

OPTI-3 WMC

CLEI: SOM1500L__
P/N 1184001L1

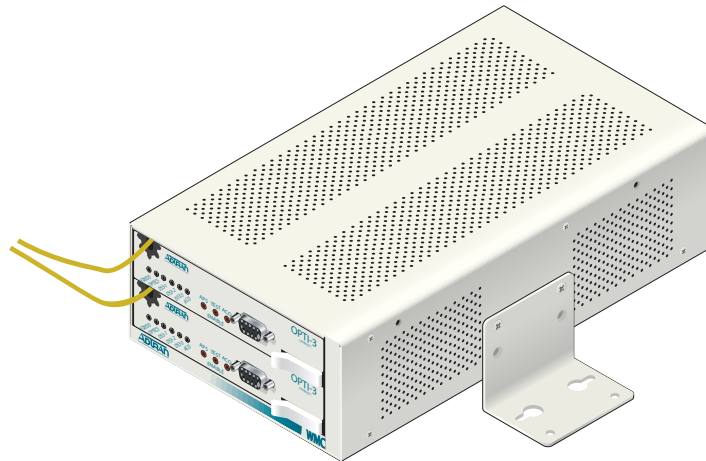


Figure 1. OPTI-3 WMC

DESCRIPTION

The OPTI-3 Wallmount Chassis (WMC) mounts to a wall or shelf and hosts two redundant OPTI-3 Controller Modules (OCM). The WMC provides six BNC connectors on the chassis backplane, corresponding to the Tx/Rx of the three DS3 interfaces.

The following features are supported on the WMC:

- ◆ Dimensions: 3.5 inches (2U) H × 6.25 inches W × 11.5 inches D
- ◆ Provides one OC-3-to-three-DS3 multiplexing capability
- ◆ Wire wrap pins for three external alarm inputs
- ◆ Primary and secondary DS1 BITS clock inputs

INSTALLATION

To install the WMC, perform the following steps:

1. Inspect the WMC for damage. If damage is found, file a claim with the carrier then contact ADTRAN® Customer Support.
2. Position the mounting brackets in an orientation that positions the ears of the brackets flush with the mounting surface. Attach the brackets to the WMC using the provided screws and the pre-tapped holes on the sides of the WMC.
3. Using the appropriate screws for the mounting surface to which the WMC will be attached, mount the WMC in the desired location.
4. Using 14 to 18 gauge wire (14 recommended), make the connection from the frame ground terminal on the backplane of the WMC to an earth ground.

WARNING: Make the frame ground wire at least the same gauge as the power wire or heavier.

5. Test the frame ground connection to ensure proper ground: Using a multimeter set to its lowest resistance range, place one lead on the earth ground and the other lead on the WMC frame ground terminal. The reading should be less than 0.1 ohms. Greater readings should be investigated.

POWER CONNECTIONS

NOTE: Use one of the following methods when powering the unit locally:

- a) Connect to a reliably grounded –48 VDC source, which is electrically isolated from the AC source. The branch circuit overcurrent protection shall be a fuse or circuit breaker rated minimum 60 VDC, maximum 15A. A readily accessible disconnect device (such as a rackmount fuse and alarm panel that is suitably approved and rated) should be incorporated in the fixed wiring.
- b) Connect to an Approved Class 2 Type (LPS) power supply rated 48 VDC, maximum 240 VA.

To Provide Power Using a –48 VDC Source:

1. Determine which fuse pairs are to supply power to the shelf.
- NOTE:** The OPTI-3 WMC will function properly with a single –48 DC power source connected to either the A or B terminals, or two separate –48 VDC sources connected to A and B power terminals.
2. Remove the fuses from the A and B slots for the pair.
 3. Cut four lengths of 16 or 18 gauge (16 recommended) conductors to reach from the terminals on the fuse and alarm panel to the power terminals on the WMC.
- WARNING: The power wire gauge should not be heavier than the ground wire.**
4. Using a crimping tool, connect lugs to both ends of each wire.
 5. Using a screwdriver, connect the ends of one wire between the “A” CO –48 VDC supply to the –48VA terminal on the WMC backplane.
 6. Connect the three remaining power wires in the same manner:
 - a. Connect the “A” CO –48 VDC return to **RET A**
 - b. Connect the “B” CO –48 VDC supply to **–48 VB**
 - c. Connect the “B” CO –48 VDC return to **RET B**

To Provide Power Using the OPTI-3 AC to –48 VDC Power Supply:

The OPTI-3 AC to –48 VDC Power Supply Assembly (P/N 4184004L1) includes:

- ◆ AC to –48 VDC power supply (P/N 1175043L2)
- ◆ Adapter (P/N 3125069@A)

To use the Power Supply Assembly, perform the following steps:

WARNING: Do not connect the power supply to an AC power source at this point.

1. Connect the end of the adapter with the 4-pin modular connector to the end of the power supply cord with the 4-pin modular connector.
2. Connect the end of the adapter with the three loose wires to the rear of the WMC:
 - a. Connect the red wire to **–48VA**.
 - b. Connect the black wire to the adjacent **RET** terminal.
 - c. Connect the green wire to the terminal labeled with the ground symbol.
3. For redundant power, repeat step 2 for the **–48VB** power terminal, **RET**, and ground, using the wires from the redundant power supply.

NOTE: For redundant power, A and B feeds share the same ground terminals.

For more information, refer to the OPTI-3 OCM Installation and Maintenance Practice (P/N 61184002L5-5) available online at www.adtran.com.



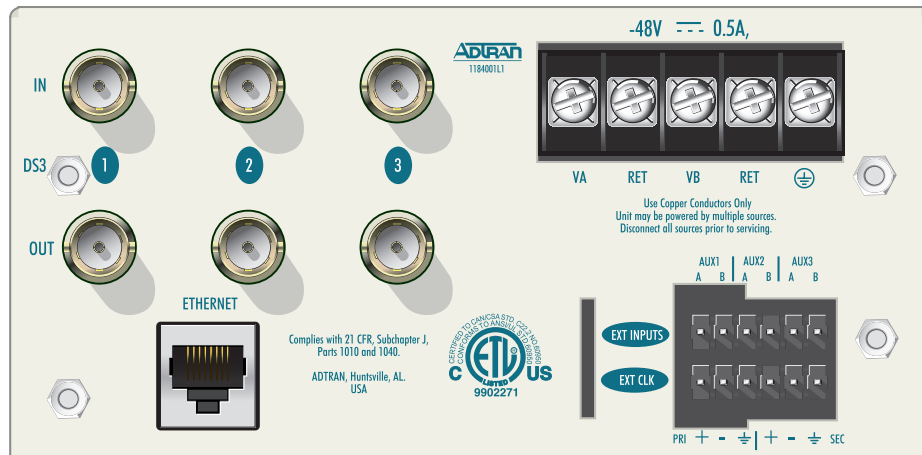


Figure 2. WMC Backplane Connectors

Apply Power and Check Voltage

WARNING: Installing fuses in the fuse and alarm panel or connecting the power supply to an AC source at this stage provides power to the shelf, the pins on the backplane, and inside the shelf. Exercise caution to avoid electric shock.

1. Without an OCM installed in the WMC, install 1A fuses in the fuse and alarm panel slots servicing the OPTI-3 WMC shelf. (If using the AC Power Supply, plug the power supply into an AC outlet.)
2. Using a voltmeter, place the common (normally black) lead on the A **RET** power terminal and the DC volts (normally red) lead on the **-48VA** power terminal. The reading should be in the operating range of -42 VDC to -56 VDC, with a nominal value of -48 VDC.
3. If redundant power is supplied, repeat step 2 for the B **RET** and **-48VB**.
4. Remove the fuses from the fuse and alarm panel serving the WMC until power is required.

ADDITIONAL CONNECTIONS

Connect External BITS Clock

If an external BITS clock is to be used, perform the following steps:

1. Determine the +, - and ground wires from the primary CO clock source.
2. Locate the external clock input wire-wrap pins on the backplane of the WMC. There are two sets of pins labeled **EXT CLK PRI** and **EXT CLK SEC**.
3. Wire-wrap the + wire from the clock source to the pin marked **PRI +**.
4. Wire-wrap the - wire from the clock source to the pin marked **PRI -**.
5. Wire-wrap the ground wire from the clock source to the pin marked with **PRI** and the ground symbol.
6. Tie the clock source wires neatly to the frame.
7. If a secondary BITS clock source is to be supplied, repeat steps 1 through 6 for **SEC**.

Connect DS3 Interface Cabling

Connect the DS3 interface cable to the proper BNC connectors on the rear of the chassis. Each of the three pairs of BNC connectors are labeled **IN** (top) and **OUT** (bottom) along with the number (between the BNC connectors) corresponding to which DS3 the connector is mapped. **IN** receives the DS3 signal from the previous network element (NE), and **OUT** transmits DS3 signal to the next NE.

Connect Alarm Inputs

There are three auxiliary alarm inputs provided by the OPTI-3 WMC using wire wrap pins, labeled **AUX 1**, **AUX 2**, and **AUX 3**

NOTE: These inputs only operate when the OCM is installed.

Any on-site equipment that might need to pass an alarm through the network can use these contacts. The priority of these contacts can be set to Critical, Major, Minor, or None using the OCM menus. An alarm is triggered when any pair of wire-wrap pins is shorted.

Connect to LAN

The OPTI-3 WMC provides an RJ-45 connection for network management over Ethernet, located on the backplane and labeled **ETHERNET**.

NOTE: The Ethernet Interface is only intended to be connected to intra-building wiring.

Optical Connections

All OC-3 connections are made using the connection points on the OCM. For more information concerning installing the OCM and making the optical connections, see the OPTI-3 Controller Module Installation and Maintenance Practice (P/N 61184002L5-5) or Job Aid (P/N 61184002L5-22).

COMPLIANCE

Per GR-1089-CORE October 2002, Section 9, this system is designed and intended only for installation in a DC-C (common) Bonding and Grounding system. It is not intended or designed for installation in a DC-I (isolated) Bonding and Grounding system.

The OPTI-3 Wallmount Chassis complies with NEBS Level 3 requirements. The WMC also complies with the requirements covered under UL 60950, and is intended for installation in restricted access locations only. The WMC must be installed in accordance with the requirements of NEC NFPA 70. With one OCM installed, the WMC has a power draw of 9 W. With two OCMs installed, the WMC has a power draw of 16 W. The following table provides the compliance codes for the OPTI-3 WMC.

Code	Input	Output
Power Code (PC)	F	C
Telecommunications Code (TC)	-	-
Installation Code	E	-