Omnitron Systems

FlexPoint™ GX/T User Manual

DESCRIPTION

The FlexPoint GX/T is a 10/100/1000BASE-T copper to 1000BASE-X fiber media converter that supports jumbo frames up to 10,240 bytes. The GX/T features Small Form Pluggable (SFP) transceivers that support both 100BASE-FX and 1000BASE-X for interoperability with Gigabit and Fast Ethernet fiber equipment.

See data sheet for supported models.

POWER ADAPTER NOTICE

When used in a stand-alone configuration, this product should always be used with its enclosed Power Adapter.

WARNING

Before plugging the Power Adapter to any wall outlet or AC power source, verify that the power on the unit is appropriate for your AC line voltage source.

NOTE: If mounting with a safety ground attachment, use the safety ground screw at the rear of the unit.

NOTE: Remove safety ground screw when installing the module in the 14-Module Chassis or when using it with the DC-DC Converter (Model # 4384)

SWITCH SETTINGS

SW1 → SW10

F/O		UTP				Pause	LB	Link Mode	
MAN	100	MAN	10/100	10	HDx	On	On	LP	RFD
AN	1000	AN	1000	100	FDx	Off	Off	LS	Norm

SW1: F/O “MAN/AN”

When this DIP-switch is in the “AN” position (factory default), the port automatically determines the duplex and pause modes of the connected device. If the connecting device cannot provide the proper signal to indicate its own mode of operation, the DIP-switch should be set to the “MAN” position. When in manual mode, no capabilities are advertised and the port operates in full-duplex mode.

NOTE: When the fiber port is in Manual Mode, a link-up may not occur with other devices. Both devices must be set to the same mode (either Manual or Auto-Negotiate) for the link-up to occur.

When set to “AN”, the fiber port will automatically reconfigure to manual mode when an auto-negotiation connection cannot be established.

SW2: F/O “100/1000”

The GX/T SFP model supports 100BASE-FX and 1000BASE-X SFPs. This DIP-switch sets the SFP port speed. Setting this DIP-switch to “1000” enables the fiber port to accept 1000BASE-X SFPs. Setting this DIP-switch to “100” enables the fiber port to accept 100BASE-FX SFPs.

SW2: OPT1 (not shown)

For fixed fiber models, this DIP-switch is ignored.

SW3 - SW6: RJ-45 Configuration

SW3	SW4	SW5	SW6	RJ-45 Mode of Operation
AN	1000	10 or 100	FDx	Configured for auto-negotiation: (1000F, 1000H, 100F, 100H, 10F, 10H)
AN	1000	10 or 100	HDx	Configured for auto-negotiation: (1000H, 100F, 100H, 10F, 10H)
AN	10/100	100	FDx	Configured for auto-negotiation: (100F, 100H, 10F, 10H)
AN	10/100	100	HDx	Configured for auto-negotiation: (100H, 10F, 10H)
AN	10/100	10	FDx	Configured for auto-negotiation: (10F, 10H)
AN	10/100	10	HDx	Configured for auto-negotiation: (10H)
MAN	1000	N/A	FDx	Configured for auto-negotiation: (1000F)
MAN	1000	N/A	HDx	Configured for auto-negotiation: (1000H)
MAN	10/100	100	FDx	Port forced to: 100F
MAN	10/100	100	HDx	Port forced to: 100H
MAN	10/100	10	FDx	Port forced to: 10F
MAN	10/100	10	HDx	Port forced to: 10H

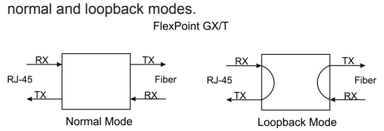
When the module is configured for auto-negotiation, the module will advertise in the order shown in the parenthesis.
When configured for MAN 1000, the port is configured for auto-negotiation.

SW7: Pause “On/Off”

In “AN mode, setting this DIP-switch to “On” allows the module to advertise as Symmetrical and Asymmetrical Pause capability. In “AN” mode, setting the DIP-switch to “Off” causes the module to advertise no Pause capability. In the “MAN” mode, this DIP-switch determines the Symmetrical Pause behavior.

SW8: LB “On/Off”

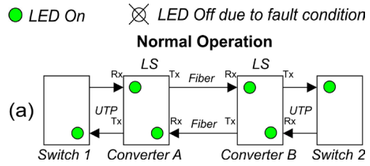
Setting this DIP-switch “On” enables loopback on the fiber and RJ-45 ports. The figure below shows the module in normal and loopback modes.



SW9 - SW10: Link Modes

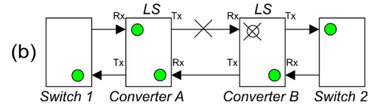
SW9	SW10	Link Mode
LS	Norm	Link Segment (LS)
LP	Norm	Link Propagate (LP)
LS	RFD	Remote Fault Detect + Link Segment (RFD+LS)
LP	RFD	Remote Fault Detect + Link Propagate (RFD+LP)

NOTE: RFD is only available when the fiber port is operating in manual mode.



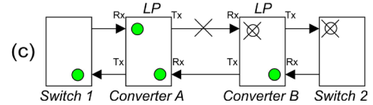
In Link Segment (LS), each port detects and displays link status independently of the status of the other port. See Figure b.

Fiber Fault with Link Segment



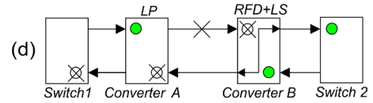
In Link Propagate (LP), a loss of any link is propagated to the other port, causing the link on the other port to drop. See Figure c.

Fiber Fault with Link Propagate



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

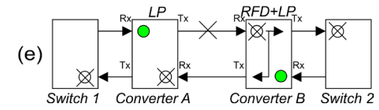
Fiber Fault with RFD+LS Link Mode



In Remote Fault Detection + Link Propagate (RFD+LP), the port transmits a Link signal only when receiving a Link signals at both the fiber port and the RJ-45 port. As a result, faults (no Link received at the fiber) are propagated forward

and looped back for fault reporting at both the network core and the customer location. See Figure e.

Fiber Fault with RFD+LP Link Mode



NOTE: Connecting two converters with both set to RFD mode is not supported and will cause a “deadly embrace” lockup.

REMOTE FAULT

When a port is configured for auto-negotiation and the port detects a loss of incoming signal, it will set the remote fault bit “high” in the AN advertisement.

When the fiber port is operating in 100BASE-FX, a loss of incoming signal will cause the port to generate a Far-End-Fault indicator pattern.

MOUNTING

The FlexPoint GX/T can be DIN-rail mounted using the DIN-rail mounting bracket (8250), wall-mounted using a wall mounting kit (4380), rack-mounted using a 5-Module shelf (4392) or inserted in a 14-Module FlexPoint Powered Chassis.

To power the module using the AC power adapter, connect the barrel connector at the end of the wire on the power adapter to the barrel connector on the module. Connect the power adapter to the AC outlet. Confirm that the module has powered up properly by checking the Power LED.

Attach the fiber cables to the fiber port. The transmit (Tx) must attach to the receive side on the device at the far

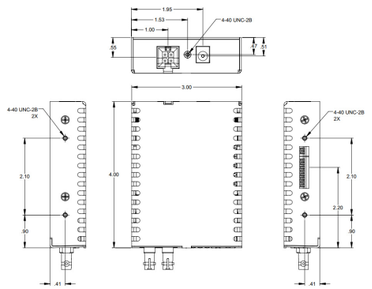
end of the fiber and the receive (Rx) must attach to the transmit side.

When using single-fiber (SF) models, the TX wavelength must match the RX wavelength at the other end and the RX wavelength must match the TX wavelength at the other end

NOTE: For SFP models, the release latch of the SFP fiber transceiver must be in the closed (up) position before insertion.

Connect a Category 5 or higher Ethernet cable to the RJ-45 port on the module and connect the other end to a 10/100/1000 capable device.

MECHANICAL



LED INDICATORS

LED	Color	Description
Power / Test “Power”	Green	**OFF:** No power **ON:** Module has power **Blinking:** Module is in loopback mode
P1 Mode “AN”	Green	**OFF:** Port configured for manual **ON:** Port configured for AN **Blinking:** Port configured for AN but in manual
P1 Speed “100” (SFP model only)	Green	**OFF:** Port not linked at 100M **ON:** Port linked at 100M **Blinking (10Hz):** Data activity **Blinking (1Hz):** Unable to establish a link
P1 Speed “1000”	Green	**OFF:** Port not linked at 1000M **ON:** Port linked at 1000M **Blinking (10Hz):** Data activity **Blinking (1Hz):** Unable to establish a link **Pattern Blinking:** AN Remote Fault detected
P2 Duplex “FDx”	Green	**OFF:** Half duplex **ON:** Full duplex
P2 Mode “AN”	Green	**OFF:** Port configured for manual **ON:** Port configured for AN **Blinking:** Port configured for AN but in manual
P2 Speed “100”	Green	**OFF:** Port not linked at 100M **ON:** Port linked at 100M **Blinking (10Hz):** Data activity
P2 Speed “1000”	Green	**OFF:** Port not linked at 1000M **ON:** Port linked at 1000M **Blinking (10Hz):** Data activity
P2 Speed “100” + “1000”	Green	**OFF:** Port not linked at 10M **ON:** Port linked at 10M **Blinking (10Hz):** Data activity **Pattern Blinking:** AN Remote Fault detected
P2 Fault “AN” +“100” +“1000”	Green	**Blinking (1Hz):** Unable to establish AN link on port P2

SPECIFICATIONS

Standard	IEEE 802.3	
Regulatory Compliances	Safety: EMI: ACT:	UL, CE, UKCA FCC Class A TAA, BAA, NDAA
Environmental	RoHS, REACH, WEEE	
Frame Size	Up to 10,240 bytes	
Port Types	Copper: Fiber:	10/100/1000BASE-T (RJ-45) 100BASE-FX (SFP) 1000BASE-X (ST, SC, LC, SFP)
Cable Types	Copper: Fiber:	EIA/TIA 568A/B, Cat 5 and higher Multimode: 50/125µm, 62.5/125µm, Single-mode: 9/125µm
AC Power Requirements	AC Adapter:	100 - 240VAC/50 - 60Hz 0.03A @ 120VAC (max)
DC Power Requirements	DC Input: (AC Adapter)	+5.0 to +32VDC 0.3A @ 9VDC 2.5mm Barrel
	DC Input: (Molex Connector)	+4.75 to +5.25VDC, 0.5A @ 5VDC
Dimensions W x D X H	3.0” x 4.0” x 1.0” (76.2 mm x 101.6 mm x 25.4 mm)	
Weight	6 oz. (170.1 grams)	
Temperature	Commercial: Wide:	0 to 50°C -40 to 60°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	Module: AC Adapter (-1): AC Adapter (-2):	900,000 250,000 100,000
Warranty	Lifetime warranty with 24/7/365 free Technical Support	

Warranty

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 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.

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

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.

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.omniton-systems.com/support or e-mail to Omnitron at intlinfo@omnitron-systems.com.

Technical Support:

Phone: (949) 250-6510
Fax: (949) 250-6514
Address: Omnitron Systems Technology
38 Tesla
Irvine, CA 92618 USA
E-mail: support@omnitron-systems.com
URL: http://www.omnitron-systems.com

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