

COMPLIANCE INFORMATION

UL Listed
C-UL Listed (Canada)
CISPR/EN55022 Class A
EN55024

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 weichen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

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.

Trademark Notice

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

Copyright Restrictions

© 2001 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.

Printed in the U.S.A.

33198.C

1000BASE-TX to 1000BASE-SX/LX

Slide-In-Module Media Converters

CGETF10xx-100

USER'S GUIDE

TRANSITION Networks CGETF10xx series Gigabit Ethernet™ media converters, designed to be installed in a *PointSystem™ Conversion Center™*, connect 1000BASE-TX shielded or unshielded twisted-pair copper cable to 1000BASE-SX or 1000BASE-LX multimode or singlemode fiber-optic cable.

CGETF1013-100

Provides an RJ-45 twisted-pair copper 1000BASE-T connector and an RX (receive) and TX (transmit) SC connector to 850 nm 1000BASE-SX multimode fiber-optic cable.



CGETF1014-100

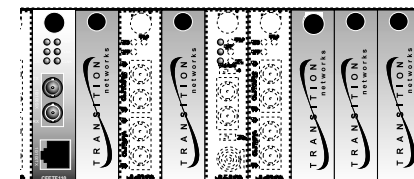
Provides an RJ-45 twisted-pair copper 1000BASE-T connector and an RX (receive) and TX (transmit) SC connector to 1300 nm 1000BASE-LX singlemode fiber-optic cable.

CGETF1015-100

Provides an RJ-45 twisted-pair copper 1000BASE-T connector and an RX (receive) and TX (transmit) SC connector to 1300 nm 1000BASE-LX singlemode fiber-optic cable.

CGETF1017-100

Provides an RJ-45 twisted-pair copper 1000BASE-T connector and an RX (receive) and TX (transmit) SC connector to 1550 nm 1000BASE-LX singlemode fiber-optic cable.



CGETF1018-100

Provides an RJ-45 twisted-pair copper 1000BASE-T connector and an RX (receive) and TX (transmit) MT-RJ connector to 850 nm 1000BASE-SX multimode fiber-optic cable.

CGETF1025-100

Provides an RJ-45 twisted-pair copper 1000BASE-T connector and an RX (receive) and TX (transmit) MT-RJ connector to 1300 nm 1000BASE-LX singlemode fiber-optic cable.

CGETF10xx in the Network	2
Installation	2
Operation	4
Fault Isolation and Correction	5
Cable Specifications	6
Technical Specifications	7
Compliance Information	8

CGETF10xx IN THE NETWORK

Install two CGETF10xx series media converters in series to extend, over fiber, the distance between two 1000BASE-TX devices. Or use one CGETF10xx media converter to connect a 1000BASE-TX terminal device and a 1000BASE-SX/LX hub, switch, or router. Or use one CGETF10xx media converter to connect a 1000BASE-TX hub, switch, or router and a 1000BASE-SX/LX terminal device.

NOTE: A TRANSITION Networks stand-alone media converter can be installed in series with a TRANSITION Networks chassis media converter that has a related model number, such as an SGETF10xx with a CGETF10xx.

INSTALLATION

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

Set 3-Position Jumper

NOTE: Jumper is located on Media Converter Slide-in-Module circuit board.

Use small needle-nosed pliers or similar device to set jumper. Refer to drawing for jumper positions.

HARDWARE Converter mode is determined by 4-position switch settings below.

SOFTWARE Converter mode is determined by most-recently-saved on-board microprocessor settings.



Set 4-Position Switch

NOTE: Switch is located on Media Converter Slide-in-Module circuit board.

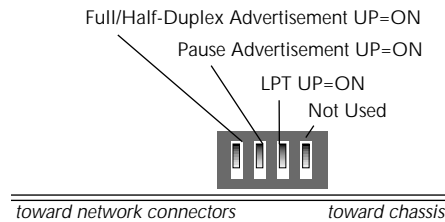
Use small flatblade screwdriver or similar device to set recessed switches. Refer to drawing for four-position switch locations.

Full/Half-Duplex Advertisement (UP=Enabled) Allows full-duplex mode. (DOWN) Allows half-duplex mode.

Pause Advertisement (UP=Enabled) Allows auto-negotiation pause. (DOWN) Allows NO auto-negotiation pause.

NOTE: If the *Pause* feature is present on all network devices attached to the media converter(s), enable *Pause* on the media converter(s). Otherwise, disable *Pause* on the media converter(s).

LPT (UP=Enabled) Allows a fault EITHER on the copper OR on the fiber side of the media converter to stop signal and data transmission on the other side. (DOWN) Disables LPT.



CATEGORY 5:

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

The Gigabit Ethernet™ network uses all four wire pairs.


The active pairs are pins 1 & 2, pins 3 & 6, pins 4 & 5, and pins 7 & 8. Use only dedicated wire pairs (such as blue/white & white/blue, orange/white & white/orange) for the active pins.

NOTE: Straight-through/crossover configuration is automatic.

TECHNICAL SPECIFICATIONS

Standards	IEEE 802.3ab, IEEE 802.3 1998
Data Rate	1000 Mb/s
Dimensions	3.4" x 0.86" x 5.0" (86mm x 22mm x 127mm)
Weight	8 oz (approximate)
Delay	300 nsec
Power Consumption	6.5 Watts
Environment	Typical Operating Temperature*: 0-50°C (32° to 122° F) Storage Temperature: -20 to 85°C Humidity: 10-90%, non condensing Altitude: 0-10,000 feet
Warranty	Lifetime

*Operating temperature range for this Slide-In-Module depends on the physical characteristics and the installation configuration of the TRANSITION Networks chassis in which this Slide-In-Module will be installed. See the User's Guide **for the chassis in which this Slide-In-Module will be installed** for a discussion of temperature-related installation constraints.

TRANSITION NETWORKS		DECLARATION OF CONFORMITY	
Name of Mfg:	Transition Networks	6475 City West Parkway, Minneapolis MN 55344 USA	
Model:	CGETF10xx-100 Series Media Converters		
Part Number(s):	CGETF1013-100, CGETF1014-100, CGETF1015-100, CGETF1017-100, CGETF1018-100, CGETF1023-100		
Regulation:	EMC Directive 89/336/EEC		
Purpose:	To declare that the CGETF10xx-100 to which this declaration refers is in conformity with the following standards.		
	EMC-CISPR 22: 1985 Class A&B; EN 55022: 1988 Class A&B; EN 50082-1:1992; EN 60950 A4:1997; IEC 801.2, IEC 801.3, and IEC 801.4; IEC 950		
<i>I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).</i>			
 Stephen Anderson, Vice-President of Engineering		January 6, 2001 Date	

CABLE SPECIFICATIONS

The physical characteristics of the media cable must meet or exceed IEEE 802.3 specifications.

Fiber Cable

Bit error rate: $\leq 10^{-9}$

MULTIMODE

Fiber Optic Cable Recommended: 62.5 / 125 μm multimode fiber
Optional: 100 / 140 μm multimode fiber
85 / 125 μm multimode fiber
50 / 125 μm multimode fiber

CGETF1013

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

Typical Maximum Cable Distance*: 220 meters

CGETF1018

Fiber Optic Transmitter Power: min: -9.5 dBm max: -4.0 dBm
Fiber Optic Receiver Sensitivity: min: -17.0 dBm max: -0.0 dBm
Link Budget: 7.0 dB

Typical Maximum Cable Distance*: 220 meters

SINGLEMODE

Fiber Optic Cable Recommended: 9 μm singlemode fiber

CGETF1014

Fiber-optic Transmitter Power: min: -13.0 dBm max: -3.0 dBm
Fiber-optic Receiver Sensitivity: min: -20.0 dBm max: -3.0 dBm
Link Budget: 7.0 dB

Typical Maximum Cable Distance*: 10 kilometers

CGETF1015

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

Typical Maximum Cable Distance*: 25 kilometers

CGETF1017

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

Typical Maximum Cable Distance*: 65 kilometers

CGETF1025

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: 20.0 dB

Typical Maximum Cable Distance*: 65 kilometers

*Actual distance dependent upon physical characteristics of network installation.

Copper Cable

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

Install Slide-In-Module in PointSystem™ Chassis

CAUTION: Any Slide-in-Module installation slot in which a Media Converter Slide-in-Module is NOT installed MUST have a protective plate instead. Failure to observe this caution will void Class A and/or Class B compliance.

NOTE: Install Media Converter Slide-in-Modules in any slot, in any order.

1. Carefully slide Media Converter Slide-in-Module into installation slot, aligning Media Converter Slide-in-Module with installation guides.

NOTE: Ensure that Slide-in-Module is firmly seated against backplane.

2. Secure Slide-in-Module by securing panel fastener screw (attached to Slide-in-Module) to chassis front.
3. Install protective plate at ANY Slide-in-Module installation slot in which a Media Converter Slide-in-Module is not installed by securing attached protective plate panel fastener screw to chassis front.

Install Cable

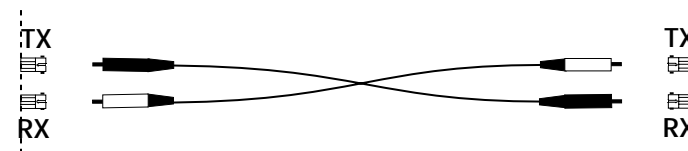
COPPER

NOTE: The CGETF10xx series media converter *auto-negotiation* feature allows the media converter to bring up the copper link in the highest mode possible for ALL the attached network devices.

1. Locate or build 1000BASE-TX-compliant cables with male RJ-45 connectors installed at both ends.
2. Connect RJ-45 connector at one end of cable to media converter RJ-45 port connector.
3. Connect RJ-45 connector at other end of cable to 1000BASE-TX-compliant device RJ-45 port connector.

FIBER

1. Locate or build 1000BASE-SX/LX-compliant fiber cable with male two-stranded TX to RX connectors installed at both ends.



2. Connect cable with connector installed at TX location on media converter to RX location on attached device.
3. Connect cable with connector installed at RX location on media converter to TX location on attached device.

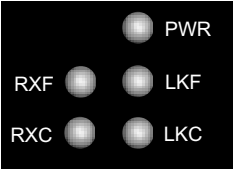
Power the Slide-In-Module

NOTE: The Slide-In-Module is powered through the Conversion Center™.

OPERATION

Using Status LEDs

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

P(o)W(e)R	Steady LED indicates connection to external AC power.	
RXF	(Fiber receive) Flashing LED indicates reception of data on fiber link.	
LKF	(Fiber link) Steady LED indicates fiber link connection.	
RXC	(Copper receive) Flashing LED indicates reception of data on copper link.	
LKC	(Copper link) Steady LED indicates copper link connection.	

Using SNMP*

Use SNMP at an attached terminal or at a remote location to:

- Monitor media converter by monitoring:
 - Media Converter Power*
 - Copper Link Status*
 - Copper Receive Status*
 - Twisted-pair Copper Cable Length*
 - Fiber Link Status*
 - Fiber Receive Status*
 - Master/Slave Status*
 - Hardware Switch settings*
 - Fault Condition*
 - Receive Error Count*
- Enter network commands that:
 - Enable/disable Full/Half-duplex Advertisement*
 - Enable/disable LPT*
 - Enable/disable Pause*

*See the on-line documentation that comes with TRANSITION Networks *FocalPoint™* software for applicable commands and usage.

FAULT ISOLATION and CORRECTION

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 *P(o)W(e)R* 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 at the external power source?
 - Does the external power source provide power?
 - Contact Technical Support: (800) 260-1312.**YES**
 - Proceed to step 2.
- 2. Is the *LKC* LED on the media converter illuminated?**
NO
 - Check twisted-pair cables for proper connection.
 - Check twisted-pair cables for connection of **all four pairs**.
 - Contact Technical Support: (800) 260-1312.**YES**
 - Proceed to step 3.
- 3. Is the *LKF* LED on the media converter 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 other device.
 - Contact Technical Support: (800) 260-1312.**YES**
 - Proceed to step 4.
- 4. Is the *RXC* LED on the media converter flashing?**
NO
 - If there is **NO ACTIVITY** on the 1000BASE-TX port, proceed to step 5.
 - If there is **ACTIVITY** on the 1000BASE-TX port, disconnect and reconnect the 1000BASE-TX cable to restart the initialization process.
 - Restart the workstation to restart the initialization process.
 - Contact Technical Support: (800) 260-1312.**YES**
 - Proceed to step 5.
- 5. Is the *RXF* LED on the media converter flashing?**
NO
 - If there is **NO ACTIVITY** on the 1000BASE-SX/LX port, continue below
 - If there is **ACTIVITY** on the 1000BASE-SX/LX port, disconnect and reconnect the fiber cable to restart the initialization process.
 - Restart the workstation to restart the initialization process.
 - Contact Technical Support: (800) 260-1312.**YES**
 - Contact Technical Support: (800) 260-1312.