Magnum Mini-Transceivers Installation & User Guide

TP1a / CT1a

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: TP1a: 2.88 in x 1.50 in x 0.80 in
(7.31 cm x 3.81 cm x 2.03 cm)
CT1a: 3.75 in x 1.50 in x 0.80 in
(9.53 cm x 3.81 cm x 2.03 cm)
Weight: TP1a: 2.25 oz. (64 g)
CT1a: 2.85 oz. (81 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.

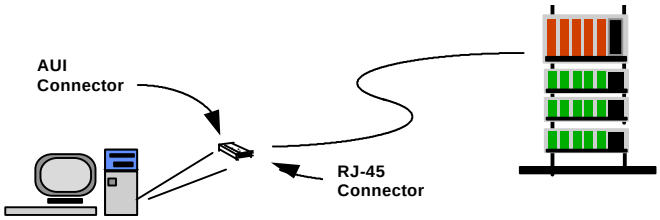

Figure 1: Magnum TP1a Provides Connectivity Between Workstation and 10BASE-T Network

OPERATION
The function of a Magnum Mini-Transceiver is to convert the station signal to the appropriate network media, and vice-versa.

The TP1a Twisted Pair Mini-Transceiver is designed to connect an existing AUI device to a 10BASE-T (TP) network.

The CT1a 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 TP1a/CT1a Mini-Transceiver is equipped with a limited set of LEDs and switches, as shown in the table below.

Magnum TP1a

LED	Color	Indication*(when lit)*
LINK	green	Connectivity established/ normal operation
RX	yellow	Data is being received from attached segment; flashes to indicate data traffic
TX	yellow	Data is being transmitted by attached station
PWR	green	Unit receiving power

SWITCH

SQE	Enables or Disables the SQE Test feature; Factory set to "On" (Enabled)

10BASE-T MODULAR JACK PINOUT

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

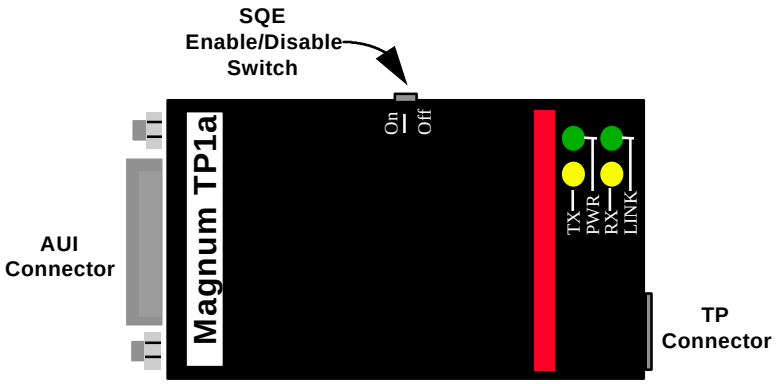

Figure 2: Front View - Magnum TP1a

Magnum CT1a

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

SWITCH

SQE	Enables or Disables the SQE Test feature; Factory set to "On" (Enabled)

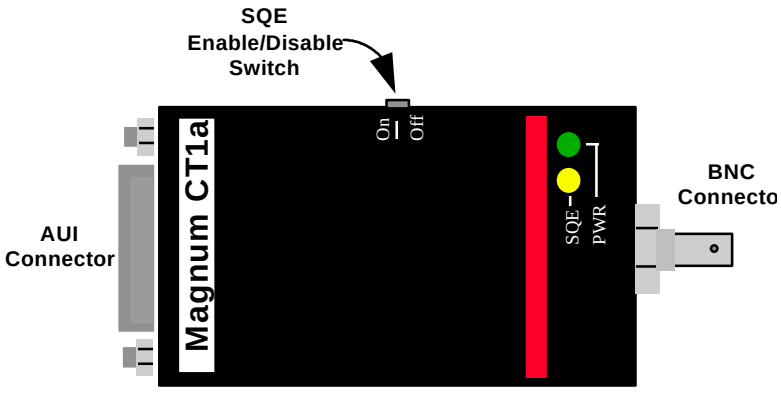

Figure 3: Front View - Magnum CT1a

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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 Shield (conductive shell)	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 TP1a. 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 TP1a's LINK LED will illuminate GREEN.

BNC Connection - ThinNet Segment

The following procedure describes how to connect a ThinNet (10BASE2) segment to a Magnum CT1a.

1) Attach a ThinNet BNC "T" connector to the BNC connector of the CT1a.
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 Garrett Communications 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 assigned RMA number. Obtain an RMA number by calling Garrett Communications 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

Garrett Communications 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.

Garrett Communications 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 Garrett Communications, 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: Garrett Communications is not liable for shipping charges
3) Ship to address:
   Garrett Communications
   48531 Warm Springs Blvd.
   Fremont, CA 94539
   Attn: Customer Service

   ph: 510-438-9071

WARRANTY INFORMATION

Garrett Communications 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 Garrett Communications.

During this warranty period, Garrett Communications 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 Garrett Communications.

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

Garrett Communications 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 Garrett Communications 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.

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