

100/1000BASE-X to 10/100/1000BASE-T

802.3at PoE Media Converter

GTP-805A

User's Manual

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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.

Energy Saving Note of the Device

This power required device does not support Standby mode operation. For energy saving, please remove the DC-plug to disconnect the device from the power circuit. Without removing the DC-plug, the device will still consume power from the power source. In view of Saving the Energy and reducing the unnecessary power consumption, it is strongly recommended to remove the DC-plug if this device is not intended to be active.

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

PLANET 100/1000BASE-X to 10/100/1000BASE-T 802.3at PoE+
Media Converter User's Manual

For Model: GTP-805A

Rev 2.1 (July, 2018)

Part No. EM-GTP-805A_v2.1 **(2350-AA4480-004)**

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1. Overview

Thank you for purchasing PLANET GTP-805A 100/1000BASE-X Fiber-optic to 10/100/1000Mbps Ethernet twisted-pair 802.3at PoE Media Converter. This converter is used to convert one type of media signal to the other type that allows two segments to connect easily, efficiently and inexpensively. The converter provides Power over Ethernet power injector function which is able to drive one IEEE 802.3at/802.3af compliant powered device.

About the Power over Ethernet Injector

The GTP-805A is an IEEE 802.3at/802.3af Power over Ethernet Injector that provides 54V DC over Ethernet cables. To insert DC voltage into Cat.5/5e/6 cables, allow the cable between the Injector (GTP-805A) and PoE PD (powered device) to transfer data and power simultaneously. The maximum distance between the Injector (GTP-805A) and PoE PD is 100 meters. The GTP-805A combines the Ethernet digital data with power over the twisted-pair cables as an IEEE 802.3at/802.3af Power over Ethernet Injector. And with the Power over Ethernet splitter, it can separate the digital data and the power into two outputs.

The benefits of PLANET GTP-805A are cost-saving, easy for networking planning and higher reliability. What's more, once any IEEE 802.3at/802.3af devices are installed, the GTP-805A or PD can make the connection while migrating and the Ethernet digital packets, such as connecting the GTP-805A to an IEEE 802.3at/802.3af complied device, wireless AP or IP camera.

2. Checklist

Your GTP-805A box should contain the following items:

Media Converter x 1	User's Manual x 1
	
AC-DC Adapter (Input: 54V DC, 0.74A max.) x 1	
	

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



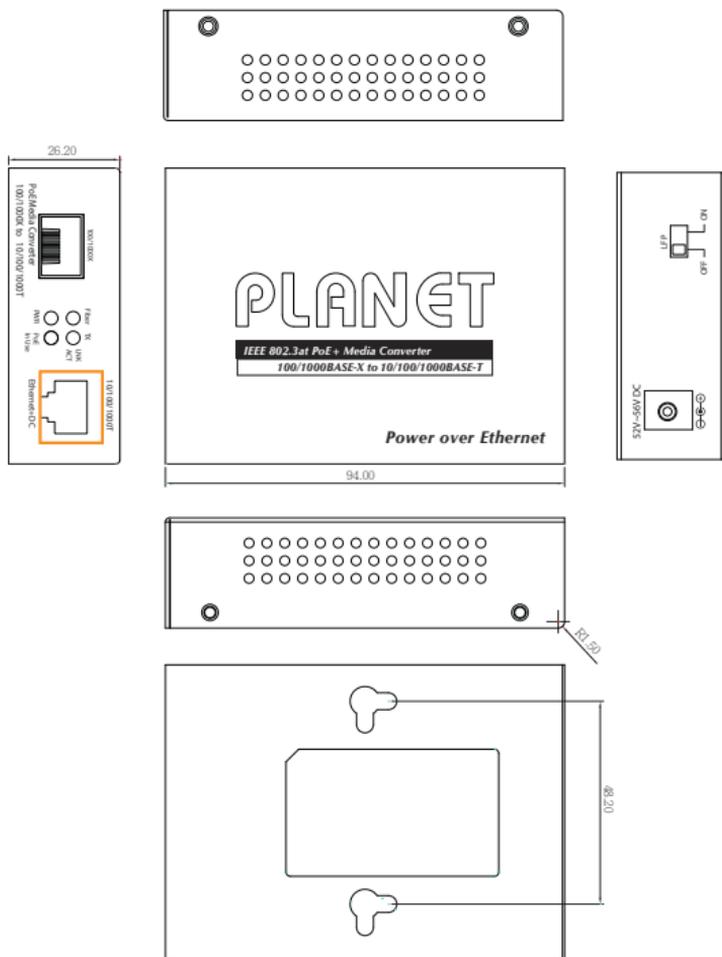
Note

The GTP-805A comes with one vacant SFP module slot. The mini GBIC SFP module is not bundled with the product.

3. Product Outlook

Overview

The layout of the GTP-805A



Dimensions (unit = mm)

Figure 3-1: Product Outlook of the GTP-805A

Left View

There are one RJ45 twisted-pair jack (auto-MDI/MDI-X), one fiber-optic connector (may vary by model) and four LED indicators.

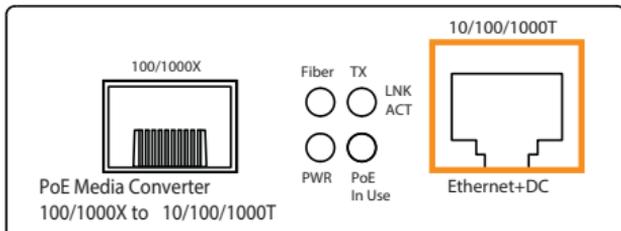


Figure 3-2: Left View of the GTP-805A

Right View

There is one DIP switch for Link Fault Passthrough (LFP) feature. It is turned on for LLCF and LLR detection but this feature is not operable when turned off. Please refer to the following sections for more. There is also one DC 52V ~ 56V power socket for the PoE+ Media Converter.



Figure 3-3: Right View of the GTP-805A

4. Link Fault Passthrough (LFP)

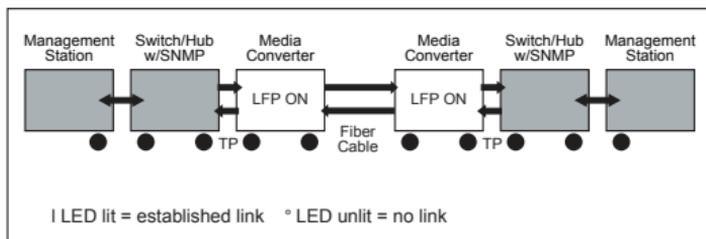
The LFP function includes the Link Fault Passthrough function (LLCF/LLR) and the DIP switch design. LLCF/LLR can immediately alert administrators to the problem of the link media and provide an efficient solution to monitor the net power usage. The DIP switch's LFP function can be disabled or enabled.

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

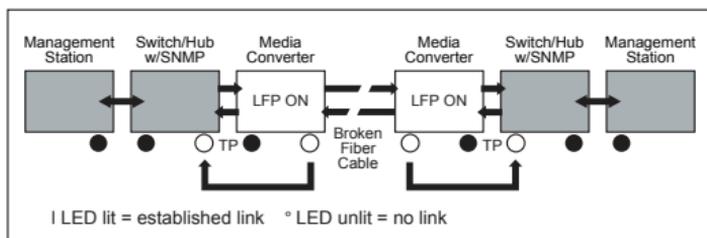
Link Loss Carry Forward (LLCF)

The GTP-805A incorporates an LLCF function for troubleshooting a remote connection. When LFP function is enabled, the FL and 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 the GTP-805A for remote connectivity.



If the connection breaks, the GTP-805A that loses the link will forward to the Switch/Hub that generates a trap to the management station. The administrator can then determine the source of the problem.



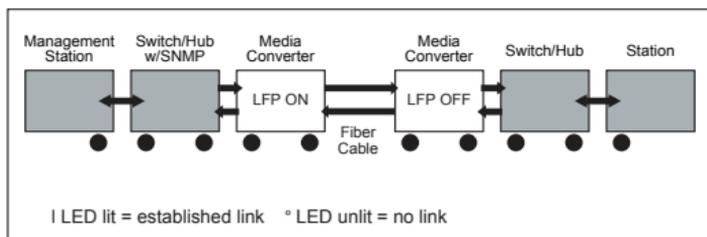
* Units are shipped with the LFP function being disabled (OFF).

Link Loss Return (LLR)

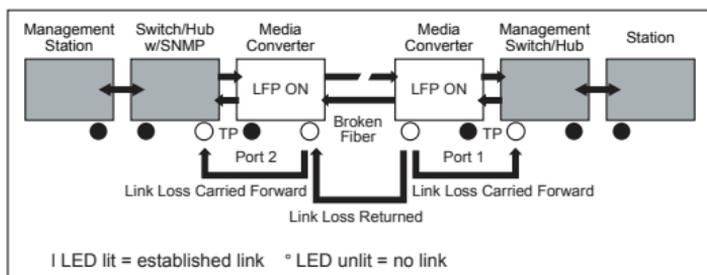
The fiber ports of the GTP-805A have been designed with an LLR function for troubleshooting a remote connection. LLR works in conjunction with LLCF.

When LFP function is enabled, the port's transmitter is shut 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 the GTP-805A for remote connectivity. Note that LLR and LLCF are enabled as indicated in the diagram.



If one of the optical conductors is down (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 turned off by default. This feature can also be turned on via the 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 on and reset the converter to make it effective. Otherwise, please put it in the default position.

5. 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 GTP-805A will be attached.
- Ensure that there is no activity in the network.
- Attach fiber cable from the GTP-805A to the fiber network.
- Attach a Cat.5/5e/6 UTP cable from the 10/100/1000BASE-T network to the RJ45 port on the GTP-805A.
- Connect the 52V~56V DC power adapter to the GTP-805A 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 up when all cables are attached.

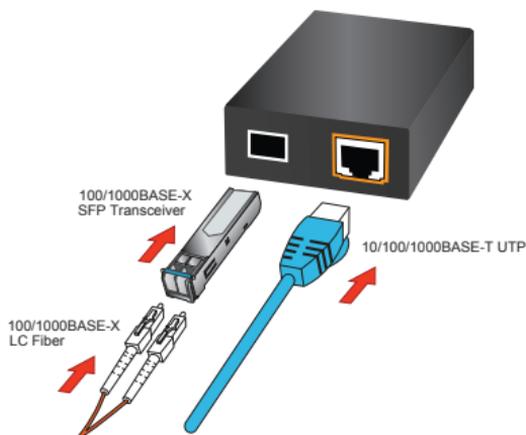


Figure 5-1: GTP-805A Installation



Note

RJ45/STP, UTP Cat5/5e/6, or straight/crossover cable is accepted.

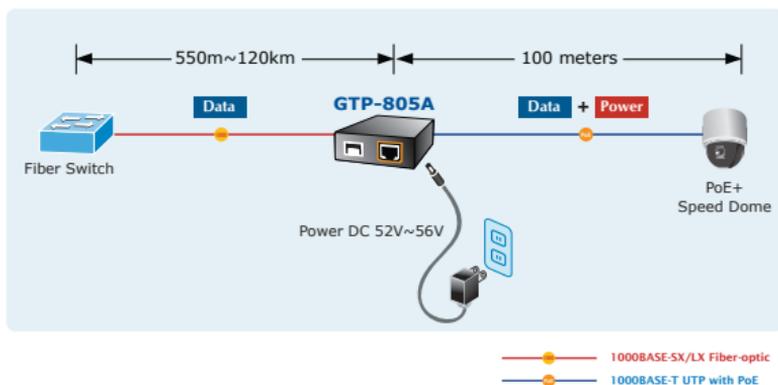
Please refer to section 8 for more about the wiring distance of your TP, optic-fiber networks.

6. PoE Function

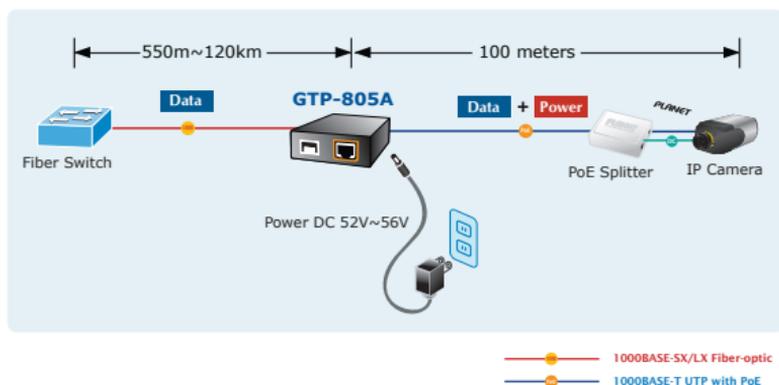
The installation of the GTP-805A and the IEEE 802.3at/802.3af Injector/Splitter

Before your installation, it is recommended to check your network environment. If there is any IEEE 802.3at/802.3af devices that need to be powered on, the GTP-805A can provide you a way to supply power for this Ethernet device conveniently and easily.

The GTP-805A equips an AC-DC adapter with DC 54V input and it injects the DC power into the pin of the twisted-pair cable (Pins 1, 2, 3 and 6).



For the places hard to find the power inlet, the GTP-805A provides the easiest way to power your Ethernet devices such as PLANET IEEE 802.3at/802.3af Power over Ethernet Splitter (POE-161S/162S) with Internet Camera or PoE Wireless Access Point installed in a wide-ranging place.



7. LED Indication

System

LED	Color	Function	
PWR	Green	Light	Indicates the device is powered.

10/100/1000BASE-T Port

LED	Color	Function	
LNK/ ACT	Green	Blink	Indicates that the PoE+ Media Converter is actively sending or receiving data over that port.
		Light	Indicates that the port is linked up at 10/100/1000Mbps.
		Off	Indicates that the port is linked down.
PoE in Use	Orange	Light	Indicates that the port is providing DC 54V to remote powered device.
		Off	Indicates that the port is not providing DC 54V to remote powered device.

1000BASE-X Fiber Port

LED	Color	Function	
LNK/ ACT	Green	Blink	Indicates that the PoE+ Media Converter is actively sending or receiving data over that port.
		Light	Indicates that the port is linked up.
		Off	Indicates that the port is linked down.

8. Cable Connection Parameter

The limitations are shown below:

Duplex	Connection	Limitation (max.)
Twisted-pair		
Half/Full	Node to Node Node to Switch/Hub	100 meters
Multi/Single Mode Converters		
Full	Node to Node Node to Switch	GTP-805A: May vary on SFP module

9. GTP-805A Technical Specifications

The GTP-805A comes with the following standard features:

- **Standard:** IEEE 802.3/802.3u/802.3ab, 10/100/1000BASE-T and IEEE 802.3at/802.3af Power over Ethernet standard
- **Connectors:**
 - ◆ One RJ45 (auto-MDI/MDI-X) twisted-pair, EIA568 with PoE
 - ◆ One fiber-optic connector type (may vary with model)
- **Data Transfer Rate:** 10/100/1000Mbps (TP), 100/1000Mbps (Fiber)
- **Duplex Mode Support:** Full- or half-duplex mode by auto-negotiation (TP)
- **LED Indicators:** PWR, FX LNK/ACT, TP LNK/ACT, PoE in Use
- **PoE Power Output:** DC 54V, 30 watts
- **Power Pin Assignment:** 1/2(+), 3/6(-)/end-span
- **Power Supply:** DC 54V, 0.74A, external AC-DC adapter
- **Ambient Temperature:** 0° to 50°C (operating)
- **Humidity:** 5% to 90% (non-condensing)
- **Dimensions:** 26 x 70 x 94mm (H x W x D)
- **Cable:**
 - ◆ UTP: Cat 5/5e/6 UTP cable
 - ◆ Fiber: MM: 50/125 μm or 62.5/125 μm optic fiber
 - ◆ Fiber: SM: 9/125 μm optic fiber

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

APPENDIX A

A.1 Device's RJ45 Pin Assignments

1000Mbps, 1000BASE-T

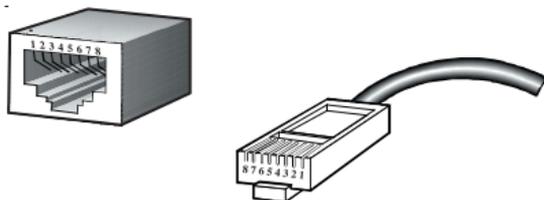
RJ45 Connector Pin Assignment		
Contact	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

10/100Mbps, 10/100BASE-TX

RJ45 Connector Pin Assignment		
Contact	MDI Media Dependent Interface	MDI-X Media Dependent Interface-Cross
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5	Not available	
6	Rx - (receive)	Tx - (transmit)
7, 8	Not available	

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 RJ45 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:

Straight Cable



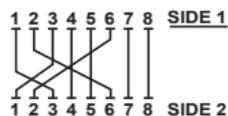
SIDE 1

- 1 = White/Orange
- 2 = Orange
- 3 = White/Green
- 4 = Blue
- 5 = White/Blue
- 6 = Green
- 7 = White/Brown
- 8 = Brown

SIDE 2

- 1 = White/Orange
- 2 = Orange
- 3 = White/Green
- 4 = Blue
- 5 = White/Blue
- 6 = Green
- 7 = White/Brown
- 8 = Brown

Crossover Cable



SIDE 1

- 1 = White/Orange
- 2 = Orange
- 3 = White/Green
- 4 = Blue
- 5 = White/Blue
- 6 = Green
- 7 = White/Brown
- 8 = Brown

SIDE 2

- 1 = White/Green
- 2 = Green
- 3 = White/Orange
- 4 = Blue
- 5 = White/Blue
- 6 = Orange
- 7 = White/Brown
- 8 = Brown

Figure A-1: Straight-through and Crossover Cables

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

A.3 Fiber Optic Cable Connection Parameter

The wiring details are shown below:

Fiber Optic Patch Cables:

Standard	Fiber Type	Cable Specification
100BASE-FX (1310/1550nm)	Multi-mode	50/125 μ m or 62.5/125 μ m
	Single-mode	9/125 μ m
1000BASE-SX (850nm)	Multi-mode	50/125 μ m or 62.5/125 μ m
1000BASE-LX (1310nm)	Multi-mode	50/125 μ m or 62.5/125 μ m
	Single-mode	9/125 μ m



EC Declaration of Conformity

For the following equipment:

*Type of Product : 1000BASE-X to 10/100/1000BASE-T PoE Media Converter

*Model Number : GTP-805A

* Produced by:

Manufacturer's Name : **Planet Technology Corp.**

Manufacturer's Address : 10F., No.96, Minquan Rd., Xindian Dist.,
New Taipei City 231, 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 (2014/30/EU).

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

EN 55032	(2015 + AC:2016)
EN61000-3-2	(2014)
EN61000-3-3	(2013)
EN 55035	(2017)

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: 10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.

Person responsible for making this declaration

Name, Surname Kent Kang

Position / Title : Director

Taiwan
Place

May 29, 2018
Date


Legal Signature

PLANET TECHNOLOGY CORPORATION

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