



## DESCRIPTION

The iConverter GX/X is a two-port Gigabit Ethernet Fiber switch and media converter. The iConverter GX/X regenerates, reshapes and re-times the fiber optic signal, and multiple GX/X converters can be cascaded to extend total network distances.

The iConverter GX/X features two 10/100 Ethernet backplane ports to provide connectivity to adjacent modules for network expansion and for in-band connectivity to an iConverter Network Management Module

See data sheet for available models.

The GX/X can be used in an unmanaged or managed applications. To be managed, an Network Management Module (NMM2) or a module with integrated management must be installed in the same chassis.

For more information on management software and hardware options, see [Comprehensive Network Management Solution product page](#).

## Advanced Features

The GX/X features Port VLAN and Tag VLAN, which allow control of traffic flow among the fiber ports and chassis backplane ports. It also features Port Access Control, which facilitates enabling and disabling of individual ports.

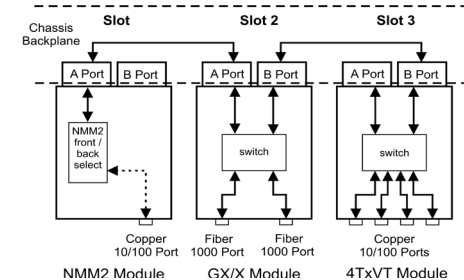
The GX/X supports reporting of MIB statistics. Statistics are available for 32 variables per port, reporting a wide range of real-time packet statistics to provide performance and operational monitoring.

## PORT STRUCTURE

The GX/X module has two front Gigabit Ethernet ports and two 10/100 Ethernet backplane port. The front ports allow connections to external devices and the backplane ports allow connections to adjacent module in an iConverter chassis. The backplane ports on the module are enabled using the on-board DIP-switches.

Multi-slot iConverter chassis have backplane ports that allow connectivity to adjacent slots. Backplane Port A allows connectivity between Odd Slot numbers to Even Slot numbers (1 to 2, 3 to 4, etc). Backplane Port B allows connectivity between Even Slot numbers to Odd Slot numbers (2 to 3, 4 to 5, etc).

The figure below illustrates one of the many applications of the GX/X module when enabling the backplane feature on each module.



## SOFTWARE CONTROLLED SETTINGS

Advanced settings are available via software control when a GX/X is installed in an iConverter chassis with a Management Module.

The following software only settings can be controlled via Serial Console/Telnet Console, NetOutlook Management Software or other third-party SNMP-based clients:

- Backplane Control
- Port 1 and Port 2 Configuration
- Port VLAN for Front Ports and Backplane Ports
- Port Access Control for All Ports
- MIB Statistics Reporting

Software controlled settings can be selected to override DIP-Switch settings.

For more information on using and configuring the Advanced Features, register for access to the [NetOutlook Management Software user manual](#).

## MOUNTING AND CABLE ATTACHMENT

The iConverter modules are hot-swappable and can be installed into [any iConverter chassis](#).

**Caution: Use proper ESD protection to reduce the risk of damage to your equipment.**

**NOTE: The GX/X should not be installed in the 1-slot chassis because of power and heat constraints.**

1. Carefully slide the module into an open slot in the chassis. Align the module with the installation guides and ensure that the module is firmly seated against the backplane. Secure the module by fastening the front panel thumbscrew (push in and turn clockwise to tighten) to the chassis front. Verify the "Pwr" LED is ON (indicating the chassis is powered).

2. Connect an appropriate multimode or single-mode fiber cables to the fiber ports of the installed module. It is important to ensure that the transmit (TX) is attached

For more information on backplane connectivity, refer to the specific [chassis user manual](#).

## DIP-SWITCH SETTINGS

### Front Panel DIP-Switches

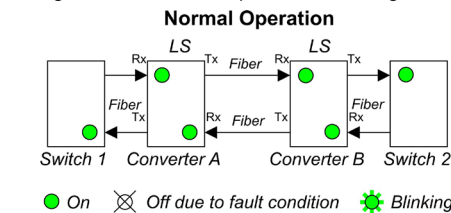


### Link Modes

LS/LP	RFD	SFD	Link Mode
Left	Left	Left	Link Segment (LS)
Right	Left	Left	Link Propagate (LP)
Left	Right	Left	Remote Fault Detect + Link Segment (RFD+LS)
Right	Right	Left	Remote Fault Detect + Link Propagate (RFD+LP)
Left	Left	Right	Symmetrical Fault Detect (SFD)

**Any other DIP-Switch combination will result in unpredictable conditions.**

In order to accommodate different user needs, the GX/X supports four different linking modes. In default configuration, the module operates in Link Segment.

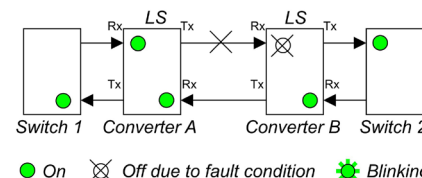


## SPECIFICATIONS

<b>Standard Compliances</b>	IEEE 802.3, 802.1Q RFC 2819 (RMON)
<b>Regulatory Compliances</b>	Safety: UL, CE, UKCA EMI: FCC Class A ACT: TAA, BAA, NDAA
<b>Environmental</b>	RoHS, WEEE, REACH
<b>Frame Size</b>	Up to 1,536 bytes
<b>Port Types</b>	Fiber: 1000BASE-X
<b>Cable Types</b>	Fiber: Multimode: 50/125µm, 62.5/125µm Single-mode: 9/125µm
<b>DC Power Requirements</b>	DC Input: 3.3VDC, 2.2A @ 3.3VDC (Backplane)
<b>Dimensions W x D x H</b>	0.85" x 4.5" x 2.8" (21.6 mm x 114.3 mm x 71.1 mm)
<b>Weight</b>	8 oz. (226.8 grams)
<b>Temperature</b>	Commercial: 0 to 50°C Wide: -40 to 60°C Storage: -40 to 80°C
<b>Humidity</b>	5 to 95% (non-condensing)
<b>Altitude</b>	-100m to 4,000m
<b>MTBF (hrs)</b>	640,000
<b>Warranty</b>	Lifetime warranty and 24/7/365 free Technical Support

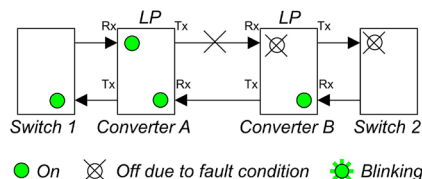
The Link Segment (LS) mode transmits a link signal independently of any received link at any port. Utilizing this configuration, a loss of a receive link signal will only affect the port detecting the loss of signal. All the other ports will continue to generate a link signal.

### Fiber Fault with Link Segment



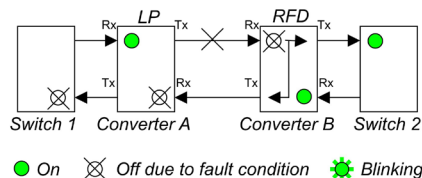
The Link Propagate (LP) mode transmits a link signal only when a link signal is detected. Utilizing this configuration, a loss of a receive link signal will continue to propagate through to the next port in the network.

### Fiber Fault with Link Propagate



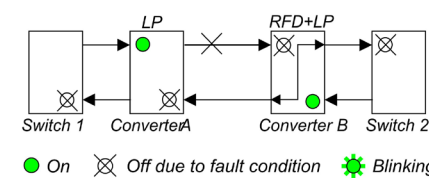
The Remote Fault Detection + Link Segment (RFD+LS) mode transmits a link signal only when a link signal is detected. When a loss of link is detected, this mode will loop back the fault condition.

### Fiber Fault with RFD + LS Link Mode



The Remote Fault Detection + Link Propagate (RFD+LP) mode transmits a link signal only when a link signal is detected. When a loss of link is detected, this mode will loop back and propagate forward the fault condition.

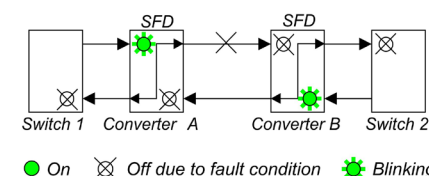
### Fiber Fault with RFD+LP Link Mode



**NOTE: Connecting two modules set to RFD is an illegal setting and will cause unpredictable conditions.**

In Symmetrical Fault Detection (SFD), Port 2 transmits a Link signal only when receiving a Link on Port 1. Port 1 transmits a Link signal only when receiving a Link signal at both the Port 1 and Port 2. As a result, faults (no Link received on Port 1) are looped back and can be reported to the network core. In addition, connecting two back-to-back modules which are both set to SFD facilitates dual-loop-back, where faults are reported to both ends of the network link. A blinking fiber link LED on a module indicates a fault of the transmit port or cables of that port.

### Fiber Fault with SFD Link Mode



**NOTE: SFD mode must be deployed in pairs.**

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This product is warranted to the original purchaser (Buyer) against defects in material and workmanship for a period of two (2) years from the date of shipment. A lifetime warranty may be obtained by the original purchaser by registering this product at [www.omnitron-systems.com/support](http://www.omnitron-systems.com/support) within ninety (90) days from the date of shipment. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective with the same product or with a product with at least the same functionality.

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 product malfunctions 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.

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## Environmental Notices

The equipment covered by this manual must be disposed of or recycled in accordance with the Waste Electrical and Electronic Equipment Directive (WEEE Directive) of the European Community directive 2012/19/EU on waste electrical and electronic equipment (WEEE) which, together with the RoHS Directive 2015/863/EU, for electrical and electronic equipment sold in the EU after July 2019. Such disposal must follow national legislation for IT and Telecommunication equipment in accordance with the WEEE directive: (a) Do not dispose waste equipment with unsorted municipal and household waste. (b) Collect equipment waste separately. (c) Return equipment using collection method agreed with Omnitron.

The equipment is marked with the WEEE symbol shown to indicate that it must be collected separately from other types of waste. In case of small items the symbol may be printed only on the packaging or in the user manual. If you have questions regarding the correct disposal of equipment go to [www.omnitron-systems.com/support](http://www.omnitron-systems.com/support) or e-mail to Omnitron at [intlinfo@omnitron-systems.com](mailto:intlinfo@omnitron-systems.com).



## Board Mounted DIP-Switch



Figure 4 Board Mounted DIP-Switches

### Backplane A Enable "BP A-EN"

When this DIP-switch is in the "BP A-EN" RIGHT position, backplane A is enabled and the module is connected to the adjacent slots in the chassis. When this DIP-switch is in the LEFT position (factory setting), the backplane port is disabled and disconnected from the backplane.

### Backplane B Enable "BP B-EN"

When this DIP-switch is in the "BP B-EN" RIGHT position, backplane B is enabled and the module is connected to the adjacent slots in the chassis. When this DIP-switch is in the LEFT position (factory setting), the backplane port is disabled and disconnected from the backplane.

### Fiber Port 1 Negotiation "AN/MAN"/Manual

When this DIP-switch is in the "AN" LEFT position (factory setting), Port 1 is operating in auto-negotiation. The port will determine duplex mode automatically. If the device connected to Port 1 cannot provide the proper signal to indicate its own mode of operation, then the DIP-Switch should be set to the "MAN" RIGHT position, forcing Port 1 to Full-Duplex mode.

### Fiber Port 2 Negotiation "AN/MAN"/Manual

When this DIP-switch is in the "AN" LEFT position (factory setting), Port 2 is operating in auto-negotiation. The port will determine duplex mode automatically. If the device connected to Port 2 cannot provide the proper signal to indicate its own mode of operation, then the DIP-Switch should be set to the "MAN" RIGHT position, forcing Port 2 to Full-Duplex mode.

**NOTE: Both devices must be configured to the same mode of operation or the port will not link.**

## Safety Warnings and Cautions



ATTENTION: Observe precautions for handling electrostatic discharge sensitive devices.



WARNING: Potential damage to equipment and personal injury.



WARNING: Risk of electrical shock.

## Customer Support Information

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