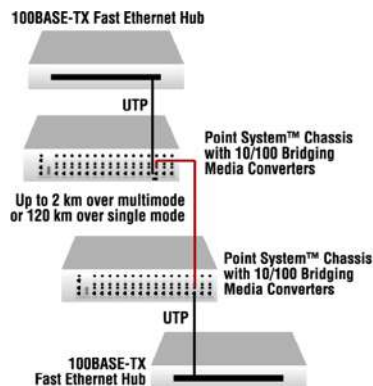


10/100 Bridging 10/100BASE-TX to 100BASE-FX

Point System™ Slide-In-Module Media Converters

CBFTF10xx-10x

► 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.



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

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 | |
| CBFTF1011-100 & CBFTF1013-100 & CBFTF1018-100 & CBFTF1039-100 | 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 |
| CBFTF1014-100 | 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 |
| CBFTF1019-100 | 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 |
| CBFTF1015-100 | 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 |
| CBFTF1016-100 & CBFTF1017-100 | 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 | |
| CBFTF1029-100 & CBFTF1029-101 | 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 |
| CBFTF1029-102 & CBFTF1029-103 | 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-Neg 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: AutoCross™ enable on/off SW6: Link Pass Through enable/disable |
| 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 | Width: 0.86" [22 mm] Depth: 5.0" [127 mm] Height: 3.4" [86 mm] |
| Power Consumption | 4.9 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

- 10Mbps or 100Mbps on all TP ports
- Half or full-duplex on all ports including fiber
- Each port fully manageable
- LED indications for all operation modes
- Auto-Negotiation (see next pages)
- AutoCross™ (see next pages)
- Link Pass Through (see next pages)
- Far End Fault (FEF) (see next pages)
- Automatic Link Restoration (next pages)
- Remote Firmware Upgrade (next pages)
- Source Address Change (SAC) (next pgs.)
- Can be used with any Point System™ Chassis

Read Management Features

- Media Converter Power
- Copper & Fiber 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 or Fiber
- Select Advertised Modes (When Auto-negotiation is Enabled)
- Enable/disable:
 - Pause
 - Source Address Change
 - Monitor Port (advanced filters available)
 - Link Pass Through
 - Far End Fault

Ordering Info

| Product Number | Port One | Port Two |
|----------------------|--|--|
| CBFTF1011-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1300nm multimode (ST) [2 km / 1.2 miles] |
| CBFTF1013-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1300nm multimode (SC) [2 km / 1.2 miles] |
| CBFTF1039-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1300nm multimode (LC) [2 km / 1.2 miles] |
| CBFTF1018-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1300nm multimode (MT-RJ) [2 km / 1.2 miles] |
| CBFTF1014-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1310nm single mode (SC) [20 km / 12.4 miles] |
| CBFTF1019-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1310nm single mode (LC) [20 km / 12.4 miles] |
| CBFTF1015-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1310nm single mode (SC) [40 km / 24.9 miles] |
| CBFTF1016-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1310nm single mode (SC) [60 km / 37.3 miles] |

| Product Number | Port One | Port Two |
|---|--|--|
| CBFTF1017-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1550nm single mode (SC) [80 km / 49.7 miles] |
| CBFTF1035-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1550nm single mode (SC) [120 km / 74.6 miles] |
| Single Fiber Products Note: Recommended use in pairs (see next pages) | | |
| CBFTF1029-100 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [20 km / 12.4 miles] |
| CBFTF1029-101 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [20 km / 12.4 miles] |
| CBFTF1029-102 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1310nm TX / 1550nm RX single fiber single mode (SC) [40 km / 24.9 miles] |
| CBFTF1029-103 | 10/100BASE-TX (RJ-45) [100 m / 328 ft.] | 100BASE-FX 1550nm TX / 1310nm RX single fiber single mode (SC) [40 km / 24.9 miles] |

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. 10Mbps, 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™

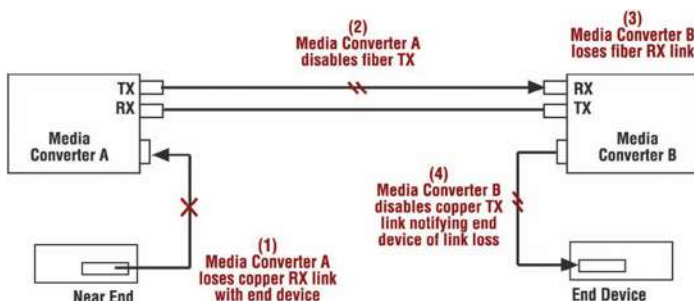
Automatically detects and configures the twisted pair port on the converter to the correct MDI or MDI-X configuration.

- 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

► Link Pass Through

Link Pass Through is a troubleshooting feature that allows the media converter to monitor both the fiber and copper RX ports for loss of signal. In the event of a loss of RX signal on one media port, the converter will automatically disable the TX signal of the other media port, thus "passing through" the link loss.
(see diagram below)

- End device automatically notified of link loss
- Prevents loss of valuable data unknowingly transmitted over invalid link



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.

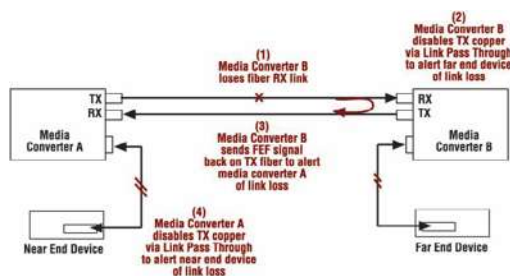
Generally, media converters are low-level OSI model devices with no IP or MAC addresses and therefore are transparent to the network. This "transparency" makes them very inexpensive and easy to use, but also can make troubleshooting the network very difficult. In an effort to overcome this difficulty 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.

ADVANCED PRODUCT FEATURES

► 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.

► Automatic Link Restoration

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

- No need to reset devices

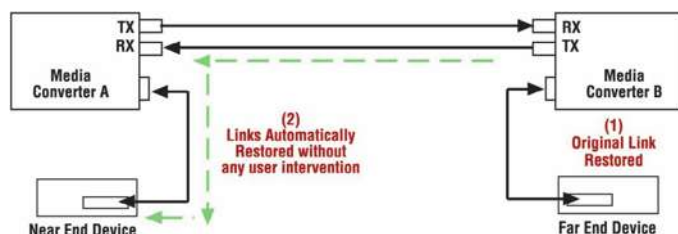
Transition Networks's converters will automatically re-establish link when connected to switches if link was lost. With other manufacturers' converters the user must reset the converter to re-establish the link.

- 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.



ADVANCED PRODUCT FEATURES

► 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.