opticomm **emcore** empower with light

Warranty & Repair Policy

Subject to the terms and conditions set forth below, Opticomm-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.

Opticomm-EMCORE's warranty does not apply if, and Opticomm-EMCORE shall have no liability for goods returned by Buyer as to which Opticomm-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 Opticomm-EMCORE unless such procedures have Opticomm-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 Opticomm-EMCORE.

The liability of Opticomm-EMCORE hereunder is solely and exclusively limited to replacement, repair or credit at the purchase price at Opticomm-EMCORE's option for any goods which are returned by Buyer during the applicable warranty period and which are found by Opticomm-EMCORE to be subject to adjustment under this warranty. Buyer must notify Opticomm-EMCORE of any warranty claim within ten (10) days of discovery of the basis therefor, and if Buyer fails to so notify Opticomm-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 Opticomm-EMCORE harmless against any and all claims, demands, liabilities, losses, costs, fees, expenses, damages and injuries (including reasonable attorney fees) (collectively, "Claims") incurred by Opticomm-EMCORE in connection with, or relating to, any such warranty made by Buyer. These warranties are the only warranties made by Opticomm-EMCORE and shall not be enlarged by representations, descriptions, course of dealing, trade usage, rendering of technical advice, service, samples, models, or otherwise, and Opticomm-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 Opticomm-EMCORE Video Sales to obtain a Return Authorization Number: Customer Service: 800-867-8426

Opticomm-EMCORE

Sales, Support & Manufacturing

2015 Chestnut Street

Alhambra, CA 91803 USA

Phone: 626-293-3400

Fax: 626-293-3427

Technical Support: video-support@emcore.com

Website: www.opticomm.com

Product Manual & User's Guide

6 Slot, 1 RU Insert Card Enclosure

OT-CC-6-1U V1.00

www.opticomm.com

626-293-3400

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Emcore Product Manual & User's Guide

- EMCORE Part Number: OT-CC-6-1U V1.00 Manual

- Revision: 13 July 2012 11:04 AM   Printed in USA.

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7. Service Information

Troubleshooting

Routine maintenance to this Opticomm-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 Opticomm-EMCORE products distributor, or the Technical Support department at the numbers listed under the contact information in the front part of the manual.

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.

Input Signal Status — Verify that source equipment is operating correctly and that a valid signal is being supplied.

Output Signal Path — Verify that destination equipment is operating correctly and receiving a valid signal.

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.

6. General

Technical Data For OT-CC-6-1U

Specification	Values
Dimensions	7.3"L x 19"W (rack mount) x 1.75"H (1RU)
Weight – Chassis	11.0 lbs
Weight – Chassis and Two Supplies	12.5 lbs
Operating Temperature	-20C to +55C
Storage Temperature	-40C to +85C
Humidity	10% to 90% (non-condensing)
Total Power	60W
MTBF	80,000 hours @ 25C, Ground Benign, per MIL-HDBK-217F
Fans MTBF	50,000 hours @ 25C, Ground Benign, per MIL-HDBK-217F

Technical Data For PS-9060

Specification	Values
Weight	.75 lbs
Operating Temperature	-20C to +55C
Storage Temperature	-40C to +85C
Humidity	10% to 90% (non-condensing)
Input Voltage	100V – 240V AC
Input Frequency	50Hz – 60Hz
AC Input Load @120V	1.6 Amps
AC Input Load @ 240V	0.83 Amps
Max DC Output Load @ +12V	5.0 Amps @ 25C
Total DC Power	60W
EMI	FCC Part 15, CE
Safety	EN 60950-1, CSA approved
Input fast transients	EN61000-4-4 2Kv
Input Surge Protection	Een61000-4-5 1Kv line to line, 2Kv line to earth
Operation altitude	FAA-G-2100F 8000ft at 50C
Shock and Vibrations	0.5g at 5-10Hz, 1.5g at 10-200Hz
MTBF	>250,000 hours @ 25C, Ground Benign, per MIL-HDBK-217F

Contact Information

EMCORE Corporation
2015 Chestnut Street
Alhambra, CA 91803

Phone: +1 626-293-3400

Sales: video-sales@emcore.com

Technical Support: video-support@emcore.com

Note: when sending email for technical support, please include information about both the hardware and software.

Customer service: +1 626-293-3744

Website: www.opticomm.com

Table of Contents

9. Click "OK" when prompted and the firmware upload will start. **IMPORTANT – Do not power off the unit or disconnect the USB cable while the firmware upload is taking place. This may crash the connection and corrupt the firmware causing the unit to become unusable.**

10. When firmware upload is complete, the USB cable may be disconnected.

7. Install the file that was provided by customer service on the PC

8. Go to "Commands > Send File". Browse and select the correct firmware file to upload (marked with the .hex extension)
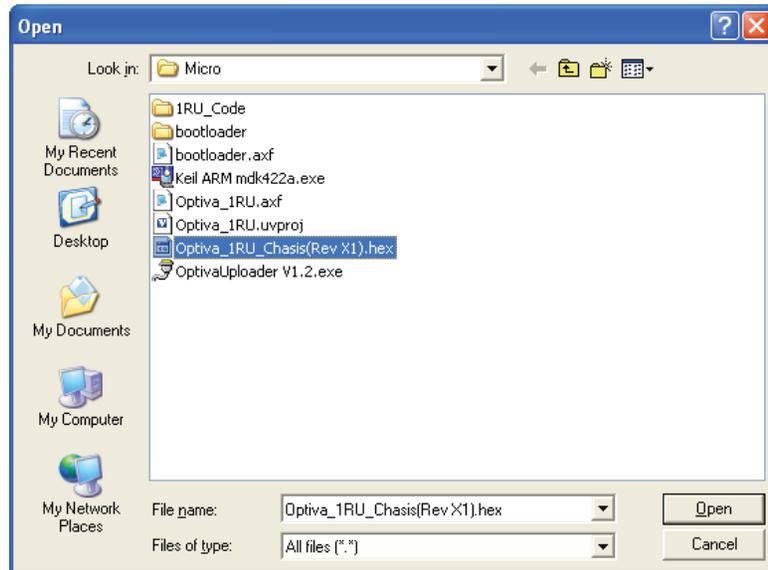
1. Introduction

A Word of Thanks

Congratulations on choosing the Opticomm-EMCORE OT-CC-6-1U Insert Card Enclosure. You have joined a growing family of professionals who appreciate the enhanced performance and ultimate versatility that Opticomm-EMCORE products provide. Your Optiva Insert Card Enclosure is part of a full line of video transport and processing products within the Opticomm-EMCORE family of products. This Insert Card Enclosure system is backed by Opticomm-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 Opticomm-EMCORE product, please contact us at 1-800-867-8426 or email us at video-support@emcore.com.

OT-CC-6-1U with optional OPV-CTLR-IC Remote Management Card

2. Preface

About This Manual

This manual is for instructions on the installation and operation of the OT-CC-6-1U single space Optiva insert card enclosure.

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

Opticomm-EMCORE's Insert 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-6-1U enclosure features:

- High density, 1 RU, 6 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.
- Reversible mounting ears
- Fan control for optimal thermal management
- Field replaceable fan trays
- 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

6. Click "OK" and data should start being received and displayed in the open window

5. Go to "File >open". A window will pop up; select the COM port of the PC to which the OT-CC-6-1RU is connected.

- swappable insert cards

- ▪ Lightweight, rugged aluminum chassis resists shock and vibration

- ▪ Redundant PS-9060 12V 60W power supplies that are hot swappable to ensure increased reliability

- ▪ Dedicated slot for the optional OPV-CTLR-IC remote monitoring card

3. Installation

Static Discharge

When installing your Opticomm-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

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 Opticomm-EMCORE to obtain a Return Merchandise Authorization (RMA) number and further instructions.

Verify that you have the items you ordered. A standard kit includes these items:

- One 1RU chassis
- Two rack mount ears for front or rear facing rack mounting
- A North American (NA) or European Union (EU) AC power cord

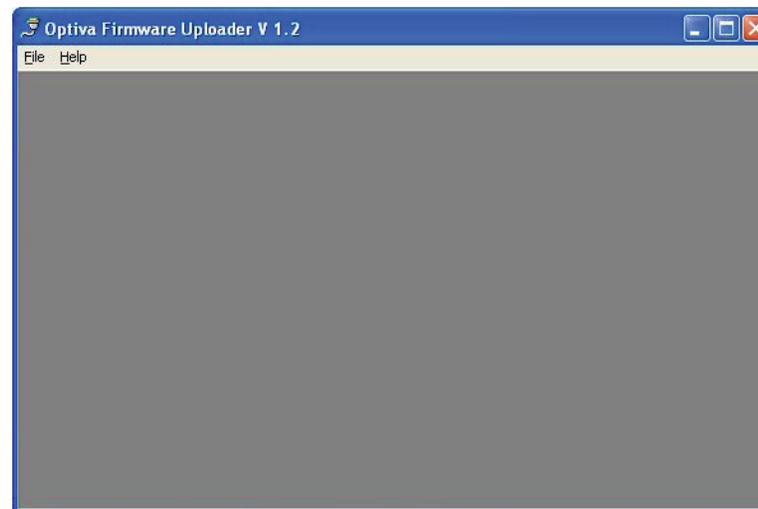## Accessories/Spare Parts

Fan Tray P/N Y5535-509

12V DC 60W Universal Power Supply PS-9060

North American Power Cord

European Power Cord

USB Cable

3. Turn on the chassis power supplies

4. Install and then Open "Optiva Uploader" program (contact customer service to download the latest version)

Updating device Firmware

1. Install USB driver (VCP Driver Kit) from http://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx

2. Connect the PC to the USB port next to the status LEDs. **IMPORTANT – chassis power must be turned off before USB cable is inserted into chassis**

Installing Rack Mount Ears for Rear Mount or Front Mount

Unpack the ears and install them for either rear mounting or front mounting using the provided (6) screws, three per side. Use the inserts provided in the chassis arranged in the triangle orientation as shown below. Rack ears are mounted to the front in this illustration.
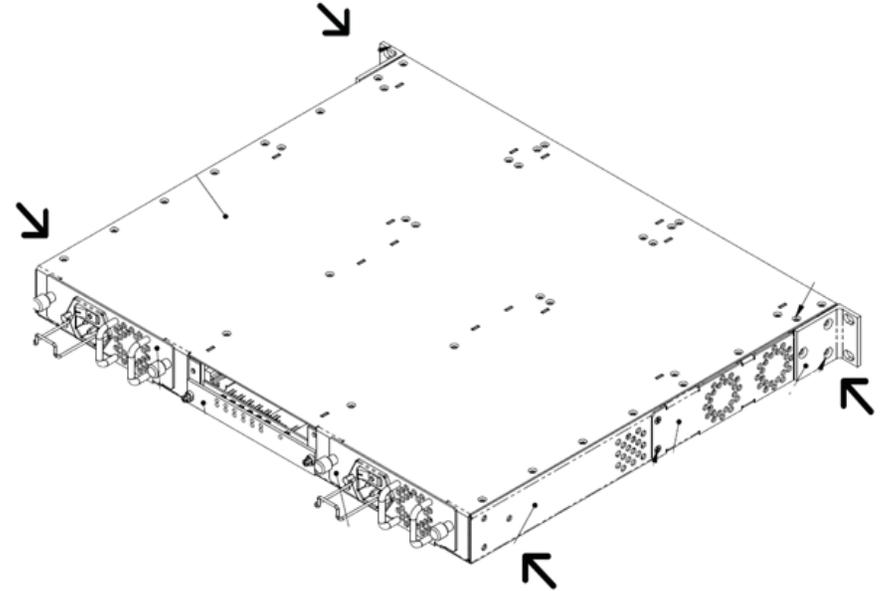
Installing Insert Cards(s)

As needed, install the separately purchased insert cards in any of the 6 available slots. All insert cards are hot-swappable.

For Daisy Chain cards, install optical card in a lower slot number then the chain card. For clarification, the slots are numbered on the chassis as 1 through 6 as shown below.

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 form the back plane and gently pull out.

Six Available slots for insert cards

Installing the Optional NMS Card (Network Management System)

The optional NMS card installs in a dedicated slot at the rear of the unit between the two power supplies. This card can be installed while the unit is powered on if desired.

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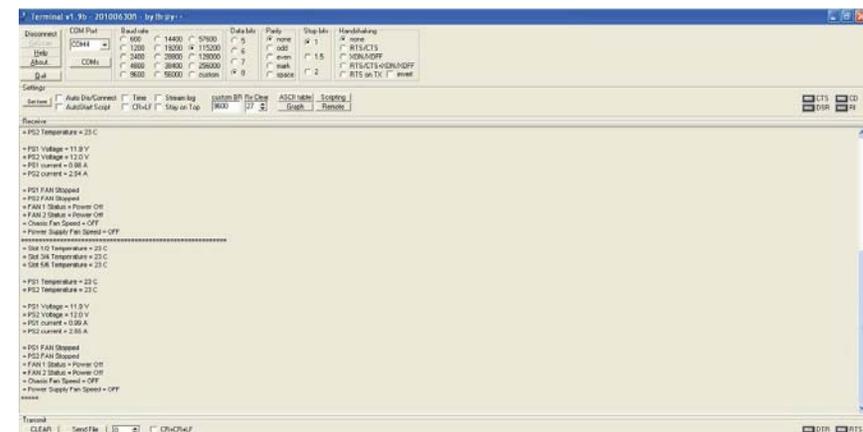
To Tighten – Screw in each of the screws located on each side of the card.

5. BIT Built-in Monitoring

The OT-CC-6-1U utilizes a real time BIT (Built-in Test) loop that monitors fan speeds, power supply current, power supply voltage, chassis temperature and power supply temperature. The earlier stated explanation of LED status indicators use the BIT loop to determine the correct status to display. In the case that a more specific root cause is needed, one can log into the BIT loop via the USB port to record chassis health. In addition, the USB port allows for remote firmware updates.

Installing the chassis BIT USB interface:

1. Install the USB driver (VCP Driver Kit) from http://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx

2. Connect a PC to the USB port next to the chassis status LED

3. BIT can be monitored through any terminal interface (e.g. Terminal https://sites.google.com/site/terminalbpp/)

4. Choose the correct COM port that the chassis is connected to

5. Set the BAUD rate to 115200 (1 stop bit, no parity, 8 data bits)

6. Data should now be showing in the terminal window, renewing every 5 seconds

4. 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. – 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 (lps > 5 amps)
Power Supply Status	Power on indication
1-6 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.
1-6 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.

Replacing Power Supplies

In the event that a power supply need to be replaced, this can be done while the unit is powered on as long as at least one of the power supplies is working correctly, **however prior to removing the supply for servicing or replacement, turn off and unplug the unit.**

To Remove – Loosen the two screws on either side of the power supply until they are detached from the enclosure. Grasp the handle underneath the fan 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

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

Power Supply Redundancy

Two PS-9060 power supplies need to be installed in the chassis for redundancy capabilities. The two power supplies must both be connected and operational to provide load sharing operation.

⚠ **Danger**	**To reduce the risk of electrical shock, do not remove the power supply cover. Disconnect power sources before servicing. Refer to qualified Opticomm-EMCORE personnel for servicing.**

Alimentation redondante:

Deux PS-9060 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.

Replacing Fan Tray

The OT-CC-6 has a field replaceable fan tray.

Caution	**Before servicing, disconnect the power sources and remove the chassis from the 19" rack.**

Removal:

1. Remove the rack mount ears if installed on the fan tray side.
2. Remove the six screws that hold the fan tray on the chassis
3. Pull out the fan tray and gently disconnect the terminal
4. Reconnect the terminals to the replacement fan tray
5. Insert the replacement fan tray into the chassis
6. For best alignment, install the fan tray back-end first and then connect the mounting ears. Install the rest of the screws holding the fan tray in place last.

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 Opticomm-EMCORE.

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

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