PLANET
Networking & Communication

PoE
FTP-80X Series

100Base-FX to 10/100Base-TX PoE Media Converter

Media Conversion

User's Manual

100Base-FX to 10/100Base-TX

PoE

Media Converter

FTP-80x

User's Manual

Trademarks

Disclaimer

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FCC Warning

This equipment has been tested and found to comply with the regulations 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 this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

CE Mark 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.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

User's manual for PLANET 100Base-FX to 10/100Base-TX PoE Media Converter

Multi-mode: FTP-802

Single-mode: FTP-802S15

Rev 1.0 (March, 2008)

Part No. 2350-AA3540-000

Table Of Contents

1. Overview

Thank you for purchasing PLANET FTP-80X family 10/100Mbps Ethernet Twisted pair to 100Base-FX Fiber-optic PoE 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. The converter provides Power over Ethernet power injector function which is able to drive one IEEE 802.3af compliant powered devices.

About the Power over Ethernet Injector

The FTP-80X is an IEEE 802.3af Power over Ethernet Injector that provide DC 48V over Ethernet cables. The FTP-80X IEEE 802.3af Power over Ethernet Injector inserts DC Voltage into Cat.5 cable, allowing the cable between the Injector (FTP-80X) and PoE PD (Powered Device) to transfer data and power simultaneously. The maximum distance between the Injector (FTP-80x) and PoE PD is 100 meters. With FTP-80x installed, it is combines the Ethernet digital data with power over the twisted pair cables as an IEEE 802.3af Power over Ethernet Injector. And the IEEE 802.3af Power over Ethernet splitter shall separate the digital data and the power into two outputs.

With IEEE 802.3af Power over Ethernet devices installed, the system administrator only have to use a single RJ-45 Ethernet cable to carries both power and data to each devices. Besides, to connect through FTP-80x and PoE PD, you could also have following benefit that, cost saving, easy for networking planning and higher reliability. What's more, upon any IEEE 802.3af devices installed, the FTP-80X or PD all can make the connection while migrating and the Ethernet digital packets, such as connecting the FTP-80X to an IEEE 802.3af complied devices, AP or IP Camera.

2. Model List

Your PoE Media Converter comes with two of the following models.

- FTP-802: on board SC / Multi-mode fiber connector, up to 2km
- FTP-802S15: on board SC / Single mode fiber connector, up to 15km

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

3. Checklist

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

- 100Base-FX to 10/100Base-TX PoE Media Converter x 1
- AC-DC Power Adapter (Input: 48V DC, 0.4A max.) x 1
- User's Manual x 1

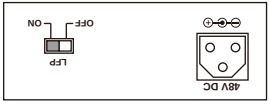
If any item is missing or damaged, please consult the dealer from whom you purchased your PoE Media Converter.

4. Product Outlook

Overview

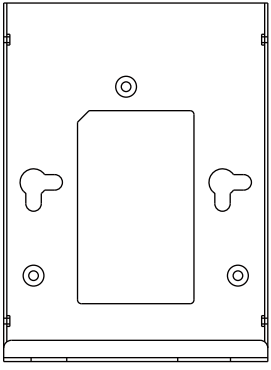
The layout of FTP-802 is the same as for FTP-802S15

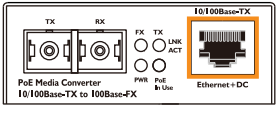
Rear Panel



TOP Panel

Bottom

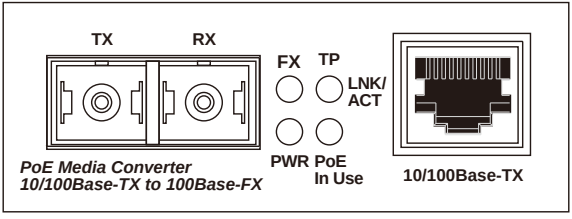




Front Panel

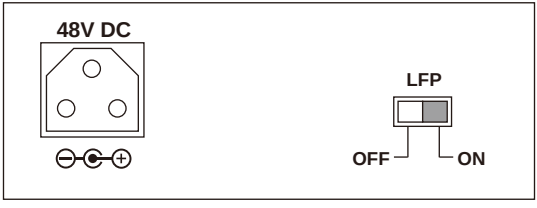
Left View

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



Right View

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. Also one DC 48V power socket for the PoE Media Converter.



5. Link Fault Pass through (LFP)

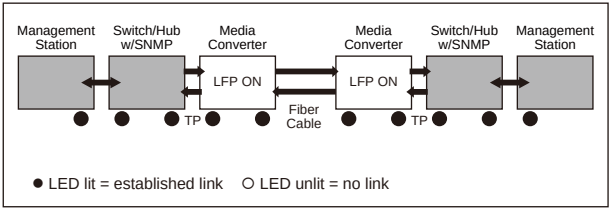
The LFP function includes the Link Fault Pass Through function (LLCF/LLR) and the DIP Switch design. LLCF/LLR can immediately alarm administrators the problem of the link media and provide efficient solution to monitor the net. The DIP Switch provides disable or enable the LFP function.

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)

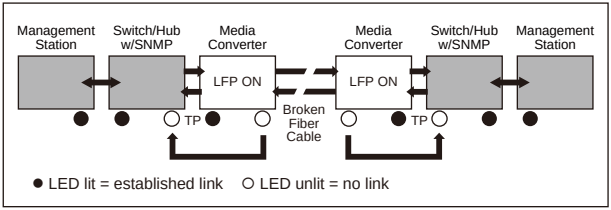
FTP-80X incorporates an LLCF function for troubleshooting a remote connection. When LFP function is enabled, the FL / TP ports do not transmit a link signal until they receive a link signal from the opposite port.

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



If the connection breaks, FTP-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.



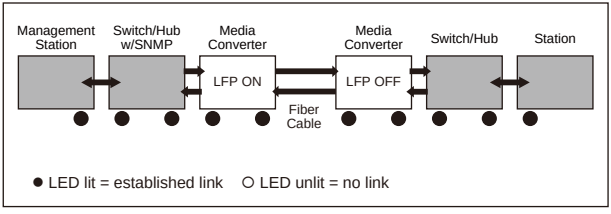
*Units are shipped with the LFP function disable (OFF).

Link Loss Return (LLR)

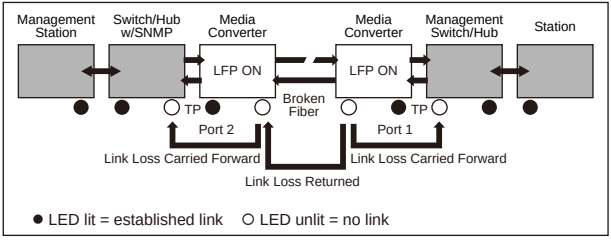
The fiber ports of FTP-80X have been designed with an LLR function for troubleshooting a remote connection. LLR works in conjunction with LLCF.

When LFP function is enabled, 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 FTP-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.



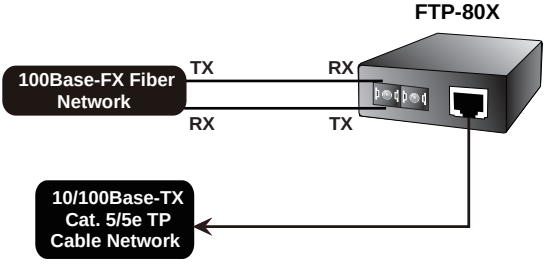
Note

LFP function is turn-off in default. This feature can also be turned on via the side DIP-switch. If you are not familiar with the network installation and for diagnostic purpose (i.e. check which end is broken), you can turn it on and reset the converter to make it take effect. Otherwise, please remain it in the default position.

6. Installing the Converter

Please follow these steps to install the PoE Media converter:

- Turn off the power of the device/station in a network to which the FTP-80X will be attached.
- Ensure that there is no activity in the network.
- Attach fiber cable from the FTP-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 FTP-80X.
- Connect the 48V DC power adapter to the FTP-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.



Note

- RJ-45/STP, UTP Cat 5, straight /crossover cable is accepted.
- Please refer to section 9 for more about the wiring distance of your TP, Optic-fiber networks.

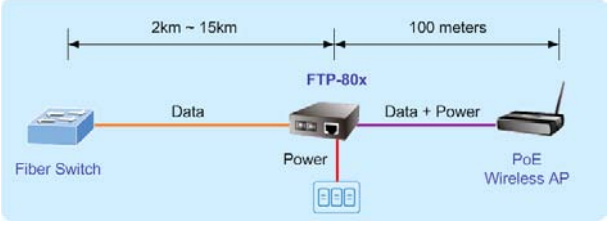
7. PoE function

FTP-80X and the IEEE 802.3af Injector / Splitter equipment installation:

Before your installation, it is recommended to check your network environment. If there is any IEEE 802.3af devices need to power on, the FTP-80X can provide you a way to supply power for this Ethernet device conveniently and easily. The FTP-80X equips with an AC-DC adapter with DC 48V input and injects this DC power into the pin of the twisted pair cable (pair 1, 2 and pair 3, 6).

If there is very difficult to find a power socket for AC-DC Adapter of your non-IEEE 802.3af networked device, the FTP-80X and POE-151S / 152S can provide you a way to supply DC power for this Ethernet device conveniently and easily.

For the places hard to find the power inlet, the FTP-80X provide the easiest way to power your Ethernet devices such as PLANET IEEE 802.3af Power over Ethernet Splitter (POE-151S / 152S) with Internet Camera (ICA-210) or Wireless Access Point (WAP-4060PE) installed in the wild rang place.



8. LED indication

■ **System**

LED	Color	Function
PWR	Green	**Lit:** Indicate the device is powered.

■ **10/100Base-TX Port**

LED	Color	Function	
LNK/ACT	Green	**Blink**	Indicate that the Media Converter is actively sending or receiving data over that port.
		Lit	Indicate that the port is link up.
		Off	Indicate that the port is link down.
PoE in Use	Green	**Lit**	Indicate that the port is providing 48VDC to remote powered device.
		Off	Indicate that the port is not providing 48VDC to remote powered device.

■ **100Base-FX SC Port**

LED	Color	Function	
LNK/ACT	Green	**Blink**	Indicate that the Media Converter is actively sending or receiving data over that port.
		Lit	Indicate that the port is link up.
		Off	Indicate that the port is link down.

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

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	FTP-802: 2 kilometers
Single-Mode Converters		
SM Full	Node to Node Node to Switch	FTP-802S15: 15 kilometers

10. FTP-80X Technical Specifications

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

- **Standard:** IEEE 802.3u, 10/100Base-TX ,100Base-FX
  IEEE 802.3af Power over Ethernet
- **Connectors:**
  - One RJ-45 (Auto-MDI/MDI-X) Twisted Pair, EIA568 with PoE
  - One Fiber-optic, 1310nm wavelength, 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, TX LNK/ACT, PoE in Use
- **PoE Power Output:** 48V DC, Max. 15.4 watts, 350mA
- **Power Pin Assignment:** 1/2(+), 3/6(-) / End-Span
- **Power Supply:** 48V DC, 0.4A, external AC-DC adapter
- **Ambient Temperature:** 0° to 50°C (operating)
- **Humidity:** 5% to 90% (non-condensing)
- **Dimension:** 26 x 70 x 97mm (H x W x D)
- **Cable:**
  - UTP: Cat 5 UTP cable
  - Fiber: MM: 50/125 μm or 62.5/125 μm optic fiber
  - Fiber: SM: 9/125 μm optic fiber

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

APPENDIX A

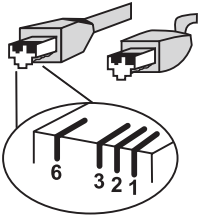
A.1 Device's RJ-45 Pin Assignments

■ **10/100Mbps, 10/100Base-TX**

Contact	MDI	MDI-X
1	1 (TX +)	3
2	2 (TX -)	6
3	3 (RX +)	1
6	6 (RX -)	2
4, 5, 7, 8	Not used	Not used

Implicit implementation of the crossover function within a twisted-pair cable, or at a wiring panel, while not expressly forbidden, is beyond the scope of this standard.

A.2 RJ-45 cable pin assignment



There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:

Figure A-1: Straight-Through and Crossover Cable

Please make sure your connected cables are with same pin assignment and color as above picture before deploying the cables into your network.

A.3 Fiber Optical Cable Connection Parameter

The wiring details are as below:

■ **Fiber Optical patch Cables:**

Standard	Fiber Type	Cable Specification
100Base-FX (1310nm)	Multi-mode	50/125μm or 62.5/125μm
100Base-FX (1310nm)	Single-mode	9/125μm

EC Declaration of Conformity

For the following equipment:

*Type of Product : 100Base-FX to 10/100Base-TX PoE Media Converter
*Model Number : FTP-802 / FTP-802S15
* Produced by:
Manufacturer's Name : **Planet Technology Corp.**
Manufacturer's Address : 11F, No. 96, Min Chuan Road, Hsin Tien Taipei, Taiwan , R. O.C.

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive on (89/336/EEC).
For the evaluation regarding the EMC, the following standards were applied:

Emission	EN 55022	(1994 + A1:1995 + A2:1997 Class A)
Harmonic	EN 61000-3-2	(2000)
Flicker	EN 61000-3-3	(1995 + A1:2001)
Immunity	EN 55024	(1998)
ESD	IEC 61000-4-2	(1995 + A1:1998 + A2:2000)
RS	IEC 61000-4-3	(1995 + A1:1998 + A2:2000)
EFT/ Burst	IEC 61000-4-4	(1995 + A1:2000)
Surge	IEC 61000-4-5	(1995 + A1:2000)
CS	IEC 61000-4-6	(1996 + A1:2000)
Magnetic Field	IEC 61000-4-8	(1993 + A1:2000)
Voltage Disp	IEC 61000-4-11	(1994 + A1:2000)

Responsible for marking this declaration if the:

☒ **Manufacturer** ☐ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

Company Name: **Planet Technology Corp.**

Company Address: **11F, No.96, Min Chuan Road, Hsin Tien, Taipei, Taiwan, R.O.C**

Person responsible for making this declaration

Name, Surname **Kent Kang**

Position / Title : **Product Manager**

Taiwan	**15, March., 2008**	
Place	*Date*	*Legal Signature*

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