option replace components in the products that prove to be defective at no charge other than shipping and handling, provided that the product is returned pre-paid to GarrettCom, Inc..

This warranty will not be effective if, in the opinion of GarrettCom, Inc., the product has been damaged by misuse, misapplication, or as a result of service or modification other than by GarrettCom, Inc.

GarrettCom, Inc. reserves the right to make a charge for handling and inspecting any product returned for warranty repair which turns out not to be faulty.

Please complete the warranty card as this acts as a product registration and mail it to GarrettCom, Inc. within 2 weeks of purchase.

IMPORTANT: Magnum Mini-Transceivers contain no user serviceable parts. Attempted service by unauthorized personnel shall render any and all warranties null and void.

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment generates, uses, and can radiate frequency energy and if not installed and used properly, that is in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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