# Transition Networks
CPSMC13xx-100
13-Slot PointSystem™ Chassis

User Guide

Revision F
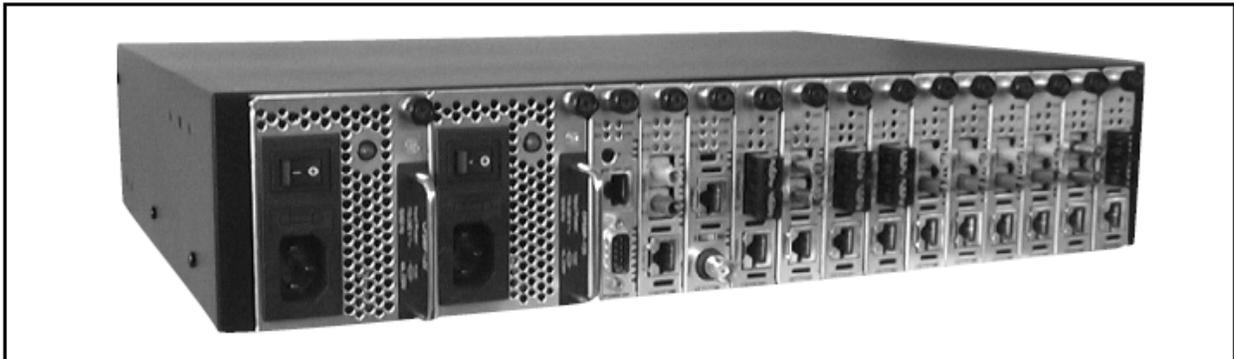
CPSMC1300-100

CPSMC1310-100

CPSMC1320-100

Contents

Record of Revisions

| Rev	Date	Notes
C	7/30/03	Updated content and placed software information in a separate manual.
D	10/1/04	Updated UL information.
E	1/26/05	Added power disconnect and external overcurrent requirements text.
F	5/26/15	Added Terminal Block Cover information and updated format.

1. Introduction

1.1 Description

The Transition Networks CPSMC13xx-100 13-Slot PointSystem™ chassis is a 19-inch, rack-mountable chassis for selected Transition Networks media converter slide-inmodules.

The CPSMC13xx-100 chassis allows the network administrator to connect various copper and fiber-optic network media over protocols that include Ethernet, Fast Ethernet, DS3/E3, and OC-12 and many others. The chassis provides installation space for up to 13 single-slot media converter slide-in-modules in the front of the unit.

The CPSMC13xx-100 also comes equipped with an AC or DC power supply installed in the front of the chassis. An extra installation space is available for an optional redundant AC or DC power supply.
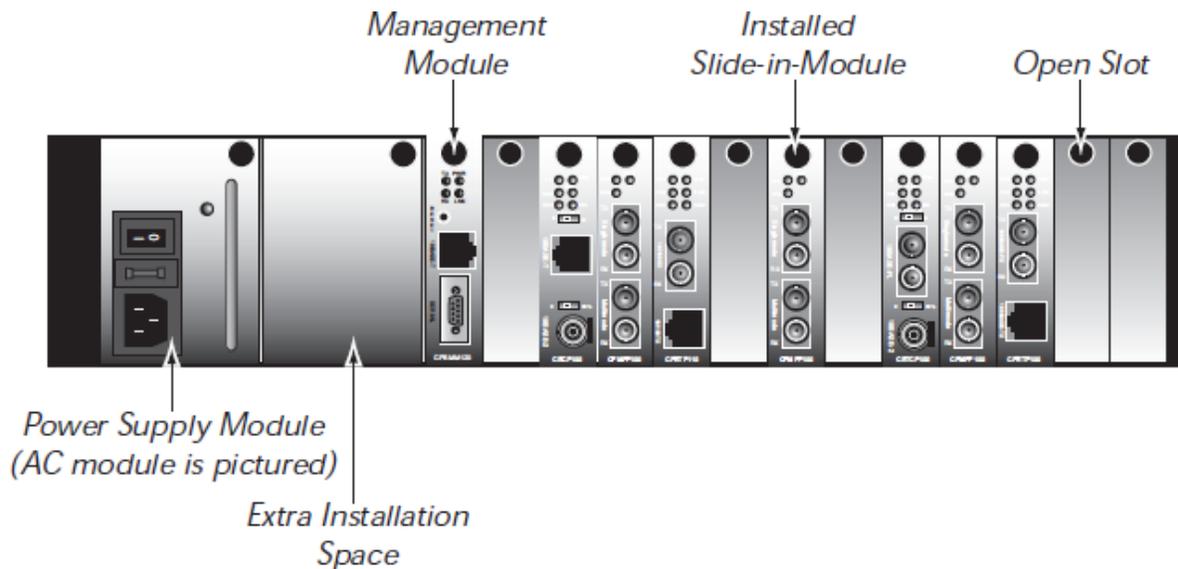
With installed PointSystem™ management module(s) (P/N CPSMM-120, -200, or -210), the CPSMC13xx-100 can be managed and monitored via:

• An SNMP application such as Transition Networks FocalPoint™ management software installed at a remote Network Management Station (NMS).

• A remote Web browser.

• A command-line interface (CLI) at an attached terminal.

• A command-line-interface (CLI) at a remote Telnet connection.

The management modules also make it possible to control up to eight (8) cascaded chassis fully populated with installed media converter slide-in-modules.

1.2 Unpacking

Use the following list to verify the shipment:

Item	Part Number
13-Slot chassis with AC Power Supply	CPSMC1300-100
13-Slot chassis with 48-VDC Power Supply	CPSMC1310-100
13-Slot chassis with 24-VDC Power Supply	CPSMC1320-100
PointSystem™ chassis face plates (10)	CPSFP-200
Power Cord	(varies by country)
Power Supply Uses Guide	33208

The following items are optional accessories for the CPSMC13xx-100 13-Slot PointSystem™ chassis:

Item	Part Number
Redundant AC Power Supply 120/240 VAC	CPSMP-120 (optional)
Redundant 48-VDC Power Supply	CPSMP-130 (optional)
Redundant 24-VDC Power Supply	CPSMP-140 (optional)
Single-Slot Master Management Module	CPSMM-120 (optional)
Dual-Slot Master Management Module	CPSMM-200 (optional)
FocalPoint™ Software Disk (included with the Master Management Modules)	7223
Expansion Management Module	CPSMM-210 (optional)
23-inch Rack Mount Ears	CPSRE-230 (optional)
Selectable Media Converter Slide-in-Module(s)	(various P/N) - (optional)

2. Slide-In Modules

2.1 Media Converter Slide-in-Modules

Transition Networks media converter slide-in-modules, installed in slots at the front of the chassis, allow the network administrator to connect various copper and fiber-optic network media over protocols that include Ethernet, Fast Ethernet, DS3/E3, and OC-12 as well as many others (see www.transition.com for a complete listing).

NOTE: Refer to the specific user's guide that comes with each media converter slidein-module for cable, connector, and LED indicator information.

2.1.1 Chassis Face Plates

CAUTION: **Slots in the CPSMC13xx-100 chassis without a slide-in-module installed MUST have a protective chassis face plate (P/N CPSFP-200) covering the empty slot for Class A compliance**.

Install a chassis face plate over any unused chassis slot by aligning the hole in the face plate with the threaded hole in the chassis. Secure the face place with the enclosed bolt.

Chassis Face Plate
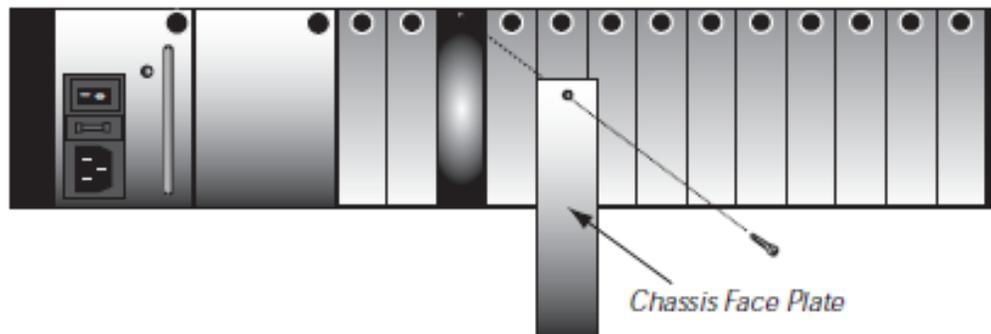
2.1.2 Calculating the Power Consumption

CAUTION: Before installing the media converter, refer to the power consumption data for each individual media converter (provided in the user's guide shipped with each media converter). **The combined power consumption of all devices must not exceed the available power supply.** Failure to observe this caution could result in diminishing system reliability.

In other words, the combined power requirements of the CPSMC13xx-100 chassis **plus** all slide-in-modules must be **less than** the available power.

In addition, the maximum power delivery capacity for each chassis slot is 12 Watts, with an aggregate chassis maximum of 6 Watts per slot. For example, a 12-Watt slide-inmodule media converter would require the power of two slots. Therefore, only six (6) 12-Watt converters could be installed into the CPSMC13xx-100 chassis. Six (6) slots must remain unused and the remaining slot can accommodate a slide-in-module up to 6 Watts.

Contact Transition Networks Tech Support to ensure the power requirements for your specific application do not exceed the available power.

2.1.3 Installing the Media Converter Slide-in-Modules

CAUTION: **Wear a grounding device and observe electrostatic discharge precautions when installing the slide-in-module(s). Failure to observe this caution could result in damage to, and subsequent failure of, the slide-inmodule(s).**

NOTE: The slide-in-modules can be installed in any installation slot, in any order.

To install the slide-in-module into the CPSMC13xx-100 chassis:

1. If a chassis face plate (P/N CPSFP-200) is covering the installation slot, remove the face plate from the installation slot by removing the one (1) screw that secures the plate to the front of the chassis.

NOTE: If the slide-in-module requires two slots, remove the face plates from two (2) adjacent installation slots.

2. Align the slide-in-module with the chassis installation slot so that the panel fastener screw is at the top of the module.

Panel Fastener Screw
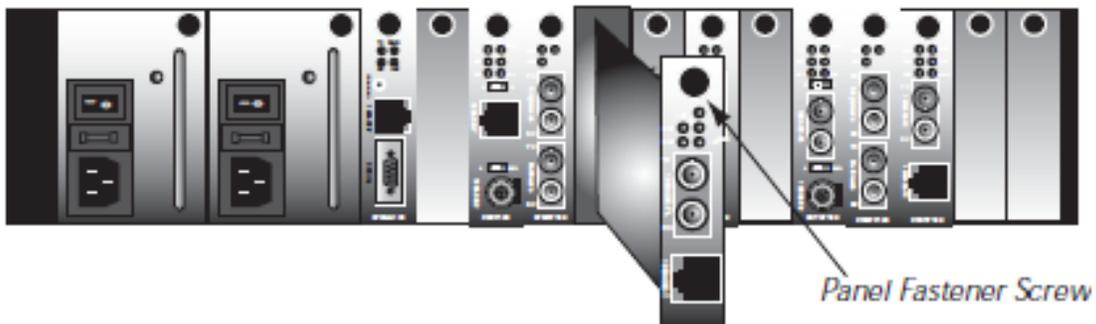
3. Carefully slide the slide-in-module into the installation slot, while aligning the module's circuit board with the installation guides.

NOTE: Ensure that the slide-in-module is firmly seated inside the chassis.

4. Push in and rotate the attached panel fastener screw clockwise to secure the slide-in-module to the chassis.

5. Repeat steps 1 through 4 for any additional slide-in-module(s).

2.1.4 Replacing the Media Converter Slide-in-Modules

CAUTION: **Wear a grounding device and observe electrostatic discharge precautions when replacing the slide-in-module(s). Failure to observe this caution could result in damage to, and subsequent failure of, the slide-inmodule(s).**

NOTE: The media converter slide-in-modules can be hot-swapped.

To replace a media converter slide-in-module:

1. Remove the slide-in-module to be replaced by loosening the panel fastener screw that secures it to the chassis front. Slide the module from the chassis.

2. Align the replacement slide-in-module with the chassis installation slot so that the panel fastener screw is at the top.

Panel Fastener Screw
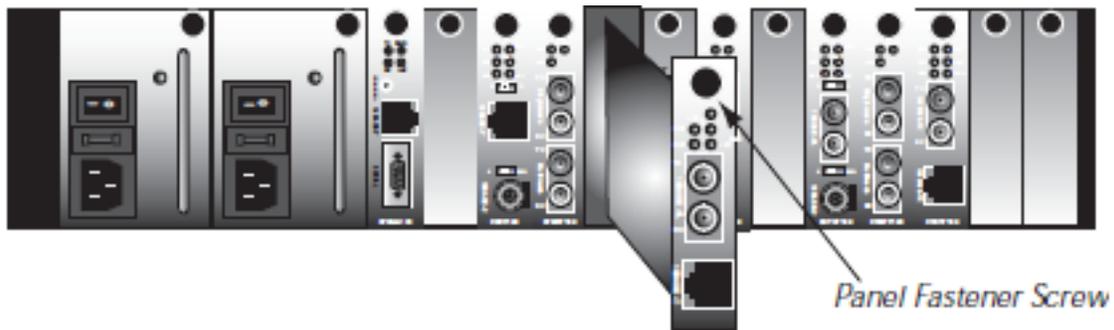
3. Carefully slide the replacement slide-in-module into the installation slot, while aligning the module's circuit board with the installation guides.

NOTE: Ensure that the slide-in-module is firmly seated inside the chassis.

4. Rotate the attached panel fastener screw clockwise to secure the slide-in-module to the chassis.

2.2 Management Modules

Optional network management is provided by SNMP software embedded in Transition Networks PointSystem™ management module(s) that can be installed in the CPSMC13xx-100 chassis.

Transition Networks provides two such modules:

• CPSMM-120 Single-Slot Master Management Module.
• CPSMM-200 Dual-Slot Master Management Module.

Along with an additional expansion module:

• CPSMM-210 Single Slot Expansion Management Module.

2.2.1 Three Types of Management Modules

CPSMM-120 Single-Slot Master Management Module

The optional CPSMM-120 Single-Slot Master Management Module can be installed to enable network management of a single CPSMC13xx-100 chassis.

Refer to the CPSMM-120 user's guide for more information on the CPSMM-120 Single-Slot Master Management Module.

CPSMM-200 Dual-Slot Master Management Module

The optional CPSMM-200 Dual-Slot Master Management Module can also be installed in the CPSMC13xx-100 chassis to enable network management.

This module has all of the features of the CPSMM-120 plus a pair of cascade ports, which allow multiple PointSystem™ chassis to be connected.

Note also that this module requires two adjacent slots in the chassis for installation.

Refer to the CPSMM-200/-210 user's guide for more information on the CPSMM-200 Dual-Slot Master Management Module.

CPSMM-210 Single-Slot Expansion Management Module

The CPSMM-210 is used with the CPSMM-200 to connect up to eight (8) PointSystem™ chassis into one manageable stack.

Refer to the CPSMM-200/-210 user's guide for more information on the CPSMM-210 Single-Slot Expansion Management Module.

NOTE: See section 4.2 Cascade Option for details on connecting multiple chassis.
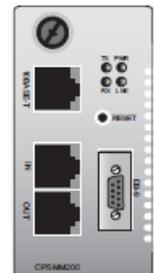
2.2.2 Installing the Management Modules

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when installing the management module into the CPSMC13xx-100 chassis. Failure to observe this caution could result in damage to, and subsequent failure of, the management module.

NOTE: Transition Networks recommends installing the management module into the left-most installation slot to keep the management module cables separate from the media converter cables.

To install a management module into the CPSMC13xx-100 chassis:

1a. CPSMM-200 Dual-Slot Master Management Module:

If chassis face plates are covering the installation slots, remove the face plates from the two (2) installation slots at the far-left position of the chassis.

Panel Fastener Screw
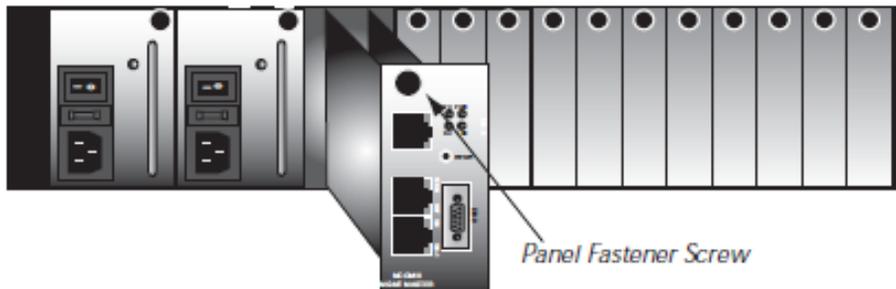
1b. CPSMM-120 Single-Slot Master Management Module OR
CPSMM-210 Single-Slot Expansion Management Module:

If chassis face plates are covering the installation slots, remove the face plate from the one (1) installation slot at the far-left position of the chassis.

Panel Fastener Screw
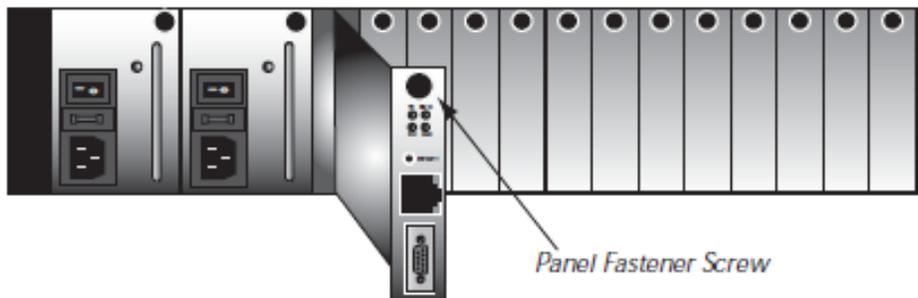
2. Align the management module with the chassis installation slot so that the panel fastener screw is at the top of the module.

3. Carefully slide the management module into the installation slot, while aligning the module's circuit board with the installation guides.

NOTE: Ensure that management module is firmly seated inside the chassis.

4. Rotate the attached panel fastener screw clockwise to secure the management module to the chassis.

2.2.3 Replacing the Management Modules

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when replacing the management module(s). Failure to observe this caution could result in damage to, and subsequent failure of, the management module(s).

NOTE: The management modules can be replaced while the chassis remains powered. However, you must configure a new IP address for the replacement management module. For more information, see the FocalPoint™ 2.0 user's guide on the enclosed application CD or on-line at www.transition.com.

To replace a management module in the CPSMC13xx-100 chassis:

1. Remove the management module to be replaced by loosening the panel fastener screw that secures the module to the chassis front. Slide the module from the chassis.

Panel Fastener Screw
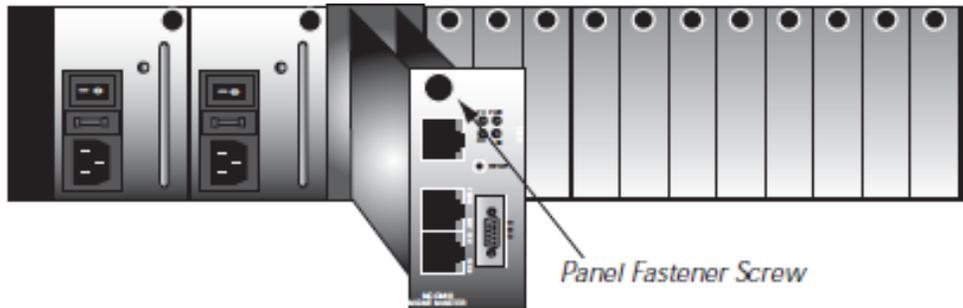
2. Align the replacement module with the installation slot so that the panel fastener screw is at the top.

3. Carefully slide the replacement management module into the installation slot, while aligning the module's circuit board with the installation guides.

NOTE: Ensure that the management module is firmly seated inside the chassis.

4. Rotate the attached panel fastener screw clockwise to secure the module to the chassis.

3 Powering the CPSMC13xx-100

3.1 CPSMP-120 Power Supply Module (AC)

The CPSMC1300-100 PointSystem™ chassis is equipped with an AC power supply module (P/N CPSMP-120) installed in the front of the chassis. The power supply module supplies power to the chassis, installed media converter slide-in-modules, and management modules.
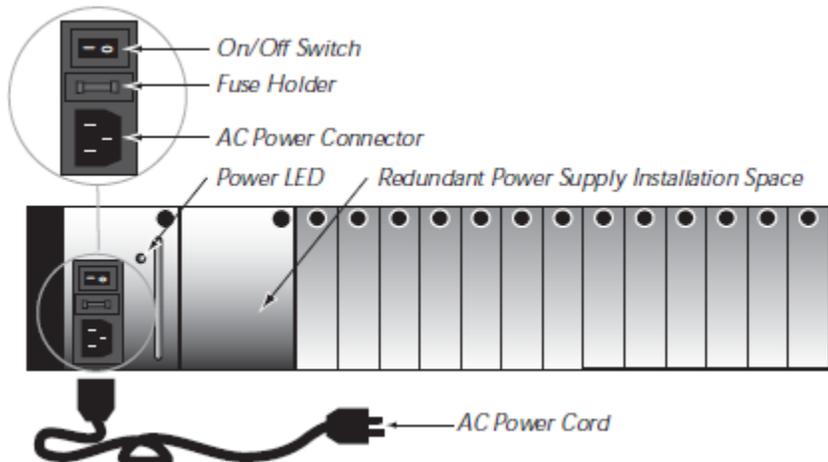
The components of the CPSMP-120 AC power supply module include:

• An **AC power cord** that distributes power from an external outlet to an AC power connector on the power supply module.
• An **On/Off switch** that, when set to "I", allows the module to supply power to the chassis and any installed modules.
• A **power LED** indicator.
• A **fuse** installed in a fuse holder.

Optional Redundant AC Power Supply Module

An extra installation space is available in the front of the chassis for installing an optional redundant AC power supply module (P/N **CPSMP-120**). See section *3.5.1 Installing the Power Supply Module* for instructions on installation.

Instant Fail-Over

The Instant Fail-Over feature ensures uninterrupted power to the chassis. If one of the power supply modules loses power, the chassis mother board automatically switches to the other power supply.

Powering the AC Power Supply Module

To power the **CPSMC1300-100** chassis through the **CPSMP-120** AC power supply module:

1. Set the On/Off switch to "**0**".

2. Connect the female end of power cord to the power receptacle on the power supply module.

3. Plug the end of the power cord into the correct voltage AC rack or wall socket.

4. Set the On/Off switch to "**I**".

5. Verify that the chassis is powered by observing the lit power LED.
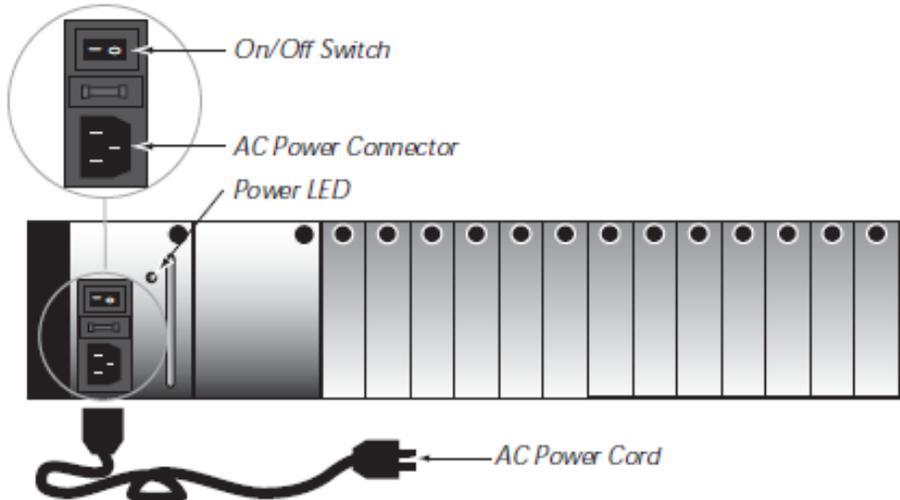
3.2 CPSMP-130 Power Supply Module (48-VDC)

The **CPSMC1310-100** chassis is equipped with a 48-VDC power supply module (P/N CPSMP-130) installed in the front of the chassis. The power supply module supplies power to the chassis, installed media converter slide-in-modules, and management modules.
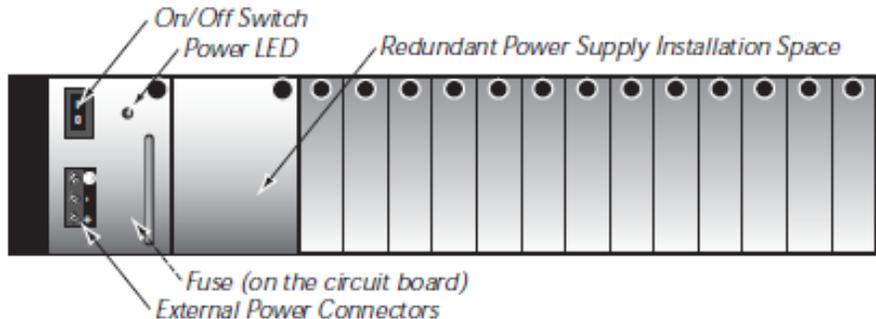
The components of the **CPSMP-130** 48-VDC power supply module include:

• A set of three (3) **external power connectors** that distribute power from an external 48-VDC outlet to a chassis ground connector, a positive (**+**) connector, and a negative (**-**) connector on the power supply module. Note that a Terminal Block Cover was added to CPSMP-130 modules built after May, 2015.
• An **On/Off switch** that, when set to "**I**", allows the module to supply power to the chassis, and any installed modules.
• A **power LED** indicator.
• A **fuse** installed on the power supply module's circuit board.

Optional Redundant 48-VDC Power Supply Module

An extra installation space is available in the front of the chassis for installing an optional redundant 48-VDC power supply module (P/N **CPSMP-130**). See section *3.5.1 Installing the Power Supply Module* for instructions on installation.

Instant Fail-Over

The Instant Fail-Over feature ensures uninterrupted power to the chassis. If one of the power supply modules loses power, the chassis mother board automatically switches to the other power supply.

Read and follow all caution and warning notices, and instructions marked on the product or included in the manual.

CAUTION: All installation and service must be performed by qualified service personnel.

CAUTION: Ensure that the external power source is NOT powered and that the On/Off switch is set to "0" when connecting the 48-VDC power supply module. Failure to observe this caution could result in damage to, and subsequent failure of, the power supply module.

Powering the 48-VDC Power Supply Module

• This product is intended to be used in a restricted access location. Proper earthing (grounding) is required to ensure safe operation. Grounding terminals are provided (section 4.1.3) for proper grounding of the device as per customer installation requirements and local electrical codes. Prior to installation, use a voltmeter/ohmmeter to check the wiring for the presence of earth ground.

• **WARNING**: Disconnect requirement: A readily accessible, suitable National Electrical Code (NEC) or local electrical code approved disconnect device and branch-circuit protector must be part of the building's installed wiring to accommodate permanently connected equipment. The approved disconnect device and branch-circuit protector must be suitable for the rated voltage and current specified. Failure to observe this warning could result in an electric shock, even death."

• **WARNING**: External overcurrent protection requirement: In compliance with UL 60950-1 2nd Edition Clause 1.7.2.3 the maximum recommended ampere rating of an external overcurrent protection device or external disconnect device for the IONPS-D is 15 Amperes. However, this recommended maximum overcurrent protection device or external disconnect device rating is not to be considered a branch circuit or power distribution protection device specification in conflict with local and national electrical codes. Branch circuit and power distribution protection device requirements must take into account installation wiring requirements, wire size, type, environmental requirements and specifications, etc., as mandated by local and national electrical codes and recommendations and as such the value of the overcurrent protection device may be other than the recommended maximum 15 Amperes.

To power the CPSMC1310-100 chassis through the CPSMP-130 48-VDC power supply module:

1. Set the On/Off switch to "**0**".

2. On CPSMP-130 modules built after May 2015 remove and retain the Terminal Block Cover and screws.

3. Connect the +48-VDC terminal to the chassis external power connector marked "**+**". Turn the terminal screw clockwise to secure.

4. Connect the -48-VDC terminal to the chassis external power connector marked "**-**". Turn the terminal screw clockwise to secure.

5. Connect the ground terminal to the chassis external power connector marked "chassis ground". Turn the terminal screw clockwise to secure.

6. Replace the Terminal Block Cover and screws removed in step 2 above (newer units only).

7. Set the On/Off switch to "**I**".

8. Verify that chassis is powered by observing the lit power LED.
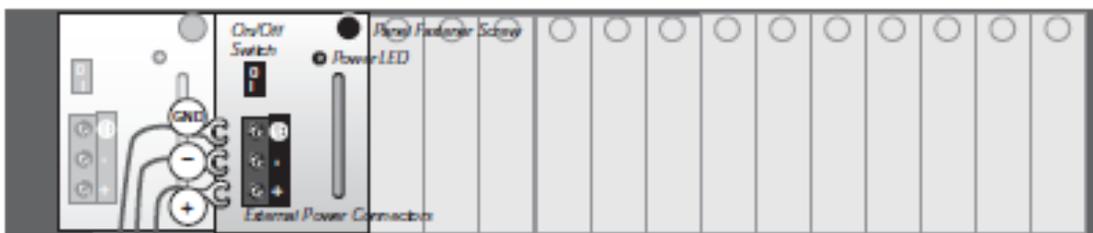
3.3 CPSMP-140 Power Supply Module (24-VDC)

The **CPSMC1320-100** chassis is equipped with a 24-VDC power supply module (P/N CPSMP-140) installed in the front of the chassis. The power supply module supplies power to the chassis, installed media converter slide-in-modules, and management modules.
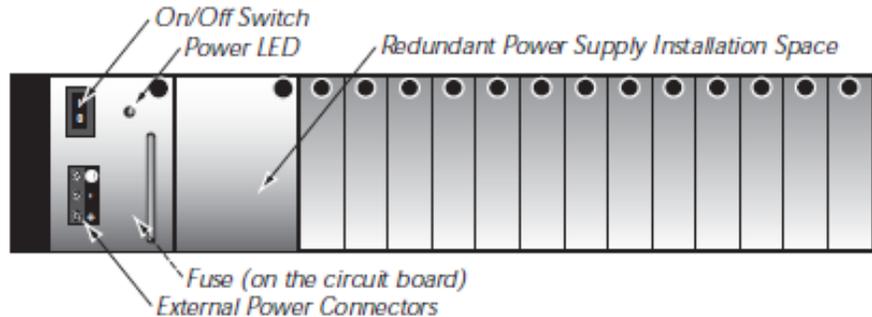
The components of the **CPSMP-140** 24-VDC power supply module include:

• A set of three (3) **external power connectors** that distribute power from an external 24-VDC outlet to a chassis ground connector, a positive (**+**) connector, and a negative (**-**) connector on the power supply module.

• An **On/Off switch** that, when set to "**I**", allows the module to supply power to the chassis, and any installed modules.

• A **power LED** indicator.

• A **fuse** installed on the power supply module's circuit board.

Optional Redundant 24-VDC Power Supply Module

An extra installation space is available in the front of the chassis for installing an optional redundant 24-VDC power supply module (P/N **CPSMP-140**). See section *3.5.1 Installing the Power Supply Module* for instructions on installation.

Instant Fail-Over

The Instant Fail-Over feature ensures uninterrupted power to the chassis. If one of the power supply modules loses power, the chassis mother board automatically switches to the other power supply.

Read and follow all caution and warning notices, and instructions marked on the product or included in the manual.

CAUTION: All installation and service must be performed by qualified service personnel.

CAUTION: Ensure that the external power source is NOT powered and that the On/Off switch is set to "0" when connecting the 24-VDC power supply module. Failure to observe this caution could result in damage to, and subsequent failure of, the power supply module.

Powering the 24-VDC Power Supply Module

• This product is intended to be used in a restricted access location. Proper earthing (grounding) is required to ensure safe operation. Grounding terminals are provided (section 4.1.3) for proper grounding of the device as per customer installation requirements and local electrical codes. Prior to installation, use a voltmeter/ohmmeter to check the wiring for the presence of earth ground.

• **WARNING**: Disconnect requirement: A readily accessible, suitable National Electrical Code (NEC) or local electrical code approved disconnect device and branch-circuit protector must be part of the building's installed wiring to accommodate permanently connected equipment. The approved disconnect device and branch-circuit protector must be suitable for the rated voltage and current specified. Failure to observe this warning could result in an electric shock, even death."

• **WARNING**: External overcurrent portection requirement: In compliance with UL 60950-1 2nd Edition Clause 1.7.2.3 the maximum recommended ampere rating of an external overcurrent protection device or external disconnect device for the IONPS-D is 15 Amperes. However, this recommended maximum overcurrent protection device or external disconnect device rating is not to be considered a branch circuit or power distribution protection device specification in conflict with local and national electrical codes. Branch circuit and power distribution protection device requirements must take into account installation wiring requirements, wire size, type, environmental requirements and specifications, etc., as mandated by local and national electrical codes and recommendations and as such the value of the overcurrent protection device may be other than the recommended maximum 15 Amperes.

To power the **CPSMC1320-100** chassis through the **CPSMP-140** 24-VDC power supply module:

1. Set the On/Off switch to "**0**".

2. Connect the +24-VDC terminal to the chassis external power connector marked "**+**". Turn the terminal screw clockwise to secure.

3. Connect the -24-VDC terminal to the chassis external power connector marked "**-**". Turn the terminal screw clockwise to secure.

4. Connect the ground terminal to the chassis external power connector marked "chassis ground". Turn the terminal screw clockwise to secure.

5. Set the On/Off switch to "**I**".

6. Verify that chassis is powered by observing the lit power LED.

3.4 Optional Dual Power Supply modules

Alternatively, two different types of power supplies may be installed in any of the CPSMC13xx-100 chassis, where one power supply is the primary and the other is the back up.
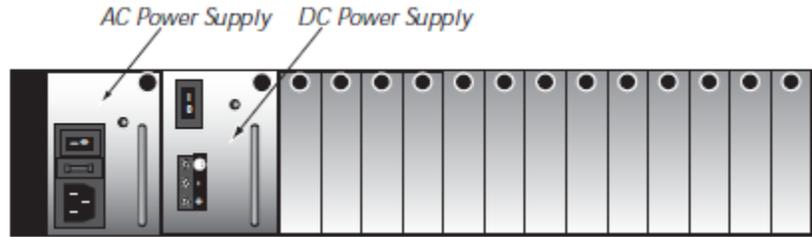
The drawing above shows one AC power supply and one DC power supply. However, the CPSMC13xx-100 chassis can accommodate any combination of AC, 48-VDC and 24-VDC power supplies. See section 3.5 Power Supply Module Maintenance for instructions on installation.

Instant Fail-Over

The Instant Fail-Over feature ensures uninterrupted power to the chassis. If one of the power supply modules loses power, the chassis mother board automatically switches to the other power supply.

Warning: **Do NOT connect the power supply module to the external power source before installing it into the chassis. Failure to observe this caution could result in equipment damage and/or personal injury or death.**

3.5 Power Supply Module Maintenance

3.5.1 Installing the Power Supply Module

The AC and DC modules are installed in the same manner:

1. Remove the power supply module protective plate from the installation slot by removing and retaining the screw that secures the protective plate to the front of the chassis.
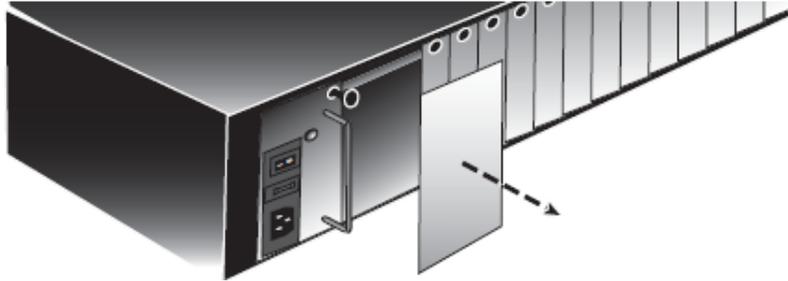
2. Carefully slide the power supply module into the installation slot, aligning the power supply module with the installation guides.
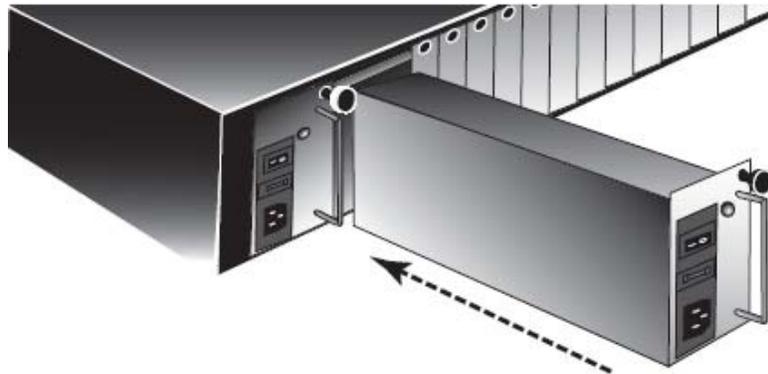
3. Ensure that the power supply module is firmly seated inside the chassis. If the power supply module does not fit flush against the frame, remove the module and ensure that it is aligned with the installation guides before installing.

4. Rotate the attached panel fastener screw clockwise to secure the power supply module to the chassis.

5. Connect the power supply module to the external power source.

(AC: see page 13 / 48-VDC: see page 15 / 24-VDC: see page 17.)

Warning: **Do NOT connect the power supply module to the external power source before installing it into the chassis. Failure to observe this caution could result in equipment damage and/or personal injury or death.**

3.5.2 Replacing the Power Supply Module

Warning: Any of the power supply modules may be "hot swapped" **provided the module to be swapped has been disconnected from the external power source and the On/Off switch has been set to "0".**

The AC and DC modules are replaced in the same manner:

1. Set the On/Off switch on the power supply module to be replaced to "**0**".

2. Disconnect the power supply module to be replaced from the external power source.

3. Loosen the panel fastener screw that secures the power supply module to the chassis.

4. Slide the power supply module from the chassis.
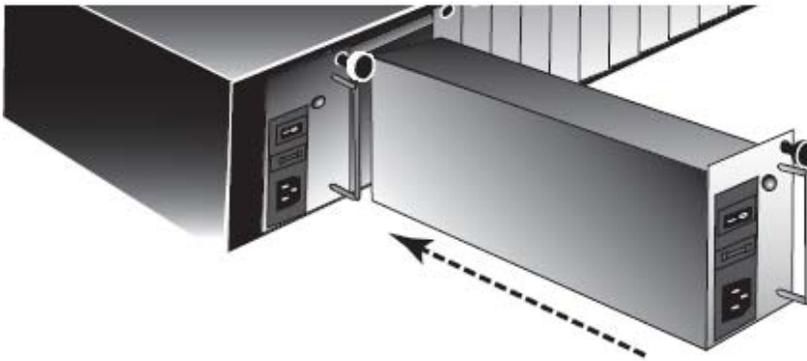
5. Carefully slide the replacement power supply module into the installation slot, aligning the power supply module with the installation guides.

6. Ensure that the the power supply module is firmly seated against the back of the chassis. If the power supply module does not fit flush against the frame, remove the module and ensure that it is aligned with the installation guides before installing.

7. Rotate the attached panel fastener screw clockwise to secure the power supply module to the chassis.

8. Connect the power supply module to the external power source.

(AC: see page 13 / 48-VDC: see page 15 / 24-VDC: see page 17.)

Warning: **Do NOT connect the power supply module to the external power source before installing it into the chassis. Failure to observe this caution could result in equipment damage and/or personal injury or death.**

3.5.3 Replacing the Power Supply Fuse

Replacing the AC Fuse

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when replacing the fuse in the power supply module. Failure to observe this caution could result in damage to, and subsequent failure of, the power supply module.

NOTE: Replace the fuse only with the same size and rating. Failure to observe this caution could result in equipment damage.

1. Set the On/Off switch on the power supply module to "**0**".

2. Disconnect the power supply module from the external power source.

3. From the inside edge of the power receptacle, insert a small flat blade screwdriver into the groove on the front, inside edge of the fuse holder and carefully pry the fuse holder from the power supply module.
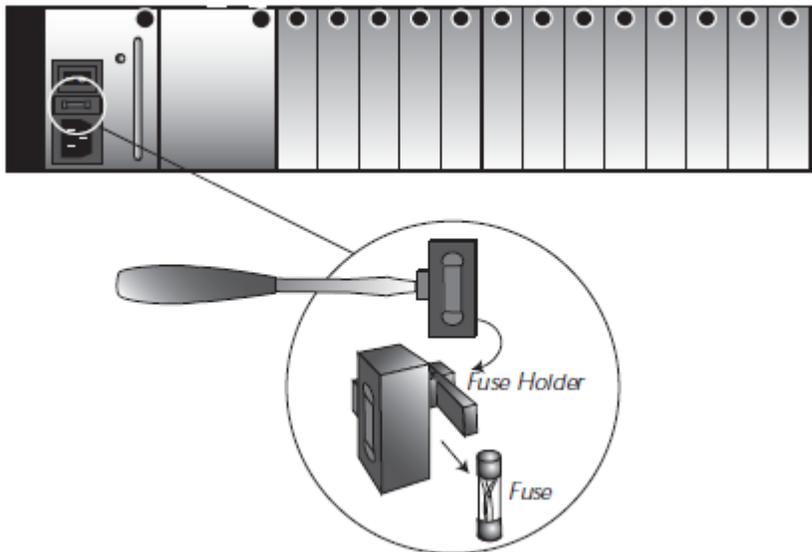

4. Carefully remove the fuse from the fuse holder.

5. Install a **same size and rating replacement** fuse in the fuse holder.

6. Return the fuse holder and fuse to the installation position in the power supply module. **Snap the fuse holder into place.**

7. Connect the power supply module to the external power source (see page 13).

Warning: Do NOT connect the power supply module to the external power source before installing it into the chassis. Failure to observe this caution could result in equipment damage and/or personal injury or death.

Replacing the 48-VDC or 24-VDC Fuse

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when replacing the fuse in the power supply module. Failure to observe this caution could result in damage to, and subsequent failure of, the power supply module.

NOTE: Replace the fuse only with the same size and rating. Failure to observe this caution could result in equipment damage.

1. Set the On/Off switch on the power supply module to "**0**".

2. Disconnect the power supply module from the external power source.

3. Loosen the panel fastener screw that secures the module to the chassis.

4. Slide the module from the chassis and place it on a flat surface.

5. Remove the four (4) screws that secure the panel to the module (see drawing below) and remove the panel from module.
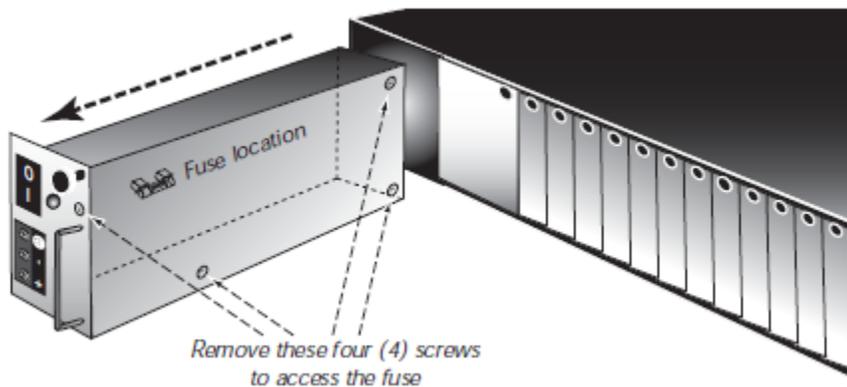
6. The fuse is located inside the power supply module on the circuit board. Remove the fuse from the fuse holder.

7. Install a **same size and rating** replacement fuse in the fuse holder.

8. Replace the panel to the power supply module and secure it in place with the four (4) screws.

9. Slide the power supply module into the installation slot, aligning the module with the installation guides. Ensure that the module is firmly seated inside the chassis.

10. Rotate the attached panel fastener screw clockwise to secure the power supply module to the chassis.

11. Connect the power supply module to the external power source. (48-VDC: see page 15 / 24-VDC: see page 17.)

4 CPSMC13xx-100 Chassis

4.1 Installing the CPSMC13xx-100 Chassis

The CPSMC13xx-100 can be installed in a standard 19-inch rack or on a table, shelf, or other stable surface.

CAUTION: **Install the chassis so that the air flow around it is not restricted.**

4.1.1 Table-Top Installation

The CPSMC13xx-100 chassis is shipped with nine (9) rubber feet for optional installation on a table or other flat, stable surface in a well-ventilated area. If table-top installation is desired, remove the rubber feet from the card and place them on the bottom of the chassis. Distribute the feet evenly so that the chassis is level when placed upright.

4.1.2 Standard 19-inch Rack Installation

The maximum recommended ambient temperature (Tmra) for the CPSMC13xx-100 chassis is **50°C**.
If the chassis is installed in a closed or multi-unit rack assembly, **the operating ambient temperature of the the rack environment may be greater than room ambient**.

NOTE: Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections **other than direct connections** to the branch circuit (e.g., use of power strips).

The chassis is designed so that the installation brackets can be installed to align the chassis either **flush** against the front or back edge of the rack or **recessed** from the front or back edge of the rack.
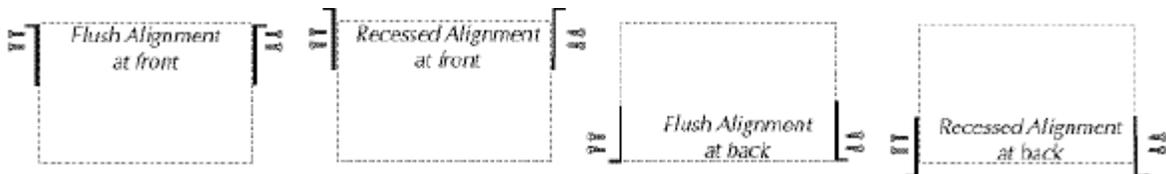
Warning: Select mounting bracket locations on the chassis that will keep the chassis balanced when mounted in the rack. Failure to observe this warning could allow the chassis to fall, resulting in equipment damage and/or possible injury to personnel.

To install the CPSMC13xx-100 chassis into a standard 19-inch rack:

1. Determine the preferred alignment of the chassis in the rack.

NOTE: Installation bracket mounting screws are provided. Rack mount screws and clip nuts are NOT provided.

2. Locate six (6) installation bracket mounting screws (provided) for each chassis to be installed.

Warning: **Mount the chassis evenly and securely onto the rack. Failure to observe this warning could allow the chassis to fall, resulting in equipment damage and/or possible injury to personnel.**

3. Align the universal mounting bracket in the selected position against the side of the chassis so that the chassis installation holes are visible through the universal bracket installation holes.

4. Using a Phillips screwdriver, install the three (3) screws through the mounting bracket into the installation holes on side of the chassis.
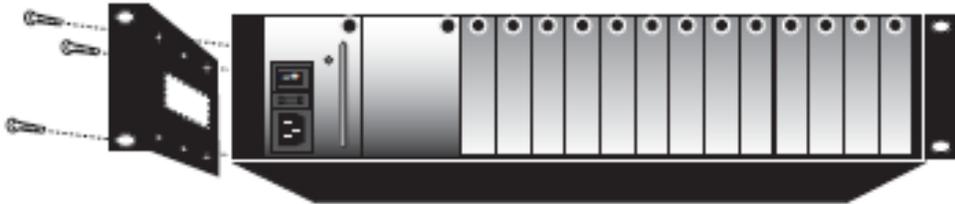
5. Repeat steps 3 and 4 for the second mounting bracket.

6. Locate four (4) screws (not provided) and optional clip-nuts (not provided) for each chassis to be installed.

7. Carefully align the chassis at a secure and level position between the 19-inch site rack mounting rails.

8. Install two (2) screws through the right bracket into the right mounting rail and two (2) screws through the left bracket into the left mounting rail, using the clip nuts to secure, if necessary.
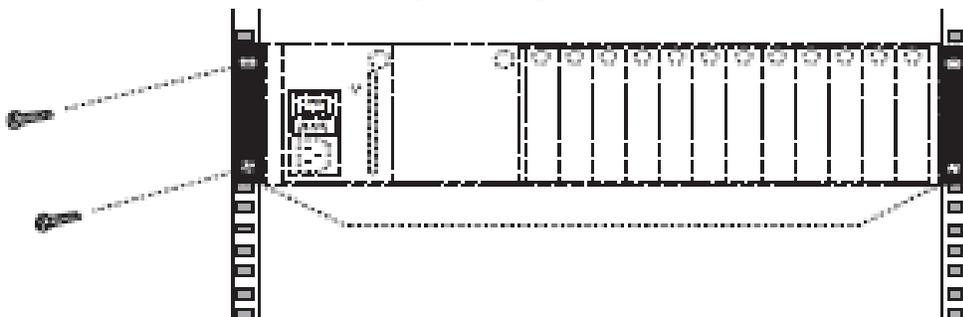
4.1.3 Grounding Lugs

The CPSMC13xx-100 comes equipped with grounding lugs, which are provided for a grounding conductor wire terminated with a **two-hole, compression-type, grounding connector**. The grounding wire -- which must be a copper conductor -- is not included with the chassis and must be provided by the customer/installer.

The electrical conducting path from the chassis must:

• Flow via the grounding lugs to the Common Bonding Network (CBN) for telecom installations; or to an alternate approved grounding system (if required) for nontelecom installations,

• Be of sufficiently low impedance to conduct fault currents likely to be imposed on the chassis, and

• Enable proper operation of any over-current protection devices.

The two-hole, compression-type, grounding connector **must be fastened to the grounding lugs with the enclosed, anti-rotation star-washers and lug-nut fasteners**. The required torque to the fasteners is specified by the connector's manufacturer.
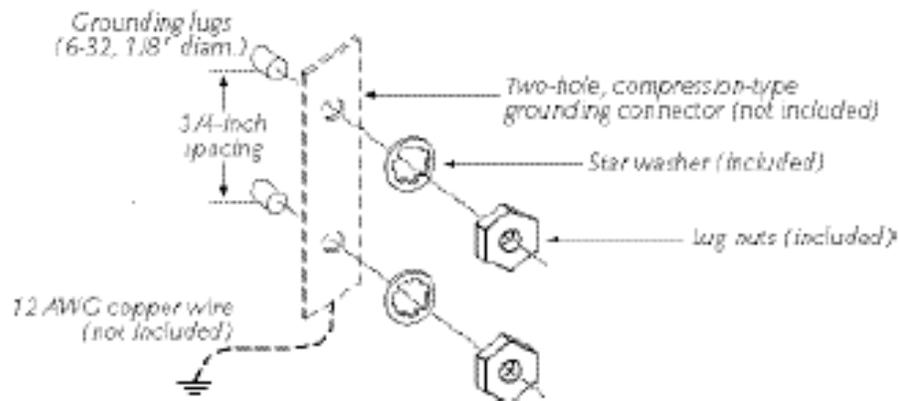
To properly ground the CPSMC13xx-100 chassis:

1. Obtain one (1) properly-terminated, grounding conductor (12 AWG copper wire gauge or larger) with a two-hole, compression-type, grounding connector. Note the manufacturer's applied torque that is required for the connector.

2. Attach the grounding conductor to the chassis by placing the two-hole, compression-type connector onto the grounding lugs and fasten with appropriate lock-washers and lug-nuts at the proper torque.

3. Attach the opposite end of the properly-terminated grounding conductor to the Common Bonding Network (CBN) for telecom installations, or to an approved grounding system (if required) for non-telecom installations.
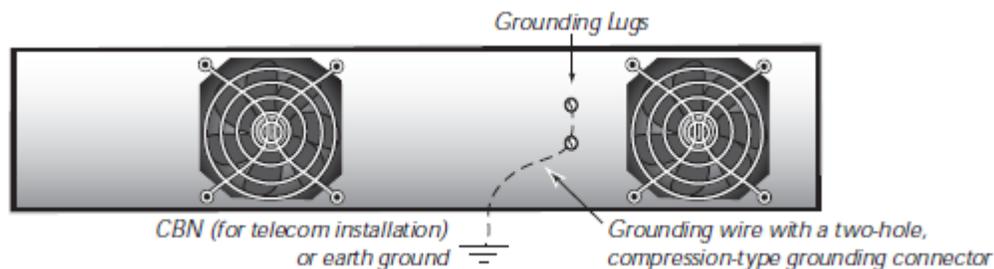
4.2 Cascade Option

The management module cascade option allows the network administrator to connect up to eight (8) chassis into one manageable stack, providing a single management source for up to 95 conversion devices.

To create the cascade option, the CPSMM-200 Dual Slot Master management module is installed in the first chassis in the series. The CPSMM-210 Single-Slot Expansion Management Module is installed in each subsequent chassis.
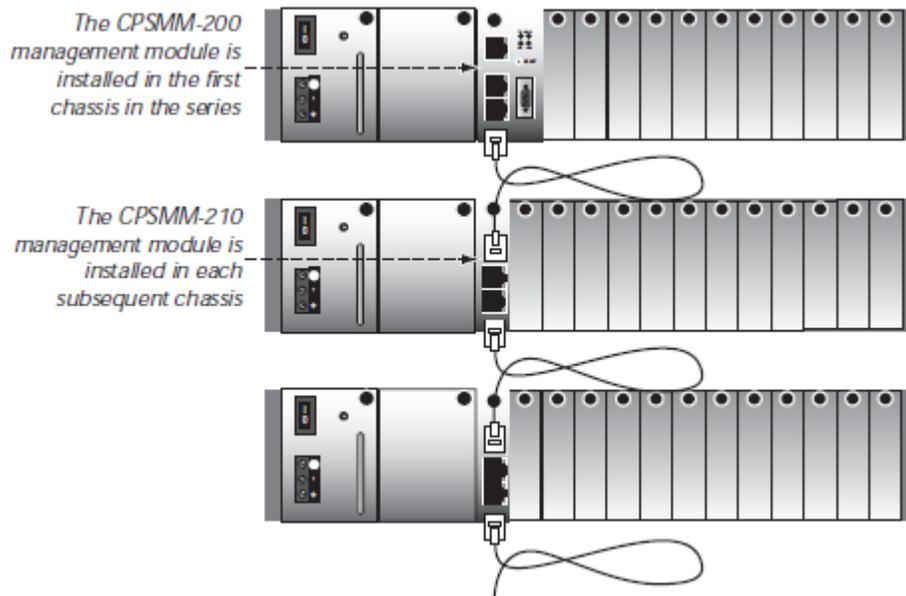
An alternative setup involves installing two CPSMM-200 Dual-Slot Master Management Modules into two adjacent chassis for redundant management.

In this set-up, the two CPSMM-200 management modules auto-negotiate so that one module is the primary while the other is in stand-by mode. If the primary module fails, the stand-by module automatically takes over and manages the network.
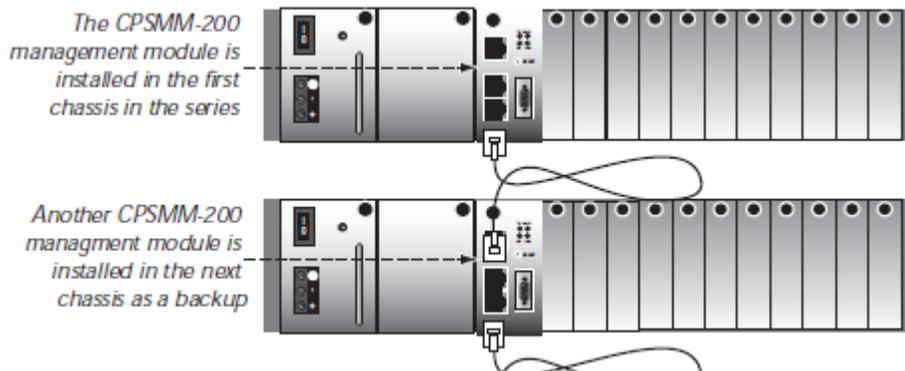
Cascading multiple CPSMC13xx-100 chassis

To cascade two or more chassis:

1. Locate one (1) Transition Networks management module cascade cable (with RJ-45 connectors installed at both ends) (P/N 6026) for each set of two (2) chassis to be cascaded.

2. At the first chassis in the series: Plug the RJ-45 connector at one end of the cascade cable into the management module's RJ-45 port labeled "OUT".

3. At the next chassis in the series: Plug the RJ-45 connector at the other end of the cascade cable into the management module's RJ-45 port labeled "IN".

4. At the same chassis as in step 3: Plug the RJ-45 connector at one end of the cascade cable into the management module's RJ-45 port labeled "OUT".

5. At the next chassis in the series: Plug the RJ-45 connector at the other end of the cascade cable into the management module's RJ-45 port labeled "IN".

6. Repeat steps 4 and 5 until all chassis have been connected.

4.3 Connecting the Slide-in-Modules to the Network

Once the CPSMC13xx-100 chassis has been installed, the media converter slide-inmodules may be connected to the network.

CAUTION: Connect input/output network cables ONLY to media converter connectors within the same network protocol (such as Ethernet-to-Ethernet, Fast Ethernet-to-Fast Ethernet, ATM-to-ATM). Failure to observe this caution will cause data transfer to fail.

Refer to the user's guide included with each media converter slide-in-module for cabling specifications and instructions.

Check the individual user's guides for specific information on how to connect each slide-in-module to the network.
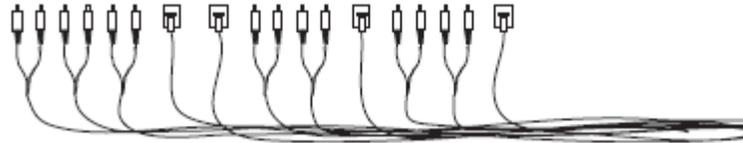
4.4 Operation

Daily operation of the CPSMC13xx-100 chassis requires no network administrator activity except for the occasional monitoring of the status LED indicators on the installed media converter slide-in-modules.

Each media converter and each management module has one or more LED indicators to help monitor the CPSMC13xx-100 chassis network.

Refer to the individual user's guide included with each Transition Networks slide-inmodule to interpret the LED indicators.
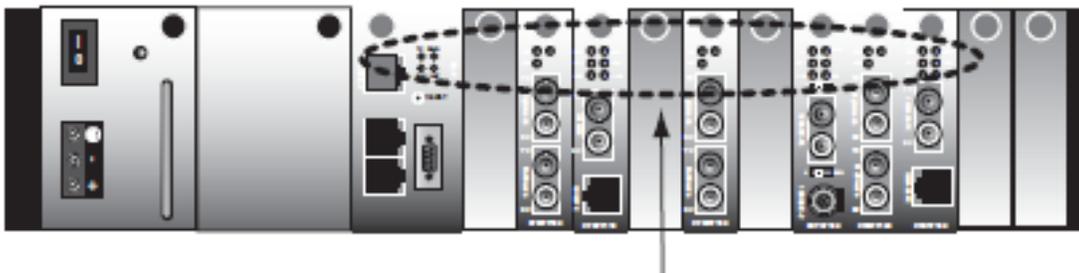
LED indicators on the management module and slide-in-modules

5. Network Management

The CPSMM100 firmware and the FocalPoint™ application are described in the FocalPoint™ Management Application and CPSMM100 Firmware user's guide (P/N 33293). This manual is included on the application CD and is also available on-line at www.transition.com.

Transition Networks CPSMM100 firmware is embedded in the optional management modules (see section 2.2). The firmware allows the network administrator to configure and manage the CPSMC13xx-100 chassis from an attached terminal or from a remote, networked computer.

The firmware includes the Transition Networks Command Line Interface (CLI), a telnet server, a Web browser, and an SNMP (Simple Network Management Protocol) agent.

In addition, Transition Networks FocalPoint™ application can be installed in the networked computer to provide a graphical user interface to monitor the PointSystem™ chassis.

5.1 Hardware Connections

Network Management can be implemented either through the DB-9 serial port or through the RJ-45 Ethernet port of the management modules.
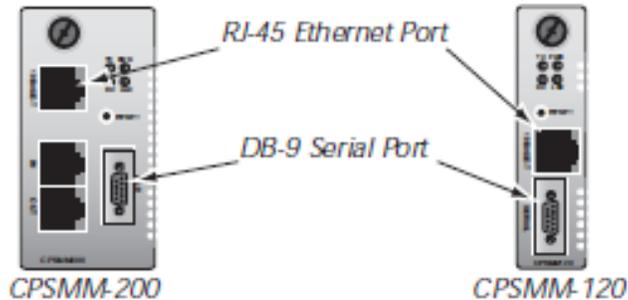
DB-9 Serial Port

The DB-9 serial port allows the network administrator to configure and manage the CPSMC13xx-100 chassis using the SNMP Command-Line Interface (CLI) at an attached terminal or terminal emulator.

Use a **null modem cable** to attach a terminal to the DB-9 serial port on the management module as shown.

Attached terminal or terminal emulator connected to the DB-9 serial port via a **null modem cable**.
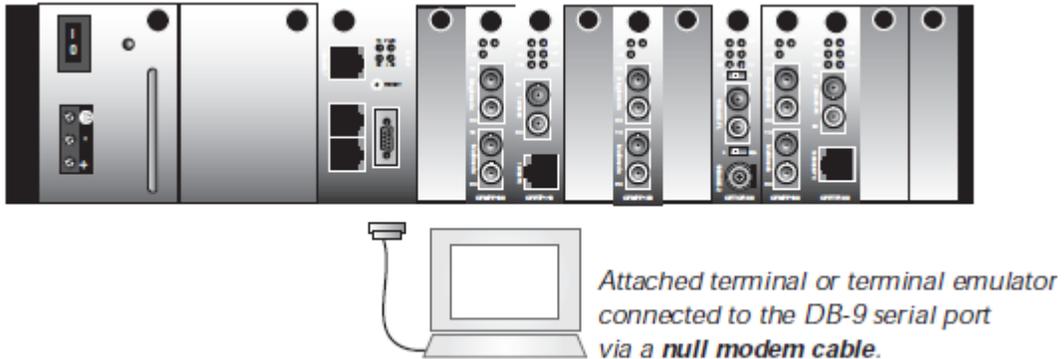
RJ-45 Ethernet Port

The RJ-45 Ethernet port allows the network administrator to manage the CPSMC13xx-100 chassis via a remote Network Management Station (NMS) in one of two ways:

1. Using the Transition Networks FocalPoint™ graphical user interface.

2. Using a remote Telnet connection.

Use an RJ-45 network cable to attach a terminal (via a network hub or switch) to the RJ-45 Ethernet port on the management module as shown.

NOTE: To manage the chassis via a remote NMS, both the RJ-45 Ethernet port and the NMS must be connected to a network with Internet access.

Network hub or switch connected to the RJ-45 Ethernet port.

Remote Telnet connection oR Remote NMS with an SNMP application
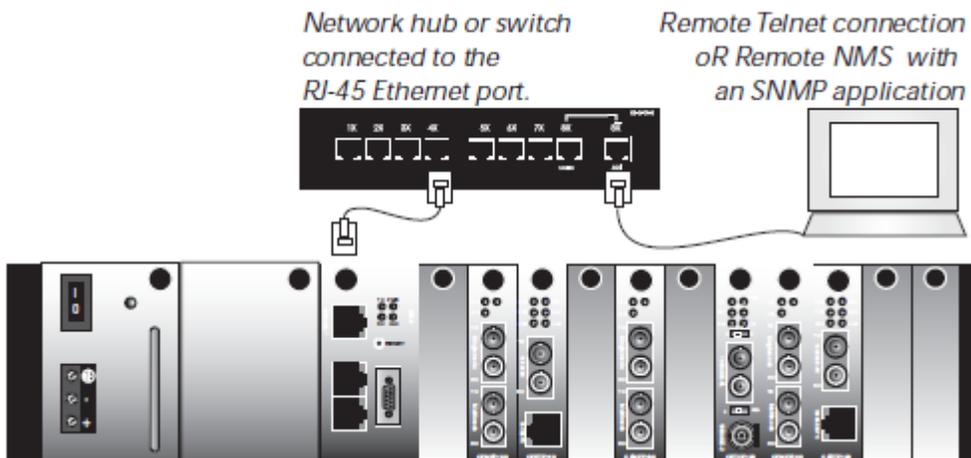
6. Troubleshooting

1. Are any of the POWER LEDs on any of the slide-in-modules lit?

> **YES**

> • The chassis is receiving power. Proceed to the next step.

> **NO**

> • Check all power supply cables for proper connection.
> • For AC power: Ensure the AC receptacle on the wall is supplying power.
> • If the fuse for the AC receptacle on the wall blows repeatedly, have the AC receptacle inspected by a qualified electrician.
> • For DC power: Ensure the DC power supply is supplying power.
> • Contact Technical Support: U.S./Canada: 1-800-260-1312, International: 00-1-952-941-7600.

2. For the management modules (CPSMM120, CPSMM200, CPSMM210), are ANY of the POWER LEDs NOT lit?

> **NO**

> • All management modules are receiving power. Proceed to the next step.

> **YES**

> For those management modules where the POWER LED is NOT lit:
> • Ensure the management module is firmly seated in the slot.
> • Press the RESET button on the management module.
> • Contact Technical Support; see Contact Us below.

3. For the remaining slide-in-modules, are ANY of the POWER LEDs NOT lit?

> **NO**

> • All slide-in-modules are receiving power. Proceed to the next step.

> **YES**

> For those slide-in-modules where the POWER LED is NOT lit:
> • Ensure the slide-in-module is firmly seated in the slot.
> • Contact Technical Support; see Contact Us below.

4. To determine if a fault is due to a software problem, see the troubleshooting section of the *FocalPoint™ Management Application and CPSMM100 Firmware User's Guide* (P/N 33293). This manual is available on the enclosed application CD and on-line at www.transition.com.

5. To determine if a fault is due to an individual management module or slide-in-module, check the troubleshooting section of the user's guide for that particular module.

6. If none of the solutions listed in this section resolves the problem, contact Technical Support; see Contact Us below.

7. Technical Specifications

For use with Transition Networks Model CPSMC13xx-100 or equivalent.

Dimensions: 17 x 14.3 x 3.5 inches (430 x 363 x 89 mm)
Weight: 17.5 lbs. (8.0 kg)

MTBF (Mean Time Before Failure)

Chassis w/ AC Power   88,550 hours (MIL217F2 V5.0 / MIL-HDBK-217F)
                                    223,169 hours (Bellcore 7 V5.0)

Chassis w/ DC Power   277,359 hours (MIL217F2 V5.0 / MIL-HDBK-217F)
                                    577,982 hours (Bellcore 7 V5.0)

CPSMP-120 Power Supply Module

Power Input: 100-240 V, 50/60 Hz, 0.4-1.0 Amp (typical with a fully-loaded chassis)
Power Output: +12 VDC at 10.83 Amp maximum.

CPSMP-130 Power Supply Module

Power Input: 48-VDC (38 to 58VDC) @ 2.63 Amp (typical with a fully-loaded chassis)
Power Output: +12 VDC at 12.5 Amp maximum.

CPSMP-140 Power Supply Module

Power Input: 24-VDC (20 to 31VDC) @ 4.83 Amp (typical with a fully-loaded chassis)
Power Output: +12 VDC at 8.3 Amp maximum.

Environment

Tmra: 0 to 50°C (32 to 122°F) (manufacturer's rated ambient temperature)
Storage Temperature: -40 to 80°C (-40 to 176°F)
Humidity: 5 to 95%, non condensing
Altitude: 0 to 10,000 feet
Compliance: EN 55022:1998 Class A; EN 55024:1998; FCC Part 15 Subpart B
   UL Listed; 21 CFR Subpart J; CE Mark

7.1 Cable Specifications

Null Modem Cable

The Null Modem Cable is used for connecting a terminal or terminal emulator to themanagement module's DB-9 connector to access the command-line interface. The table below shows the pin assignments for the DB9 cable.

Function	Mnemonic	Pin
Carrier Detect	CD	1
Receive Data	RXD	2
Transmit Data	TXD	3
Data Terminal Ready	DTR	4
Signal Ground	GND	5
Data Set Ready	DSR	6
Request To Send	RTS	7
Clear To Send	CTS	8

```
             25 Pin RS-232 Null Modem Cable

Chassis Ground      1 ——————————— 1    Chassis Ground
Transmit Data       2 ——————————— 3    Receive Data
Receive Data        3 ——————————— 2    Transmit Data
Request To Send     4 ┐         ┌ 4    Request To Send
Clear To Send       5 ┘         └ 5    Clear To Send
Data Set Ready      6 ┐ ┌———————— 20   Data Terminal Ready
Carrier Detect      8 ┘ │    ┌— 6      Data Set Ready
Data Terminal Ready 20 ——┘    └ 8      Carrier Detect
Signal Ground       7 ——————————— 7    Signal Ground
```
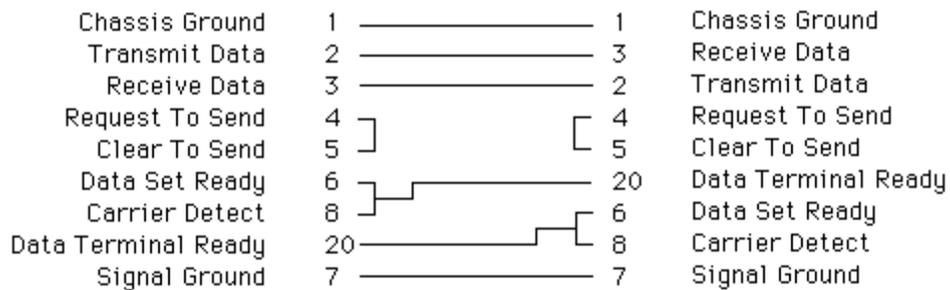
RJ-45 Cable

Category 5:

Gauge: 24 to 22 AWG

Attenuation: 22.0 dB /100m @ 100 MHz

Maximum Cable Distance: 100 meters

• Straight-through or crossover cable may be used.

• Shielded twisted-pair (STP) or unshielded twisted-pair (UTP) may be used.

• Pins 1&2 and 3&6 are the two active pairs in an Ethernet network.
(RJ-45 Pin-out: Pin 1 = TD+, Pin 2 = TD-, Pin 3 = RD+, Pin 6 = RD-)

• All pin pairs (1&2, 3&6, 4&5, 7&8) are active in a Gigabit Ethernet network.

• Use only dedicated wire pairs for the active pins:
(e.g., blue/white & white/blue, orange/white & white/orange, etc.)

• Do not use flat or silver satin wire.

COAX Cable

Coaxial cable media is used for circuits such as DS3, E1 and 10Base-2 Ethernet. The impedance of the coaxial cable is determined by the interface type, for example:

• 75 ohm for DS3.

• 50 ohm for 10Base-2 Ethernet.

Special attention should be given to the grounding requirements of coaxial cable circuits. Installation may require grounding at both cable ends or only one cable end or neither cable end.

Cable Shield Grounding

Media converter network cabling my be shielded or unshielded. Shielded cables MUST be grounded according to the specific requirements of the media and port type. For example:

• Shielded RJ-45 cable used for 100Base-Tx Ethernet MUST be grounded at both cable endpoints via shielded RJ-45 jacks.

• Shielded RS-232 cable MUST have the shield grounded at both cable endpoints via shielded RS-232 connectors.

• COAX cable used for 10Base-2 Ethernet MUST only be grounded at a single point.

The media converters provide a jumper option or other grounding mechanism as required. Special attention should be given to the grounding requirements of coaxial cable circuits. Installation may require grounding at both cable ends or only one cable end or neither cable end. See the individual media converter user's guide for cable/port grounding requirements.

7.2 Warranty

Warranty: Lifetime

Product is certified by the manufacturer to comply with DHHS Rule 21/CFR, Subchapter J applicable at the date of manufacture.

The fiber optic transmitters installed in this device meet Class I Laser safety requirements per IEC-825/CDRH standards and comply with 21 CFR1040.10 and 21CFR1040.11

CAUTION: Visible and invisible laser radiation when open. Do not stare into beam or view directly with optical instruments.

CAUTION: Use of controls, adjustments or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

Limited Lifetime Warranty

Effective for Products Shipped May 1, 1999 and After. Every Transition Networks labeled product purchased after May 1, 1999, and not covered by a fixed-duration warranty will be free from defects in material and workmanship for its lifetime. This warranty covers the original user only and is not transferable.

This warranty does not cover damage from accident, acts of God, neglect, contamination, misuse or abnormal conditions of operation or handling, including over-voltage failures caused by use outside of the product's specified rating, or normal wear and tear of mechanical components. If the user is unsure about the proper means of installing or using the equipment, contact Transition Networks's free technical support services.

Transition Networks will, at its option:

   • Repair the defective product to functional specification at no charge

   • Replace the product with an equivalent functional product

   • Refund a portion of purchase price based on a depreciated value

Return Authorization

To return a defective product for warranty coverage, contact Transition Networks's technical support department for a return authorization number. Transition's technical support department can be reached through any of the following means:

Service Hours

USA: 8:00 PM Sunday through 8:00 PM Friday CST
After Hours: Calls will be answered by an on call engineer.

Direct Contact Numbers

Domestic: + 1 800-260-1312
International: + 1 952-358-3601
Fax: +1 952-941-2322
Email: techsupport@transition.com Online Support
Live Help: Chat live with a Transition Networks representative.

Return Instructions

Send the defective product postage and insurance prepaid to the following address:

Transition Networks, Inc.
10900 Red Circle Drive
Minnetonka, MN 55343 USA
Attn: RETURNS DEPT: CRA/RMA # _____

Failure to properly protect the product during shipping may void this warranty. The return authorization number must be written on the outside of the carton to ensure its acceptance. We cannot accept delivery of any equipment that is sent to us without a CRA or RMA number.

CRA's are valid for 60 days from the date of issuance. An invoice will be generated for payment on any unit(s) not returned within 60 days.

Upon completion of a demo/ evaluation test period, units must be returned or purchased within 30 days. An invoice will be generated for payment on any unit(s) not returned within 30 days after the demo/ evaluation period has expired.

The customer must pay for the non-compliant product(s) return transportation costs to Transition Networks for evaluation of said product(s) for repair or replacement. Transition Networks will pay for the shipping of the repaired or replaced in-warranty product(s) back to the customer (any and all customs charges, tariffs, or/and taxes are the customer's responsibility).

Before making any non-warranty repair, Transition Networks requires a $200.00 charge plus actual shipping costs to and from the customer. If the repair is greater than $200.00, an estimate is issued to the customer for authorization of repair. If no authorization is obtained, or the product is deemed 'not repairable', Transition Networks will retain the $200.00 service charge and return the product to the customer not repaired. Non-warranted products that are repaired by Transition Networks for a fee will carry a 180-day limited warranty. All warranty claims are subject to the restrictions and conventions set forth by this document.

Transition Networks reserves the right to charge for all testing and shipping incurred, if after testing, a return is classified as "No Problem Found."

THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. TRANSITION NETWORKS IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE OR THEORY. AUTHORIZED RESELLERS ARE NOT AUTHORIZED TO EXTEND ANY DIFFERENT WARRANTY ON TRANSITION NETWORKS'S BEHALF.

7.3 Contact Us

Technical support

Technical support is available 24-hours a day

US and Canada: 1-800-260-1312

International: 00-1-952-941-7600

Transition now

Chat live via the Web with Transition Networks Technical Support.

Log onto www.transition.com and click the **Transition Now** link.

Web-based seminars

Transition Networks provides seminars via live web-based training.

Log onto www.transition.com and click the **Learning Center** link.

E-Mail

Ask a question anytime by sending an e-mail to our technical support staff at techsupport@transition.com.

Address

Transition Networks

10900 Red Circle Drive

Minnetonka, MN 55343, U.S.A.

telephone: 952-941-7600

toll free: 800-526-9267

fax: 952-941-2322

8. Compliance Information
UL Listed
C-UL Listed (Canada)
CISPR22/EN55022 Class A + EN55024
CE Mark

8.1 Declaration of Conformity

Declaration of Conformity

Name of Mfg.   **Transition Networks**
                  10900 Red Circle Drive, Minnetonka MN 55343 U.S.A.

Model: **PointSystem   Chassis**

Part Number: **CPSMC1300-100, CPSMC1310-100, CPSMC1320-100**

Regulation: **EMC Directive 89/336/EEC**

Purpose: To declare that the **PointSystem   Chassis** to which this declaration refers is in conformity with the following standards.

CISPR 22:1993; EN 55022:1998; EN 55024:1998 Class A; UL 60950:2000; 21 CFR subpart J;

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Stephen Anderson, Vice-President of Engineering   June 14, 2001
                                                         Date

FCC regulations
This equipment has been tested and found to comply with the limits for a Class A digital 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 the user's own expense.

Canadian regulations
This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.
Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European regulations
Warning
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
Achtung !
Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fäll is der Benutzer für Gegenmaßnahmen verantwortlich.

Attention !

Ceci est un produit de Classe A. Dans un environment domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilsateur de prende les measures spécifiques appropriées.

In accordance with European Union Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003, Transition Networks will accept post usage returns of this product for proper disposal. The contact information for this activity can be found in the 'Contact Us' portion of this document.

CAUTION: RJ connectors are NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentlickes Telekommunikationsnetz in den EGMitgliedstaaten

verstösst gegen die jeweligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

Transition Networks

10900 Red Circle Drive

Minnetonka, MN 55343 USA

Tel: 952- 941-7600 or 1-800-526-9267

Fax: 952-941-2322

CPSMP-130 and -140 User Guide PN 33213 Rev. F