Omnitron Systems

iConverter® GxAN Plug-in Module User Manual

DESCRIPTION

The iConverter Gx AN Plug-In media converter provides 1000BASE-T Copper to 1000BASE-X fiber media conversion.

The Gx AN supports auto-negotiation with configurable Full/Half Duplex mode via hardware and software controls.

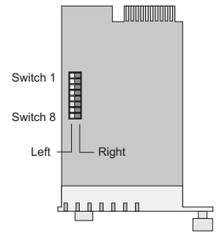
See data sheet for available features.

The Gx AN 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.

DIP-SWITCH SETTINGS

The location of the DIP-switches is shown below.



The function of DIP-switches are shown below.

Switch	Function	LEFT (Default)	RIGHT
SW1	Port 1 Fiber Negotiation	Auto	Man
SW2, SW3	Port 2 RJ-45 Auto-Negotiation Capabilities		
SW4, SW5	Pause Advertisement Modes		
SW6 - SW8	Link Modes		

SW1 - Port 1 Fiber Negotiation

When this DIP-switch is in the LEFT “Auto” default position, the fiber optic port is transparent to the network and allows the end devices connected to the module to advertise through the module and establish negotiated settings between the end devices. If Port 2 (RJ-45) is not connected, the fiber port will not be able to establish a fiber link. In the Auto mode, the DIP-switches for Pause, Port 2 (RJ-45) and link modes RFD and SFD are ignored.

If two Gx AN modules are linked together and Port 1 is configured for auto-negotiation, the mode of operation will be determined by the devices connected to Port 2 (RJ-45). Port 1 is transparent to the process.

When this DIP-switch is in the RIGHT “Man” position, the advertised auto-negotiation capabilities of Port 2 is controlled by DIP-switches SW2 through SW5.

SW2 and SW3 - Port 2 (RJ-45) Settings

These DIP-switches are only valid when Port 1 is set to “MAN”. Port 2 is always configured for auto-negotiation and DIP-switches SW2 and SW3 define what modes are advertised by auto-negotiation.

SW2	SW3	RJ-45 Mode of Operation
LEFT	LEFT	Configured for AN the following modes are advertised: 1000FDX, 1000HDX
RIGHT	LEFT	Configured for AN the following modes are advertised: 1000FDX
LEFT or RIGHT	RIGHT	Configured for AN the following modes are advertised: 1000HDX

SW4 and SW5 - Port 2 Pause Advertisement

These DIP-switches are only valid when Port 1 is set to “Man”. The PAUSE modes advertised by auto-negotiation will be based on the configuration of DIP-switches SW4 and SW5.

SW4	SW5	RJ-45 Pause Modes
LEFT	LEFT	No PAUSE advertised
LEFT	RIGHT	Asymmetric PAUSE towards link partner
RIGHT	LEFT	Symmetric PAUSE
RIGHT	RIGHT	Both Symmetric and Asymmetric PAUSE towards local device

SW6, SW7, SW8 - Link Modes

These three DIP-switches configure the link mode settings. DIP-switch SW6 is valid when Port 1 is set to “Auto” or “Man”. DIP-switches SW7 and SW8 are ignored when Port 1 is set to “Auto”.

It is recommended to have link modes Left default position during the initial installation. After the circuit has been tested and operational, configure the module for the desired mode.

SW1	SW6	SW7	SW8	Results
LEFT (AN)	LEFT	LEFT	LEFT	Link Segment (LS AN)
LEFT (AN)	RIGHT	LEFT	LEFT	Link Propagate (LP AN)
RIGHT (MAN)	LEFT	LEFT	LEFT	Link Segment (LS MAN)
RIGHT (MAN)	RIGHT	LEFT	LEFT	Link Propagate (LP MAN)
RIGHT (MAN)	LEFT	RIGHT	LEFT	Remote Fault Detection + Link Segment (RFD+LS)
RIGHT (MAN)	RIGHT	RIGHT	LEFT	Remote Fault Detection + Link Propagate (RFD+LP)
RIGHT (MAN)	LEFT	LEFT	RIGHT	Symmetrical Fault Detect (SFD)
RIGHT (MAN)	RIGHT	LEFT	RIGHT	Undefined
RIGHT (MAN)	LEFT	RIGHT	RIGHT	Undefined
RIGHT (MAN)	RIGHT	RIGHT	RIGHT	Undefined

NOTE: Connecting two converters set to any of the RFD modes is illegal and will cause a “deadly embrace” lockup.

For detailed information on the operation of the different Link Modes, download the Application Note “iConverter Link Modes” available on Omnitron’s web page.

SOFTWARE CONTROLLED SETTINGS

Additional settings are available via software control when a Gx AN 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:

- Port 1 Fiber Negotiation Modes
- Port 2 RJ-45 Configuration Modes
- Pause Modes
- Link Modes

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.

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. Insert the SFP Fiber transceiver into the Port 1 SFP receptacle on the Gx AN.

NOTE: The release latch of the SFP Fiber transceiver must be in the closed position before insertion.

3. Connect the RJ-45 ports via a Category 5 or better Ethernet cable to a 1000BASE-T Ethernet devices.

4. 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

Once the module has been installed and configured, verify the module is operational by viewing the status of the LED indicators. The table below provides a description for each LED indicator.

LED	Color	Description
Power “PWR”	Green	**OFF:** No power applied I **ON:** Module has power
P1 Activity “P1”	Green	**OFF:** No fiber link **ON:** Fiber link **Blinking (10Hz):** Fiber data activity **Blinking (1Hz):** Signal detect but AN has not completed or SFD error detected
P2 Duplex “FDX”	Green	**OFF:** Half-duplex when P2 link is active **ON:** Full-duplex when P2 link is active and negotiated to full-duplex
P2 Activity “P2”	Green	**OFF:** Not linked **ON:** Port linked at 1000M **Blinking 10Hz):** RJ-45 data activity **Blinking (1Hz):** SFD error detected

SPECIFICATIONS

Standard Compliances	IEEE 802.3	
Regulatory Compliances	Safety: EMI: ACT:	UL, CE, UKCA FCC Class A TAA, BAA, NDAA
Environmental	RoHS, WEEE, REACH	
Frame Size	Supports frame sizes up to 10K bytes	
Port Types	Copper: Fiber:	1000BASE-T (RJ-45) 1000BASE-X (ST, SC, LC, SFP)
Cable Types	Copper: Fiber:	EIA/TIA 568A/B, Cat 5 UTP and higher Multimode: 50/125µm, 62.5/125µm Single-mode: 9/125µm
DC Power Requirements	DC Input: (Backplane)	3.3VDC, 0.7A @ 3.3VDC
Dimensions W x D x H	0.85” x 4.5” x 2.8” (21.6 mm x 114.3 mm x 71.1 mm)	
Weight	8 oz. (226.8 grams)	
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)	870,000	
Warranty	Lifetime warranty and 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.

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

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

040-8500N-001G 7/23