



## User's Guide

### J/E-CX-TBT-02

#### Stand-Alone Media Converter

- Coax to twisted pair
- 10Base-2 to 10Base-T

The Transition Networks J/E-CX-TBT-02 Ethernet media converter connects 10Base-T shielded or unshielded twisted-pair copper cable to 10Base-2 coaxial copper cable.

The J/E-CX-TBT-02 supports up to 24 daisy-chained devices on one coax segment per twisted-pair segment.

Part Number	Port One - Twisted-Pair	Port Two - Coax
J/E-CX-TBT-02	RJ-45, 10Base-T 100 m (328 ft)*	BNC, 10Base-2 185 m (610 ft)*

\* Typical maximum cable distance. The actual maximum cable distances are dependent upon the physical characteristics of the network installation.

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## Installation

### Checklist

The box should contain the following:

- Converter
- AC/DC power converter
- T-Connector (for TP-BNC converter)

Contact your sales representative if any item is missing.

### Power the media converter

**NOTE:** The external power supply provided with this product is UL listed by the manufacturer.

**Before you begin:** Only qualified technical personnel should install this media converter.

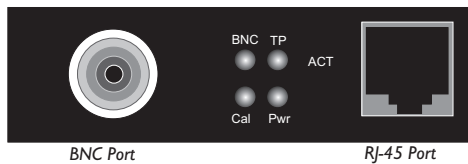
1. Connect the barrel connector on the power adapter to the media converter's power port (located on the back of the media converter).
2. Plug the AC end of the power adapter into an appropriate AC power outlet.
3. Verify that the LED power indicator light is ON; if it is not, see the Troubleshooting section in this manual.

### LED description

Use the LEDs to monitor media converter operation in the network.

TP-BNC Converter LED Functions

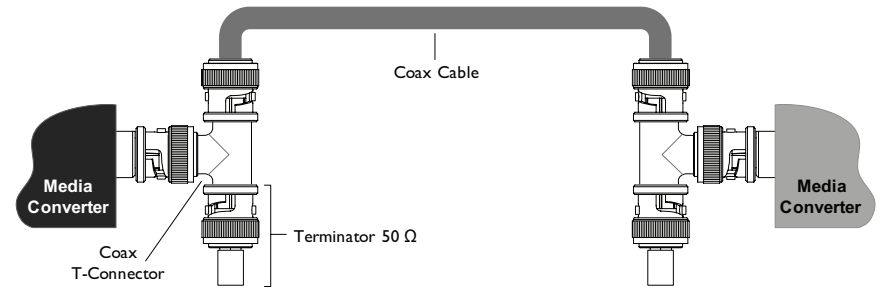
LED	Color	Function
BNC/Act	Green	Flashing = 10base-2 data traffic
TP/Act	Green	<ul style="list-style-type: none"> <li>• ON = 10Base-T link connection</li> <li>• Flashing = 10Base-T data traffic</li> </ul>
Col (Collision)	Amber	Flashing = collision present
Pwr (Power)	Green	ON = connected to external power



## Installation -- continued

### Install the coax cable

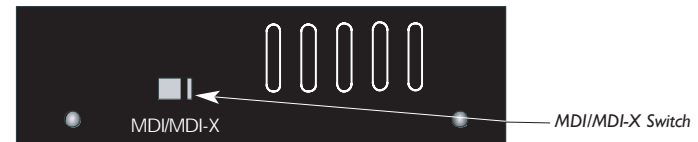
1. Install the coax T-connector and coax cable as shown below.



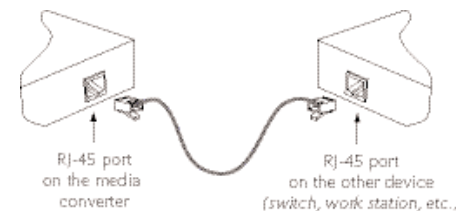
**CAUTION:** Ensure that the 10Base-2 coax cables are terminated properly at both ends. In a coax thinnet installation, terminate the first and last device in the daisy-chain with a 50 Ω terminator. Also, ensure that the 10Base-2 segment is grounded to earth ground at a single point. Failure to observe this caution will cause data transfer failures.

### Install the 10Base-T cable

**CAUTION:** Set the MDI/MDI-X switch (located on the side of the converter) to MDI-X (default) when connecting the J/E-CX-TBT-02 to a hub, switch, or router. Set the switch to MDI when connecting to a terminal, transceiver, or NIC. Failure to observe this caution will cause loss of data.



1. Locate or build 10Base-T compliant copper cables with male, RJ-45 connectors installed at both ends.
2. Connect the RJ-45 connector at one end of the cable to the RJ-45 port on the media converter, as shown below.
3. Connect the RJ-45 connector at the other end of the cable to the RJ-45 port on the 10Base-T compliant device, as shown below.



## Cable Specifications

### 10Base-2 cable

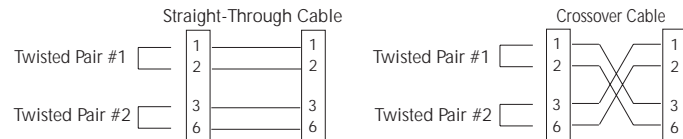
Cable type:	Stranded coaxial RG-58
Impedance:	50 $\Omega$
Maximum cable distance:	185 m (610 ft.)
Minimum cable distance:	0.5 m (1.6 ft.)
Device placement along segment:	0.5 m intervals
Max length of any single series path:	3 segments and 2 links
Maximum number of connections:	30

### 10Base-T cable

Category 3 (minimum requirement)	
Gauge:	24 to 22 AWG
Attenuation:	11.5 dB/100m @ 5-10 MHz
Maximum cable distance:	100 m (328 ft)
Category 5 (recommended)	
Gauge:	24 to 22 AWG
Attenuation:	22.0 dB/100m @ 100 MHz Maximum
cable distance:	100 m (328 ft)

#### Cable considerations:

- Either straight-through or crossover cable can be used.
- Shielded (STP) or unshielded (UTP) twisted-pair cable can be used.
- Pins 1 and 2, 3 and 6 are the two active pairs in an Ethernet network.
- RJ-45 Pin-out: Pin 1 = TD+, Pin 2 = TD-, Pin 3 = RD+, Pin 6 = RD-
- Use only dedicated wire pairs for the active pins; e.g., blue/white and white/blue, orange/white and white/orange, etc.
- Do not use flat or silver satin wire.



## Technical Specifications

For the Transition Networks Model J/E-CX-TBT-02 or equivalent.

Standards:	IEEE 802.3
Dimensions:	1" x 2.75" x 3.7" (26 mm x 71 mm x 94 mm)
Weight:	6 oz (181 g) approximate
Data Rate:	10 Mb/s (half-duplex mode)
LEDs:	BNC/Act, TP/Act, Col, Pwr
Power Supply:	100-240VAC 50/60 Hz, 1.0A @ 5VDC (The external power supply provided with this product is UL listed by the power supply's manufacturer.)
MTBF:	49,000 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 129,000 hours (Bellcore7 V5.0)
Operating Temp:	0°C to 50°C (32° F to 122° F)
Storage Temp:	-20°C to 85°C (-4° F to 185° F)
Humidity:	10% to 90%, non-condensing
Warranty:	Lifetime

## Troubleshooting

If the media converter fails, isolate and correct the fault by determining the answers to the following questions and then taking the indicated action:

1. Is the PWR LED on the media converter illuminated?
  - NO
    - Is the power cord properly installed in the media converter and at the external power source?
    - Does the external power source provide power?
    - Contact Technical Support: U.S.A./Canada: 1-800-260-1312, International: 00-1-952-941-7600.
  - YES
    - Proceed to step 2.
2. Is the TP/ACT LED on the media converter illuminated or flashing?
  - NO
    - Check twisted-pair 10Base-T cables for proper connection.
    - Verify that the MDI/MDI-X switch is set correctly. See MDI/MDI-X switch setting caution.
    - Contact Technical Support
  - YES
    - Proceed to step 3.
3. Is the TP/ACT LED on the media converter illuminated, but not flashing?
  - NO
    - Disconnect and reconnect the cable to restart the initialization process.
    - Restart the workstation to restart the initialization process.
    - Contact Technical Support.
  - YES
    - Proceed to step 4.
4. Is the BNC/ACT LED turned ON?
  - NO
    - Check 10Base-2 cables for proper connection.
    - Verify that 10Base-2 cable connections on the media converter and on the attached device are terminated properly.
    - Disconnect and reconnect the cable to restart the initialization process.
    - Restart the workstation to restart the initialization process.
    - Contact Technical Support.
  - YES
    - Contact Technical Support.

## Contact Us

### Technical support

Technical support is available 24 hours a day.

US and Canada: 1-800-260-1312

International: 00-1-952-941-7600

### Transition now

Chat live via the Web with Transition Networks Technical Support.

Log onto [www.transition.com](http://www.transition.com) and click the Transition Now link.

### Web-based seminars

Transition Networks provides seminars via live web-based training.

Log onto [www.transition.com](http://www.transition.com) and click the Learning Center link.

### E-Mail

Ask a question anytime by sending an e-mail to our technical support staff.

[techsupport@transition.com](mailto:techsupport@transition.com)

### Address

Transition Networks



10900 Red Circle Drive

Minnetonka, MN 55343, U.S.A.

Telephone: 952-941-7600

Toll free: 800-526-9267

Fax: 952-941-2322

		<b>Declaration of Conformity</b>	
Name of Mfg:	Transition Networks 10900 Red Circle Drive, Minnetonka MN 55343 U.S.A.		
Model:	J/E-CX-TBT-02 Series Media Converters		
Part Number(s):	J/E-CX-TBT-02		
Regulation:	EMC Directive 89/336/EEC		
Purpose:	To declare that the J/E-CX-TBT-02 to which this declaration refers is in conformity with the following standards. CISPR 22:1993; EN 55022:1998 Class A; FCC part 15 subpart B		
I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).			
 Stephen Anderson, Vice-President of Engineering			December, 2010 Date

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# Compliance Information

## 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.  
Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

## 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.

**Achtung!** Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fall ist der Benutzer für Gegenmaßnahmen verantwortlich.

**Attention!** Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.



In accordance with European Union Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003, Transition Networks will accept post usage returns of this product for proper disposal. The contact information for this activity can be found in the 'Contact Us' portion of this document.



**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 öffentliches Telekommunikationsnetz in den EG-Mitgliedstaaten verstösst gegen die jeweiligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

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