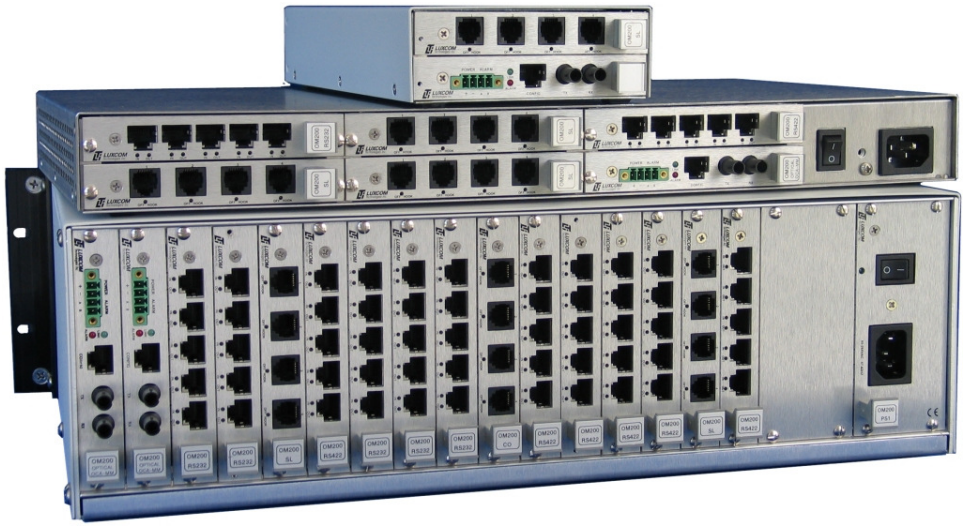
Optical SONET Interface
For OM200 SONET-OC3 Multiplexer



Chassis

- Chassis sizes of 2, 4, 6, and 16 slot.
- Optical data rate of 155Mbps
- Single or multimode fiber versions
- Point-to-point topology
- Add/drop topology
- Fiber protection ring switching

Interfaces

Telephony
- Subscriber Loop & CO
- Digital - MC300
- Digital – M3903/4
- T1 or E1

Data
- EIA530, RS232, V.35
- RS485/RS232 - Add/Drop
- RS232
- RS485
- Ethernet

Audio
- Analog 2-wire
- Analog 4-wire
- E&M
- Radio - Harris RF5800H

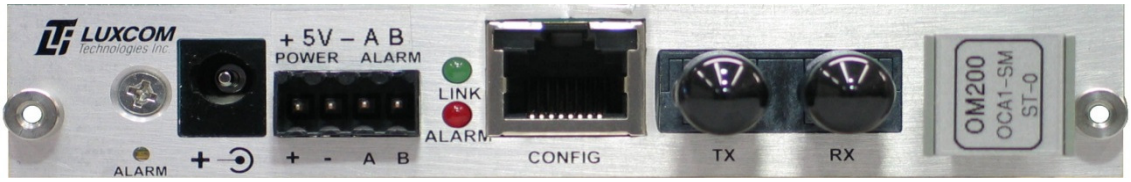
Other
- Contact sense/closure
- Alarm - chassis monitor
- Radar - video
- Optical SONET

General

Every chassis requires at least one *Optical SONET* card and one *Interface* card.
Full details can be found at: *www.luxcom.com/product/om200*

102 WALGREEN ROAD, OTTAWA, ONTARIO, K0A 1L0
Telephone (613) 831-7777 Fax (613) 831-7778
www. luxcom.com
email: sales@luxcom.com

Interface: OM200-OCA1 (optical SONET)



CLASS 1 LASER PRODUCT

Description

The optical card maps the interface card data into a SONET un-channelized OC-3 optical frame (155.52M bps). As well, it receives the OC-3 frame and distributes it to the Interface cards.

Singlemode, multimode, and single-fiber optics are available with LC, ST, and SC connectors. The network management port, relay alarm contacts, and optional DC input power supply are also on this card.

This OM200-OCA1 has dual DC power supply inputs which allow external power supply connections for redundancy if desired. The inputs must be powered by the same nominal voltage within the range shown in the *Specification*. The card is compatible with the earlier OCA version.

This card, a chassis, and at least one interface card are necessary for a minimal system. Two of these cards in a chassis allows for an add/drop topology. Full details are discussed in the OM200 Operating manual.

Indicators

Link On indicates this optical card is receiving an optical signal. Flashing indicates this card is receiving an optical signal, but the remote optical card is not.

Alarm (below LINK LED) On indicates this card does not have an optical link, or one of the cards in the chassis is interfering with transmission, or a back-up power supply is installed in this node and it is not powered. Flashing indicates the RX optical fiber should be connected to the other optical card. See the Topologies section See *Installation/Configuring Power Supply Alarms.*

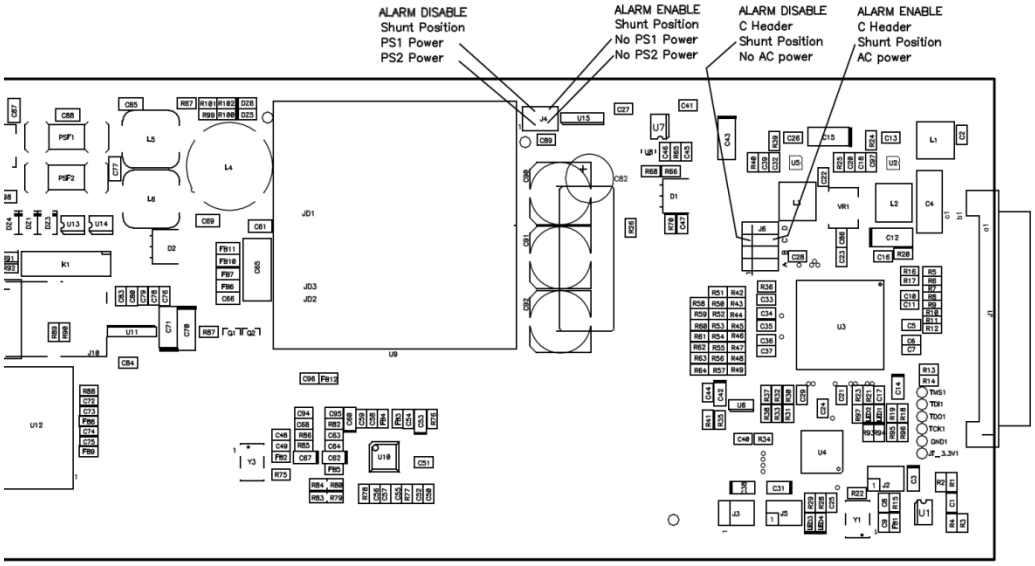
Alarm (small indictor on left) OM200-OCA1 only - on indicates this card has failed.

Jumpers for Configuring Power Supply Alarms

The Alarm LED on the chassis indicates power supply failure among other things. Since powering a supply is optional, a jumper must be set to tell the management software to alarm on power supply absence; otherwise an inadvertent alarm will occur.

OM200-OCA1 Jumpers

The figure below shows the OM200-OCA1 optical card and the location of the jumpers which must be set if the power supply is connected to a power source. PS1 is the 2.1mm barrel jack connector on the top, and PS2 is the terminal block input



Network Management Port

The optical card's network management port may be RS232 Serial, USB 2.0, or Ethernet IP. The model number on the optical card pull handle will end in: **-R (**RS232), **-E** (Ethernet), or **-U** (USB). Different nodes can have different types of port interfaces. When a node has two optical cards, the full network management can only be accessed through the optical card in slot 1.

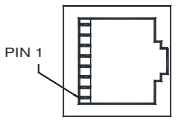
See *NETWORK MANAGEMENT Interface* in the manual for details on using these Interfaces.

USB Console Port

The USB mini B console option uses an internal USB UART.
See *NETWORK MANAGEMENT Interface* for details on using these Interfaces

RS232 Interface Option

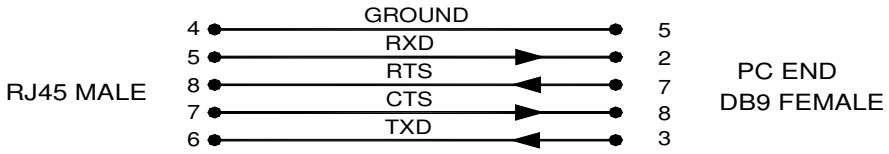
The RS232 port follows the EIA/TIA-561 DCE standard.



Pin #	Pin Name	Direction
1	DSR Data Set Ready	Output (High)
2	DCD Data Carrier Detect	Output (High)
3	DTR Data Terminal Ready	Input (NC)
4	GND Ground	
5	RXD Receive Data	Output
6	TXD Transmit Data	Input
7	CTS Clear To Send	Output
8	RTS Request to Send	Input

RS232 Interface Port Adapter

The RJ45 management port typically connects to the DB9 male serial port on a computer. An adapter, P/N 51-237-9, is supplied with the each optical card with the RS232 interface; a customer supplied CAT5 Ethernet cable is used to connect the OM200 management port to this adapter. Optionally a full console port cable (RJ45-EIA561 to DB9-DCE) can be purchased, P/N: 92-161-9. The pin-out of this adapter and console cable is shown below.



Ethernet Interface Option

This 10/100Mbit Ethernet interface has an on-board server with an assignable IP address. Using this Interface, the management software can be accessed from anywhere on a local area network, or even from the Internet. It uses a standard straight through CAT5 cable.

Pin #	Pin Name	Direction
1	TX+	Output
2	TX-	Output
3	RX+	Input
4	Not Used	
5	Not Used	
6	RX-	Input
7	Not Used	
8	Not Used	

Power/Alarm Terminal Block

Auxiliary Power Supply:

If the optical card has the 5 volt input option, it may be powered directly from this power cube.

Input 85-264VAC/47-63Hz
Output 5VDC/4A

This power cube comes with a 2.1mm connector. This may be modified to interface with the terminal block on the optical card. This figure shows the polarity of the wires once the plug is removed and the wires stripped for attaching to the terminal block.

Part number LTIPS-5-4-U-2

Optical Connector

The fiber pair may be singlemode or multimode depending on the ordering option selected. There is also a version which uses only one singlemode fiber.

Specifications

System bandwidth used by this card 0%
Current used by this card ..... < 0.6 A
Power consumption ..... < 3 W

Optical

Data rate ..... 155.54 Mbps
Light source
- MM version ..... 1310 nm ELED
- SM version ..... 1310 nm LASER
- ZXE version ..... 1550 nm LASER
- BU version ..... 1310 nm LASER
- BD version ..... 1550 nm LASER

Output min.
- MM version, 62.5/125 fiber ..... -19 dBm
- SM version, 9/125 fiber ..... -15 dBm
- ZXE version, 9/125 fiber ..... 0 dBm
- BU version, 9/125 fiber ..... -12 dBm
- BD version, 9/125 fiber ..... -12 dBm

Sensitivity 10-10 BER
- MM version, 62.5/125 fiber ..... -32.5 dBm
- SM version ,9/125 fiber ..... -32.5 dBm
- ZXE version ,9/125 fiber ..... -35 dBm
- BU version, 9/125 fiber ..... -32.5 dBm
- BD version, 9/125 fiber ..... -32.5 dBm

Operating distance (3dB safety margin), typical fiber*
- MM version, 62.5/125 fiber ..... 5 Km
- SM version, 9/125 fiber ..... 20 Km
- LXE version, 9/125 fiber ..... 120 Km
- BU version, 9/125 fiber ..... 50 Km
- BD version, 9/125 fiber ..... 50 Km

Optical connectors ..... SC, ST, or LC
Operating temp.
- MM version ..... 0 to 70C
- SM version ..... -40 to 70C
- LXE version ..... 0 to 70C
- BU version ..... 0 to 70C
- BD version ..... 0 to 70C

On card power supply

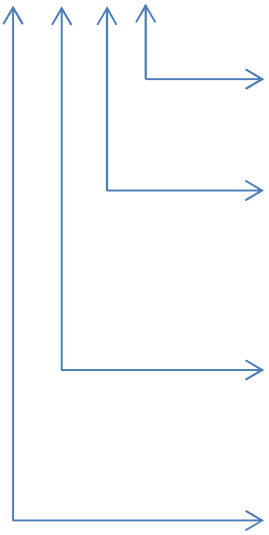
Input connector ..... Screw terminal
Operating temperature ..... -25C to 71C
Input voltage/current*
- 5 V version (external power cube) ..... 4.9 to 5.3 VDC, <5 A
- 12 V version ..... 9 to 18 VDC, <2.7A
- 24 V version ..... 18 to 36 VDC, <0.4A
- 48 V version ..... 36 to 72 VDC, <0.7A
- Output current all versions ..... 5 Amps max

Alarm contacts

Current ..... 0.5 A max
Voltage ..... 200 V max
Isolation input to output ..... >2000 V

* The inputs to the 12V, 24V, and 48V bricks are isolated from the internal circuitry.

OM200-OCA1-XX-XX-XX-X



R (or Blank) = RS232 management interface
E = Ethernet management interface

0 = 5V input DC supply (default)*
1 = 12V input DC supply
2 = 24V input DC supply
3 = 48V input DC supply

SC = Optical connectors
ST = Optical connectors
LC = SFP Optical Connector

MM = 1310nm Multimode fiber
SM = 1310nm Singlemode fiber
ZXE =1550nm Singlemode fiber
BU = 1310nm TX Singlemode single fiber*
BD = 1550nm TX Singlemode single fiber*
* The BU must communicate with the BD version.