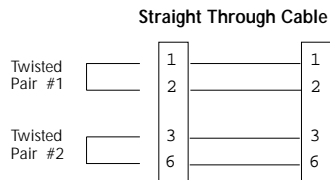


# MEDIA CONVERTER TECHNICAL SPECIFICATIONS

<b>Standards</b>	100BASE-SX, IEEE 802.3u	
<b>Environment</b>	Temperature:	0-40°C (32° to 100° F)
	Humidity	10-90%, non condensing
	Altitude	0-10,000 feet
<b>Warranty</b>	Lifetime	

## Straight-through Cable Configuration

Straight-through/crossover 100BASE-TX requirements are satisfied using the MDI/MDI-X switch with straight-through cable.



The two active pairs in a 100BASE-TX 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.



**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.

## 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.

## Copyright Restrictions

© 1998-1999. 2001TRANSITION Networks.

All rights reserved. No part of this work may be reproduced or used in any form or by any means – graphic, electronic, or mechanical – without written permission from TRANSITION Networks.

## Trademark Notice

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

33065.C



Minneapolis, MN 55344 USA

# 100BASE-TX/100BASE-SX 850 Nanometer Slide-In-Module Media Converters

C/E-100BTX-SX-01, C/E-100BTX-SX-01(SC)

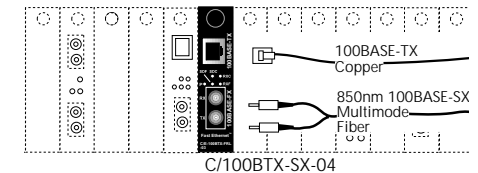
## USER'S GUIDE

The TRANSITION Networks C/E-100BTX-SX-01 series of 100BASE-TX to 100BASE-SX slide-in-module media converters, designed to be installed in the TRANSITION Networks Media Conversion Center, E-MCC-1600, connect 100BASE-TX unshielded twisted pair cable to **850 nm multimode** fiber-optic cable.

A four-position switch allows selection of Auto-negotiation, half-duplex or full-duplex, and/or Link Pass Through (LPT) /Remote Fault Detection (RFD). An MDI/MDI-X switch allows *straight-through* twisted-pair cable to be used for *crossover* 100BASE-TX connections.

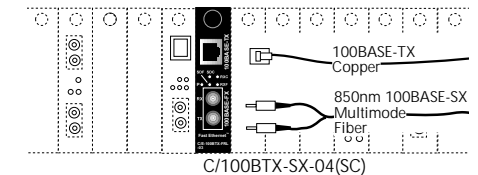
### C/E-100BTX-SX-01

Provides an RJ-45 twisted pair 100BASE-TX connector and a set of RX (receive) and TX (transmit) ST 100BASE-SX connectors to **multimode** fiber-optic cable.

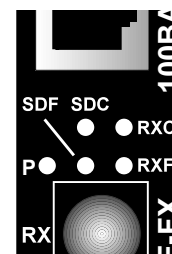


### C/E-100BTX-SX-01(SC)

Provides an RJ-45 twisted pair 100BASE-TX connector and an RX (receive) and TX (transmit) SC 100BASE-SX connector to **multimode** fiber-optic cable.



## Status LEDs



- Power** Illuminated green LED indicates connection to external AC power.
- SDF** Signal Detect/Fiber: Steady green LED indicates fiber port is connected to device.
- SDC** Signal Detect/Copper: Steady green LED indicates RJ-45 port is connected to device.
- RXC** Receive/Copper: Flashing green LED indicates packets are seen on RJ-45 port.
- RXF** Receive/Fiber: Flashing green LED indicates packets are seen on fiber port.

## Switch Settings and Cable Requirements

Use small flatblade screwdriver or similar device to set recessed switches. Refer to label on top of media converter for MDI/ MDI-X switch settings. Refer to drawing for four-position switch settings.

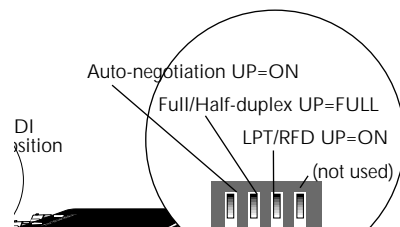
**MDI/MDI-X Straight-Through/Crossover** Straight-through/crossover 100BASE-TX requirements are satisfied using the MDI/MDI-X switch with straight-through cable. Set the MDI/MDI-X switch to MDI for cable connections between hub and media converter. Set the MDI/MDI-X switch to MDI-X for cable connections between media converter and terminal, transceiver or NIC.

### 4-Position Switch (4th switch not used)

**Auto-negotiation** (UP) Detects and adapts to line speed/operation mode of attached device.

**Full/Half-duplex** (UP) Allows an attached full-duplex station to transmit and receive simultaneously. (DOWN) Allows an attached station to transmit and receive sequentially.

**LPT/RFD** (UP) Blinks the SDF or SDC LED if a malfunction is detected at the unit to which the media converter is attached.



## Ethernet Cable Specifications

The physical characteristics of the media cable must meet or exceed IEEE 802.3u 100BASE-TX and 100BASE-SX specifications.

### 100BASE-TX Cable Specifications

Category 5 wire or better is required. Either shielded twisted pair (STP) or unshielded twisted pair (UTP) can be used. Use a straight-through cable configuration (see *back page*).

#### Category 5:

Gauge	24 to 22 AWG
Attenuation	20 dB/1000' @ 10 MHz
Impedance	100 $\Omega$ $\pm$ 10% @ 10 MHz

Maximum Cable Distance: 100 meters (330 feet)

### 100BASE-SX Cable Specifications

#### MULTIMODE

Fiber-optic Cable Recommended: 62.5 / 125  $\mu$ m multimode fiber  
Optional: 50 / 125  $\mu$ m multimode fiber

Modal bandwidth:  $\leq$ 160MHz-Km

Fiber-optic Transmitter Power: min: -20 dBm max: -12 dBm

Fiber-optic Receiver Sensitivity: min: -24 dBm max: -12 dBm

Wavelength: 850nm

Bit error rate:  $\leq$ 2.5<sup>-10</sup>

Maximum Cable Distance: 2-300 meters

## Installing Slide-In-Module(s)

**CAUTION: Wear a grounding device and observe electrostatic discharge precautions when installing Media Converter Slide-in-Module(s) in the 16-Slot Media Conversion Center. Failure to observe this caution could result in damage to, and subsequent failure of, the Media Converter Slide-in-Module(s).**

NOTE: Slide-in-Modules can be installed in any installation slot, in any order.

To install the Media Converter Slide-in-Module in the E-MCC-1600 chassis:

1. Ensure that switches on circuit board are set correctly for site installation.
2. Remove Media Converter Slide-in-Module protective plate from selected installation slot by removing two screws that secure plate to front of E-MCC-1600. Retain one installation screw.
3. Carefully slide Media Converter Slide-in-Module into installation slot, aligning Media Converter Slide-in-Module with installation guides. NOTE: Ensure that the Media Converter Slide-in-Module is firmly seated against the backplane.
4. Secure Slide-in-Module by installing retained installation screw.

## Troubleshooting

1. Is the power LED on the media converter illuminated?
  - NO**
    - Is the Slide-In-Module properly connected to the Media Conversion Center chassis backplane?
    - Is the Power Supply Module properly connected both to the Media Conversion Center chassis backplane and to the AC outlet?
    - Contact Technical Support at (800) 260-1312/ (800) LAN-WANS.
  - YES**
    - Proceed to step 2.
2. Is the 100BASE-TX SDC LED illuminated?
  - NO**
    - Check UTP cables for proper connection and pin assignment. (See above.)
    - Contact Technical Support at (800) 260-1312/ (800) LAN-WANS.
  - YES**
    - Proceed to step 3.
3. Is the fiber SDF LED illuminated?
  - NO**
    - Check fiber cables for proper connection.
    - Verify that TX and RX cables on media converter are connected to RX and TX ports, respectively, on the other 100BASE-SX device.
    - Refer to Tech Tips available at: <http://www.transition.com>
    - Contact Technical Support at (800) 260-1312/ (800) LAN-WANS.
  - YES**