



User's Guide

J/GE-CF-01

Stand-Alone Media Converter

- *Gigabit Ethernet*
- *Copper to Fiber*
- *1000Base-T to 1000Base-SX/LX*

Transition Networks J/GE-CF-01 gigabit Ethernet media converter connects 1000Base-T shielded or unshielded twisted-pair copper cable to 1000Base-SX or 1000Base-LX, fiber-optic cable.

Part Number	Port One - Copper	Port Two - Duplex Fiber-Optic
J/GE-CF-01(SX)	<i>RJ-45 1000Base-T 100 m (328 ft)*</i>	<i>SC, 1000Base-SX, 850 nm multimode 220 m (722 ft)* (62.5/125 μm cable) 500 m (1,640 ft)* (50/125 μm cable)</i>
J/GE-CF-01(LX1)	<i>RJ-45 1000Base-T 100 m (328 ft)*</i>	<i>SC, 1000Base-LX, 1310 nm single mode 10 km (6.2 miles)*</i>
J/GE-CF-01(LX2)	<i>RJ-45 1000Base-T 100 m (328 ft)*</i>	<i>SC, 1000Base-LX, 1310 nm single mode 25 km (15.5 miles)*</i>
J/GE-CF-01(LX6)	<i>RJ-45 1000Base-T 100 m (328 ft)*</i>	<i>SC, 1000Base-LX, 1550 nm single mode 65 km (40.4 miles)*</i>
J/GE-CF-01(LX100)	<i>RJ-45 1000Base-T 100 m (328 ft)*</i>	<i>SC, 1000Base-LX, 1310(TX)/1550(RX)nm single mode 20K (12.4 miles)</i>
J/GE-CF-01(LX101)	<i>RJ-45 1000Base-T 100 m (328 ft)*</i>	<i>SC, 1000Base-LX, 1550(TX)/130(RX)nm single mode 20K (12.4 miles)</i>

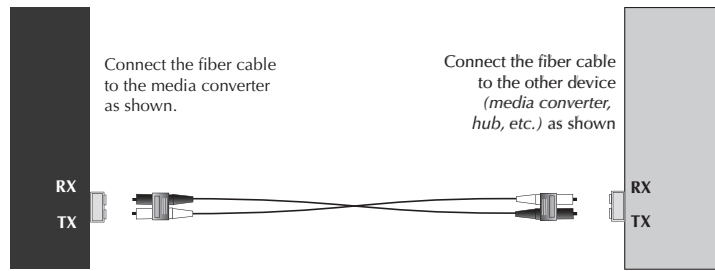
* Typical maximum cable distance. Actual distance is dependent upon the physical characteristics of the network installation.

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Installation

Install the Fiber Cable

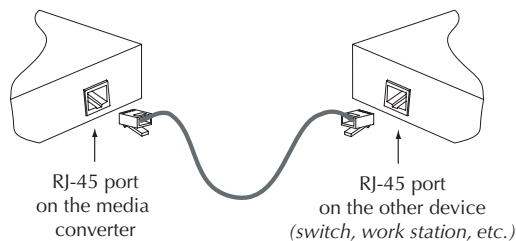
1. Locate or build 1000Base-SX/LX compliant fiber cable with male, two-stranded TX to RX connectors installed at both ends.
2. Connect the fiber cables to the J/GE-CF-01 media converter as described:
 - Connect the male TX cable connector to the female TX port.
 - Connect the male RX cable connector 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.



Install the Copper Cable

NOTE: The AutoCross™ feature automatically configures the media converter to link up when connected to 1000Base-T devices, regardless if the copper cable is MDI (straight-through) or MDI-X (crossover).

1. Locate or build 1000Base-T 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 J/GE-CF-01 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

AC

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.

DC

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 J/GE-CF-01 media converter operation in the network.

PWR	On	= Connection to external AC or DC power.
FLNK	On	= Fiber link connection.
LACT	On	= Copper link connection.
	Flashing	= Activity on the copper link.
DPX/COLL	On	= Copper link at full-duplex.
	Off	= Copper link at half-duplex
	Flashing	= Collision condition on the half-duplex, copper link.



Cable Specifications

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

Fiber Cable

Bit Error Rate:	<10 ⁻⁹	
Single mode fiber (<i>recommended</i>):	9 μm	
Multimode fiber (<i>recommended</i>):	62.5/125 μm	
Multimode fiber (<i>optional</i>):	100/140, 85/140, 50/125 μm	
J/GE-CF-01(SX)	850 nm multimode	
Fiber Optic Transmitter Power:	min: -10.0 dBm	max: -4.0 dBm
Fiber Optic Receiver Sensitivity:	min: -17.0 dBm	max: 0.0 dBm
Link Budget:	7.0 dB	
J/GE-CF-01(LX1)	1310 nm single mode	
Fiber-optic Transmitter Power:	min: -9.5 dBm	max: -3.0 dBm
Fiber-optic Receiver Sensitivity:	min: -20.0 dBm	max: -3.0 dBm
Link Budget:	10.5 dB	
J/GE-CF-01(LX2)	1310 nm single mode	
Fiber-optic Transmitter Power:	min: -5.0 dBm	max: -0.0 dBm
Fiber-optic Receiver Sensitivity:	min: -20.0 dBm	max: -3.0 dBm
Link Budget:	15.0 dB	
J/GE-CF-01(LX6)	1550 nm single mode	
Fiber-optic Transmitter Power:	min: -3.0 dBm	max: +2.0 dBm
Fiber-optic Receiver Sensitivity:	min: -23.0 dBm	max: -3.0 dBm
Link Budget:	20.0 dB	
J/GE-CF-01(LX100)	1310/1550 nm single mode	
J/GE-CF-01(LX101)	1550/1310 nm single mode	
Fiber-optic Transmitter Power:	min: -8.0 dBm	max: -3.0 dBm
Fiber-optic Receiver Sensitivity:	min: -21.0 dBm	max: -3.0 dBm
Link Budget:	13.0 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 -- minimum requirement

Gauge = 24 to 22 AWG;

Attenuation = 22.0 dB /100m @ 100 MHz

- Shielded (STP) or unshielded (UTP) twisted-pair may be used
- All pin pairs (1&2, 3&6, 4&5, 7&8) are active in a gigabit network.
- 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 J/GE-CF-01 or equivalent

Standards:	IEEE 802.3™ 2000	
Data Rate:	1000 Mb/s	
Dimensions: (w x d x h)	3.0" x 4.0" x 1.0" (76 mm x 121 mm x 25 mm)	
Weight:	6 oz. (181 g) (approximate)	
Power Consumption:	3.2 Watts; 260 mA @ 12 VDC	
Power Supply	12VDC, 1.25 Amp (<i>The external power supply provided with this product is UL listed by the power supply's manufacturer.</i>)	
Environment:	Tmra*:	0 to 50°C (32 to 122°F)
	Storage Temp:	-15 to 65°C (5 to 149°F)
	Humidity:	5 to 95%, non condensing
	Altitude:	0 to 10,000 feet

Warranty: Lifetime

*Manufacturer's rated ambient temperature.

The information in this user's guide is subject to change. For the most up-to-date information on the J/GE-CF-01 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 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.

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-CC	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)
WMBS	Optional Wall Mount Brackets; 3.2 in. (91 mm)
WMBD	Optional DIN Rail Mount Bracket; 5.0 in. (127 mm)
WMBD-FS	Optional DIN Rail Mount Bracket (flat); 3.1in. (79 mm)

Troubleshooting

If the media converter fails, isolate and correct the fault by determining the answers to the following questions and then taking the indicated action:

1. Is the Power LED illuminated?
NO
 - Is the power adapter the proper type of voltage and cycle frequency for the AC outlet?
 - Is the power adapter properly installed in the media converter and in the outlet?
 - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.
 YES
 - Proceed to step 2.

2. Is the Copper LED illuminated?
NO
 - Check the twisted-pair copper cables for proper connection.
 - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.
 YES
 - Proceed to step 3.

3. Is the Fiber LED illuminated?
NO
 - Check the 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
 - Proceed to step 4.

4. Is the Copper LED flashing?
NO
 - If there is no activity on the 1000Base-T port, proceed to step 5.
 - If there is activity on the 1000Base-T port, disconnect and reconnect the twisted-pair 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
 - Proceed to step 5.

5. Is the DPX/COLL (duplex/collision) LED illuminated?
YES
 - The media converter has selected full-duplex for the copper link.
 - If this is not the correct mode, disconnect and reconnect the twisted-pair copper cable to restart the initialization process.
 - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

Troubleshooting -- Continued

NO

- The media converter has selected half-duplex for the copper link.
- If this is not the correct mode, disconnect and reconnect the twisted-pair copper cable to restart the initialization process.
- Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

6. Is the DPX/COLL (duplex/collision) LED flashing?

YES

- There is a collision along the twisted-pair copper link.
- Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

Contact Transition Networks

Technical support is available 24 hours a day.



US and Canada: 1-800-260-1312 International: 00-1-952-941-7600

Chat live via the Web with Transition Networks Technical Support. Log onto www.transition.com and click the Transition Now link.

Transition Networks provides seminars via live web-based training. Log onto www.transition.com and click the Learning Center link.

Send an e-mail anytime to our technical support staff at: techsupport@transition.com

Transition Networks, 6475 City West Pkwy, 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 Pkwy, Minneapolis MN 55344 U.S.A.
Model:	J/GE-CF-01 Series Media Converters
Part Number(s):	J/GE-CF-01(SX), J/GE-CF-01(LX1), J/GE-CF-01(LX2), J/GE-CF-01(LX6), J/GE-CF-01(LX100), J/GE-CF-01(LX101)
Regulation:	EMC Directive 89/336/EEC
Purpose:	To declare that the J/GE-CF-01 to which this declaration refers is in conformity with the following standards:
CISPR 22:1993; EN 55022:1994 +A1:1995 +A2:1997 Class A; EN 55024:1998; EN61000-2-3:1995; EN61000-3-3:1995 FCC Part 15 Subpart B; 21 CFR subpart J	
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	January, 2008 Date

Compliance Information

CISPR22/EN55022 Class A + EN55024; 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.

European Regulations

Warning This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Achtung ! Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fall ist der Benutzer für Gegenmaßnahmen verantwortlich.

Attention ! Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.



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.



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.

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