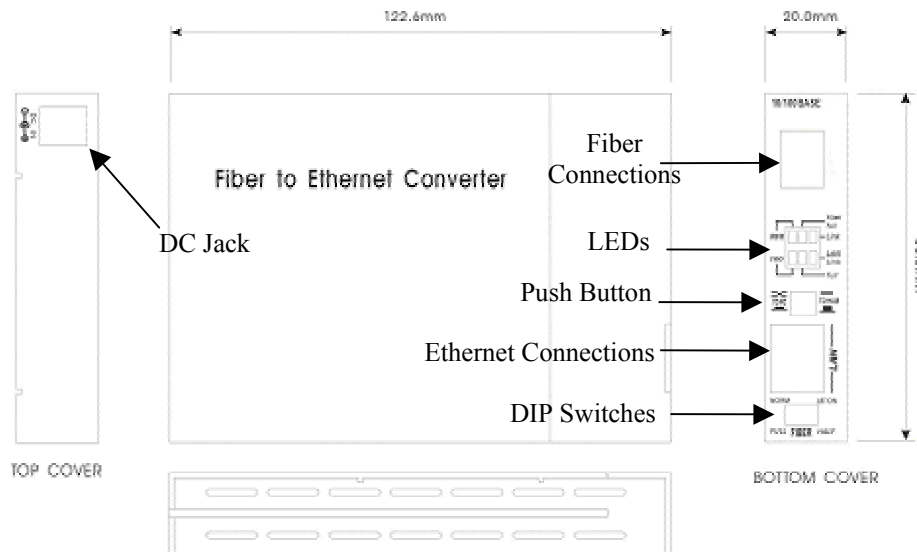


Installation Instructions for FIB1 10/100 Series 10/100BASE-TX / 100BASE-FX Fiber Transceiver Converters

Description

The Fiber Transceiver Converter Series gives you the option to choose from the two most popular fiber cabling connectors. The **FIB1-10/100/ST** provides you with ST[®] connectors for your fiber optic cables and an RJ-45 connector for 10/100Base-TX twisted pair cable connection. The **FIB1-10/100/SC** provides you with SC connectors for your fiber optic cables and an RJ-45 connector for your 10/100Base-TX cable connection. For the UTP side, auto-negotiation is default. These units will automatically tailor themselves to convert both half-duplex or full-duplex signals and 10Base-T or 100Base-TX, depending on your specific network needs. You may also set the FX side in full-duplex only or half-duplex only. The Fiber Transceiver Converters give you the freedom to extend your 10/100Mbps cabling distance by allowing connectivity up to 120 kilometers. Six LED indicators signal the power status of the converter, UTP port speed, duplex status and Link/RX and FX port Link/RX and duplex status.



Specifications

Standard

IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX, 100BASE-FX (Fast Fiber, 100Mbps)
Supports Full Duplex Ethernet mode (200Mbps)

10/100BASE-TX RJ-45 Connectors

Two RJ-45 connectors are provided for connection to either MDI-X (PC) or MDI (HUB) equipment. This allows all UTP connections to be made using only a common straight-through UTP cable.

RJ-45 Jack ID



RJ-45 Type

MDI-X (to PC)
MDI (to HUB)

RJ-45 Pin

1
2
3
6

MDI-X type

Rx+
Rx-
Tx+
Tx-

MDI type

Tx+
Tx-
Rx+
Rx-

10/100BASE-TX UTP Cable

Cable type: 10Base-T; Cat. 3,4 or 5 ; 100Base-Tx; Category 5
Maximum cable distance: 100 meters (328 feet)

Fiber Optic Connectors

One connector is provided for fiber optic cable connection. One is for both transmission and reception of optical data. Please note that transceiver "A" must connect to transceiver "B" for proper fiber linking.

Environment

Temperature 0°C - 70°C
Humidity 10-90% non condensing

Dimensions

102mm x 57mm x 20mm

Power

+9V /800mA maximum
DC plug type : center positive

Dip Switch Settings

(Observe the "ON" marking on the DIP switch. All "Off" is the default position. Except for Switch#6. Any changes to the default settings require opening the case. Please follow the number order from left to right)

1. UTP Auto/Manual :
UTP Auto : Automatically configure UTP port for 100M, 10M, full-duplex or half-duplex operation.
UTP Manual : Force UTP port only for its choice manually.
 2. UTP Full /Half : The UTP will be configured in Full-duplex or Half-duplex mode.
 3. UTP 100/10 : Force UTP port in 100/10 Base.
 4. Fiber 100 Full/Half : The fiber will be configured in Full-duplex or Half-duplex mode.
 5. Ethernet Frame length : 1518/1522 (Normal); 1536/1536(Special for VPN)
 6. Link-Loss-Forwarding function (Details please see on next page)
- ** Please remember to reset power of the unit if any change of the dip switch setting is made while power is on.**

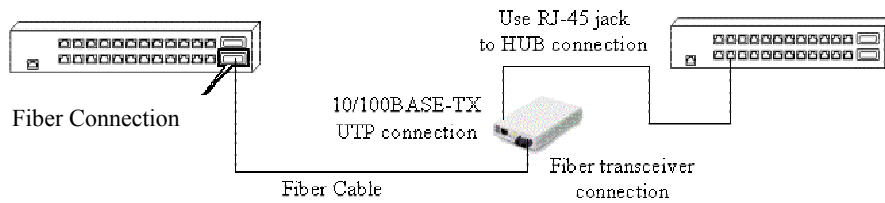
ON					
UTP	UTP	UTP	Fiber 100	Special	LLF
Manual	Half	10	Half		ON
1	2	3	4	5	6
Auto	Full	100	Full	Normal	OFF

Installation

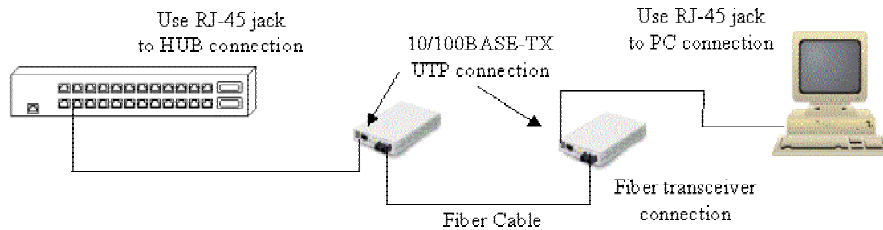
Connect the fiber interface cable to the FIB1-10/100. Using a straight through UTP cable, connect the Ethernet connection to the appropriate RJ-45 jack. Connect a PC to the "cross" connector, connect a HUB to the "straight" connector. Set the "FX" switch according to the specifications of your fiber side equipment. The switch has two positions, one is "Half" for half duplex, the other is "Full" for full duplex. A full duplex setting will be indicated by the LED. Follow the connection examples below. Install the fiber converter with the DC power adapter provided (+9VDC, 1A) and connect the adapter to an AC outlet.

Connections

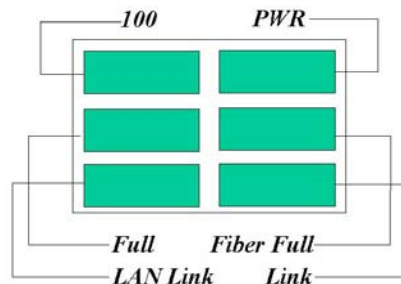
The following example illustrates the connection scheme when connecting from a 10/100BASE-TX port of one HUB to a 100BASE-FX port of another HUB through the fiber converter.



The following example illustrates the connection scheme when connecting from a 10/100BASE-TX port of one HUB to a 10/100BASE-TX Network Interface Card (NIC) in a computer through the fiber converter.



LED Indicators



LED	Function	State	Status
PWR	Power indicator	On	Converter has power.
		Off	Converter has no power.
Fiber Full	mode display	Blinking	The SNMP is active.
		On	Fiber side full duplex mode (200mbps).
Link	Fiber link	Off	Half-duplex mode or no devices attached
		On	The fiber link is ok.
100	mode display	Off	No link or the link is faulty.
		Blinking	Receiving data on the fiber.
Full	mode display	On	Ethernet is operating in 100Mbps mode.
		Off	Ethernet is operating in 10Mbps mode or no devices attached.
LAN Link	Ethernet link	On	Full duplex mode (200mbps).
		Off	Half-duplex mode or no devices attached
		On	The UTP link is ok.
		Off	No link or the link is faulty.
		Blinking	Receiving data on Ethernet.

Link-Loss-Forwarding Application Note

This media converter incorporates a Fiber Link Forwarding feature which allows indirect sensing of a Fiber Link Loss via the 100 Base-TX UTP connection. Whenever the media converter detects a Link Loss condition on the Receive fiber (Fiber LNK OFF), it disables its UTP transmitter so that a Link Loss condition will be sensed on the receive UTP port. (See the following figure) The link loss can then be sensed and reported by a Network Management agent at the remote UTP port's host equipment.

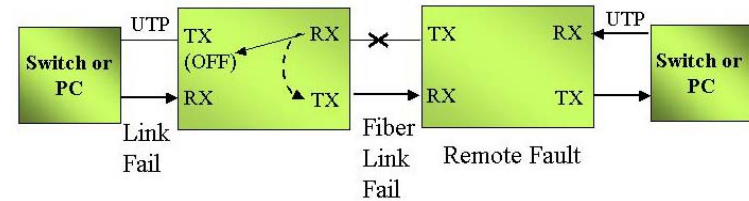


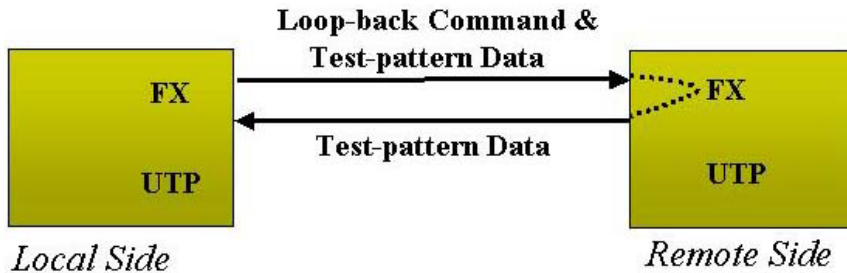
Figure : Fiber Break Responses

- Situation 1 : When the LLF status caused by any fiber-side failed connection the LEDs indication is : LED **FX** link/RX will be off and both side of the LED **UTP** link/RX, Full Duplex and Speed100 will be flashing.
- Situation 2 : When the LLF status caused by any UTP-side failed connection *Whether it's under the 10 or 100 Mbps mode - the major indication will be displayed by : Cause it will be detected through host-side equipment so this status will be displayed by the switch equipment's UTP link LED .

This feature has no effect on the media converter's UTP LNK LED, which continues to function normally, independent of the state of the Fiber LNK LED and the UTP transmitter. This feature is enabled by default on all the FMC Series media converters.

- Loop-back Testing Application Note :**
(While this feature is operating the Fiber side transmission will be halted)

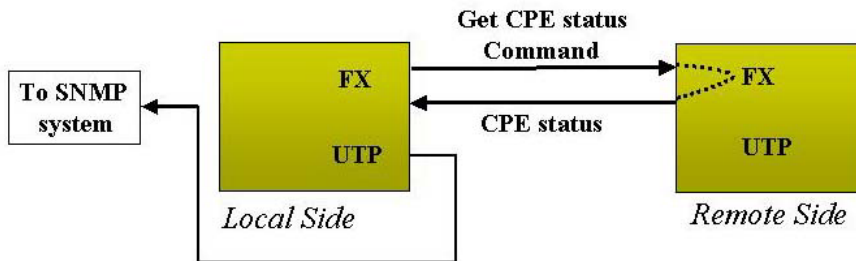
This media converter incorporates a Fiber Loop-back Testing feature which allows the system to confirm that the fiber or Ethernet circuit loop is complete or not. The local-side unit will send out a detect message which includes both command and test-pattern data to the remote-side unit and request for an answer. When the remote-side unit receives the message, first it will try to recognize the command. After the remote-side unit recognizes the command message, then it will deliver the received test-pattern data back to the local-side unit. In this way, the circuit loop is complete. This feature is enabled by the DIP switch#2.



Situation 1 : If the remote-side unit can not recognize the command message then the PWR led will flash rapidly for a duration of on for 0.3 second and off for 0.2 second. Normally the PWR LED will flash for a duration of on for 1 second and off for 1 second. This indicates the loop-back test is successful.

- Get CPE status Application Note :**
(While this feature is operating the Fiber side transmission will be halted)

This feature allows the system (only available for rack mount type unit) to monitor the CPE status. The rack mount unit will send out a message which includes a command to the CPE-side unit and request for an answer. When the CPE-side unit receives the message, first it will try to recognize the command. After the CPE-side unit recognize the command message, it will delivery the CPE status back to the rack mount unit. In this way, the rack mount unit can easily monitor every CPE side unit. The CPE status message include the fiber side - link status and duplex status, the UTP side – link status, duplex status and speed status, the power status, transmission status and fiber (Tx side) failure status.



TRADEMARKS

Ethernet is a registered trademark of Xerox Corp.

ST[®] is a registered trademark of AT&T.

WARNING:

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 in which case the user will be required to correct the interference at his own expense. NOTICE: (1) The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. (2) Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

CISPR PUB.22 Class A COMPLIANCE:

This device complies with EMC directive of the European Community and meets or exceeds the following technical standard. EN 55022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This device complies with CISPR Class A.

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.

CE NOTICE

Marking by the symbol CE indicates compliance of this equipment to the EMC directive of the European Community. Such marking is indicative that this equipment meets or exceeds the following technical standards: EN 55022:1994/A1:1995/A2:1997 Class A and EN61000-3-2:1995, EN61000-3-3:1995 and EN50082-1:1997