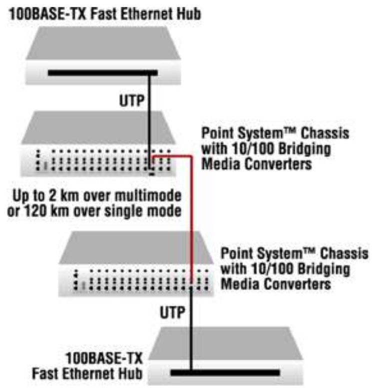
10/100 Bridging 10/100BASE-TX to 100BASE-FX
Multiport

Point System™ Slide-In-Module Media Converters

CBFTF10xx-1xx

Convert 10/100BASE-TX to 100BASE-FX

Extend Network Distance



Extend network distance

Extend network distance up to 120 km.

Bridging media converter will provide conversion and integration solutions for half duplex and full duplex environments.

Specifications

Standards	IEEE Std 802.3™
Data Rate	10Mbps; 100Mbps
Filtering Addresses	4K MAC addresses
Filtering & Forwarding Rate	14,880pps for Ethernet; 148,800 pps for Fast Ethernet
RAM Buffers	256KB
Max Packet Size	1536 bytes
Fiber Optic Connector Specs	
CBFTF1011-1x0 & CBFTF1013-1x0 & CBFTF1018-1x0 & CBFTF1039-1x0	Min TX PWR: -19.0 dBm Max TX PWR: -14.0 dBm RX Sensitivity: -30.0 dBm Max In PWR: -14.0 dBm Link Budget: 11.0 dB
CBFTF1014-1x0	Min TX PWR: -15.0 dBm Max TX PWR: -8.0 dBm RX Sensitivity: -31.0 dBm Max In PWR: -8.0 dBm Link Budget: 16.0 dB
CBFTF1019-1x0	Min TX PWR: -15.2 dBm Max TX PWR: -8.0 dBm RX Sensitivity: -32.5 dBm Max In PWR: -3.0 dBm Link Budget: 17.3 dB
CBFTF1015-1x0	Min TX PWR: -8.0 dBm Max TX PWR: -2.0 dBm RX Sensitivity: -34.0 dBm Max In PWR: -7.0 dBm Link Budget: 26.0 dB
CBFTF1016-1x0 & CBFTF1017-1x0	Min TX PWR: -5.0 dBm Max TX PWR: 0.0 dBm RX Sensitivity: -34.0 dBm Max In PWR: -7.0 dBm Link Budget: 29.0 dB
CBFTF1035-100	Min TX PWR: 0.0 dBm Max TX PWR: 5.0 dBm RX Sensitivity: -36.0 dBm Max In PWR: -3.0 dBm Link Budget: 36.0 dB
Single Fiber Products	
CBFTF1029-1x0 & CBFTF1029-1x1	Min TX PWR: -13.0 dBm Max TX PWR: -6.0 dBm RX Sensitivity: -32.0 dBm Max In PWR: -3.0 dBm Link Budget: 19.0 dB
CBFTF1029-1x2 & CBFTF1029-1x3	Min TX PWR: -8.0 dBm Max TX PWR: -3.0 dBm RX Sensitivity: -33.0 dBm Max In PWR: -3.0 dBm Link Budget: 25.0 dB

Switches	SW1: TP1: Enable/Disable Auto-negotiation SW2: TP1: Force 10Mbps or 100Mbps with Auto-negotiation OFF SW3: TP1: Force Half or Full duplex with Auto-negotiation off SW4: FBR: Half or Full duplex SW5: Auto-cross enable on/off SW6: Fiber Redundancy Enable/Disable (xBFTF10xx-14x only) SW7: TP2: Enable/Disable Auto-negotiation SW8: TP2: Force 10Mbps or 100Mbps with Auto-negotiation off SW9: TP2: Force Half or Full duplex with Auto-negotiation off SW10: Enable/Disable monitor on TP2
Unit LED	The TP LEDs use a bi-color LED that can be turned on green or yellow. Green – ON power applied to board
Port LEDs	Copper: Duplex/Link/Activity Yellow - ON: LInk; BLINK: activity Copper: 10Mbps / 100Mbps Yellow - 10Mbps Green - 100Mbps Fiber: Link/Activity Green - ON: Link; BLINK - activity Fiber: Duplex Green - ON: Full; OFF: half
Dimensions	CBFTF10xx-11x: Width: 0.86” [22 mm] Depth: 5.0” [127 mm] Height: 3.4" [86 mm] CBFTF10xx-12x & -14x: Width: 1.72” [44 mm] Depth: 5.0” [127 mm] Height: 3.4" [86 mm]
Power Consumption	CBFTF10xx-11x: 4.9 watts CBFTF10xx-12x & -14x: 9.0 watts
Environment	See chassis specifications
Shipping Weight	1 lb. [0.45 kg]
Regulatory Compliance	FCC Class A, VCCI Class 1, CISPR22/EN55022 Class A, EN55024, EN61000, CE Mark
Warranty	Lifetime

Features

- Auto-Negotiation *see next pages*
- AutoCross™ *see next pages*
- 10Mbps or 100Mbps on all TP ports
- Half or full-duplex on all ports including fiber
- Far End Fault (FEF) *see next pages*
- Automatic Link Restoration *next pages*
- Each port fully manageable
- Individual switches for both TP ports *(-110 only)*
- LED indications for all operation modes
- Port mirroring mode on TX ports
- Remote Firmware Upgrade *next pages*
- Source Address Change (SAC) *next pgs.*
- Fiber Redundancy Mode *(-140 only)*

When failure on primary fiber occurs it is detected by a converter; fiber two (secondary) is activated and becomes the primary link. The original fiber link (1) is put in the disabled state. It becomes secondary until the failure on primary Fiber occurs.

- Read Management features:
  - Media Converter Power
  - Fiber Link Status
  - Copper Link Status
  - Copper Port Speed
  - Hardware Switch Settings
- Write Management features:
  - Enable/disable Auto-negotiation on Copper
  - Force 10Mb/s or 100Mb/s on Copper
  - Force Full or Half-duplex on Copper
  - Force Full or Half-duplex on Fiber
  - Select Advertised Modes (When Auto-negotiation is Enabled)
  - Enable/disable Pause
  - Enable/disable Source Address Change
  - Enable/disable Monitor Port (Advanced filters available)
  - Enable/disable Far End Fault

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Ordering Information: 10/100 Bridging Point System™ Media Converters

-110 models can be used with any Point System™ Chassis (see pages 17 & 18)

Product Number	Port One	Port Two
CBFTF1011-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (ST) **[2 km / 1.2 miles]**
CBFTF1013-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (SC) **[2 km / 1.2 miles]**
CBFTF1039-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (LC) **[2 km / 1.2 miles]**
CBFTF1018-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (MT-RJ) **[2 km / 1.2 miles]**
CBFTF1014-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (SC) **[20 km / 12.4 miles]**
CBFTF1019-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (LC) **[20 km / 12.4 miles]**
CBFTF1015-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (SC) **[40 km / 24.9 miles]**
CBFTF1016-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (SC) **[60 km / 37.3 miles]**
CBFTF1017-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm single mode (SC) **[80 km / 49.7 miles]**
CBFTF1035-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm single mode (SC) **[120 km / 74.6 miles]**
Single Fiber Products *Note: Recommended use in pairs (see next pages)*		
CBFTF1029-110	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) **[20 km / 12.4 miles]**
CBFTF1029-111	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) **[20 km / 12.4 miles]**
CBFTF1029-112	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) **[40 km / 24.9 miles]**
CBFTF1029-113	(2) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) **[40 km / 24.9 miles]**

-120 models cannot be used with the 1-Slot Point System™ Chassis (see pages 17 & 18)

Product Number	Port One	Port Two
CBFTF1011-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (ST) **[2 km / 1.2 miles]**
CBFTF1013-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (SC) **[2 km / 1.2 miles]**
CBFTF1039-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (LC) **[2 km / 1.2 miles]**
CBFTF1018-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1300nm multimode (MT-RJ) **[2 km / 1.2 miles]**
CBFTF1014-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (SC) **[20 km / 12.4 miles]**
CBFTF1019-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (LC) **[20 km / 12.4 miles]**
CBFTF1015-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (SC) **[40 km / 24.9 miles]**
CBFTF1016-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (SC) **[60 km / 37.3 miles]**
CBFTF1017-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm single mode (SC) **[80 km / 49.7 miles]**
CBFTF1035-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm single mode (SC) **[120 km / 74.6 miles]**
Single Fiber Products *Note: Recommended use in pairs (see next pages)*		
CBFTF1029-120	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) **[20 km / 12.4 miles]**
CBFTF1029-121	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) **[20 km / 12.4 miles]**
CBFTF1029-122	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) **[40 km / 24.9 miles]**
CBFTF1029-123	(5) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) **[40 km / 24.9 miles]**

-140 models cannot be used with the 1-Slot Point System™ Chassis (see pages 17 & 18)

Product Number	Port One	Port Two
CBFTF1011-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1300nm multimode (ST) **[2 km / 1.2 miles]**
CBFTF1013-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1300nm multimode (SC) **[2 km / 1.2 miles]**
CBFTF1039-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1300nm multimode (LC) **[2 km / 1.2 miles]**
CBFTF1018-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1300nm multimode (MT-RJ) **[2 km / 1.2 miles]**
CBFTF1014-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1310nm single mode (SC) **[20 km / 12.4 miles]**
CBFTF1019-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(1) 100BASE-FX 1310nm single mode (LC) **[20 km / 12.4 miles]**
CBFTF1015-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1310nm single mode (SC) **[40 km / 24.9 miles]**
CBFTF1016-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1310nm single mode (SC) **[60 km / 37.3 miles]**
CBFTF1017-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1550nm single mode (SC) **[80 km / 49.7 miles]**
CBFTF1035-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1550nm single mode (SC) **[120 km / 74.6 miles]**
Single Fiber Products *Note: Recommended use in pairs (see next pages)*		
CBFTF1029-140	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) **[20 km / 12.4 miles]**
CBFTF1029-141	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) **[20 km / 12.4 miles]**
CBFTF1029-142	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) **[40 km / 24.9 miles]**
CBFTF1029-143	(4) 10/100BASE-TX (RJ-45) **[100 m / 328 ft.]**	(2) 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) **[40 km / 24.9 miles]**

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ADVANCED PRODUCT FEATURES

Auto-Negotiation (802.3u)

Auto-Negotiation allows devices to perform automatic configuration to achieve the best possible mode of operation over a link. Devices with this feature will broadcast their speed (10Mbps, 100Mbps, etc.) and duplex (half/full) capabilities to other devices and negotiate the best mode of operation between the two devices.

- No user intervention required to determine best mode of operation
- Optimal link established automatically
- Quick and easy installation

While the inclusion of this feature is beneficial, the ability to disable it is equally beneficial. In the event of a non-negotiating end device trying to connect to a negotiating device, the mode of operation will drop to the least common denominator between the two devices (i.e. 100Mbps, half-duplex). Disabling this feature gives the user the ability to force the connection to the best mode of operation when trying to link with a non-negotiating device. Most Transition converters with Auto-Negotiation will allow you to disable this feature.

AutoCross™

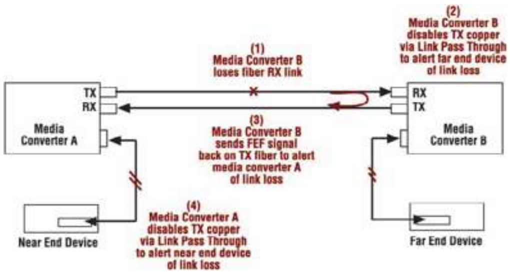
Automatically detects and configures the twisted pair port on the converter to the correct MDI or MDI-X configuration.

- Eliminates an entire category of troubleshooting
- No need to identify cable type—straight-through or crossover
- No user intervention required to determine correct button / switch settings

Far End Fault (802.3u)

Far End Fault (FEF) is a troubleshooting feature that is generally used in conjunction with Link Pass Through to notify both end devices of a loss of link. In the event of a loss of the fiber RX signal on the far end converter the converter will automatically generate a Far End Fault signal and send it on its TX fiber port to notify the near end converter of a fiber link loss. Link Pass Through will then disable the copper links on both ends; alerting both end devices of network trouble (see diagram below).

- Both end devices automatically notified of link loss
- Prevents loss of valuable data unknowingly transmitted over invalid link
- Allows for quick diagnosis and resolution of network problems



Transition Networks's media converters that include the FEF feature do not need to be used as pictured above as they will work with other network devices that support Far End Fault per IEEE standards.

If someone tells you media conversion is a commodity product that anyone can bring to market, they probably haven't looked at the extensive product suite offered by Transition Networks. With the industry's most comprehensive offering of full-featured products, Transition's media converters stand out as "the choice" among industry IT professionals.

Generally, media converters are low-level OSI model devices with no IP or MAC addresses and therefore are transparent to the network. This "transparency" makes them very inexpensive and easy to use, but also can make troubleshooting the network very difficult. In an effort to overcome this difficulty and to make media converters "visible" to network managers, Transition has designed their full-featured products to include the most advanced features on the market today.

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ADVANCED PRODUCT FEATURES

Automatic Link Restoration

Transition Networks's converters will automatically re-establish link in all network conditions.

No need to reset devices

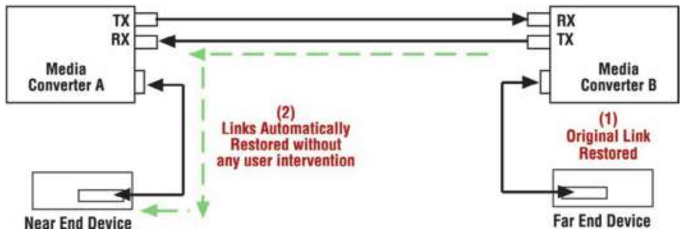
Transition Networks's converters will automatically re-establish link when connected to switches if link was lost. With other manufacturers' converters the user must reset the converter to re-establish the link.

Auto-Negotiation Enabled

Automatic Link Restoration allows the users to continue using Auto-Negotiation with Link Loss Notification features. With other manufacturers' converters the user must disable Auto-Negotiation and hard set the link.

Link Pass Through Activated in both directions

Automatic Link Restoration on Transition Networks's products allows users to continue using Link Loss Notification feature activated in both directions. Many competitive solutions allow for Link Loss Notification activation only in one direction. If Link Loss feature is activated in both directions, competitive products are put in a "deadly embrace" and they cannot restore the link without resetting the converters.



Remote Firmware Upgrade

New product features are continuously being added to Transition Networks's products. These improvements are also available for many products already installed in the field. Management modules and many media converters can be updated remotely via firmware upgrade. The remote upgrade feature eliminates the need to ship the products back to the manufacturer. The firmware upgrades can be performed by a user either locally via a Console port or remotely via TFTP.

The upgrades do not require the reconfiguration of the SNMP management or converter feature settings.

Source Address Change

Select bridging media converters are capable of detecting and reporting changes in the MAC (Ethernet hardware) address of the attached equipment. This feature is very useful when administrators intend that only a particular physical device be attached to a particular port.

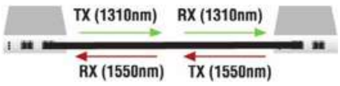
When the MAC address of a connected device changes (new device is inserted) the administrator receives the trap with the notification of a change.

Single Fiber

Single fiber technology offers a 50% savings in fiber utilization. It is an attractive solution to maximize the usage of a limited number of fiber runs.

In a traditional optical link, a fiber pair consists of two uni-directional strands. The single fiber technology multiplexes two optical wavelengths of 1310nm and 1550nm into a single strand fiber. In a single fiber media converter each wavelength is responsible for either the transmit or receive function. Consequently, the bi-directional transmission is achieved by using a single strand. The converters in a single fiber scenario "match" each other's wavelengths. Converter A transmits at the wavelength of 1310nm and receives at 1550nm while the other converter transmits at 1550nm and receives at 1310nm. Therefore, converters are usually used in pairs.

Single Fiber



Single fiber technology is available on all Transition Networks Media Converters in maximum distance ranges from 20 to 80km.

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