COMPLIANCE INFORMATION

UL Listed
C-UL Listed (Canada)
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 weichen Fällen der Benutzer für entsprechende Gegenmaßnahmen werantwortlich ist.

Attention !
Ceci est un produit de Classe A. Dans un environment domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilsateur de prende les measures spécifiques appropriées

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TRANSITION networks

E1 Coax Copper to Fiber

Slide-In-Module Media Converters

CSDTF30xx*-110

USER'S GUIDE

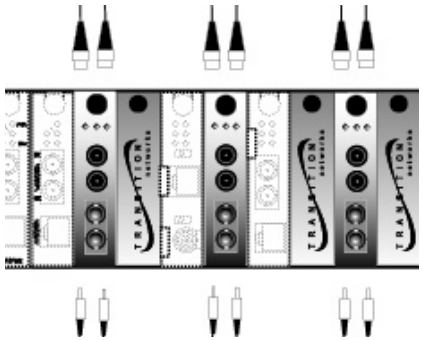
TRANSITION Networks CSDTF30xx-110 series media converters, designed to be installed in a TRANSITION Networks *PointSystem™ media conversion center*, encode and decode E1 coax copper signals over duplex fiber-optic cable to extend the distance and transmission reliability of high speed E1 data traffic.

CSDTF3011-110
*Provides a set of coax copper input and output connectors for E1 signals and a set of RX/TX **ST** connectors to **850 nm multimode** duplex fiber-optic cable.*

CSDTF3012-110
*Provides a set of coax copper input and output connectors for E1 signals and an RX/TX **ST** connector to **1300 nm singlemode** duplex fiber-optic cable.*

CSDTF3013-110
*Provides a set of coax copper input and output connectors for E1 signals and an RX/TX **SC** connector to **850 nm multimode** duplex fiber-optic cable.*

CSDTF3014-110
*Provides a set of coax copper input and output connectors for E1 signals and an RX/TX **SC-SM** connector to **1300 nm singlemode** duplex fiber-optic cable.*



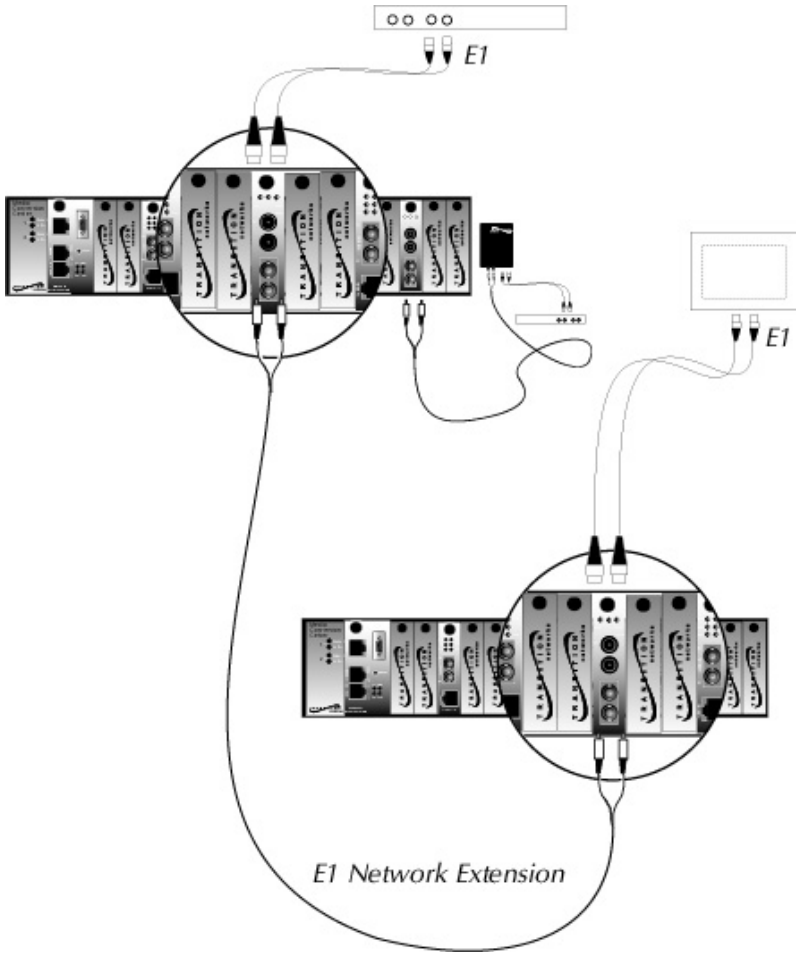
CSDTF3015-110 *(long haul)*
*Provides a set of coax copper input and output connectors for E1 signals and an RX/TX **SC-LH** connector to **1300 nm singlemode** duplex fiber-optic cable.*

CSDTF3022-110 *(long haul)*
*Provides a set of coax copper input and output connectors for E1 signals and an RX/TX **ST** connector to **1300 nm singlemode** duplex fiber-optic cable.*

*In CSDTF30**xx** model designation, **30** represents the E1 coax input and output connectors; **xx** represents the selectable fiber connector installed on the media converter.

CSDTF30xx IN THE NETWORK

NOTE: E1 MEDIA CONVERTERS MUST BE USED IN PAIRS. A TRANSITION Networks CSDTF30xx stand-alone media converter can be used with another CSDTF30xx stand-alone media converter, with a SSDTF30xx chassis media converter, or with a previous model TRANSITION Networks T1/E1 media converter, such as a C/T1E1-CF-01 or a T1E1-CF-01.



Media converter is framing independent (as ESF vs D4) and supports all common line codes, (AMI, B8ZS, HDB3).

All Ones Insertion (AIS) on loss of signal at copper and/or fiber interface.

TECHNICAL SPECIFICATIONS

Standards	*Emissions*: CISPR A	
	E1 Physical Layer: ITU-T, TBR12 British Technical Publication: PD7024 (NTR4), ANSI, AT&T, ETSI, EN 45001	
Dimensions	2.9" x 4.8" x 1.4"	
Weight	8 oz (approximate)	
Power Consumption	5 watts	
Environment	Typical Operating Temperature*:	0° to 50°C (32° to 122°F)
	Storage Temperature:	-20° to 85°C (-4° to 185°F)
	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: **CSDTF30xx Series E1 Coax Copper-to-Fiber Media Converter**

Part Number: **CSDTF3011-110, CSDTF3012-110, CSDTF3013-110, CSDTF3014-110, CSDTF3015-110, CSDTF3022-110**

Regulation: **EMC Directive 89/336/EEC**

Purpose: To declare that the ***CSDTF30xx*** to which this declaration refers is in conformity with the following standards.

EN 55022:1994; EN 55024:1998; FCC Part 15 Class A; EN 60950 A4:1997; UL 1950

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 8, 2001
Date

CABLE SPECIFICATIONS (continUed)

Coax Copper Cable

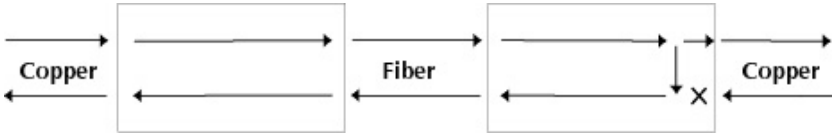
E1:

Cable Type	RG-58
Gauge	24 to 22 AWG
Attenuation	2 dB/100 meters @ 1.0 MHz
Differential Characteristic Impedance	75 ±10%

Switch-Selectable Functions

LOOPBACK TEST FUNCTION

A loopback switch facilitates installation and network debug procedures. The path for the CSDTF30xx loopback is shown:



TRANSMIT ALL ONES FUNCTION

A selectable Transmit All Ones switch on the fiber interface AND on the copper interface allows for insertion of an “all ones” pattern on the interface whenever *signal detect* is lost. The “all ones” pattern creates an alarm condition at the equipment connected to the interface.

INSTALLATION

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when setting switch and when installing Media Converter 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.

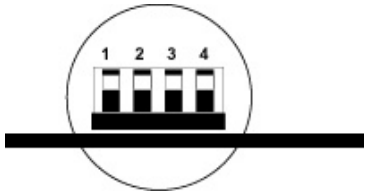
Set Loopback Test Switch

NOTE: The Loopback Test switch, located on Media Converter Slide-in-Module front panel, allows the network administrator to enable a loopback test for installation and network debug procedures.

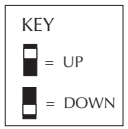
Use small flatblade screwdriver or similar device to set Loopback Test switch.

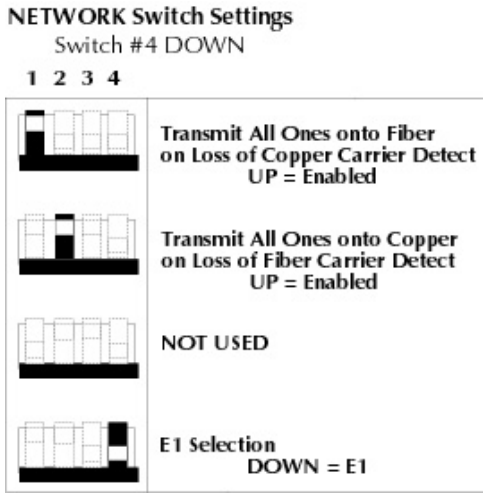
Set 4-Position Switch

Use small flatblade screwdriver or similar device to set mode switches located on Media Converter Slide-in-Module circuit board.



NOTE: E1 **MUST** BE SELECTED (by setting #4: DOWN) FOR PROPER OPERATION.





CABLE SPECIFICATIONS

Fiber Cable

Bit error rate:	$1\ 0^{-9}$	
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	
CSDTF3011-110	850 nM	
Fiber Optic Transmitter Power:	min: -14.0 dBm	max: -12.0 dBm
Fiber Optic Receiver Sensitivity:	min: -25.0 dBm	max: -12.0 dBm
Typical Maximum Cable Distance*:	2 kilometers	
CSDTF3013-110	850 nM	
Fiber-optic Transmitter Power:	min: -14.0 dBm	max: -12.0 dBm
Fiber-optic Receiver Sensitivity:	min: -25.0 dBm	max: -12.0 dBm
Typical Maximum Cable Distance*:	2 kilometers	
SINGLEMODE		
Fiber Optic Cable Recommended:	9 µm singlemode fiber	
CSDTF3012-110	1300 nM	
Fiber-optic Transmitter Power:	min: -21.0 dBm	max: -14.0 dBm
Fiber-optic Receiver Sensitivity:	min: -25.0 dBm	max: -14.0 dBm
Typical Maximum Cable Distance*:	8 kilometers	
CSDTF3014-110	1300 nM	
Fiber-optic Transmitter Power:	min: -21.0 dBm	max: -14.0 dBm
Fiber-optic Receiver Sensitivity:	min: -27.0 dBm	max: -14.0 dBm
Typical Maximum Cable Distance*:	8 kilometers	
CSDTF3015-110 *(long haul)*	1300 nM	
Fiber-optic Transmitter Power:	min: -15.0 dBm	max: -5.0 dBm
Fiber-optic Receiver Sensitivity:	min: -27.0 dBm	max: -14.0 dBm
Typical Maximum Cable Distance*:	15 kilometers	
CSDTF3022-110 *(long haul)*	1300 nM	
Fiber-optic Transmitter Power:	min: -15.0 dBm	max: -5.0 dBm
Fiber-optic Receiver Sensitivity:	min: -25.0 dBm	max: -14.0 dBm
Typical Maximum Cable Distance*:	15 kilometers	

*Actual distance dependent upon physical characteristics of network installation.

FAULT ISOLATION and CORRECTION

If the media converter fails, isolate and correct the failure 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 SDF (Signal Detect/Fiber) 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 other media converter.
- Contact Technical Support: (800) 260-1312.

YES

- Proceed to step 3.

3. Is the SDC (Signal Detect/Copper) LED illuminated?

NO

- Check coax cables for proper connection.
- Check integrity of device attached to media converter by coax cable.
- Contact Technical Support: (800) 260-1312.

YES

- Contact Technical Support: (800) 260-1312.

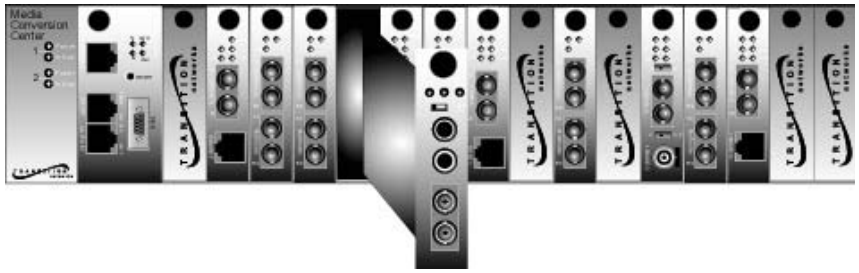
Install Slide-In-Module(s)

CAUTION : Wear a grounding device and observe electrostatic discharge precautions when installing Media Converter Slide-in-Module(s) 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(s).

NOTE: Slide-in-Modules can be installed in any installation slot, in any order.

To install the Media Converter Slide-in-Module in the CPSMC18xx chassis:

1. Remove Media Converter Slide-in-Module protective plate from selected installation slot by removing two screws that secure plate to front of CPSMC18xx.



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

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

3. Secure Slide-in-Module to CPSMC18xx chassis by rotating captive screw attached to Slide-in-Module clockwise into chassis.

INSTALLATION (continued)

Install Cable

FIBER

1. Locate or build fiber cables that are compliant with specifications on page __, 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.

COPPER

E1 75 OHM (COAX CONNECTOR)

NOTE: Ground coax segment to earth ground at one end.

- Locate or build coax cables that are compliant with specifications on page 10.
- Connect BNC connector at one end of cable to media converter.
- Connect BNC connector at other end of cable to network equipment.

Power the Slide-In-Module Media Converter

NOTE: The Slide-In-Module is powered through the media conversion center.

OPERATION

Status LEDs

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

SDC **Signal Detect/Copper** - Steady LED indicates twisted-pair copper link is up.

Flashing LED (once/second) indicates transmitting All Ones (AIS) on link if ***fiber*** link (switch selectable) is down.

Flashing LED (5 times/second) indicates All Ones detected on Link.

SDF **Signal Detect/Fiber** - Steady LED indicates fiber link is up.

Flashing LED (once/second) indicates transmitting All Ones (AIS) on link if ***copper*** link (switch selectable) is down.

Flashing LED (5 times/second) indicates All Ones detected on Link.

P(o)W(e)R Steady green LED indicates connection to external AC power.

*Using SNMP**

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

- Monitor media converter by monitoring:
  Media Converter Power
  Fiber Link Status
  Copper Link Status
  Hardware Switch settings
  AIS detected on Fiber
  AIS detected on Copper
- Enter network commands that:
  Enable/disable Loop-back on Fiber
  Enable/disable Transmit All Ones on Fiber when Copper is down
  Enable/disable Transmit All Ones on Copper when Fiber is down
  Power Down Media Converter.

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