

**10/100/1000Base-T to 1000Base-SX/LX**

**Gigabit Ethernet Media Converter**

**User's Manual**

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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.

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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 Gigabit Ethernet Converter

**For Models:** GT-802, GT-802S, GT-805A, GT-806A15, GT-806B15, GT-806A60, GT-806B60

Rev 1.0 (August. 2007)

**Part No:** 2010-AA4230-000

## ***Table of Contents***

Chapter 1 OVERVIEW.....	6
About the Gigabit Ethernet Media Converter .....	6
Chapter 2 PRODUCT FEATURES.....	7
Chapter 3 MODEL LIST .....	9
Chapter 4 CHECKLIST .....	10
Chapter 5 PRODUCT OUTLOOK .....	11
Chapter 6 INSTALLING THE CONVERTER.....	13
6.1 Stand-alone Installation .....	13
6.2 Chassis Installation and Rack Mounting .....	16
Chapter 7 DUPLEX MODE SUPPORT.....	18
Chapter 8 LED INDICATION .....	19
Chapter 9 CABLE CONNECTION PARAMETER .....	20
Chapter 10 PRODUCT SPECIFICATION .....	22
Chapter 11 POWER INFORMATION .....	24

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## **Chapter 1 OVERVIEW**

Thank you for purchasing PLANET GT-80X family Gigabit Ethernet Media Converter products. This Gigabit Ethernet Media Converter is used to convert one type media signal to other type equivalent that allows two type segments connect easily, efficiently and inexpensively. The Gigabit Ethernet Media Converter introduced here provides one channel media conversion between the 10/100/1000Base-T and 1000Base-SX/LX, 1000Base-SX/LX through SFP Mini-GBIC (GT-805A only) or the 1000Base-LX WDM (GT-806A15/B15 and GT-806A60/B60 only).

This Gigabit Ethernet Media 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 multi-mode and single-mode Fiber combined networks at a central wiring closet. Please contact with your sales representative for more about the 10"/19" media chassis.

### **About the Gigabit Ethernet Media Converter**

This Gigabit Ethernet Media Converter utilizes a network technology specified by IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T and IEEE 802.3z 1000Base-SX/LX standards. The Gigabit Ethernet Media Converter is used to convert one type media signal to other type equivalent that allows two type segments connect easily, efficiently and inexpensively.

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## **Chapter 2 PRODUCT FEATURES**

- Comply with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX/LX Ethernet standard
- Bridge mode media converter with TP port supports 10/100/1000Base-T auto-negotiation and auto-MDIX
- Auto-Negotiation for 10/100/1000Base-T; Half-Duplex or Full-duplex for 100Mbps and 10Mbps
- LED indicators for simple diagnostics and management
- Fiber Interface
- Compact in size, easy installation
- Can be installed on PLANET's 10"/19" Media Converter Chassis (MC-700/1000R/1500)

### **GT-802**

1000Base-SX interface for up to 550 meters (multi-mode 50/125 $\mu$ m fiber) and 220 meters (multi-mode 62.5 /125 $\mu$ m fiber)

### **GT-802S**

1000Base-LX interface for up to 10km (single mode 9/125 $\mu$ m fiber) and up to 550m (multi-mode fiber cable)

### **GT-805A**

One SFP (Mini-GBIC) slot supporting either multi-mode or single mode fiber, flexibility in Gigabit Ethernet fiber-optic wiring with different Mini-GBIC module installed

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### **GT-806A15 / GT-806B15**

1000Base-LX WDM interface for up to 15km (single mode 9/125 $\mu$ m fiber)

### **GT-806A60 / GT-806B60**

1000Base-LX WDM interface for up to 60km (single mode 9/125 $\mu$ m fiber)



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## Chapter 3 MODEL LIST

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

- GT-802: 10/100/1000Base-T to 1000Base-SX(SC)
- GT-802S: 10/100/1000Base-T to 1000Base-LX(SC)
- GT-805A: 10/100/1000Base-T to 1000Base-SX/LX(LC)
- GT-806A15: 10/100/1000Base-T to 1000Base-LX(WDM)
- GT-806B15: 10/100/1000Base-T to 1000Base-LX(WDM)
- GT-806A60: 10/100/1000Base-T to 1000Base-LX(WDM)
- GT-806B60: 10/100/1000Base-T to 1000Base-LX(WDM)

In the following sections, the term "GT-80X" indicates the product family above, the term "MM" and "SM" represent Multi-Mode and Single Mode fiber-optic mode.

<b>Notice:</b>	Please note GT-806A15/806B15 and GT-806A60/806B60 is designed to work together. It means you must connect GT-806A15 to GT-806B15 or GT-806A60 to GT-806B60 from them to work normally. If both ends are GT-806A15 or GT-806A60 and GT806B15 or GT-806B60, they can't work normally and may damage the fiber connectors.
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## **Chapter 4 CHECKLIST**

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

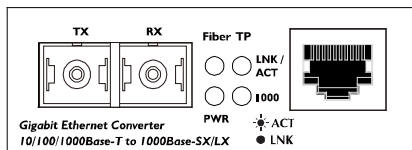
- The Gigabit Ethernet Converter
- AC-DC Power Adapter (Output: 5VDC, 2A max.)
- This user's manual

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

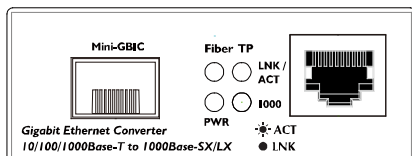
<b>Notice:</b>	GT-805A is with one vacant SFP module slot. The mini GBIC SFP module is not bundled with in the package.
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## Chapter 5 PRODUCT OUTLOOK

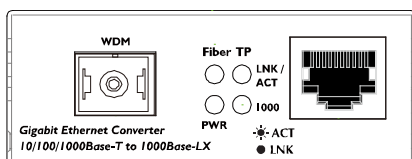
### Right View (GT-80X)



GT-802/GT-802S



GT-805A



GT-806A15/B15/A60/B60

Left: Fiber-optic connector, Right: TP connector.

Two LED indicators per TP, fiber port.

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## Rear View (GT-80X)

One DC jack for DC power input.



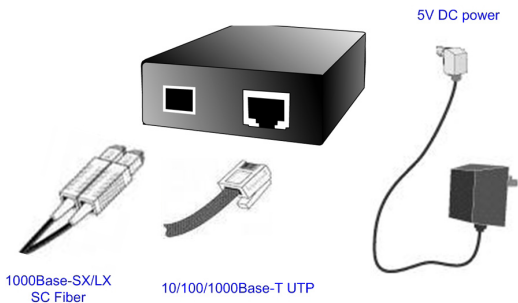
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## ***Chapter 6 INSTALLING THE CONVERTER***

### **6.1 Stand-alone Installation**

To install a GT-80X stand-alone, on a desktop or shelf, simply complete the following steps:

- Step 1: Turn off the power of the device/station in a network to which the GT-80X will be attached.
- Step 2: Ensure that there is no activity in the network.
- Step 3: Attach fiber cable from the GT-80X to the fiber network. TX, RX must be paired at both ends.
- Step 4: Connect the 5VDC power adapter to the GT-80X and verify that the Power LED lights up.
- Step 5: Turn on the power of the device/station; the PWR LEDs should light when all cables are attached.



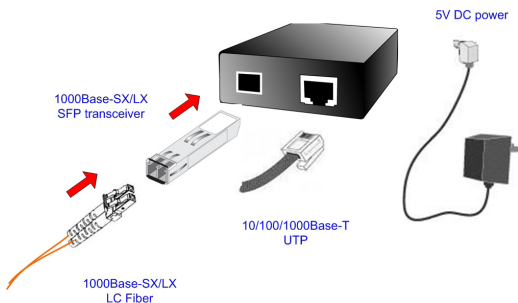
**Figure 6-1** GT-80X installation

**Notice:**

Please refer to Section 9 for detailed wiring information of the GT-80X.  
To prevent from optic acceptor malfunction, check the both wires / transmitter before power on the converter.

## GT-805A Installation

- Step 1: Connect the fiber cable. Attach the duplex LC connector on the network cable into the SFP transceiver.
- Step 2: Attach fiber cable from the GT-805A to the fiber network. TX, RX must be paired at both ends.
- Step 3: Connect the 5VDC power adapter to the GT-805A and verify that the Power LED lights up.
- Step 7: Turn on the power of the device/station; the PWR LEDs should light when all cables are attached.



**Figure 6-2** GT-805A installation

**Notice:**

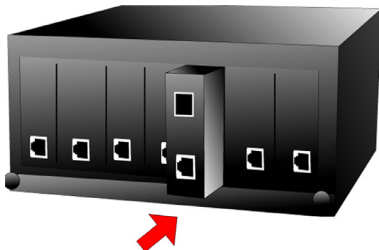
It recommends using PLANET MGB-SX / MGB-LX series 1000Base-SX/LX SFP on the converter. If you insert a SFP transceiver that is not supported, the converter will not recognize it.

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## 6.2 Chassis Installation and Rack Mounting

To install the media converter in a 10-inch or 19-inch with standard rack, follow the instructions described below.

- Step 1: Place your GT-80X on a hard flat surface, with the front panel positioned towards your front side.
- Step 2: Carefully slide in the module until it is fully and firmly fitted into the slot of the chassis.



**Figure 6-3:** Insert a media converter into an available slot

- Step 3: Attach a rack-mount bracket to each side of the Chassis with supplied screws attached to the package.
- Step 4: After the brackets are attached to the chassis, use suitable screws to securely attach the brackets to the rack, as shown in Figure 6-3.
- Step 5: Proceed with the steps 4 and steps 5 of session 6.1 Stand-alone Installation to connect the network cabling and supply power to your switch.



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***Caution:***

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate your warranty.

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## ***Chapter 7 DUPLEX MODE SUPPORT***

The GT-80X is one-channel media conversion between 10/100/1000Base-T and 1000Base-SX/LX. 10/100/1000Base-T port can work under Auto-negotiation mode. 1000Base-SX/LX fiber port only allow to work under fixed 1000Mbps full duplex mode.

## Chapter 8 LED INDICATION

LED	Color	Description
PWR	Green	Lit: When +5VDC power detected.
Fiber LNK/ACT	Green	Lit: To indicate the link through that fiber port is successfully established. Blink: Indicate that the Fiber port is actively sending or receiving data over that port.
TP LNK/ACT	Green	Lit: To indicate the link through that port is successfully established. Blink: Indicate that the port is actively sending or receiving data over that port.
TP 1000	Green	Lit: When the port runs in 1000Mbps Full duplex. Blink: When the port runs in 100Mbps Full duplex. Off: When the port runs in 10Mbps Full duplex.

**Table 8-1:** LED indication of GT-80x

## Chapter 9

### CABLE CONNECTION PARAMETER

The wiring details are as below:

#### Cables:

Standard	Fiber Type	Cable Specification
1000Base-SX (850nm)	Multi-mode	50/125 $\mu$ m or 62.5/125 $\mu$ m
1000Base-LX (1300nm)	Multi-mode	50/125 $\mu$ m or 62.5/125 $\mu$ m
	Single-mode	9/125 $\mu$ m

#### Wiring Distances:

Standard	Fiber	Diameter (micron)	Modal Bandwidth (MHz * km)	Max. Distance (meters)
1000Base-SX	MM	62.5	100	220
		62.5	200	275
		50	400	500
		50	500	550
1000Base-LX	MM	62.5	5	550
		50	4	
		50	5	
	SM	9	N/A	5000*

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**Notice:**

The Single-mode port (1000Base-LX port) of GT-802S, GT-805A, GT-806A15/B15 and GT-806A60/B60 is complied with LX 5 kilometers and provides additional margin allowing for a 10/15/60 kilometers Gigabit Ethernet link on single mode fiber.

## Chapter 10 PRODUCT SPECIFICATION

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

Model	GT-802	GT-802S	GT-805A	GT-806A15 GT-806A60	GT-806B15 GT-806B60
Connector - Fiber	SC-type connector		SFP, LC type	SC-type connector (WDM) LX	
Mode	Multi- mode	Single mode	Vary on module	Single mode	Single mode
Fiber Maximum Distance	220m / 550m	10km	Vary on module	15km	60km
Connector - Copper	10/100/1000Mbps RJ-45				
Modes	Full Duplex, auto-negotiation				
Packet Forwarding Rate (64bytes)	14880 pps @10Mbps 148810 pps @100Mbps 1488000 pps @ 1000Mbps				
LED indicators:	PWR, 1000, Fiber/LNK/ACT, TP/LNK/ACT				
Protocols and Standards:	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3z 1000Base-SX/LX				

Cable	<p><b>10/100/1000Base-T:</b> 1000Base-T-2-pair UTP Cat. 5/5e/6, up to 100m</p> <p><b>1000Base-SX:</b> 50/125<math>\mu</math>m or 62.5/125<math>\mu</math>m multi-mode fiber optic cable, up to 220/550m</p> <p><b>1000Base-LX:</b> 9/125<math>\mu</math>m single-mode fiber optic cable, up to 10/15/60km</p>
Dimensions	26 x 70 x 97mm (H x W x D)
Power	External power adaptor 5V 2A max.
EMI Compatibility:	FCC Class A, CE Certification Class A
Temperature:	Storage: -40°C ~ 70°C Operating: 0°C ~ 50°C
Humidity:	5% ~90% non-condensing

<b>Notice:</b>	Connecting to the Gigabit Ethernet products, please refer to the device's Technical Manual.
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## ***Chapter 11 POWER INFORMATION***

The power jack of GT-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 GT-80X is installed to a Media Chassis.



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