Omnitron Systems

iConverter® **XGT+ Standalone User Manual**

This describes the functions of the iConverter XGT+ Revision 2. The product revision can be found on the small white label on the bottom of the module. The label is marked xx/yy, where yy is the revision number.

DESCRIPTION

The iConverter XGT+ is a 10 Gigabit Ethernet media converter with one 10GBASE-T RJ-45 port and one XFP or SFP+ pluggable transceiver port that provides copper-to-fiber media conversion.

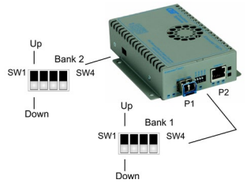
The XGT+ supports high-power (power level 4) XFP transceivers, and the latest generation of wavelength tunable DWDM XFP transceivers.

See data sheet for available models.

DIP-SWITCH SETTINGS

DIP-Switch Bank 1

The location of the DIP-switches is shown below.



The function of the DIP-switches is described below.

Switch	DOWN (Default)	UP
SW1	Normal	P1 Loopback Enabled
SW2	Normal	P2 Loopback Enabled
SW3	Normal	P2 Short Range
SW4	Normal	P1 Built-In Self Test (BIST)

SW1 - P1 LOOPBACK "P1-LB"

When this DIP-switch is in the DOWN position (factory default), port P1 loopback is disabled. When this DIP-switch is in the UP "P1-LB" position, loopback is enabled on port P1. When enabled, all data received on port P1 is transmitted out port P1 and the connection between port P1 and port P2 is interrupted.

NOTE: Simultaneous loopback of port P1 and port P2 is not supported on XFP models.

SW2 - P2 LOOPBACK "P2-LB"

When this DIP-switch is in the DOWN position (factory default), port P2 loopback is disabled. When this DIP-switch is in the UP "P2-LB" position, loopback is enabled on port P2. When enabled, all data received on port P2 is transmitted out port P2 and the connection between port P2 and port P1 is interrupted.

NOTE: Simultaneous loopback of port P1 and port P2 is not supported on XFP models.

SW3 - P2 Short Range

When this DIP-switch is in the DOWN position (factory default), port P2 short range feature is disabled. When disabled, port P2 will support up to 100 meters of CAT 6A cabling. When this DIP-switch is in the UP "P2-SR" position, port P2 will support up to 30 meters of CAT 5E or better cabling in a reduced power consumption mode. The SR LED will be illuminated indicating Short Range is enabled.

SW4 - P1 BIST (SFP+ Model Only)

When this DIP-switch is in the DOWN position (factory default), port P1 Built-In Self Test is disabled. When this DIP-switch is in the UP "P1-Tst" position, the port will transmit a Pseudo Random Bit Sequence (PRBS).

When two XGT+ converters are connected via port P1 (Port 1 to Port 1), the BIST function is supported. The XGT+ initiating BIST (DIP-switch SW4 UP) will generate and send a PRBS pattern out Port 1 to the other module. The receiving XGT+ will detect a good test pattern and return a PRBS acknowledgement test pattern back to the initiating XGT+.

A successful test will produce a green blinking (5Hz) P1 LB LED on the initiating XGT+ and a green blinking (1Hz) P1 LB LED on the receiving XGT+. If the initiating XGT+ does not receive a valid response, the P1 LB LED will be blinking amber (5Hz). When BIST is initiated, the traffic received on Port 2 of both converters will be discarded.

If loopback has been initiated, the BIST DIP-switch will be ignored. If BIST has been initiated, the loopback DIP-switches will be ignored.

NOTE: The XGT+ modules must be the same revision for the BIST function to operate correctly.

DIP-Switch Bank 2

SW1 and SW2 - Link Modes

SW1	SW2	Function
DOWN	DOWN	Link Segment
UP	DOWN	Link Propagate Port 1 to Port 2
DOWN	UP	Link Propagate Port 2 to Port 1
UP	UP	Symmetrical Link Propagate

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.

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.

Asymmetrical Link Propagate

In Asymmetrical 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). The loss of link on Port 2 does not cause the loss of link to propagate. The loss only propagates in the Port 1 to Port 2 direction.

Symmetrical Link Propagate

In Symmetrical Link Propagate mode, the loss of a receive link signal will continue to propagate through to the next port in the network causing the port to drop link.

MOUNTING AND CABLE ATTACHMENT

1. The XGT+ is available as a standalone module with 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 16AWG 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.

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.

2. Insert the appropriate 10G SFP+ or XFP transceiver (depending on the model of the module) into Port 1 receptacle on the XGT+. The release latch of the transceiver must be in the closed position before insertion.

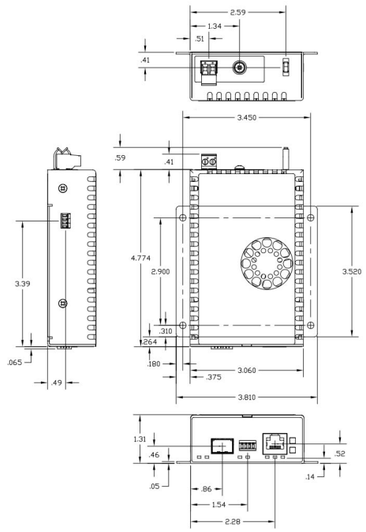
3. Connect an appropriate multimode or single-mode fiber cable to the fiber transceiver port on the XGT+. It is important to ensure that the transmit (Tx) is attached to the receive side of the device at the other end and the receive (Rx) is attached to the transmit side.

4. Connect the RJ-45 port via a CAT 6A or better Ethernet cable to a 10GBASE-T Ethernet device.

LED INDICATORS

LED	Color	Description
Power "PWR"	Green	**OFF:** No power applied or module is not operational **ON:** Module has power
P1 Link "Lk"	Green/ Amber	**OFF:** No Transceiver detected or no fiber link **Solid Green:** Fiber link (signal detect) **Blinking Amber (1Hz):** Port disabled due to installed transceiver drawing more current than allowed.
P1 Status "Stat"	Green/ Amber	**OFF:** Transceiver does not support digital diagnostic or no transceiver installed **Solid Green:** Transceiver supports digital diagnostic and no DDMI Alarm Detected **Solid Amber:** Transceiver supports digital diagnostic and DDMI alarm detected. **Blinking Amber (1Hz):** Port is disabled due to installed transceiver drawing more current than allowed
P1 Loopback "LP"	Green/ Amber	**OFF:** Port loopback mode not enabled **Solid Green:** Port set to Loopback mode and port in loopback. **Blinking Green (1 Hz):** Port responding to BIST activation with valid BIST response. **Blinking Green (5 Hz):** Port initiating BIST and receiving valid BIST response **Solid Amber:** Port set to loopback mode, but XFP does not support loopback. **Blinking Amber (5 Hz):** Port initiating BIST and not receiving valid BIST response
P2 Link "Lk"	Green	**OFF:** No copper link detected **Solid Green:** Copper link detected **Blinking Amber:** Data activity
Short Range "SR"	Green	**OFF:** Short range function is disabled **ON:** Short range function is enabled
P2 Loopback "LP"	Green	**OFF:** Port loopback mode not enabled **Solid Green:** Port set to Loopback mode and port in loopback.

MECHANICAL



SPECIFICATIONS

Standard Compliances	IEEE 802.3, 802.3an, 802.3az, SFF-8077, SFF-8477	
Regulatory Compliances	Safety: EMI: ACT:	UL, cUL, CE, NEBS 3 Compliant, UKCA FCC Class A TAA, BAA, NDAA
Environmental	RoHS, WEEE, REACH	
Frame Size	Unlimited	
Port Types	Copper: Fiber:	10GBASE-T (RJ-45) 10GBASE-X Dual and single-fiber SFP+, XFP
Cable Types	Copper: Fiber:	EIA/TIA 568-B.2-10, Cat 6A and higher Multimode: 50/125µm, 62.5/125µm Single-mode: 9/125µm
AC Power Requirements	AC Adapter:	100 - 240VAC/50 - 60Hz 0.20A @ 120VAC (max)
DC Power Requirements	DC Input: (Terminal)	10 - 60VDC, 1.3A @ 12VDC max 2-Pin Terminal (non-isolated)
	DC Input: (AC Adapter)	10 - 60VDC, 1.3A @ 12VDC max 2.5mm Barrel Connector
Dimensions W x D x H	3.8" x 4.8" x 1.8" (96.7 mm x 121.9 mm x 45.7 mm)	
Weight	1.0 lb. (453.6 grams) - without AC Adapter 1.5 lbs. (680.4 grams) - with AC Adapter	
Temperature	Commercial: Wide: Storage:	0 to 50°C -40 to 60°C -40 to 80°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	230,000 - Module 70,000 - Module with US AC Adapter 70,000 - Module with Universal AC Adapter	
Warranty	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 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.

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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