Omnitron Systems

iConverter®

5-Module Power Chassis

User Manual

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Warranty

This network product and the included AC/DC power adapter are warranted to the original purchaser (Buyer) against defects in material and workmanship for a period of two (2) years from the date of shipment. The warranty for the network product can be extended to lifetime by registering the 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.

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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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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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Fax: (949) 250-6514

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iConverter® 5-Module Power Chassis User Manual

Product Overview

The iConverter 1U (1.75 inch) 5-Module Power Chassis is powered by up to two (2) hot-swappable and redundant universal AC or DC power supplies and can accommodate up to 5 iConverter modules. It is ideal for enterprise Local Area Network (LAN) or Metropolitan Area Network (MAN) applications where managed media converters with high density and small rack-footprint are important.

iConverter 5-Module Chassis (Shown without modules installed)

This User Manual describes the following models:

Model Number	Model Type	Power Description
8220-x	5-Module Chassis with 33 watt AC Power Supply	IEC 320 Socket, 100 to 240VAC, 50/60Hz, 0.5A @ 120VAC,
8221-x	5-Module Chassis with 66 watt High Airflow AC Power Supply	IEC 320 Socket, 100 to 240VAC, 50/60Hz, 1.5A @ 120VAC,
8225-x	5-Module Chassis with 33 watt 48 VDC Power Supply	Direct DC 3-Pin Terminal, +/- 36 to 60VDC, 0.7A @ 48VDC
8226-x	5-Module Chassis with 33 watt 24 VDC Power Supply	Direct DC 3-Pin Terminal, +/- 18 to 36VDC, 1.4A @ 24VDC
8227-x	5-Module Chassis with 66 watt High Airflow 48 VDC Power Supply	Direct DC 3-Pin Terminal, +/- 36 to 60VDC 2.0A @ 48VDC
x indicates the number of power supplies installed in the chassis (x = 1 or 2). For a spare power supply (no chassis), x = 9		

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 power supplies (66W) cannot be installed in the same chassis with other types of power supplies.

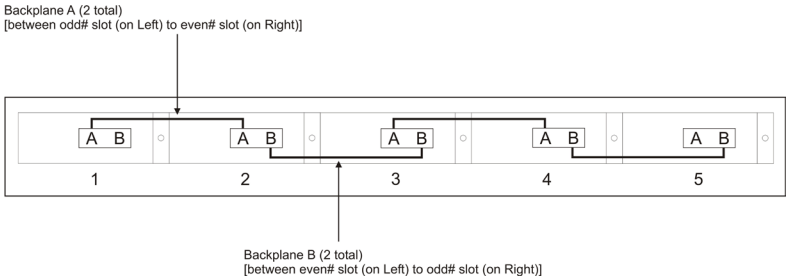
Mechanical Description

The iConverter 5-Module chassis consists of two AC or DC power supplies. As can be seen from the model table on the previous page, the 5-Module chassis models have been pre-configured with two power supplies. The power supplies provide power to the chassis' 5 backplane connectors.

Backplane Architecture

The chassis features 5 module slots numbered 1 (left-most positioned slot) through 5 (right-most positioned slot).

Backplane A and Backplane B provide Ethernet connectivity between adjacent slots.



iConverter 5-Module Chassis Backplane Architecture

The figure above depicts the backplane architecture of the chassis showing Backplane A and Backplane B connectivity.

Backplane A connects odd numbered slots on the left to even numbered slots on the right (i.e. 1-2, 3-4).

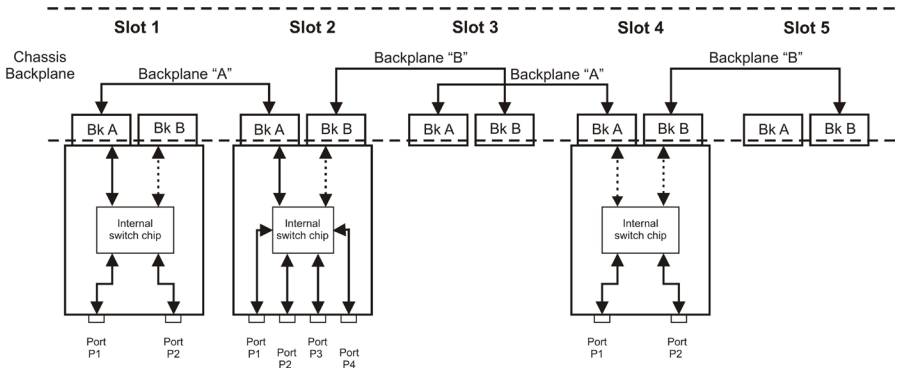
Backplane B connects even numbered slots on the left to odd numbered slots on the right (i.e. 2-3, 4-5).

When modules with Backplane capabilities are inserted into adjacent chassis slots, they can connect to each other via the Ethernet backplanes when enabled, creating a flexible network architectures.

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

Application Example

The figure below illustrates the connectivity of Backplane A and Backplane B when multiple modules are installed in the chassis. Modules supporting backplane connectivity (such as the iConverter 10/100M2 and iConverter 4TxVT) can be connected via the appropriate backplane creating a multi-port device. The figure show a iConverter 10/100M2 module is installed in slot 1 and a iConverter 4TxVT module is installed in slot 2. Both modules have Backplane A enabled. Utilizing the Ethernet backplane between the slots, a 5+1 switch (5 RJ-45 ports and 1 fiber port) is created.



Backplane Connectivity

Unpacking, Visual Inspection and Inventory

Review the contents. The following items should be included:

- iConverter 5-Module Power Chassis
- 2 Rack mounting "L" brackets and 8 screws
- 1 installed power supply: 8220-1 (AC) / 8225-1 (48VDC) / 8226-1 (24VDC)
- 2 installed power supplies: 8220-2 (AC) / 8221-2 (AC) / 8225-2 (48VDC) / 8226-2 (24VDC) / 8227-2 (48VDC)
- One power cord for each AC Power supply
- 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.

Rack Mounting and Grounding the Chassis

Prepare the chassis for proper grounding to the office equipment.

The chassis is suitable for installation as part of the Common Bonding Network (CBN) per GR-1089-CORE, Issue 4 (sec 9.3).

Verify the rack is properly grounded to Earth ground.

When rack mounting the chassis to a 19" standard rack, first attach the two enclosed "L" shaped rack mounting brackets to the chassis using the enclosed screws.

Mount and attach the chassis (after the mounting brackets are installed) to the rack using the appropriate rack mounting screws (not provided).

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.

The 8220-1 AC power supply requires 100-240VAC, 50/60Hz @ 0.5 Amps and the 8221-2 power supplies require 100-240VAC, 50/60Hz @ 3.0 Amps (1.5 Amps each).

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.

The fans should immediately begin to run and any installed iConverter modules will illuminate the power LED.

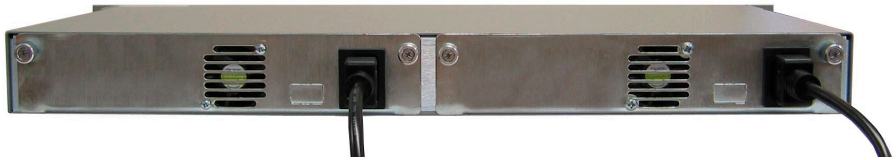
WARNING

High Airflow power supplies (66W) cannot be installed in the same chassis with other types of power supplies.

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.

iConverter 5-Module Chassis with Installed High Flow (66 Watt) AC Power Supplies



iConverter 5-Module Chassis with Installed 33 Watt AC Power Supplies

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.

The 8225-1 requires 36-60VDC @ 0.7 Amps and the 8227-2 requires 36-60VDC @ 4 Amps (2 Amps each). The 8226-1 requires 18-36VDC @ 1.4Amps. Appropriate overloading protection should be provided on all 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.

iConverter 5-Module Chassis with Installed High Flow (66 Watt) DC Power Supplies

iConverter 5-Module Chassis with Installed 33 Watt DC Power Supplies

WARNING

High Airflow power supplies (66W) cannot be installed in the same chassis with other types of power supplies.

Power Supply Replacement

To remove power from the chassis, remove power cord from all power supplies.

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.

The power supplies are hot swappable and can be replaced without shutting the chassis down. However, when removing and replacing a power supply unit, the following steps must be strictly followed in order to prevent serious injury or death or serious damage to your equipment. Removal of power supplies or cards will result in access to hazardous electricity.

Hot Removal of AC Power Supply

Determine which power supply is faulty by observing the status LEDs on the iConverter NMM2 or viewing the status from the network management software.

Power Supply 1 (PS1) refers to the power supply on the right (as viewed from the front). Power Supply 2 (PS2) refers to the power supply in the middle.

LED being ON indicates that the power supply is supplying power. LED being OFF indicates that the power supply is not present. Blinking LED indicates that a power supply is installed but does not supply power because it is not properly connected to a power source or because it is faulty.

Once you determine that your AC plug is connected properly to an AC wall outlet, and the power supply LED is still not ON, determine which is the failing power supply unit and proceed to the next step.

Remove the AC power cord of the faulty power supply from the wall outlet.

Remove the AC power cord of the faulty power supply from the power supply unit.

Using a screwdriver, loosen the 2 thumb screws securing the power supply to the main chassis.

Remove the failing power supply.

Hot Installation of AC Power Supply

Unpack the power supply carefully. Inspect for any damage. If any damage is observed, do not use the power supply and call 949-250-6510 to report the damage immediately and request a replacement unit.

Align the guide rails on the chassis with the rails on the bottom of the power supply; Slide the power supply in, ensuring that the power supply is seated firmly against the backplane and tighten the thumb screws securely with a screwdriver.

Plug the AC cord to the back of the power supply.

Plug the AC cord to the AC wall outlet.

Watch and listen to the fan in the rear of the power supply to ensure it is powered.

Save the packing material of the new power supply for return shipment of the faulty power supply or for future reuse.

Hot Removal of DC Power Supply

Determine which power supply is faulty by observing the status of the LEDs in the iConverter NMM2 or viewing the status from the network management software.

Power Supply 1 (PS1) refers to the power supply on the right (as viewed from the front). Power Supply 2 (PS2) refers to the power supply in the middle.

LED being ON indicates that the power supply supplies power. LED being OFF indicates that the power supply is not present. Blinking LED indicates that a power supply is installed but does not supply power because it is not properly connected to a power source or because it is faulty.

Once you determine that your DC source is connected properly, and the power supply LED is still not ON, determine which is the failing power supply unit and proceed to the next step.

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

Remove the DC power cables of the faulty power supply from the iConverter power supply unit.

Using a screwdriver, loosen the 2 thumb screws securing the power supply to the main chassis.

Remove the failing power supply.

Hot Installation of DC Power Supply

Unpack the power supply carefully. Inspect for any damage. If any damage is observed, do not use the power supply and call 949-250-6510 to report the damage immediately and request a replacement unit.

Align the guide rails on the chassis with the rails on the bottom of the power supply; slide in the power supply ensuring that the power supply is seated firmly against the backplane and tighten the thumb screws securely with a screwdriver.

Locate the DC circuit breaker and make sure that the switch is in the OFF position.

Reconnect the DC power source to the iConverter power supply.

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

Watch and listen to the fan in the rear of the power supply to ensure it is powered.

Save the packing material of the new power supply for return shipment of the faulty power supply or for future reuse.

Specifications

5-Module Chassis Common Specifications		
Power Supply Capacity	1 or 2 Hot-Swappable Power Supplies	
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	17.5” x 9.0” x 1.75” (444.5 mm x 228.6 mm x 44.5 mm)	
Weight	1 Power Supply 7.5 lbs (3.40 kg)	2 Power Supplies 9.0 lbs (4.08 kg)
Temperature	Commercial: 0 to 50°C Wide: -40 to 60°C Extended: -40 to 75°C (DC models only) Storage: - 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	**5-Module AC**	**5-Module AC High Airflow**
Model Number	8220-x	8221-x
Input Power Requirements (typical)	100 to 240VAC 50/60Hz 0.5A @ 120VAC	100 to 240VAC 50/60Hz 1.5A @ 120VAC
Output Power	33 watts 10A @ 3.3VDC	66 watts 20A @ 3.3VDC
Power Connector	IEC 320 Socket	IEC 320 Socket
MTBF (hrs)	1 Power Supply: 43,000 2 Power Supplies: 173,000	2 Power Supplies: 90,000

DC Power Specifications			
Description	**5-Module 24VDC**	**5-Module 48VDC**	**5-Module 48VDC High Airflow**
Model Number	8226-x	8225-x	8227-x
Input Power Requirements (typical)	+/- 18 to 36VDC 1.4A @ 24VDC	+/- 36 to 60VDC 0.7A @ 48VDC	+/- 36 to 60VDC 2.0A @ 48VDC
Output Power	33 watts 10A @ 3.3VDC	33 watts 10A @ 3.3VDC	66 watts 20A @ 3.3VDC
Power Connector	3-Pin Terminal (Isolated)	3-Pin Terminal (Isolated)	3-Pin Terminal (Isolated)
MTBF (hrs)	1 Power Supply: 43,000 2 Power Supplies: 173,000		2 Power Supplies: 90,000