

User's Manual

GST-802/802S

GST-805A

GST-806A15/806B15

GST-806A60/806B60

10/100/1000Base-T to 1000Base-LX/SX Smart Media Converter



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Revision

PLANET 10/100/1000Base-T to 1000Base-LX/SX Smart Media Converter User's manual

MULTI-MODE: GST-802 / GST-805A

SINGLE-MODE: GST-802S / GST-805A / GST-806A15 / GST-806B15 / GST-806A60 / GST-806B60

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1. INTRODUCTION

1.1 Checklist

Thank you for purchasing PLANET 10/100/1000Base-T to 1000Base-LX/SX Smart Media Converter, the 10/100/1000Base-T to 1000Base-LX/SX Smart Media Converter package shall contain following contents:

Check the contents of your package for following parts:

- 10/100/1000Base-T to 1000Base-LX/SX Smart Media Converter x1
- User's manual CD x1
- DC 5V 2A Power Adapter x1

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

1.2 About the 10/100/1000Base-T to 1000Base-LX/SX Smart Media Converter

The Smart Gigabit Media Converter- GST-80x series extends communication distance with highly Gigabit performance via fiber optical cable. The GST-80x series provides media conversion between 10/100/1000Base-T and 1000Base-SX/LX interfaces such as multi-mode LC/SC connectors (220m / 550m), single-mode LC/SC connectors (10/20/30/40/50/70/120km) and single fiber connectors (WDM, 15/60km) for various fiber optic applications.

The GST-80x series provides Auto MDI/MDI-X on its TP port and the DIP switch to configure the available smart functions including the auto-negotiation / force for fiber interface and Link Pass Through function (LLCF/LLR). The Link Loss Carry Forward (LLCF) function works with Link Loss Return (LLR) to diagnose network connections. Also, the LLR function can immediately alarm network administrator the media link issue and provide efficient solution to monitor the entire network.

The GST-80x series allows two type segments to connect easily. The Smart Media Converter can be used as a standalone unit when powered by it's DC adapter or used as a slide-in module to the PLANET 19-inch Web Smart / Managed 16-Slots media converter chassis (MC-1600MR/MC-1600MR48 & MC-1610MR / MC-1610MR48). When working with the Web Smart / Managed media converter chassis, the GST-80x is able to be managed and its status be monitored through the local RS-232 console and remote web interface.

1.3 Features

- **Standards:**
 - Complies with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX/LX Ethernet Standard
- **Interface:**
 - One **10/100/1000Base-T** port with RJ-45 connector
 - One **1000Base-SX/LX** port with LC/SC/WDM connector supporting multi-mode or single-mode fiber optic cable
 - Auto-negotiation and Auto-MDI / MDI-X for 10/100/1000Base-T port
- **Layer 2 Features:**
 - Back-pressure & IEEE 802.3x compliant flow control and full wire-speed forwarding rate
 - **9K Jumbo Frame** size supported
 - Link Loss Return (**LLR**) switch on each fiber optic to aid in troubleshooting remote network connections
 - Link Loss Carry Forward (**LLCF**) work with LLR in diagnosing network connections

➤ **Smart Management:**

- ☐ Provides DIP switch for fiber (Auto-negotiation / Manual) and LFP function (Disable / Enable) setting
- ☐ Manageable through Web Smart / Managed Media Converter Chassis System (MC-1600MR/MC-1610MR series)
- ☐ **Bandwidth control / TS-1000 OAM / IEEE 802.3ah OAM / Loop Back Test** function provided with MC-1610MR / MC-1610MR48 Managed Media Converter Chassis System

➤ **Hardware:**

- ☐ Used as a stand-alone device or work with Web Smart / Managed Media Converter Chassis for up to 16 converter with redundant power supply for optional expansion use
- ☐ LED indicators for converter status
- ☐ Choice of fiber-connector from SC, LC, WDM, multi-mode / single-mode fiber / 1000Base-SX / LX mini GBIC module
- ☐ EMI standards complies with FCC, CE class A

1.4 Specification

Model		GST-802	GST-802S	GST-805A	GST-806 A15	GST-806 B15	GST-806 A60	GST-806B 60
Hardware Specification								
Standards		IEEE 802.3, 10Base-T IEEE 802.3u, 100Base-TX IEEE 802.3ab, 1000Base-T IEEE 802.3z, 1000Base-SX/LX IEEE 802.3ah OAM						
Ports		1 x 10/100/1000Base-T port, 1 x 1000Base-SX/LX port						
Copper Interface		RJ-45 port (Auto-MDI/MDI-X) Twisted Pair						
Optic Interface		SC		SFP	WDM			
Optic Wavelength		850nm	1310nm	-	TX:1310 nm RX:1550 nm	TX:1550 nm RX:1310 nm	TX:1310 nm RX:1550 nm	TX:1550 nm RX:1310 nm
Launch Power(dBm)	Max.	-4 dBm	-3 dBm	-	-3 dBm	+5 dBm	-3 dBm	+4 dBm
	Min.	-9.5 dBm	-9.5dBm	-	-9 dBm	0 dBm	-9 dBm	-1 dBm
Receive Sensitivity		-13.5 dBm	-14.4 dBm	-	-21 dBm	-25 dBm	-21 dBm	-25 dBm
Maximum Input power		-18 dBm	-20 dBm	-	-3 dBm	-3 dBm	-2 dBm	-2 dBm
Speed	Twisted-pair	10/20Mbps for Half / Full-Duplex 100/200Mbps for Half / Full-Duplex 2000Mbps for Full-Duplex						
	Fiber-optic	2000Mbps for Full-Duplex						

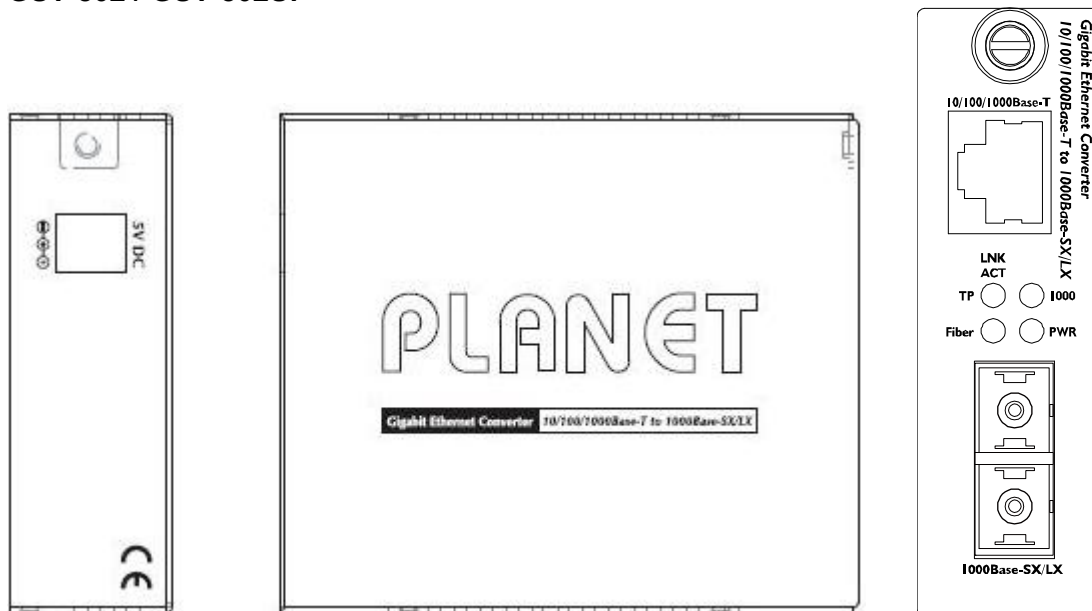
Cable	Twisted-pair	10Base-T: 2-pair UTP Cat. 3,4,5, up to 100 m 100Base-TX: 2-pair UTP Cat. 5, up to 100 m 1000Base-T: 4-pair STP Cat 5 up to 100m
	Fiber-optic Cable	• 50/125µm or 62.5/125µm multi-mode fiber cable, up to 220/550m. • 9/125µm single-mode cable, provides long distance for 10/20/30/40/50/70/120km (vary on fiber transceiver or SFP module)
LED Indicator		• PWR (Green) • TP: 1000, LINK/ACT • Fiber: LINK/ACT
DIP Switch		Fiber (Auto-negotiation / Manual), LFP (Disable / Enable)
Power Consumption		3.1 Watts / 10BTU (maximum)
OAM		TS-1000, IEEE 802.3ah terminal
Jumbo Frame size		9K
Power Input		DC 5V / 2A
Dimension (W x D x H)		81 x 94 x 26 mm
Weight		214g
Operating Environment		Temperature: 0~50 Degree C; Humidity: 5~90% non-condensing
Storage Environment		Temperature: -40~70 Degree C; Humidity: 5~90% non-condensing
Emissions		FCC Class A, CE Class A

1.5 Product Outlook

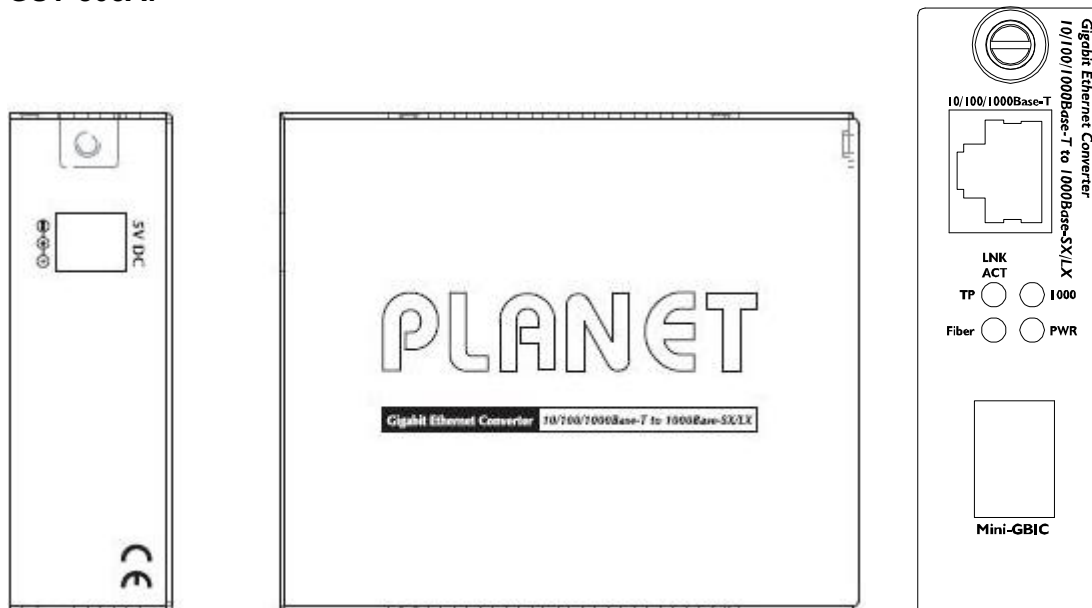
Right View: there is one RJ-45 twisted-Pair jack (**Auto-MDI/MDI-X**), one fiber-optic connector (**vary by model**) and six LED indicators.

Left View: there is one DC jack for DC 5V power adapter.

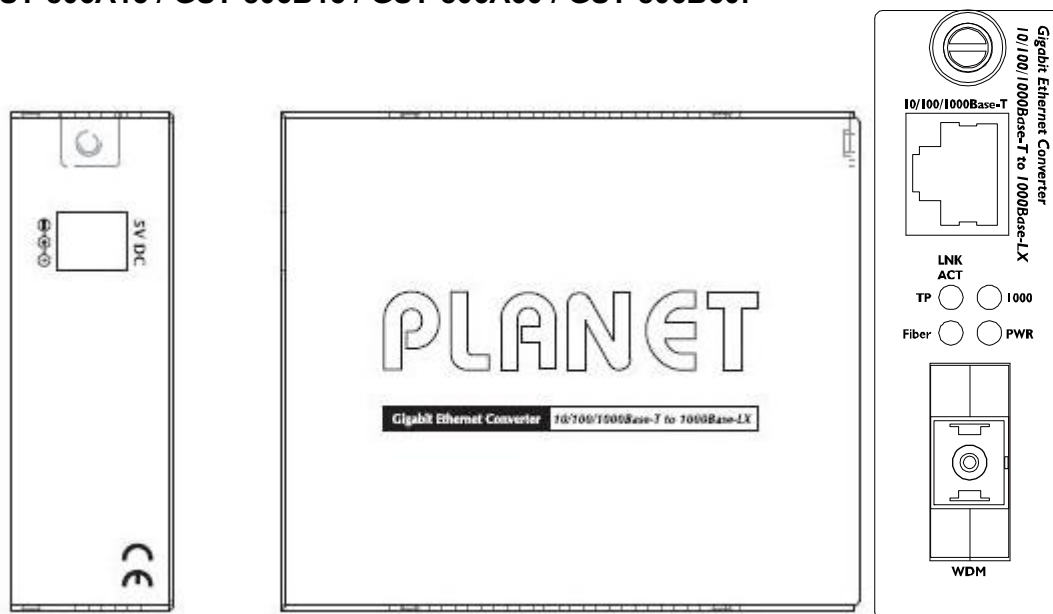
GST-802 / GST-802S:



GST-805A:



GST-806A15 / GST-806B15 / GST-806A60 / GST-806B60:



LED Indicators

LED	Color	Status	Indication
PWR	Green	Lights Off	Power off.
		Lights On	Power on – when +5V DC detected.
Fiber LNK /ACT	Green	Lights Off	Indicate the link through that port is not established.
		Lights On	Indicate the link through that port is successfully established.
		Lights Blink	Indicate that port is actively sending or receiving data.
TP LINK/ACT	Green	Lights Off	The link through that port is not established.
		Lights On	The link through that port is successfully established.
		Lights Blink	Indicate that port is actively sending or receiving data.
TP 1000	Green	Lights Off	Indicate that the port is operating at 10Mbps or 100Mbps.
		Lights On	Indicate that the port is operating at 1000Mbps.

2. HARDWARE INSTALLATION

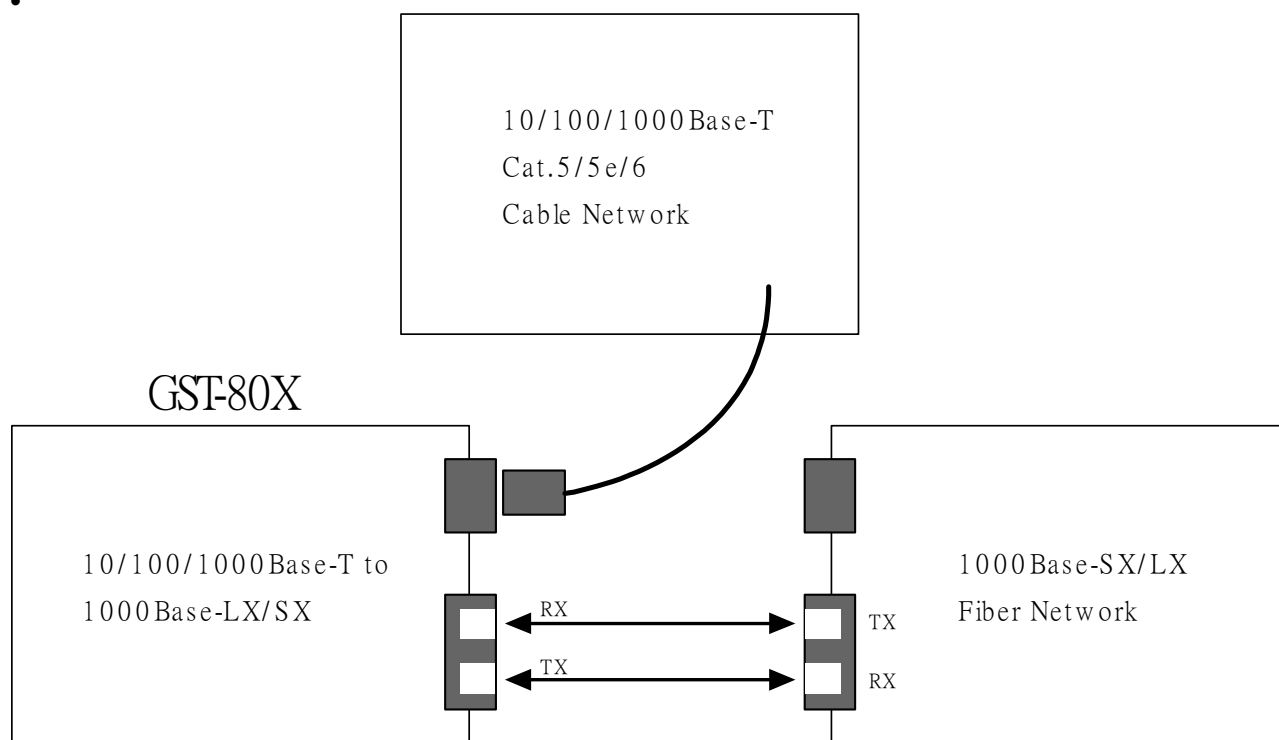
This product provides two different running speeds – 10/100/1000Base-T and 1000Base-LX/SX in the same device.

This section describes the hardware installation of GST-80x. Before connecting any network device to the GST-80x, read this chapter carefully.

2.1 Stand-alone Media Converter Installation

The GST-80x can use as a stand-alone Media Converter for Plug & Play and quick network environment deploy, please follow these steps to install the converter:

- Turn off the power of the device/station in a network to which the GST-80x will be attached.
- Ensure that there is no activity in the network.
- Attach fiber cable from the GST-80x to the fiber network. TX, RX must be paired at both ends.
- Attach a Cat. 5/5e/6 UTP cable from the 10/100/1000Base-T network to the RJ-45 port on the GST-80x.
- Connect the 5VDC power adapter to the GST-80x and verify that the Power LED lights up.
- Turn on the power of the device/station, the TX Link /Act and LX/SX Link/Act LEDs should light when all cables are attached.
-

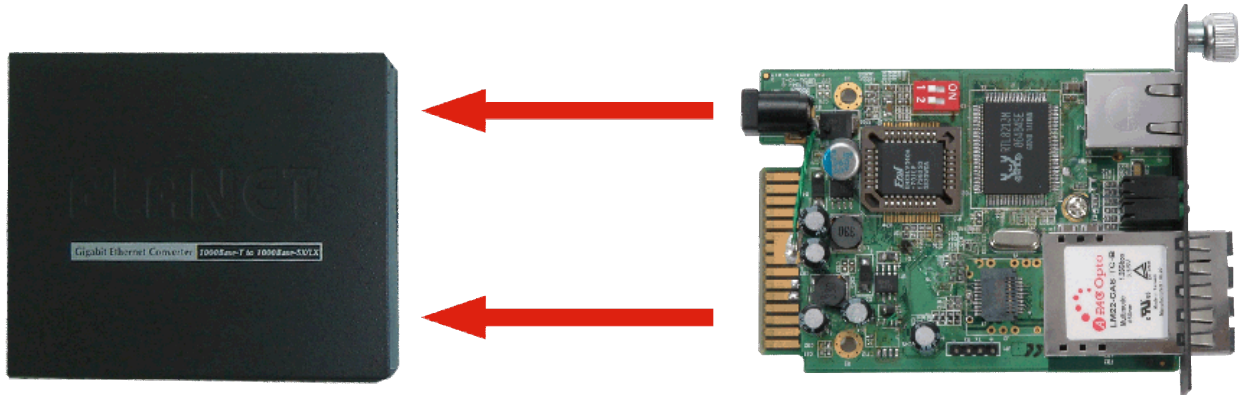


Notice:

- 1. RJ-45/STP, UTP Cat 5/5e/6, straight/crossover cable is accepted.
- 2. Please refer to Appendix A for more about the wiring distance of your TP and fiber- Optic cable.

2.2 Slide Media Converter module into MC-1600MR/R48 / MC-1610MR/MR48 Chassis installation

Step 1- Unscrew and pull out the GST-80x Media Converter board.



Step 2- Remove a blank faceplate from an empty expansion slot on the front of the chassis. The GST-80x Media Converter board can be installed in any expansion slot.



Step 3- Slide the GST-80x Media Converter board into the expansion slot, aligning it with the guide rails, until it firmly connects to the chassis' backplane.



Step 4- Secure the GST-80x Media Converter board to the chassis by tightening the thumbscrew.

2.3 Real Ethernet environment application

Fiber-Optic Networking for ISP, Enterprise, and Home

The GST-80x provides advanced Media conversion technology- 10/100/1000Base-T and 1000Base-SX/LX interfaces to fulfill different kinds of demand as the current network grows and expanding. The GST-80x provides diverse fiber connect type options for different network applications. It is very flexible for the GST-80x working as a standalone device or being installed in the central Web Smart / Management Media converter chassis for centralized management. When working with the Web Smart / Management Media converter chassis, the GST-80x is hot swappable to avoid network downtime. The GST-80x is the ideal solution for building a network solution of FTTH (Fiber to the Home) or FTTC (Fiber to the Curb), and FTTB (Fiber to the Building) for ISPs, campuses and enterprise.

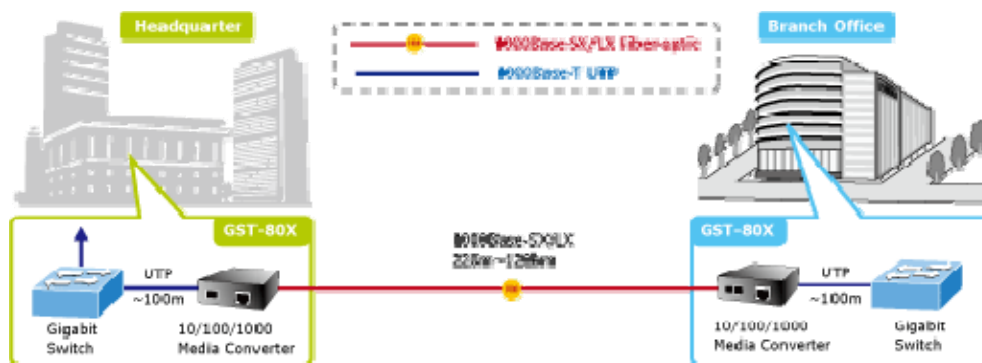


Figure 1 : GST-80x FTTB application

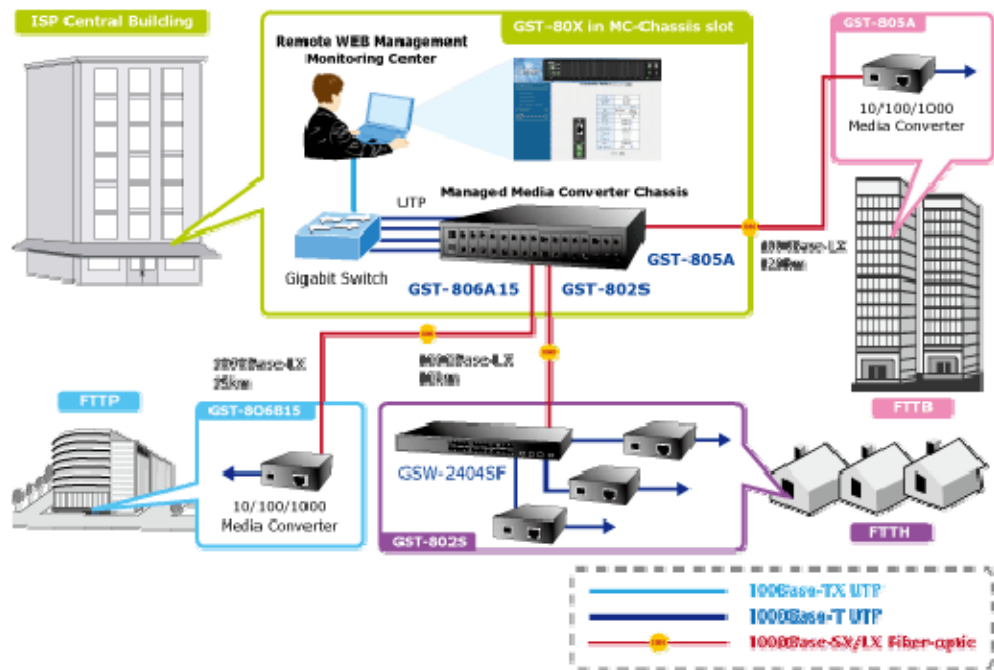


Figure 2: GST-80x FTTX application

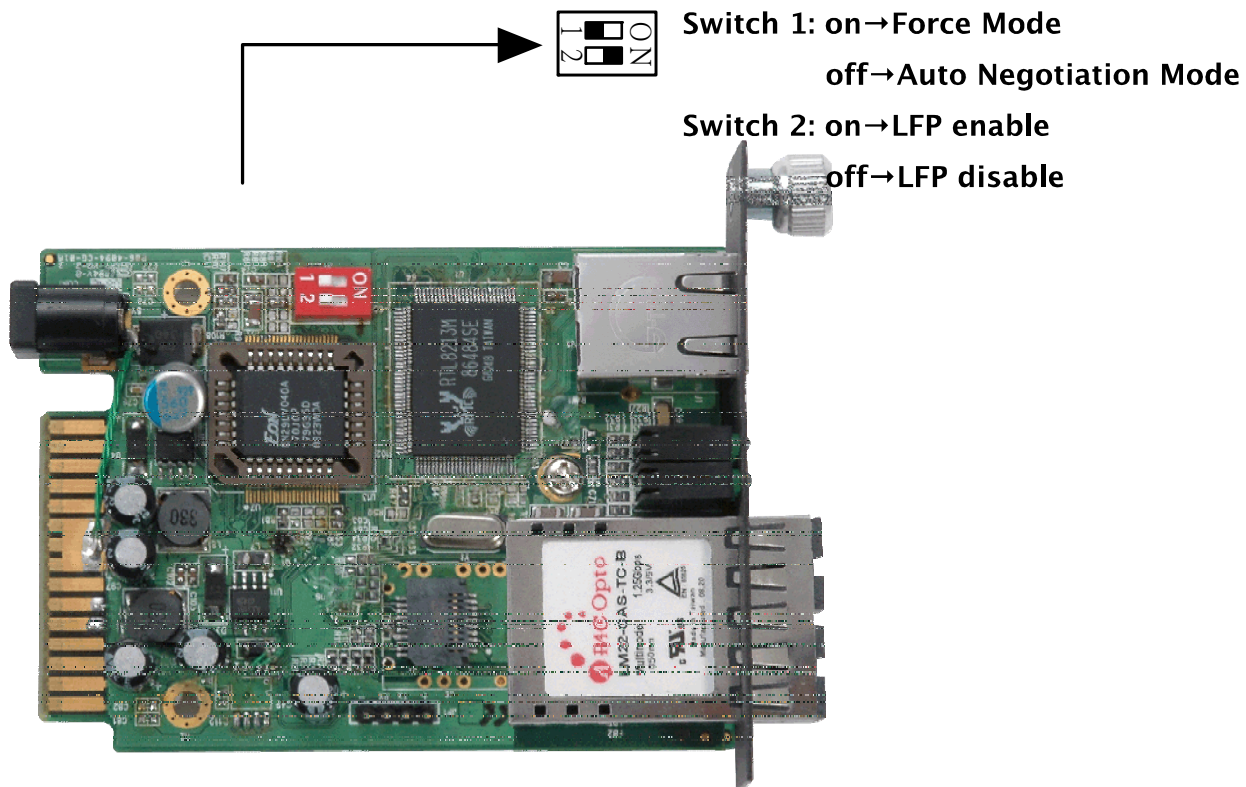
3. MANAGE THE MEDIA CONVERTER

This product provides two different managed methods – configure through its DIP Switch or install into the central Web Smart / Management Media converter chassis for central management.

This section describes how to managed the GST-80x through its DIP Switch and Web Smart / Management Media converter chassis. Before use the GST-80x smart function, please read this chapter carefully.

3.1 DIP Switch configuration

The GST-80x provide DIP switch to setting fiber (Auto-negotiation / Manual) and LFP (Disable / Enable). Please refer to the table below for more detail description.



DIP Switch	Mode	Description
DIP Switch 1	On	Fiber interface operates at Forced Mode.
	Off	Fiber interface operates at Auto-Negotiation (Default).
DIP Switch 2	On	LFP Enable.
	Off	LFP Disable (Default).

Notice:

Be sure the opposite end is using the same setting (forced or Auto-negotiation). And when using two converters at the same time, the two converters **MUST** set to forced mode.

3.2 Managed Media Converter module through MC-1600MR/R48 & MC-1610MR/R48 Chassis

The Web Smart / Management Media Converter Chassis that can control GST-80x through the management system, GST-80x can be controlled through Web Browser and terminal emulation program.

The Web Smart Media Converter Chassis-MC-1600MR/R48 will display out the status of GST-80x, also the Web Smart Media Converter Chassis can control the function through the management system.

Module Status

- Chassis Status
- Converter Status

Management

- System Configuration
- Location Setting
- Redundant Backup Setting
- Password Setting
- Firmware Update
- Factory Reset
- Reboot

Converter Status

Converter	GST-80X	
Ports	TP	Fiber
Link	Down	Up
Speed	-	10M
Duplex	-	Full
Device	☒ Enable ☐ Disable	
LFP	☐ Enable ☒ Disable	
TP AN Mode	☒ Auto ☐ Force	
TP Speed	☒ 1000M ☐ 100M ☐ 10M	
TP Duplex	☒ Full ☐ Half	
TP FC	☒ Enable ☐ Disable	
Fiber AN Mode	☒ Auto ☐ Force 1000	

Apply Cancel Set Default

MC-1600MR Media Converter Information

MGMT	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot9	Slot10	Slot11	Slot12	Slot13	Slot14	Slot15	Slot16

Through the Web Smart Media Converter Chassis System, you can control the setting of GST-80X, such as device (Disable / Enable), LFP (Disable / Enable).UTP (Auto-negotiation / Manual), speed (10/100/1000Mbps) , duplex mode (Half / Full duplex mode), Flow control (Disable / Enable). Fiber (Auto-negotiation / Manual).

Item	Description
Device	To enable or disable per GST-80x Converter board.
LFP	To enable or disable the LFP function from GST-80x Converter board.
TP AN Mode	To set the UTP port runs at Auto-negotiation or Forced Mode.
TP Speed	To set the UTP port runs at 1000Mbps, 100Mbps or 10Mbps.
TP Duplex	To set the UTP port runs at Full duplex or Half duplex mode.
TP FC	To set the Flow Control of the UTP port to enable or disable.
Fiber AN Mode	To set the Fiber port runs at Auto-negotiation or Forced Mode.

Notice:

- Please to note that if converter is connect with switch which is Auto negotiation, must enable the Auto negotiation function. If both devices are converters must disable the Auto negotiation function.
- Due to firmware structure and restriction of MC-1600MR/R48, the OAM / bandwidth control function not provide in GST-80x setting Web page screen.

The Management Coverter Chassis-MC-1610MR/R48 will display out the status of GST-80x, also the Management Media Coverter Chassis can control the function and OAM / Bandwidth control setting through the management system.

Module Status

- Chassis Status
- Converter Status
- Location Setting
- Redundant Backup Setting

Management

- SNMP
- Logout

Converter Status Select Slot Apply

Slot	Slot 1	
Converter	GST-80X	
Device	Enable	
	TP	Fiber
Link	Link-down	Link-up
Speed	--	1000M
Duplex	--	Full
Device	Enable	
LFP	Disable	
TP AN Mode	Auto	
TP Speed	1000M	
TP Duplex	Full	
TP FC	Enable	
Fiber AN Mode	Auto	

Apply Default

Through the Management Media Coverter Chassis System, you can control the setting of GST-80X, such as device (Disable / Enable), LFP (Disable / Enable).UTP (Auto-negotiation / Manual), speed (10/100/1000Mbps) , duplex mode (Half / Full duplex mode), Flow control (Disable / Enable). Fiber (Auto-negotiation / Manual).

Item	Description
Device	To enable or disable per GST-80x Converter board.
LFP	To enable or disable the LFP function from GST-80x Converter board.
TP AN Mode	To set the UTP port runs at Auto-negotiation or Forced Mode.
TP Speed	To set the UTP port runs at 1000Mbps, 100Mbps or 10Mbps.
TP Duplex	To set the UTP port runs at Full duplex or Half duplex mode.
TP FC	To set the Flow Control of the UTP port to enable or disable.
Fiber AN Mode	To set the Fiber port runs at Auto-negotiation or Forced Mode.

Notice:

Please to note that if converter is connect with switch which is Auto negotiation, must enable the Auto negotiation function. If both devices are converters must disable the Auto negotiation function.

For easily to know the TP / Fiber port link status of oppsite device, the Management Media Coverter Chassis System provide OAM Setting that include TS-1000 OAM / IEEE 802.3ah OAM / Loop Back Test function. Also the bandwidth control function allow to define available transmit / receive bandwidth on TP / Fiber port of GST-80x.

OAM Setting	Configure OAM	
	TP	Fiber
Ingress Rate Limit	No Limit ▼	No Limit ▼
Egress Shaping	No Limit ▼	No Limit ▼

Apply Default

Item	Description
OAM Setting	Provide OAM Configuration on GST-80x.
Ingress Rate Limit	Define receive rate for bandwidth control from TP and Fiber ports of GST-80x.
Egress Shaping	Define transmit rate for bandwidth control from TP and Fiber ports of GST-80x.

 Notice:

Please refer to manual of Management Media Coverter Chassis (MC-1610MR/R48) for more detail about OAMSetting and bandwidth control function.

4. LINK PASS THROUGH FUNCTION

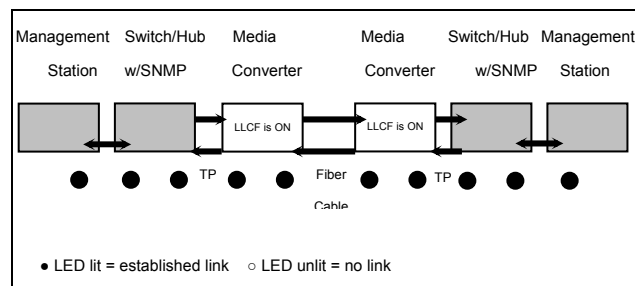
The LFP function includes the Link Fault Pass Through function (LLCF/LLR) and the DIP Switch design. LLCF/LLR can immediately alarm administrators the problem of the link media and provide efficient solution to monitor the net. The DIP Switch provides disable or enable the LFP function.

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.

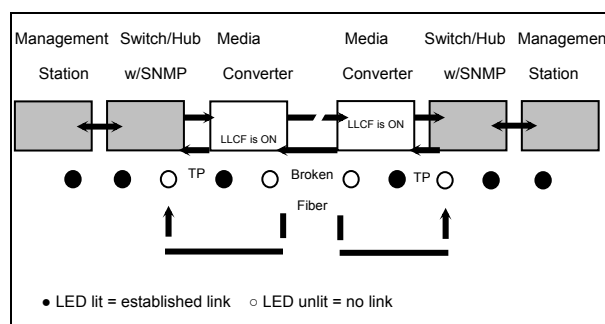
4.1 Link Loss Carry Forward (LLCF)

The GST-80X modules incorporate default LLCF function for troubleshooting a remote connection; the Fiber/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 GST-80X for remote connectivity.



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



Notice:

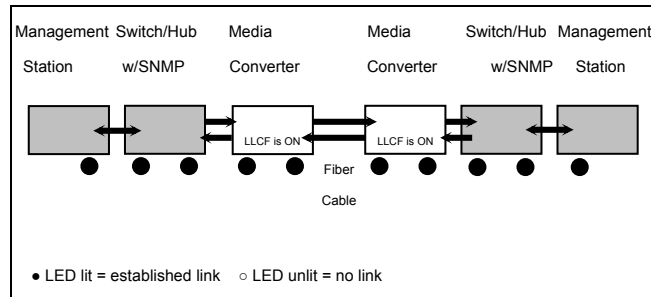
The converter is shipped with the default LFP (LLCF/LLR) function disable.. This feature can also be turned on on-purpose. If you are familiar with the network installation and for diagnostic purpose (i.e. check which end is broken), you can turn it on and the converter will take effect immediately. Otherwise, please remains it in the default position.

4.2 Link Loss Return (LLR)

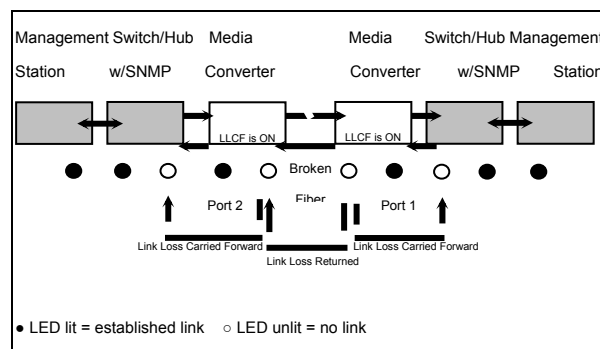
The fiber ports of GST-80X have been designed with an LLR function for troubleshooting a remote connection. LLR works in conjunction with LLCF.

When LLR 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 GST-80X for remote connectivity. Note that LLR is 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 enabled will return a no-link condition to its link partner. With LLCF also default 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.



Notice:

The converter is shipped with the default LFP (LLCF/LLR) function disable.. This feature can also be turned on on-purpose. If you are familiar with the network installation and for diagnostic purpose (i.e. check which end is broken), you can turn it on and the converter will take effect immediately.. Otherwise, please remains it in the default position.

5. TROUBLESHOOTING

This chapter contains information to help you solve issues. If the GST-80x is not functioning properly, make sure the GST-80x was set up according to instructions in this manual.

The Power LED is not lit

Solution:

Check the power cable connection between power adapter and GST-80X.

Why I connect GST-80x to device with 1000Base-LX/SX interface and the 1000Base-LX/SX fiber connection fail?

Solution:

1. Please check the fiber connection between two devices is correct.
2. Please check the 1000Base-LX / SX interface from both devices run at force full duplex mode.
3. Check and if the 1000Base-LX/SX interface of other device run at Auto-negotiation mode only, please enable the Auto negotiation bypass function of GST-80x for successful fiber connection.

10/100/1000Base-T port link LED is lit, but the traffic is irregular

Solution:

1. Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.
2. Check and assure the TP ports from both GST-80x and attached device run at Auto-negotiation mode.

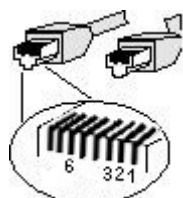
APPENDIX A NETWORKING CONNECTION

A.1 Switch's RJ-45 Pin Assignments

1000Mbps, 1000Base T

Contact	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

A.2 RJ-45 cable pin assignment



The standard RJ-45 receptacle/connector

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 Cable Connection Parameter

The limitations are shown as below;

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

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*

Notice:

- 1: Consult your local dealer for more about PLANET single mode fiber connectivity.
2. The Single-mode port (1000Base-LX port) of GST-802S, GST-805A, GST-806A15/B15 and GST-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.
3. A model (GST-806Ann, TX: 1310nm; RX: 1550nm) and B model (GST-806Bnn, TX: 1550nm; RX: 1310nm) should runs in pair and same distance model, i.e. nn=15 or 60.

EC Declaration of Conformity

For the following equipment:

*Type of Product : 10/100/1000Base-T to 1000Base-SX/LX Smart Gigabit Media Converter

*Model Number : GST-802 / GST-802S

* 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, 92/31/EEC, 93/68/EEC).

For the evaluation regarding the EMC, the following standards were applied:

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

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
Place

26th, Jun., 2009
Date


Kent Kang
Legal Signature

PLANET TECHNOLOGY CORPORATION

e-mail: sales@planet.com.tw http://www.planet.com.tw

11F, No. 96, Min Chuan Road, Hsin Tien, Taipei, Taiwan, R.O.C. Tel:886-2-2219-9518 Fax:886-2-2219-9528

EC Declaration of Conformity

For the following equipment:

*Type of Product : 10/100/1000Base-T to 1000Base-SX/LX Smart Gigabit Media Converter
(mini-GBIC,SFP)
*Model Number : GST-805A
* 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,92/31/EEC,93/68/EEC).

For the evaluation regarding the EMC, the following standards were applied:

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

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
Place

26th Jun., 2009
Date


Legal Signature

PLANET TECHNOLOGY CORPORATION

EC Declaration of Conformity

For the following equipment:

*Type of Product : 10/100/1000Base-T to 1000Base-LX WDM Smart Gigabit Media Converter
(Tx: 1310/1550) - 15KM/60KM

*Model Number : GST-806A15 / GST-806B15 / GST-806A60 / GST-806B60

* 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, 92/31/EEC, 93/68/EEC).

For the evaluation regarding the EMC, the following standards were applied:

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

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
Place

26th Jun., 2009
Date


Kent Kang
Legal Signature

PLANET TECHNOLOGY CORPORATION

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