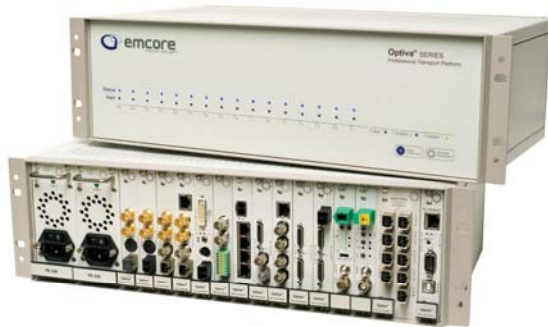


Product Manual & User's Guide

OT-CC-16 & OT-CC-16F
Rackmount Insert Card Enclosure

OT-CC-16 V1.00



Emcore Product Manual & User's Guide

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Introduction

A Word of Thanks

Congratulations on choosing the EMCORE Series of 16-slot Insert Card Enclosures. You have joined a growing family of professionals who appreciate the enhanced performance and ultimate versatility that EMCORE products provide. Your Optiva Insert Card Enclosure is part of a full line of video transport and processing products within the EMCORE family of products. These Insert Card Enclosure systems are backed by EMCORE's experience in engineering and design expertise since 1984 and should provide many years of trouble-free performance.

Should you have a question about the installation or operation of your EMCORE product, please contact us at 1-800-867-8426 or email us at video-support@emcore.com.

Preface

About This Manual

This manual is for instructions on the installation and operation of the OT-CC-16 and OT-CC-16F series of Optiva insert card enclosures.

Cautionary Notes

Color-coded notes indicate important information about the product and/or operation as follows:

Caution	Indicates potentially hazardous situations which, if not avoided, may result in minor injury or damage to data or hardware. It may also alert you about unsafe practices.
Danger	Indicates imminently hazardous situations, which, if not avoided, may result in moderate to severe injury, including death.

About Optiva Insert Card Enclosures

EMCORE's Card Enclosures offer a state of the art platform for density and space utilization. A variety of Optiva cards have been developed for this platform including analog 1 MHz to 40 GHz, digital video, digital audio, serial data and Ethernet. Optiva cards have been developed to support both optical and daisy-chaining non-optical formats. New insert cards are continuing to be developed to satisfy additional signal formats and applications as well.

The OT-CC-16 and -16F Series of enclosures feature:

- High density, 3U, 16 slot chassis for optimal space utilization and density
- EMI/EMC and Safety Standards conforming to CSA and CE standards
- Status and Alarm LEDs on Front and Rear Panels for operator knowledge of card and chassis conditions from either side of the enclosure.
- Fan control for optimal thermal management
- BIT (Built in Test)
- Unique daisy-chaining design for better utilization of fiber bandwidth (for insert cards that offer this function)
- Flexible chassis design accepts all Optiva plug-in cards
- Chassis to card grounding eliminates electrostatic discharge during insertion and removal of hot

swappable insert cards

- Lightweight, rugged aluminum chassis resists shock and vibration
- Various power supply options depending on the needs of the internal cards chosen that are all hot swappable to ensure increased reliability
- Compatibility with the optional OPV-CTLR-IC remote monitoring card

Variants with Options and Accessories

OT-CC-16F

OT-CC-16F-001 with built-in fan and no power supplies

OT-CC-16F-002 with built-in fan, reversed mounting and no power supplies

OT-CC-16F-003 with built-in fan, 4" recessed mounting ears and no power supplies

Note: May be ordered with single or redundant power supplies, 200 watts each

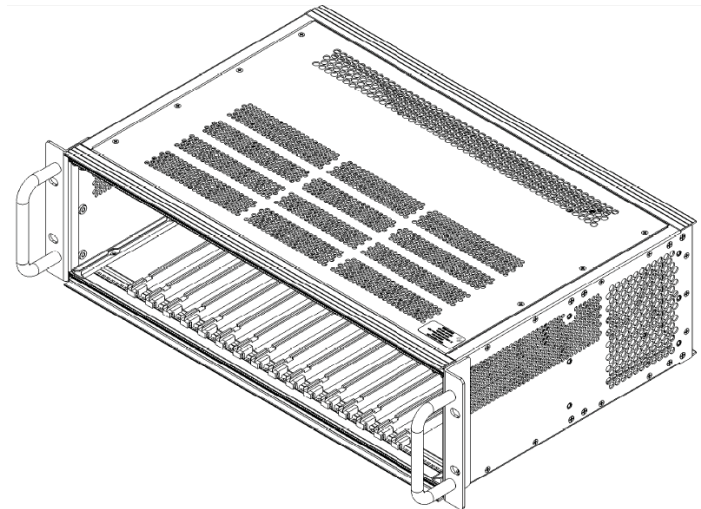
Options and Accessories:

OPV-CTLR-IC Controller Card for remote monitoring

PS-200F-NA 200W 120/240 VAC power supply, North American (NA) power cord

PS-200F-EU 200W 120/240 VAC power supply, European (EU) power cord

PS-200F-UK 200W 120/240 VAC power supply, United Kingdom (UK) power cord



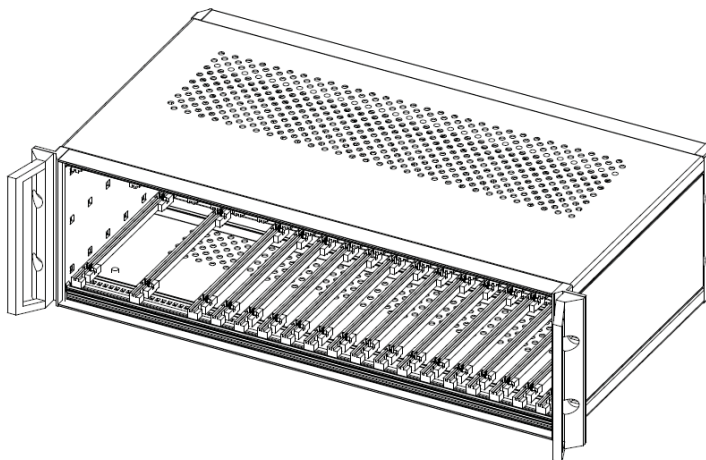
OT-CC-16

OT-CC-16	with no power supplies
OT-CC-16-01	reversed mounting with no power supplies
OT-CC-16-100-NA	with one 100 watt North American power supply
OT-CC-16-100-EU	with one 100 watt European power supply
OT-CC-16-01-100-NA	reversed mounting with one 100 watt North American power supply
OT-CC-16-01-100-EU	reversed mounting with one 100 watt European power supply
OT-CC-16-100-RPS-NA	with 100 watt redundant North American power supplies
OT-CC-16-100-RPS-EU	with 100 watt redundant European power supplies
OT-CC-16-01-100-RPS-NA	reversed mounting with 100 watt redundant North American power supplies
OT-CC-16-01-100-RPS-EU	reversed mounting with 100 watt redundant European power supplies

Options and Accessories:

OPV-CTLR-IC	Controller Card for remote monitoring
PS-100-NA	100W Power Supply for the OT-CC-16 Enclosure, North American Power Cord
PS-100-EU	100W Power Supply for the OT-CC-16 Enclosure, European Power Cord
PS-200-NA	200W Power Supply for the OT-CC-16 Enclosure, North American Power Cord
PS-200-EU	200W Power Supply for the OT-CC-16 Enclosure, European Power Cord
FA-2000-NA	Cooling Fan Tray, 100-240V Internal Power Supply, North American Power Cord
FA-2000-EU	Cooling Fan Tray, 100-240V Internal Power Supply, European Power Cord

Note: The 200W power supply must be used with Optiva satellite products



The OT-CC-16 has an optional fan tray for use in high heat generating locations and/or when the OT-CC-16 is 50 percent filled or more. Install in the rack space directly over the top of the OT-CC-16 chassis. Make sure there are at least 3 rack spaces clear above the fan tray for optimal air flow.



FA-2000 Fan Tray

Installation

Static Discharge

When installing your EMCORE product, please be aware that static electricity is a potential cause of damage to any electronic device:



ESD Susceptibility

Caution	Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in environments where static electricity can be generated (such as carpeted areas and when wearing synthetic fiber clothing). Always exercise proper grounding precautions when working on circuit boards and related equipment
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Unpacking

Carefully unpack the carton and inspect all components for any sign of damage. If the shipping carton is damaged or water-stained, please contact the freight carrier for inspection of carton and contents.

To return a product damaged in shipment, contact EMCORE to obtain a Return Merchandise Authorization (RMA) number and further instructions.

Installing Insert Cards(s)

As needed, install the separately purchased insert cards in any of the 16 available slots. All insert cards are hot-swappable.

For Daisy Chain cards, install optical card in a lower slot number than the chain card.

Caution	Do not attempt electrical or optical connections to the cards themselves until the insert cards are securely installed in the enclosure, with all screws fastened.
----------------	---

To Insert – Use the red card guides to lead the cards into the enclosure and gently place pressure onto each card until the PCB is firmly inserted into the bus back plane. Power is evident when the LED is lit on each card. Note that the “Green” LED will not appear on the receiver side until an optical link communication is obtained.

To Tighten – Screw in each of the screws located on the top and bottom of the front panel of the card

To Remove – Loosen the top and bottom screws on the front panel until they are detached from the enclosure rails. Depress the black blade ejector to release the card from the back plane and gently pull out.



OT-CC-16-100-RPS



OT-CC-16F-003 with optional redundant power supplies

OPV-CTRL-IC NMS Card

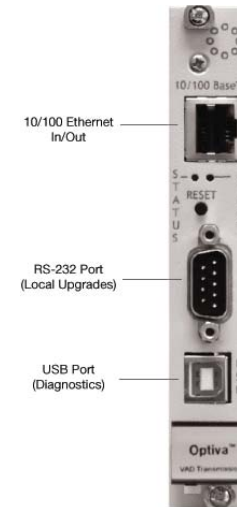
(Network Management System)

The optional OPV-CTRL-IC NMS card installs in any of the 16 slots and may be installed while the unit is powered on if desired.

Caution	The OPV-CTRL-IC must be the last card in the system and directly adjacent to the last I/O card used in the configuration.
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To Insert – Gently place pressure onto the card until the PCB is firmly inserted into the bus back plane. Power is evident when the green LED is lit.

To Tighten – Screw in each of the screws located on each side of the card.



OPV-CTRL-IC

Replacing Power Supplies

In the event that a power supply needs to be replaced in a system with redundant configurations, this can be done while the chassis is powered on as long as at least one of the power supplies is working correctly.

Caution

Prior to removing the supply for servicing or replacement, turn off and unplug the power supply being removed.

To Remove – Loosen the two screws on either side of the power supply until they are detached from the enclosure. Grasp the provided handle and gently pull out.

To Insert – Use the guides to lead the power supply into the enclosure and gently place pressure onto the card until the PCB is firmly inserted into the back plane.

To Tighten – Screw in each of the screws located on either side of the card



PS-100 Power Supply



PS-200 Power Supply



PS-200F Power Supply

Danger

To reduce the risk of electrical shock, do not remove the power supply cover. Disconnect power sources before servicing. Refer to qualified Emcore personnel for servicing.

Caution

To avoid damage to the power supply(s), use the correct AC input voltage range.

Alimentation redondante:

Deux PS-100, PS200, PS200R doivent être installées dans le châssis pour un fonctionnement en mode alimentation redondante.

Les alimentations partagent la charge, seulement si les deux sont en fonctionnement normal.

Attention!

Afin d'éviter d'endommager vos alimentations, Restez dans la plage des tensions secteurs d'entrées prévues.

Afin de réduire le risque de choc électrique, ne pas ouvrir le boîtier de l'alimentation.

Débranchez l'alimentation de toutes sources d'énergie, avant toutes maintenances.

Confiez la maintenance des alimentations, à un personnel qualifié EMCORE.

Avant de retirer, d'insérer ou d'entretenir les alimentations, éteignez et débranchez chacune des alimentations.

La prise de courant, doit être installée près de l'équipement et doit être facilement accessible.

Monitoring

LEDs

LED Name/Location	Description
Front Panel Power 1 Status LED	Power Supply #1 indicator and chassis status LED. If power supply 1 is off, LED will be off. If power supply is not detected and/or the power supply sensor is faulty, the LED will blink
Front Panel Power 2 Status LED	Power Supply #2 indicator and chassis status LED. If power supply 2 is off, LED will be off. If power supply is not detected and/or the power supply sensor is faulty, the LED will blink
Other Fault conditions indicated on front panel by both LEDs blinking	Both LEDs will blink if any one of the following conditions are detected. <ul style="list-style-type: none"> One of the temperature sensors is faulty or the allowed temperature range of the power supply has been exceeded (over 55 degree C) One of the system fans is not detected and/or faulty (this includes both the power supply and chassis fans) A power supply current in out of range (Ips > 5 amps)
Power Supply Status	Power on indication
1-16 Green LED for status	When a front a slot is populated, this LED labeled with the same slot number will reflect the status LED on the card that is plugged at the relevant slot number. The LED will match the one on the card itself so the status of the card can be monitored from either side of the unit.
1-16 Red LED for alert	When a front a slot is populated, this LED labeled with the same slot number will reflect the status LED on the card that is plugged at the relevant slot number. The LED will match the one on the card itself so the status of the card can be monitored from either side of the unit.
Blue LED for status	If the optional NMS card is installed and working correctly, this LED will signal communication with a blinking light.

General

OT-CC-16 and OT-CC-16F

Specification	Values
Dimensions	8.64" L x 19" W (rack mount) x 5.22" H (3RU)
Weight – Chassis	8.0 lbs
Operating Temperature	-20C to +55C
Storage Temperature	-40C to +85C
Humidity	0% to 95% (non-condensing)
Operating Voltage	100-240 VAC 50/60Hz

PS-100-NA / PS-100-EU

Specification	Values
Weight	20 oz.
Operating Temperature	-10C to +55C
Storage Temperature	-40C to +85C
Humidity	10% to 95% (non-condensing)
Input Voltage	90V – 240V AC
Input Frequency	50Hz – 60Hz
AC Input Load @120V	1 Amp
AC Input Load @ 240V	0.5 Amps
Max DC Output Load @ +12V	8.3 Amps @ 70C
Total DC Power	100W
EMI	Applicable CSA and CE standards
Safety	EN 60950-1, CSA approved
Efficiency	80-85%
Input Surge Protection	EN61000-3-4
Operation altitude	3000 m
Shock and Vibrations	Sinusoidal, 1.5g at 5-200Hz
MTBF	>400,000 hours @ 30C, Ground Benign, per MIL-HDBK-217F

PS-200-NA / PS-200-EU

Specification	Values
Weight	20 oz.
Operating Temperature	-10C to +55C
Storage Temperature	-40C to +85C
Humidity	10% to 95% (non-condensing)
Input Voltage	90V – 240V AC
Input Frequency	50Hz – 60Hz
AC Input Load @120V	1.6 Amps
AC Input Load @ 240V	0.8 Amps
Max DC Output Load @ +12V	11.1 Amps @ 70C
Total DC Power	200W
EMI	Applicable CSA and CE standards
Safety	EN 60950-1, CSA approved
Efficiency	80-85%
Input Surge Protection	EN61000-3-4
Operation altitude	3000 m
Shock and Vibrations	Sinusoidal, 1.5g at 5-200Hz
MTBF	>400,000 hours @ 30C, Ground Benign, per MIL-HDBK-217F

PS-200F-NA / PS-200F-EU / PS-200F-UK

Specification	Values
Weight	20 oz.
Operating Temperature	-10C to +55C
Storage Temperature	-40C to +85C
Humidity	10% to 95% (non-condensing)
Input Voltage	90V – 240V AC
Input Frequency	50Hz – 60Hz
AC Input Load @120V	1.6 Amps
AC Input Load @ 240V	0.8 Amps
Max DC Output Load @ +12V	11.1 Amps @ 70C
Total DC Power	200W
EMI	Applicable CSA and CE standards
Safety	EN 60950-1, CSA approved
Efficiency	80-85%
Input Surge Protection	EN61000-3-4
Operation altitude	3000 m
Shock and Vibrations	Sinusoidal, 1.5g at 5-200Hz
MTBF	>400,000 hours @ 30C, Ground Benign, per MIL-HDBK-217F

Optional FA-2000-NA / FA-2000-EU

Specification	Values
Dimensions	11" L x 19" W (rack mount) x 1.75" H (1RU)
Weight	7.5 lbs
Operating Temperature	-20C to +55C
Storage Temperature	-30C to +85C
Humidity	0% to 95% (non-condensing)
Input Voltage	120VAC or 240VAC versions available
Input Frequency	50Hz – 60Hz
AC Input Load @120V	0.4 Amps
AC Input Load @ 240V	0.2 Amps
Measured Airflow	300 CRM

Service Information

Troubleshooting

Routine maintenance to this EMCORE product is not required. In the event of problems, the following basic troubleshooting checklist may help identify the source of the problem. If the product still does not appear to be working properly after checking all possible causes, please contact your EMCORE products distributor, or the Technical Support department at the numbers listed under the contact information in the front part of the manual.

It is recommended to purchase an SNMP card to monitor each one of the channels for a faulty condition. Please contact our factory if you detect a faulty condition for video/audio/data. EMCORE offers the Optiva OPV-CTRL Network Controller Card, which provides support for remote monitoring of your frame and uses Simple Network Management Protocol (SNMP), which is compatible with many third-party monitoring and control tools. Refer to the SNMP Monitoring and Control Manual for additional information on the Optiva OPV-CTRL Network Controller Card and OptivaView software.

Visual Review — Performing a quick visual check may reveal many problems, such as connectors not properly seated or loose cables. Check the card, the enclosure, and any associated peripheral equipment for signs of trouble.

Power Check — Check the power indicator LED on the product's front panel for the presence of power. If the power LED is not illuminated make sure the power cable is connected to a power source and verify that power is available at the power main. Confirm that the power supplies are fully seated in their slots. If the power LED is still not illuminated, replace the power supply with one that is working properly.

Improper connections — The system requires a transmitter be connected to a receiver, so it is important to verify this connection for each link. Even if the cable plant is properly documented, fibers may have been crossed at intermediate connections, so using a visual tracer or visual fault locator will allow quick confirmation of the connection.

Unit Exchange — Exchanging a suspect unit with a unit that is known to be working correctly is an efficient method for locating problems in individual components.

Warranty & Repair Policy

Subject to the terms and conditions set forth below, EMCORE warrants the goods to be free from defects in material and workmanship. This warranty shall extend for a period of 3 years from date of shipment.

EMCORE's warranty does not apply if, and EMCORE shall have no liability for goods returned by Buyer as to which EMCORE's examination reveals that: (i) the goods have been exposed to unusual or excessive environmental, mechanical, electrical or thermal stress during the course of installation or use; (ii) the absolute maximum ratings are exceeded for any reason including, but not limited to, equipment variations, environment variations, the effects of changes in operating conditions due to variations in device characteristics, improper equipment design, improper device installation or application; (iii) goods malfunction is the result of misuse, abuse, improper installation or application, alteration, accident, or negligence in use, storage, transportation or handling or if the original identification markings on the goods have been removed, defaced or altered; (iv) goods are tested for Buyer by anyone other than EMCORE unless such procedures have EMCORE's prior written approval; or (v) the goods are classified as other than a commercial production unit, e.g. a design verification unit, sample, preproduction unit, developmental unit, prototype unit, incomplete (with notice) or "fallout" (i.e. out of specification with notice) unit. All warranty claims are subject to verification by EMCORE.

The liability of EMCORE hereunder is solely and exclusively limited to replacement, repair or credit at the purchase price at EMCORE's option for any goods which are returned by Buyer during the applicable warranty period and which are found by EMCORE to be subject to adjustment under this warranty. Buyer must notify EMCORE of any warranty claim within ten (10) days of discovery of the basis therefor, and if Buyer fails to so notify EMCORE by such time, Buyer shall be deemed to have waived such warranty claim.

The foregoing warranties extend to Buyer only, and not to Buyer's customers or to users of Buyer's products. These warranties may not be transferred or assigned, and Buyer shall make no warranty with regard to the goods to any of its customers or other users of Buyer's products, and Buyer shall indemnify and hold EMCORE harmless against any and all claims, demands, liabilities, losses, costs, fees, expenses, damages and injuries (including reasonable attorney fees) (collectively, "Claims") incurred by EMCORE in connection with, or relating to, any such warranty made by Buyer. These warranties are the only warranties made by EMCORE and shall not be enlarged by representations, descriptions, course of dealing, trade usage, rendering of technical advice, service, samples, models, or otherwise, and EMCORE MAKES NO OTHER WARRANTIES EXPRESS, IMPLIED, OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

For all repair work, contact EMCORE Video Sales to obtain a Return Authorization Number: Customer Service: 800-867-8426

Opticomm-EMCORE

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