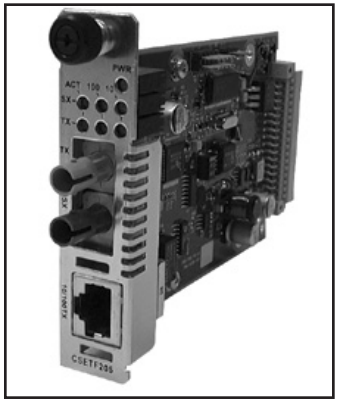
TRANSITION NETWORKS



User's Guide

CSETF10xx-205

Slide-in-Module Media Converter

- ***Ethernet and Fast Ethernet***
- ***10/100Base-TX to 10/100Base-SX***

Transition Networks CSETF10xx-205 series Ethernet and Fast Ethernet media converters connect 10/100Base-TX twisted-pair copper cable to 10/100Base-SX fiber-optic cable. The CSETF10xx-205 is also designed to be installed in a Transition Networks *PointSystem*™ chassis.

Part Number	Port One - Copper 10/100Base-TX	Port Two - Fiber-Optic 10/100Base-SX
CSETF1011-205	RJ-45 80 m *(262 ft)**	ST, 850 nm multimode 2 km *(1.2 mi.)** @ 10 Mb/s 60 m *(197ft.)** @ 100 Mb/s
CSETF1013-205	RJ-45 80 m *(262 ft)**	SC, 850 nm multimode 2 km *(1.2 mi.)** @ 10 Mb/s 60 m *(197 ft.)** @ 100 Mb/s

* Typical maximum cable distance. Actual distance is dependent upon the physical characteristics of the network installation.

The stand alone version of this media converter is SSETF10xx-205. For more information, see the SSETF10xx-205 user's guide on-line at: www.transition.com.

Installation

Set the Jumper

- The jumper is located on the circuit board.
- Use small needle-nose pliers to set the jumper.

Hardware — The media converter settings such as AutoCross and Link Pass-Through cannot be changed.

Hardware Mode

Software — The media converter settings are determined by the most-recently saved, on-board microprocessor settings.

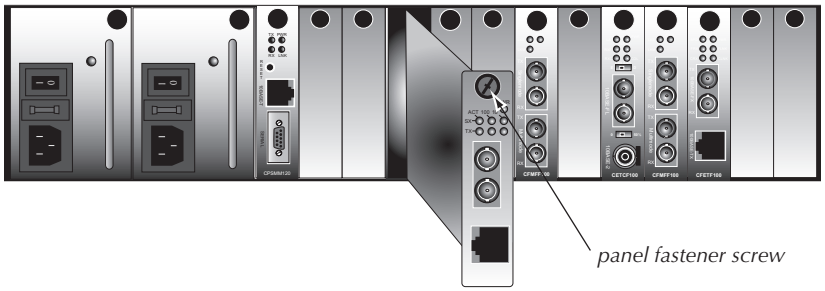
Software Mode

Install the Slide-In-Module

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when installing the media converter. Failure to observe this caution could result in damage to, and subsequent failure of, the media converter.

To install the CSETF10xx-205 media converter slide-in-module:

1. Locate an empty installation slot on the *PointSystem*™ chassis.
2. Carefully slide the slide-in-module into the installation slot, aligning the module with the installation guides.
3. Ensure that the module is firmly seated inside the chassis.
4. Push in and rotate the attached panel fastener screw clockwise to secure the module to the chassis front.

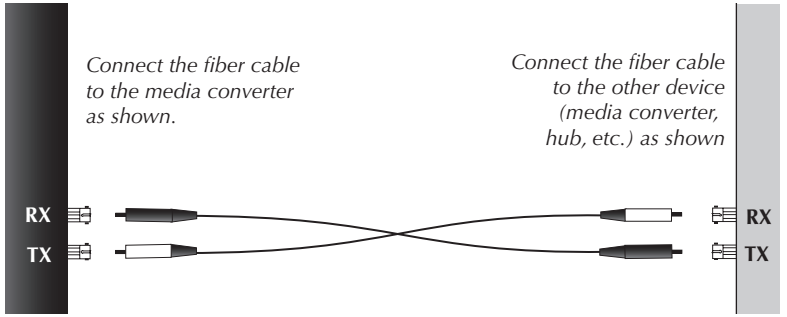


Installation -- Continued

Installing the Cable

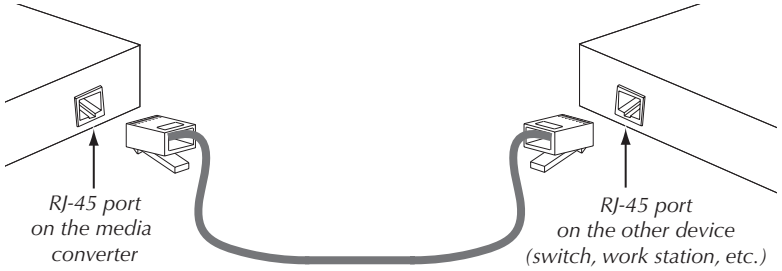
Fiber

1. Locate or build 10/100Base-SX compliant fiber cable with male, two-stranded TX to RX connectors installed at both ends.
2. Connect the fiber cables to the CSETF10xx-205 media converter as described:
   - Connect the male TX cable connector to the female TX port.
   - Connect the male RX cable connector to the female RX port.
3. Connect the fiber cables to the other device (another media converter, hub, etc.) as described:
   - Connect the male TX cable connector to the female RX port.
   - Connect the male RX cable connector to the female TX port.



Copper

1. Locate or build 10/100Base-TX 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 CSETF10xx-205 media converter.
3. Connect the RJ-45 connector at the other end of the cable to the RJ-45 port on the other device (switch, workstation, etc.).



Installation -- Continued

Power the Media Converter

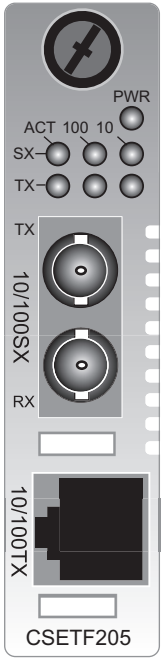
The CSETF10xx-205 slide-in-module is powered through the Transition Networks *PointSystem™* chassis.

Operation

Status LEDs

Use the status LEDs to monitor the CSETF10xx-205 media converter operation in the network.

PWR	*Power*	On = Connection to the external AC or DC power.
SX-ACT	*Fiber Activity*	Flashing = Data reception on the fiber link.
SX-100	*Fiber Speed*	On = Fiber link at 100 Mb/s.
SX-10	*Fiber Speed*	On = Fiber link at 10 Mb/s.
TX-ACT	*Copper Activity*	Flashing = Data reception on the copper link.
TX-100	*Copper Speed*	On = Copper link at 100 Mb/s.
TX-10	*Copper Speed*	On = Copper link at 10 Mb/s.

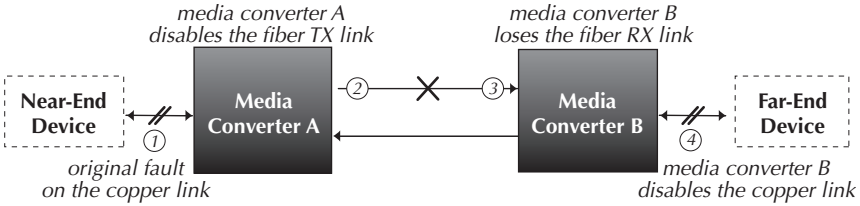


Operation -- Continued

Product Features

Link Pass-Through

The Link Pass-Through feature allows the media converter to monitor both the fiber and copper RX (receive) ports for loss of signal. In the event of a loss of an RX signal (1), the media converter will automatically disable the TX (transmit) signal (2), thus, "passing through" the link loss (3). The far-end device is automatically notified of the link loss (4), which prevents the loss of valuable data unknowingly transmitted over an invalid link.



Auto-Negotiation

The Auto-Negotiation feature allows the media converter to automatically configure itself to achieve the best possible mode of operation over a link. The media converter broadcasts its speed *(10 Mb/s or 100Mb/s)* and duplex capabilities *(full or half)* to the other devices and negotiates the best mode of operation. Auto-Negotiation allows quick and easy installation because the optimal link is established automatically. No user intervention is required to determine the best mode of operation.

A scenario where the media converter is linked to a non-negotiating device is a case where the user may want to disable Auto-Negotiation. *(Note: Auto-Negotiation can only be disabled in software mode.)* In this instance, the mode of operation will drop to the least common denominator between the two devices *(e.g.: 10 Mb/s, half-duplex)*. Disabling this feature gives the user the ability to force the connection to the desired speed and duplex mode of operation.

NOTE: The CSETF10xx-205 series media converter does not support rate conversion between 10Mb/s and 100Mb/s network devices.

Operation -- Continued

Product Features -- Continued

AutoCross™

The AutoCross feature allows either straight-through (MDI) or crossover (MDI-X) copper cables to be used when connecting to 10/100Base-TX devices. AutoCross determines the characteristics of the connection and automatically configures the unit to link up, regardless if the copper cable is MDI or MDI-X configuration.

NOTE: Factory default is "enable AutoCross." Transition networks recommends leaving the device in the "enable" mode.

SNMP

Use SNMP at an attached terminal or at a remote location to monitor the media converter by monitoring:

- Media converter power
- Copper link status
- Fiber link status
- Copper receive status
- Fiber receive status
- Media converter speed

Also, use SNMP to enter network commands that:

- Enable/disable AutoCross, Link Pass-Through, Auto-Negotiation
- Media converter speed
- Power down the media converter

See the on-line documentation that comes with Transition Networks *FocalPoint*™ software for commands and usage at www.transition.com

Cable Specifications

The physical characteristics must meet or exceed IEEE 802.3™ specifications.

Fiber Cable

Bit Error Rate:	<10-9	
Multimode fiber *(recommended):*	62.5/125 µm	
Multimode fiber *(optional):*	100/140, 85/140, 50/125 µm	
Wavelength:	850 nm multimode	
Attenuation:	<3.75 dB/km @ 850 nm	
CSETF1011-205 *(100 Mb/s)*		
Fiber Transmitter Power:	min: -19.0 dBm	max: -9.0 dBm
Fiber Receiver Sensitivity:	min: -24.0 dBm	max: -8.0 dBm
Link Budget:	5.0 dB	
CSETF1011-205 *(10 Mb/s)*		
Fiber Transmitter Power:	min: -19.0 dBm	max: -9.0 dBm
Fiber Receiver Sensitivity:	min: -32.5 dBm	max: -8.0 dBm
Link Budget:	13.5 dB	
CSETF1013-205 *(100 Mb/s)*		
Fiber Transmitter Power:	min: -19.0 dBm	max: -9.0 dBm
Fiber Receiver Sensitivity:	min: -24.0 dBm	max: -8.0 dBm
Link Budget:	5.0 dB	
CSETF1013-205 *(10 Mb/s)*		
Fiber Transmitter Power:	min: -19.0 dBm	max: -9.0 dBm
Fiber Receiver Sensitivity:	min: -32.5 dBm	max: -8.0 dBm
Link Budget:	13.5 dB	

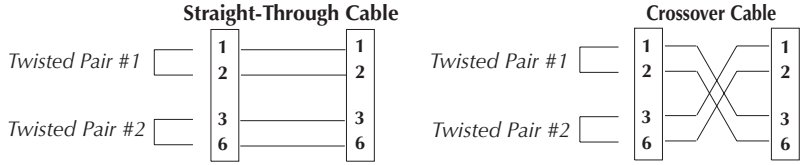
The fiber optic transmitters on this device meet Class I Laser safety requirements per IEC-825/CDRH standards and comply with 21 CFR1040.10 and 21CFR1040.11.

Copper Cable

Category 5:

Gauge:	24 to 22 AWG
Attenuation:	22.0 dB /100m @ 100 MHz
Maximum Cable Distance:	80 meters

- Straight-through (MDI) or crossover (MDI-X) twisted-pair cable may be used.
- Shielded (STP) or unshielded (UTP) twisted-pair cable may be used.
- Pins 1&2 and 3&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 & white/blue, orange/white & white/orange, etc.)
- Do not use flat or silver satin wire.



Technical Specifications

For use with Transition Networks Model CSETF10xx-205 or equivalent.

Standards:	IEEE 802.3™
Data Rate:	10 Mb/s, 100 Mb/s
Dimensions:	3.4" x 0.87" x 5" *(86 mm x 22 mm x 182 mm)*
Weight:	3 oz *(91 g) (approximately)*
Power Consumption:	3.6 watts
MTBF	521,000 hours *(MIL217F2 V5.0) (MIL-HDBK-217F)* 1,450,000 hours *(Bellcore7 V5.0)*
Environment:	Tmra*: 0° to 60°C *(32° to 140°F)* Storage Temperature: -20° to 85°C *(-4° to 185°F)* Humidity: 5 to 95%, non condensing Altitude: 0 to 10,000 feet
Warranty:	Lifetime

*Manufacturer's rated ambient temperature: Tmra range for this slide-in-module depends on the physical characteristics and the installation configuration of the Transition Networks PointSystem™ chassis in which this slide-in-module will be installed.

The information in this user's guide is subject to change. For the most up-to-date information on the CSETF10xx-205 media converter, view the user's guide on-line at: www.transition.com.

Product is certified by the manufacturer to comply with DHHS Rule 21/CFR, Subchapter J applicable at the date of manufacture.

CAUTION: Visible and invisible laser radiation when open. Do not stare into the beam or view directly with optical instruments.

CAUTION: Use of controls, adjustments or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION: Copper based media ports, e.g., Twisted Pair (TP) Ethernet, USB, RS232, RS422, RS485, DS1, DS3, Video Coax, etc., are intended to be connected to intra-building *(inside plant)* link segments that are not subject to lightening transients or power faults. Copper based media ports, e.g., Twisted Pair (TP) Ethernet, USB, RS232, RS422, RS485, DS1, DS3, Video Coax, etc., are NOT to be connected to inter-building *(outside plant)* link segments that are subject to lightening transients or power faults.

Troubleshooting

1. Is the PWR LED on the media converter illuminated?
   NO
   - Is the media converter inserted properly into the chassis?
   - Is the power cord properly installed in the chassis and in the grounded AC outlet?
   - Does the grounded AC outlet provide power?
   - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

   YES
   - Go to step 2.
2. Is the SX-ACT LED illuminated?
   NO
   - Check the 10/100Base-SX (fiber) cables for proper connection.
   - Verify that the TX and RX cables on the media converter are connected to the RX and TX ports, respectively, on the other device.
   - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

   YES
   - Go to step 3.
3. Is the SX-ACT LED flashing?
   NO
   - If there is no activity on the fiber port, continue below
   - If there is activity on the fiber port, disconnect and reconnect the fiber cable to restart the initialization process.
   - Restart the workstation to restart the initialization process.
   - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

   YES
   - Go to step 4.
4. Is the SX-100 LED illuminated?
   YES *(Flashing)*
   - The media converter is selecting between 10 Mb/s and 100 Mb/s speed for the fiber link. If persistent, disconnect and reconnect either cable to restart the initialization process.
   - Go to step 5.

   YES
   - The media converter has selected 100 Mb/s operation for the fiber link. If this is not the correct speed, disconnect and reconnect the fiber cable to restart the initialization process.
   - Go to step 5.

   NO
   - Go to step 5.
5. Is the SX-10 LED illuminated?
   YES *(Flashing)*
   - The media converter is selecting between 10 Mb/s and 100 Mb/s speed for the fiber link. If persistent, disconnect and reconnect either cable to restart the initialization process.

YES (On)

- The media converter has selected 10 Mb/s operation for the fiber link. If this is not the correct speed, disconnect and reconnect the fiber cable to restart the initialization process.
- Go to step 6.

NO

- Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

6. Is the TX-ACT LED illuminated?

NO

- Check the 10/100Base-TX (copper) cables for proper connection.
- Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

YES

- Go to step 7.

7. Is the TX-ACT LED flashing?

NO

- If there is no activity on the copper port, go to step 8.
- If there is activity on the copper port, disconnect and reconnect the copper cable to restart the initialization process.
- Restart the workstation to restart the initialization process.
- Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

YES

- Go to step 8.

8. Is the TX-100 LED illuminated?

YES (Flashing)

- The media converter is selecting between 10 Mb/s and 100 Mb/s speed for the copper link or one or both of the links is down. If persistent, disconnect and reconnect either cable to restart the initialization process.
- Go to step 9.

YES (On)

- The media converter has selected 100 Mb/s operation for the copper link. If this is not the correct speed, disconnect and reconnect the copper cable to restart the initialization process.
- Go to step 9.

NO

- Go to step 9.

9. Is the TX-10 LED illuminated?

YES (Flashing)

- The media converter is selecting between 10 Mb/s and 100 Mb/s speed for the copper link or one or both of the links is down. If persistent, disconnect and reconnect either cable to restart the initialization process.

YES

- The media converter has selected 10 Mb/s operation for the fiber link. If this is not the correct speed, disconnect and reconnect the copper cable to restart the initialization process.
- Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

NO

- Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

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** and click the **Transition Now** link.

Web-Based Seminars

Transition Networks provides seminars via live web-based training.
Log onto **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

Address

Transition Networks
6475 City West Parkway
Minneapolis, MN 55344, U.S.A.
telephone: 952-941-7600
toll free: 800-526-9267
fax: 952-941-2322

Declaration of Conformity

Name of Mfg:	Transition Networks 6475 City West Parkway, Minneapolis MN 55344 U.S.A.
Model:	CSETF10xx-205 Series Media Converters
Part Number(s):	CSETF1011-205, CSETF1013-205
Regulation:	EMC Directive 89/336/EEC

Purpose: To declare that the CSETF10xx-205 to which this declaration refers is in conformity with the following standards.

EN55022:1994 + A1:1995 + A2:1997; EN 55024:1998

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 — July, 2007 Date

Compliance Information

CE Mark

FCC Regulations

This equipment has been tested and found to comply with the limits for a Class A & B 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 & B 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 & B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

In accordance with European Union Directive 2002/96/ECU 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.

Dew Anschluss dieses Grates an en öffentlickes Telekommunikationsnetz in den EG-Mitgliedstaaten verstösst gegen die jeweligen einzelstaatlichen Gesetze zur Anwendung Dew Richtlinie 91/263/EWG zur Angleichung Dew Rechtsvorschriften Dew Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich Dew gegenseitigen Anerkennung ihrer Konformität.

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