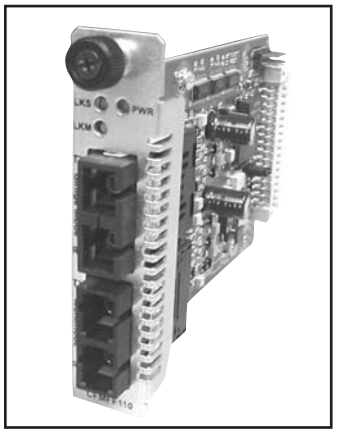
TRANSITION networks



User's Guide

CFMFF131x-21x (NTBW80xx 01)

Slide-In-Module Media Converter

- ***ATM or SONET***
- ***Single Mode to Multimode***

The Transition Networks CFMFF131x-21x (NTBW80xx 01) series media converter connects multimode fiber-optic cable to single mode fiber-optic cable, and extends ATM or SONET over a 622 Mbps single mode fiber up to 80 km. The CFMFF131x-21x (NTBW80xx 01) is designed to be installed in a Transition Networks *PointSystem*™ chassis CPSMC1310-110 (NTBW80AA 01).

Part Number	Port One - Fiber Optic	Port Two - Fiber Optic
CFMFF1314-212 **NTBW80HA 01**	*SC, 1300 nm multimode* *2 km (1.2 miles)** *(Agilent® connector)*	*SC, 1310 nm single mode* *15 km (9.3 miles)**
CFMFF1316-212 **NTBW80PA 01**	*SC, 1300 nm multimode* *2 km (1.2 miles)** *(Agilent® connector)*	*SC, 1310 nm single mode* *40 km (24.8 miles)**
CFMFF1317-212 **NTBW80JA 01**	*SC, 1300 nm multimode* *2 km (1.2 miles)** *(Agilent® connector)*	*SC, 1550 nm single mode* *60 km (37.2 miles)**

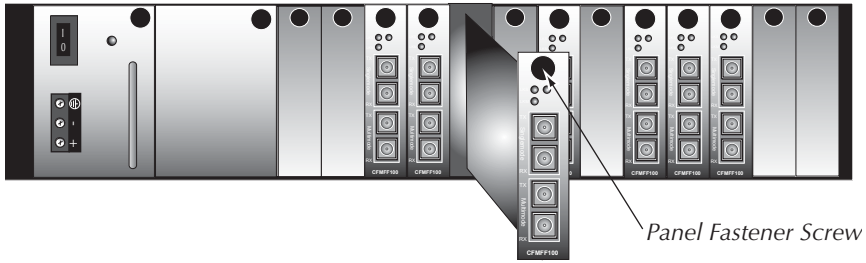
Installation

Install the slide-in-module

CAUTION: Slots in the PointSystem™ chassis without a slide-in-module installed, MUST have a protective plate covering the empty slot for Class B compliance.

Install the slide-in-modules in any slot, in any order:

1. Carefully slide the slide-in-module into the installation slot, aligning the module with the installation guides.
2. Ensure that the slide-in-module is firmly seated inside the chassis.
3. Rotate the attached panel fastener screw clockwise to secure the slide-in-module to the chassis front.



Installation -- Continued

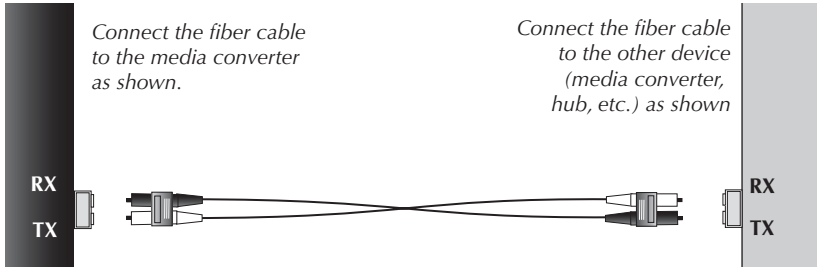
Install the fiber cable

CAUTION: Both connections (Port 1 and Port 2) to the CFMFF131x-21x (NTBW80xx 01) media converter must be of the same network speed and network protocol. Failure to observe this caution will cause data transfer to fail.

1. Locate or build IEEEE 802.3™ compliant fiber cable with male, two-stranded TX to RX connectors installed at both ends.
2. Connect the fiber cables to the CFMFF131x-21x (NTBW80xx 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.

Power the media converter

The media converter is powered through the Transition Networks *PointSystem*™ chassis.



Using SNMP

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

Use SNMP at an attached terminal or at a remote location to monitor the media converter by monitoring:

- Media converter power
- single mode and multimode fiber link status
- Port-disable mode jumper setting

Also, use SNMP to enter network commands that:

- Power-down the media converter
- Disable the dual port transmit mode jumper setting
- Disable the OPP(osite) mode jumper setting
- Disable the single mode and multimode transmitter

Operation

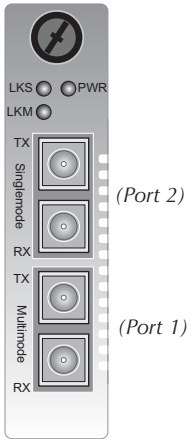
Using status LEDs

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

PWR On = The media converter is connected to external power.

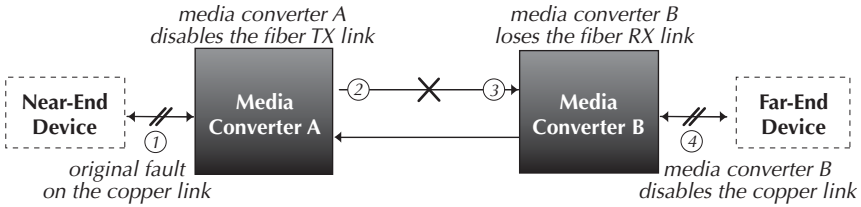
LKS On = The single mode (Port 2) fiber link is up.

LKM On = The multimode (Port 1) fiber link is up.



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, the media converter will automatically disable the TX (transmit) signal, thus, "passing through" the link loss. The far-end device is automatically notified of the link loss, which prevents the loss of valuable data unknowingly transmitted over an invalid link.



Cable Specifications

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

single mode fiber (recommended):	9 µm
Multimode fiber (recommended):	62.5/125 µm
Multimode fiber (optional):	100/140, 85/140, 50/125 µm
Data Rate	622 Mb/s
Bit Error Rate:	<10-9

PORT 1 (all models):

Fiber-optic Transmitter Power:	min: -19.0 dBm	max: -14.0 dBm
Fiber-optic Receiver Sensitivity:	min: -26.0 dBm	max: -14.0 dBm
Link Budget	7.0 dB	

Cable Specifications -- Continued

PORT 2:

CFMFF1314-212 (NTBW80HA 01)

Fiber-optic Transmitter Power:	min: -15.0 dBm	max: -8.0 dBm
Fiber-optic Receiver Sensitivity:	min: -28.0 dBm	max: -7.0 dBm
Link Budget:	13.0 dB	

CFMFF1316-212 (NTBW80PA 01)

Fiber-optic Transmitter Power:	min: -3.0 dBm	max: +2.0 dBm
Fiber-optic Receiver Sensitivity:	min: -29.0 dBm	max: -7.0 dBm
Link Budget:	26.0 dB	

CFMFF1317-212 (NTBW80JA 01)

Fiber-optic Transmitter Power:	min: -3.0 dBm	max: +2.0 dBm
Fiber-optic Receiver Sensitivity:	min: -28.0 dBm	max: -7.0 dBm
Link Budget:	25.0 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.

Technical Specifications

For use with Transition Networks Model CFMFFxxxx-2xx or equivalent

Standards	IEEE 802.3™, ATM, OC-3	
Dimensions	3.4" x 0.86" x 5.0" (86mm x 22mm x 127mm)	
Weight	3 oz (91 g) approximate	
Data Rate / Delay	622 Mbps / 2 nsec	
Power Consumption	3.0 watts (typical)	
MTBF	650,318 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 1,793,425 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	10-90%, non-condensing
	Altitude	0-10,000 feet
Warranty	Lifetime	

*Manufacturer's rated ambient temperature: "Tmra" range for this slide-in-module depends on the physical characteristics and the installation configuration of the Transition Networks *PointSystem*™ chassis in which this module will be installed.

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 could result in hazardous radiation exposure.

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 PWR LED 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 Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

   YES
   - Proceed to step 2.

2. Is the LKS LED illuminated?

   NO
   - Check the single mode 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 3.

3. Is the LKM LED illuminated?

   NO
   - Check the multimode 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.
   - Restart the workstation to restart the initialization process.
   - Contact Tech Support: 1-800-260-1312, Int'l: 00-1-952-941-7600.

   YES
   - 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
6475 City West Parkway
Minneapolis, MN 55344, USA
telephone: 952-941-7600
toll free: 800-526-9267
fax: 952-941-2322

TRANSITION networks

DECLARATION OF CONFORMITY

Name of Mfg:	Transition Networks 6475 City West Parkway, Minneapolis MN 55344 USA
Model:	CFMFF131x-21x (NTBW80xx 01) Series Media Converters
Part Number(s):	CFMFF1314-211 (NTBW80CA 01), CFMFF1314-212 (NTBW80HA 01), CFMFF1317-212 (NTBW80JA 01)
Regulation:	EMC Directive 89/336/EEC

Purpose: To declare that the CFMFF131x-21x (NTBW80xx 01) to which this declaration refers is in conformity with the following standards.

EN 55022:1994, A-1:1995, A-2:1997 Class A&B; FCC Part 15 Subpart B; UL 1950; EN 55024:1998; EN 61000-3-2:1995; EN 61000-3-3:1995; 21CFR 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 — August 22, 2005 Date

Compliance Information

UL Listed
C-UL Listed (Canada)
CISPR22/EN55022 Class A & B + EN55204
CE Mark

FCC regulations

This equipment has been tested and found to comply with the limits for a Class A & B 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 & B 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 & B 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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