

iConverter® 4Tx



User Manual

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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.



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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.

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Description

The iConverter 4Tx is a compact 4-Port Ethernet switch module. The 4Tx supports Half or Full-duplex 10/100Mbps auto-negotiation, and features flexible hardware and software controls. Two ports can be controlled by DIP-switches and all the four ports can be controlled via SNMP management.

The 4Tx supports RJ-45 auto-crossover (MDI/MDI-X) on three of the four ports, eliminating the need for a crossover cable and facilitating connectivity to different types of Ethernet equipment. Port 1 features a manual crossover switch.

[See data sheet for available features.](#)

The 4Tx 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](#).

Advanced Features

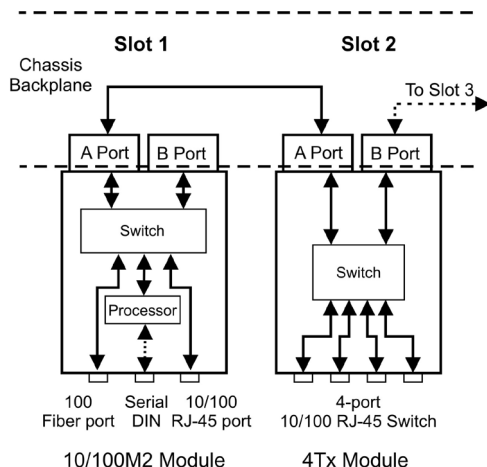
The 4Tx features Port VLAN control on all ports, which allows complete control of traffic flow between ports. The switch module also supports Port Access Control to enable/disable individual RJ-45 ports. MIB statistics are available for 32 variables per port, reporting a wide range of real-time packet statistics such as performance and operational status indicators.

Port Structure

The 4Tx module has four front 10/100 Ethernet ports and two 100 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 illustrates one of the many applications of the 4Tx when used in an iConverter chassis. By enabling Backplane Port A on both modules, the 4Tx in slot 2 is communicating to the 10/100M2 in slot 1 via the Backplane A.

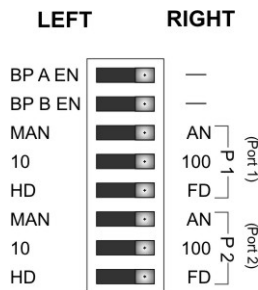


The iConverter 10/100M2 module is a 10/100Mbps copper to fiber media converter with integrated management capability. The 10/100M2 provides the long-haul network uplink via the fiber port, and the 4Tx distributes the network service locally via the 4-port 10/100 Switch. With this configuration, the 4Tx and the 10/100M2 form a managed 5-port Ethernet switch with a fiber uplink.

DIP-Switch Settings

On-Board DIP-Switches

The On-Board DIP-switches control the operation for Port 1 and Port 2 only. Port 3 and Port 4 can be configured using a Management Module installed in the same chassis as the 4Tx. By default, Port 3 and Port 4 are configured for Auto-Negotiation.



Backplane A Enable “BP A-EN”

When this DIP-switch is in the “BP A-EN” LEFT position, backplane A is enabled and the module is connected to the adjacent slots in the chassis. When this DIP-switch is in the RIGHT position (factory setting), the backplane port is disabled and disconnected from the backplane.

Backplane B Enable “BP B-EN”

When this DIP-switch is in the “BP B-EN” LEFT position, backplane B is enabled and the module is connected to the adjacent slots in the chassis. When this DIP-switch is in the RIGHT position (factory setting), the backplane port is disabled and disconnected from the backplane.

RJ-45 Auto/Manual Negotiate “AN/MAN”

Port 1 or Port 2

When this DIP-Switch is in the “AN” RIGHT position (factory setting), the module auto-negotiates and matches the duplex mode of a mating auto-negotiating device connected to the RJ-45 port.

When this DIP-Switch is in the “MAN” LEFT position, the module does not auto-negotiate and operates in the duplex mode selected by the Full/Half-Duplex DIP-Switch.

RJ-45 Speed “10/100”

Port 1 or Port 2

When the RJ-45 “AN/MAN” DIP-switch is in the manual “MAN” position, the “10/100” DIP-switch determines the speed of operation for the designated RJ-45 port. Setting the “10/100” DIP-switch to “100” RIGHT position (factory default) forces the RJ-45 port to operate at 100Mbps. Setting this DIP-switch to “10” LEFT position forces the RJ-45 port to operate at 10Mbps.

When the RJ-45 “AN/MAN” DIP-switch is in the Auto-Negotiate “AN” position and the RJ-45 10/100 DIP-switch is in the “100” RIGHT position, the RJ-45 port Auto-Negotiates to 100Mbps or 10Mbps. When in the “10” LEFT position, the RJ-45 port only operates at 10Mbps.

RJ-45 Full/Half Duplex “FD/HD”

Port 1 or Port 2

When the RJ-45 Auto/Manual Negotiate “AN/Man” DIP-Switch is in the Manual “Man” position, the RJ-45 Full/Half-Duplex “FD/HD” DIP-Switch determines the duplex mode for the module.

When this DIP-Switch is in the “FD” RIGHT position (factory setting), the module operates in Full-Duplex mode. When in the “HD” LEFT position, it operates in Half-Duplex mode. Set the duplex mode to match the connecting device and check for link status.

Note: Attaching an auto-negotiating RJ-45 port to a non-auto-negotiating (manual / forced / hard-coded) RJ-45 port will result in an unpredictable port setting with excessive collisions and poor link performance.

When operating in Manual mode both connected ports MUST be set manually to the same speed and duplex mode.

Port 1 RJ-45 Crossover Slide Switch (not shown)

When the RJ-45 “AN/MAN” DIP-switch is in the manual “MAN” position, the “Workstation/Switch” switch is set depending on the type of network device which is connected to Port 1. When connecting Port 1 to a workstation, set switch to Straight-Through (=) “Workstation” position (factory default). When connecting to a network switch or a hub, set switch to crossover (X) “Switch” position.

Software Controlled Settings

Additional settings are available via software control when a 4Tx is installed in an iConverter chassis with a Management Module, such as a Network Management Module (NMM2) or a 10/100M2 Media Converter with Integrated Management. The following settings can be controlled via the Serial Console, Telnet or SNMP Management Software such as *NetOutlook®* Management Software or other third-party SNMP-based clients:

- Enabling 10/100 Ethernet Backplane Port A and B
- RJ-45 Ports 1-4 Auto/Manual Negotiation mode selection
- RJ-45 Ports 1-4 10/100 speed selection
- RJ-45 Ports 1-4 Full/Half Duplex mode selection
- Port VLAN for RJ-45 Ports and Backplane Ports
- Port Access Control for RJ-45 Ports
- MIB Statistics Reporting

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 100BASE-TX Ethernet device.

LED Indicators

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

Specifications

Standard Compliances	IEEE 802.3	
Regulatory Compliances	Safety:	UL, CE, UKCA
	EMI:	FCC Class A
	ACT:	TAA, BAA, NDAA
Environmental	RoHS, WEEE, REACH	
Frame Size	Up to 1,536 bytes	
Port Types	Copper:	10/100BASE-T (RJ-45)
Cable Types	Copper:	EIA/TIA 568A/B, Cat 5 UTP and higher
DC Power Requirements	DC Input: (Backplane)	3.3VDC, 0.9A @ 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
	Extended:	-40 to 75°C
	Storage:	-40 to 80°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	910,000	
Warranty	Lifetime warranty and 24/7/365 free Technical Support	

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