

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.

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 welchen 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.

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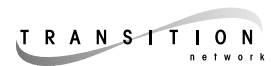
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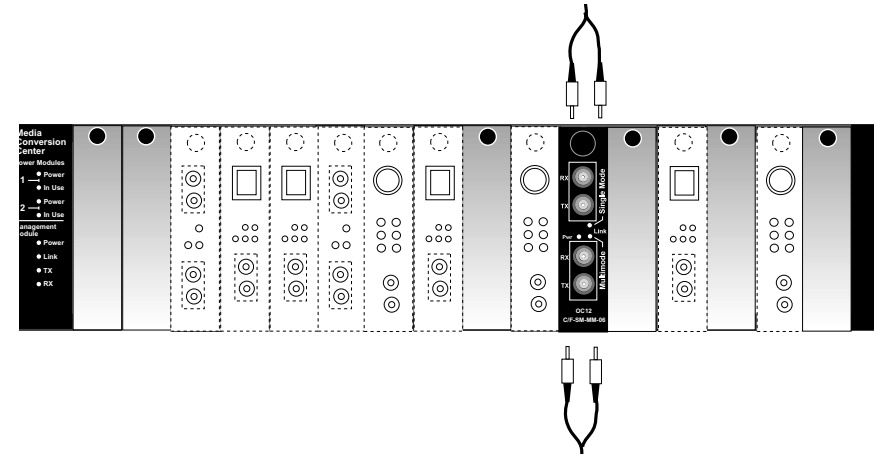


OC-12 1300 Nanometer Slide-In-Module Media Converter

C/F-SM-MM-06

USER'S GUIDE

The TRANSITION Networks C/F-SM-MM-06 series *OC-12* Ethernet media converters, designed to be installed in the TRANSITION Networks Media Conversion Center, E-MCC-1600, connect *1300 nm OC-12 multimode* fiber-optic cable to *1300nm OC-12 singlemode* fiber-optic cable.



C/F-SM-MM-06

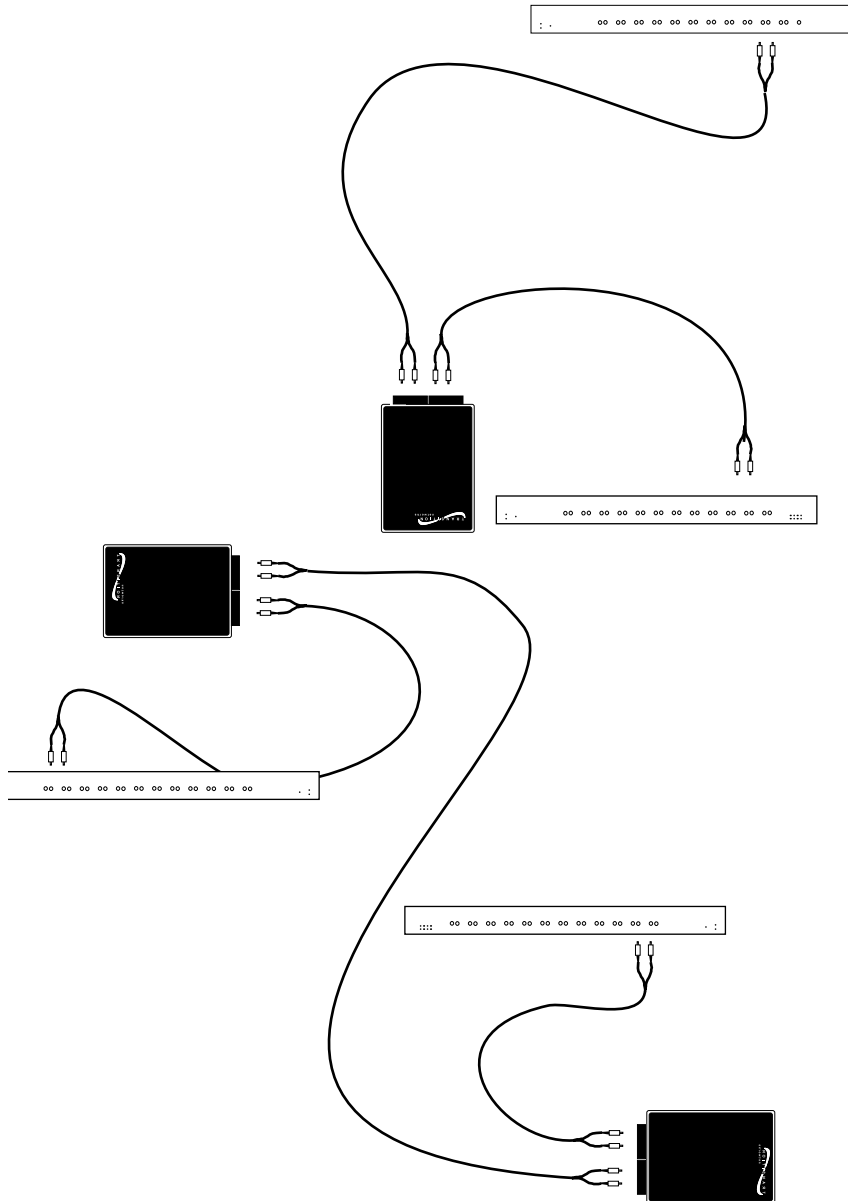
Provides an RX (receive) and TX (transmit) SC OC-12 connector to **1300nm multimode** fiber-optic cable and an RX (receive) and TX (transmit) SC OC-12 connector to **1300nm singlemode** fiber-optic cable.

C/F-SM-MM-06(XL)

Provides an RX (receive) and TX (transmit) SC OC-12 connector to **1300nm multimode** fiber-optic cable and an RX (receive) and TX (transmit) SC OC-12 connector to **1300nm singlemode** extra-long-haul fiber-optic cable.

C/F-SM-MM-06 in the Network	2
Installation	3
Operation	4
Fault Isolation and Correction	5
Cable Specifications	6
Technical Specifications	7
Compliance Information	8

C/F-SM-MM-06 IN THE NETWORK



NOTE: This product is NOT a repeater. Therefore, maximum distances depend on specific characteristics of the installation. The full distances of BOTH singlemode and multimode fiber MAY NOT be supported *in the same installation*.

TECHNICAL SPECIFICATIONS

Standards	ANSI T1.646-1995, ITU G.957
Dimensions	3.8" x 2.4" x 1.0" (97mm x 61mm x 25mm)
Weight	8 oz (approximate)
Power Consumption	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

TRANSITION
networks


DECLARATION OF CONFORMITY

Name of Mfg: **Transition Networks**
6475 City West Parkway, Minneapolis MN 55344 USA
Model: **C/F-SM-MM-06 Series Media Converters**
Part Number(s): **C/F-SM-MM-06, C/F-SM-MM-06(XL)**
Regulation: **EMC Directive 89/336/EEC**

Purpose: To declare that the *C/F-SM-MM-06* to which this declaration refers is in conformity with the following standards.

EMC-CISPR 22: 1985 Class A; EN 55022: 1988 Class A; EN 50082-1:1992;
EN 60950 A4:1997; IEC 801.2, IEC 801.3, and IEC 801.4; IEC 950

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 1, 1997
Date

CABLE SPECIFICATIONS

The physical characteristics of the cable must meet or exceed ANSI T1.646-1995 and ITU G.957 specifications.

Fiber Specifications

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

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

Wavelength : 1300 nM
Fiber Optic Transmitter Power: min: -15.0 dBm max: -8.0 dBm
Fiber Optic Receiver Sensitivity: min: -23.0 dBm max: -8.0 dBm
Minimum Cable Distance: 2 meters
Maximum Cable Distance: 2 kilometers

SINGLEMODE

C/F-SM-MM-06

Fiber Optic Cable Recommended: 9 μm singlemode fiber
Wavelength : 1300 nM
Fiber-optic Transmitter Power: min: -15.0 dBm max: -8.0 dBm
Fiber-optic Receiver Sensitivity: min: -28.0 dBm max: -8.0 dBm
Minimum Cable Distance: 2 meters
Maximum Cable Distance: 15 kilometers

C/F-SM-MM-06(XL)

Fiber Optic Cable Recommended: 9 μm singlemode fiber
Wavelength : 1300 nM
Fiber-optic Transmitter Power: min: -3.0 dBm max: -2.0 dBm
Fiber-optic Receiver Sensitivity: min: -28.0 dBm max: -8.0 dBm
Minimum Cable Distance: 2 meters
Maximum Cable Distance: 40 kilometers

INSTALLATION

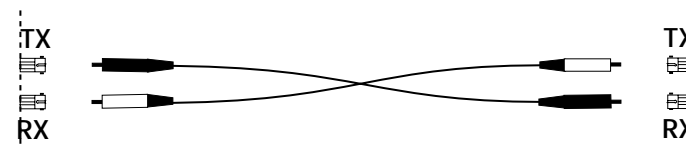
Install Slide-In-Module in E-MCC-1600 Chassis

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

1. Remove Media Converter Slide-in-Module protective plate from selected installation slot by removing screw that secures plate to front of E-MCC-1600.
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 firmly seated against the backplane.
3. Secure Media Converter Slide-in-Module to E-MCC-1600 chassis by turning Media Converter Slide-in-Module panel fastener screw clockwise to tighten.

Install Cable

1. Locate or build fiber cable with male two-stranded TX to RX connectors **appropriate to the media converter** installed at both ends.



2. Connect cable to connector to TX location on media converter and connect **same cable strand** to RX location on attached device.
3. Connect cable to connector to RX location on media converter and connect **same cable strand** to TX location on attached device.
4. Repeat steps 1-3 for second fiber cable.

Power the Slide-In-Module

NOTE: The Media Converter Slide-In-Module is powered through the E-MCC-1600 Media Conversion Center.

OPERATION

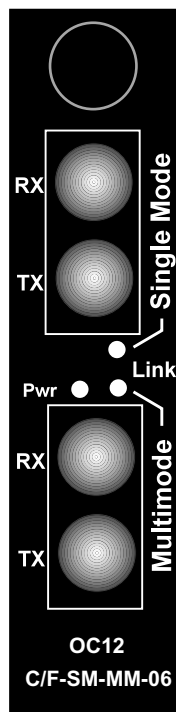
After installation, the media converter should function without operator intervention.

Status LEDs

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

P(o)w(e)r Steady green LED indicates connection to external AC power.

Link Steady green LED indicates that *singlemode* and/or *multimode* fiber link is connected properly.



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 Multimode *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.
- Power-cycle the media converter.
- Refer to Tech Tips available at: <http://www.transition.com>
- Contact Technical Support: (800) 260-1312.

YES

- Proceed to step 3.

3. Is the Singlemode *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.
- Power-cycle the media converter.
- Refer to Tech Tips available at: <http://www.transition.com>

YES

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