

## iConverter® 4GT Plug-in Module User Manual



### DESCRIPTION

The iConverter 4GT is a four-port 10/100/1000Mbps Ethernet switch that supports Half/Full-Duplex and auto-negotiation on each RJ-45 port.

See data sheet for available features.

The 4GT can be used in an unmanaged or managed applications. To be managed, a 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 4GT supports the IEEE 802.1Q tag Virtual Local Area Network (VLAN) packet tagging and untagging (including Q-in-Q) and the 802.1p Quality of Service priority standards. The switch module also supports Port Access Control which facilitates enabling and disabling of individual RJ-45 ports, Bandwidth Allocation, and reporting of MIB statistics.

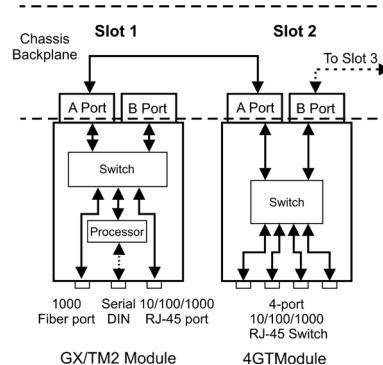
### PORT STRUCTURE

The 4GT module has four front 10/100/1000 Ethernet ports and two 100/1000 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 4GT when used in an iConverter chassis. By enabling Backplane Port A on both modules, the 4GT in slot 2 is communicating to the GX/TM2 in slot 1 via the Backplane A.



### SOFTWARE CONTROLLED SETTINGS

Advanced settings are available via software control when a 4GT 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 VLAN for RJ-45 Ports and Backplane Ports
- Port Access Control for RJ-45 Ports
- MIB Statistics Reporting
- Tag VLAN for RJ-45 Ports and Backplane Ports
- Bandwidth Allocation for RJ-45 Ports

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).

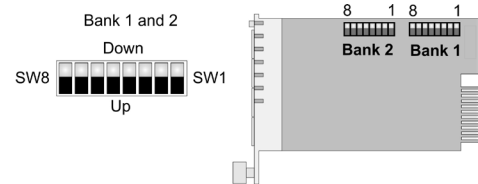
2. Using a Category 5 or better Ethernet cable, attach the RJ-45 port (or ports) to a 10/100/1000 Ethernet device.

### DIP-SWITCH SETTINGS

#### DIP-Switch Bank 1

The location of the DIP-switches is shown in the figure below.

**1000Mbps Manual operation is not supported. For 1000Mbps operation, configure the ports for AN operation.**



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

Switch	Legend	Function	DOWN (Default)	UP
SW1	A-DS/EN	Backplane A Enable/Disable	DS (Disable)	EN (Enable)
SW2	B-DS/EN	Backplane B Enable/Disable	DS (Disable)	EN (Enable)
SW3	AN/Man	Port 1 Negotiation	AN	Man
SW4	100/10	Port 1 Speed	100	10
SW5	FDX/HDX	Port 1 Duplex	FDX	HDX
SW6	AN/Man	Port 2 Negotiation	AN	Man
SW7	100/10	Port 2 Speed	100	10
SW8	FDX/HDX	Port 2 Duplex	FDX	HDX

#### SW1 and SW2: BACKPLANE ENABLE

When these DIP-switches are in the "DS" position (factory default), the Backplane Port of the 4GT is isolated from the Ethernet Backplane on the chassis. When these DIP-switches are in the "EN" position, the Backplane Port is enabled. This allows Ethernet Backplane connectivity to

an adjacent module via the chassis A/B Backplane Link depending on the switch setting. Refer to the chassis user manual for detailed information on the Ethernet Backplane.

#### SW3 and SW6 - Port 1 and Port 2 "AN/Man"

When these DIP-switches are configured for AN, the port automatically determines the speed, duplex and pause capability of the connected device. When these DIP-switches are configured for Man, the speed and duplex is determined by the 100/10 and FDX/HDX DIP-switches.

#### SW4 and SW7 - Port 1 and Port 2 Speed "100/10"

When the AN/Man DIP-switch is configured for AN, the 100/10 DIP-switch is ignored. When the AN/Man DIP-switch is configured for Man, the 100/10 DIP-switch determines the speed of the port.

#### SW5 and SW8 - Port 1 Port 2 Duplex "FDX/HDX"

These DIP-switches determine the duplex mode of the port when the AN/Man DIP-switch is configured for Man.

AN/Man	100/10	FDX/HDX	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

### DIP-Switch Bank 2

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

Switch	Legend	Function	DOWN (Default)	UP
SW1	AN/Man	Port 3 Negotiation	AN	Man
SW2	100/10	Port 3 Speed	100	10
SW3	FDX/HDX	Port 3 Duplex	FDX	HDX
SW4	AN/Man	Port 4 Negotiation	AN	Man
SW5	100/10	Port 4 Speed	100	10
SW6	FDX/HDX	Port 4 Duplex	FDX	HDX
SW7	Off/On	Pause	Disabled	Enabled
SW8	On/Off	MAC Learning	Enabled	Disabled

#### SW1 and SW4 - Port 3 and Port 4 "AN/Man"

When these DIP-switches are configured for AN, the port automatically determines the speed, duplex and pause capability of the connected device. When these DIP-switches are configured for Man, the speed and duplex is determined by the 100/10 and FDX/HDX DIP-switches.

#### SW2 and SW5 - Port 3 and Port 4 Speed "100/10"

When the AN/Man DIP-switch is configured for AN, the 100/10 DIP-switch is ignored. When the AN/Man DIP-switch is configured for Man, the 100/10 DIP-switch determines the speed of the port.

#### SW3 and SW6 - Port 3 and Port 4 Duplex "FDX/HDX"

These DIP-switches determine the duplex mode of the port when the AN/Man DIP-switch is configured for Man.

### LED INDICATORS

LED	Color	Description
Pwr	Yellow	Module has power
Port 1 "100"	Green	OFF: Not linked at 100Mbps ON: Linked at 100Mbps Blinking: Data activity
Port 1 "1000"	Green	OFF: Not linked at 1000Mbps ON: Linked at 1000Mbps Blinking: Data activity
Port 1 "100 + 1000"	Green	OFF: Not linked at 10Mbps ON: Linked at 10Mbps Blinking: Data activity
Port 2 "100"	Green	OFF: Not linked at 100Mbps ON: Linked at 100Mbps Blinking: Data activity
Port 2 "1000"	Green	OFF: Not linked at 1000Mbps ON: Linked at 1000Mbps Blinking: Data activity
Port 2 "100 + 1000"	Green	OFF: Not linked at 10Mbps ON: Linked at 10Mbps Blinking: Data activity
Port 3 "100"	Green	OFF: Not linked at 100Mbps ON: Linked at 100Mbps Blinking: Data activity
Port 3 "1000"	Green	OFF: Not linked at 1000Mbps ON: Linked at 1000Mbps Blinking: Data activity
Port 3 "100 + 1000"	Green	OFF: Not linked at 10Mbps ON: Linked at 10Mbps Blinking: Data activity
Port 4 "100"	Green	OFF: Not linked at 100Mbps ON: Linked at 100Mbps Blinking: Data activity
Port 4 "1000"	Green	OFF: Not linked at 1000Mbps ON: Linked at 1000Mbps Blinking: Data activity
Port 4 "100 + 1000"	Green	OFF: Not linked at 10Mbps ON: Linked at 10Mbps Blinking: Data activity

### SPECIFICATIONS

Description	iConverter 4GT 4-Port 10/100/1000BASE-T Copper Switch	
Standard Compliances	IEEE 802.1Q, 802.1p, 802.3, RFC 2819 (RMON)	
Regulatory Compliances	Safety: UL, CE, UKCA EMI: FCC Class A ACT: TAA, BAA, NDA	
Environmental	RoHS, WEEE, REACH	
Frame Size	Up to 10,240 bytes	
Port Types	Copper:	10/100/1000BASE-T (RJ-45)
Cable Types	Copper:	EIA/TIA 568A/B, Cat 5 UTP and higher
DC Power Requirements	DC Input: (Backplane)	3.3VDC, 1.1A @ 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: 0 to 50°C Wide: -40 to 60°C Storage: -40 to 80°C	
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	450,000	
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](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).



AN/Man	100/10	FDX/HDX	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

#### SW7 - Pause "Off/On"

The Pause DIP-switch sets the flow control functionality for all four ports on the module, including pause mode advertisement, pause functionality, and half duplex back pressure.

When the DIP-switch is in the Pause Enable "On" position, flow control functionality is enabled. When this DIP-switch is in the Pause Disable "Off" position (factory default), flow control functionality is disabled.

If Pause is Enabled on the module 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 Enabled on the module 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 Enable "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 Disable "Off" position, learning is turned off and all received packets are forwarded to all ports.

### 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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