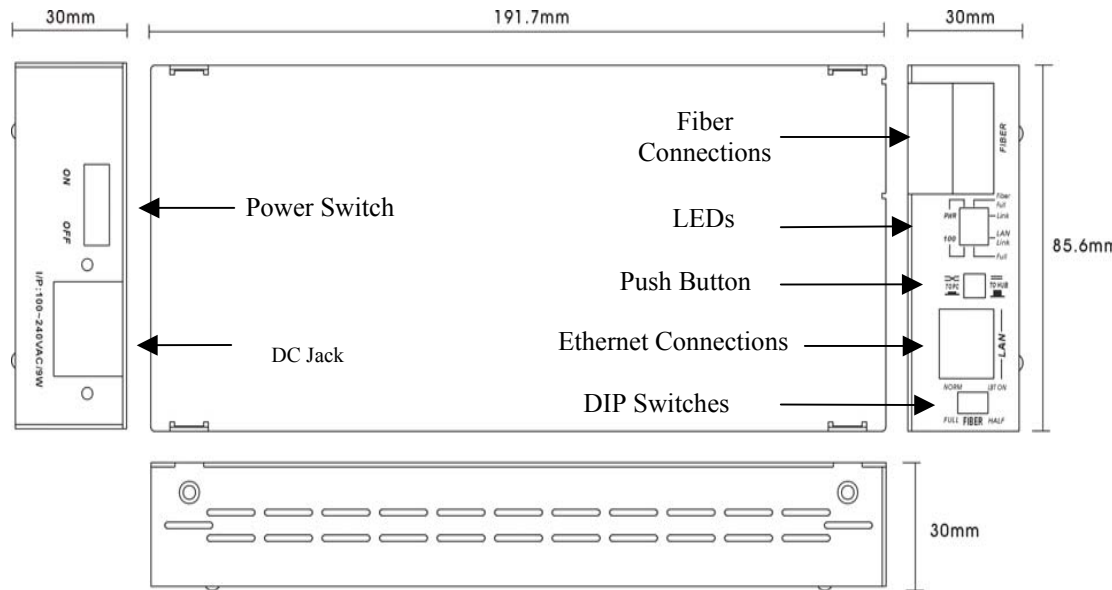


Installation Instructions for FIB2 10/100 Series 10/100BASE-TX / 100BASE-FX Fiber Optical Transceiver Converters

Description

The FIB2 Series are standalone fiber media converters with universal AC power supplies built-in, available in models for 100Base-TX or 10/100 Ethernet, and provide optional functions for LLF (link loss forwarding), loop-back test, and get remote CPE status. These optional features are especially useful when the standalone units are linked to one of our Rack type units with optional SNMP management. The FIB2 series Ethernet Fiber Converters give you the options to choose from two of the most popular fiber cabling connectors, ST or SC. Both multimode and single mode converter models are available and well as WDM (wave division multiplexing) which allows TX and RX to use a single fiber cable. The Ethernet connections are all provided by shielded RJ-45 jacks and incorporate a push-button switch to allow connection to either HUB or PC equipment. When auto-negotiation is selected, these units will automatically tailor themselves to convert both half-duplex and full-duplex signals, depending on your specific network needs. LED indicators signal the power status of the converter, UTP port speed, UTP duplex status and UTP Link/RX, FX Link/RX and FX duplex status.



FIB2-10/100 PRINTING

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

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

Push-button



RJ-45 Type

MDI-X (to PC)

MDI (to HUB)

RJ-45 Pin

1
2
3
6

MDI-X type

Rx+
Rx-
Tx+
Tx-

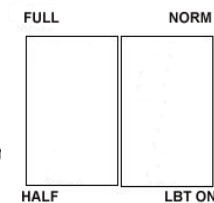
MDI type

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)

Front Panel DIP Switch Setting



1. Full /Half : The Fiber Duplex Setting will be configured in either Full-duplex or Half-duplex
* **This switch will force an automatic reset, so power-reset is not necessary when any switch modification is made.**
2. Loop-back test and get remote side status (NORM →Not active ; LBT ON→active)
* **When the local side loop-back test is activated, all LEDs (except the PWR LED) will flash rapidly before revealing the remote side status.**
* **Note: This application must only be run under the condition that the remote side loop-back testing function is off.**

Fiber Optic Connectors

Two connectors are provided for fiber optic cable connection. One is for transmission and the other is for reception of optical data (WDM model provides only one connector.)

Environment

Temperature 0°C - 70°C
Humidity 10-55% non condensing

Dimensions

191.7mm x 85.6mm x 30mm

Power

100~240 VAC
50/60Hz, 9 Watts

Dip Switch Settings (on PCB)

(Observe the "ON" marking on the DIP switch. Switch one through four are in "Off" for the default position. Switch #5 & switch #6 are in "On" for the default position. Any changes to the default settings require opening the case. Please follow the number order from left to right)

WARNING : Hazardous voltages inside; always disconnect from power source before opening the case.

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. (depends on setting of 2 & 3)

2. UTP Full /Half :

The UTP will be configured in Full-duplex or Half-duplex mode. (only if 1 is on)

3. UTP 100/10 :

Force UTP port in 100/10 Base.(only if 1 is on)

4. Reserved

5. Link-Loss-Forwarding function (Details please see on next page)

6. Ethernet Frame length : 64~1518 (No VLAN Tag); 64~1522 (VLAN Tag)

64~1536 (Special)

ON

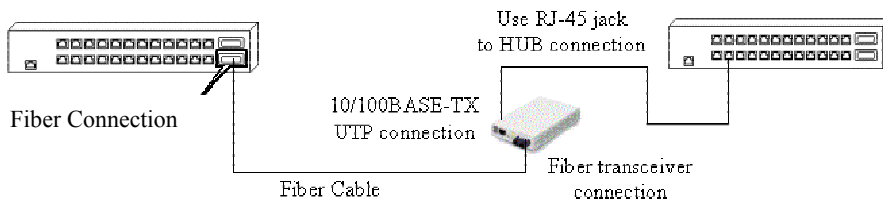
1	2	3	4	5	6
Manual	Half	10	Reserved	ON	1536
Auto	Full	100		LLF	FL
				OFF	Normal

Installation

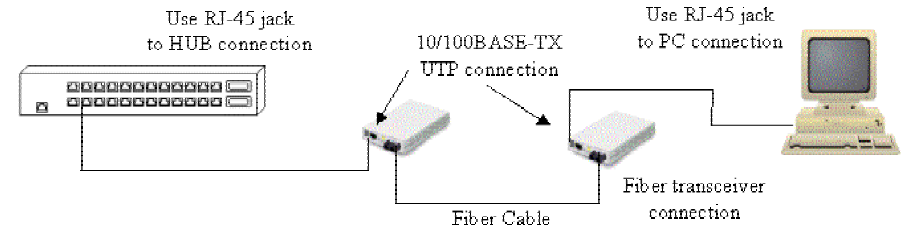
Connect the fiber interface cable to the FIB2-10/100. Using a straight through UTP cable, connect the Ethernet connection to the RJ-45 jack. Set the push-button according to your application. Set the "FX" switch according to the specifications of your fiber side equipment. The switch has two positions, 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 AC power cord provided to an AC outlet.

Connections

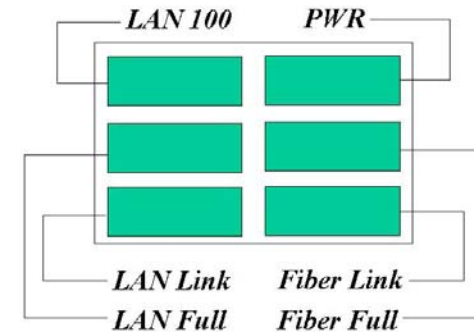
The following example illustrates the connection scheme when connecting from a 10/100BASE-TX port of one HUB to a 100BASE-FX port of another HUB through the fiber converter.



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	On	Fiber side full duplex mode (200mbps).
		Off	Fiber side half-duplex mode
Fiber Link	Fiber link	On	The fiber link is ok.
		Off	No link or the link is faulty.
		Blinking	Receiving data on the fiber.
LAN 100	mode display	On	UTP side is operating in 100Mbps mode.
		Off	UTP side is operating in 10Mbps mode
LAN Full	mode display	On	UTP side full duplex mode (200mbps).
		Off	UTP side half-duplex mode
LAN Link	Ethernet link	On	The UTP link is ok.
		Off	No link or the link is faulty.
		Blinking	Receiving data on Ethernet.

■ Link-Loss-Forwarding (LLF) 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.

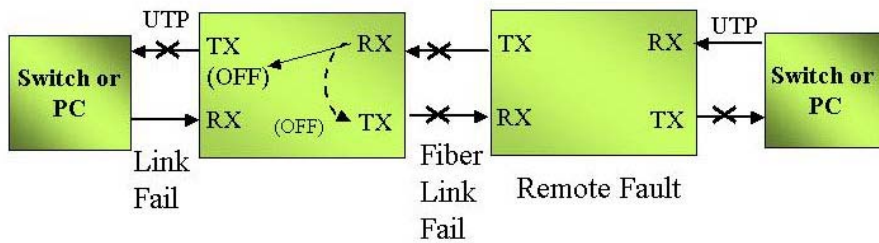


Figure : Fiber Break Responses

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 FIB2 Series media converters.

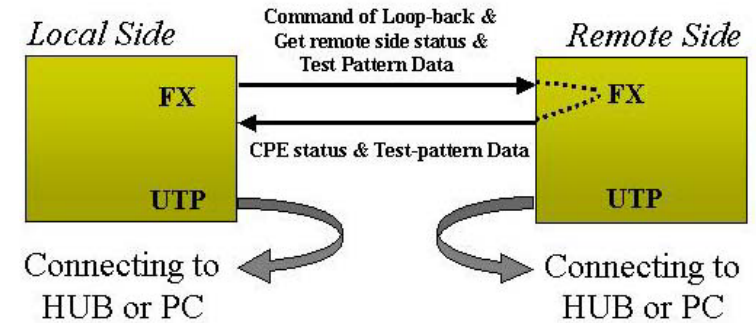
■ Loop-back Testing(LBT)& Get CPE status Application Note : (While this feature is operating the Fiber side transmission will be halted)

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 on the front panel.

The get remote side status feature allows the system (both available for FIB2 & FRM301 and FRM401 series application) to monitor the remote side status. First, the unit will send out a message which includes a command 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, it will deliver the remote side status back to the rack mount unit. In this way, the rack mount unit can easily monitor every remote side unit. The remote side 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.

The FIB2 series is compatible with FRM301 & FRM401 series for this feature. You may test the whole application with FIB2 & FRM301 and FRM401.

Situation 1 : If the local side can not access the remote side while LBT is running then only the power LED will flash rapidly alone.



TRADEMARKS

Ethernet is a registered trademark of Xerox Corp.
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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