TABLE OF CONTENTS

Figures

Tables

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Initial Release	Jan 08
1.1	Added VistaLINK® screen shots	Jan 08
1.2	Updated rear plate drawing	Nov 08

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 7707CVT-4 series DWDM cards and any 7707CVR-4 series cards directly with a short fiber optic cable. The 7707CVT-4 series DWDM card produces +7dBm of power, which will damage the receiver if connected directly.

Do not hook up the 7707CVT-4 series cards that output more than -7dBm of power (see 7707CVT-4 series specifications for output power of various laser types) and 7707CVR-4 series high sensitivity (-H versions) receiver cards directly with a short fiber optic cable. The 7707CVT-4 series cards that produce more than -7dBm of power will damage the receiver if connected directly.

1. OVERVIEW

The 7707CVT-4 is a VistaLINK® enabled, Quad Analog Video fiber transmitter for broadcast quality video and audio signals. This single card module accepts four NTSC or PAL analog video inputs, performs analog to digital conversion and transmits them over a single fiber. The companion 7707CVR-4 Quad Analog Video fiber receiver demultiplexes the signals and converts them back to analog form.

The 7707CVT-4-A16 Quad Analog Video and 16 Channel Analog Audio fiber transmitter is a version that digitizes and multiplexes 4 analog video and up to sixteen analog audio signals and converts them to an optical signal for transmission. The companion 7707CVR-4-A16 Quad Analog Video and 16 Channel Analog Audio fiber receiver accepts a fiber optic input, demultiplexes the signals, performs D to A conversion and outputs 4 NTSC or PAL analog video signals and up to sixteen balanced analog audio signals.

The fiber output is available in an assortment of optical wavelengths, accommodating standard or CWDM transmission schemes. (7707CVT-4 shown, 7707CVT-4-A16 similar)

7707CVT13-4	1310 nm FP	-7dBm output, suitable for distances up to 50 Km
7707CVT15-4	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. These versions all have 0dBm output and are suitable for distances up to 75 Km.

7707CVT27-4	1270 nm DFB
7707CVT29-4	1290 nm DFB
7707CVT31-4	1310 nm DFB
7707CVT33-4	1330 nm DFB
7707CVT35-4	1350 nm DFB
7707CVT37-4	1370 nm DFB
7707CVT43-4	1430 nm DFB
7707CVT45-4	1450 nm DFB
7707CVT47-4	1470 nm DFB
7707CVT49-4	1490 nm DFB
7707CVT51-4	1510 nm DFB
7707CVT53-4	1530 nm DFB
7707CVT55-4	1550 nm DFB
7707CVT57-4	1570 nm DFB
7707CVT59-4	1590 nm DFB
7707CVT61-4	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).

7707CVTyyy-4	DWDM DFB laser output, yyy – ITU channel number

The 7707CVT-4 occupies one card slot and the 7707CVT-4-A16 occupies two card slots. Both 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 single slot modules.

Features:

- Single card fiber optic transmitter for up to four analog video and 16 analog audio signals
- Supports both NTSC and PAL video
- Broadcast quality analog video and audio performance
- High video signal to noise ratio
- Meets or exceeds EIA/TIA RS250-C short haul specifications for analog video transport
- Comprehensive signal and card status monitoring via four digit card edge display or remotely through SNMP and *Vista*LINK®
- Signal transport over fiber is uninterrupted by loss of input video or audio feeds
- *Vista*LINK® capability is available when modules are used with the 3RU 7700FR-C frame and a 7700FC *Vista*LINK® Frame Controller module in slot 1 of the frame
- Adjustable gain equalization for up to approximately 250m of Belden 1694 coaxial cable
- Fully Hot-swappable from front of frame with no fiber disconnect/reconnect required
- Supports Single mode (8-10 μm) and Multi-mode (50/62.5 μm) fiber optic cable
- Optical output wavelengths of 1310nm, 1550nm and up to 16 CWDM wavelengths (ITU-T G.694.2 compliant)
- DWDM wavelengths (ITU-T G.694.1 compliant) also available

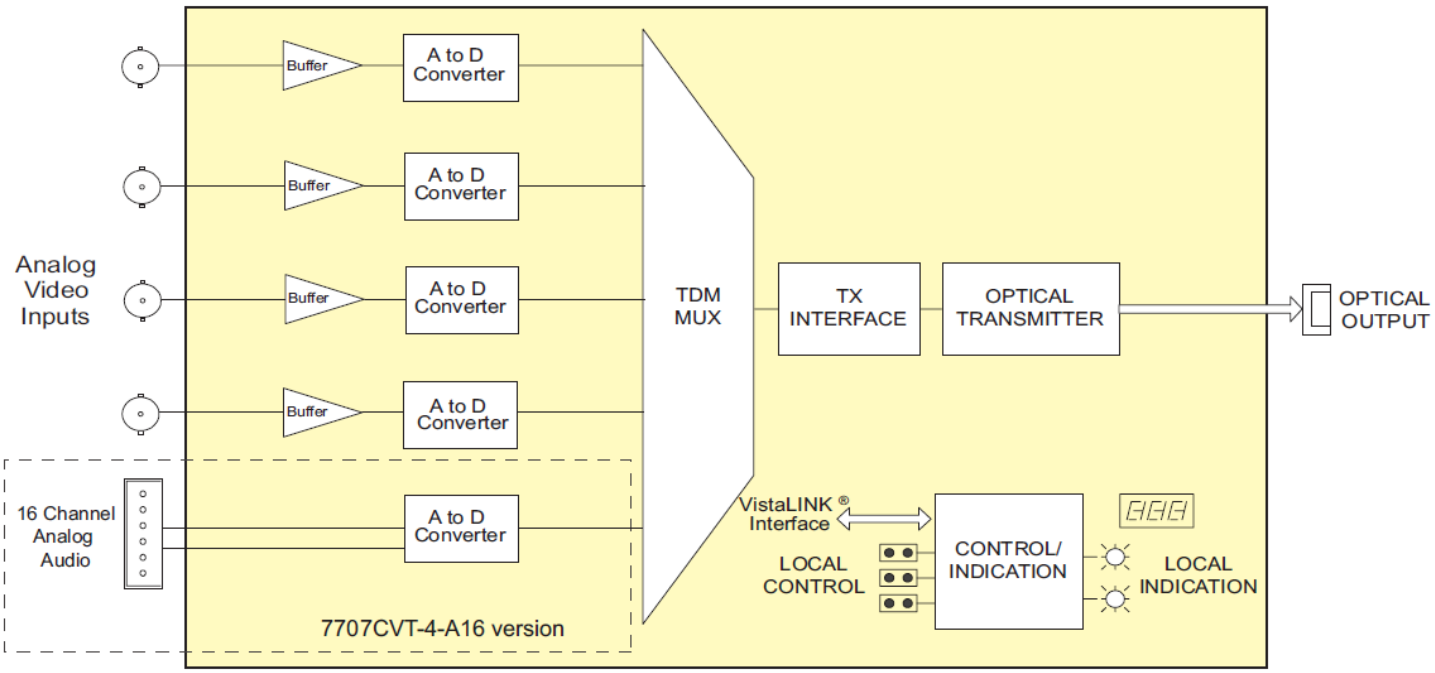


Figure 1-1: 7707CVT-4 and 7707CVT-4-A16 Block Diagram

2. INSTALLATION

The 7707CVT-4 comes with a companion rear plate that has four BNC connectors and one SC/PC, SC/PC with cover flap, ST/PC or FC/PC optical connector. Additionally the 7707CVT-4-A16 has one 48-pin terminal header with removable terminal block. For information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.

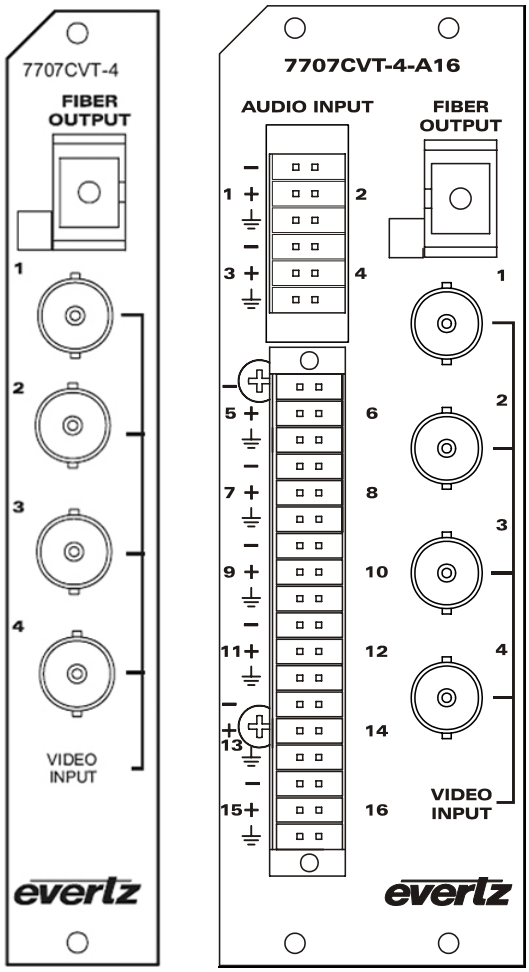


Figure 2-1: 7707CVT-4 and 7707CVT-4-A16 Rear Panels

VIDEO INPUT

1 to 4: Input BNC accepts analog NTSC or PAL video signals. There are separate video inputs for each of the video signals. This input provides equalization compensation for up to approximately 250m of industry standard Belden 1694 coaxial cable.

OPTICAL OUTPUT: Output SC/PC, 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-4 series DWDM cards and any 7707CVR-4 series cards directly with a short fiber optic cable. The 7707CVT-4 series DWDM cards produce +7dBm of power, which will damage the receiver if connected directly.

Do not hook up the 7707CVT-4 series cards that output more than -7dBm of power (see 7707CVT-4 series specifications for output power of various laser types) and 7707CVR-4 series high sensitivity (-H versions) receiver cards directly with a short fiber optic cable. The 7707CVT-4 series cards that produce more than -7dBm of power will damage the receiver if connected directly.

AUDIO INPUTS

1 to 16: The 7707CVT-4-A16 modules provide terminal block input connections compatible with either balanced or unbalanced analog audio. Balanced audio signals should be connected to the positive (+) and negative (-) input terminals. Unbalanced audio signals should be connected to the positive (+) input terminal, while the negative (-) input terminal is connected to ground. The audio cables can be secured into the removable portion of the terminal strips using a small screwdriver. The removable part of the terminal strip is then inserted into the rear panel.

2.1. CARE AND HANDLING OF OPTICAL FIBER

2.1.1. Safety

CLASS 1 LASER PRODUCT

Background colour: yellow
Triangular band: black
Symbol: black

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 not enough room 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: 7707CVT13-4, 7707CVT13-4-A16, 7707CVT15-4, 7707CVT15-4-A16, 7707CVTxx-4, 7707CVTxx-4-A16, (xx = 27, 29, 31, 33, 35, 37, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61) 7707CVTDyyy-4, 7707CVTDyyy-4-A16 (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 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. ANALOG VIDEO INPUT

Standards:	NTSC, SMPTE 170M, PAL, ITU-R 624-4
Number of Inputs:	4
Connector:	1 BNC per IEC 61169-8 Annex A.
Signal Quantization:	12 bits
System Bandwidth:	5.5MHz
Input Level:	2 Vp-p (Maximum)
Gain Equalization:	Up to 250m of Belden 1694 or equivalent (adjustable)
Input impedance:	75 Ohms
Return Loss:	> 30 dB to 5.5 MHz
Signal/Noise Ratio:	> 70 dB
Differential Gain:	< 1.0 %
Differential Phase:	< 0.7 Degree
Passband Ripple:	
NTSC:	< +/- 0.1dB to 4.1 MHz
	< +/- 0.2dB to 5.5 MHz
PAL:	< +/- 0.1dB to 4.8 MHz
	< +/- 0.2dB to 5.8 MHz
Chroma/Luma Gain:	98% to 103%
Chroma/Luma Delay:	
NTSC:	< 5 ns
PAL:	< 12 ns
Line Time Distortion:	1.2%

3.2. ANALOG AUDIO INPUTS (7707CVT-4-A16 Only)

Number of Inputs:	16
Type:	Balanced analog audio
Connector:	48 pin removal terminal block
Input impedance:	High Impedance (>20 KOhm)
Freq. Response:	+/-0.1 dB, 20Hz to 20 kHz
THD 20Hz–20Khz:	< 0.005%
Channel Phase Diff.:	+/- 1 deg
SNR (weighted):	> 85 dB
Max. Audio Input Level:	+24 dBu
Signal Quantization:	24 Bits

3.3. OPTICAL OUTPUT

Number of Outputs:	1
Connector:	Female SC/PC, SC/PC with cover flap, ST/PC or FC/PC
Return Loss:	> 14 dB
Wavelengths:	
Standard:	1310nm, 1550nm (nominal)
CWDM:	1270nm to 1610nm (ITU-T G.694.2 compliant)
DWDM:	ITU channel 20 to 60, 100GHz spacing, (ITU-T G.694.1 compliant)
Output Power:	
1310nm FP (Standard):	-7dBm ± 1dBm
1550nm & CWDM DFB:	0dBm ± 1dBm
DWDM DFB:	+7dBm ± 1dB

3.4. ELECTRICAL

Voltage:	+12VDC
Power:	11/12Watts. (Non-DWDM) 13/14Watts. (DWDM)

3.5. COMPLIANCE

Electrical Safety:	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
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
EMI/RFI:	Complies with FCC regulations for class A devices. Complies with EU EMC directive 89/336/EEC.

3.6. PHYSICAL

7700 or 7701 frame mounting:	
Number of slots:	1 (7707CVT-4) 2 (7707CVT-4-A16)

4. STATUS INDICATORS AND DISPLAYS

The 7707CVT-4 series 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 5-1 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 video signals:

VIDEO 1 PRESENT: This Green LED indicates the presence of a valid signal on the Video 1 input. This Red LED indicates that Video 1 input is blocked.

VIDEO 2 PRESENT: This Green LED indicates the presence of a valid signal on the Video 2 input. This Red LED indicates that Video 2 input is blocked.

VIDEO 3 PRESENT: This Green LED indicates the presence of a valid signal on the Video 3 input. This Red LED indicates that Video 3 input is blocked.

VIDEO 4 PRESENT: This Green LED indicates the presence of a valid signal on the Video 4 input. This Red LED indicates that Video 4 input is blocked.

4.2. DOT-MATRIX DISPLAY / CARD STATUS AND CONTROLS

Additional status monitoring and controls are provided via the 4-digit dot-matrix display located at the card-edge. The card-edge toggle-switch (see Figure 5-1) is used to navigate through the display menus and the pushbutton is used to select options. Figure 5-1 provides a quick reference to the display menu structure.

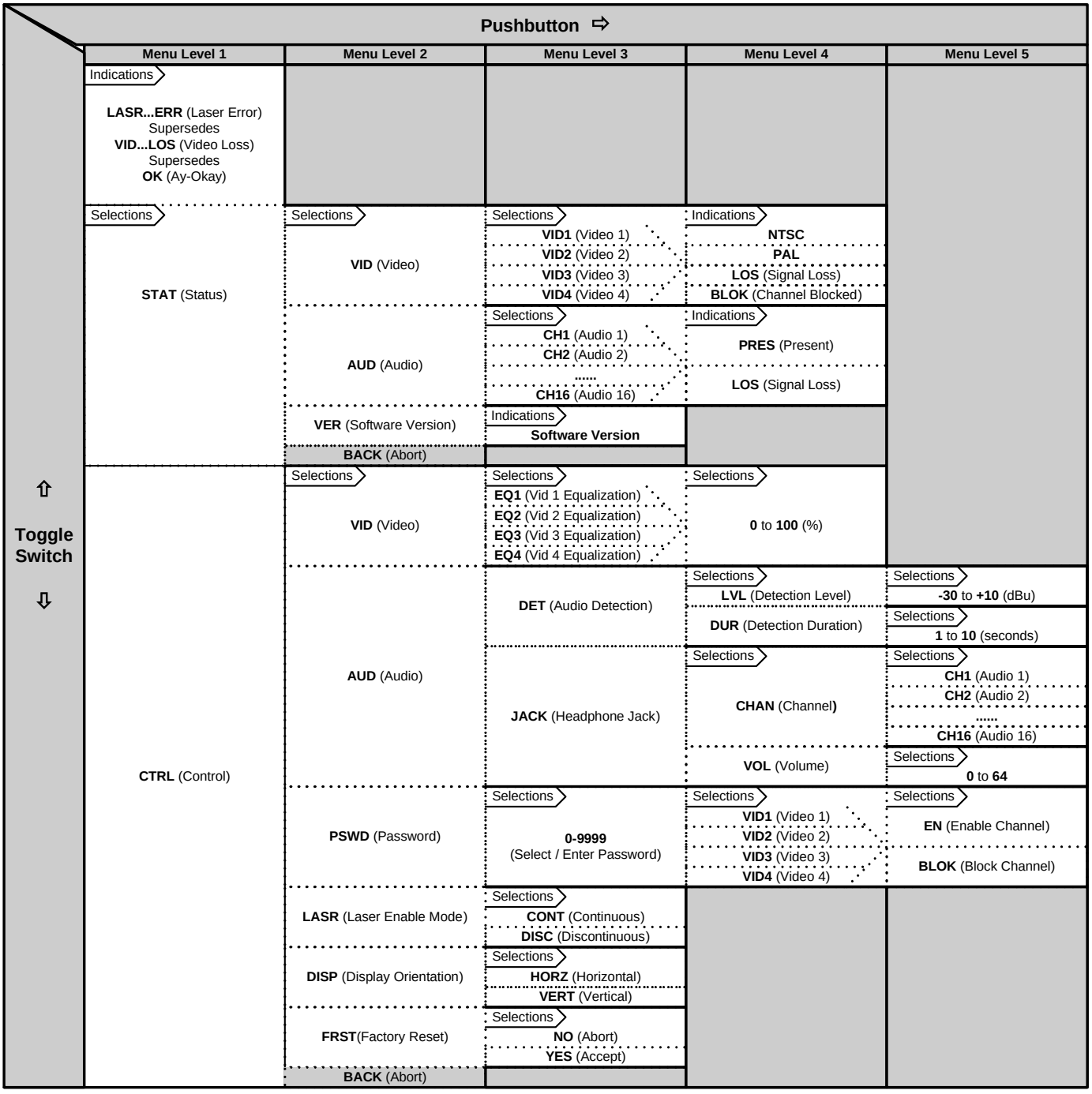


Figure 4-1: Card Edge Menu Structure

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 most recent user selection will be maintained in non-volatile memory in the event of power loss to the module.

4.2.1. Display of Warning Status Indications

The top level, default display indicates overall card status and warnings:

OK	Card is functioning properly.
LASR…ERR	Laser Error Warning – Flashing indication alternates between **LASR** and **ERR**.
VID…LOS	No video input detected.

Pressing the pushbutton from this default display will allow the user to select from **STAT** (status) and **CTRL** (control) menu items.

4.2.2. Displaying the Video Standard

The 7707CVT-4 detects the video standard of the signals present at its inputs. To display the video standard, select the **STAT** menu item in menu level 1, select **VID** from menu level 2, then use the toggle switch to display the desired video channel (from **VID1** to **VID4**) and press the pushbutton to select it. For the sake of simplicity, only the VID1 menu item will be described in the manual.

STAT *VID* *VID1* *NTSC* *PAL* *LOS* *BLOK*	The video standard will be displayed from the list below: *NTSC* displays that NTSC is present. *PAL* displays that PAL is present. *LOS* displays that there is a Loss of Signal. *BLOK* displays that there is a Channel Block.

4.2.3. Displaying the Audio Presence (7707CVT-4-A16 Only)

The 7707CVT-4-A16 detects analog audio at the inputs. To display the audio presence, select the **STAT** menu item in menu level 1, select **AUD** from menu level 2, then use the toggle switch to display the desired audio channel (from **CH1** to **CH16**) and press the pushbutton to select it. For the sake of simplicity, only the AUD menu item will be described in the manual.

STAT *AUD* *CH1* *PRES* *LOS*	The audio presence will be displayed from the list below: *PRES* displays that the audio is present. *LOS* displays that the audio is lost.

4.2.4. Displaying the Firmware Version

The **VER** option displays the card's current firmware version. To display the firmware version, select the **STAT** menu item in menu level 1 then use the toggle switch to display the **VER** option and press the pushbutton to select it.

STAT *VER* *(software version)*	The firmware version will scroll across the display. For example: **VER 1.0 BLD 067**

4.2.5. Setting the Video Equalization

The *EQ* controls are used to set the amount of cable equalization being applied at the video input(s). 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.

To set cable equalization, select the **CTRL** menu item in menu level 1, select **VID** from menu level 2, then use the toggle switch to select the desired video channel equalization (from **EQ1** to **EQ4**) and press the pushbutton to select it. Use the toggle switch to set the equalization value of **EQ1** to **EQ4**. For the sake of simplicity, only EQ1 will be described in the manual.

CTRL
VID
EQ1
0 to 100

This control selects the amount of cable equalization that is applied at the video input(s).

0 to **100%** Equalization range, describing a % value

4.2.6. Setting the Analog Audio Detection Threshold (7707CVT-4-A16 Only)

In order to properly indicate audio signal presence, a detection threshold is used. The audio detection threshold adjustment is implemented in the digital domain. The specified range of threshold adjustment is –30dBu to +10dBu, in 1dB increments. Threshold adjustment is done using the card-edge interface or through *Vista*LINK® control.

To change the audio detection threshold, use the pushbutton to select the **CTRL** menu item in menu level 1, then use the pushbutton to select **AUD** from menu level 2. Use the pushbutton to select **DET** in menu level 3, then **LVL** from menu level 4.

The toggle switch may then be used to change the threshold value. Use the toggle switch to select the desired value then press the pushbutton to apply the displayed selection and return to menu level 3.

CTRL
AUD
DET
LVL
-30 to +10

This control selects the detection level.

-30 to **+10** Detection threshold range, describing a dBu value

The factory default configuration applies an audio detection threshold value of 0dBu.

4.2.7. Setting the Analog Audio Silence Duration Period (7707CVT-4-A16 Only)

In order to properly indicate audio signal presence, a silence duration period is used. The duration period adjustment is implemented in the digital domain. The specified range of time adjustment is 1sec to 10sec, in 1sec increments. Duration adjustment is done using the card-edge interface or through *Vista*LINK® control.

To change the audio silence duration period, use the pushbutton to select the **CTRL** menu item in menu level 1, then use the pushbutton to select **AUD** from menu level 2. Use the pushbutton to select **DET** in menu level 3, then **DUR** from menu level 4.

The toggle switch may then be used to change the duration value. Use the toggle switch to select the desired value then press the pushbutton to apply the displayed selection and return to menu level 3.

CTRL
AUD
DET
DUR
1 to 10

This control selects the detection duration.

1 to **10** silence duration period range in seconds

4.2.8. Selecting the Headphone Jack Channel and Volume (7707CVT-4-A16 Only)

The 7707CVT-4-A16 provides a convenient audio monitoring headphone jack at the card-edge. This jack can be used to verify signal presence or content for each audio channel, and is enabled while specific menu items are selected within the **JACK** menu. The selected audio channel is applied to the left and right headphone outputs as a monaural signal. Headphone jack channel and volume are selectable via the card-edge interface.

To configure the headphone jack, use the pushbutton to select the **CTRL** menu item in menu level 1, then use the pushbutton to select **AUD** from menu level 2. Use the pushbutton to select **JACK** in menu level 3.

CTRL
AUD
JACK
CHAN
CH1
CH2
…
CH16

The 7707CVT-4-A16 allows the user to control the headphone monitoring jack channel. Use the toggle switch then pushbutton to choose the parameter to be controlled.

CHAN Allows selection of the headphone monitoring channel.

The following list describes possible selections for the headphone monitoring channel:

CH1 to **CH16** is the range of audio channels for the 7707CVT-4-A16 product version.

Press the pushbutton to apply the displayed section. A scrolling line segment will be displayed. The headphone jack will be enabled while in this state. Pressing the pushbutton again will exit this state, and mute the headphone jack.

CTRL
AUD
JACK
VOL
0 to 64

The 7707CVT-4-A16 allows the user to control the headphone monitoring jack volume. Use the toggle switch then pushbutton to choose the parameter to be controlled.

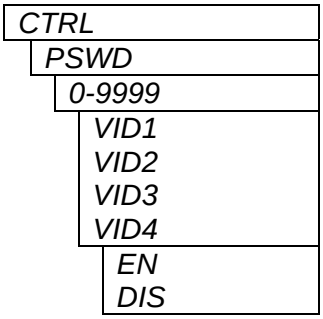
VOL Allows selection of headphone monitoring volume.

Upon selecting the **VOL** menu item, a line segment is displayed. The position of the line-segment on the dot-matrix display indicates the configured volume, and can be adjusted via the toggle switch. The headphone jack will be enabled while in this state. Pressing the pushbutton will exit this state, and mute the headphone jack.

4.2.9. Setting the Password for Channel Blocking and Selecting Channels to be Blocked

The 7707CVT-4-A16 allows selective blocking of video channels 1 to 4 with a password. The default password is **7154**.

To view the menu for channel blocking, use the toggle switch and pushbutton to select the **CTRL** menu item in menu level 1, then use the pushbutton to select the **PSWD** from menu level 2. Use the toggle switch to cycle through password **0…9999**. Use the pushbutton to enter the password shown on the display in menu level 3.



In menu level 4 use the toggle switch and then pushbutton to select the following:

PWSL	Enter a new password **0…9999**
VID1	Select Video Input 1
VID2	Select Video Input 2
VID3	Select Video Input 3
VID4	Select Video Input 4

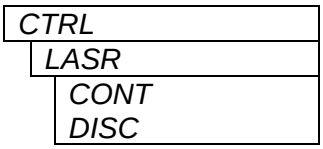
To enable or disable blocking, select the video channel (**VID1 to VID4**) menu item in menu level 4. Use the toggle switch to set the blocking parameter in menu level 5 of **VID1** to **VID4** individually.

EN	Enable Channel
BLOK	Block Channel

Without the correct password, the blocking or enable setting of each channel cannot be changed. The current Block or Enable status can only be viewed in menu level 5.

4.2.10. Controlling the Behavior of the Laser

On the 7707CVT-4 the **LASR** option allows the user to set the behavior of the laser transmitter when there is no video signal applied to the video inputs. To set the laser behavior, select the **CTRL** menu item in menu level 1, then use the toggle switch to display the **LASR** menu selection and press the pushbutton to select it. Use the toggle switch to choose between **CONT** and **DISC** and press the pushbutton to select the mode of operation.



This control enables the user to select the laser enable mode.

CONT Laser will transmit continuously regardless of whether there are valid input video signals present on the inputs of the 7707CVT-4.

DISC The laser will turn off when there is no recognizable video on the 7707CVT-4 inputs.

With the 7707CVT-4 set to discontinuous mode, due to the laser turning off, the companion 7707CVR-4 will indicate an optical signal loss when no input video signal is present at the 7707CVT-4.

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

The **DISP** display option allows the user to set a horizontal or vertical orientation for the card edge display messages. To set the display orientation, select the **CTRL** menu item in menu level 1, then use the toggle switch to access the **DISP** menu selection and use the pushbutton to select it. Use the toggle switch to change between **HOR** and **VERT**. Press the pushbutton to make your selection.

- *CTRL*
  - *DISP*
    - *HORZ*
    - *VERT*

This control enables the user to select the display orientation.

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.

4.2.12. Resetting Factory Defaults

The **FRST** menu option will return the 7707VT-4-HS to factory defaults. To return all settings to factory defaults, select the **CTRL** menu item in menu level 1, then use the toggle switch to display the **FRST** menu selection and use the pushbutton to select it. Use the toggle switch to change between **YES** and **NO**. Press the pushbutton to make your selection.

- *CTRL*
  - *DISP*
    - *YES*
    - *NO*

This control enables the user to reset the setting to factory default.

YES Return all card settings to factory default.

NO Retain current settings. Abort the factory reset operation.

5. JUMPERS

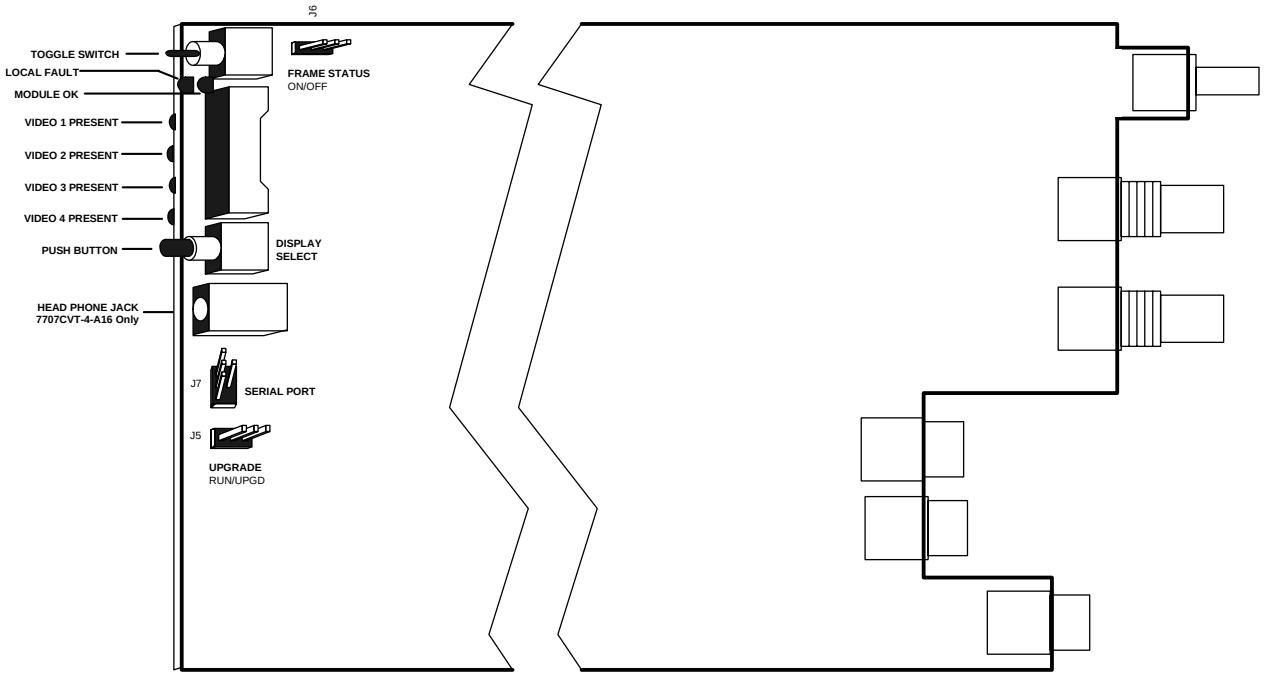


Figure 5-1: Location of Jumpers and Card Edge Controls

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

The FRAME STATUS jumper J6 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* 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 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.

6. *VISTA*LINK® 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.

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 *Vista*LINK® Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *Vista*LINK® enabled fiber optic products.

2. Managed devices (such as 7707CVT-4 and 7707CVR-4 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 *Vista*LINK® network, see the 7700FC Frame Controller chapter.

6.2. *VISTA*LINK® MONITORED PARAMETERS

The following parameters can be remotely monitored through the *Vista*LINK® interface.

Parameter	Description
Laser OK	Indicates whether the laser is operating without functional problems
Module OK	Indicates whether the module is operating without functional problems
Video 1 to 4 Standard	A range of values describing the detected video standard on channels 1 through 4
Video 1 to 4 Signal Valid Present	Indicates the presence of a valid video input signal on channels 1 through 4
Audio 1 to 16 Present (7707CVR-4-A16 Only)	Indicates the presence of an Audio input signal on channels 1 through 16
Card Type	Indicates whether the card is 7707CVT-4 or 7707CVT-4-A16

Table 6-1: *Vista*LINK® Monitored Parameters

6.3. *VISTA*LINK® CONTROLLED PARAMETERS

The following parameters can be remotely controlled through the *Vista*LINK® interface.

Parameter	Description
Video 1 to 4 EQ	A range of values describing equalization being applied at the Video input 1 to 4
Audio Detection Level (7707CVR-4-A16 Only)	Sets the Audio Silence Detect Level
Audio Duration (7707CVR-4-A16 Only)	Sets the Audio Silence Detect Duration
Laser Mode Selection	Allows users to control the laser behavior when no video is present on the inputs

Table 6-2: *Vista*LINK® Controlled Parameters

6.4. *VISTA*LINK® TRAPS

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

Parameter	Description
Audio Presence (7707CVR-4-A16 Only)	Triggers on loss of an Audio input signal. Loss of valid audio signal will trigger the "Audio ChXX Level Too Quiet" trap in the VistaLINK® Alarm View. Where XX is channels 1 through 16.
Laser OK	Indicates whether the laser is in good operating condition or not. If there is a laser fault it will trigger the "Laser Not OK" trap in the VistaLINK® Alarm View.
Module OK	Indicates whether the card is in good operating condition or not. If there is a module fault, it will trigger the "Module Not OK" trap in the VistaLINK® Alarm View.
Video 1 to 4 Presence	Indicates if there is a valid input video signal present on video channel 1 through 4. Loss of valid video signal will trigger the "Signal Unknown" trap in the VistaLINK® Alarm View. NOTE: Always Loss when channel blocked.

Table 6-3: *Vista*LINK® Fault Status Parameters – Traps

6.5. VISTALINK® GUI SCREENS

The following screen shots show the VistaLINK® GUI screens for the 7707CVT-4 and 7707CVT-4-A16.

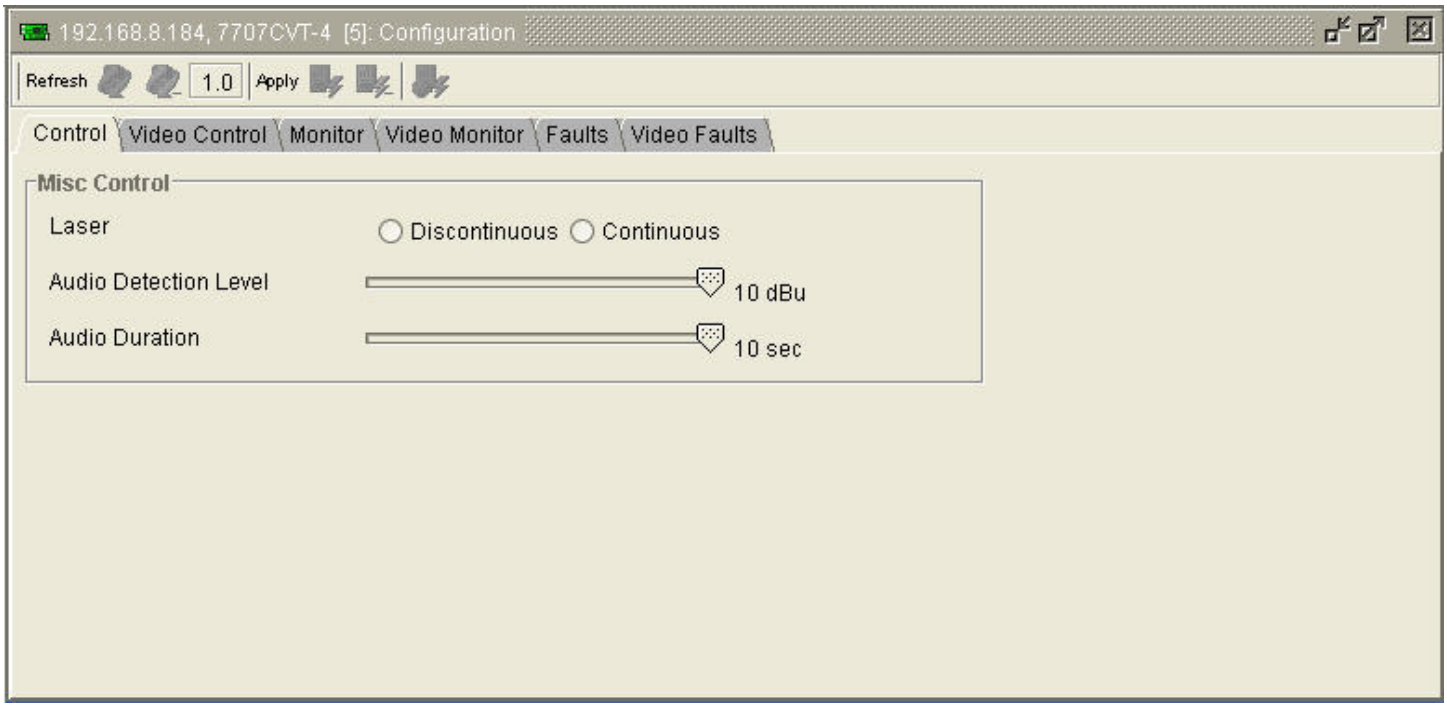


Figure 6-1: Control Tab

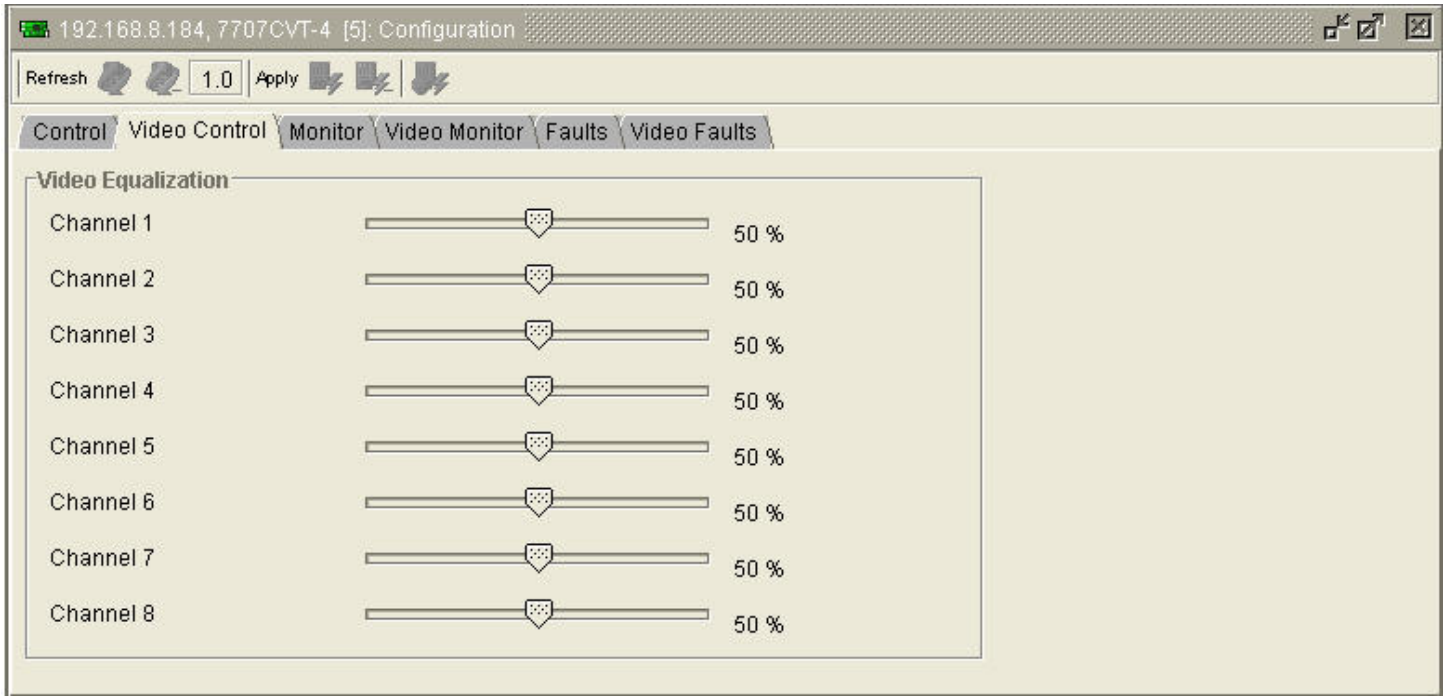


Figure 6-2: Video Control Tab

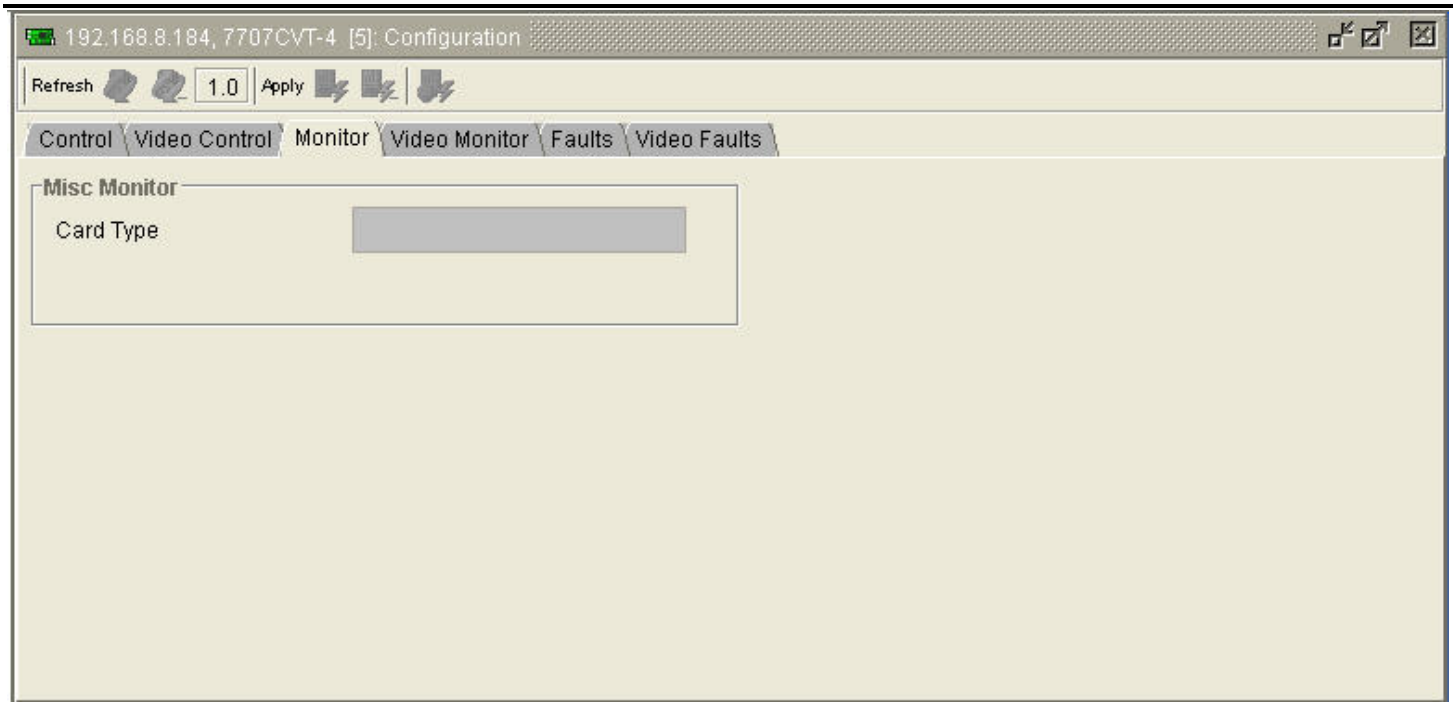


Figure 6-3: Monitor Tab

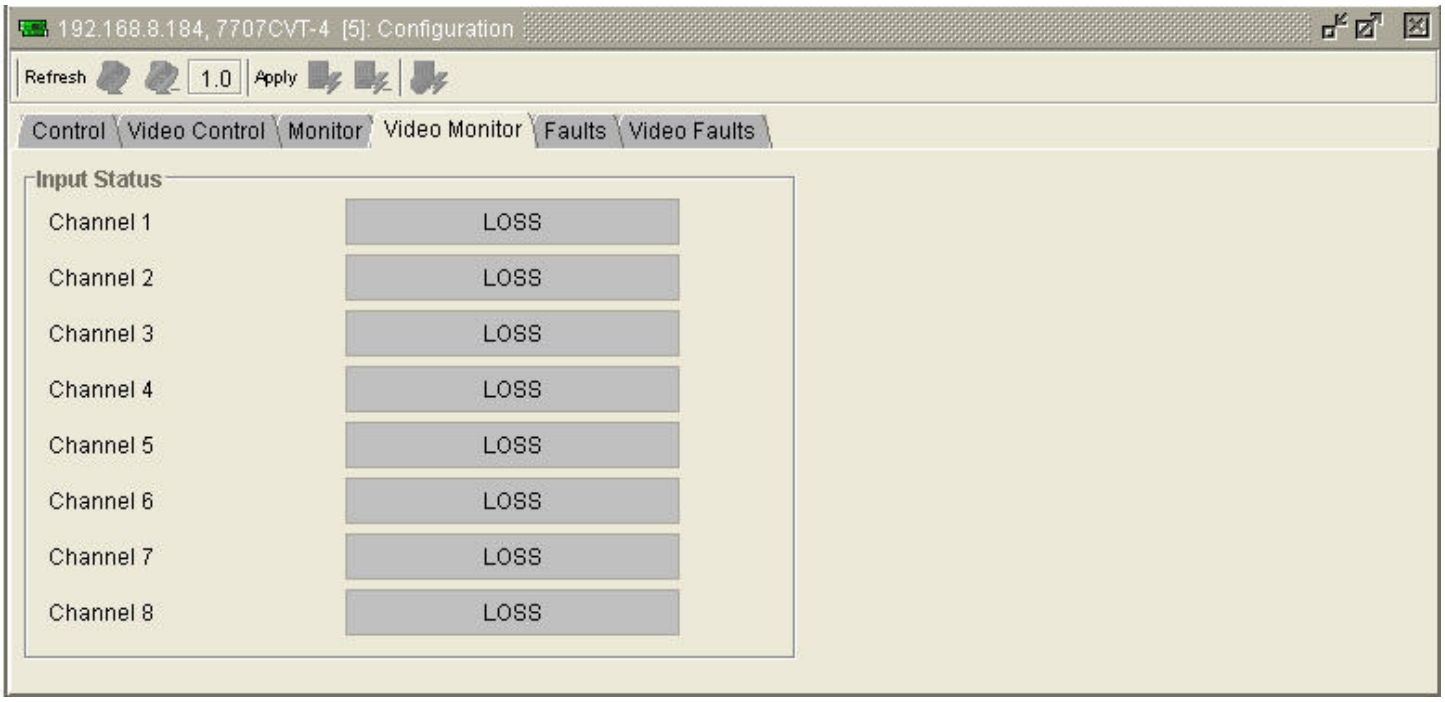


Figure 6-4: Video Monitor Tab

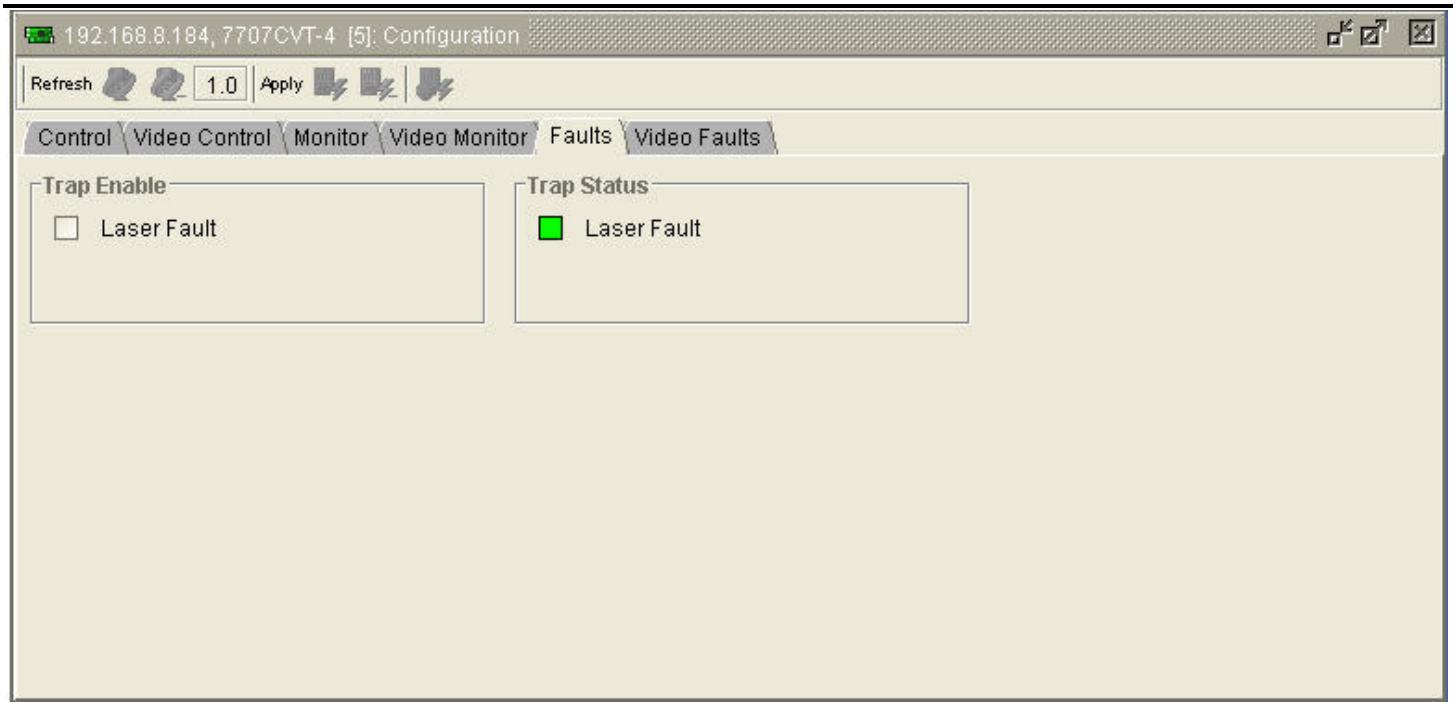


Figure 6-5: Faults Tab

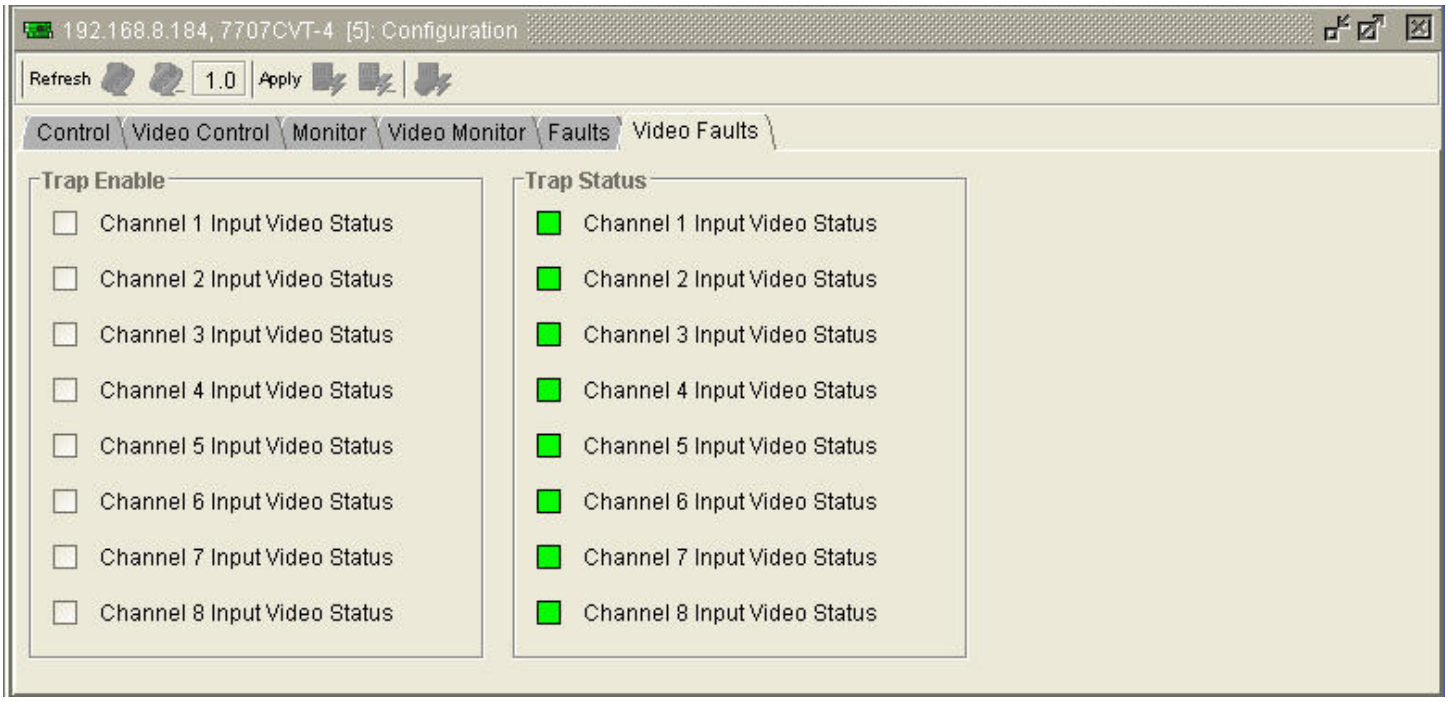


Figure 6-6: Video Faults Tab

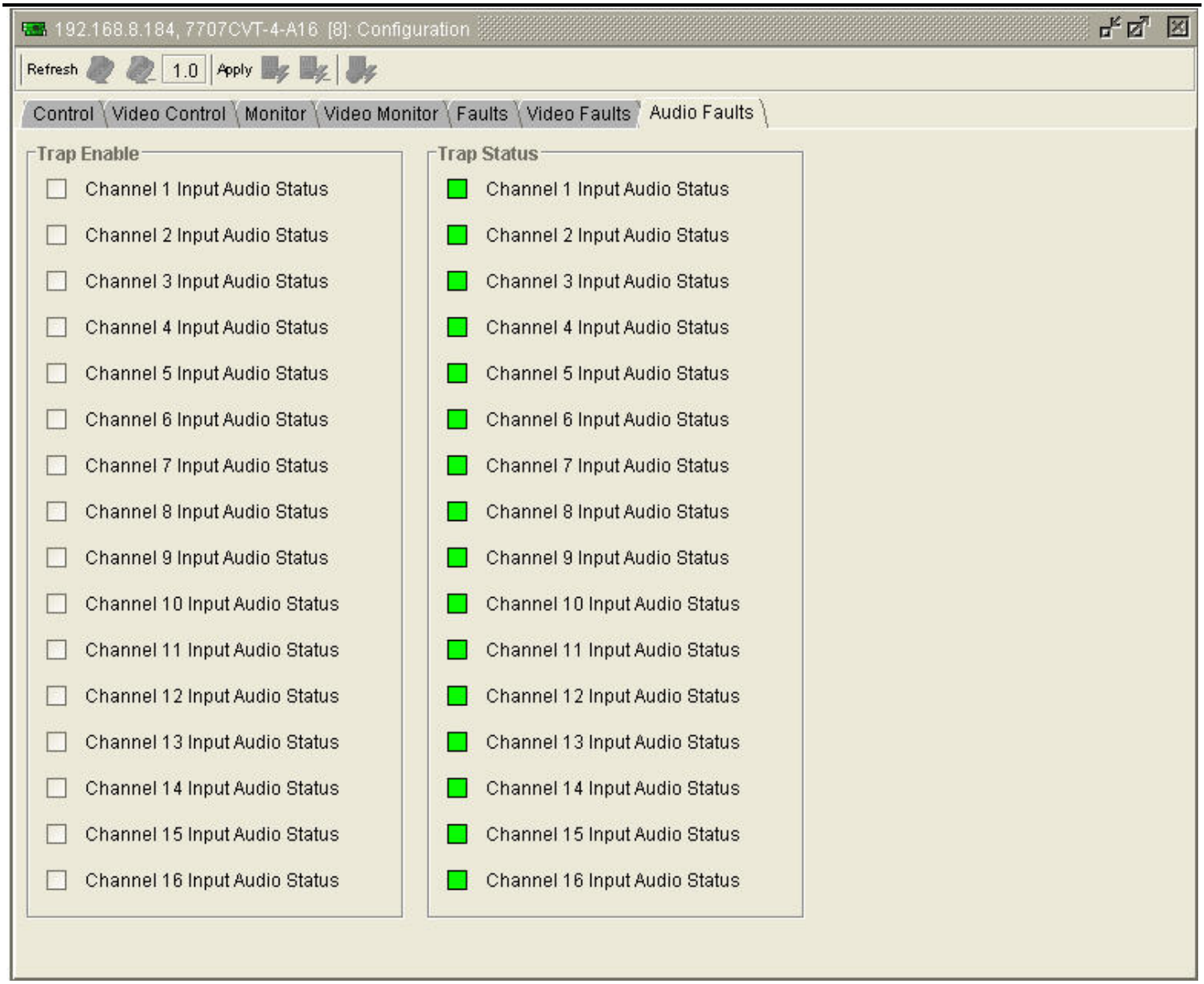


Figure 6-7: Audio Faults Tab (7707CVT-4-A16 only)

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