

# MEDIA CONVERTER TECHNICAL SPECIFICATIONS

<b>Standards</b>	IEEE 802.5, 802.5t	
<b>Delay</b>	400ns round trip	
<b>Case dimensions</b>	4.7" x 3.0" x 1.0" (119mm x 76mm x 25mm)	
<b>Shipping Weight</b>	3 lbs	(0.9 kg)
<b>Environment</b>	Temperature:	0-40°C (32° to 104° F)
	Humidity	10-90%, non condensing
	Altitude	0-10,000 feet
<b>Maximum number media converters in series:</b>	2	
<b>Warranty</b>	Five years	

**Power Supply Requirements** Replace power supply with only the equivalent input rating (see below) and output rating (regulated 9VDC at 0.5 A).

TN PN	Requirement	Location
3525	240 volts, 50 hertz	United Kingdom
3525	230 volts, 50 hertz	Europe
3518	120 volts, 60 hertz	USA/Canada/Mexico
3514	100 volts, 50-60 hertz	Japan
3525	240 volts, 50 hertz	Australia

NOTE: This product also can be powered by the Transition Networks E-MCR series media converter rack.



**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

© 1999 TRANSITION 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.

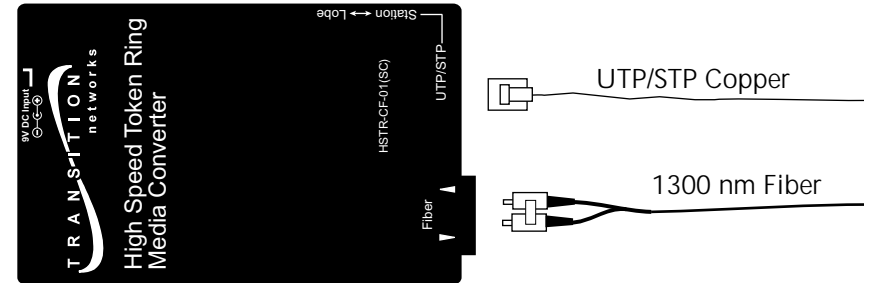
33105.A

# High-Speed Token Ring Copper/Fiber Media Converter

HSTR-CF-01(SC), HSTR-CF-01(SM)

## USER'S GUIDE

The TRANSITION Networks High-Speed Token Ring copper-to-fiber media converters connect either unshielded or shielded High-Speed Token Ring twisted-pair copper cable to High-Speed Token Ring *multimode* fiber-optic cable (HSTR-CF-01(SC)) OR to High-Speed Token Ring *singlemode* fiber-optic cable (HSTR-CF-01(SM)).



### HSTR-CF-01(SC)

Provides an RJ-45 twisted pair 100BASE-TX connector and an RX (receive) and TX (transmit) SC 100BASE-FX connector to 1300 nm multimode fiber-optic cable.

### HSTR-CF-01(SM)

Provides an RJ-45 twisted pair 100BASE-TX connector and an RX (receive) and TX (transmit) SC 100BASE-FX connector to 1300 nm singlemode fiber-optic cable.

### Status LEDs:

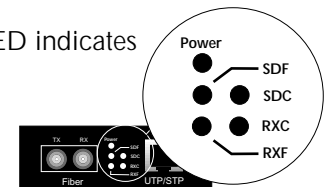
**Power** Illuminated green LED indicates connection to external AC power.

**SDF** Signal Detect/Fiber: Steady green LED indicates fiber port is connected to device.

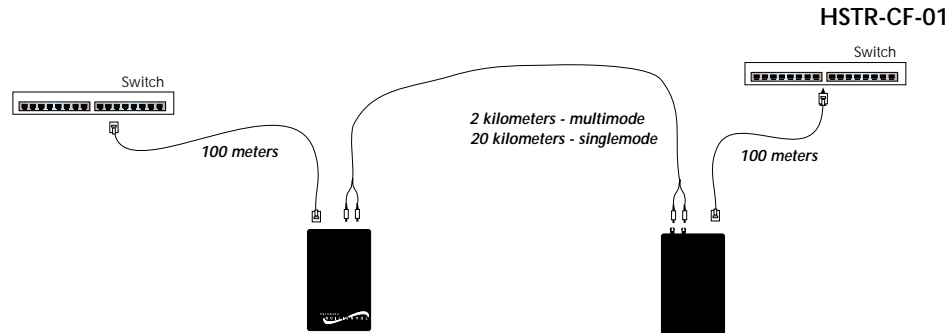
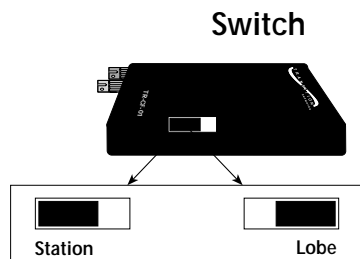
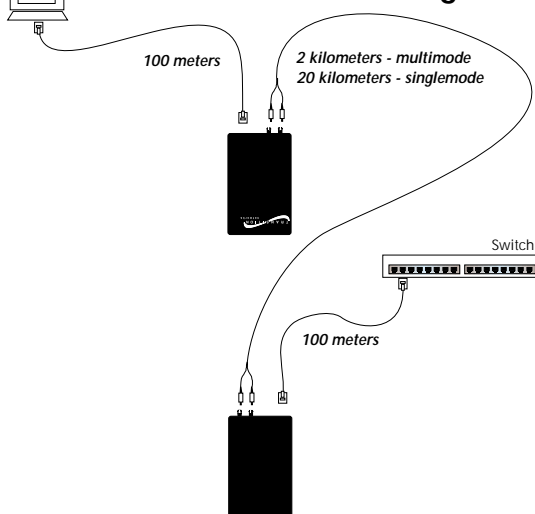
**SDC** Signal Detect/Copper: Steady green LED indicates RJ-45 port is connected to device.

**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



**Station:** Selected when connecting media converter to terminal device.  
**Lobe:** Selected when connecting media converter to switch.

**NOTE:** Use small flatblade screwdriver or similar device to set recessed switch. Refer to label on top of media converter for switch settings.

## Installation Notes

- Be certain that the switch is set correctly for site installation.
- Install unit with power supply unit provided. (Output 9 VDC regulated, 500 mA).
- Install no more than two (2) media converters in series.

## Troubleshooting the Media Converter

1. Is the power LED on the media converter illuminated?
  - NO**
    - Is the power adapter the proper type of voltage and cycle frequency for AC outlet?
    - Is the power adapter properly installed in the media converter and in the outlet?
    - Contact Technical Support at (800) 260-1312/ (800) LAN-WANS.
  - YES**
    - Proceed to step 2.
2. Is the Copper **SDC** Link LED illuminated?
  - NO**
    - Check UTP cables for proper connection and switch position. (See above.)
    - Contact Technical Support at (800) 260-1312/ (800) LAN-WANS.
  - YES**
    - Proceed to step 3.
3. Is the fiber **SDF** Link 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 device.
    - Refer to Tech Tips available at: <http://www.transition.com>
    - Contact Technical Support at (800) 260-1312/ (800) LAN-WANS.
  - YES**
    - Contact Technical Support at (800) 260-1312/ (800) LAN-WANS.

## Token Ring Cable Specifications

The physical characteristics of the media cable must meet or exceed IEEE 802.5t specifications.

### Copper Cable Specifications

Category 5 wire or better is required. Either shielded twisted pair (STP) or unshielded twisted pair (UTP) can be used. **DO NOT USE FLAT OR SILVER SATIN WIRE.**

#### Category 5:

Gauge	24 to 22 AWG
Attenuation	22 dB/100' @ 100 MHz
Differential Characteristic Impedance	100 $\Omega$ $\pm$ 15%
Maximum Cable Distance:	100 meters (330 feet)

### Fiber Cable Specifications

#### MULTIMODE

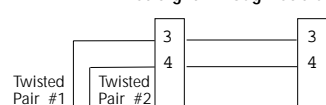
Fiber-optic Cable Recommended:	62.5 / 125 $\mu$ m multimode fiber
*Optional:	100 / 140 $\mu$ m multimode fiber
	85 / 125 $\mu$ m multimode fiber
	50 / 125 $\mu$ m multimode fiber

Fiber-optic Transmitter Power:	min: -19.0 dBm	max: -14.0 dBm
Fiber-optic Receiver Sensitivity:	min: -32.5 dBm	max: -14.0 dBm
Wavelength:	1300nm	
Bit error rate:	$\leq 10^{-9}$	
Maximum Cable Distance:	2 kilometers	

#### SINGLEMODE

Fiber-optic Cable Recommended:	9 $\mu$ m singlemode fiber	
Wavelength:	1300nm	
Bit error rate:	$\leq 10^{-9}$	
Fiber-optic Transmitter Power:	min: -19.0 dBm	max: -14.0 dBm
Fiber-optic Receiver Sensitivity:	min: -32.5 dBm	max: -8.0 dBm
Maximum Cable Distance:	20 kilometers	

#### Straight Through Cable



Twisted pair connection requires two active pairs configured as straight through. The two active pairs in a Token Ring network are pins 4 & 5 and pins 3 & 6. Use only dedicated wire pairs (such as blue/white & white/blue, orange/white &