



**DESCRIPTION**

The GX/T2 is a 10/100/1000BASE-T copper to 100BASE-FX or 1000BASE-X modular fiber media converter that supports jumbo frames up to 10,240 bytes. The GX/T2 features Small Form Pluggable (SFP) transceivers that support both 100BASE-FX and 1000BASE-X for interoperability with Fast Ethernet and Gigabit fiber equipment.

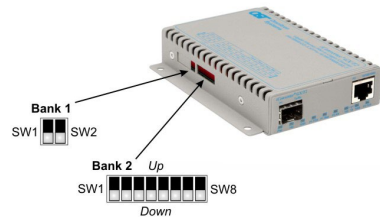
See data sheet for available models.

**DIP-SWITCHES**

**DIP-Switch Bank 1**

The location of the DIP-switches is shown below.

**DIP-switch Locations**



The functions of DIP-switch Bank 1 are shown below.

Switch	Function	DOWN (Default)	UP
SW1	L2CP Block	Forward	Discard
SW2	Reserved	Off	On

**SW1: L2CP Block**

When this DIP-switch is in the default DOWN position, the module will forward all L2CP frames. When the DIP-switch is in the UP position, the module will discard all L2CP frames.

**SW2: Reserved**

This DIP-switch is reserved and must be in the DOWN (default) position.

**DIP-Switch Bank 2**

The functions of DIP-switch Bank 2 are shown below.

Switch	Function	DOWN (Default)	UP
SW1	Port 1 Speed	Auto	100
SW2	Port 2 Negotiation	Auto	Man
SW3	Port 2 Speed	100	10
SW4	Port 2 Duplex	Full (FDX)	Half (HDX)
SW5	Link Propagate Port 1 to Port 2	Link Segment	P1 to P2
SW6	Link Propagate Port 2 to Port 1	Link Segment	P2 to P1
SW7	Pause	Off	On
SW8	MAC Learning	On	Off

**SW1: Port 1 Speed**

This DIP-switch configures the speed of the transceiver installed in Port 1. If the DIP-switch is in the DOWN "Auto" (default) position, the port detects the data rate of the transceiver installed and operates at 100M or 1G accordingly. If the DIP-switch is in the UP "100" position, the port is expecting a 100M capable transceiver to be installed.

**NOTE: SW1 is not available for fixed fiber models. The fiber port is always set to 1000.**

**SW2: Port 2 Negotiation**

This DIP-switch configures Port 2 for Auto Negotiation or Manual operation.

**SW3 - SW4: Port Negotiation, Speed and Duplex**

Copper port configurations are outlined below.

Negotiation SW2	Speed SW3	Duplex SW4	RJ-45 Mode of Operation
AN	10 or 100	FDX or HDX	When set to AN the following modes are advertised: 1000FDX, 1000HDX, 100FDX, 100HDX, 10FDX, 10HDX
Man	100	FDX	Port is set to manual 100FDX
Man	100	HDX	Port is set to manual 100HDX
Man	10	FDX	Port is set to manual 10FDX
Man	10	HDX	Port is set to manual 10HDX

**SW5 and SW6: Link Modes**

These DIP-switches configure the link mode settings. It is recommended to have link modes DOWN position (default) during the initial installation. After the circuit has been tested and operational, configure the module for the desired mode. See Link Mode application note for more information.

**Link Segment**

In Link Segment mode, all ports operate independently. 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.

**Link Propagate**

In Link Propagate mode, faults are propagated based on the port notation. Port 1 to Port 2 notation indicates the direction the loss of link signal will propagate. A loss of

receive link on Port 1 causes Port 2 to drop its link due to the propagated state (Port 1 to Port 2).

Port 2 to Port 1 notation indicates the direction the loss of link signal will propagate. A loss of receive link on Port 2 causes Port 1 to drop its link due to the propagated state (Port 2 to Port 1).

SW5	SW6	Function
DOWN	DOWN	Link Segment
DOWN	UP	Link Propagate Port 2 to Port 1
UP	DOWN	Link Propagate Port 1 to Port 2
UP	UP	Reserved

**SW7: Pause**

The Pause DIP-switch sets the flow control functionality for all ports on the module, including pause mode advertisement, pause functionality, and half duplex back pressure. When the DIP-switch is in the UP "On" position, flow control functionality is enabled. When this DIP-switch is in the DOWN "Off" position (factory default), flow control functionality is disabled.

If Pause is On and the port is in half duplex, then half duplex flow control is enabled. When a port is in half duplex flow control it generates a back pressure signal when internal buffer resources are low.

If Pause is On and the port is in full duplex, then full duplex flow control is enabled. When a port is in full duplex flow control and internal buffering resources are low, a pause frame is generated to slow down the traffic flow to the port.

**SW8: MAC Learning**

When this DIP-switch is in the DOWN "On" position (factory default), all ports on the module will learn the source MAC address of each received packet and store the address so packets destined for the stored addresses can be forwarded to the appropriate interface on the module. When the DIP-switch is in the UP "Off" position, learning is turned off and all received packets are forwarded to all ports.

**MOUNTING AND CABLE ATTACHMENT**

The GX/T2 is available as a standalone module with or without integrated wall-mount brackets. Attach the unit to a wall, backboard or other flat surfaces. Make sure the unit is placed in a safe, dry and secure location.

**For AC models:**

To power the unit using the AC/DC adapter, connect the AC/DC adapter to an AC outlet. Then connect the barrel plug at the end of the wire on the AC/DC adapter to the 2.5mm DC barrel connector (center-positive) on the unit. Confirm that the unit has powered up properly by checking the power status LED located on the front of the unit.

**For DC Models:**

To power the unit using a DC power source, prepare a power cable using a two conductor insulated wire (not supplied) with 12AWG to 14AWG thickness. Cut the power cable to the length required. Strip approximately 3/8 of an inch of insulation from the power cable wires. Connect the power cables to the unit by fastening the stripped ends to the DC power connector.

Connect the power wires to the DC power source. The Power LED should indicate the presence of power.

WARNING: Note the wire colors used in making the positive and negative connections. Use the same color assignment for the connection at the DC power source.

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

1. Insert the SFP fiber transceivers into the SFP receptacles on the module.

**NOTE: The release latch of the SFP transceiver must be in the closed (up) position before insertion.**

The GX/T2 module has the ability to detect the speed and automatically configure the port to match the speed of Omnitron SFP transceivers. For non-Omnitron transceivers, configure the port for the correct speed of the transceiver using SW1 of DIP-switch Bank 2.

2. Connect the RJ-45 port via a Category 5 or better Ethernet cable to a 10BASE-T, 100BASE-TX or 1000BASE-T Ethernet devices.

3. 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 to the receive side of the device at the other end and the receive (RX) is attached to the transmit side. Single-fiber (SF) media converter models operate in pairs. 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.

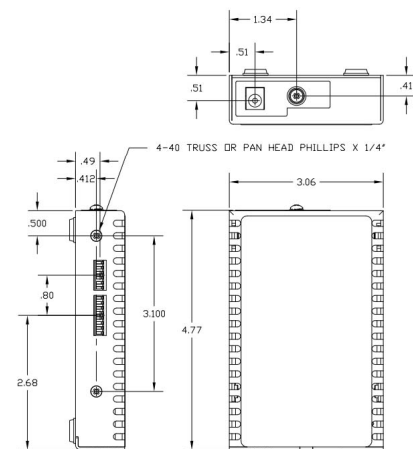
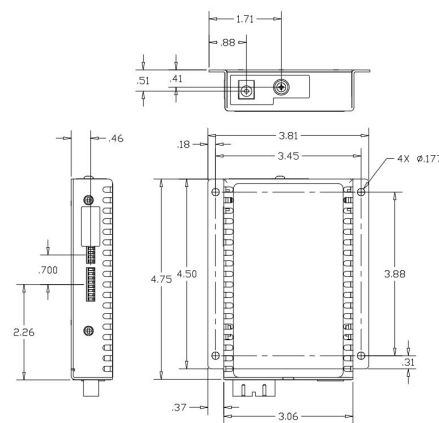
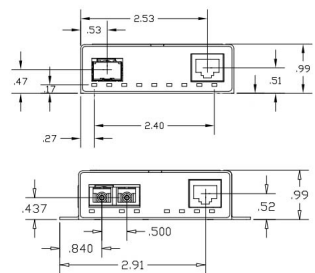
**LED INDICATORS**

LED	Color	Description
Power "PWR"	Green	<b>OFF:</b> No power applied or module is not operational <b>ON:</b> Module has power
P1 Activity "100"	Green/Amber	<b>OFF:</b> Port is not linked at 100M <b>Solid Green:</b> Port linked at 100M <b>Blinking Green:</b> Data activity <b>Blinking Amber:</b> Operating at 100M and receiving FEF1
P1 Activity "1000"	Green/Amber	<b>OFF:</b> Port is not linked at 1000M <b>Solid Green:</b> Port linked at 1000M <b>Blinking Green:</b> Data activity <b>Blinking Amber:</b> Operating at 1000M and receiving a remote fault
P1 Activity "100" and "1000"	Green	<b>OFF:</b> Port is not linked at 10M <b>Solid Green:</b> Port linked at 100M <b>Blinking Green:</b> Data activity
P1 Duplex "FDX"	Green	<b>OFF:</b> Configured for half duplex per DIP-switch or resolved by auto-negotiation <b>Solid Green:</b> Configured for full duplex per DIP-switch or resolved by auto-negotiation
P1 SFP DMMI Alarm "Stat1"	Green/Amber	<b>OFF:</b> Installed transceiver does not support digital diagnostics or no transceiver installed <b>Solid Green:</b> Installed transceiver supports digital diagnostics and no alarm detected <b>Solid Amber:</b> Transceiver has detected an alarm

LED	Color	Description
P2 Negotiation Mode "AN"	Green	<b>OFF:</b> Configured for Manual operation <b>Solid Green:</b> Configured for Auto-negotiation <b>Blinking Green:</b> Configured for auto-negotiation but has not completed the process with link partner
P2 Activity "100"	Green/Amber	<b>OFF:</b> Port is not linked at 100M <b>Solid Green:</b> Port is linked at 100M <b>Blinking Green:</b> Data activity <b>Blinking Amber:</b> Receiving a remote fault at 100Mbps
P2 Activity "1000"	Green/Amber	<b>OFF:</b> Port is not linked at 1000M <b>Solid Green:</b> Port is linked at 1000M <b>Blinking Green:</b> Data activity <b>Blinking Amber:</b> Receiving a remote fault at 1000Mbps
P2 Activity "100" and "1000"	Green	<b>OFF:</b> Port is not linked at 10M <b>Solid Green:</b> Port is linked at 1000M <b>Blinking Green:</b> Data activity
P2 Duplex "FDX"	Green	<b>OFF:</b> Configured for half duplex per DIP-switch or resolved by auto-negotiation <b>Solid Green:</b> Configured for full duplex per DIP-switch or resolved by auto-negotiation

<sup>1</sup> LEDs are not installed on the fixed fiber models

**MECHANICAL**



**SPECIFICATIONS**

<b>Standard Complies</b>	IEEE 802.3
<b>Regulatory Complies</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 10,240 bytes
<b>Port Types</b>	Copper: 10/100/1000BASE-T (RJ-45) Fiber: 100BASE-X (SFP Model Only) 1000BASE-X
<b>Cable Types</b>	Copper: EIA/TIA 568A/B, Cat 5 UTP and higher Multimode: 50/125µm, 62.5/125µm Fiber: Single-mode: 9/125µm
<b>AC Power Requirements</b>	AC Adapter: 100 - 240VAC/50 - 60Hz 0.06A @ 120VAC (max)
<b>DC Power Requirements</b>	DC Input: 7 - 60VDC, 0.7A max 2-Pin Terminal (non-isolated) DC Input: 7 - 60VDC, 0.7A max (AC Adapter) 2.5mm Barrel Connector
<b>Dimensions W x D x H</b>	Standalone: 3.1" x 4.8" x 1.0"(78.7 mm x 121.9 mm x 25.4 mm) Standalone with Mounting Brackets: 3.8" x 4.8" x 1.0"(96.5 mm x 121.9 mm x 25.4 mm)
<b>Weight</b>	1.0 lb. (453.6 grams) - without AC Adapter 1.5 lbs. (680.4 grams) - with AC Adapter
<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>	722,000 - Module 250,000 - Module with US AC Adapter 100,000 - Module with Universal AC Adapter
<b>Warranty</b>	Lifetime warranty and 24/7/365 free Technical Support

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**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](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.

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.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).



**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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