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REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
0.1	Preliminary Version.	May 2005
1.0	First Release - updated drawings, and menu items.	Jun 2005
1.1	Updated Safety info, and formatting.	Jan 2006
1.2	Corrected configuration menu items.	Jan 2007
1.3	Added specifications for OC-48 option.	Feb 2007
1.4	Menu Updates. Fixed Typos and referencing.	Apr 2007
1.5	Updated rear plate drawing.	Apr 2008
1.5.1	Updated LED order in Figure 4-1.	Aug 2008
1.6	Updated menu structure format (section 4.2.1 to 4.2.2.9). Updated features & technical specifications.	Oct 2008
1.6.1	Updated LED order in Figure 5-1.	March 2010

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Although every attempt has been made to accurately describe the features, installation and operation of this product in this manual, no warranty is granted nor liability assumed in relation to any errors or omissions unless specifically undertaken in the Evertz sales contract or order confirmation. Information contained in this manual is periodically updated and changes will be incorporated into subsequent editions. If you encounter an error, please notify Evertz Customer Service department. Evertz reserves the right, without notice or liability, to make changes in equipment design or specifications.



Do not hook up the 7707VT-8-OC48 DWDM and 7707VR-8-OC48 cards directly with a short fiber optic cable. The 7707VT-8-OC48DWDM card produces +7dBm of power which will damage the receiver if connected directly.



Do not hook up the 7707VT-8-OC48 cards that output more than -7dBm of power (see 7707VT-8-OC48 specifications for output power of various laser types). Do not hook up the 7707VR-8-OC48-H high sensitivity receiver cards directly with a short fiber optic cable. The 7707VT-8-OC48 cards that produce more than -7dBm of power will damage the receiver if connected directly.

1. OVERVIEW

The 7707VR-8-OC48 is a *VistaLINK*®-enabled fiber optic receiver for SDI, DVB-ASI or SDTi signals. This double card module de-multiplexes up to eight SDI, DVB-ASI or SDTi video signals that have been Time Domain Multiplexed (TDM) by the companion 7707VT-8-OC48 Octal SDI and Ethernet SONET/SDH Fiber Transmitter module.

The 7707VR-8-OC48 and companion 7707VT-8-OC48 will transparently pass embedded AES audio or any other data in the horizontal or vertical ancillary data space. Monitoring and control of card status and parameters is provided locally at the card edge or remotely via *VistaLINK*®.

The 7707VR-8-OC48 occupies two card slots in the 3 RU frame, which will hold up to 7 modules or one card slot in the 1RU frame, which will hold up to three modules. One 7707VR-8-OC48 module can also be installed in the S7701 stand-alone enclosure.

Features:

- Transports signals over OC-48/STM-16 data rates (2.488Gb/s)
- Single card TDM multiplexer for eight asynchronous SD-SDI, SDTi and DVBASI signals
- Built-in Ethernet transceiver with one 10/100 Base-T port
- Interfaces directly to SONET/SDH infrastructure
- Uncompressed, full-rate video transport
- Signal transport over fiber uninterrupted by loss of any input feed
- Transparently passes embedded AES or any other data in the horizontal or vertical ancillary data space
- Stratum 3 wander/holdover/jitter compliance
- Wide input frequency range tolerance (± 50 ppm)
- Fully hot-swappable from front of frame
- Supports single-mode and multi-mode fiber optic cable
- Optical output wavelengths of 1310nm, 1550nm, and up to sixteen CWDM wavelengths (ITU-T G.694.2 compliant)
- DWDM wavelength (ITU-T G.694.1 compliant) support
- SC/PC, ST/PC, FC/PC connector options
- Comprehensive signal and card status monitoring via four digit card edge display or remotely through SNMP and *VistaLINK*®
- *VistaLINK*® capability is available when modules are used with the 3RU 7700FR-C or 350FR frame and a 7700FC *VistaLINK*® Frame Controller module in slot 1 of the frame
- Occupies three card slots and can be housed in either a 1RU frame which will hold up to 3 modules, a 3RU frame which will hold up to 7 modules, 350FR portable frame that holds up to 3 modules or a standalone frame which will hold 1 module

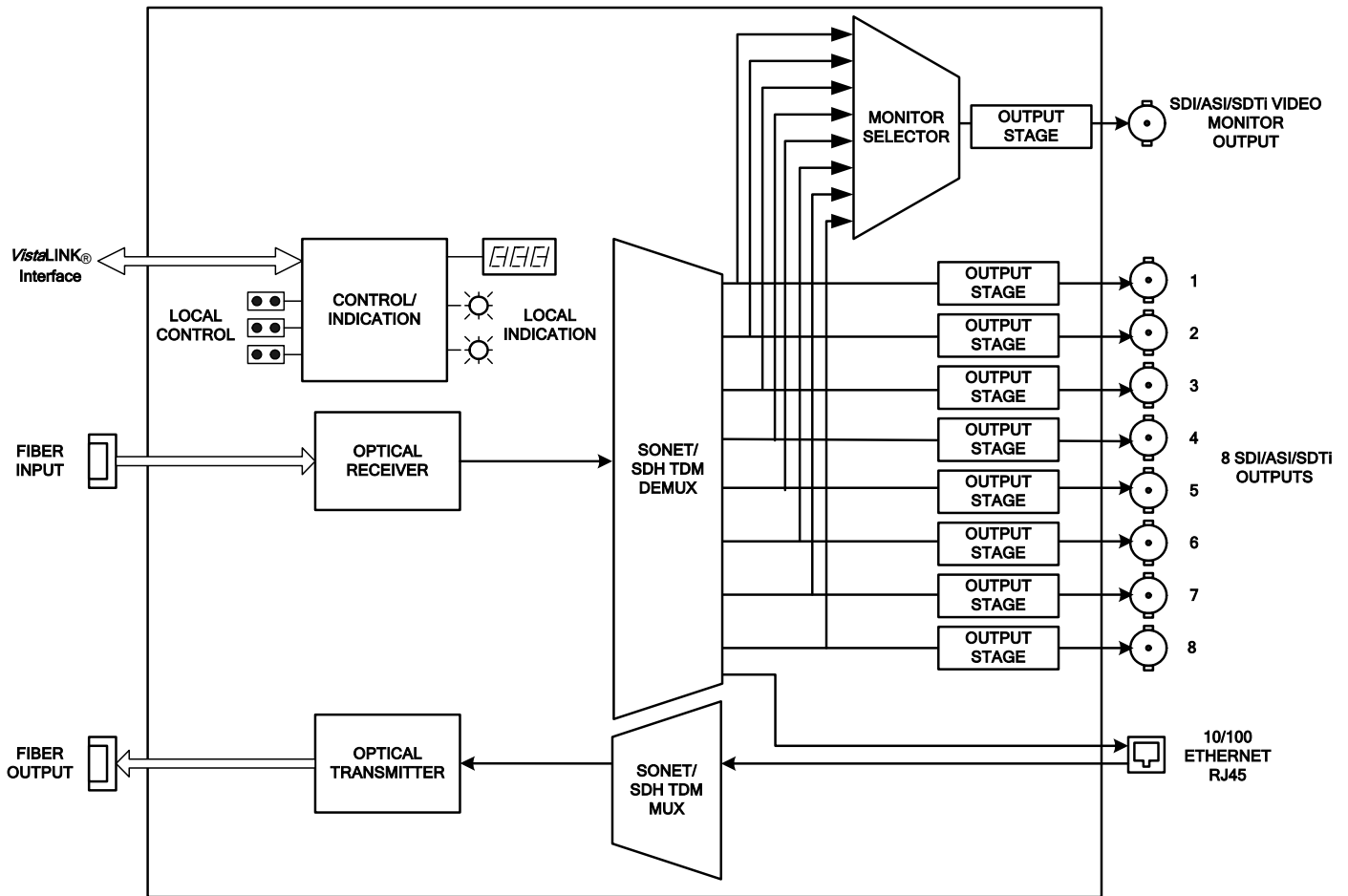


Figure 1-1: 7707VR-8-OC48 Block Diagram

2. INSTALLATION

The 7707VR-8-OC48 comes with a companion rear plate that has eight BNC connectors and one SC/PC (shown), ST/PC or FC/PC optical connector. For information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.

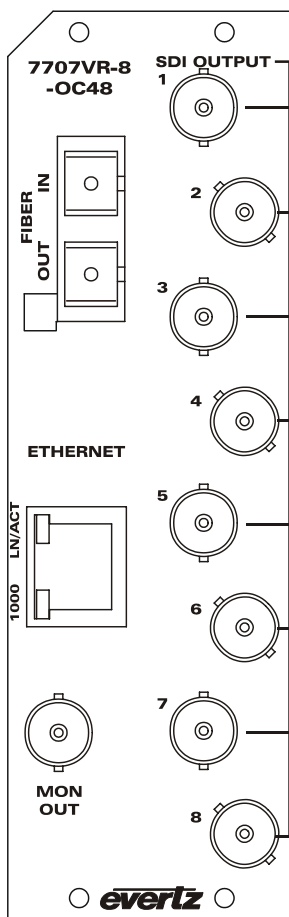


Figure 2-1: 7707VR-8-OC48 Rear Panel

- SDI OUTPUT:** Eight BNC outputs for eight independent reclocked serial digital component video signals, compatible with the SMPTE 259M, SMPTE 305M and DVB-ASI standards.
- MON OUTPUT:** User selectable video loopback output. Any of the inputs can source this output for reclocked loop back functionality. The selection is controlled via the card edge menu or *VistaLINK*®. If EDH correction is activated, the selected output will be EDH corrected.
- OPTICAL INPUT:** SC/PC, SC/PC with cover (shown), ST/PC or FC/PC female connector. This wide range input accepts optical wavelengths of 1270nm to 1610nm, accommodating standard or CWDM transmission schemes.



Do not hook up the 7707VT-8-OC48 DWDM and 7707VR-8-OC48 cards directly with a short fiber optic cable. The 7707VT-8-OC48DWDM card produces +7dBm of power which will damage the receiver if connected directly.



Do not hook up the 7707VT-8-OC48 cards that output more than -7dBm of power (see 7707VT-8-OC48 specifications for output power of various laser types) and/or 7707VR-8-OC48-H high sensitivity receiver cards directly with a short fiber optic cable. The 7707VT-8-OC48 cards that produce more than -7dBm of power will damage the receiver if connected directly.

2.1. HANDLING AND CONNECTING FIBERS



Never touch the end face of an optical fiber. Always keep dust caps on optical fiber connectors when not connected. Always remember to properly clean the optical end face of a connector before making a connection.

The transmission characteristics of the fiber are dependent on the shape of the optical core and therefore care must be taken to prevent fiber damage due to heavy objects or abrupt fiber bending. Evertz recommends that you maintain a minimum bending radius of 5 cm to avoid fiber-bending loss that will decrease the maximum attainable distance of the fiber cable. The Evertz fiber optic modules come with cable lockout devices, to prevent the user from damaging the fiber by installing a module into a slot in the frame that does not have a suitable I/O module. For further information about care and handling of fiber optic cable see section 3 of the Fiber Optics System Design section of this manual binder.

3. SPECIFICATIONS

3.1. SERIAL VIDEO OUTPUT

Standards:	SMPTE 259M-C, DVB-ASI, SMPTE 305M (SDTi)
Number of Outputs:	8 (+1 monitor with user-selectable source)
Connector:	1 BNC per IEC 1169-8 Annex A.
Signal Level:	800mV (nominal)
DC Offset:	0V \pm 0.5V
Rise and Fall Time:	900ps nominal at 270Mb/s
Overshoot:	< 10% of amplitude
Return Loss:	> 12dB
Wide Band Jitter:	< 0.2UI

3.2. SERIAL VIDEO MONITOR OUTPUT

Standards:	SMPTE 259M-C, DVB-ASI, SMPTE 305M (SDTi)
Number of Outputs:	1, signal user-selectable from the 8 inputs
Connector:	1 BNC per IEC 61169-8 Annex A
Signal Level:	800mV nominal
DC Offset:	0V \pm 0.5V
Rise and Fall Time:	900ps nominal
Overshoot:	< 10% of amplitude
Return Loss:	> 12dB
Wideband Jitter:	< 0.2 UI

3.3. OPTICAL OUTPUT

Standards:	OC-48/STM-16
Number of Outputs:	1
Connector:	Female SC/PC, ST/PC or FC/PC
Return Loss:	> 14dB
Wideband Jitter:	< 0.2 UI
Fiber Size:	9 μ m core/125 μ m overall
Wavelength:	
Standard:	1310nm, 1550nm (nominal)
CWDM:	1270nm to 1610nm (See Ordering Information)
DWDM:	C-Band (ITU-T G.694.1 compliant) (See Ordering Information)
Power:	
1310nm FP (Standard):	-7dBm \pm 1dBm
1550nm & CWDM DFB:	0dBm \pm 1dBm
DWDM DFB:	+7dBm \pm 1dBm

3.4. OPTICAL INPUT

Standards:	OC-48/STM-16
Number of Inputs:	1
Connector:	Female SC/PC, ST/PC or FC/PC
Return Loss:	>25dB
Input Wavelength:	1270nm to 1610nm
Maximum Input Power	
Standard Version:	-1dBm
-H Version:	-8dBm

Optical Sensitivity	
Standard Version:	-21dBm
-H Version:	-28dBm

3.5. ELECTRICAL

Voltage:	+12V DC
Power:	10W (non DWDM) 13W (DWDM)

3.6. PHYSICAL

Number of slots:	2
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3.7. COMPLIANCE

Electrical Safety:	CSA Listed to CSA C22.2 No. 60065-03IEC 60065-(2001-12) 7th Edition Complies with CE Low voltage directive 93/68/EEC
Laser Safety:	Complies with 24 CFR 1040.10 and 1040.11 except for deviations pursuant to LN No. 50, dated July 26, 2001 Complies with IEC 60825-1, Am. 2
EMI/RFI:	Complies with FCC regulations for class A devices Complies with EU EMC directive 89/336/EEC

4. STATUS INDICATORS AND DISPLAYS

The 7707VR-8-OC48 has 11 LED Status indicators and a 4 digit alphanumeric display on the front card edge to show operational status of the card at a glance. The card edge pushbutton and toggle switch are used to select various displays on the alphanumeric display. Figure 5-1 shows the locations of the indicators, pushbutton and toggle switch.

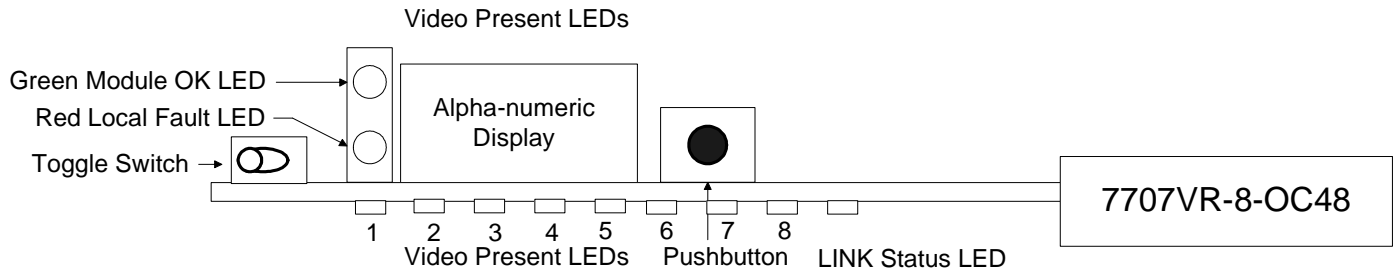


Figure 4-1: Location of Status Indicators and Controls

4.1. STATUS INDICATOR LEDS

LOCAL FAULT: On the 7707VR-8-OC48 board this Red LED indicates poor module status and will be ON during the absence of a valid fiber link input signal or if a local input power fault exists (i.e.: a blown fuse).

The LOCAL FAULT indications can also be reported to the frame through the FRAME STATUS jumper.

MODULE OK: This Green LED indicates good module status. It will be ON when a valid input signal is present, and the board power is good.

On the 7707VR-8-OC48 there are nine small LEDs on the front of the board that indicate the optical link status and the presence of video signals.

LINK STATUS LED:

GREEN	Valid signal input. No errors.
RED	Valid signal input. Errors detected.
OFF	No valid input detected.

VIDEO 1 STATUS LED:

GREEN	Valid signal output. No errors.
RED	Valid signal output. Errors detected.
OFF	No valid output detected.
YELLOW	Output is blocked by user



VIDEO 2-8 STATUS LEDs function similar to VIDEO 1 STATUS LED.

4.2. CARD EDGE DISPLAY

Additional signal and status monitoring is provided via the 4-digit dot-matrix display located at the card-edge. The card edge toggle switch is used to select whether you are displaying status from the card (monitoring mode) or setting control parameters for the card (control mode). Press the toggle switch to select 'monitor mode' (STAT) or 'control mode' (CTRL). Table 4-1 shows the menu structure for the 7707VT-8-OC48 card.

You can use the toggle switch to move up and down the list of available parameters to adjust. To adjust any parameter, use the toggle switch to move up or down to the desired parameter and press the pushbutton. Using the toggle switch, adjust the parameter to its desired value. If the parameter is a numerical value, the number will increase if you push up on the toggle switch and decrease if you push down on the toggle switch. If the parameter contains a list of choices, you can cycle through the list by pressing the toggle switch in either direction. The parameter values are changed as you cycle through the list.

When you have stopped at the desired value, depress the pushbutton. This will return to the parameter select menu item you are setting (the display shows the parameter name you were setting). To change another parameter, use the toggle switch to select other parameters. If neither the toggle switch nor pushbutton is operated for several seconds the card edge control will exit the menu system and return to an idle state.

On all menus, there is an extra selectable item: *BACK*. Selecting *BACK* will take you to the previous menu (the one that was used to get into the current menu). On the main menu, *BACK* will both take the user to the normal operating mode (indicated by the moving line on the card edge display).

Level 1	Level 2	Level 3	Level 4	Level 5
STAT	FIBR	STD	OC, STM, LOSS	
		PWR	-40 TO 0 dB	
		REF	OUT	REF, XO, HOLD, LINK
			IN	LOS, FOS, OK
		CIC	15m/24H	TIME, ESL, SESL, ESS, SESS, ESP, SESP, SEFS
		LIC	15m/24H	TIME, ESL, SESL, ESS, SESS, ESP, SESP, SEFS
		ESR	SECT, LINE, PATH	0.0% - 100%
		LOSL	0 to 9999	
	TDMD	LOSS, ERR, OK		
	VID1-VID8	STD	ASI, N270, P270, LOSS	
		EDH	PRES, LOSS	
		SDTI	PRES, LOSS	
		OSTD	ASI, N270, P270, LOSS	
	ETH	LINK	UP, DOWN	
		SPD	10, 100, 1000, DOWN	
	VER			
CTRL	FIBR	STD	OC, STM	
		LASR	CONT, DISC	
		REF	LINK, XO, HOLD, AUTO	
		CIC	ALL, 15M, 24H	CLR
		LOSL	CLR	1 to 9999
		CESR	CLR	
		SETH	SESS, SESL, SESP, SEFS	
	VID1-VID8	EDH	ON, OFF	
		OSTD	AUTO, OFF, ASI, N270, P270	
	VMON	VID1-VID8		
	PSWD	0 to 9999	0 to 9999	
	This area visible only if correct password is entered	PWSL	DIS, EN	
		VID1-VID8		
	DISP	HORZ, VERT		

Table 4-1: Card Edge Menu

4.2.1. STAT Menu

When in monitoring mode, the toggle switch determines what data is being displayed on the alphanumeric display. Each time the toggle switch is pressed up/down, the display advances to the next/previous level.

The card-edge pushbutton and toggle switch are used to navigate through the display menu. Table 4-2 provides a quick reference to the monitoring mode display. The details of the each of the displays are described in the sections 4.2.1.1 to 4.2.1.12. For information about setting up the module in control mode (CTRL) see section 4.2.2.

Level 1	Level 2	Level 3	Level 4	Level 5
STAT	FIBR	STD	OC, STM, LOSS	
		PWR	-40 TO 0 db	
		REF	OUT	REF, XO, HOLD, LINK
			IN	LOS, FOS, OK
		CIC	15m/24H	TIME, ESL, SESL, ESS, SESS, ESP, SESP, SEFS
		LIC	15m/24H	TIME, ESL, SESL, ESS, SESS, ESP, SESP, SEFS
		ESR	SECT, LINE, PATH	0.0% - 100%
		LOSL	0 to 9999	
	TDMD	LOSS, ERR, OK		
	VID1-VID8	STD	ASI, N270, P270, LOSS	
		EDH	PRES, LOSS	
		SDTI	PRES, LOSS	
		OSTD	ASI, N270, P270, LOSS	
	ETH	LINK	UP, DOWN	
		SPD	10, 100, 1000, DOWN	
	VER			

Table 4-2: STAT Menu Structure

4.2.1.1. Displaying the Optical Link Data Standard

STAT
FIBR
STD
OC
STM
LOSS

The STD menu shows the current transmission standard implemented by the card. OC is displayed for SONET transmission, while STM is displayed for SDH transmission. LOSS is displayed for a loss of signal. These modes can be set through the control menu, see section 4.2.2.

4.2.1.2. Displaying the Optical Power

STAT
FIBR
PWR
-40 to 0 dB

Displays the Input Optical Power:

0 to -40 Optical input power within this range.

OVER Optical power measure is higher than operating range.

LOW Optical power measure is lower than operating range.

4.2.1.3. Displaying the Link Output Reference Clock Source

STAT
FIBR
REF
OUT
REF
XO
HOLD
LINK

Displays Link Output Clock Reference Source.

REF	ERR	Reference error
XO		Oscillator
HOLD		Hold Over
LINK		Link Input

4.2.1.4. Displaying the Link Input Status

STAT
FIBR
REF
IN
LOS
FOS
OK

Displays Link Input Status.

LOS	LINK LOST
FOS	FREQUENCY OFFSET
OK	LINK VALID

4.2.1.5. Displaying the Current Interval Counter

STAT
FIBR
CIC
15m/24h
TIME
ESL
SESL
ESS
SESS
ESP
SESP
SEFS

The Current Interval Counter menu provides the user with an option to monitor 15m or 24h counters to detect errored transmission.

For a detailed description see Table 4-3.

STAT/FIBR/CIC	15M	24H
TIME	Current 15 minute interval elapsed time.	Current 24 hour interval elapsed time.
ESL	Current 15 minute interval, errored seconds line.	Current 24 hour interval, errored seconds line.
SESL	Current 15 minute interval, severe errored seconds line.	Current 24 hour interval, severe errored seconds line.
ESS	Current 15 minute interval, errored seconds section.	Current 24 hour interval, errored seconds section.
SESS	Current 15 minute interval, severe errored seconds section.	Current 24 hour interval, severe errored seconds section.
ESP	Current 15 minute interval, errored seconds path.	Current 24 hour interval, errored seconds path.
SESP	Current 15 minute interval, severe errored seconds path.	Current 24 hour interval, severe errored seconds path.
SEFS	Current 15 minute interval, severe errored seconds frame.	Current 24 hour interval, severe errored seconds frame.

Table 4-3: Current Interval Counter Menu

For detailed information about these parameters refer to section 4.2.1.16

4.2.1.6. Displaying the Last Interval Counter

STAT
FIBR
LIC
15m/24h
TIME
ESL
SESL
ESS
SESS
ESP
SESP
SEFS

Displays the last interval counter for the following parameters:
TIME, ESL, SESL, ESS, SESS, ESP, SESP, SEFS

STAT/LIC	15M	24H
ESL	Last 15 minute interval, errored seconds line.	Last 24 hour interval, errored seconds line.
SESL	Last 15 minute interval, severe errored seconds line.	Last 24 hour interval, severe errored seconds line.
ESS	Last 15 minute interval, errored seconds section.	Last 24 hour interval, errored seconds section.
SESS	Last 15 minute interval, severe errored seconds section.	Last 24 hour interval, severe errored seconds section.
ESP	Last 15 minute interval, errored seconds path.	Last 24 hour interval, errored seconds path.
SESP	Last 15 minute interval, severe errored seconds path.	Last 24 hour interval, severe errored seconds path.
SEFS	Last 15 minute interval, severe errored seconds frame.	Last 24 hour interval, severe errored seconds frame.

Table 4-4: Last Interval Counter Menu

4.2.1.7. Displaying the Errored Seconds Ratio

STAT
FIBR
ESR
SECT
LINE
PATH
0.0% - 100%

Displays the Errored Seconds Ratio in Percentage for Section, Line, and Path layers from 0.0 to 100 %

4.2.1.8. Displaying the Loss of Signal Seconds in Line Layer

STAT
FIBR
LOSL
0 to 9999

Displays the Loss of Signal seconds in Line Layer.

4.2.1.9. Displaying the TDM Data Errors

STAT
TDMD
LOSS
ERR
OK

Displays if there are errors in the clear channel TDM data. This allows you to monitor if transmission errors are occurring at the SONET network or at TDM stream.

4.2.1.10. Displaying the Video Standard

STAT	Displays the video standard present at the input.
VID1-VID8	
STD	ASI Indicates DVB-ASI Signal at Input
ASI	N270 SMPTE 259M-C, 270 Mb/s 4:2:2 Component 525 line, 4:3 or SMPTE 305M
N270	P270 SMPTE 259M-C, 270 Mb/s 4:2:2 Component 625 line, 4:3 or SMPTE 305M
P270	LOSS Loss of Valid Input Signal
LOSS	

4.2.1.11. Detecting the EDH Presence in a Compatible Signal

STAT	Displays input video EDH status.
VID1-VID8	
EDH	
PRES	
LOSS	

4.2.1.12. Displaying the SDTI Status

STAT	Displays input video SDTI status.
VID1-VID8	
SDTI	
PRES	
LOSS	

4.2.1.13. Displaying the Video Standard on Loss of Signal

STAT	Monitors the output video standard on loss of input video.
VID1-VID8	
OSTD	ASI DVB-ASI
ASI	N270 SMPTE 259M-C, 270 Mb/s 4:2:2 Component 525 line, 4:3
N270	P270 SMPTE 259M-C, 270 Mb/s 4:2:2 Component 625 line, 4:3
P270	LOSS Loss of Valid Input Signal
LOSS	

4.2.1.14. Ethernet Status and Speed

STAT	Displays the Ethernet Connection Status.
ETH	
LINK	
UP	
DOWN	

STAT
ETH
SPD
10
100
1000
DOWN

Displays the Ethernet Transmission Speeds.

4.2.1.15. Displaying the Firmware Version

STAT
VER

The **VER** display shows the firmware version and build number of the 7707VR-8-OC48 firmware. The message will scroll across the display.

For example: **VER 1.0 BLD 067**

4.2.1.16. Performance Monitoring and Error Reporting

The 7707VR-8-OC-48 card enables the user to proactively monitor the performance parameters of the three physical layers in two different counter settings. A *current interval counter* is indicated on the card as CIC and the *last interval counter* is indicated as LIC. Both counters keep track of 15-minute and 24-hour time periods.

To display the errors, depress the pushbutton, go to STAT/FIBR and choose the appropriate setting (for example: open the STAT/FIBR/CIC/15m/ESL to access the line errors reported in the last 15 minutes on the current interval counter).

Line Layer Performance Parameters

- *ESL (Errored Seconds – Line)* shows the number of seconds during which a line Bit Interleaved Parity (BIP) error or an alarm signal was detected.
- *SESL (Severely Errored Seconds – Line)* displays the number of seconds during which H, line BIP, or alarm signal error was detected. H can be set by the user through the CTRL/SETH/SESL menu option.

Section Layer Performance Parameters

- *ESL (Errored Seconds – Section)* shows the number of seconds during which a signal Bit Interleaved Parity (BIP) error or an alarm signal was detected.
- *SESL (Severely Errored Second – Section)* shows the number of seconds during which H, more section BIP, or alarm signal error was detected. H can be set by the user through the CTRL/SETH/SESS menu option.

Path Layer Performance Parameters

- *ESL (Errored Seconds – Path)* shows the number of seconds during which a path Bit Interleaved Parity (BIP) error or an alarm signal was detected.
- *SESL (Severely Errored Seconds – Path)* shows the number of seconds during which H, more path BIP, or alarm signal error was detected. H can be set by the user through the CTRL/SETH/SESP menu option.

Frame Errors

- *SEFS (Severe Errored Seconds – Frame)* shows the number of seconds during which H or more Frame errors were detected. H can be set by the user in the CTRL/SETH/SEFS menu option.

4.2.2. Control Menu

The control menu enables the user to control and set different parameters on the 7707VR-8-OC48 cards.

Level 1	Level 2	Level 3	Level 4	Level 5
CTRL	FIBR	STD	OC, STM	
		LASR	CONT, DISC	
		REF	LINK, XO, HOLD, AUTO	
		CIC	ALL, 15M, 24H	
		LOSL	CLR	
		CESR	CLR	
		SETH	SESS, SESL, SESP, SEFS	
	VID1-VID8	EDH	ON, OFF	1 to 9999
		OSTD	AUTO, OFF, ASI, N270, P270	
	VMON	VID1-VID8		
	PSWD	0 to 9999	0 to 9999	
	This area visible only if correct password is entered	PWSL	DIS, EN	
		VID1-VID8		
	DISP	HORZ, VERT		

Table 4-5: Control Menu

4.2.2.1. Setting the Optical Link Standard

CTRL
FIBR
STD
OC
STM

The user can select the standard for transmission from the Control menu.

To set the Optical Link Data Standard to SONET, select OC (SONET).

For SDH transmission, select STM.

4.2.2.2. Laser Continuous or Discontinuous Operation

CTRL
FIBR
LASR
CONT
DISC

Selects the action of the Laser when there is no video present on the input.

DISC The laser will turn off if no video or audio input is present.

CONT The laser will continue transmitting a freewheel video signal as set by Video Output Standard.

4.2.2.3. Setting the Clock Source

CTRL
FIBR
REF
LINK
XO
HOLD
AUTO

Four different clock settings are available for serial fiber output. Select the appropriate clock source from the FIBR/REF menu.

LINK to select POS Link clock.
 Choose XO to select the Stratum 3 oscillator.
 HOLD to select Hold Over mode.
 AUTO to automatically select the best setting.

4.2.2.4. Clearing the Counters

CTRL
FIBR
CIC
ALL
15M
24H
CLR

You can clear the contents of all the current counters and reset them back to default values by going in the CTRL/FIBR/CIC menu option.

Choose All to clear both counters.
 Choose 15m to clear the 15-minute counter.
 Choose 24h to clear the 24-hour counter.

To clear the loss of link counter, go to CTRL/FIBR/LOSL and choose CLR to clear it.

CTRL
FIBR
LOSL
CLR

Clear Loss of Link Counter.

This control enables the user to clear the contents of the loss of link counter.

To clear the error ratios (ESR SECT, LINE and PATH), go to CTRL/FIBR/CESR and choose CLR to clear and restart the timer.

CTRL
FIBR
CESR
CLR

Clear Error Ratios.

4.2.2.5. Setting the Severe Errored Second Threshold

CTRL
FIBR
SETH
SESS
SESL
SESP
SEFS
1 to 9999

SESS = Severe Errored Seconds – Section
SESL = Severe Errored Seconds – Line
SESP = Severe Errored Seconds – Path
SEFS = Severe Errored Seconds – Frame

Set threshold for severe errored seconds 1 to 9999.

You can set the value of the BIP errors occurring in one second at or above which it is considered a severely errored second. These threshold limits can be set for Line, Section or Path layers. Threshold values range from 1 to 9999.

4.2.2.6. Activating or Deactivating EDH Processing

CTRL
VID1-VID8
EDH
ON
OFF

Enables or Disables EDH Processing of Compatible signals.

ON Input Signals will be EDH monitored and recalculated EDH packets will be embedded into the video signal. Flags are also updated. EDH processing will not monitor or modify non-compatible signals (ex. DVB-ASI).

OFF EDH recalculation and reinsertion is disabled. EDH errors are still reported when present.



If input signal has EDH packets, EDH Insert will always be forced ON.

4.2.2.7. Setting the Video Standard on Loss of Signal

CTRL
VID1-VID8
OSTD
AUTO
OFF
ASI
N270
P270

The 7707VR-8-OC48 can be individually configured to output grey video with a user set standard if an input video signal is lost. To select the video standard select the desired channel, then select the OSTD menu.

AUTO

OFF

ASI DVB-ASI

N270 SMPTE 259M-C, 270 Mb/s 4:2:2 Component 525 line, 4:3

P270 SMPTE 259M-C, 270 Mb/s 4:2:2 Component 625 line, 4:3

4.2.2.8. Setting the Monitoring Output

The 7707VR-8-OC48 enables the user to output a channel without having to switch the BNC connectors. A **MON OUT** terminal is provided that can be set to output any of the eight channels.

CTRL
VMON
VID1-VID8

This control enables user selectable video loopback output.

This option allows the user to select one of the eight channels to output on MON OUT connector.

4.2.2.9. Signal BLOCK Configuration

CTRL
PSWD
0 to 9999
0 to 9999

Depress the pushbutton and select the PSWD option. Actuate the toggle switch to achieve the correct code number

(Factory Default = 7154).

CTRL
PSWD
PWSL
DIS
EN

Store a new passcode (0-9999) required for BLOCK configuration.

This menu is not available without entering the correct passcode.

CTRL
PSWD
VID1-VID8

When Disabled, the data input on the selected signal is not placed on the fiber link data stream.

This menu item cannot be modified without entering the correct passcode, though its current state is viewable.

4.2.2.10. Setting the Orientation of the Text on the Card Edge Display

On the 7707VR-8-OC48 card, the **DISP** display allows the user to set a horizontal or vertical orientation for the card edge display messages. After one second the display will show a message indicating the current orientation of the display. When this message is showing, press the pushbutton to change the orientation of the display.

CTRL
DISP
HORZ
VERT

HOR Horizontal display used when the module is housed in the 1 rack unit 7701FR frame or the stand-alone enclosure.

VERT Vertical display used when the module is housed in the 3-rack unit 7700FR frame.

5. JUMPERS

Several jumpers, located at the front of the module, are used to preset various operating modes. Figure 5-1 shows the locations of the jumpers on the board.

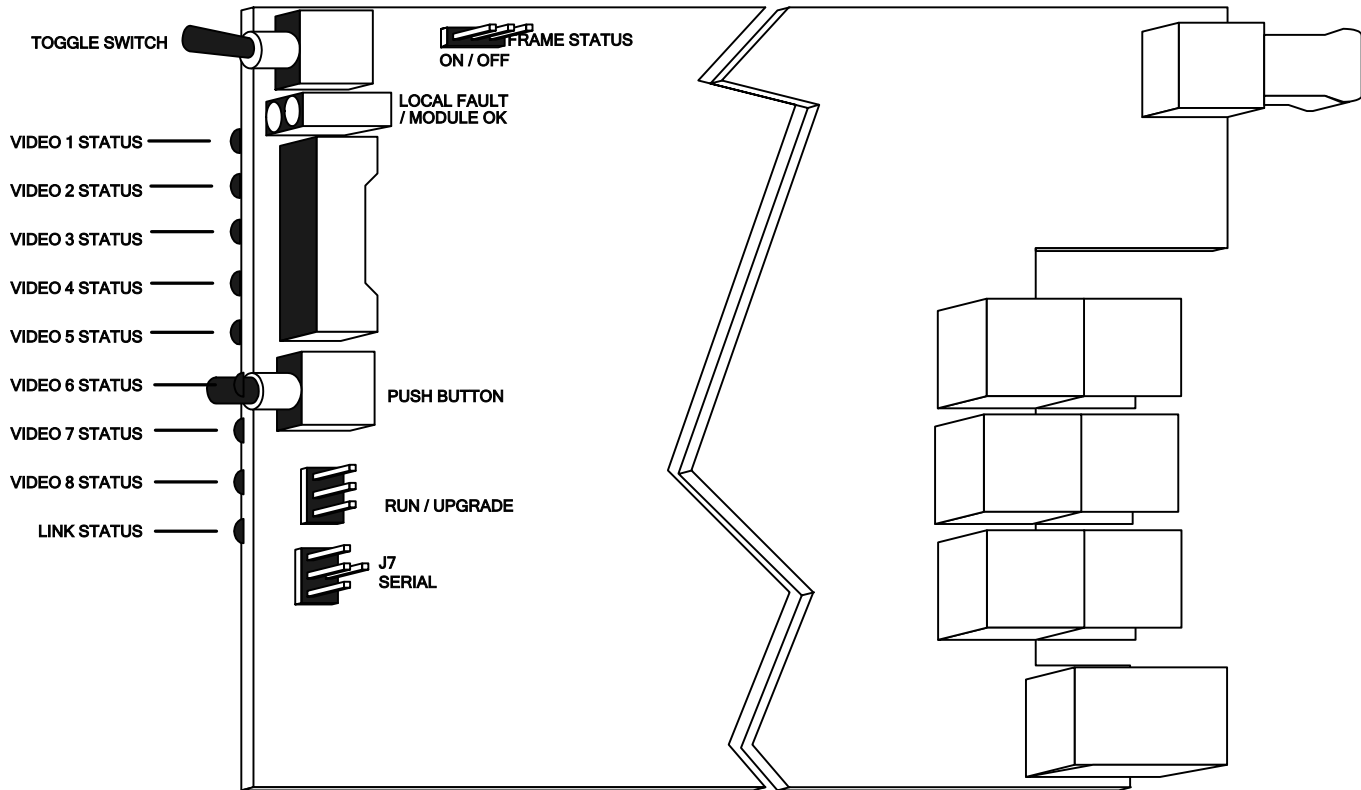


Figure 5-1: Location of Status Indicators and Jumpers

5.1. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS

The FRAME STATUS jumper determines whether local faults (as shown by the Local Fault indicator) will be connected to the 7700FR frame's global status bus. Each of the cards of the module pair has a frame status jumper. Be sure to change both jumpers to the same state.

FRAME STATUS: To monitor faults on this module with the frame status indicators (on the Power Supply FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position. (default)

When this jumper is installed in the Off position local faults on this module will not be monitored.

5.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

The 7707VR-8-OC48 card can be configured for firmware upgrades using the UPGRADE jumpers or with the serial port 'u' command as described below.

5.2.1. Using the Upgrade Jumper

UPGRADE: The UPGRADE jumper is used when firmware upgrades are being done to the module. For normal operation it should be installed in the *RUN* position. See the *Upgrading Firmware* section of this manual for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move the UPGRADE jumper into the *UPGRADE* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the SERIAL header at the card edge. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* section in the front of this manual binder. Once the upgrade is complete, remove the module from the frame, move the UPGRADE jumper into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

5.2.2. Upgrade Serial Port Command

Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the SERIAL header at the card edge of the card to be upgraded. Connect this cable to your computer and run a terminal program as described in the *Upgrading Firmware* section in the front of this manual binder. Type in "u" without the quotes and hit Enter. Follow the prompts that are presented on your terminal screen and proceed to download the new firmware specified for this card.

6. VISTALINK® REMOTE MONITORING/CONTROL

6.1. WHAT IS VISTA LINK®?

VistaLINK® is Evertz's remote monitoring and configuration platform which operates over an Ethernet network using Simple Network Management Protocol (SNMP). SNMP is a standard computer network protocol that enables different devices sharing the same network to communicate with each other. *VistaLINK®* provides centralized alarm management, which monitors, reports, and logs all incoming alarm events and dispatches alerts to all the VLPro Clients connected to the server. Card configuration through *VistaLINK®* PRO can be performed on an individual or multi-card basis using simple copy and paste routines, which reduces the time to configure each module separately. Finally, *VistaLINK®* enables the user to configure devices in the network from a central station and receive feedback that the configuration has been carried out.

There are 3 components of SNMP:

1. An SNMP manager, also known as a Network Management System (NMS), is a computer running special software that communicates with the devices in the network. Evertz VL-Fiber demo Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *VistaLINK®* enabled fiber optic products.
2. Managed devices (such as 7707VT-8-OC48 and 7707VR-8-OC48 cards), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz *VistaLINK®* enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC *VistaLINK®* frame controller module, which serves as the Agent.
3. A virtual database, known as the Management information Base (MIB), lists all the variables being monitored which both the Manager and Agent understand. Please contact Evertz for further information about obtaining a copy of the MIB for interfacing to a third party Manager/NMS.

For more information on connecting and configuring the *VistaLINK®* network, see the 7700FC Frame Controller chapter.

6.2. VISTALINK[®] MONITORED PARAMETERS

The following parameters can be remotely monitored through the *VistaLINK[®]* interface.

Parameter	Description
Video Present 1 to 8	Indicates the presence of a valid video fiber input signal.
Video Error 1 to 8	Indicates the presence of errors on a video fiber input signal.
Video Standard 1 to 8	Indicates the detected video standard.
Fiber Link Present	Indicates a valid fiber link data stream at fiber input.
Fiber Link Error	Indicates errors on valid fiber link input.
Optical Power Alarm	Indicates that Optical Power at fiber input has dropped below a configurable threshold.
Optical Power	Indicates the optical power level at fiber input.

Table 6-1: *VistaLINK[®]* Monitored Parameters

6.3. VISTALINK[®] CONTROLLED PARAMETERS

The following parameters can be remotely controlled through the *VistaLINK[®]* interface.

Parameter	Description
Video Output Standard on Loss 1 to 8	Selects the Output Standard to be generated on loss of Fiber Link. This value auto-updates to match the current valid input standard when applied.
Video Signal Block 1 to 8	Allows the User to Block specific video paths. Blocked outputs will flip to generated sources.
Passcode Set	Setup the Password used to access the Video Blocking features.
Optical Alarm Threshold	Set the optical power level that trips an alarm if the fiber signal degrades.

Table 6-2: *VistaLINK[®]* Controlled Parameters

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