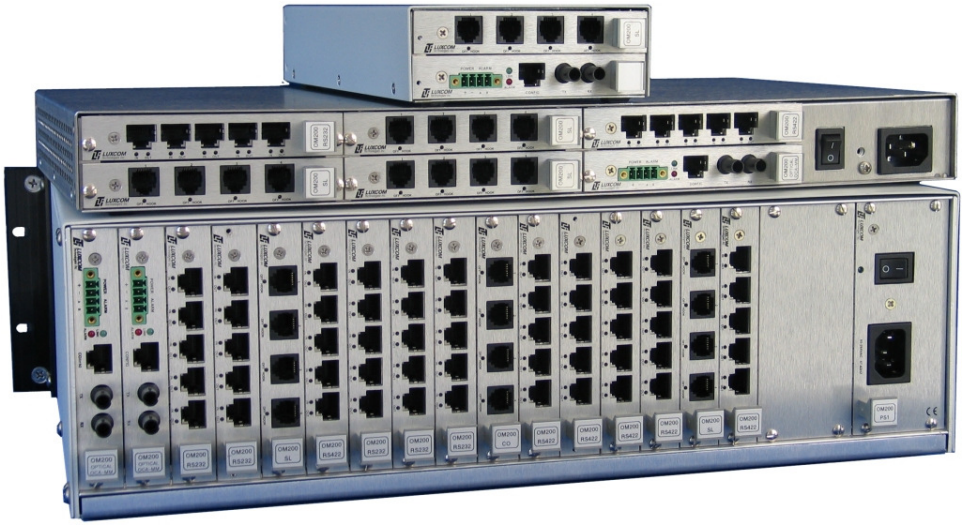
Radar video Interface
For OM200 SONET-OC3 Multiplexer



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*

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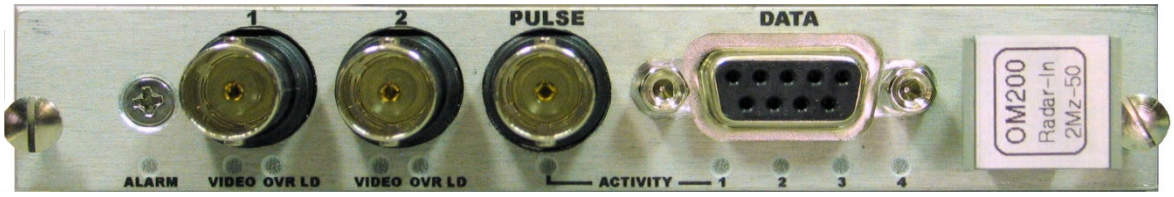
Interface: OM200-Radar (video)



Description

This interface transmits radar video signals normally found in air traffic control systems. The video signal goes from a minimum of 0 V to a maximum of 4 Vpeak, with a bandwidth of 2 or 4 MHz. This signal connects to the OM200-Radar-IN with a 50 or 75 Ohm coaxial cable. This signal is passed to the remote node and output on the OM200-Radar-OUT card. Several data channels are passed with the video. These cards also accept NAVALEX tm video signals where the data burst and video signal are combined. Because of the high bandwidth used by these cards, only a single Radar-In/Out pair of cards may be in a network; other types of interfaces may be installed.

The OM200-Radar cards transmit the following signals.

- Radar video (1 channel at 4 MHz BW, or 2 channels at 2 MHz BW)
- One Radar Trigger pulse signal
- Four Azimuth RS422 balanced signal

I/O Ports

Signals are input at the Radar-In card and output at the Radar-Out card.
There are two video ports which are identical. If the video bandwidth of the cards is 2 MHz, both ports may be used. If the video bandwidth is 4 MHz, either one but not both of the ports may be used. The network management software is used to activate a port. These ports have BNC connectors, and are terminated in 50 or 75 Ohm depending on the ordering option.
The pulse channel also has a BNC connector, and is terminated in 50 or 75 Ohm depending on the ordering option. It passes pulses > 1u second; the rep rate of the pulses must be <8 KHz.
The RS422 data channels are balanced drivers/receivers, and are data rate transparent from DC to 22 kbps.

DB9S Pin assignments

Pin #	Name	Direction
9	1-A	Input on OM200-Radar-In, Output on OM200-Radar-Out
5	1-B	" "
8	2-A	" "
4	2-B	" "
7	3-A	" "
	3-B	" "
6	4-A	" "
1	4-B	" "
3	Signal Ground	" "

Jumpers

The video and data channels on the OM200-Radar-In card have jumpers which connect/disconnect the termination resistor. The termination resistor should always be selected except when two transmission systems are connected in parallel, as in a hot-standby configuration; then only one of the systems should be terminated. The cards are shipped with the termination impedance connected.

The video input signal will be <2.5 Vpeak or <4.5 Vpeak, and there is a jumper which should be set accordingly. If the **OVR LD** indicator flashes red, the jumpers which control the gain of the system should be moved to -20%. They may be moved to +20% if a higher output is desired and the OVR **LD** indicator does not flash. If they are in the middle position, the gain will be unity.

The termination impedance and the bandwidth of the video signal channel cannot be adjusted; it is specified at the time of ordering.

Indicators

ALARM is on (red) indicates there is no connection with a remote partner, or a card failure.

VIDEO flashes when a video signal exceeds ~ 0.1 volt.

OVR LD is on indicates the video signal is over-loading the OM200-Radar-IN card; however this indicator shows up at both the input and output cards.

ACTIVITY is on indicates that data channel is active. It is off for steady state input.

Management Port Settings

The Network Management Interface is used to configure the following options.

1 Select port 1.

2 Select port 2.

3 Select both port 1 and port 2. (This will only be displayed for the 2 MHz BW video.)

The Radar-In and Radar-Out card configuration must agree before the connection is established, and the connection must be deleted before these settings can be changed; however if only one port is selected, it may be toggled between port 1 and port 2 without re-establishing the connection. In this later case, input port 1 can become output port 2, and vice versa.

Specifications

General

System bandwidth used by this card; one 2 MHz channel	32%
System bandwidth used by this card; two 2 MHz channel	64%
System bandwidth used by this card; one 4 MHz channel	64%
Current used by this card	< 0.5 A
Power consumption	< 2.5 W
Operating temperature	-40 to 70 ºC

Video Channel

-0.5 dB BW for 2 MHz option	2 MHz
-0.5 dB BW for 4 MHz option	4 MHz
Delay from video input to video output with 1km fiber	< 0.6 ms
' ' ' ' 10km fiber	< 0.7 ms
Output skew between video channels with simultaneous input	+/- 50 ns
S/N Ratio 2 MHz video BW (Peak signal to random noise)	> 62 dB (Non-Weighted)
S/N Ratio 4 MHz video BW (Peak signal to random noise)	> 58 dB (Non-Weighted)
Vin with 2.5 V jumper setting	- 0.2 to 2.5 V
Vin with 4.5 V jumper setting	- 0.5 to 4.5 V
Output offset voltage with 0 Vin	< +/-20 mV
In band ripple (DC to 1.5 MHz)	0 +/- 0.5 dB
I/O impedance	75 or 50 Ohm +/- 5%
I/O connector	BNC

Pulse Channel

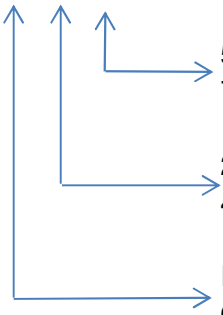
Minimum period	125 us
Minimum pulse width	1us
Pulse jitter (with 1 us pulse)	40 ns
Vout high	7 V +/- 10%
Vout low	0 V
Input/output impedance	75 or 50 Ohm +/- 5%
I/O connector	BNC
Output skew between pulse and video channel with simultaneous input	+/- 40 ns

Data Channels

Number of channels	4
Data input /output levels	RS422
Output skew between data and pulse channel with simultaneous input	+400 ns, -10 ns
Bit rate transparent from	DC to 22 kbps
Data format (bits/char, start, stop bits etc.)	any
Fail-safe output	yes
Input Impedance	120 Ohm
Voltage common mode	+/- 7 V max
I/O connector	DB9s (female)

Ordering Information

OM200-Radar-XX-XX-XX



50 = Video/Pulse 50 Ohm termination impedance
75 = Video/Pulse 75 Ohm termination impedance

2M = 2 MHz Video BW
4M = 4 MHz Video BW

IN = Video input card
OUT = Video output card

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