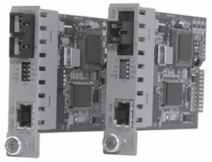
Omnitron Systems Technology, Inc.

iConverter® Gx User Manual

Port 1 (P1)

Port 2 (P2)



iConverter Gx Dual Fiber Modules					
Fiber Type	**Distance**	**Connector Type**			
		ST	**SC**	**MT-RJ**	**LC**
MM	220m/550m	-	8502-0	8504-0	8506-0
SM	12 km	-	8503-1	8505-1	8507-1
SM	34 km	-	8503-2	-	8507-2
SM	80 km	-	8503-3	-	8507-3
SM	140 km	-	8503-5	-	-

iConverter Gx Single-Fiber Modules			
Fiber / Connector Type	**Distance**	**Tx: 1310 nm, Rx: 1550 nm**	**Tx: 1550 nm, Rx: 1310 nm**
SM / SC	20 km	8510-1	8511-1
SM / SC	40 km	8510-2	8511-2

For wide temperature (-40 to 60º C), add a "W" to the end of the model number. Consult factory for extended temperature(-40 to +75º C) models.
When using single-fiber (SF) media converter models, the Tx wavelength on one end has to match the Rx wavelength on the other.
*A minimum of 3dB of attenuation is required for these models.
For complete fiber specifications, refer to this product's data sheet.

ABOUT THIS MANUAL:

This document supports revision "xx/07" of the *iConverter* Gx. Please refer to the serial number label on the Gx for the revision number of your product. This revision incorporates the following improvements to the Gx:

1. Enhanced UTP Auto-Negotiation options.
2. Compatibility with ***NetOutlook*** and NMM version 3.2 or later.

OVERVIEW:

The *iConverter* Gx media converter supports the IEEE 802.3 Ethernet Standard and converts 1000BASE-X fiber to 1000BASE-T unshielded twisted pair (UTP). Models are available for multimode (MM) and single-mode (SM), dual fiber and single-mode single-fiber.

The Gx supports UTP Half-Duplex and Full-Duplex auto-negotiation and features UTP automatic crossover for easy attachment to hubs, switches and workstations.

The Gx can be used in an unmanaged or managed fashion. When unmanaged, it can be installed in a chassis without an *iConverter* Network Management Module (NMM). To be managed, an NMM or a media converter with integrated management, such as the GX/TM, must be installed in the same chassis.

MOUNTING AND CABLE ATTACHMENT:

iConverter modules are hot-swappable and can be installed into any *iConverter* chassis.

Installation Instructions

1. Carefully slide the *iConverter* module into installation slot, aligning the module with installation guides. Ensure that module is firmly seated against backplane.

2. Secure the module by securing panel fastener screw (attached to module) to the front of the chassis.
3. Attach the UTP port via a category 5 cable to a 1000BASE-TX Ethernet device.
4. Attach the fiber port via an appropriate fiber cable (multimode or single-mode) to a 1000BASE-FX Fast Ethernet device. The *iConverter* transmit (TX) must attach to the receive side on other device; the receive (RX) must attach to the transmit.
5. When using single-fiber (SF) media converter models, the TX wavelength on one end has to match the RX wavelength on the other. Based on this guideline, SF media converter models must be used in pairs, such as the 8510-1 matched with the 8511-1.

LINK MODES:

In order to accommodate different user needs, the Gx supports three different linking modes.

In Link Segment (LS), sometimes referred to as Normal mode, a converter port transmits a Link signal independently of any received Link at any other port. For example, the UTP transmits a Link regardless of the fiber receiving a Link [Fig 1(a) & (b)].

In Link Propagate (LP), sometimes referred to as Link Loss Carry Forward, a converter port transmits a Link signal only when receiving a Link at its other port. For example, the UTP transmits a Link only when receiving a Link at the fiber port. [Fig 1(c)].

In Remote Fault Detection + Link Segment (RFD+LS), the fiber port transmits a Link signal only when receiving a Link at the fiber port. As a result, fiber faults (no Link received at the fiber) are looped-back and can be reported to the network core [Fig. 1(d)].

In Remote Fault Detection + Link Propagate (RFD+LP), the UTP port transmits a Link signal only when receiving a Link at the fiber port. The fiber port transmits a Link signal only when receiving a Link signal at both the fiber port and the UTP port. As a result, fiber faults are looped-back and can be reported to the network core [Fig. 1(e)].

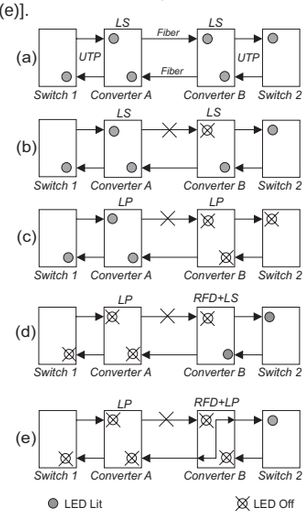


Fig.1 Link Modes

DIP-SWITCH SETTINGS:

Front Panel DIP-Switch Settings:

Link Segment/Link Propagate "LS/LP" DIP-Switch: This DIP-Switch controls Link Segment or Link Propagate modes. When in the "LS" position, Link Segment mode is enabled (factory setting). When in the "LP" position, Link Propagate mode is enabled.

Auto/Manual Negotiate "AN/Man" DIP-Switch: When the Auto/Manual Negotiate "AN/MAN" DIP-Switch is in the Auto-Negotiate "AN" position (factory setting) and the FDX/HDX DIP-Switch is in the "FDX" position, the converter auto negotiates and matches the duplex mode of a mating auto-negotiating device connected to its UTP port. When the "AN/MAN" DIP-Switch is in the "AN" position and the FDX/HDX DIP-Switch is in the "HDX" position, the converter auto-negotiates and operates in half-duplex mode only.

When in the Manual "Man" position, the converter auto-negotiates and operates only in the mode selected by the "FDX/HDX" DIP-Switch.

UTP Full/Half Duplex "FDX/HDX" DIP-Switch: When the Auto/Manual Negotiate DIP-Switch is in the Manual "Man" position, the Full/Half-Duplex "FDX/HDX" DIP-Switch selects the duplex mode for the converter.

When the UTP Full/Half-Duplex DIP-Switch is in the

Full-Duplex "FDX" position (factory setting), the converter operates in Full-Duplex. This is the recommended mode.

When in the "HDX" position, the converter auto-negotiates and operates in Half-Duplex.

When the "AN/Man" DIP-Switch is in the "AN" position, please consult the Auto/Manual Negotiate DIP-Switch section (pg. 5) for information on this setting.

It should be noted that Half-Duplex must be used when connecting to a hub. Full-Duplex can be used when connecting to a switch, or between a switch and a Full-Duplex capable workstation.

UTP Pause Enable/Disable "Pause En/Dis" DIP-Switch: Setting this DIP-Switch to Pause Enable "Pause En" (factory default) allows the UTP port to auto-negotiate to Symmetrical and Asymmetrical Pause. Setting the DIP-Switch to Pause Disable "Dis" forces the UTP port to auto-negotiate only to No Pause. Pause frames are always passed through the converter.

Board Mounted DIP-Switch Settings:

Remote Fault Detection DIP-Switch (Not Shown): The board mounted DIP-Switch controls the Remote Fault Detection function. To enable Remote Fault Detection, change the position of DIP 1 from disable (down, factory default) to enable (up).

When this DIP-Switch is in the enable (up) position and the "LS/LP" DIP-Switch is in the "LS" position, Remote Fault Detection + Link Segment mode is enabled. In

RFD+LS mode, the fiber port transmits a Link signal only when receiving a Link at the fiber port. As a result, fiber faults (no Link received at the fiber) are looped-back and can be reported to the network core.

When this DIP-Switch is in the enable (up) position and the "LS/LP" DIP-Switch is in the "LP" position, Remote Fault Detection + Link Propagation mode is enabled. In RFD+LP mode, the Gx propagates the presence or absence of an incoming Link signal from a Fiber port receive side to the transmit side of both the Fiber and the UTP ports.

Note that connecting two converters when both are set to RFD mode is illegal and will cause a "deadly embrace" lockup.

The Gx fiber port is always in Manual Mode, and sometimes a link-up will not occur with other devices. A user must switch the connected device to Manual Mode.

LED INDICATORS:

LED	Color	Description
Pwr:	Yellow	On--Power on
F/O Lk:	Green	On--Link; Blink--Activity
FDx:	Green	On--Full-Duplex mode
UTP/Link:	Green	On--UTP Link; Blink--Activity

Gx SPECIFICATIONS:

Model Type	Gx
Protocols	1000BASE-SX/LX, 1000BASE-T
UTP Connectors	RJ-45
Fiber Connectors	SC, LC, MT-RJ, Single-Fiber SC
Controls	LS/LP, RFD, UTP, FDX/HDX, AN/Man, Pause En
LED Displays	Power, FO link, UTP link, FDX/HDX
Dimensions	W:0.85" x D:4.5" x H:2.8"
Weight	8 oz.
Compliance	UL, CE, FCC Class A, NEBS Level 3
Power Requirement	1.4A @ 3.3VDC (typical)
Temperature	Standard: 0 to 50º C Wide: -40 to 60º C Storage: -40 to 80º C
Humidity	5 to 95% (non-condensing)
Altitude	-100m to 4000m
MTBF (hrs)	1,100,000

Warning

The operating description in this Instruction Manual is for use by qualified personnel only. To avoid electrical shock, do not perform any servicing of this unit other than that contained in the operating instructions, unless you are qualified and certified to do so by Omnitron Systems Technology, Inc.

Warranty

This product is warranted to the original purchaser against defects in material and workmanship for a period of TWO YEARS from the date of shipment. A LIFETIME warranty may be obtained by the original purchaser by REGISTERING this product with Omnitron within 90 days from the date of shipment. TO REGISTER, COMPLETE AND MAIL OR FAX ENCLOSED REGISTRATION FORM. Or you may register your product on the Internet at www.omnitron-systems.com. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective.

For warranty service, the product must be sent to an Omnitron designated facility, at Buyer's expense. Omnitron will pay the shipping charge to return the product to Buyer's designated US address using Omnitron's standard shipping method.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including removal of equipment cover by personnel

not specifically authorized and certified by Omnitron), or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

No other warranty is expressed or implied. Omnitron specifically disclaims the implied warranties of merchantability and fitness for any particular purpose.

Exclusive Remedies

The remedies provided herein are the Buyer's sole and exclusive remedies. Omnitron shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

Technical Support:

For help with this product, contact our Technical Support:

Phone: (949) 250-6510
Fax: (949) 250-6514
Address: Omnitron Systems Technology, Inc.
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Irvine, CA 92618 USA
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Form: 040-08500-001K 1/10