TRANSITION NETWORKS

User's Guide

SSETF10xx-205

Stand-Alone Media Converter

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

Transition Networks SSETF10xx-205 series Ethernet and Fast Ethernet media converters connect 10/100Base-TX twisted-pair copper cable to 10/100Base-SX fiber-optic cable.

Part Number	Port One - Copper 10/100Base-TX	Port Two - Fiber-Optic 10/100Base-SX
SSETF1011-205	RJ-45 60 m *(197 ft)**	ST, 850 nm multimode 2 km *(1.2 mi.)** @ 10 Mb/s 300 m *(984 ft.)** @ 100 Mb/s
SSETF1013-205	RJ-45 60 m *(197ft)**	SC, 850 nm multimode 2 km *(1.2 mi.)** @ 10 Mb/s 300 m *(984 ft.)** @ 100 Mb/s

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

Note: The chassis version of the media converter is CSETF10xx-205. For more information, see the CSETF10xx-205 User's Guide on-line at: www.transition.com.

Optional Accessories *(sold separately)*

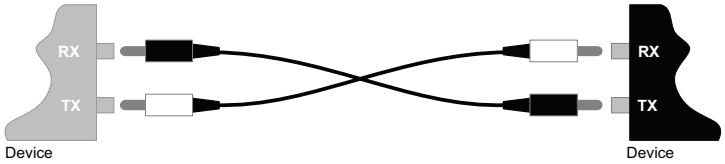
Part Number	Description
SPS-1872-SA	Optional External Power Supply; 18-72VDC Stand-Alone Output: 12.6VDC, 1.0 A
SPS-1872-PS	Optional External Power Supply; 18-72VDC Piggy-back; Output: 12.6VDC, 1.0 A
E-MCR-04	12-slot media converter Rack *(includes universal internal power supply)* 17 x 15 x 5 in. *(432 x 381 x 127 mm)*
WMBL	Length: 4.0 in. *(102 mm)*, Fits converter length: 4.7 in. *(119 mm)*
WMBV	Optional Vertical Mount Bracket, 5.0 in. *(127 mm)*
WMBD	Optional DIN Rail Mount Bracket, 5.0 in. *(127 mm)*
WMBD-F	Optional DIN Rail Mount Bracket *(flat),* 3.3in. *(84 mm)*

Installation

Installing the cable

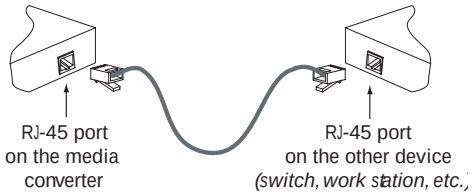
Fiber

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 SSETF10xx-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 SSETF10xx-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

Note: The external power supply provided with this product is UL listed by the power supply's manufacturer.

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. Connect the power adapter plug to AC power.
3. Verify that the media converter is powered by observing the illuminated LED power indicator light.

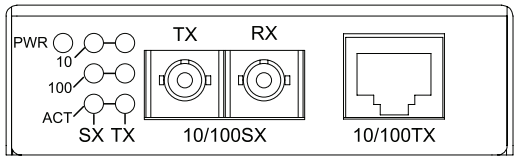
For DC power, consult the user's guide for the Transition Networks SPS1872-xx DC External power supply for powering the media converter.

Operation

Status LEDs

Use the status LEDs to monitor the SSETF10xx-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.

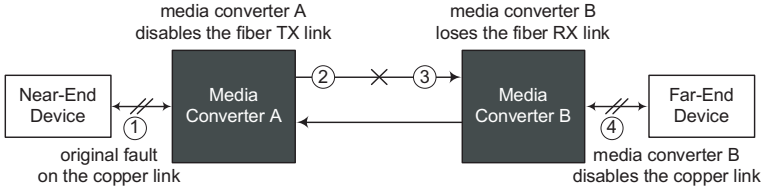


Operation – Continued

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.



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.

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.

Note: The SSETF10xx-205 series media converter does NOT support rate conversion between 10Mb/s and 100Mb/s network devices.

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	
SSETF1011-205 *(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	
SSETF1011-205 *(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	
SSETF1013-205 *(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	
SSETF1013-205 *(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.

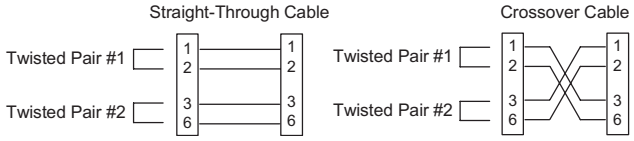
Cable Specifications – Continued

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 SSETF10xx-205 or equivalent.

Standards:	IEEE 802.3™
Data Rate:	10 Mb/s, 100 Mb/s
Dimensions:	3.25" x 1.0" x 4.7" (*83 mm x 25 mm x 119 mm)*
Weight:	1lb *(455 g) (approximate)*
Power Consumption:	3.6 watts
Power Supply:	12VDC, 0.5 Amp *(North America)* 12VDC, 0.41 Amp *(Europe, Japan, Latin Am)* 12VDC, 1.25 Amp *(NZ, UK, Australia, S Africa)* *(The external power supply provided with this product is UL listed by the power supply's manufacturer.)*
MTBF*:	41,660 hours *(MIL-HDBK-217F)* 114,5a0 hours *(Bellcore7 V5.0)*
Environment:	Tmra*: 0° to 50°C *(32° to 122°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

*Based on 50,000 hour power supply

The information in this user's guide is subject to change. For the most up-to-date information on the SSETF10xx-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. Failure to observe this caution could result in damage to equipment.

Troubleshooting

1. Is the PWR LED on the media converter illuminated?
   NO
   - Is the power adapter the proper type of voltage and cycle frequency for AC outlet? *(See "Techncial Specifications" section.)*
   - Is the power adapter properly installed in the media converter and in the 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
10900 Red Circle Drive
Minnetonka, MN 55343, U.S.A.
telephone: 952-941-7600
toll free: 800-526-9267
fax: 952-941-2322

TRANSITION NETWORKS

Declaration of Conformity

Name of Mfg:	Transition Networks 10900 Red Circle Drive Minnetoka MN 55343 U.S.A.
Model:	SSETF10xx-205 Series Media Converters
Part Number(s):	SSETF1011-205, SSETF1013-205
Regulation:	EMC Directive 89/336/EEC

Purpose: EMC Directive 2004/108/EC; EN 55022:2006+A1:2007 Class A; EN55024:1998+A1:2001+A2:2003; EN61000-3-2; EN61000-3-3; CFR Title 47 Part 15 Subpart B Class A; Low Voltage Directive: 2006/95/EC; CFR Title 21 Section 1040.10 Class I

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

August, 2010
Date

Compliance Information

CE Mark

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.

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

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.

Trademark Notice

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

Copyright Restrictions

Printed in the U.S.A.