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CE Mark Warning

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Revision

User's manual for PLANET Fast Ethernet Converter

Multi-mode: FT-801, FT-802, FT-803

Single-mode: FT-802S15, FT-802S35, FT-802S50,

FT-806A20, FT-806B20

Rev 6.0 (September. 2004)

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Chapter 1 **Overview**

Thank you for purchasing PLANET FT-80X family 10/100Mbps Ethernet Twisted pair to 100Base-FX Fiber-optic Bridge Converter. This converter is used to convert one type media signal to other type equivalent that allows two type segments connect easily, efficiently and inexpensively. This converter can be used as a standalone unit or as a slide-in module to the 10"/19" media chassis (up to 15 units) for a TP and Fiber combined networks at a central wiring closet. Please contact with your sales representative for more about the 19" media chassis.

Chapter 2 **Model List**

Your Fast Ethernet Converter comes with one of the following models.

- ⇒ FT-801: on board ST fiber connector
- ⇒ FT-802/S: on board SC fiber connector
- ⇒ FT-803: on board MTRJ fiber connector
- ⇒ FT-806A20: on board single SC fiber connector
- ⇒ FT-806B20: on board single SC fiber connector

Models with last character "S" indicate the fiber-port is with "Single-Mode" optic fiber connector and followed with a number indicates the maximum wiring distance.

In the following sections, the term "FT-80X" indicates the product family above.

Chapter 3 **Checklist**

Your FT-80X carton should contain the following items:

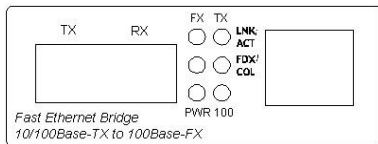
- ⇒ The Fast Ethernet Bridge Converter
- ⇒ AC-DC Power Adapter (Output: 5VDC, 2 A max.)
- ⇒ This user's manual

If any item is missing or damaged, please consult the dealer from whom you purchased your Fast Ethernet Converter.

Chapter 4 **Product Outlook**

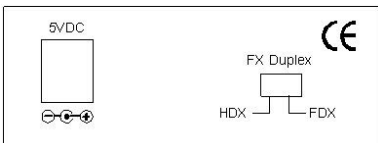
Right View

There are one RJ-45 Twisted-Pair jack (Auto-MDI/MDI-X), one fiber-optic connector (vary by model) and six LED indicators.



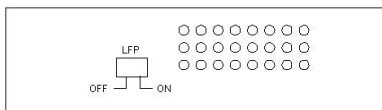
Left View

One DIP switch for Fiber-optic operating mode selection, FDX for full-duplex, and HDX for half-duplex.



Side View (FT-80X)

One DIP switch for Link Fault Pass Through (LFP) feature, "ON" to turn-on the LLCF and LLR detection. And "OFF" to turn-off this feature. Please refer to the following sections for more.



DIP Switch for LFP function.

Chapter 5 **Link Fault Pass through (LFP)**

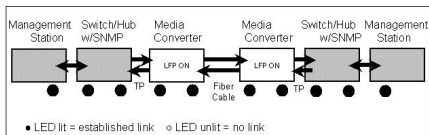
The LFP function includes the Link Fault Pass Through function (LLCF/LLR) and the DIP Switch design. LLCF/LLR can immediately alarm administrators the problem of the link media and provide efficient solution to monitor the net. The DIP Switch provides disable or enable the LFP function.

LLCF (Link Loss Carry Forward) means when a device connected to the converter and the TP line loss the link, the converter's fiber will disconnect the link of transmit. LLR (Link Loss Return) means when a device connected to the converter and the fiber line loss the link, the converter's fiber will disconnect the link of transmit. Both can immediately alarm administrators the problem of the link media and provide efficient solution to monitor the net.

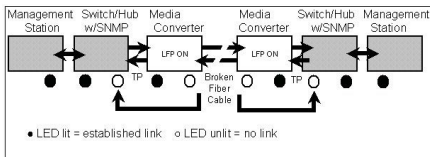
Link Loss Carry Forward (LLCF)

FT-80X incorporates an LLCF function for troubleshooting a remote connection. When LFP function is enabled, the FL/TP ports do not transmit a link signal until they receive a link signal from the opposite port.

The diagram below shows a typical network configuration with a good link status using FT-80X for remote connectivity.



If the connection breaks, FT-80X that link loss forward to the switch/hub that generates a trap to the management station. The administrator can then determine the source of the problem.



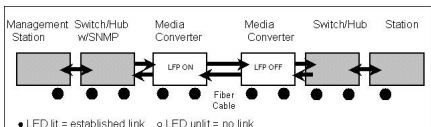
*Units are shipped with the LFP function enabled (ON).

Link Loss Return (LLR)

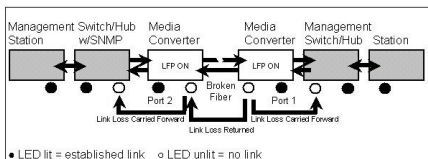
The fiber ports of FT-80X have been designed with an LLR function for troubleshooting a remote connection. LLR works in conjunction with LLCF.

When LFP function is enabled *(by default), the port's transmitter shuts down when its receiver fails to detect a valid receive link. LLR should only be enabled on one end of the link and is typically enabled on either the unmanaged or remote device.

The diagram below shows a typical network configuration with a good link status using FT-80X for remote connectivity. Note that LLR and LLCF are enabled as indicated in the diagram.



If one of the optical conductors is bad (as shown in the diagram box below), the converter with LLR function will return a no-link condition to its link partner. With LLCF function also enabled, the no-link condition is carried forward to the switch/hub where a trap is generated to the management station, and the administrator can then determine the source of the loss.



NOTE:

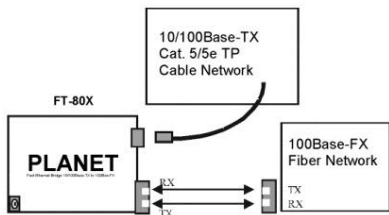
LFP function is turn-on in default. This feature can also be turned off via the side DIP-switch. If you are familiar with the network installation and for diagnostic purpose (i.e. check which end is broken), you can turn it off and reset the converter to make it take effect. Otherwise, please remains it in the default position.

Chapter 6

Installing the Converter

Please follow these steps to install the converter:

- Turn off the power of the device/station in a network to which the FT-80X will be attached
- Ensure that there is no activity in the network
- Attach fiber cable from the FT-80X to the fiber network. TX, RX must be paired at both ends
- Attach a Cat. 5 UTP cable from the 10/100Base-TX network to the RJ-45 port on the FT-80X.
- Connect the 5VDC power adapter to the FT-80X and verify that the Power LED lights up.
- Turn on the power of the device/station, the TX Link and FX Link LEDs should light when all cables are attached
- Turn on the power of the device/station, the TX Link and FX Link LEDs should light when all cables are attached



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- RJ-45/STP, UTP Cat 5, straight/crossover cable is accepted

 NOTE:

- Please refer to section 8 for more about the wiring distance of your TP, Optic-fiber networks.
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Chapter 7

Duplex Mode setting

The TP port of FT-80X supports duplex mode detection by auto-negotiation (A-N). The following is the duplex mode parameters:

Fast Ethernet Device	FT-80X Duplex Mode support
Ethernet / Fast Ethernet Hub	Half-Duplex
Ethernet / Fast Ethernet Switch (without A-N)	Half-Duplex
Fast Ethernet Devices * Support Auto-Negotiation	Full-Duplex / Half-Duplex



NOTE:

Normally, an A-N switch will detect and set to full-duplex, where a dual-speed hub will detect half.

There is a DIP-switch as in the left view as section 4. Please check and follow the duplex mode of the fiber device and have the duplex selection to your FT-80X.

Chapter 8

LED indication

LED	Color	Description
FX LNK / ACT	Green	Blinks: when any FX packets transmitting and receiving
		Lit: when Fiber connection is good
TX LNK / ACT	Green	Blinks: when any TP packets transmitting and receiving
		Lit: when TP connection is good
FX FDX/ COL	Green	Lit: when Full-duplex mode is enabled in FX port
		Blinks: indicate that the connection is experiencing collisions.
TX FDX/ COL	Green	Lit: when Full-duplex mode is enabled (detect by Auto-Negotiation) in TP port
		Blinks: indicate that the connection is experiencing collisions.
100	Green	Lit when the TP port runs in 100Mbps. Remains off while LINK LED lit represent the TP port runs in 10Mbps
PWR	Green	Lit when +5VDC power detected



NOTE:

Fiber-optic Partner should be set to the correct mode according to this FDX indicator for optimal network performance.

Chapter 9

Cable Connection Parameter

The limitations are as below:

Duplex	Connection	Limitation (max.)
Twisted Pair		
Half / Full	Node to Node Node to Switch/Hub	100 meters
Multi-Mode Converters		
MM Half	Node to Node Node to Switch	412 meters
MM Full	Node to Node Node to Switch	2 kilometers
Single-Mode Converters* (FT-80xynn; x= 2, 6; y= S, A, B; nn=km)		
SM Full	Node to Node Node to Switch	Depends on model



NOTE:

1. Consult your local dealer for more about our single mode fiber connectivity.
 2. A model (TX: 1310nm; RX: 1510nm) and B model (TX: 1510nm; RX: 1310nm) should runs in pair.
-

Chapter 10

FT-80X Technical Specifications

The FT-80X comes with the following standard features:

- **Standard:** IEEE802.3/u, 10/100Base-TX and 100Base-FX
- **Connectors:**
 - ⇒ One RJ-45 (Auto-MDI/MDI-X) Twisted Pair, EIA568
 - ⇒ One Fiber-optic, 1310nm wavelength (except: FT-806A/FT-806B), connector-type vary with model
- **Data Transfer Rate:** 10/100Mbps (TP), 100Mbps (FX)
- **Duplex mode support:** Full or half-duplex mode by Auto-Negotiation (TP)
- **LED indicators:** PWR, FX LNK/ACT, FX FDX/COL TP 100, TP LNK/ACT, TP FDX/COL
- **Power Requirement:** 5V DC, 2A
- **Ambient Temperature:** 0° to 50°C (operating)
- **Humidity:** 5% to 90% (non-condensing)
- **Dimension:** 26 x 70 x 97mm (HxWxD)
- **Cable:**
 - ⇒ UTP: Cat 5 UTP cable
 - ⇒ Fiber: MM: 50/125 μ m or 62.5/125 μ m optic fiber
 - ⇒ Fiber: SM: 8.3/125, 8.7/125, 9/125 μ m optic fiber

Connecting to Router, Bridge, or Switch, Hub, please refer to the device's Technical Manual.

Chapter 11

Power information

The power jack of FT-80X is with 2.5mm in the central post and required +5VDC power input. It will conform to the bundled AC-DC adapter and Planet's Media Chassis. Should you have the problem to make the power connection, please contact your local sales representative.

Please keep the AC-DC adapter as spare parts when your FT-80X is installed to a Media Chassis.

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