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## REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
0.1	Preliminary Version	Sep 05
0.2	Updated VistaLINK <sup>®</sup> description and fixed format	Nov 08

Preliminary

Information contained in this manual is believed to be accurate and reliable. However, Evertz assumes no responsibility for the use thereof nor for the rights of third parties, which may be affected in any way by the use thereof. Any representations in this document concerning performance of Evertz products are for informational use only and are not warranties of future performance, either expressed or implied. The only warranty offered by Evertz in relation to this product is the Evertz standard limited warranty, stated in the sales contract or order confirmation form.

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.



**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 7707CVT series DWDM cards and any 7707CVR series cards directly with a short fiber optic cable. The 7707CVT series DWDM card produces +7dBm of power which will damage the receiver if connected directly.**



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

## 1. OVERVIEW

The 7707CVT-2-SV is a VistaLINK<sup>®</sup> enabled, S-Video and analog audio fiber transmitter for broadcast quality video and audio signals. This single card module accepts one S-Video dual channel inputs (luminance and color-Y/C) with up to four analog audio inputs, performs analog to digital conversion and transmits them over a single fiber. The companion 7707CVR-2-SV S-Video and Analog Audio fiber receiver demultiplexes the signals and converts them back to analog form.

The fiber output is available in an assortment of optical wavelengths, accommodating standard or CWDM transmission schemes.

<b>7707CVT13-2-SV</b>	1310 nm FP	-7dBm output, suitable for distances up to 50 Km
<b>7707CVT13M-2-SV</b>	1310 nm FP	0dBm output, suitable for distances up to 75 Km
<b>7707CVT15-2-SV</b>	1550 nm DFB	0dBm output, suitable for distances up to 75 Km

There are several versions with built in isolators specifically suited to coarse wave division multiplexing (CWDM) applications.

<b>7707CVT27-2-SV</b>	1270 nm DFB
<b>7707CVT29-2-SV</b>	1290 nm DFB
<b>7707CVT31-2-SV</b>	1310 nm DFB
<b>7707CVT33-2-SV</b>	1330 nm DFB
<b>7707CVT35-2-SV</b>	1350 nm DFB
<b>7707CVT37-2-SV</b>	1370 nm DFB
<b>7707CVT43-2-SV</b>	1430 nm DFB
<b>7707CVT45-2-SV</b>	1450 nm DFB
<b>7707CVT47-2-SV</b>	1470 nm DFB
<b>7707CVT49-2-SV</b>	1490 nm DFB
<b>7707CVT51-2-SV</b>	1510 nm DFB
<b>7707CVT53-2-SV</b>	1530 nm DFB
<b>7707CVT55-2-SV</b>	1550 nm DFB
<b>7707CVT57-2-SV</b>	1570 nm DFB
<b>7707CVT59-2-SV</b>	1590 nm DFB
<b>7707CVT61-2-SV</b>	1610 nm DFB

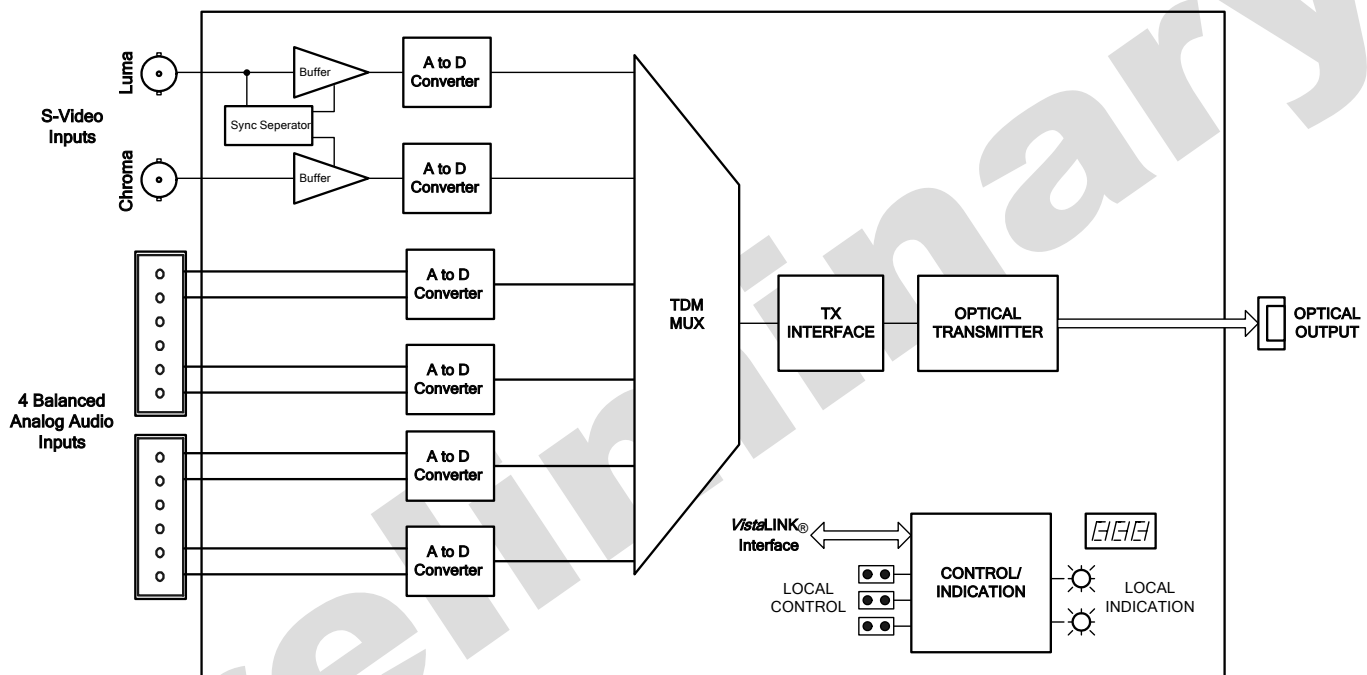
There are several versions with built in isolators specifically suited to dense wave division multiplexing (DWDM) applications. The DWDM versions are suitable for distances >120 km @ 270 Mb/s (for DWDM applications contact factory).

<b>7707CVTDyyy-2-SV</b>	DWDM DFB laser output, yyy – ITU channel number
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The 7707CVT-2-SV occupies one card slot and can be housed in either a 1RU frame, which will hold up to three modules, or a 3 RU frame, which will hold up to 15 modules.

**Features:**

- Single card slot including fiber optic converter
- Supports both NTSC and PAL video
- Broadcast quality S-Video and Audio performance
- Superior digital data transmission methods
- Signal transport over fiber is uninterrupted by loss of input video or audio feeds.
- Low Audio to Video latency
- Signal and status monitoring via four-digit card-edge display, or through SNMP and VistaLINK® enabled capability
- Adjustable gain equalization for up to approximately 300m of Belden 1694 coaxial cable
- Fully Hot-swappable from front of frame with no fiber disconnect/reconnect required
- Supports Single mode (8-10  $\mu\text{m}$ ) and Multi-mode (50/62.5  $\mu\text{m}$ ) fiber optic cable
- Optical output wavelengths of 1310nm, 1550nm, up to sixteen CWDM wavelengths and up to 40 DWDM wavelengths



**Figure 1-1: 7707CVT-2-SV Block Diagram**

## 2. INSTALLATION

The 7707CVT-2-SV comes with a companion rear plate that has two BNC connectors, one twelve pin terminal header with removable terminal block and one SC/PC, SC/PC with cover flap, ST/PC or FC/PC optical connector. For information on mounting the rear plate and inserting the module into the frame see the 7700FR chapter section 3.

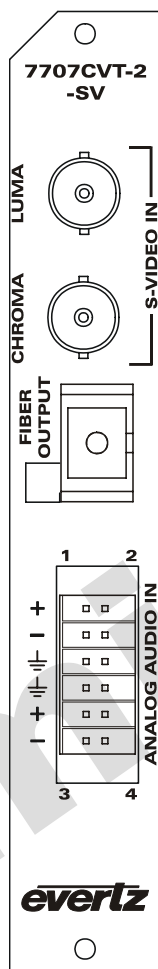


Figure 2-1: 7707CVT-2-SV Rear Panels

**S-VIDEO IN:** The 7707CVT-2-SV has two BNC inputs, Luma and Chroma. The inputs provide equalization compensation for up to approximately 300m of industry standard Belden 1694 coaxial cable.



**NOTE:** Video equalization set for Luma and Chroma must be configured to the same values. Levels applied to one channel must be applied to the second channel.

**OPTICAL OUTPUT:** Output SC/PC, SC/PC with cover flap, ST/PC or FC/PC female connector. This output contains the Time Domain Multiplex (TDM) of the digitized analog video signal and analog audio signal.

This optical output is available in 1310nm, 1550nm, up to sixteen CWDM wavelengths (ITU-T G.694.2 compliant) and up to 40 DWDM wavelengths (ITU-T G.694.1 compliant). The output wavelength is marked on the rear panel of each module. When connected directly to a companion module, the output is compatible with multi-mode fiber optic cable. If not connected directly (i.e. connected through CWDM, DWDM, WDM, or splitter/combiner) the output is compatible only with single-mode fiber optic cable.



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



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

**AUDIO IN:** Balanced analog audio inputs for 4 channels. Each input (+, -, GND) is on three of twelve pins on twelve pin terminal header.

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

### **2.1.1. Safety**



Background colour: yellow  
Triangular band: black  
Symbol: black

**CLASS 1 LASER PRODUCT**



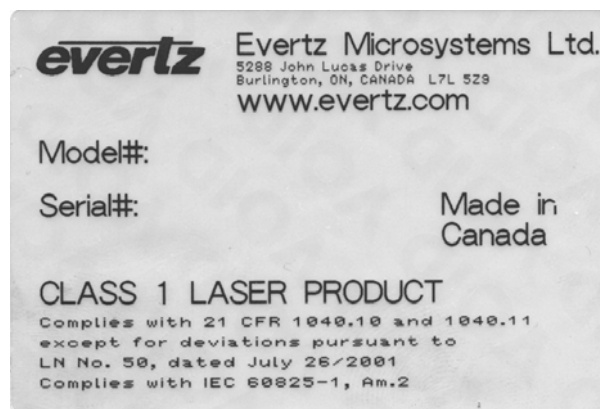
### 2.1.2. Assembly

Assembly or repair of the laser sub-module is done only at Evertz facility and performed only by qualified Evertz technical personnel.

### 2.1.3. Labeling

Certification and Identification labels are combined into one label. As there is inadequate space on the product to place the label, it is reproduced here in the manuals.

- There is no date of manufacture on this label as it can be traced by bar code label placed on the Printed circuit board of each Evertz plug-in module
- The Model number is one of: 7707CVT13-2-SV, 7707CVT13M-2-SV, 7707CVT15-2-SV, 7707CVTxx-2-SV (xx = 27, 29, 31, 33, 35, 37, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61) 7707CVTDyyy-2-SV (Dyyy represents ITU Grid Channel: D200, D210, D220, D230, D240, D250, D260, D270, D280, D290, D300, D310, D320, D330, D340, D350, D360, D370, D380, D390, D400, D410, D420, D430, D440, D450, D460, D470, D480, D490, D500, D510, D520, D530, D540, D550, D570, D580, D590, D600)



**Figure 2-2: Reproduction of Laser Certification and Identification Label**

### 2.1.4. 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 the user 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. S-VIDEO INPUT**

<b>Standards:</b>	NTSC, SMPTE 170M, PAL, ITU-R 624-4
<b>Number of Inputs:</b>	2 (1 Luma, 1 Chroma)
<b>Connector:</b>	BNC per IEC 61169-8 Annex A.
<b>Signal Quantization:</b>	10 bits
<b>System Bandwidth:</b>	5.5MHz
<b>Input Level:</b>	2 Vp-p (Maximum)
<b>Gain Equalization:</b>	up to 250m of Belden 1694 or equivalent (adjustable)
<b>Input impedance:</b>	75 Ohms
<b>Return Loss:</b>	> 30 dB to 5.5 MHz
<b>Signal/Noise Ratio:</b>	> 67 dB
<b>Differential Gain:</b>	< 1.0 %
<b>Differential Phase:</b>	< 0.7 Degree
<b>Passband Ripple:</b>	
<b>NTSC:</b>	< +/- 0.1dB to 4.1 MHz < +/- 0.2dB to 5.5 MHz
<b>PAL:</b>	< +/- 0.1dB to 4.8 MHz < +/- 0.2dB to 5.8 MHz
<b>Chroma/Luma Gain:</b>	98% to 103%
<b>Chroma/Luma Delay:</b>	
<b>NTSC:</b>	< 5 ns
<b>PAL:</b>	< 12 ns
<b>Line Time Distortion:</b>	1.2%

#### **3.2. ANALOG AUDIO INPUTS**

<b>Number of Inputs:</b>	4
<b>Type:</b>	Balanced analog audio
<b>Connector:</b>	12 pin removal terminal block
<b>Input impedance:</b>	High Impedance (>20 KOhm)
<b>Freq. Response:</b>	+/-0.1 dB, 20Hz to 20 kHz
<b>THD 20Hz–20Khz:</b>	< 0.005%
<b>Channel Phase Diff.:</b>	+/- 1 deg
<b>SNR (weighted):</b>	> 85 dB
<b>Max. Audio Input Level:</b>	+24 dBu
<b>Signal Quantization:</b>	24 Bits

### 3.3. OPTICAL OUTPUT

<b>Number of Outputs:</b>	1
<b>Connector:</b>	Female SC/PC, SC/PC with cover flap, ST/PC or FC/PC
<b>Return Loss:</b>	> 14 dB
<b>Rise and Fall Time:</b>	200ps nominal
<b>Fiber Size:</b>	9 $\mu$ m core / 125 $\mu$ m overall
<b>Wavelengths:</b>	
<b>Standard:</b>	1310nm, 1550nm (nominal)
<b>CWDM:</b>	1270nm to 1610nm (ITU-T G.694.2 compliant)
<b>DWDM:</b>	ITU channel 20 to 60, 100GHz spacing, (ITU-T G.694.1 compliant)
<b>Output Power:</b>	
<b>1310nm FP (Standard)</b>	-7dBm $\pm$ 1dBm
<b>1310nm FP (M Version)</b>	0dBm $\pm$ 1dBm
<b>1550nm &amp; CWDM DFB</b>	0dBm $\pm$ 1dBm
<b>DWDM DFB</b>	+7dBm $\pm$ 1dB

### 3.4. SYSTEM PERFORMANCE

<b>Video Input to Video Output Delay:</b>	< 10 $\mu$ s
<b>Audio Input to Audio Output Delay:</b>	< 1.9ms

### 3.5. ELECTRICAL

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

### 3.6. COMPLIANCE

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

### 3.7. PHYSICAL

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

## **4. STATUS INDICATORS AND DISPLAYS**

The 7707CVT-2-SV 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 displays on the alphanumeric display. Figure 7-1 shows the location of the LEDs and card edge controls.

### **4.1. STATUS INDICATOR LEDS**

Two large LEDs on the front of the board indicate the general health of the module.

**LOCAL FAULT:** This Red LED indicates poor module health and will be On during the absence of a valid video and audio input signal, if a laser fault exists, or if a local input power fault exists (i.e. a blown fuse). The LOCAL FAULT indication can also be reported to the frame through the FRAME STATUS jumper.

**MODULE OK:** This Green LED indicates good module health. It will be On when a valid video or audio input signal is present, and the laser and board power are good.

There are four small LEDs on the back side of the board that indicate the presence of audio signals above the detection level (see section 5.4.1 for information about configuring the audio detection).

**AUDIO 1 PRESENT:** This Green LED indicates the presence of a valid signal on the Audio 1 input.

**AUDIO 2 PRESENT:** This Green LED indicates the presence of a valid signal on the Audio 2 input.

**AUDIO 3 PRESENT:** This Green LED indicates the presence of a valid signal on the Audio 3 input.

**AUDIO 4 PRESENT:** This Green LED indicates the presence of a valid signal on the Audio 4 input.

### **4.2. DOT-MATRIX DISPLAY**

Additional signal and status monitoring and control over the card's parameters are provided via the 4-digit alphanumeric display located on the card edge. The card edge toggle switch is used to select whether the user is displaying status from the card (monitoring mode) or setting control parameters for the card (control mode). To select one of the display modes, press the pushbutton one or more times to exit the current display mode and return to the mode select menu item (the display will show **MON** or **SET**). Press the toggle switch to select monitor mode (**MON**) or control mode (**SET**). Once the desired mode is selected, press the pushbutton to enter that mode. For information about setting up the module in control mode see section 5.

While in monitor 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 display. A message indicating what display mode is active is shown for one second. After one second without the toggle switch being pressed, the selected display data is shown. The card edge pushbutton is used to select sub-items where applicable.

The following display messages indicate what is being displayed:

<b>AJCK</b>	Set Headphone Jack Audio Channel
<b>VSTD</b>	Video Standard in Use

The details of the each of the displays are described in the section 4.2.1 and 4.2.2.

#### **4.2.1. Setting the Headphone Jack Channel**

The **AJCK** display allows the user to set a whether audio channels 1/2 or 3/4 will be monitored on the card edge headphone jack. After one second the display will show a message indicating the current audio channel being monitored at the headphone jack. When this message is showing, press the pushbutton to change the audio channel being monitored.

<b>A1/2</b>	Audio channels 1 and 2 will be monitored at the headphone jack.
<b>A3/4</b>	Audio channels 3 and 4 will be monitored at the headphone jack.

#### **4.2.2. Displaying the Video Standard**

The 7707CVT-2-SV detects the Video standard of the input signal and displays this on the four-digit card edge display. The following list describes possible displays and their meaning:

<b>NTSC</b>	SMPTE 170M
<b>PAL</b>	ITU-R624-4
<b>LSV</b>	Indicates that no valid video signal is present on the input. This message overrides the normal video standard message.

## 5. CARD EDGE MENU SYSTEM

### 5.1. NAVIGATING THE MENU SYSTEM

While in control mode, the toggle switch and pushbutton are used to navigate through a menu system to set various parameters for the module. To enter the menu system, press the pushbutton one or more times to exit the current display mode and return to the mode select menu item. The display will show **MON** or **SET**. Press the toggle switch to select control mode (**SET**) and then press the pushbutton to enter the control mode main setup menu. Use the toggle switch to move up and down the list of available sub menus. Once the desired submenu name is displayed, press the pushbutton to select the next menu level.

Once the user is in the sub menu, there will be a list of 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 the toggle switch is pressed up and the number will decrease if the toggle switch is pressed down. If the parameter contains a list of choices, the user can cycle through the list by pressing the toggle switch in either direction.

Depress the pushbutton once the desired value is reached. This will update the parameter to the selected value and return to the mode select menu item (the display shows **SET**). To change another parameter, press the pushbutton to enter the main menu system again and continue selecting and adjusting other parameters.

Throughout the descriptions of the Menu items, default values are shown in underlined text.

Each time the toggle switch is pressed up/down, the display advances to the next/previous display. A message indicating what display mode is active is shown for one second. After one second without the toggle switch being pressed, the selected display data is shown. The card edge pushbutton is used to select sub-items where applicable.

### 5.2. TOP LEVEL MENU STRUCTURE

The following is a brief description of the top level of the menu tree that appears when the user enters the Control menu. Selecting one of these items will take the user down into the next menu level. The details of each of the displays are described in the sections 5.3 to 5.5.

<b>EQ1</b>	Configures the input cable equalization on Video input 1 (Luma).
<b>EQ2</b>	Configures the input cable equalization on Video input 2 (Chroma).
<b>ADET</b>	Sub menu allows the user to set parameters relating to the Audio detection.
<b>DISP</b>	Allows the user to set the orientation of the front panel display.
<b>FRST</b>	Resets the module to its factory reset values.

### 5.3. SETTING THE VIDEO CONTROLS

#### 5.3.1. Setting the Cable Equalization

<b>EQ1</b>
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="margin-bottom: 5px;">0</div> <div>0 to 300</div>

The *EQ1* control is used to set the amount of cable equalization being applied at the video 1 Input (Luma). It can be adjusted to compensate for various input cable lengths to achieve a flat frequency curve. The display shows a range of approximate cable length values expressed in meters for Belden 1694 cable or equivalent. When set to 0 the cable equalization is turned off.

<b>EQ2</b>
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="margin-bottom: 5px;">0</div> <div>0 to 300</div>

The *EQ2* control is used to set the amount of cable equalization being applied at the video 2 Input (Chroma). It can be adjusted to compensate for various input cable lengths to achieve a flat frequency curve. The display shows a range of approximate cable length values expressed in meters for Belden 1694 cable or equivalent. When set to 0 the cable equalization is turned off.



**NOTE:** Video equalization set for Luma and Chroma must be configured to the same values. Levels applied to one channel must be applied to the second channel.

### 5.4. SETTING THE AUDIO CONTROLS

The first group of menu items are used to configure the control items relating to the Audio. The menu items for each channel are identical so for the sake of simplicity, only the menu items for A1 channel are shown.

#### 5.4.1. Configuring Audio Presence Detection

The ADET sub menu contains 3 menu items (for each audio channel) relating to the Audio detection. The menu items for each channel are identical so for the sake of simplicity, only the menu items for A1 channel are shown.

<b>DET1</b>
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div>OFF</div> <div>ON</div>

The *DET* controls enable audio presence detection on each of the channels.

The *LVL* and *DUR* controls are used to detect when the audio is considered to be missing. The *LVL* control sets the audio level under which the audio is considered to be missing. The audio must be under the *LVL* level for the duration set by the *DUR* control before the audio is considered missing. When audio is missing, the audio must be over the *LVL* level for 1 sec. before the audio will be considered present.

<b>LVL1</b>
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div>-67 to 0</div> <div>-40</div>

The *LVL* control sets the audio level under which audio is considered to be missing. This value is expressed in dBu

<i>DUR1</i>
<i>1 to 20</i>
<i>10</i>

The *DUR* control sets the amount of time (in seconds) the audio is below the level set by the *LVL* control before the audio is considered missing.

#### 5.4.1.1. Procedure to Calibrate Audio Presence Detection

1. Supply the 7707CVT-2-SV module that is being calibrated with the plant's noisiest audio feed without any audio program material present. This will be a baseline noise level to calibrate the audio-missing detector.
2. Set the *DUR* control to 0.5 sec in order to see the results of adjusting the *LVL* parameter without getting confused with the detection time.
3. Adjust the audio *LVL* control upward from its minimum value until the corresponding *AUDIO PRESENT* LED on the card edge goes Off. This will be the noise floor level. Raise the *LVL* a few dB to make the detector insensitive to this noise level.
4. Set the *DUR* control to a time appropriate to the application. This should be set to a value longer than the worst case acceptable quiet period.

#### 5.5. CHANGING THE ORIENTATION OF THE TEXT ON THE DISPLAY

<i>DISP</i>
<i><u>VERT</u></i>
<i>HOR</i>

The *DISP* control allows the user to select a horizontal or vertical orientation for the displays to accommodate mounting the module in the 3RU or 1RU frames.

#### 5.6. RESTORING THE FACTORY SETTINGS

<i>FRST</i>
<i><u>NO</u></i>
<i>YES</i>

The *FRST* control allows the user to restore the factory values (those underlined) for the module's parameters described in sections 5.3 and 5.5.



## **6. CARD EDGE CONTROLS**

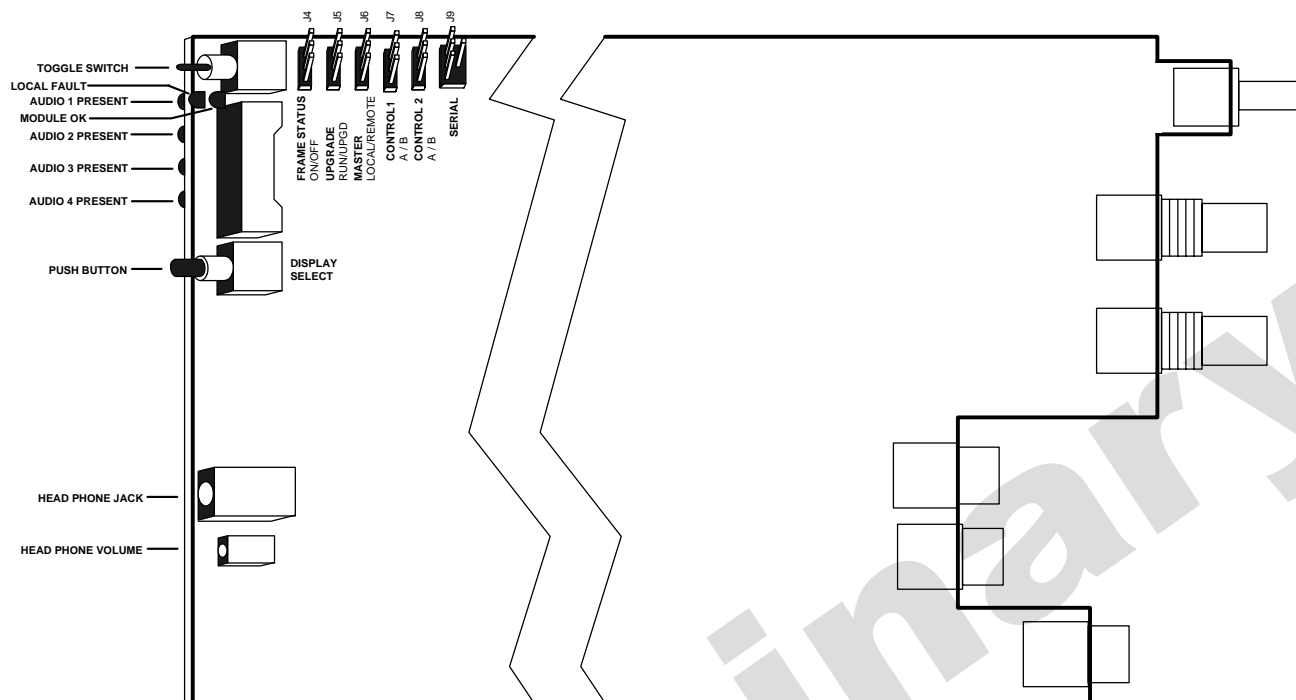
The 7707CVT-2-SV is equipped with a three position, return to center toggle switch which is used to select the various card-edge displays and menu items and is also used in conjunction with a momentary pushbutton to select some sub-items of the menu system. See sections 4.2 and 5 for information about the card edge displays and menu system.

### **6.1. MONITORING THE AUDIO**

A stereo headphone jack located at the front of the module is used to monitor the individual audio channel pairs. The *AJCK* menu item is used to select the audio channels currently being monitored. (Please refer to section 4.2.1) The monitoring volume level can be adjusted but turning the level potentiometer located beside the headphone jack.

## 7. JUMPERS

Several jumpers, located at the front of the module are used to preset various operating modes. Figure 7-1 shows the location of the card edge controls, status indicators and jumpers.



**Figure 7-1: Location of Jumpers and Card Edge Controls**

### 7.1. 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.

## **7.2. SELECTING WHETHER MODULE WILL BE CONTROLLED FROM THE LOCAL CONTROLS OR THROUGH THE *VistaLINK*<sup>®</sup> INTERFACE**

The MASTER jumper J6 selects whether the module will be controlled from the local user controls or through the *VistaLINK*<sup>®</sup> interface.

**MASTER:** When this jumper is installed in the LOCAL position, the card functions are controlled through the local jumpers.

When this jumper is installed in the REMOTE position, the card functions are controlled through the *VistaLINK*<sup>®</sup> interface.

## **7.3. 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* chapter 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 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.

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

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

VistaLINK<sup>®</sup> 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<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 VL-Fiber demo 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 7707EO and 7707OE 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 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.

## 8.2. *VistaLINK*® MONITORED PARAMETERS

The following parameters can be remotely monitored through the *VistaLINK*® interface:

Parameter	Description
<b>Laser OK</b>	Indicates whether laser is operating without functional problems.
<b>Master Jumper</b>	Indicates if card is in Local or Remote mode (the position of Master Jumper).
<b>Module OK</b>	Indicates whether module is operating without functional problems.
<b>Video A, B Standard</b>	A range of values describing the detected video standard.
<b>Video A, B Signal Valid Present</b>	Indicates the presence of a valid video input signal.
<b>Audio 1 Present</b>	Indicates the presence of an Audio 1 input signal (the state of the AUDIO 1 PRESENT LED).
<b>Audio 2 Present</b>	Indicates the presence of an Audio 2 input signal (the state of the AUDIO 2 PRESENT LED).
<b>Audio 3 Present</b>	Indicates the presence of an Audio 3 input signal (the state of the AUDIO 3 PRESENT LED).
<b>Audio 4 Present</b>	Indicates the presence of an Audio 4 input signal (the state of the AUDIO 4 PRESENT LED).

**Table 8-1: *VistaLINK*® Monitored Parameters**

### 8.3. VISTA LINK® CONTROLLED PARAMETERS

The following parameters can be remotely controlled through the VistaLINK® interface:

Parameter	Description
Video A PreEQ	A range of values describing equalization being applied at the Video A input.
Video B PreEQ	A range of values describing equalization being applied at the Video B input.
Audio 1 Silence Level	Sets the Audio 1 Silence Detect Level.
Audio 1 Silence Duration	Sets the Audio 1 Silence Detect Duration.
Audio 1 Silence Detect Enable	Sets the Audio 1 Silence Detect Mode.
Audio 2 Silence Level	Sets the Audio 2 Silence Detect Level.
Audio 2 Silence Duration	Sets the Audio 2 Silence Detect Duration.
Audio 2 Silence Detect Enable	Sets the Audio 2 Silence Detect Mode.
Audio 3 Silence Level	Sets the Audio 3 Silence Detect Level.
Audio 3 Silence Duration	Sets the Audio 3 Silence Detect Duration.
Audio 3 Silence Detect Enable	Sets the Audio 3 Silence Detect Mode.
Audio 4 Silence Level	Sets the Audio 4 Silence Detect Level.
Audio 4 Silence Duration	Sets the Audio 4 Silence Detect Duration.
Audio 4 Silence Detect Enable	Sets the Audio 4 Silence Detect Mode.

Table 8-2: VistaLINK® Controlled Parameters



**NOTE:** Video equalization set for Luma and Chroma must be configured to the same values. Levels applied to one channel must be applied to the second channel.

#### 8.4. VISTA LINK® TRAPS

The following parameters can be remotely monitored through the VistaLINK® interface as trap statuses in the configuration View and traps in the Alarm View.

Parameter	Description
<b>Audio 1 Silence</b>	Triggers on loss of an Audio 1 input signal. <u>Loss of valid audio signal will trigger the “Audio Ch1 Level Too Quiet” trap in the VistaLINK® Alarm View.</u>
<b>Audio 2 Silence</b>	Triggers on loss of an Audio 2 input signal. . <u>Loss of valid audio signal will trigger the “Audio Ch2 Level Too Quiet” trap in the VistaLINK® Alarm View.</u>
<b>Audio 3 Silence</b>	Triggers on loss of an Audio 3 input signal. . <u>Loss of valid audio signal will trigger the “Audio Ch3 Level Too Quiet” trap in the VistaLINK® Alarm View.</u>
<b>Audio 4 Silence</b>	Triggers on loss of an Audio 4 input signal. . <u>Loss of valid audio signal will trigger the “Audio Ch4 Level Too Quiet” trap in the VistaLINK® Alarm View.</u>
<b>Laser OK</b>	Indicates whether laser is in good operating condition or not. <u>If there is a laser fault it will trigger the “Laser Not OK” trap in the VistaLINK® Alarm View.</u>
<b>Module OK</b>	Indicates whether card is in good operating condition or not. <u>If there is a module fault it will trigger the “Module Not OK” trap in the VistaLINK® Alarm View.</u>
<b>Signal A Invalid</b>	Indicates if there's valid input video signal present on channel A. <u>Loss of valid video signal will trigger the “Signal Unknown” trap in the VistaLINK® Alarm View.</u>
<b>Signal B Invalid</b>	Indicates if there's valid input video signal present on channel B. <u>Loss of valid video signal will trigger the “Signal Unknown” trap in the VistaLINK® Alarm View.</u>
<b>Not In Local Control Mode (trap only)</b>	This trap in VistaLINK® Alarm View triggers every time card is switched to Remote mode.
<b>In Local Control Mode (trap only)</b>	This trap in VistaLINK® Alarm View triggers every time card is switched to Local mode.
<b>Not In Remote Control Mode (trap only)</b>	This trap in VistaLINK® Alarm View triggers every time card is switched to Local mode.
<b>In Remote Control Mode (trap only)</b>	This trap in VistaLINK® Alarm View triggers every time card is switched to Remote mode.

**Table 8-3: VistaLINK® Fault Status Parameters – Traps**

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