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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.

Revision

User's manual for PLANET Fast Ethernet Converter

Multi-mode: FT-701B, FT-702B, FT-703, FT-704, FT-705

Single-mode: FT-702S15, FT-702S35, FT-702S50, FT-703S, FT-706A15, FT-706B15

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Table of Contents

Chapter 1 OVERVIEW

Thank you for purchasing PLANET FT-70X family Fast Ethernet Twisted pair to Fiber-optic 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-701B on board ST fiber connector
- FT-702B/S on board SC fiber connector
- FT-703/S on board MT-RJ fiber connector
- FT-704/S on board VF-45 fiber connector
- FT-705/S on board LC fiber connector
- FT-706A15 on board single SC fiber connector
- FT-706B15 on board single SC fiber connector

Models with last two numbered characters indicates the fiber-port is with "Single-Mode" optic fiber connector and the number indicates the maximum distance in km. The rest will be "Multi-Mode" optic fiber models.

In the following sections, the term "FT-70X" indicates the product family above.

Chapter 3 CHECKLIST

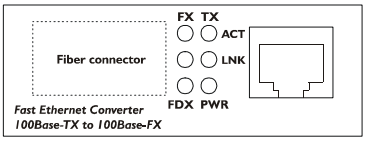
Your FT-70X carton should contain the following items:

- ð The Fast Ethernet Converter
- ð AC-DC Power Adapter (Output: 5VDC, 2 A max.)
- ð 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 (FT-70X)



There are one RJ-45 Twisted-Pair jack, one fiber-optic connector and six LED indicators on this side.

The fiber connector is different from model to model. Please refer to the section 2 Model List and section 9 Technical Specification for detail.

Left View (FT-70X)

One DC jack for DC power input.

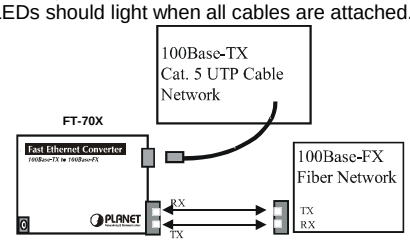
Side View (FT-70X)

One DIP Switch for TP Device selection.

Chapter 5 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-70X will be attached.
- Ensure that there is no activity in the network.
- Attach fiber cable from the FT-70X to the fiber network. TX, RX must be paired at both ends for some two connectors models.
- Attach a Cat. 5 UTP cable from the 100Base-TX network to the RJ-45 port on the FT-70X.
- Connect the 5VDC power adapter to the FT-70X 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-through cable is accepted.
- Cabling from FT-70X TP port to a TP device is as below:
  - To Workstation: DIP switch on DTE
  - To Hub/Switch: DIP switch on MPR
- Please refer to section 8 for more about the wiring distance of your TP, Optic-fiber networks.
- Please note FT-706A15/706B15 is designed to work together. It means you must connect FT-706A15 to FT-706B15 from them to work normally. If both ends are FT-706A15 or FT-706B15, they can't work normally and may damage the fiber connectors.

Chapter 6 DUPLEX MODE SETTING

The twisted pair port of FT-70X support duplex mode selection by Auto-Negotiation (A-N). The following is the duplex mode parameters:

Fast Ethernet Device	FT-70X Duplex Mode support
Fast Ethernet Hub	Half-Duplex
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 be detected and set to Full-duplex where a dual-speed hub will be detected and set to Half-Duplex.

Chapter 7 THE LED INDICATIONS

LED	**COLOR**	Status	**DESCRIPTION**
TP ACT	Green	Blinks	If fiber-optic is not present for converter self -diagnose / detecting
		Blinks	If both ports link with any TP packets transmitting
		OFF	Fiber-optic link is present
		OFF	With no TP/FX LINK on, i.e. only turn on the power and the ACT do not blink at all, pleas consult your local dealer
TP Link	Green	ON	TP connection is good
FX ACT	Green	Blinks	When any FX packets transmitting
FX Link	Green	ON	When Fiber connection is good
FDX*	Green	ON	When Full-duplex mode is detected in TP port
PWR	Green	ON	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 8 CABLE CONNECTION PARAMETER

The cable distance 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-70xS, FT-706A15/706B15)		
SM Full	Node to Node Node to Switch	FT-70xS15: 15 km FT-70xS35: 35 km FT-70xS50: 50 km FT-706A15: 15 km FT-706B15: 15 km

***Note*:** If the fiber port works on half duplex, please note that Fast Ethernet/100Base-TX network allows 512 bit-time delay between any two nodes/stations in a collision domain (when work in half duplex). The overall bit time of TP/Fiber wires and devices must below 512 bit-time in one network segment. To extend the distance, however, you may use switch to break up a collision domain and extend the distance.

Chapter 9 TECHNICAL SPECIFICATIONS

The FT-70X comes with the following features:

Standard	IEEE 802.3u, 100Base-TX and 100Base-FX
TP Connector	One RJ-45 Twisted Pair, EIA568 connectors
Fiber Connector	FT-701B: ST FT-702B: SC FT-702S series: SC FT-703 series: MT-RJ FT-704 series: VF-45 FT-705 series: LC FT-706A/FT-706B series: single SC
Optical wave-length	FT-706A15: Tx-1310nm, Rx-1550nm FT-706B15: Tx-1550nm, Rx-1310nm Others: Tx and Rx -1310nm
Data Rate	100Mbps
Duplex mode	Full or half-duplex mode by Auto- Negotiation
LED indicators	PWR, TX LNK/ACT, FX LNK/ACT, FDX
Power Re-quirement	5V ,2A
Ambient Tem-perature	0° to 50°C
Humidity	5% to 90%
Dimension	26 x 70 x 97mm (HxWxD)
Cable	• UTP : Cat 5 UTP cable • Fiber-MM: 50/125 ㎛m or 62.5/125 ㎛m optic fiber • Fiber-SM: 8.3/125, 8.7/125, 9/125 ㎛m optic fiber

Chapter 10 POWER INFORMATION

The power jack of FT-70X is with 2.5mm in the central post and required +5VDC / 2A 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-70X is installed to a Media Chassis.

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