Prisma MediaCenter
20-Slot, 6-Slot, and 3-Slot Chassis Installation Instructions

Overview

Purpose

These installation instructions provide product information and instructions for installing the Prisma® MediaCenter 20-slot, 6-slot, 3-slot chassis and modules.

Audience

This document is intended for authorized service personnel who have experience working with similar equipment. The service personnel should have appropriate background and knowledge to complete the procedures described in this document.

Qualified Personnel

WARNING:

Allow only qualified and skilled personnel to install, operate, maintain, and service this product. Otherwise, personal injury or equipment damage may occur.

Only appropriately qualified and skilled personnel should attempt to install, operate, maintain, and service this product.

Related Publications

You may find the following publications useful as you implement the procedures in this document.

- *Prisma MediaCenter SNMP Management Module Installation Instructions*, part number 4027869
- *PrismaView Management Application Software Installation Instructions*, part number 4006062

Hardware Feature Matrix

Power Supply	20-Slot Chassis	6-Slot Chassis	3-Slot Chassis
Versions	2AC, 2DC,* ACDC	AC, 2AC, DC, 2DC *	AC, 2AC, DC, 2DC,* ACDC
Type	Modular	Modular	Fixed
End user replaceable	No	Yes	No
LEDs	Yes	Yes	Yes
Redundant upgrade on single slot chassis	No	Yes	No

* Trap can be set for exceeding a temperature value.

In This Document

Important Safety Instructions

Read and Retain Instructions

Carefully read all safety and operating instructions before operating this equipment, and retain them for future reference.

Follow Instructions and Heed Warnings

Follow all operating and use instructions. Pay attention to all warnings and cautions in the operating instructions, as well as those that are affixed to this equipment.

Terminology

The terms defined below are used in this document. The definitions given are based on those found in safety standards.

Service Personnel - The term *service personnel* applies to trained and qualified individuals who are allowed to install, replace, or service electrical equipment. The service personnel are expected to use their experience and technical skills to avoid possible injury to themselves and others due to hazards that exist in service and restricted access areas.

User and Operator - The terms *user* and *operator* apply to persons other than service personnel.

Ground(ing) and Earth(ing) - The terms *ground(ing)* and *earth(ing)* are synonymous. This document uses ground(ing) for clarity, but it can be interpreted as having the same meaning as earth(ing).

Electric Shock Hazard

This equipment meets applicable safety standards.

WARNING:

To reduce risk of electric shock, perform only the instructions that are included in the operating instructions. Refer all servicing to qualified service personnel only.

Electric shock can cause personal injury or even death. Avoid direct contact with dangerous voltages at all times. The protective ground connection, where provided, is essential to safe operation and must be verified before connecting the power supply.

Know the following safety warnings and guidelines:

- Dangerous Voltages
  - Only qualified service personnel are allowed to perform equipment installation or replacement.
  - Only qualified service personnel are allowed to remove chassis covers and access any of the components inside the chassis.
- Grounding
  - Do not violate the protective grounding by using an extension cable, power cable, or autotransformer without a protective ground conductor.
  - Take care to maintain the protective grounding of this equipment during service or repair and to re-establish the protective grounding before putting this equipment back into operation.

Installation Site

When selecting the installation site, comply with the following:

- **Protective Ground -** The protective ground lead of the building's electrical installation should comply with national and local requirements.
- **Environmental Condition –** The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water. Ensure that this equipment is operated in an environment that meets the requirements as stated in this equipment's technical specifications, which may be found on this equipment's data sheet.

Installation Requirements

WARNING:

Allow only qualified service personnel to install this equipment. The installation must conform to all local codes and regulations.

Equipment Placement

WARNING:

Avoid personal injury and damage to this equipment. An unstable mounting surface may cause this equipment to fall.

To protect against equipment damage or injury to personnel, comply with the following:

- Install this equipment in a restricted access location.
- Do not install near any heat sources such as radiators, heat registers, stoves, or

other equipment (including amplifiers) that produce heat.

- Place this equipment close enough to a mains AC outlet to accommodate the length of this equipment's power cord.
- Route all power cords so that people cannot walk on, place objects on, or lean objects against them. This may pinch or damage the power cords. Pay particular attention to power cords at plugs, outlets, and the points where the power cords exit this equipment.
- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with this equipment.
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.
- The mounting surface or rack should be appropriately anchored according to manufacturer's specifications. Ensure this equipment is securely fastened to the mounting surface or rack where necessary to protect against damage due to any disturbance and subsequent fall.

Ventilation

This equipment has openings for ventilation to protect it from overheating. To ensure equipment reliability and safe operation, do not block or cover any of the ventilation openings. Install the equipment in accordance with the manufacturer's instructions.

Rack Mounting Safety Precautions

Mechanical Loading

Make sure that the rack is placed on a stable surface. If the rack has stabilizing devices, install these stabilizing devices before mounting any equipment in the rack.

WARNING:

Avoid personal injury and damage to this equipment. Mounting this equipment in the rack should be such that a hazardous condition is not caused due to uneven mechanical loading.

Reduced Airflow

When mounting this equipment in the rack, do not obstruct the cooling airflow through the rack. Be sure to mount the blanking plates to cover unused rack space. Additional components such as combiners and net strips should be mounted at the back of the rack, so that the free airflow is not restricted.

CAUTION:

Installation of this equipment in a rack should be such that the amount of airflow required for safe operation of this equipment is not compromised.

Elevated Operating Ambient Temperature

Only install this equipment in a humidity- and temperature-controlled environment that meets the requirements given in this equipment's technical specifications.

CAUTION:

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install this equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.

Handling Precautions

When moving a cart that contains this equipment, check for any of the following possible hazards:

WARNING:

Avoid personal injury and damage to this equipment! Move any equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause this equipment and cart to overturn.

- Use caution when moving this equipment/cart combination to avoid injury from tip-over.
- If the cart does not move easily, this condition may indicate obstructions or cables that may need to be disconnected before moving this equipment to another location.
- Avoid quick stops and starts when moving the cart.
- Check for uneven floor surfaces such as cracks or cables and cords.

Grounding

This section provides instructions for verifying that the equipment is properly grounded.

Safety plugs (USA only)

This equipment is equipped with either a 3-terminal (grounding-type) safety plug or a 2-terminal (polarized) safety plug. The wide blade or the third terminal is provided for safety. Do not defeat the safety purpose of the grounding-type or polarized safety plug.

To properly ground this equipment, follow these safety guidelines:

- **Grounding-Type Plug** - For a 3-terminal plug (one terminal on this plug is a protective grounding pin), insert the plug into a grounded mains, 3-terminal outlet.

  Note: This plug fits only one way. If this plug cannot be fully inserted into the outlet, contact an electrician to replace the obsolete 3-terminal outlet.

- **Polarized Plug** - For a 2-terminal plug (a polarized plug with one wide blade and one narrow blade), insert the plug into a polarized mains, 2-terminal outlet in which one socket is wider than the other.

  Note: If this plug cannot be fully inserted into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to replace the obsolete 2-terminal outlet.

Grounding terminal

If this equipment is equipped with an external grounding terminal, attach one end of an 18-gauge wire (or larger) to the grounding terminal; then, attach the other end of the wire to a ground, such as a grounded equipment rack.

Safety plugs (European Union)

- **Class I Mains Powered Equipment –** Provided with a 3-terminal AC inlet and requires connection to a 3-terminal mains supply outlet via a 3-terminal power cord for proper connection to the protective ground.

  Note: The equipotential bonding terminal provided on some equipment is not designed to function as a protective ground connection.

- **Class II Mains Powered Equipment –** Provided with a 2-terminal AC inlet that may be connected by a 2-terminal power cord to the mains supply outlet. No connection to the protective ground is required as this class of equipment is provided with double or reinforced and/or supplementary insulation in addition to the basic insulation provided in Class I equipment.

  Note: Class II equipment, which is subject to EN 50083-1, is provided with a chassis mounted equipotential bonding terminal. See the section titled **Equipotential Bonding** for connection instructions.

Equipotential Bonding

If this equipment is equipped with an external chassis terminal marked with the IEC 60417-5020 chassis icon (⏚), the installer should refer to CENELEC standard EN 50083-1 or IEC standard IEC 60728-11 for correct equipotential bonding connection instructions.

AC Power

Important: If this equipment is a Class I equipment, it must be grounded.

- If this equipment plugs into an outlet, the outlet must be near this equipment, and must be easily accessible.
- Connect this equipment only to the power sources that are identified on the equipment rating label normally located close to the power inlet connector(s).
- This equipment may have two power sources. Be sure to disconnect all power sources before working on this equipment.
- If this equipment **does not** have a main power switch, the power cord connector serves as the disconnect device.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Unplug this equipment when unused for long periods of time.

Connection to -48 VDC or -60 VDC Power Sources

If this equipment is DC powered, refer to the specific installation instructions in this manual or in companion manuals in this series for information on connecting this equipment to nominal -48 VDC or -60 VDC power sources.

Circuit Overload

Know the effects of circuit overloading before connecting this equipment to the power supply.

CAUTION:

Consider the connection of this equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Refer to the information on the equipment-rating label when addressing this concern.

General Servicing Precautions

WARNING:

Avoid electric shock! Opening or removing this equipment's cover may expose you to dangerous voltages.

CAUTION:

These servicing precautions are for the guidance of qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

Be aware of the following general precautions and guidelines:

- **Servicing** - Servicing is required when this equipment has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into this equipment, this equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **Wristwatch and Jewelry** - For personal safety and to avoid damage of this equipment during service and repair, do not wear electrically conducting objects such as a wristwatch or jewelry.
- **Lightning** - Do not work on this equipment, or connect or disconnect cables, during periods of lightning.
- **Labels** - Do not remove any warning labels. Replace damaged or illegible warning labels with new ones.
- **Covers** - Do not open the cover of this equipment and attempt service unless instructed to do so in the instructions. Refer all servicing to qualified service personnel only.
- **Moisture** - Do not allow moisture to enter this equipment.
- **Cleaning** - Use a damp cloth for cleaning.
- **Safety Checks** - After service, assemble this equipment and perform safety checks to ensure it is safe to use before putting it back into operation.

Electrostatic Discharge

Electrostatic discharge (ESD) results from the static electricity buildup on the human body and other objects. This static discharge can degrade components and cause failures.

Take the following precautions against electrostatic discharge:

- Use an anti-static bench mat and a wrist strap or ankle strap designed to safely ground ESD potentials through a resistive element.
- Keep components in their anti-static packaging until installed.
- Avoid touching electronic components when installing a module.

Fuse Replacement

To replace a fuse, comply with the following:

- Disconnect the power before changing fuses.
- Identify and clear the condition that caused the original fuse failure.
- Always use a fuse of the correct type and rating. The correct type and rating are indicated on this equipment.

Lithium Battery

This product may contain batteries. Special instructions apply regarding the safe use and disposal of batteries:

Safety

- Insert batteries correctly. There may be a risk of explosion if the batteries are incorrectly inserted.
- Do not attempt to recharge ‘disposable’ or ‘non-reusable’ batteries.
- Please follow instructions provided for charging ‘rechargeable’ batteries.
- Replace batteries with the same or equivalent type recommended by manufacturer.
- Do not expose batteries to temperatures above 100°C (212°F).

Disposal

- The batteries may contain substances that could be harmful to the environment
- Recycle or dispose of batteries in accordance with the battery manufacturer’s instructions and local/national disposal and recycling regulations.



- The batteries may contain perchlorate, a known hazardous substance, so special handling and disposal of this product might be necessary. For more information about perchlorate and best management practices for perchlorate-containing substance, see www.dtsc.ca.gov/hazardouswaste/perchlorate.

Modifications

This equipment has been designed and tested to comply with applicable safety, laser safety, and EMC regulations, codes, and standards to ensure safe operation in its intended environment. Refer to this equipment's data sheet for details about regulatory compliance approvals.

Do not make modifications to this equipment. Any changes or modifications could void the user's authority to operate this equipment.

Modifications have the potential to degrade the level of protection built into this equipment, putting people and property at risk of injury or damage. Those persons making any modifications expose themselves to the penalties arising from proven non-compliance with regulatory requirements and to civil litigation for compensation in respect of consequential damages or injury.

Accessories

Use only attachments or accessories specified by the manufacturer.

Electromagnetic Compatibility Regulatory Requirements

This equipment meets applicable electromagnetic compatibility (EMC) regulatory requirements. Refer to this equipment's data sheet for details about regulatory compliance approvals. EMC performance is dependent upon the use of correctly shielded cables of good quality for all external connections, except the power source, when installing this equipment.

- Ensure compliance with cable/connector specifications and associated installation instructions where given elsewhere in this manual.

Otherwise, comply with the following good practices:

- Multi-conductor cables should be of single-braided, shielded type and have conductive connector bodies and backshells with cable clamps that are conductively bonded to the backshell and capable of making 360° connection to the cable shielding. Exceptions from this general rule will be clearly stated in the connector description for the excepted connector in question.
- Ethernet cables should be of single-shielded or double-shielded type.
- Coaxial cables should be of the double-braided shielded type.

FCC Radio Frequency Interference Statement

Use the following table to find the FCC class for your product, and then read the appropriate statement below.

Product Description	Version	FCC Class
Prisma MediaCenter 20-Slot Chassis	2AC	B
	2DC	B
	ACDC	B
Prisma MediaCenter 6-Slot Chassis	AC	A
	2AC	A
	DC	B
	2DC	B
Prisma MediaCenter 3-Slot Chassis	AC	B
	2AC	B
	DC	B
	2DC	B
	ACDC	B

Class A

This equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits. This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n' émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

Class B

This equipment has been tested and found to comply with the limits for a Class B computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits. This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n' émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

European Directive 2002/96/EC (WEEE) Statement

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste.

It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.

Laser Safety

Introduction

This equipment may contain modules that use an infrared laser that transmits intensity-modulated light and emits invisible radiation. Refer to the module manuals for safety information.

Warning: Radiation

WARNING:

- **Avoid personal injury! Use of controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure.**
- **Avoid personal injury! The laser light source on this equipment (if a transmitter) or the fiber cables connected to this equipment emit invisible laser radiation. Avoid direct exposure to the laser light source.**
- **Avoid personal injury! Viewing the laser output (if a transmitter) or fiber cable with optical instruments (such as eye loupes, magnifiers, or microscopes) may pose an eye hazard.**

- Do not apply power to this equipment if the fiber is unmated or unterminated.
- Do not stare into an unmated fiber or at any mirror-like surface that could reflect light emitted from an unterminated fiber.
- Do not view an activated fiber with optical instruments such as eye loupes, magnifiers, or microscopes.
- Use safety-approved optical fiber cable to maintain compliance with applicable laser safety requirements.

Warning: Fiber Optic Cables

WARNING:

Avoid personal injury! Qualified service personnel may only perform the procedures in this manual. Wear safety glasses and use extreme caution when handling fiber optic cables, particularly during splicing or terminating operations. The thin glass fiber core at the center of the cable is fragile when exposed by the removal of cladding and buffer material. It easily fragments into glass splinters. Using tweezers, place splinters immediately in a sealed waste container and dispose of them safely in accordance with local regulations.

Safe Operation for Software Controlling Optical Transmission Equipment

If this manual discusses software, the software described is used to monitor and/or control ours and other vendors' electrical and optical equipment designed to transmit video, voice, or data signals. Certain safety precautions must be observed when operating equipment of this nature.

For equipment specific safety requirements, refer to the appropriate section of the equipment documentation.

For safe operation of this software, refer to the following warnings.

WARNING:

- **Ensure that all optical connections are complete or terminated before using this equipment to remotely control a laser device. An optical or laser device can pose a hazard to remotely located personnel when operated without their knowledge.**
- **Allow only personnel trained in laser safety to operate this software. Otherwise, injuries to personnel may occur.**
- **Restrict access of this software to authorized personnel only.**
- **Install this software in equipment that is located in a restricted access area.**

Prisma MediaCenter 20-Slot Chassis

The Prisma MediaCenter 20-slot chassis is a modular chassis platform designed for use with simple network management protocol (SNMP)-manageable Prisma Media Converter modules.

The 20-slot chassis is a 3U high, rack-mountable chassis that features 20 slots for installing Prisma Media Converter modules, plus an additional slot for an SNMP Management Module. The chassis uses modular power supplies that are both field replaceable and hot-swappable.

20-Slot Chassis Features

The 20-slot chassis is available in dual AC, dual DC, and ACDC versions. It offers features such as end-user replaceable power supply modules, temperature monitoring, Last Gasp, and an alarm reset button.

The chassis supports modular power supply modules, so that worn parts can be replaced without having to send an entire unit in for repair.

20-Slot Chassis Front View

20-Slot Chassis Rear View

20-Slot Chassis Dimensions

The following are the dimensions for the chassis.

Height x Width x Depth	Dimension
Height	5.2 inches (13.21 cm)
Width	19.0 inches (48.26 cm)
Depth	13.8 inches (35.05 cm)

Alarm Reset Button

When one power supply module malfunctions, an audible alarm sounds indicating the loss of the power supply. The alarm can be silenced by pressing the alarm reset button, located next to the power connector on the power supply module.

Important: In the event of a power failure, remove and replace the power supply immediately.

LEDs on the management module and the power supply module itself also indicate power supply module failures.

Last Gasp Alarm

The chassis includes a Last Gasp trap feature, "Remote Chassis Down," which sends a trap when any of the following events occurs:

- Both power supplies in the chassis malfunction.
- Both power supplies in the chassis are powered down.
- The AC line fails.

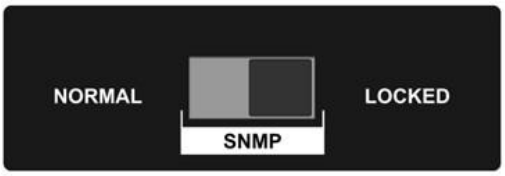
Temperature Gauge

The chassis includes a temperature monitoring gauge with a heat sensor on the backplane of the chassis. Users define a threshold for chassis temperature via SNMP. If the chassis temperature rises above the specified level, the SNMP agent sends a trap (configured in PrismaView) to the administrator. Refer to *PrismaView Management Application Software Installation Instructions*, part number 4006062 for more information.

There is also an LED indicator on the SNMP management module for chassis temperature. Refer to ***SNMP Management Module LEDs*** (on page 20) for more information.

SNMP Write Lock Switch

The SNMP write lock switch on the front of the chassis can be used to prevent a new SNMP management module from reconfiguring the application module settings (e.g., the status of features such as LinkLoss, FiberAlert, Force mode, etc.) made via SNMP on any previous management module(s).



Note: Leave this switch in the NORMAL position during day-to-day operation. Only use the LOCKED position when changing the SNMP management module.

SNMP Management Module (Optional)

The optional SNMP management module includes two twisted-pair ports; one for management and one reserved for future use. The management module also features a DB-9 serial port and supports SNMP V1/V2c.

The SNMP management module can be removed and replaced as necessary. Refer to *Prisma MediaCenter SNMP Management Module Installation Instructions*, part number 4027869 for complete instructions about how to configure and operate the module.

If an SNMP management module is installed, refer to the ***SNMP Management Module LEDs*** (on page 20) for indicators of link, temperature, power supply modules, and other functions.

SNMP Management Module LEDs

The SNMP management module features several LEDs. The following table provides module LED display functions.

LED	Function
LNK/ACT	■ Glows green when a link is established on port. ■ Blinks green when data activity occurs.
FDX/COL	■ Glows yellow when port is in full duplex mode. ■ Blinks yellow when port is operating in half duplex mode and collisions occur.
TEMP	■ Glows yellow when temperature of unit surpasses a user-defined level.
PS	■ Glows yellow when one power supply malfunctions.
FAN A / FAN B	■ Glows yellow when a fan malfunctions.

Chassis Installation

Install the chassis before installing any Prisma media converter modules into the chassis.

Safety Precautions

When installing the chassis, be sure to observe the following precautions to prevent electrical or mechanical damage:

- Stay within the chassis power rating to prevent overload of supply circuits or damage to overcurrent protection and supply wiring.
- Maintain reliable earth ground, especially when connecting to a power strip instead of directly to a branch circuit.
- Protect the chassis from exposure to sunlight and electrical or magnetic fields.
- Ensure that the equipment rack remains stable, even with the addition of the chassis and its associated cabling.

Supplies Needed

All required rack-mounting hardware is supplied with the chassis except the following items:

- Four #10 screws
- Four clip-nuts

Note: Hardware may vary depending on rack type.

To Install the Chassis

1. Locate a suitable location in the rack for the unit installation and secure the clip-nuts onto the mounting rails.
2. Attach the chassis to the rack with the four screws.
3. Plug the chassis into a reliable, filtered power source.

Important

- **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. In this case, consider installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** - Give consideration to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over current protection and supply wiring.
- **Reliable Grounding** - Maintain reliable grounding of rack mounted equipment. Give particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).
- **Location** - Both AC and DC versions are intended for use in a Restricted Access Location (RAL).

DC Power Wiring and Power Supply Modules

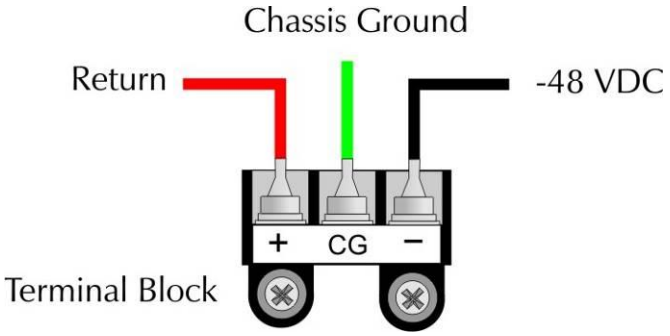
Wiring Guidelines

- Connect a suitable grounding conductor to the grounding terminal at each power supply module. A minimum 14 AWG copper conductor should be suitable based on a 15 A circuit breaker requirement.
- Connect suitable supply wiring to the plus and minus terminals at each power supply module. A minimum 14 AWG copper conductor is considered suitable based on the 11 A input maximum. The input terminal block at the power supply module is suitable for 22-14 AWG copper wire.

  Note: For safety, the protective earth conductor (ground wire) must be large enough to carry all of the current if the -48 VDC return fails. Full fault redundancy is achieved by having equal size conductors for the protective earth ground and the -48 VDC return.
- A suitable listed circuit breaker shall be provided in the building installation as the unit's disconnect device. Observe the branch circuit rating (i.e., minimum 15 A listed circuit breaker, etc.).

DC Power Supply Wiring

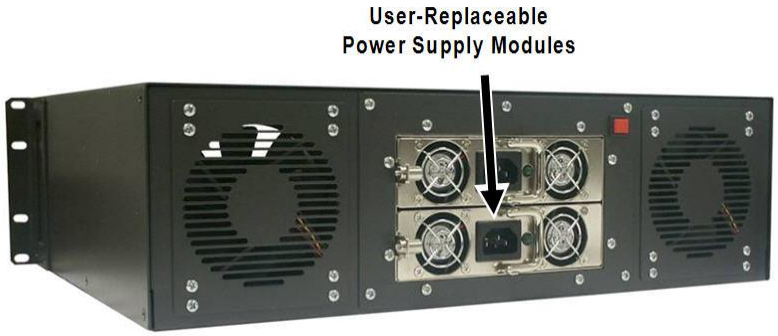
The following diagram shows the wiring configuration for a -48 VDC power supply for the 20-slot chassis/DC version.



Note: The chassis is protected against incorrect wiring configurations. When wired incorrectly, the chassis will not function, but no damage will occur.

To Replace Power Supply Modules

All power supply modules except model 850-10960-2DC are redundant. If any power supply module fails, you should replace it promptly to maintain network integrity and prevent data loss.

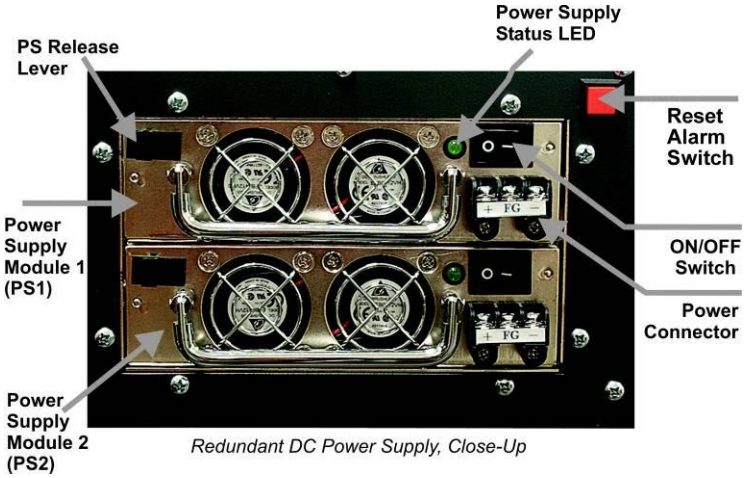


To Replace a Power Supply Module

1. Disconnect the power source from the power supply module.
2. Remove the screws of the retainer plate (on some AC modules).
3. Move the power supply release lever toward the right, or unscrew the captive release screw.
4. Grasp the power supply module by the silver handle and slide out of the chassis. Power supply modules are hot-swappable.
5. Install new power supply module. If module is equipped with an ON/OFF switch, install the module with the switch in the OFF position.

Note: Prisma MediaCenter 20-Slot Chassis in the 850-10960-xx model series can support dual AC, dual DC, or ACDC power. The power supply modules for that series are interchangeable. The five available power supply modules are shown in the following illustrations.

Dual DC Power Supply 850-10954-2DC



Redundant DC Power Supply, Close-Up

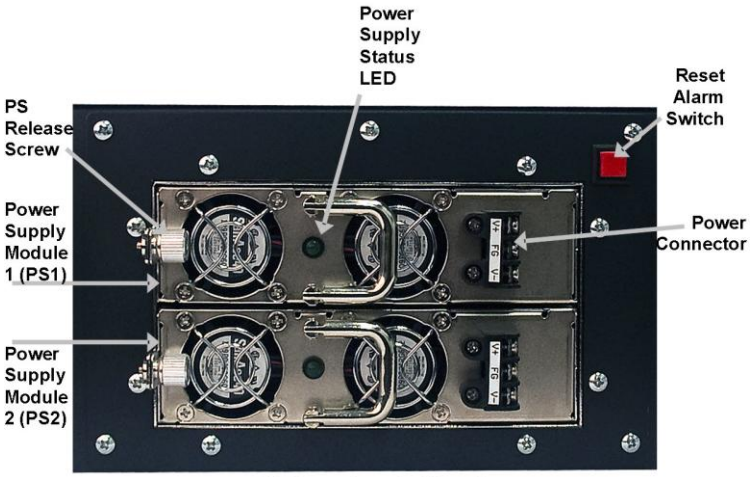
Dual AC Power Supply 850-10956-2AC

Redundant AC Power Supply, Close-Up

Dual AC Power Supply 850-10960-2AC

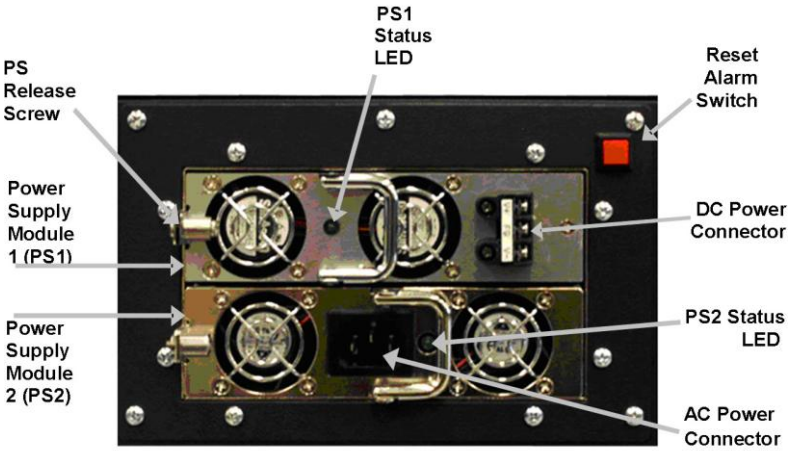
Redundant AC Power Supply, Close-Up

Dual DC Power Supply 850-10960-2DC



DC Power Supply, Close-Up

ACDC Power Supply 850-10960-ACDC



Redundant ACDC Power Supply, Close-Up

Installing Application and SNMP Management Modules

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to the plug-in media converter modules that install into the chassis. Always observe the following precautions when installing or handling a module or any board assembly.

1. Do not remove the module from its protective packaging until you are ready to install it.
2. Wear an ESD wrist grounding strap before handling any module or component. If you do not have a wrist strap, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.

> **CAUTION:**
>
> **Prevent electrostatic damage to electronic equipment. Take ESD precautions, including the use of an ESD wrist strap.**

> **CAUTION:**
>
> **Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service personnel and use tools and techniques that conform to accepted industry practices.**

3. Hold boards by the edges only; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static free surface, ESD pad, or in a proper ESD bag. Do not slide the board over any surface.

To Install Application Modules

Refer to the installation guide shipped with the media converter modules for configuration and laser safety information.

Complete the following steps to install an application module in the chassis.

1. Remove the blank brackets covering the slots where the module is to be installed by removing the screws on the outside edges of the bracket.
2. Slide the module into the chassis card guides until the module is securely seated in the connector.
3. Secure the module into the chassis by tightening the captive screw(s).

   Note: Install blank brackets in unused module slots.
4. Save any blanks removed during installation for future use.

To Install the SNMP Management Module

To manage the chassis, you must install the SNMP management module in the first slot, on the far left of the chassis.

First Slot

Important: The management slot is only for the SNMP management module. Do not install application modules such as media conversion and mode conversion modules in this slot.

Prisma MediaCenter 6-Slot Chassis

The Prisma MediaCenter 6-Slot Chassis is a modular chassis platform designed for use with simple network management protocol (SNMP)-manageable Prisma media converter modules.

The 6-slot chassis is a 1U high, rack-mountable chassis that features 6 slots for installing Prisma media converter modules, plus an additional slot for an SNMP management module.

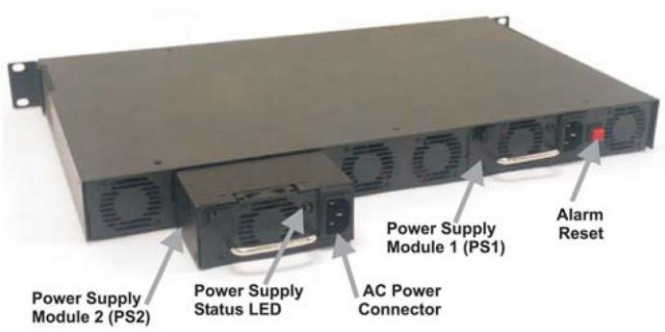
6-Slot Chassis Features

The 6-slot chassis is available in single AC, single DC, dual AC, and dual DC versions. It offers features such as user-replaceable power supply modules, temperature monitoring, Last Gasp, and an alarm reset button.

The chassis supports modular power supply modules, so that worn parts can be replaced without having to send an entire unit in for repair. Keeping fans functional ensures that the modules will operate within their temperature specifications.

6-Slot Chassis Front View

6-Slot Chassis Rear View



6-Slot Chassis Dimensions

The following are the dimensions for the chassis.

Height x Width x Depth	Dimension
Height	1.75 inches (4.45 cm)
Width	17.35 inches (44.07 cm)
Depth	10.65 inches (27.05 cm)

Alarm Reset Button

When one power supply module malfunctions, an audible alarm sounds indicating the loss of the power supply. The alarm can be silenced by pressing the alarm reset button, located next to the power connector on the power supply module.

Important: In the event of a power failure, remove and replace the power supply immediately.

LEDs on the management module and the power supply module itself also indicate power supply module failures.

Last Gasp Alarm

The chassis includes a Last Gasp trap feature, "Remote Chassis Down," which sends a trap when any of the following events occurs:

- Both power supplies in the chassis malfunction.
- Both power supplies in the chassis are powered down.
- The AC line fails.

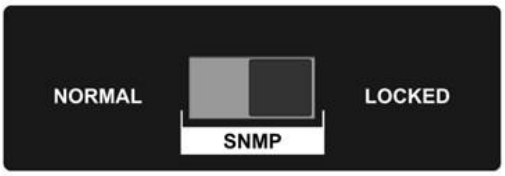
Temperature Gauge

The chassis includes a temperature monitoring gauge with a heat sensor on the backplane of the chassis. Users define a threshold for chassis temperature via SNMP. If the chassis temperature rises above the specified level, the SNMP agent sends a trap (configured in PrismaView) to the administrator. Refer to *PrismaView Management Application Software Installation Instructions*, part number 4006062 for more information.

There is also an LED indicator on the SNMP management module for chassis temperature. Refer to ***SNMP Management Module LEDs*** (on page 32) for more information.

SNMP Write Lock Switch

The SNMP write lock switch on the front of the chassis can be used to prevent a new SNMP management module from reconfiguring the application module settings (e.g., the status of features such as LinkLoss, FiberAlert, Force mode, etc.) made via SNMP on any previous management module(s).



Note: Leave this switch in the NORMAL position during day-to-day operation. Only use the LOCKED position when changing the SNMP management module.

SNMP Management Module (Optional)

The optional SNMP management module includes two twisted-pair ports; one for management and one reserved for future use. The management module also features a DB-9 serial port and supports SNMP V1/V2c.

The SNMP management module can be removed and replaced as necessary. Refer to *Prisma MediaCenter SNMP Management Module Installation Instructions*, part number 4027869 for complete instructions about how to configure and operate the module.

If an SNMP management module is installed, refer to the ***SNMP Management Module LEDs*** (on page 32) for indicators of link, temperature, power supply modules, and other functions.

SNMP Management Module LEDs

The SNMP management module features several LEDs. The following table provides module LED display functions.

LED	Function
LNK/ACT	■ Glows green when a link is established on port. ■ Blinks green when data activity occurs.
FDX/COL	■ Glows yellow when port is in full duplex mode. ■ Blinks yellow when port is operating in half duplex mode and collisions occur.
TEMP	■ Glows yellow when temperature of unit surpasses a user-defined level.
PS	■ Glows yellow when one power supply malfunctions.
FAN A / FAN B	■ Glows yellow when a fan malfunctions.

Chassis Installation

Install the chassis before installing any Prisma media converter modules into the chassis.

Safety Precautions

When installing the chassis, be sure to observe the following precautions to prevent electrical or mechanical damage:

- Stay within the chassis power rating to prevent overload of supply circuits or damage to overcurrent protection and supply wiring.
- Maintain reliable earth ground, especially when connecting to a power strip instead of directly to a branch circuit.
- Protect the chassis from exposure to sunlight and electrical or magnetic fields.
- Ensure that the equipment rack remains stable, even with the addition of the chassis and its associated cabling.

Supplies Needed

All required rack-mounting hardware is supplied with the chassis except the following items:

- Four #10 screws
- Four clip-nuts

Note: Hardware may vary depending on rack type.

To Install the Chassis

1. Locate a suitable location in the rack for the unit installation and secure the clip-nuts onto the mounting rails.
2. Attach the chassis to the rack with the four screws.
3. Plug the chassis into a reliable, filtered power source.

Important

- **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. In this case, consider installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** - Give consideration to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over current protection and supply wiring.
- **Reliable Grounding** - Maintain reliable grounding of rack mounted equipment. Give particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).
- **Location** - Both AC and DC versions are intended for use in a Restricted Access Location (RAL).

DC Power Wiring, Power Supply Modules, and Fans

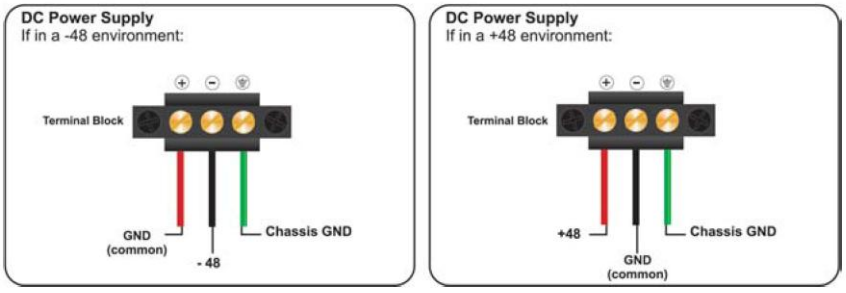
Wiring Guidelines

- Connect a suitable grounding conductor to the grounding terminal at each power supply module.
- Connect suitable supply wiring to the plus and minus terminals at each power supply module.

  Note: For safety, the protective earth conductor (ground wire) must be large enough to carry all of the current if the -48 VDC return fails. Full fault redundancy is achieved by having equal size conductors for the protective earth ground and the -48 VDC return.
- A suitable listed circuit breaker shall be provided in the building installation as the unit's disconnect device.

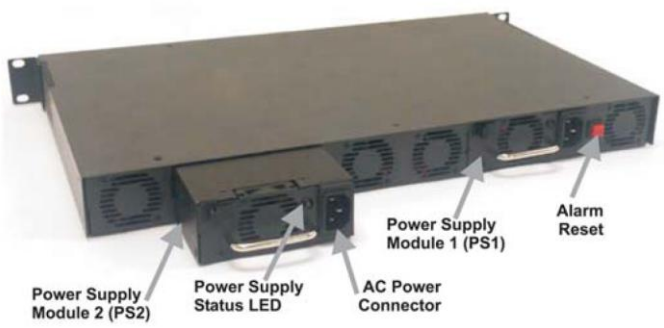
DC Power Supply Wiring

The following illustration shows the wiring configurations for -48 VDC power supplies for the 6-slot chassis.



User-Replaceable Power Supply Modules

The 6-slot chassis ships from the factory with one or two power supplies installed, depending on the model. Chassis ordered with one power supply come with a filler tray installed in the second slot.



To Install a Second Power Supply Module

1 Remove the filler tray from the power supply slot.
2 Slide the power supply module into the chassis and click into place.
3 Attach the chassis power cord.

To Remove a Power Supply Module

1 Disconnect the power source from the power supply module.
2 Move the power supply release switch toward the right.
3 While holding the switch, grasp the power supply module by the silver handle and slide the module out of the chassis.

Fans

Users can define a threshold for fan operation via SNMP (when installed in a managed environment). If fan speed falls below the specified level, SNMP sends a trap (configured in PrismaView) to the administrator. The SNMP management module also contains two LED indicators for fan failure.

The red alarm reset button also functions as a fan test button. To verify fan functionality, hold the button down for several seconds and confirm that the fans engage. The fans will turn off when the button is released.

Installing Application and SNMP Management Modules

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to the plug-in media converter modules that install into the chassis. Always observe the following precautions when installing or handling a module or any board assembly.

1. Do not remove the module from its protective packaging until you are ready to install it.
2. Wear an ESD wrist grounding strap before handling any module or component. If you do not have a wrist strap, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.

> **CAUTION:**
>
> **Prevent electrostatic damage to electronic equipment. Take ESD precautions, including the use of an ESD wrist strap.**

> **CAUTION:**
>
> **Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service personnel and use tools and techniques that conform to accepted industry practices.**

3. Hold boards by the edges only; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static free surface, ESD pad, or in a proper ESD bag. Do not slide the board over any surface.

To Install Application Modules

Refer to the installation guide shipped with the media converter modules for configuration and laser safety information.

Complete the following steps to install an application module in the chassis.

1. Remove the blank brackets covering the slots where the module is to be installed by removing the screws on the outside edges of the bracket.
2. Slide the module into the chassis card guides until the module is securely seated in the connector.
3. Secure the module into the chassis by tightening the captive screw(s).

   Note: Install blank brackets in unused module slots.
4. Save any blanks removed during installation for future use.

To Install the SNMP Management Module

To manage the chassis, you must install the SNMP management module in the first slot, on the far left of the chassis.

First Slot

Important: The management slot is only for the SNMP management module. Do not install application modules such as media conversion and mode conversion modules in this slot.

Prisma MediaCenter 3-Slot Chassis

Introduction

The Prisma MediaCenter 3-Slot Chassis is a modular chassis platform designed for use with simple network management protocol (SNMP)-manageable Prisma media converter modules.

The chassis is a 1U high, rack-mountable chassis capable of supporting redundant power supply modules and an SNMP management module.

3-Slot Chassis Features

The 3-slot chassis is available in single AC, single DC, dual AC, dual DC, and ACDC versions. All contain internal fixed power supply modules that are not user-replaceable. It offers features such as redundant power supply modules, temperature monitoring, Last Gasp, and an alarm reset button.

The 3-slot chassis ships with one or two AC or DC power supply modules, depending on the model. All models include fans.

3-Slot Chassis Front View

3-Slot Chassis Dimensions

The following are the dimensions for the chassis.

Height x Width x Depth	Dimension
Height	1.73 inches (4.4 cm)
Width	7.5 inches (19.0 cm)
Depth	8.74 inches (22.0 cm)

Alarm Reset Button

When one power supply module malfunctions, an audible alarm sounds indicating the loss of the power supply. The alarm can be silenced by pressing the alarm reset button, located next to the power connector on the power supply module.

Important: In the event of a power failure, return the chassis to us for repair or replacement.

Last Gasp Alarm

The chassis includes a Last Gasp trap feature, "Remote Chassis Down," which sends a trap when any of the following events occurs:

- Both power supplies in the chassis malfunction.
- Both power supplies in the chassis are powered down.
- The AC line fails.

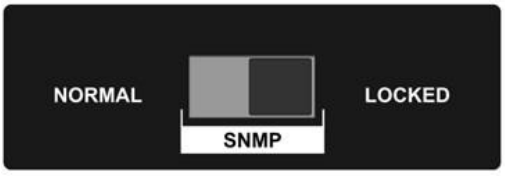
Temperature Gauge

The chassis includes a temperature monitoring gauge with a heat sensor on the backplane of the chassis. Users define a threshold for chassis temperature via SNMP. If the chassis temperature rises above the specified level, the SNMP agent sends a trap (configured in PrismaView) to the administrator. Refer to *PrismaView Management Application Software Installation Instructions*, part number 4006062 for more information.

There is also an LED indicator on the SNMP management module for chassis temperature. Refer to ***SNMP Management Module LEDs*** (on page 41) for more information.

SNMP Write Lock Switch

The SNMP Write Lock switch on the back of the chassis can be used to prevent a new management board from overwriting application module settings, such as the status of LinkLoss, FiberAlert, and Force mode features, made by SNMP and held on any previous management board.



SNMP Management Module (Optional)

The optional SNMP management module includes two twisted-pair ports; one for management and one reserved for future use. The management module also features a DB-9 serial port and supports SNMP V1/V2c.

The SNMP management module can be removed and replaced as necessary. Refer to *Prisma MediaCenter SNMP Management Module Installation Instructions*, part number 4027869 for complete instructions about how to configure and operate the module.

If an SNMP management module is installed, refer to the ***SNMP Management Module LEDs*** (on page 41) for indicators of link, temperature, power supply modules, and other functions.

SNMP Management Module LEDs

The SNMP management module features several LEDs. The following table provides module LED display functions.

LED	Function
LNK/ACT	■ Glows green when a link is established on port. ■ Blinks green when data activity occurs.
FDX/COL	■ Glows yellow when port is in full duplex mode. ■ Blinks yellow when port is operating in half duplex mode and collisions occur.
TEMP	■ Glows yellow when temperature of unit surpasses a user-defined level.
PS	■ Glows yellow when one power supply malfunctions.
FAN A / FAN B	■ Glows yellow when a fan malfunctions.

Chassis Installation

Install the chassis before installing any Prisma media converter modules into the chassis.

Safety Precautions

When installing the chassis, be sure to observe the following precautions to prevent electrical or mechanical damage:

- Stay within the chassis power rating to prevent overload of supply circuits or damage to overcurrent protection and supply wiring.
- Maintain reliable earth ground, especially when connecting to a power strip instead of directly to a branch circuit.
- Protect the chassis from exposure to sunlight and electrical or magnetic fields.
- Ensure that the equipment rack remains stable, even with the addition of the chassis and its associated cabling.

To Install the Chassis

You can install the chassis on a table top, mount it in a standard equipment rack, or mount it to a wall surface. This section describes all three installation methods.

To Install the Chassis on a Table Top

Place the chassis on a flat surface, leaving adequate space on the sides of the unit to accommodate cooling. Plug the chassis power cable into a reliable, filtered power source.

To Install the Chassis in a Rack

Note: Installation in a rack requires an accessory rack mounting bracket, sold separately. Contact customer support for ordering information.

1. Place the chassis on the accessory rack mounting bracket.
2. Align the holes of the chassis to the shelf and secure with screws.
3. Attach the cables between the chassis and the device that will be interconnected.
4. Plug the chassis power cable into a reliable, filtered power source.

Note: You can install up to two chassis side-by-side in an accessory mounting bracket.

To Mount the Chassis to a Wall Surface

1. Locate the two mounting holes in the bottom of the chassis and measure their center-to-center distance.
2. Mark two screw locations at the desired location on the mounting surface, separated by the distance of the mounting holes in the chassis.
3. Install two #10 panhead screws (not supplied) at the marked screw locations.
4. Hang the chassis on the screws.
5. Plug the chassis power cable into a reliable, filtered power source.

Note: All versions of the chassis are intended for use in a Restricted Access Location (RAL). A readily accessible disconnect device shall be incorporated in the building installation wiring.

DC Power Wiring, Power Supply Modules, and Fans

Wiring Guidelines

- Connect a suitable grounding conductor to the grounding terminal at each power supply module.
- Connect suitable supply wiring to the plus and minus terminals at each power supply module.

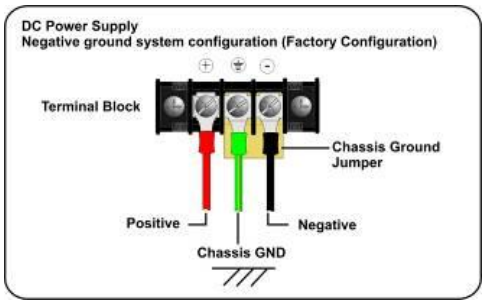
  Note: For safety, the protective earth conductor (ground wire) must be large enough to carry all of the current if the -48 VDC return fails. Full fault redundancy is achieved by having equal size conductors for the protective earth ground and the -48 VDC return.
- A suitable listed circuit breaker shall be provided in the building installation as the unit's disconnect device.

Power Supplies

Power supply modules in all models of the 3-slot chassis are fixed, and are not user-replaceable.

DC Power Supply Wiring

The following illustration shows the wiring configuration for a -48 VDC power supply for the chassis.



For positive ground system applications, remove the chassis ground jumper and connect it between the positive terminal and the chassis ground terminal. Alternatively, remove the chassis ground jumper and connect the chassis ground at the power source.

CAUTION:

- **Incorrect wiring will result in a chassis malfunction.**
- **The chassis is compliant with Isolated Grounding Plane practices. The positive and negative terminals are isolated from the chassis ground and must have a ground reference at the power-sourcing equipment.**

Temperature Triggered Fans

The chassis includes temperature triggered fans. When the temperature of the chassis reaches 40°C, the two fans are activated. To test fan operation, hold the alarm reset button down for 4 to 5 seconds. The fans should turn on, and will turn off when you release the button. If the fans do not turn on, call us. Fans are not user-replaceable.

The red alarm reset button also functions as a fan test button. To verify fan functionality, hold the button down for several seconds and confirm that the fans engage. The fans will turn off when the button is released.

WARNING:

Disconnect all power supplies before servicing this equipment.

Installing Application and SNMP Management Modules

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to the plug-in media converter modules that install into the chassis. Always observe the following precautions when installing or handling a module or any board assembly.

1. Do not remove the module from its protective packaging until you are ready to install it.
2. Wear an ESD wrist grounding strap before handling any module or component. If you do not have a wrist strap, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.

> **CAUTION:**
>
> **Prevent electrostatic damage to electronic equipment. Take ESD precautions, including the use of an ESD wrist strap.**

> **CAUTION:**
>
> **Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service personnel and use tools and techniques that conform to accepted industry practices.**

3. Hold boards by the edges only; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static free surface, ESD pad, or in a proper ESD bag. Do not slide the board over any surface.

To Install Application Modules

Refer to the installation guide shipped with the media converter modules for configuration and laser safety information.

Complete the following steps to install an application module in the chassis.

1. Remove the blank brackets covering the slots where the module is to be installed by removing the screws on the outside edges of the bracket.
2. Slide the module into the chassis card guides until the module is securely seated in the connector.
3. Secure the module into the chassis by tightening the captive screw(s).

   Note: Install blank brackets in unused module slots.
4. Save any blanks removed during installation for future use.

To Install the SNMP Management Module

To manage the chassis, you must install the SNMP management module in the management slot at the bottom left of the chassis.

Slot 1 **Slot 2**

Management Slot **Slot 3**

Important: The management slot is only for the SNMP management module. Do not install application modules such as media conversion and mode conversion modules in this slot.

Fiber Optic Cleaning Guidelines

CAUTION:

Proper operation of this equipment requires clean optical fibers. Dirty fibers will adversely affect performance. Proper cleaning is imperative.

The proper procedure for cleaning optical connectors depends on the connector type. The following describes general instructions for fiber optic cleaning. Use your company's established procedures, if any, but also consider the following.

Cleaning fiber optic connectors can help prevent interconnect problems and aid system performance. When optical connectors are disconnected or reconnected, the fiber surface can become dirty or scratched, reducing system performance.

Inspect connectors prior to mating, clean as needed, and then remove all residue. Inspect connectors after cleaning to confirm that they are clean and undamaged.

Recommended Equipment

- CLETOP or OPTIPOP ferrule cleaner (for specific connector type)
- Compressed air (also called “canned air”)
- Lint-free wipes moistened with optical-grade (99%) isopropyl alcohol
- Bulkhead swabs (for specific connector type)
- Optical connector scope with appropriate adaptor

Tips for Optimal Fiber Optic Connector Performance

- Do not connect or disconnect optical connectors with optical power present.
- Always use compressed air before cleaning the fiber optic connectors and when cleaning connector end caps.
- Always install or leave end caps on connectors when they are not in use.
- If you have any degraded signal problems, clean the fiber optic connector.
- Advance a clean portion of the ferrule cleaner reel for each cleaning.
- Turn off optical power before making or breaking optical connections to avoid microscopic damage to fiber mating surfaces.

To Clean Optical Connectors

Warning:

- **Avoid personal injury! Use of controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure.**
- **Avoid personal injury! The laser light source on this equipment (if a transmitter) or the fiber cables connected to this equipment emit invisible laser radiation.**
- **Avoid personal injury! Viewing the laser output (if a transmitter) or fiber cable with optical instruments (such as eye loupes, magnifiers, or microscopes) may pose an eye hazard.**

- Do not apply power to this equipment if the fiber is unmated or unterminated.
- Do not stare into an unmated fiber or at any mirror-like surface that could reflect light emitted from an unterminated fiber.
- Use safety-approved optical fiber cable to maintain compliance with applicable laser safety requirements.

Important: Ensure that no optical power is present prior to this procedure.

1. Turn optical power off to the connector.
2. Using an optical connector scope, inspect the connector for scratches, burns, or other signs of damage.

   Note: If the connector is damaged, replace the jumper.
3. If the connector requires cleaning, swipe it across the face of the appropriate ferrule cleaner several times. This will remove dust and some films.

   Note: You may hear a slight "squeak" while cleaning the connector, indicating that it is clean.
4. Inspect the connector again. If the connector requires further cleaning, clean it using 99% isopropyl alcohol and a lint-free wipe.
5. Swipe the connector across the face of the appropriate ferrule cleaner several more times to remove any film left by the alcohol.
6. Repeat all the steps above as needed until the connector is clean.

For Information

Support Telephone Numbers

This table lists the Technical Support and Customer Service numbers for your area.

Region	Centers	Telephone and Fax Numbers
North America	Cisco Services Atlanta, Georgia United States	For *Technical Support*, call: ▪ Toll-free: 1-800-722-2009 ▪ Local: 678-277-1120 (Press **2** at the prompt) For *Customer Service*, call: ▪ Toll-free: 1-800-722-2009 ▪ Local: 678-277-1120 (Press **3** at the prompt) ▪ Fax: 770-236-5477 ▪ Email: customer-service@cisco.com
Europe, Middle East, Africa	Belgium	For *Technical Support*, call: ▪ Telephone: 32-56-445-197 or 32-56-445-155 ▪ Fax: 32-56-445-061 For *Customer Service*, call: ▪ Telephone: 32-56-445-444 ▪ Fax: 32-56-445-051 ▪ Email: service-elc@cisco.com
Japan	Japan	▪ Telephone: 81-3-5908-2153 or +81-3-5908-2154 ▪ Fax: 81-3-5908-2155
Korea	Korea	▪ Telephone: 82-2-3429-8800 ▪ Fax: 82-2-3452-9748 ▪ Email: songk@cisco.com
China (mainland)	China	▪ Telephone: 86-21-2401-4433 ▪ Fax: 86-21-2401-4455 ▪ Email: xishan@cisco.com
All other Asia Pacific countries & Australia	Hong Kong	▪ Telephone: 852-2588-4746 ▪ Fax: 852-2588-3139 ▪ Email: saapac-support@cisco.com
Brazil	Brazil	▪ Telephone: 11-55-08-9999 ▪ Fax: 11-55-08-9998 ▪ Email: fattinl@cisco.com or ecavalhe@cisco.com
Mexico, Central America, Caribbean	Mexico	For *Technical Support*, call: ▪ Telephone: 52-3515152599 ▪ Fax: 52-3515152599 For *Customer Service*, call: ▪ Telephone: 52-55-50-81-8425 ▪ Fax: 52-55-52-61-0893 ▪ Email: sa-latam-cs@cisco.com

Region	Centers	Telephone and Fax Numbers
All other Latin America countries	Argentina	For *Technical Support*, call: ■ Telephone: 54-23-20-403340 ext 109 ■ Fax: 54-23-20-403340 ext 103 For *Customer Service*, call: ■ Telephone: 770-236-5662 ■ Fax: 770-236-5888 ■ Email: keillov@cisco.com

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