10/100/1000Base-T to Dual 1000Base-X SFP

Media Converter

GT-1205A

User's Manual

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FCC Warning

This device has been tested and found to comply with the limits for a Class B 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 the Instruction manual, 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 whose own expense.

CE Mark Warning

This is a Class B 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 discon-nect the device from the power circuit. Without removing the DC-plug or switch off the device, the device will still consume power from the power source. In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to power off or to remove the DC-plug for the device 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 Gigabit Ethernet Redundant Media Converter User's Manual

FOR MODEL: GT-1205A

Revision: 1.0 (Augest, 2011)

Part No.: 2350-AA4530-000

Table of Contents

1. Introduction

1.1 Check List

Check the contents of your package for following parts:

- GT-1205A x 1
- 5V / 2A AC-DC Power Adapter x 1
- User's Manual x 1

GT-1205A is with two vacant SFP module slot. The 1000Base-X SFP module is not bundled with in the package

1.2 Introduction To GT-1205A

Thank you for choosing the 10/100/1000Base-T to Dual 1000Base-X SFP Media Converter.

The GT-1205A is a 3-Port Media Converter which supports conversion between 10/100/1000Base-T and 1000Base-X network. Different with the other one-port channel media converter, the Media Converter is designed for critical networks that require fiber or copper link, such as ISP, telecom, hospital, banking and enterprise. PLANET 3-Port Gigabit Media converter is shown as following:

With the 3-Port switch mode, they work in high performance Store and Forward mechanism; also can prevent packet loss with IEEE 802.3x Flow Control (Full-Duplex) and Back Pressure (Half-Duplex).

With 1000Base-X SFP ports, the GT-1205A is with high reliability and flexibility to extend the distance up to 550m, 10Km, 20Km, or longer.

The Media Converter can be used as a stand-alone unit or as a slide-in module to the PLANET Media Converter Chassis (MC-700 and MC-1500 series), it could be hot swappable in MC-Chassis.

1.3 Key Features

- **Standard**
  - Complies with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab 10/100/1000Base-T, IEEE 802.3z, 1000Base-SX / LX
  - IEEE 802.3x Full-Duplex Flow-Control, Back-Pressure in Half-Duplex eliminate packets loss
- **Interface**
  - Dual 1000Base-SX / LX SFP Fiber optic, One 10/100/1000Base-T Copper
  - Auto-Negotiation for 10/100Base-TX Half-Duplex or 10/100/1000Base-T Full-Duplex
  - Auto MDI/MDI-X
- **Mechanical**
  - 5V/2A DC power supply
  - LED indicators for easy network diagnose
  - Co-work with PLANET MC family Media Chassis **(MC-700/1500/1500R/1500R48)**

2. Product Specification

2.1 Functional Specifications

Model		GT-1205A
Ports	Copper	1 x 10/100/1000Base-T port
	Fiber	2 x 1000Base-X SFP interfaces
Optic Interface		**SFP**

Cable	Twisted-pair	10Base-T: 2-Pair UTP CAT. 3, 4, 5, up to 100 meter 100Base-TX: 2-Pair UTP CAT. 5, 5e up to 100 meter 1000Base-T: 4-Pair UTP CAT. 5e, 6 up to 100 meter
	Fiber-optic cable	50/125μm or 62.5/125μm multi-mode fiber cable, up to 220 & 550 meters 9/125μm single-mode cable, provide long distance for 10/15/20/30/40/50/60/70/120km or longer (vary on SFP module)
Switch Processing Scheme		Store-and-Forward
Switching Fabric		6Gbps / non-blocking
LED indicator		**System:** One Power LED **TP Port:** One Speed, One LNK/ACT **Fiber Port:** Two LNK/ACT
Dimension (W x D x H)		94 x 70 x 26 mm
Weight		191g (device only)
Power Requirement		5V DC, 2A max.
Power Consumption		5.4Watts / 18.5 BTU per hour max.
Standards		IEEE 802.3, 10Base-T IEEE 802.3u, 100Base-TX IEEE 802.3ab, 1000Base-T IEEE 802.3z, 1000Base-SX / LX IEEE 802.3x, Flow Control

2.2 LED Indicator

The LED indicators give you instant feedback on status of the converter:

■ **System**

LED	Color	Function
PWR	Green	**Lit:** Power on.

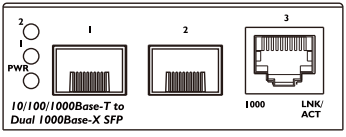
■ GT-1205A -10/100/1000Base-T Port

LED	Color	Function	
1	Green	**Lit**	Indicate that the fiber optical port is link up.
		Blink	Indicate that the converter is actively sending or receiving data over that port.
		Off	Indicate that the fiber optical port is link down.
2	Green	**Lit**	Indicate that the fiber optical port is link up.
		Blink	Indicate that the converter is actively sending or receiving data over that port.
		Off	Indicate that the fiber optical port is link down.
LNK/ ACT	Orange	**Lit**	Indicate that the copper port is link up.
		Blink	Indicate that the converter is actively sending or receiving data over that port.
		Off	Indicate that the copper port is link down.
1000	Green	**Lit**	Indicate that the copper port is operating at **1000Mbps**.
		Off	Indicate that the copper port is **link down** or **10/100Mbps**.

3. Installation

3.1 Product Outlook

■ **Front Panel**



- Port-1 1000Base-X SFP slot
- Port-2 1000Base-X SFP slot
- Port-3 10/100/1000Base-T copper connector

■ **Rear Panel**

- One DC jack for DC 5V / 2A power input.

3.2 Stand-alone Installation

GT-1205A is with high reliability and flexibility to extend the distance up to 550m and 10/15/20/30/40/50/60/70/120km. It depends on the 1000Base-SX / LX SFP transceiver modules. The SFP transceiver is hot-pluggable and hot-swappable. You can plug-in and out the transceiver to / from any SFP port without having to power down the converter.

To install a GT-1205A 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-1205A will be attached.

Step 2: Ensure that there is no activity in the network.

Step 3: Slot in the 1000Base-X SFP. Make sure both side of the SFP transceiver are with the same media type, for example: 1000Base-SX / 550m multi-mode to 1000Base-SX / 550m multi-mode, 1000Bas-LX / 10km single mode to 1000Base-LX / 10km single mode.

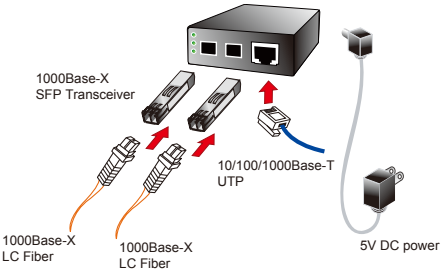


Figure 3-1: GT-1205A Media Converter Stand Alone Installation

Step 4: Connect the fiber cable. Attach the duplex LC connector on the network cable into the SFP transceiver.

Step 5: Attach fiber cable from the GT-1205A to the fiber network. TX, RX must be paired at both ends.

Step 6: Connect the 5V DC power adapter to the GT-1205A and verify that the Power LED lights up.

Step 7: Turn on the power of the device/station; the LINK LED should light when all cables are well attached.

Note

1. It is recommends using PLANET **MGB** series SFP modules for the converter. If you insert a SFP trans-ceiver that is not supported, the converter will not recognize it. Please check appendix or go visit our WEB site for details specification information. http://www.planet.com.tw
2. To prevent from optic acceptor malfunction, check the both wires / transmitter before power on the con-verter.
3. To remove the SFP module, please remove the fiber connectors in advanced and push the belt or letch of the module. Pull out the module with violent may damage the module and the converter.

3.3 Chassis Installation And Rack Mounting

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

Step 1: Find an available slot from your PLANET MC Chassis.

Step 2: Follow Figure 3-2, carefully slide in the converter fully and firmly fitted to the slot of the chassis. The Power LED of the converter will turns ON.

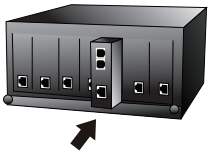


Figure 3-2: Insert GT-1205A Media Converter into an available slot

Note

1. Never push the converter into the slot with violent, it could damage the chassis.
2. The Media Converter Chassis supports hot-swap, there is no need to turn off the whole chassis before slide in the new converter.

3.4 Din-Rail Installation

The GT-1205A also supports din-rail installation, the option kit RKE-DIN can help to mount the converter to the Rail system, please follow the steps below.

Step 1: Use the bundled screw to fix the RKE-DIN to the converter.

Step 2: Hook the converter to the DIN-Rail.

Note

You must use the screws supplied with the RKE-DIN. Damage caused to the parts by using incorrect screws would invalidate your warranty.

4. Appendix A

A.1 Device's RJ-45 Pin Assignments

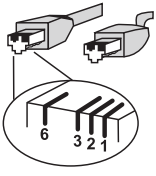
■ **1000Mbps, 1000Base T**

RJ-45 Connector pin assignment					
Contact	MDI	MDI-X	Contact	MDI	MDI-X
1	BI_DA+	BI_DB+	5	BI_DC-	BI_DD-
2	BI_DA-	BI_DB-	6	BI_DB-	BI_DA-
3	BI_DB+	BI_DA+	7	BI_DD+	BI_DC+
4	BI_DC+	BI_DD+	8	BI_DD-	BI_DC-

■ **10/100Mbps, 10/100Base-TX**

RJ-45 Connector pin assignment		
Contact	MDI Media Dependant Interface	MDI-X Media Dependant Interface-Cross
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5	Not used	
6	Rx - (receive)	Tx - (transmit)
7, 8	Not used	

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:

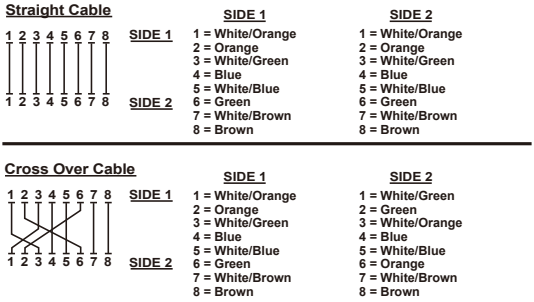


Figure A-1: Straight-Through and Crossover Cable

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 Fiber Optical Cable Connection Parameter

The wiring details are as below:

■ **Fiber Optical patch Cables:**

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


Note

The IEEE 1000Base-LX standard supports up to 5000 meters, however, with various SFP modules the actual link distance may vary. Please check appendix for the available modules.

A.4 Power Information

The power jack of the Gigabit Media Converter is with 2.5mm in the central post and required +5V DC power input. It will conform to the bundled AC-DC adapter and PLANET's Media Chassis. If you have issue to make the power connection, please contact with your local sales dealer.

Please keep the AC-DC adapter as spare parts when your Media Converter is installed to a Media Chassis.


2.5mm
DC Receptacle 2.5mm
+5V for each slot

DC receptacle is 2.5mm wide that conforms to and matches the Media Converter 2.5mm DC jack's central post. Do not install any improper unit, model of the Media Converter

A.5 Available Modules

The following list the available Modules for GT-1205A

MGB-GT	SFP-Port 1000Base-T mini-GBIC module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module - 550meters
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module - 10km
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module - 30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module - 50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX: 1310nm), SM, 10km
MGB-LB10	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX: 1550nm), SM, 10km
MGB-LA20	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX: 1310nm), SM, 20km
MGB-LB20	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX: 1550nm), SM, 20km
MGB-LA40	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX: 1310nm), SM, 40km
MGB-LB40	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX: 1550nm), SM, 40km
MGB-TSX	SFP-Port 1000Base-SX mini-GBIC module - 550meters (-40~75°C)
MGB-TLX	SFP-Port 1000Base-LX mini-GBIC module - 10km (-40~75°C)
MGB-TL30	SFP-Port 1000Base-LX mini-GBIC module - 30km (-40~75°C)
MGB-TL70	SFP-Port 1000Base-LX mini-GBIC module - 70km (-40~75°C)

EC Declaration of Conformity

For the following equipment:

*Type of Product : 10/100/1000Base-T to Dual 1000Base-X SFP Media Converter (1 TP, 2 SFP)
*Model Number : **GT-1205A**

* 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 (2004/108/EC).
For the evaluation regarding the EMC, the following standards were applied:

EN 55022	(CLASS A: 2006 + A1:2007)
EN 61000-3-2	(2006 + A2:2009)
EN 61000-3-3	(2008)
EN 55024	(1998+A1:2001+A2:2003)
IEC 61000-4-2	(2008)
IEC 61000-4-3	(2008)
IEC 61000-4-4	(2004)
IEC 61000-4-5	(2005)
IEC 61000-4-6	(2008)
IEC 61000-4-8	(2009)
IEC 61000-4-11	(2004)

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 : **Product Manager**

Taiwan	**30, Sep., 2011**	
Place	*Date*	*Legal Signature*