Omnitron Systems

iConverter®

2-Module Power Chassis

User Manual

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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.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

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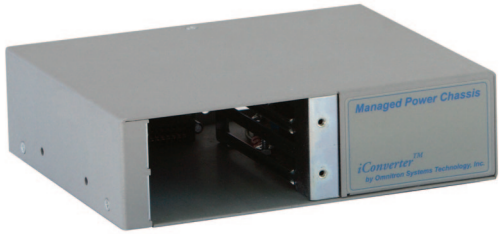
040-08230-001N 6/23

iConverter 2-Module Power Chassis User Manual

Product Overview

The iConverter 2-Module Power Chassis is powered by a single internal universal AC or DC power supply and can accommodate up to two iConverter media converters. It is ideal for enterprise Local Area Network (LAN) or Metropolitan Area Network (MAN) applications where remote management and explicit demarcation between the service provider's equipment and customer's equipment is required.



2-Module Chassis (Shown without modules installed)

This User Manual describes the following models:

Model Number	Model Type	Power Description
8230-x	2-Module Chassis with 8.5 watt AC Power Supply, No fan	IEC 320 Socket, 100 to 240VAC, 50/60Hz, 0.5A @ 120VAC,
8231-x	2-Module Chassis with 16.5 watt AC Power Supply, with temperature controlled fan	IEC 320 Socket, 100 to 240VAC, 50/60Hz, 0.5A @ 120VAC,
8232-1	2-Module Chassis with 16.5 watt High Airflow AC Power Supply, with fan, with dying gasp	IEC 320 Socket, 100 to 240VAC, 50/60Hz, 0.5A @ 120VAC,
8235-x	2-Module Chassis with 6.6 watt 48 VDC Power Supply, No fan	Direct DC 3-Pin Terminal, +/- 18 to 60VDC, 1.0A @ 48VDC
8236-x	2-Module Chassis with 16.5 watt 48 VDC Power Supply, with temperature controlled fan	Direct DC 3-Pin Terminal, +/- 18 to 60VDC, 2.0A @ 48VDC
8238-1	2-Module Chassis with 16.5 watt High Airflow 48 VDC Power Supply, with fan, with dying gasp	Direct DC 3-Pin Terminal, +/- 18 to 60VDC 2.0A @ 48VDC
x indicates the the dying gasp option (0 = no dying gasp, 1 = dying gasp).		

Use the Power Calculator to verify the iConverter chassis power supplies will meet the requirements of the installation.

Depending on the installed model type and the number of modules installed, the High Airflow power supply may be required. See Application Notes for XG+ / XGT+ and GM4.

High Airflow fans are always turned on.

High Airflow models are only available with dying gasp.

Dying Gasp Trap

The 8230-1, 8231-1, 8232-1, 8235-1, 8236-1 and 8238-1 chassis feature Dying Gasp Trap, which reports loss of power input or chassis power supply failure. This feature requires an iConverter management module be installed in the chassis. When power failure occurs, the chassis reserves enough power to keep the installed modules running in order to send a final SNMP alert to the management software.

Terminology

Backplane	A printed circuit board which is permanently mounted inside the chassis and is populated with receptacle connectors into which modules are inserted.
Slot	A single chassis position consisting of a backplane connector and its associated module-guides.
A Link	A backplane slot-to-slot connection that provides Ethernet connectivity between adjacent slots (sometimes referred to as A Backplane Link).
A Port	An interface on a module capable of Ethernet traffic via the backplane's A Link.

Other iConverter multi-module chassis models also support a backplane B Link. This feature is not required on the 2-Module Chassis.

Mechanical Description

The 2-Module chassis consists of a fixed internal AC (models 8230-0, 8230-1, 8231-0, 8231-1 and 8232-1) or DC (models 8235-0, 8235-1, 8236-0, 8236-1 and 8238-1) power supply that provides power to the chassis' two (2) backplane connectors.

Backplane Architecture

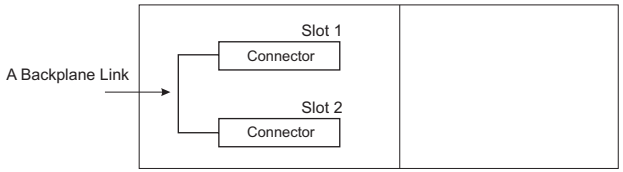
The chassis features two (2) module slots numbered 1 (top slot) and 2 (bottom slot). As modules are inserted into the chassis slots, they are seated into the slot connectors.

The two slots are connected using the A Link which provides Ethernet connectivity between the two slots.

When modules with A Port capability are inserted into the adjacent chassis slots, they can connect their Ethernet data using their A Ports and the A Link.

Note: Not all modules support and have backplane ports. Refer to the specific module's documentation for information on backplane support.

This chassis' architecture facilitates a variety of applications including unmanaged, out-of-band managed, in-band managed and multi-port configurations.



2-Module Backplane Architecture

Application Examples

In-Band Managed 10/100 Converter Application

The figure below depicts a typical in-band managed fiber to UTP conversion at a Customer's Premises (CP) or at a remote network edge. In-band management is a desirable feature in these applications since it facilitates remote monitoring, configuration and trap notification from the chassis. VLANs can be used to separate the customer data from the management data.

This application uses an iConverter 10/100M2 module for media conversion and management and a 4TxVT 4-Port 10/100 switch module for added customer connectivity. Both modules are plugged into the 2-Module chassis.

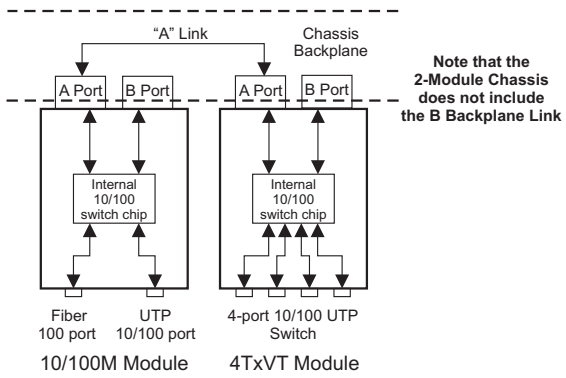
The 10/100M2 converter module features two front-plane Ethernet ports (100BASE-FX fiber and 10/100BASE-T RJ-45) and two 10/100Mbps Ethernet backplane ports (A and B Ports).

The 4TxVT module features four front-plane Ethernet ports (10/100BASE-T) and two 10/100Mbps Ethernet backplane ports (A and B Ports).

The user data flows between the fiber and RJ-45 ports of the 10/100M and 4TxVT via the backplane.

The management data flows between the fiber and all the RJ-45 ports (in-band). Using a management VLAN, the management data is recognized by the 10/100M module and is not shared by the other ports.

This configuration provides the network administrator with the ability to manage and maintain the converter chassis at the remote location.



In-Band Managed 10/100 Converter Application

Out-of-Band Managed 4-Port Switch Application

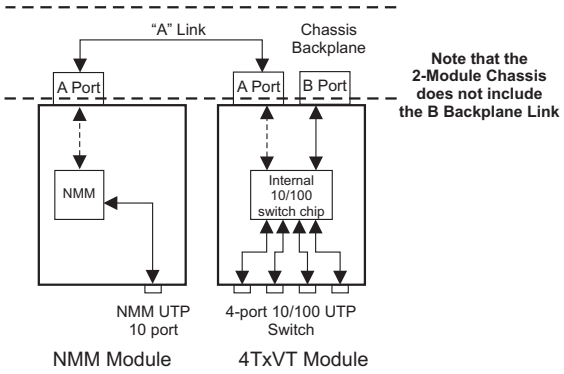
This application uses a 4TxVT 4-Port 10/100 switch module and an iConverter Network Management Module (NMM2) for management. Both modules are plugged into the 2-Module chassis.

The 4TxVT features four front-plane 10/100BASE-T RJ-45 Ethernet ports and two 10/100Mbps Ethernet backplane ports (A and B Ports).

The NMM2 features a 10/100BASE-T front-plane port and a 10/100Mbps Ethernet backplane A Port.

Out-of-band management is provided by connecting to the front-plane port on the NMM module. The management data is separate from the user data on the 4TxVT.

This configuration provides the network administrator with the ability to efficiently and cost effectively manage a small (4-port) workgroup switch.



Managed 4-Port Switch Application

Unpacking, Visual Inspection and Inventory

Review contents. The following items should be included:

- iConverter 2-Module Power Chassis
- One AC power cord (AC MODULES ONLY)
- One DC power connector (DC MODULES ONLY)
- User Manual

Inspect equipment and immediately report any damage or discrepancies to Omnitron at 949-250-6510. If equipment is damaged, do not apply power to the equipment.

Wall and Rack Mounting

The 2-Module chassis can be wall/rack mounted by attaching the optional wall/rack mount brackets (8249-0). A 19" Rack Mount Shelf (8260-0) is available to install three 2-Module chassis.

The operating temperature of this equipment is 0 to 50 degrees C or -40 to 60 degrees C depending on the model number. If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack must not exceed the maximum rated temperature for the chassis used.

Installation of the equipment should be such that the air flow in the front and back of the unit is not compromised or restricted.

Installing this equipment into a rack in such a way as to make it unstable **may cause injury or death**. Always make sure that the rack you are installing this equipment into is properly secured, stable, balanced and designed to carry the weight and weight distribution of this equipment.

Never use this equipment to carry any weight except its own. Never use it as a shelf to support the weight of other equipment.

Installing Modules

Carefully slide the modules into an open slot in the chassis. Align the modules with the installation guides and ensure that the modules are firmly seated against the backplane. Secure the modules by fastening the front panel thumbscrew (push in and turn clockwise to tighten) to the chassis front.

AC Powered Chassis Site Preparation and Cabling

Power source should be available within 5 ft. of the chassis and installed per the National Electrical Code, ANSI/NFPA-70.

This equipment requires a 100-240VAC, 0.5Amp, 50/60Hz power outlet. Appropriate overloading protection should be provided on the AC power source outlets utilized.

Appropriate overloading protection should be provided on all AC power source outlets utilized.

Attach the AC power cords (provided for each Power Supply) to the back of each Power Supply. Connect the AC power cords to the AC outlets and switch the outlets ON.

Any installed iConverter modules will illuminate the power LED.

WARNING!!!

NEVER ATTEMPT TO OPEN THE CHASSIS OR SERVICE THE POWER SUPPLY OR FAN MODULE. OPENING THE CHASSIS MAY CAUSE SERIOUS INJURY OR DEATH.
THERE ARE NO USER REPLACEABLE OR SERVICEABLE PARTS IN THIS UNIT.

Rear of 2-Module Chassis with Power Cord

DC Powered Chassis Site Preparation and Cabling

The over current protection for the connection with centralized DC shall be provided in the building installation and shall be a UL listed breaker rated at 20 Amps, and installed per the National Electrical Code, ANSI/NFPA-70.

This equipment requires 18-60VDC/1.0Amp (8235) or 2.0Amp (8236 and 8238) rated power. Appropriate overloading protection should be provided on the DC power source outlets utilized.

Appropriate overloading protection should be provided on all DC power source outlets utilized.

NOTE: The DC power battery return (BR) terminal or positive terminal must be grounded at the source end (power feed or DC mains power end). The DC power BR input terminal is not connected to the equipment frame (chassis), so it is configured as DC-I according to the GR-1089-CORE, Issue 4 (sec 9.8.3) definitions.

WARNING: Only a DC power source that complies with safety extra low voltage (SELV) requirements can be connected to the DC-input power supply.

WARNING REGARDING EARTHING GROUND:

- This equipment shall be connected to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode is connected.
- This equipment shall be located in the same immediate area (such as adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same DC supply circuit and the earthing conductor, and also the point of earthing of the DC system. The DC system shall not be earthed elsewhere.
- The DC supply source is to be located within the same premises as this equipment.
- There shall be no switching or disconnecting devices in the earthed circuit conductor between the DC source and the earthing electrode conductor.

Locate the DC circuit breaker and switch the circuit breaker to the OFF position.

Prepare a power cable using a three conductor insulated wire (not supplied) with 12AWG to 14AWG thickness. Cut the power cable to the length required.

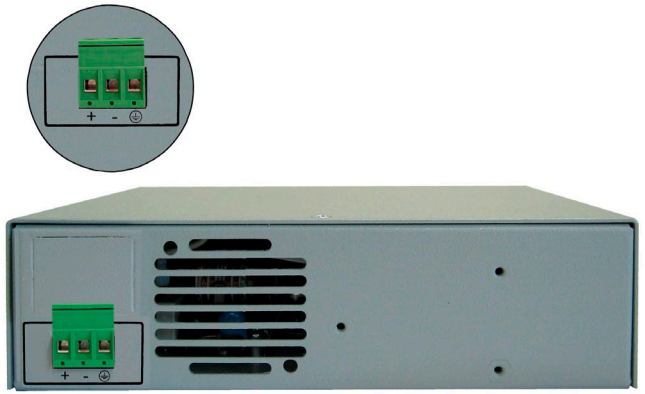
Strip approximately 3/8 of an inch of insulation from the power cable wires.

Connect the ground wire to the ground terminal on the chassis by fastening the stripped end to the DC power connector (ground).

Connect the power cables to the chassis by fastening the stripped ends to the DC power connector.

WARNING: Note the wire colors used in making the positive, negative and ground connections. Use the same color assignment for the connection at the circuit breaker.

Connect the power wires to the circuit breaker and switch the circuit breaker ON.



Rear of 2-Module Chassis with DC Power Connector

WARNING!!!

NEVER ATTEMPT TO OPEN THE CHASSIS OR SERVICE THE POWER SUPPLY OR FAN MODULE. OPENING THE CHASSIS MAY CAUSE SERIOUS INJURY OR DEATH.
THERE ARE NO USER REPLACEABLE OR SERVICEABLE PARTS IN THIS UNIT.

Specifications

2-Module Chassis Common Specifications		
Power Supply Capacity	Single Fixed Internal Power Supply	
Regulatory Compliances	Safety: EMI: ACT:	UL, CE, NEBS Level 3, UKCA FCC Class A TAA, BAA, NDAA
Environmental	RoHS, WEEE, REACH	
Dimensions W x D x H	6.7" x 5.51" x 1.87" (435.6 mm x 228.6 mm x 44.5 mm)	
Weight	2.5 lb (1.14 kg)	
Temperature	Commercial: Wide: Extended: Storage:	0 to 50°C -40 to 60°C -40 to 75°C (DC models only) -40 to 80°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
Warranty	Lifetime warranty with 24/7/365 free Technical Support	

AC Power Specifications			
Description	**2-Module AC**	**2-Module AC**	**2-Module AC High Airflow**
Model Number	8230-x	8231-x	8232-1
Input Power Requirements (typical)	100 to 240VAC, 50/60Hz 0.5A @ 120VAC	100 to 240VAC, 50/60Hz 0.5A @ 120VAC	100 to 240VAC, 50/60Hz 0.5A @ 120VAC
Output Power	8.5 watts 2.6A @ 3.3VDC 1.5A per slot	16.5 watts 5A @ 3.3VDC 2.5A per slot	16.5 watts 5A @ 3.3VDC 2.5A per slot
Power Connector	IEC 320 Socket	IEC 320 Socket	IEC 320 Socket
MTBF (hrs)	151,000	413,000	50,000

DC Power Specifications			
Description	**2-Module 48VDC**	**2-Module 48VDC**	**2-Module 48VDC High Airflow**
Model Number	8235-x	8236-x	8238-1
Input Power Requirements (typical)	18 to 60VDC -48VDC @ 1.0A	18 to 60VDC -48VDC @ 2.0A	18 to 60VDC -48VDC @ 2.0A
Output Power	6.6 watts 2A @ 3.3VDC 1.5A per slot	16.5 watts 5A @ 3.3VDC 2.5A per slot	16.5 watts 5A @ 3.3VDC 2.5A per slot
Power Connector	3-Pin Terminal (Isolated)	3-Pin Terminal (Isolated)	3-Pin Terminal (Isolated)
MTBF (hrs)	329,000	538,000	50,000

The 8231-x and 8236-x have internal temperature-controlled fans. The fan will turn on when the chassis internal temperature is greater then ~40°C. Under normal operating temperature, the fan is off.

The 8232-1 and 8238-1 have internal fans that are always turned on.

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