**“twister”**™

MEDIA CONVERTER 7000 MODULES

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**Quick Reference**

**Specifications:**
- **100Mbps “twister” Modules**
  - Bit Rate: 100Mbps full-duplex; 200Mbps full-duplex
  - Bit Delay: < 40 bits

**Twisted-Pair Interface**
- Connector: Shielded RJ-45, 8-pin jack
- Impedance: 100Ohms nominal
- Signal Level Output (differential): -95 to 1.05V
- Signal Level Input: 350mV minimum
- Supported Link Length: Category 5 UTP

**Multimode Fiber Optic Interface**
- Connector: ST or SC
- **ST** RX Input Sensitivity: -31 dBm peak minimum
- RX Output Power: -14 dBm to -23.5 dBm (50/125 µm)
- TX Output Power: -19 dBm to -14 dBm (62.5/125 µm)
- Supported Link Length: up to 2km full duplex
  - Up to 15km full duplex
  - 50/125, 62.5/125, 10/140 µm POF

**Singlemode Fiber Optic Interface**
- Connector: ST or SC
- **ST** RX Input Sensitivity: -31 dBm peak minimum
- RX Output Power: -8 dBm to -15 dBm (9/125 µm)
- TX Output Power: 0 dBm to -5 dBm (9/125 µm)
- Supported Link Length: up to 40km full duplex
  - 8.3/125, 8.7/125, 9/125, 10/125 µm POF

**Singlemode Fiber Optic Interface — extended distance support**
- Connector: SC
- RX Input Sensitivity: -35 dBm minimum
- RX Output Power: 0 dBm to -5 dBm (9/125 µm)
- TX Output Power: 0 dBm to -5 dBm (9/125 µm)
- Supported Link Length: up to 40km full duplex
  - 8.3/125, 8.7/125, 9/125, 10/125 µm POF

**Thinnet Coax Interface**
- Connector: BNC receptacle
- Internal Transceiver: IEEE 802.3
- Termination: User Selectable
- Supported Link Length: up to 185m
- Cable Type: RG-58 coaxial cable

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1. **Installing “twister” Media Converter 7000 Modules**
   - Modules must be firmly secured to the chassis before network connections are made. Follow the simple steps outlined below:
   1. Grasp a module by the front panel as shown and insert into a slot making sure that both the top and bottom of the card edges are lined up with the top and bottom card guides.
   2. Slide the module in until the top and bottom edges of the front panel are flush and even with the top and bottom edges of the chassis and secure to the chassis by turning the thumb screw clockwise until snug.

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The information contained in this document is assumed to be correct and current. The manufacturer is not responsible for errors or omissions and reserves the right to change specifications at any time without notice.
100Mpbs TX-to-FX “twister” 7000 Modules:

- RJ-45 to SX multimode SC: 100m/300m
- RJ-45 to SX singlemode SC: 100m/300m
- RJ-45 to SX singlemode ST: 100m/15km
- RJ-45 to SX multimode ST: 100m/15km

These modules provide high-speed transparent integration of 10BASE-FL segments. These modules operate in the LE7306A and LE7312A chassis only.

100Mbps MM-to-SM “twister” 7000 Modules:

- RJ-45 to SX multimode SC: 2km/15km
- RJ-45 to SX singlemode SC: 2km/15km
- RJ-45 to SX singlemode ST: 2km/15km
- RJ-45 to SX multimode ST: 2km/15km

These modules provide seamless integration between higher bandwidth singlemode and multimode fiber optic segments.

LED Operation:

- PWR: normal operation
- LK: satisfactory link status on respective port
- AT: detecting collision condition
- COL: detection of collision condition
- II: auto-negotiation.

Jumper Settings:

- To enable use of external termination: connect pins 1&2
- To disable LLCF: connect pins 2&3 (default)

10Mpbs TELCO “twister” 7000 Modules:

- LE7302C: TELCO to dual RJ-45 100m/100m
- LE7304C: TELCO to dual FL multimode SC 2km/2km
- LE7324C: TELCO to dual FL singlenode ST 2km/2km
- LE7326C: TELCO to dual FL multimode ST 2km/2km

These modules operate in the LE7308A and LE7312A chassis only and provide media conversion between the two individual network connections on the front of the module and a 50-pin TELCO connector on the back of the chassis. Since each module consists of two network connections, up to 24 individual connections can be supported by both the 7000-12 LS and 7000-22 LS chassis, and up to 12 individual connections can be supported by the 7000-6 chassis. (NOTE: The RJ-45 ports have their transmit and receive pairs internally crossed over.)

LED Operation:

- PWR: normal operation
- LK: satisfactory receive link status on TP port
- COL: detection of collision condition
- II: auto-negotiation.

Jumper JP4 Termination

- To enable use of external termination: connect pins 2&5 (default)
- To enable internal 50Ω termination: connect pins 1&2

Link Loss Carry Forward (LLCF):

Link Loss Carry Forward (LLCF) functionality is incorporated on “twister” 7000 modules (with the exception of the BNC and TELCO modules) as an aid in troubleshooting remote connections. The modules are shipped with the LLCF jumper set at disabled. When LLCF is enabled, the FX ports as well as the TX ports on the Twister Modules do not transmit a link signal until the receive a link signal from the opposite port.

Refer to the “twister” Media Converter 7000 Installation & User Guide for a more complete description and instructions for enabling LLCF.

IMPORTANT: When connecting a “twister” Module with LLCF enabled to an auto-negotiating device, force both sides of the configuration to either 10 or 100Mpbs full or half duplex. This allows the “twister” Module to immediately see link pulses and start passing data.

10Mbps Fiber Optic “twister” 7000 Modules:

- LE7313C-SC-R2: RJ-45 to FL multimode ST 100m/2km
- LE7314C-R2: RJ-45 to FL multimode ST 100m/2km
- LE7316C-R2: RJ-45 to FL singlemode ST 100m/8km
- LE7316C-MM-R2: RJ-45 to FL multimode SMA 100m/8km

These modules provide transparent integration of 10BASE-T and 10BASE-F segments.

LED Operation:

- PWR: normal operation
- LK: satisfactory receive link status on respective port
- AT: receiving data
- II: auto-negotiation.

Jumper Settings:

- To enable LLCF: connect pins 1&2
- To disable LLCF: connect pins 2&3 (default)

10Mbps Thinet coaxial “twister” 7000 Module:

- LE7313C-R2: RJ-45 to BNC 100m/185m

This module provides twisted-pair to Thinet coax segment integration.