A Network Systems Solution

UNICOM™

For full coverage of your warranty, be sure to register your product using the enclosed registration card.

velocity series

10/100/1000Base-T
1000Base-SX/LX
Gigabit Ethernet Converter

GEP-5300TF-C   1000Base-T/SX (SC/MM/220m/500m)
GEP-5400TF-C   1000Base-T/LX (SC/SM/10km)

A Network Systems Solution

UNICOM™

908 Canada Court
City of Industry, CA 91748 U.S.A.
Phone: 626.964.7873 or 800.346.6668 **Fax:** 626.964.7880
www.unicomlink.com   e-mail: info@unicomlink.com

USER'S MANUAL

Package Contents

Package contents include the following:

- 10/100/1000Base-T to 1000Base-SX/LX Converter (Multi-Mode or Single Mode)
- DC Power Adapter
- User's Manual
- Rack Mount Brackets
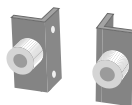- Warranty card (not shown)

Gigabit Converter
(Multi-Mode or Single Mode)

User's Manual

Power Adapter

Rack Mount Brackets

IMPORTANT: If any piece is missing or damaged, please contact your local dealer or reseller for service.

- -

For Your Records

Product Name: _____

_____

Serial Number: _____

Date of Purchase: _____

Purchased from: _____

Notes: _____

_____

_____

10

Product Specifications

Standard Compliance:	IEEE 802.3 10/100/1000Base-T Gigabit Ethernet
	IEEE 802.3 1000Base-SX/LX Gigabit Ethernet
Protocol:	CSMA/CD
Interface:	(1) 10/100/1000Base-T, Shielded RJ-45 Jack
	(1) 1000Base-SX/LX, Dual SC connector
Cable distance:	10/100/1000Base-T
	Cat. 5e or 6: up to 100m.
	1000Base-SX: Multi-mode fiber
	$50/125\mu m$ (500m)
	$62.5/125\mu m$ (220m)
	1000Base-LX: Single Mode fiber
	$9/125\mu m$ (10Km)
LED Indicators:	Device: Power
	UTP: 1000Mbps, Full-Duplex/collision,
	Link/Activity
	Fiber: Link
Power Supply:	External power adapter 9V DC/700mA (min.)
Operating Temperature:	0˚C to 45˚C
Operating Humidity:	10% - 90% RH
EMI:	FCC Class A, CE Mark
Enclosure:	Metal
Dimensions:	4.72"(L) x 3.36"(W) x .96"(H)
	118mm x 84mm x 24mm
Warranty:	Limited Lifetime

FCC Statement

This equipment has been tested and found to comply with the limits for a class B device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference with 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 the user's expense.

Introduction

Congratulations on purchasing a quality UNICOM product.

Unicom's *VELOCITY Series* represents the newest, most advanced generation of signal conversion technology.

These converters transform your 10/100/1000Base-T copper network to 1000Base-LX/SX fiber optic and expands the fiber link up to 10 km (Single Mode in Full Duplex mode).

The 10/100/1000T/1000LX/SX Converters offer the most popular fiber cabling connector: SC format in Multi-mode and Single Mode. The UTP port supports the Auto MDI/MDIX function and there are five LEDs for diagnosis and maintenance. These converters can be used in Unicom's 10 bay media chassis or as stand-alone components.
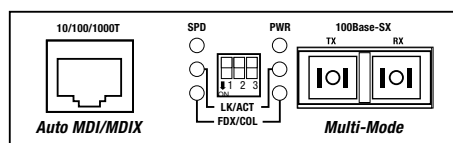
Key Features

- Conforms to IEEE 802.3 10/100/1000Base-T and IEEE 802.3 1000Base-SX/LX Gigabit Ethernet standards
- Converts between UTP cabling and Fiber Optic cabling.
- Fiber cabling connectivity up to 10Km.
- One RJ-45 connector, Auto-MDI/MDIX for UTP port.
- Auto full- or Half-duplex operation mode for UTP Port
- Uses store-and-forward switching to separate collision domains.
- Prevents packet loss by supporting back-pressure & flow control.
- Per port LEDs for diagnosis and maintenance
- External DC power adapter, 9V DC/700mA
- Can be mounted in chassis or used as stand-alone.
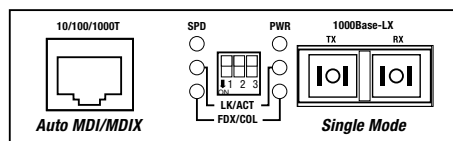- FCC Class A, CE Mark certification

Hardware Description

The Front Panel

The Front Panel of the 10/100/1000T/1000SX/LX converters consists of one RJ-45 Port (Auto MDI/MDIX), 6 LED Indicators (SPD, LK/ACT, FDX/COL, and PWR) and one fiber 1000Base-SX/LX Port.

GEP-5300TF-C   220m

GEP-5400TF-C   10km

Ports

- RJ-45 Port (Auto MDI/MDIX): the Ethernet RJ-45 will features Auto-Sensing for 10/100/1000Base-T connections and Auto MDI/MDIX which is basically an auto crossover feature. This means you can connect to another Switch or workstation without changing to a crossover cable.

- Fiber Port: This port is for the 1000Base-SX/LX connection and is available in the SC format in Multi- and Single mode.This fiber port does not support auto-negotiation.

Troubleshooting

- Verify that you are using the right power adapter, DC 5V, 2A (minimum). Using a power adapter with DC output greater than 5V could result in damage to the unit and/or personal injury.

- Confirm the proper UTP/Fiber cable is being used. The Single Mode converter must use Single Mode fiber optic cable.

Optical Fiber Spec

The following table shows the optical fiber specification:

Module Name	GEP-5300TF-C (SX)	GEP-5400TF-C (LX)
Wavelength	850 nm	1300 nm
Fiber Size	50/125µ, 62.5/125µ	8/125µ, 9/125µ
Output Optical	Min.-9.5, Max.-4 (dBm)	Min.-9.5, Max.-3 (dBm)
Stressed Receiver Sensitivity	Max. -13.5 dBm Avg.	Max. -14.4 dBm Avg.
Max. FDX Fiber Distance	50/125µ, 500m 62.5/125µ, 220m	10Km

DIP Switch Description

No.	Status	Description
1	Off On	FIBER Auto-Negotiation FIBER in 1000Mbps Full Duplex
2	Off On	UTP Link Loss Disabled UTP Link Loss Enabled
3	Off On	FIBER Link Loss Disabled FIBER Link Loss Enabled

Cabling

- Twisted-pair segments can be Unshielded Twisted Pair (UTP) or Shielded Twisted Pair (STP) cabling. The cable must comply with the IEEE 802.3 10/100/1000Base-T standard for Category 5e/6. The cable between the converter and the link partner (switch, hub, workstation, etc.) must be 100 meters (328 ft.) or less in length.

- Fiber segments using Single Mode connectors must use 8/125 or 9/125 μm Single Mode fiber cable. The maximum link distance is 10 Kilometers (6.2 miles) in full duplex operation.

- The maximum distance of fiber segments using Multi-Mode connectors measures 500 meters (1650 ft.) with 50/125μm or 220 meters (726 ft.) with 62.5/125μm Multi-Mode fiber cable.

LED Indicators

There are six diagnostic LEDs located on the front panel of these converters. The LEDs provide real-time information on system status. The indicators include Power, SPD, FDX/COL, and LK/ACT (UTP and fiber). The following table provides describes these LEDs.

| LED	Status	Color	Description
PWR	On	Green	• The converter is supplied with suitable power.
SPD (speed)	On On Off	Green Orange -	• Current UTP Speed is **1000**Mbps • Current UTP Speed is **100**Mbps • Current UTP Speed is **10**Mbps
LK/ACT (UTP)	On Blinking Off	Green - -	• Unit is connected with a link • Unit is transmitting data • No device attached
FDX/COL (UTP)	On Blinking Off	Orange - -	• The UTP port is in full-duplex mode. • Packet Collisions occurring in the port. • Half-duplex mode/no device attached
LK/ACT (Fiber)	On Off	Green -	• Unit is connected with a fiber link • No device attached

Rear Panel

The rear panel contains a power socket. This power socket accepts DC 9V voltage and minimum 700mA supplied current.
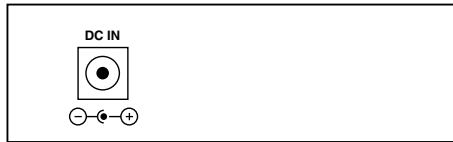
Network Connection

A. Select the appropriate length Category 5e or 6 twisted pair cable. Connect one end of the twisted pair cable to the RJ-45 connector on the converter and the other end of twisted pair cable to the RJ-45 connector on any 10/100/1000Base-T device.

B. Connect one end of a fiber jumper to the SC connector on this converter and the other end of the fiber jumper to the SC connector on the other 1000Base-SX/LX device.
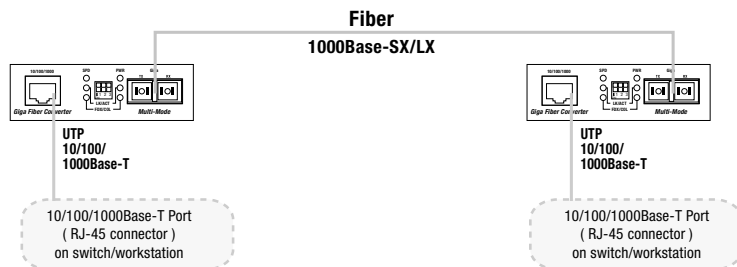

C. Attach the power adapter DC jack to the converter. Verify that the Power LED is on.

D. Verify that the UTP "LK/ACT" LEDs light when cable connection is installed correctly. Verify that Fiber "LK/ACT" LED blinks to indicate network activity.

Installing Converters into Chassis

Follow the steps below to install modular converters into the 10 space Converter Chassis (pn: FEP-593110).

A. Remove the blank bracket from the chassis by rotating screw counterclockwise. Put the blank bracket aside.

B. Open the rack mount bracket kit. The kit contains two rack mount brackets and four screws.
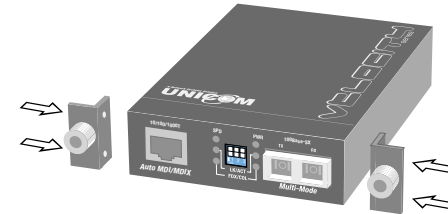
C. Use a screwdriver to attach the rack mount ears to both sides of the modular converter.

D. Install the modular converter by inserting it into the chassis guides and sliding it in until it stops. Press it firmly to seat the chassis power plug into the modular converter receptacle.
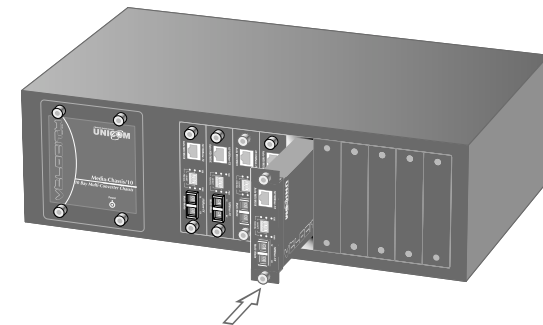
E. Gently push the thumbscrews in and turn clockwise to tighten. *Do not over tighten.*