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## REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1.0	Initial Release	May 06
1.1	Updated features, specs and menu format	Oct 08

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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.

## WARNING



**Never look directly into an optical fiber. Non-reversible damage to the eye can occur in a matter of milliseconds.**



**Do not hook up the 7707ADVT-HD DWDM and 7707ADVR-HD cards directly with a short fiber optic cable. The 7707ADVT-HD DWDM card produces +7dBm of power which will damage the receiver if connected directly.**



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

## 1. OVERVIEW

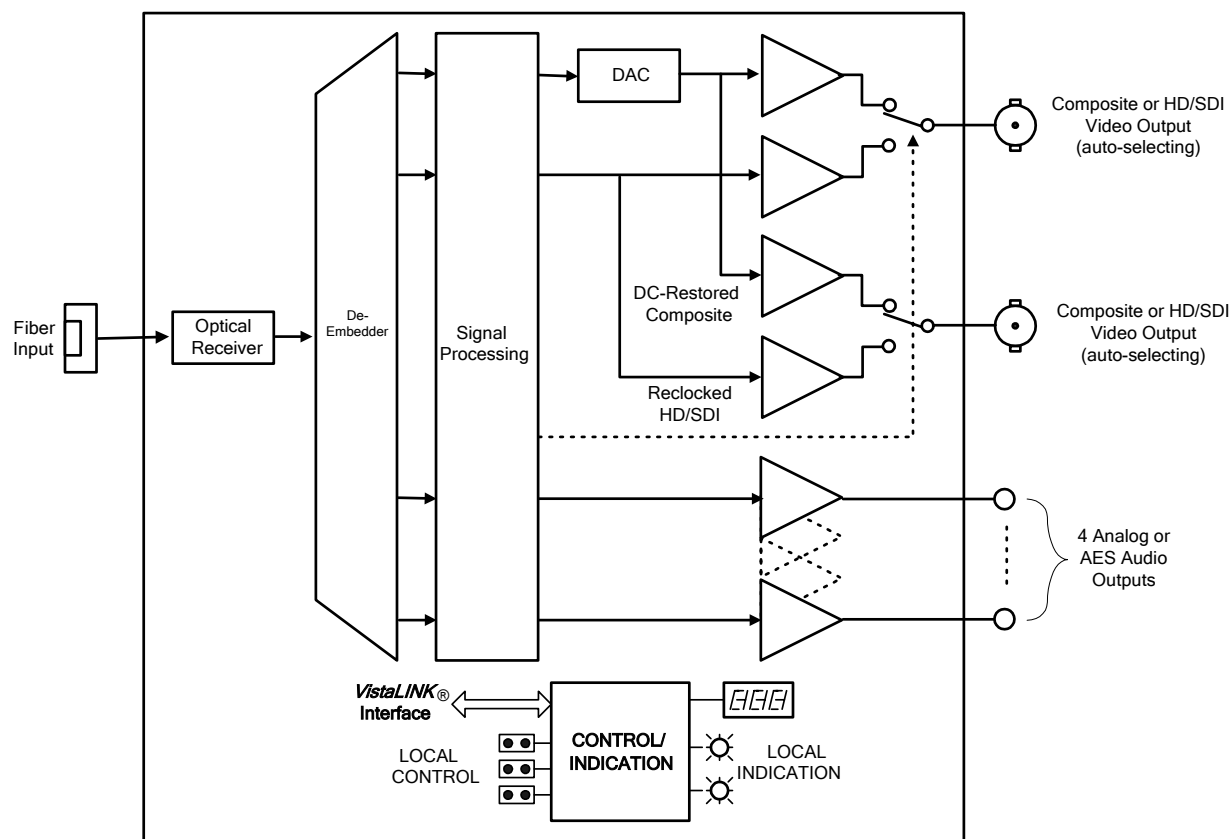
The 7707ADVR-HD fiber receiver extends one composite analog, SD-SDI or HD-SDI video signal over a single fiber optic link, accompanied by two stereo channels of analog audio or four channels of digital AES audio. Analog or SD-SDI video and audio signals are decoded from a single 270Mb/s optical transport signal while HD-SDI video and audio signals that are decoded from a single 1.485 Gb/s transport a signal which is input from a companion 7707ADVT-HD transmitter. These standard data rates promote signal compatibility and efficient use of optical bandwidth. The video output supports composite NTSC or PAL analog video, 1.485 Gb/s HD-SDI or 270Mb/s SD-SDI, SDTi or DVB-ASI video. The 7707ADVR-HD is designed to operate with a companion 7707ADVT-HD transmitter to permit communication over distances up to 120Km, with minimum possible latency.

In the case where digital HD-SDI, SD-SDI or SDTi video is detected at the input of the companion 7707ADVT-HD, this signal is transported transparently across the fiber with audio embedded into two of the four available audio groups. When composite NTSC or PAL analog video is detected at the input, this signal is encoded with audio into an SDTi data stream for transport across the fiber. DVB-ASI is transported transparently across the fiber, without separate audio. The 7707ADVR-HD provides conversion back to the original video signal type and provides selectable analog or digital audio output.

Monitoring and control of card status and parameters is provided locally at the card-edge or remotely via VistaLINK® capability. The wide-band optical input of the 7707ADVR-HD is compatible with all available 7707ADVT-HD transmitter wavelengths.

### Features:

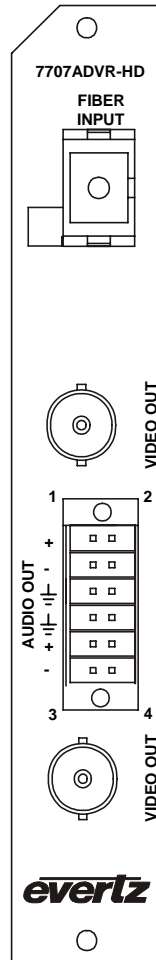
- Single card fiber optic receiver for one composite Analog, SDI or HD-SDI video and four analog or AES audio signals
- Auto-sensing (analog or digital) video and audio outputs
- Supports 525/625 line component 4:2:2 SDI @ 270Mb/s
- Supports HD (SMPTE 292M) video @ 1.485Gb/s
- Supports both NTSC and PAL analog or 4:2:2 component digital video
- Supports Analog to Digital and Digital to Analog audio conversion
- Broadcast quality analog video and audio performance
- Meets or exceeds EIA/TIA RS250-C short haul specifications for analog video and audio transport
- Supports 32, 44.1, 48kHz AES audio
- Dolby-E™ compatible
- 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 portable frame and a 7700FC VistaLINK® Frame Controller module in slot 1 of the frame
- Adjustable gain, DC offset and pre-emphasis for analog video for driving up to 250m of Belden 1694A coaxial cable
- Fully hot-swappable from front of frame with no fiber disconnect/reconnect required
- Supports single-mode and multi-mode fiber optic cable
- Wideband optical input (1270nm-1610nm)

**Figure 1-1: 7707ADVR-HD Block Diagram**



## 2. INSTALLATION

Each 7707ADVR-HD module comes with a companion rear plate that has two BNC connectors, one terminal header with removable terminal block, 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: 7707ADVR-HD Rear Panel**

**VIDEO OUT:** Output BNC connectors for serial digital video signals compatible with SMPTE 292M, SMPTE 259M-C or SMPTE 305M standards; or analog NTSC or PAL video signals.

**FIBER INPUT:** The 7707ADVR-HD is available with a female SC/PC (shown), ST/PC or FC/PC type optical input connector. The optical input is a 1.485 Gb/s HD-SDI or 270Mb/s SDI or SDTi formatted signal, comprised of encoded video and audio data.



**Do not hook up the 7707ADVT-HD DWDM and 7707ADVR-HD cards directly with a short fiber optic cable. The 7707ADVT-HD DWDM card produces +7dBm of power which will damage the receiver if connected directly.**



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

**AUDIO OUT:** Removable terminal block providing output connections for four balanced analog audio signals or two balanced AES audio signals. Terminal connections are described by the silkscreen labels, as depicted in Figure 2-1. User configuration selects audio outputs to be either analog or digital.

## **2.1. CARE AND HANDLING OF OPTICAL FIBER**

### **2.1.1. Handling and Connecting Fibers**



**Never touch the end face of an optical fiber. Always keep dust caps on optical fiber connectors when not connected and 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 chapter of this manual.

### 3. SPECIFICATIONS

#### 3.1. SERIAL VIDEO OUTPUT

<b>Number of Outputs:</b>	2 regenerated
<b>Standard:</b>	SMPTE 259M-C (525 or 625 line component), SMPTE 305M (SDTi), DVB-ASI (without separate audio), SMPTE 292M (HD)
<b>Connector:</b>	1 BNC per IEC 61169-8 Annex A
<b>Signal Level:</b>	800mV nominal
<b>DC Offset:</b>	0V $\pm$ 0.5V
<b>Rise and Fall Time:</b>	900ps nominal @ 270Mb/s < 270ps @ 1.485Gb/s
<b>Overshoot:</b>	< 10% of amplitude
<b>Return Loss:</b>	> 15dB up to 1.485Gb/s
<b>Wide Band Jitter:</b>	< 0.2 UI

#### 3.2. ANALOG VIDEO OUTPUT

<b>Standard:</b>	SMPTE 170M, (NTSC), ITU-R 624-2 (PAL)
<b>Number of Outputs:</b>	2 BNC per IEC 61169-8 Annex A
<b>System bandwidth:</b>	> 5.5MHz
<b>Output Level:</b>	1V p-p (nominal), 2V p-p (maximum)
<b>Gain:</b>	Unity gain nominal, adjustable 50% to 150%
<b>Output Impedance:</b>	75 $\Omega$
<b>Return Loss:</b>	> 30dB to 5.5MHz
<b>SNR:</b>	> 70dB
<b>Differential Gain:</b>	< 1.0%
<b>Differential Phase:</b>	< 0.7°
<b>Pre-Emphasis:</b>	Adjustable cable loss compensation for up to 250m of Belden 1694A
<b>Passband Ripple:</b>	
<b>NTSC:</b>	< $\pm$ 0.1dB to 4.1MHz and < $\pm$ 0.2dB to 5.5MHz
<b>PAL:</b>	< $\pm$ 0.1dB to 4.8MHz and < $\pm$ 0.2dB to 5.8MHz
<b>Chroma/Luma Gain:</b>	98% - 103%
<b>Chroma/Luma Delay:</b>	
<b>NTSC:</b>	<5ns
<b>PAL:</b>	<12ns
<b>Line Time Distortion:</b>	1.2%

#### 3.3. AES AUDIO OUTPUTS

<b>Number of Outputs:</b>	4 regenerated (selectable for balanced or unbalanced)
<b>Standard:</b>	
<b>Unbalanced AES:</b>	SMPTE 276M
<b>Balanced AES:</b>	AES3-1992
<b>Other:</b>	Dolby E compatible
<b>Connector:</b>	12 pin terminal strip
<b>Input Return Loss:</b>	>15dB (1MHz to 6MHz)
<b>Signal Level:</b>	
<b>Unbalanced:</b>	1 Vp-p $\pm$ 0.1Vp-p
<b>Balanced:</b>	2 Vp-p $\pm$ 0.1Vp-p

<b>Resolution:</b>	Up to 24-bits
<b>Sampling Rate:</b>	32, 44.1, 48 kHz
<b>Output Jitter:</b>	<0.1UI
<b>Impedance:</b>	
Unbalanced:	75Ω
Balanced:	110Ω

### 3.4. ANALOG AUDIO OUTPUTS

<b>Number of Outputs:</b>	4
<b>Type:</b>	Balanced analog audio
<b>Connector:</b>	12 pin removal terminal block
<b>Output impedance:</b>	66Ω
<b>Freq. Response:</b>	+/- 0.1dB, 20Hz to 20 kHz
<b>THD 20Hz-20kHz:</b>	< 0.005%
<b>Channel Phase Diff.</b>	+/- 1 deg
<b>SNR (weighted):</b>	> 85dB
<b>Output Level Adj:</b>	-20dB to +3dB
<b>Max Output Level:</b>	+24 dBu into 10kΩ loads

### 3.5. OPTICAL INPUT

<b>Number of Inputs:</b>	1
<b>Connector:</b>	Female SC/PC, ST/PC, FC/PC
<b>Operating Wavelength:</b>	1270nm to 1610nm
<b>Maximum Input Power:</b>	0dBm
<b>Optical Sensitivity:</b>	-25dBm
-H Version:	-30dBm

### 3.6. ELECTRICAL

<b>Voltage:</b>	+12VDC
<b>Power:</b>	12 Watts.

### 3.7. COMPLIANCE

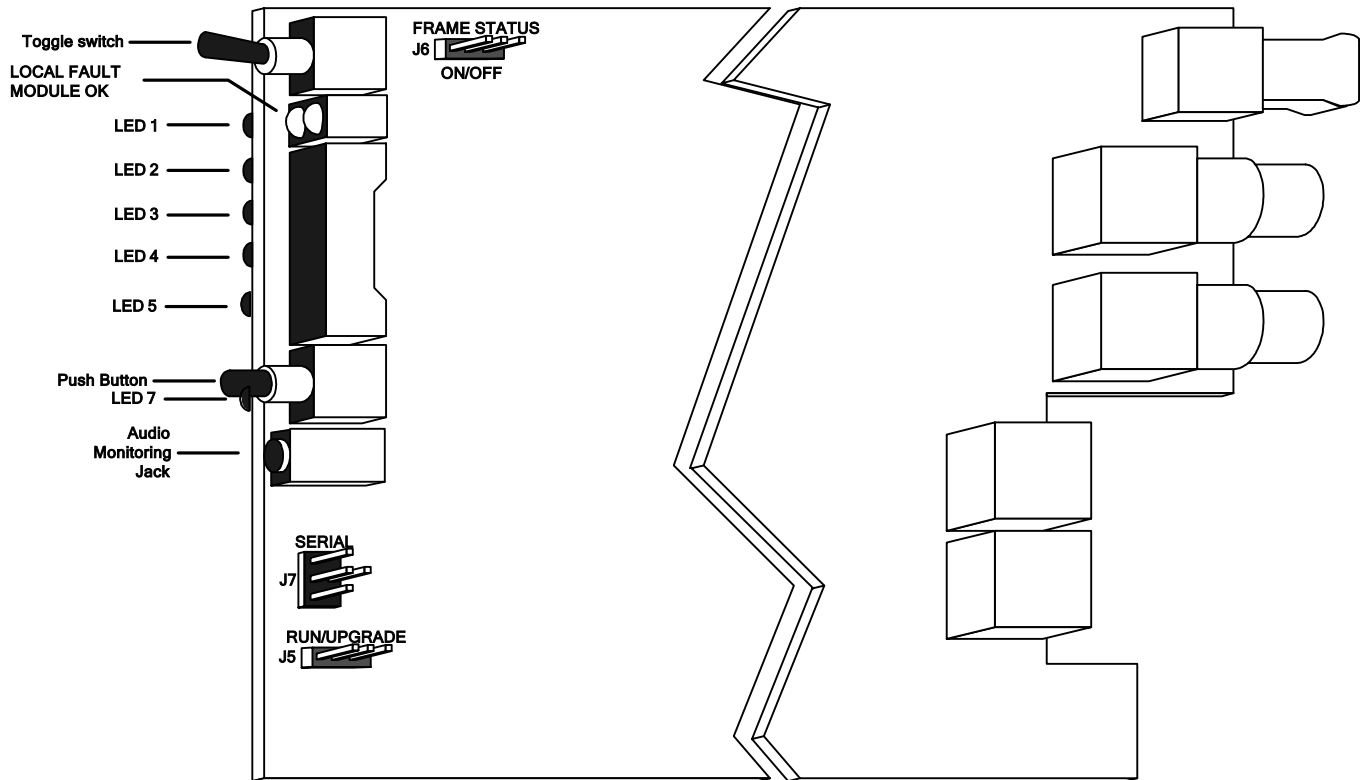
<b>Electrical Safety:</b>	CSA Listed to CSA C22.2 No. 60065-03, UL 60065-03 IEC 60065-(2001-12) 7th Edition
<b>EMI/RFI:</b>	Complies with CE Low voltage directive 93/68/EEC Complies with FCC regulations for class A devices. Complies with EU EMC directive 89/336/EEC.

### 3.8. PHYSICAL

<b>7700 or 7701 frame mounting:</b>	
Number of slots:	1

## 4. STATUS INDICATORS AND DISPLAYS

The 7707ADVR-HD has 6 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 indications to the alphanumeric display. Figure 4-1 shows the location of the LEDs and card edge controls.



**Figure 4-1: Location of Jumpers and Card Edge Controls**

## 4.1. STATUS INDICATOR LEDS

Two large LEDs at the front card-edge indicate operational health of the module:

<b>LOCAL / FAULT</b>	RED	Link Loss
	GREEN	Link Present
<b>LED1</b>	RED	Link Error
	GREEN	Link Present
	OFF	Link Loss
<b>LED2</b>	RED	Audio 1 Transport Error
	GREEN	AES 1 / Analog 1 Output Present
	OFF	AES 1 / Analog 1 Output Loss
<b>LED3</b>	RED	Audio 2 Transport Error
	GREEN	AES 2 / Analog 2 Output Present
	OFF	AES 2 / Analog 2 Output Loss
<b>LED4</b>	RED	Audio 3 Transport Error
	GREEN	AES 3 / Analog 3 Output Present
	OFF	AES 3 / Analog 3 Output Loss
<b>LED5</b>	RED	Audio 4 Transport Error
	GREEN	AES 4 / Analog 4 Output Present
	OFF	AES 4 / Analog 4 Output Loss

## 4.2. CARD EDGE MENU CONTROL

Control functions are implemented via the 4-digit dot-matrix display and controls located at the card-edge. The card-edge pushbutton and toggle-switch are used to navigate through the display menu.

Pressing the pushbutton advances the display to the next menu level. The toggle-switch may then be used to move up or down through selections of that menu level. Select **BACK** to return to the previous menu level.

If a specific menu selection has a configuration value associated with it, then this may be changed using the toggle switch. Pressing the pushbutton will apply the displayed value and return you to the previous menu level.

The card edge menu system is divided into 2 parts:

**CTRL:** Control is used to configure the card.

**STAT:** Status is to check the status of the card parameters via card edge.

### 4.3. CTRL – (CONTROL) MENU STRUCTURE

<b>VID</b>	Video Setup
<b>AUD</b>	Audio Setup
<b>DISP</b>	Orientation of the Text on the Card Edge Display
<b>FRST</b>	Factory Reset

#### 4.3.1. Video Setup – (VID)

<b>OSTD</b>	Output Video Standard on Input Video or Link Loss. When set to AUTO, the last valid input standard will be used to determine the output video standard.
<b>ADVT</b>	ADVT-HD Control Packet De-embed  This packet is used on the ADVR-HD for auto-configuration based on the inputs at the ADVT-HD.
<b>EDH</b>	EDH Insertion
<b>ANLG</b>	Analog Video Calibration Menu

##### 4.3.1.1. Output Standard on Video Loss Control

<b>VID</b>	Output Video Standard on loss of link.	
<b>OSTD</b>		
<b>AUTO</b>	<b>AUTO</b>	The last valid input standard will be used.
<b>N270</b>	<b>N270</b>	Video output standard is N270.
<b>P270</b>	<b>P270</b>	Video output standard is P270.
<b>ASI</b>	<b>ASI</b>	Video output standard is ASI.
<b>NTSC</b>	<b>NTSC</b>	Video output standard is NTSC.
<b>PAL</b>	<b>PAL</b>	Video output standard is PAL.
<b>1080i/60</b>	<b>1080i/60</b>	1080i/60 or 1080p/30sF standard.
<b>1080i/59.94</b>	<b>1080i/59.94</b>	1080i/59.94 or 1080p/29.97sF standard.
<b>1080i/50</b>	<b>1080i/50</b>	1080i/50 or 1080p/25sF standard.
<b>1035i/60</b>	<b>1035i/60</b>	1035i/60 standard.
<b>1035i/59.94</b>	<b>1035i/59.94</b>	1035i/59.94 standard.
<b>1080i/48</b>	<b>1080i/48</b>	1080i/48 or 1080p/24sF standard.
<b>1080i/47.96</b>	<b>1080i/47.96</b>	1080i/47.96 or 1080p/23.98sF standard.
<b>720p/60</b>	<b>720p/60</b>	720p/60 standard.
<b>720p/59.94</b>	<b>720p/59.94</b>	720p/59.94 standard.

##### 4.3.1.2. ADVT Control Packet De-embed

<b>VID</b>	Sets the DID looked for in the HANC. 50-5F (Hex) are unassigned user DIDs in the standard.
<b>ADVT</b>	
<b>DID</b>	
<b>50-5F</b>	

#### 4.3.1.3. EDH Insertion ON/OFF

VID
EDH
ON
OFF

This system recalculates the CRC values and updates EDH flag systems when enabled. Setting this control to OFF will disable EDH insertion only when no EDH is present on the input. If EDH is present on the video input, then this value is forced ON.

#### 4.3.1.4. Analog Video Calibration (GAIN)

VID
ANLG
GAIN
95% - 150%

Allows the user to adjust the analog output gain in 5% steps.  
Default = 100

#### 4.3.1.5. Analog Video Calibration (EQ1)

VID
ANLG
EQ1
0 - 100

Analog Video EQ Control  
Default = 6%

#### 4.3.1.6. Analog Video Calibration (EQ2)

VID
ANLG
EQ2
0 - 100

Analog Video EQ Control  
Default = 6%

#### 4.3.1.7. Analog Video Calibration (DC)

VID
ANLG
DC
-100 to 100

Allows the user to adjust the Analog DC Level Control in increments of 5mV.  
Default = 0

#### 4.3.2. Audio Setup – (AUD)

<b>MODE</b>	Audio Mode Set
<b>DEMB</b>	Audio De-embedder Control
<b>ANLG</b>	Analog Audio Control
<b>DGTL</b>	Digital Audio Output Termination Control
<b>JACK</b>	Audio Monitoring Jack Control



#### 4.3.2.1. Set Audio Mode

AUD	This menu allows the user to set the audio output signal. When set to Auto the 7707ADVR-HD reads the control packet from the 7707ADVT-HD.
MODE	
DGTL	
ANLG	
AUTO	
DGTL	AES Audio
ANLG	Analog Audio
AUTO	Auto detection of audio

#### 4.3.2.2. Audio De-embedder 1 Controls

AUD	Controls Audio De-embedder 1.
DEMB	
DMB1	
OFF	
GRP1	
GRP2	
GRP3	
GRP4	
AUTO	
OFF	Audio De-embedder is disabled.
GRP1	Audio is de-embedded from group 1.
GRP2	Audio is de-embedded from group 2.
GRP3	Audio is de-embedded from group 3.
GRP4	Audio is de-embedded from group 4.
AUTO	The 7707ADVR-HD reads the control packet from the 7707ADVT-HD to determine the group to de-embed.

#### 4.3.2.3. Audio De-embedder 2 Controls

AUD	Controls Audio De-embedder 2.
DEMB	
DMB2	
OFF	
GRP1	
GRP2	
GRP3	
GRP4	
AUTO	
OFF	Audio De-embedder is disabled.
GRP1	Audio is de-embedded from group 1.
GRP2	Audio is de-embedded from group 2.
GRP3	Audio is de-embedded from group 3.
GRP4	Audio is de-embedded from group 4.
AUTO	The 7707ADVR-HD reads the control packet from the 7707ADVT-HD to determine the group to de-embed.

#### 4.3.2.4. SDTi Audio Bypass Control

AUD	Removes Audio Groups De-embedded by ADVR-HD (Groups are added by the 7707ADVT-HD)
DEMB	
REM	
ON	
OFF	

#### 4.3.2.5. Analog Audio Level Control (dBu)

AUD	0.1 dBu Steps. Sets the full scale analog audio signal level at card output.
ANLG	
LVL	
16 - 24	

#### 4.3.2.6. Analog Audio Presence Detection

AUD
ANLG
DET
LVL
0 to 60

Analog Audio will be detected when an analog audio sample arrives above the set LVL threshold. Entered in dBu.

#### 4.3.2.7. Analog Audio Presence Detection Time Duration

AUD
ANLG
DET
DUR
1 to 20

This control sets the time, in seconds, for which analog audio must be below the above LVL threshold for audio to be considered not present.

Default Menu Value is 10.

#### 4.3.2.8. Analog Audio Presence Detection Enable/Disable

AUD
ANLG
DET
ENB
ON
OFF

When set to OFF, all Analog Audio channels are considered present.

This control allows the user to disable constant alarms/traps during media sessions with silent periods in audio sources.

#### 4.3.2.9. Audio Channel 1 and 2 Pair Enable or Mute

AUD
ANLG
ENB
A1+2
ENB
MUTE

Allows user to Pass or Mute Analog Audio channels 1 and 2.

**ENB** When set to ENB the Analog Audio Channels 1 and 2 will be passed.

**MUTE** When set to MUTE the Analog Audio Channels 1 and 2 will be muted.

#### 4.3.2.10. Audio Channel 3 and 4 Pair Enable or Mute

AUD
ANLG
ENB
A3+4
ENB
MUTE

Allows user to Pass or Mute Analog Audio channels 3 and 4

#### 4.3.2.11. Digital Audio Output Termination Control (ALL Audio)

AUD	Adjusts all 4 AES outputs at once.	
DGTL		
TERM	BAL	Sets the AES output to Balanced audio (110 ohms) (XLR)
ALL	UBAL	Sets the AES output to Unbalanced audio (75 ohms) (BNC)
BAL		
UBAL		

#### 4.3.2.12. Digital Audio Output Termination Control (AES 1 through 4)

AUD	Adjusts AES1 output individually	
DGTL		
TERM	BAL	Sets the AES1 output to Balanced audio (110 ohms) (XLR)
AES1 - 4	UBAL	Sets the AES1 output to Unbalanced audio (75 ohms) (BNC)
BAL		
UBAL		



**AES2, AES3, and AES4 are configured the same way as AES1. For simplicity, only AES1 has been shown.**

#### 4.3.2.13. Audio Monitor Jack Source Selection

AUD	Selects the audio source to be monitored by the Audio Monitor Jack	
JACK		
SRCE	OFF	No audio will be present on Audio Monitor Jack.
OFF	A1+2	Audio Jack will be sourced from Analog Audio input 1 and 2.
A1+2	A3+4	Audio Jack will be sourced from Analog Audio input 3 and 4.
A3+4	AES1	Audio Jack will be sourced from Digital Audio Input 1.
AES1	AES2	Audio Jack will be sourced from Digital Audio Input 2.
AES2	AES3	Audio Jack will be sourced from Digital Audio Input 3.
AES3	AES4	Audio Jack will be sourced from Digital Audio Input 4.
AES4		

#### 4.3.2.14. Audio Jack Volume Control

AUD	Allows the user to control the volume output of the card edge monitoring jack.	
VOL		
0 - 64		

#### 4.3.3. Orientation of the Text on the Card Edge Display (DISP)

DISP	Allows the user to set a horizontal or vertical orientation for the card edge display messages.	
VERT		
HORZ		

#### 4.3.4. Factory Reset (FRST)

FRST	Allows the user to perform factory reset.
NO	
YES	

#### 4.4. STAT – (STATUS) MENU STRUCTURE

<b>PWR</b>	Optical Power Indication
<b>VID</b>	Video Status
<b>AUD</b>	Audio Status
<b>VER</b>	Displays Firmware Version

##### 4.4.1. Video Status Card Edge Monitoring

<b>INP</b>	Video Input Status
<b>OUT</b>	Output Video Standard
<b>ADVT</b>	ADVT Control Packet Detect
<b>SDTI</b>	SDTI Input Detect
<b>EDH</b>	EDH Input Detect

##### 4.4.1.1. Optical Power Indication

VID	This control sets the power level of the fiber input.
PWR	
-40 to -1	Displays Optical Power levels detected on the fiber input.
OVER	
LOW	
	<b>OVER</b> Indicates the Power level is above the measurable range.
	<b>LOW</b> Indicates the Power level is below the measurable range.

##### 4.4.1.2. Video Input Detect

VID	Reports Standard of recognized video source.	
INP		
N270	<b>N270</b>	Video source is 525 SDI
P270	<b>P270</b>	Video source is 625 SDI
ASI	<b>ASI</b>	Video source is ASI
NTSC	<b>NTSC</b>	Video source is NTSC composite
PAL	<b>PAL</b>	Video source is PAL composite
1080i/60	<b>1080i/60</b>	1080i/60 or 1080p/30sF standard
1080i/59.94	<b>1080i/59.94</b>	1080i/59.94 or 1080p/29.97sF standard
1080i/50	<b>1080i/50</b>	1080i/50 or 1080p/25sF standard
1035i/60	<b>1035i/60</b>	1035i/60 standard
1035i/59.94	<b>1035i/59.94</b>	1035i/59.94 standard
1080i/48	<b>1080i/48</b>	1080i/48 or 1080p/24sF standard
1080i/47.96	<b>1080i/47.96</b>	1080i/47.96 or 1080p/23.98sF standard
720p/60	<b>720p/60</b>	720p/60 standard
720p/59.94	<b>720p/59.94</b>	720p/59.94 standard
ERR	<b>ERR</b>	Indicates that there is an EDH error
LOS	<b>LOS</b>	Indicates that no valid optical signal is present on the input

#### 4.4.1.3. Output Video Standard

VID	Current Output Video Standard.
OUT	
N270	N270 Video Mode is 525 SDI.
P270	P270 Video Mode is 625 SDI.
ASI	ASI Video Mode is ASI.
NTSC	NTSC Video Mode is NTSC composite.
PAL	PAL Video Mode is PAL composite.
1080i/60	1080i/60 1080i/60 or 1080p/30sF standard
1080i/59.94	1080i/59.94 1080i/59.94 or 1080p/29.97sF standard
1080i/50	1080i/50 1080i/50 or 1080p/25sF standard
1035i/60	1035i/60 1035i/60 standard
1035i/59.94	1035i/59.94 1035i/59.94 standard
1080i/48	1080i/48 1080i/48 or 1080p/24sF standard
1080i/47.96	1080i/47.96 1080i/47.96 or 1080p/23.98sF standard
720p/60	720p/60 720p/60 standard
720p/59.94	720p/59.94 720p/59.94 standard

#### 4.4.1.4. ADVT-HD Control Packet Detect

VID	This control identifies whether the SDTI headers are detected on the input or not
ADVT	
PRST	PRST Indicates an ADVT-HD control packet was found on the fiber video input.
LOS	LOS Indicates an ADVT-HD control packet was not found on the fiber video input.

#### 4.4.1.5. SDTi Input Detect

VID	This control identifies whether the SDTI headers are detected on the input or not.
SDTI	
PRST	PRST Indicates that the SDTI headers are detected on the input.
LOS	LOS Indicates that the SDTI headers were not detected on video.

#### 4.4.1.6. EDH Input Detect

VID	This control identifies whether or not the EDH headers are detected on the input.
EDH	
PRST	PRST Indicates that the EDH headers are detected on input.
LOS	LOS Indicates that the EDH headers are not detected on video.

#### 4.4.2. Audio Status Card Edge Monitoring

<b>MODE</b>	Audio Mode Report
<b>DEMB</b>	Displays the current status of Audio De-embedder 1 and 2
<b>ALG1</b>	Analog Audio Input 1 Status
<b>ALG2</b>	Analog Audio Input 2 Status
<b>ALG3</b>	Analog Audio Input 3 Status
<b>ALG4</b>	Analog Audio Input 4 Status

##### 4.4.2.1. Audio Mode Report

AUD	Displays current ADVR Audio output mode
MODE	
DGTL	
ANLG	

##### 4.4.2.2. Displays the current status of Audio De-embedders

AUD	Displays the current status of audio de-embedders (DMB1 and DMB2 in sub-menu)
DEMB	
DMB1	
DMB2	

##### 4.4.2.2.1 Displays the Current Status of Audio De-embedder 1

AUD	This menu displays the current status of Audio De-embedder 1.	
DEMB		
DMB1		
GRP1	<b>GRP1</b>	De-embedder 1 is currently assigned Audio Group 1.
GRP2	<b>GRP2</b>	De-embedder 1 is currently assigned Audio Group 2.
GRP3	<b>GRP3</b>	De-embedder 1 is currently assigned Audio Group 3.
GRP4	<b>GRP4</b>	De-embedder 1 is currently assigned Audio Group 4.
OFF	<b>OFF</b>	De-embedder 1 is disabled.

##### 4.4.2.2.2 Displays the Current Status of Audio De-embedder 2

AUD	This menu displays the current status of Audio De-embedder 2.	
DEMB		
DMB2		
GRP1	<b>GRP1</b>	De-embedder 2 is currently assigned Audio Group 1.
GRP2	<b>GRP2</b>	De-embedder 2 is currently assigned Audio Group 2.
GRP3	<b>GRP3</b>	De-embedder 2 is currently assigned Audio Group 3.
GRP4	<b>GRP4</b>	De-embedder 2 is currently assigned Audio Group 4.
OFF	<b>OFF</b>	De-embedder 2 is disabled.

#### 4.4.2.3. Analog Audio Input 1 Status

AUD	This control determines whether the Analog Audio 1 input is present or not.
ALG1	
PSNT	
SLNT	

PSNT Analog Audio 1 is present.  
SLNT Analog Audio 1 is not detected.



**ALG2, ALG3, and ALG4 are configured the same way as ALG1. For simplicity, only ALG1 has been shown.**

#### 4.4.3. Firmware Version

VER	VER x.x BUILD xxx Software version. Character string scrolls across four digit display
-----	---

#### 4.5. UPGR – (UPGRADE) MENU STRUCTURE

UPGR	This menu allows the user to configure the module for firmware upgrades.
NO	
YES	

NO Module stays in run mode.  
YES Puts module in upgrade mode.

## **5. JUMPER CONTROLS**

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

The FRAME STATUS jumper J4 determines whether local faults (as shown by the Local Fault indicator) will be connected to the 7700FR frame's global status bus.

**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**

**UPGRADE:** The UPGRADE jumper J5 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 *UPGD* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the SERIAL header (J7) at the card edge. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* section of this manual. Once the upgrade is completed, 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.



## **6. VISTALINK<sup>®</sup> REMOTE MONITORING/CONTROL**

### **6.1. WHAT IS VISTALINK<sup>®</sup>?**

*VistaLINK<sup>®</sup>* is Evertz' 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<sup>®</sup>* 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<sup>®</sup>* 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<sup>®</sup>* 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 *VistaLINK<sup>®</sup>* Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *VistaLINK<sup>®</sup>* enabled fiber optic products.
2. Managed devices (such as 7707ADVT-HD and 7707ADVR-HD cards), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz *VistaLINK<sup>®</sup>* enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC *VistaLINK<sup>®</sup>* 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 and 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<sup>®</sup>* network, see the 7700FC Frame Controller chapter.

## 6.2. VISTALINK® MONITORED PARAMETERS

The following parameters can be remotely monitored via the *VistaLINK*® interface.

Parameter	Description
Card Type	Indicates either 7707ADVR-HD or 7707ADVR-HD-H card type.
Audio Mode Status	Indicates whether the audio mode is analog or digital.
Analog Audio Status 1 to 4	Indicates presence of analog audio.
Audio De-embedder status 1	Indicates whether De-embedder 1 is on or off.
Audio De-embedder status 2	Indicates whether De-embedder 2 is on or off.
Optical Power	Indicates optical power level in dBm units at fiber input.
Video Input Status	Indicates video standard of the input signal.
Output Video Standard	Indicates video standard of the output signal.
SDTi Input Detect	Indicates whether SDTi signal is present or not.
ADVT-HD Control Packet Detect	Indicates whether an ADVT-HD control packet was found or not on the fiber video input.
Digital Video Equalization	Indicates equalization strength in %.

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

### 6.3. VISTALINK® CONTROLLED PARAMETERS

The following parameters can be remotely controlled via the VistaLINK® interface.

Parameter	Description
Audio Mode	Sets audio mode to auto, digital or analog.
Audio De-embedder Remove	Removes Audio Groups De-embedded by ADVR-HD when set to On.
Analog Audio Output Level	Sets analog audio level from 16dBu to 24dBu in steps of 0.1 dBu.
Analog Audio Detection Level	Sets analog audio level detection form –60dBu to 0dBu in steps of 10dBu.
Analog Audio Silence Duration	Sets analog audio silence duration from 1sec to 20sec in steps of 1 second.
Analog Audio Detection Enable	Enables or disables analog audio detection
Audio De-embedder 1	Controls audio de-embedder 1.
Audio De-embedder 2	Controls audio de-embedder 2.
Video Standard On Loss	Sets output video standard on input video or link loss. When set to AUTO, the last valid input standard will be used to determine the output video standard.
Control Packet DID	Sets the DID looked for in the HANC.
EDH Insertion Enable	Enables or disables EDH insertion. Setting this control to OFF will disable EDH insertion only when no EDH is present on the input.
Analog Video Gain	Sets analog video gain from 95% to 150% in steps of 5%.
Analog Video DC Offset	Sets analog video DC offset from –100mv to 100mV in steps of 5mV.
Optical Power Alarm Threshold	Sets the optical power level that triggers an alarm if the fiber signal degrades.
Digital Video Equalization Threshold	Sets the equalization level that triggers an alarm if the digital video signal degrades.
Analog Video EQ 1	Sets analog video 1 equalization from 0% to 100% in steps of 1%.
Analog Video EQ 2	Sets analog video 2 equalization from 0% to 100% in steps of 1%.
Analog Audio 1 and 2 Output Enable	Enables or mute Audio Channel Pair 1 and 2.
Analog Audio 3 and 4 Output Enable	Enables or mute Audio Channel Pair 3 and 4.
Audio digital Output Termination 1 to 4	Sets AES 1 to 4 output to balanced or unbalanced audio.

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

## 6.4. VISTALINK® TRAPS

The following traps can be remotely enabled and monitored through *VistaLINK®* interface.

Trap	Description
Link Loss	Triggers when there's a loss of fiber link data stream at fiber input.
Link Error	Triggers when there is an error on valid fiber link input.
Optical Power Below Threshold	Triggers when optical power at fiber input has dropped below a set threshold.
Audio Output 1 to 4 Loss	Triggers when loss of audio signal 1 to 4 happens.
Audio Output 1 to 4 Error	Triggers when an error of audio signal 1 to 4 happens.

**Table 6-3: *VistaLINK®* Traps**