

Gigabit Ethernet media converters
1000Base-T to 1000Base-SX/LX series
User's Manual

FCC Warning

This device has been tested and found to comply with limits for a Class A digital device, pursuant to Part 2 and 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 radiates radio frequency energy and, if not installed and used in accordance with the user's manual, may cause interference in which case user will be required to correct the interference at his own expense.

NOTICE:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

CISPR A COMPLIANCE:

This device complies with EMC directive of the European Community and meets or exceeds the following technical standard.

EN 55022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This device complies with CISPR Class A.

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.

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Chapter 1.

Introduction

The Gigabit Ethernet media converters series are designed to bridge a 1000Base-T signal to a 1000Base-SX/LX signal. It's used to extend the connection distance between two Gigabit Ethernet Twisted-pair devices via fiber cable transparently with no performance degradation.

The Gigabit converter series is supported 1000Base-T Auto-negotiation & Auto MDIX. Isn't working in the 10Base-T or 100Base-TX environment. The converters supported flow control function both on Twisted-pair port and Fiber port. And provided different types of fiber connectors such as SC, LC, GBIC and SFP LC for multi-mode or single-mode cables.

Product Features

- Complies with IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-SX/LX Standards.
- TP port support Auto-MDIX & Auto-negotiation.
- Up to 100 meters for 1000Base-T Cat5, 5e or 6 twisted pair cable.
- Supports Full-duplex operation. (Gigabit Std)
- Switch base design support flow control capability.
- 1000Base-SX interface for up to 220 meters. (Multi-mode 62.5/125 μ m MMF optic cable)
- 1000Base-SX interface for up to 550 meters. (Multi-mode 50/125 μ m MMF optic cable)
- 1000Base-LX interface for up to 40 km. (Single-mode 9/125 μ m SMF optic cable)
- LED indicator supports.
- Multiple fiber connector supports. (SC, LC, GBIC, SFP LC...etc)
- Can be installed on media converter chassis. (10 inch or 19 inch)

Technical Specifications

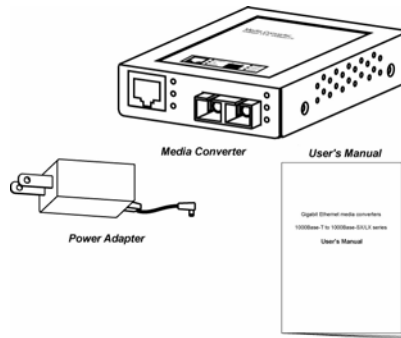
- ◎ Standards : IEEE 802.3ab 1000Base-T
: IEEE 802.3z 1000Base-SX/LX
- ◎ Media support : 1000BASE-T Cat5, 5e or 6 UTP/STP
: 1000Base-SX Multi-mode 50/125 μ m & 62.5/125 μ m MMF
: 1000Base-LX Single-mode 9/125 μ m SMF
- ◎ Distances support : Twisted pair STP→100 meters / 328ft.
: 220m for 62.5/125 μ m MMF optic cable
: 550m for 50/125 μ m MMF optic cable
: 40km for 9/125 μ m SMF optic cable.
- ◎ Wavelength : 850nm for 1000Base-SX & 1310nm for 1000Base-LX
- ◎ Data Transfer Rate : 1000Mbps
- ◎ LED indicators : System - power
: Twisted pair port – Link & TX LEDs
: Fiber port – Link & RX LEDs
- ◎ Temperature : 0°C to 60°C (Operating)
: -20°C to 90°C (Storage)
- ◎ Humidity : 10% to 90% (Non-condensing)
- ◎ Power consumption : 5.2 Watts (max)
- ◎ Power Requirement : 5V DC 1.4A
- ◎ Certifications : FCC Class A, CE Mark
- ◎ Dimensions : 102 mm × 74 mm × 22 mm (L × W × H)
- ◎ Weight : 240g (No power adapter)

Chapter 2.

Package contents

Before you start to install the converter, please verify your package that contains the following items:

- One media converter
- One Power Adapter
- One User's Manual



Model information

1000Base-SX Multi-Mode 850nm wavelength

| Model | Description |
|-------------------------------|--|
| Multimode SC Connector | <ul style="list-style-type: none">■ 1 x 1000Base-T STP port (RJ-45 connector).■ Support Auto-MDIX & Auto-negotiation.■ 1 x 1000Base-SX fiber port (SC type MMF)■ The 62.5/125um MMF optic cable for 220m (722 ft.) links.■ The 50/125um MMF optic cable for 550m (1804 ft) links. |
| Multimode LC Connector | <ul style="list-style-type: none">■ 1 x 1000Base-T STP port (RJ-45 connector).■ Support Auto-MDIX & Auto-negotiation.■ 1 x 1000Base-SX fiber port (LC type MMF)■ The 62.5/125um MMF optic cable for 220m (722 ft.) links.■ The 50/125um MMF optic cable for 550m (1804 ft) links. |
| Multimode GBIC Connector | <ul style="list-style-type: none">■ 1 x 1000Base-T STP port (RJ-45 connector).■ Support Auto-MDIX & Auto-negotiation.■ 1 x 1000Base-SX fiber port (+5V GBIC SC Type MMF)■ Support 62.5/125um MMF optic cable for 220m (722 ft.)■ Support 50/125um MMF optic cable for 550m (1804 ft.) |
| Multimode Pluggable Connector | <ul style="list-style-type: none">■ 1 x 1000Base-T STP port (RJ-45 connector).■ Support Auto-MDIX & Auto-negotiation.■ 1 x 1000Base-SX fiber port (+3.3V Pluggable LC MMF)■ Support 62.5/125um MMF optic cable for 220m (722 ft.)■ Support 50/125um MMF optic cable for 550m (1804 ft.) |

Pluggable series 1000Base-SX/LX (850nm/1310nm)

| Model | Description |
|-----------|---|
| GBIC | <ul style="list-style-type: none"> ■ 1 x 1000Base-T STP port (RJ-45 connector). ■ Support Auto-MDIX & Auto-negotiation. ■ 1 x 1000Base-SX fiber port (+5V GBIC Module) ■ The 62.5/125um MMF optic cables for 220m (722 ft.) links. ■ The 50/125um MMF optic cable for 550m (1804 ft) links. |
| Pluggable | <ul style="list-style-type: none"> ■ 1 x 1000Base-T STP port (RJ-45 connector). ■ Support Auto-MDIX & Auto-negotiation. ■ 1 x 1000Base-SX fiber port (+3.3V Pluggable LC Module) ■ The 62.5/125um MMF optic cables for 220m (722 ft.) links. ■ The 50/125um MMF optic cable for 550m (1804 ft) links. |

1000Base-LX Single-Mode 1310nm wavelength

| Model | Description |
|---------------------------------|---|
| Single mode SC Connector | <ul style="list-style-type: none"> ■ 1 x 1000Base-T STP port (RJ-45 connector). ■ Support Auto-MDIX & Auto-negotiation. ■ 1 x 1000Base-LX fiber port (SC type SMF) ■ The 9/125um SMF optic cable for 10km, 20km, 40km links. |
| Single mode LC Connector | <ul style="list-style-type: none"> ■ 1 x 1000Base-T STP port (RJ-45 connector). ■ Support Auto-MDIX & Auto-negotiation. ■ 1 x 1000Base-LX fiber port (LC type SMF) ■ The 9/125um SMF optic cable for 10km, 20km, 40km links. |
| Single mode GBIC Connector | <ul style="list-style-type: none"> ■ 1 x 1000Base-T STP port (RJ-45 connector). ■ Support Auto-MDIX & Auto-negotiation. ■ 1 x 1000Base-LX fiber port (+5V GBIC SC Type SMF) ■ The 9/125um SMF optic cable for 10km, 20km, 40km links. |
| Single mode Pluggable Connector | <ul style="list-style-type: none"> ■ 1 x 1000Base-T STP port (RJ-45 connector). ■ Support Auto-MDIX & Auto-negotiation. ■ 1 x 1000Base-LX fiber port (+3.3V Pluggable LC SMF) ■ The 9/125um SMF optic cable for 10km, 20km, 40km links. |

Chapter 3.

Installation

I. DC input & external power adapter

The external power supply adapter specification:

- AC input range from 90VAC to 260VAC.
- AC frequency range from 47Hz to 63Hz, TUV, CE, UL Safety.
- Power adapter DC output is +5VDC 1.4A
- The device DC input +5VDC 1.4A.

II. The TP port

The TP port of converter supported 1000Base-T Auto-negotiation, Auto MDIX and Flow control function. Please make sure isn't working in the 10Base-T or 100Base-TX environment. The cable length up to 100 meters for Cat5, 5e or 6 shielded/unshielded twisted pair cable.

III. The Fiber port

The converter provided different types of fiber connectors such as SC, LC, GBIC and SFP LC for multi-mode or single-mode fiber cables.

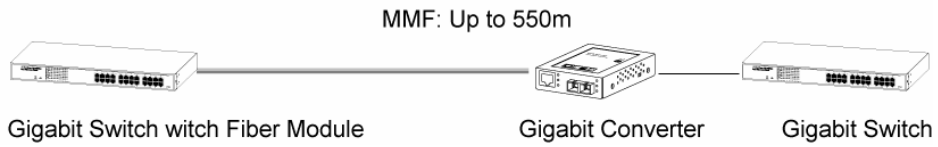
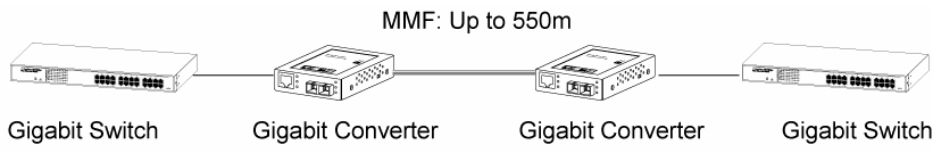
The LED indicators

| LED | Color | Status | Description |
|-------|--------|----------|---------------------|
| Power | Yellow | On | Power on |
| TX | Green | Flashing | Port data transmits |
| RX | Green | Flashing | Port data receive |
| LINK | Green | On | Port connection |

Chapter 4.

Application

Multi-Mode Fiber (MMF) application



Single-Mode Fiber application

