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REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1.0	First Revision	May 2006
1.1	Updated menu's	Aug 2006

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1. OVERVIEW

The 7772MFC-HD, HDTV Compression Codec encodes one SMPTE 292M (1.485Gb/s) serial digital video signal with up to eight audio groups of embedded or separate audio, into one 270Mb/s compliant output stream. Automatic detection and support of 1080i and 720p video formats is provided.

The 7772MFC-HD occupies two card slots and is housed in either the standard Evertz 3RU frame that holds up to 15 modules, Evertz 1RU frame that holds up to three modules, or Evertz Stand Alone frame that holds one module.

Features:

- Automatic detection of 1080/720 active lines
- Accepts up to four groups of embedded or external AES audio
- No compression applied to AES audio streams
- Built in Frame buffering and Genlock
- Fully hot swappable from front of frame

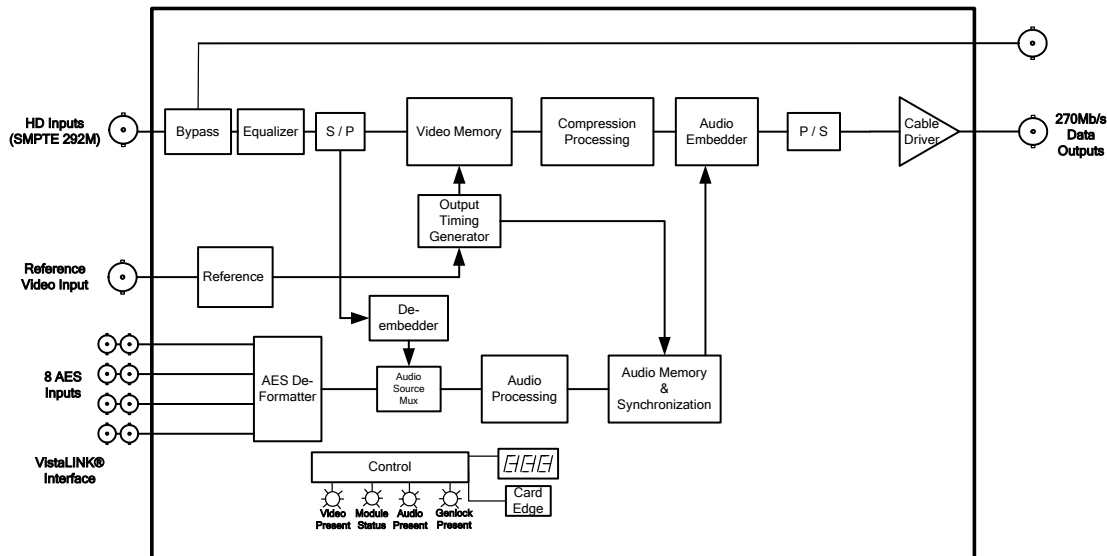


Figure 1: 7772MFC-HD Block Diagram

2. INSTALLATION

The 7772MFC-HD comes with a companion rear plate, occupying two slots in the 7700FR frame. For information on mounting the rear plate and inserting the module into the frame see the 7700FR chapter section 3.

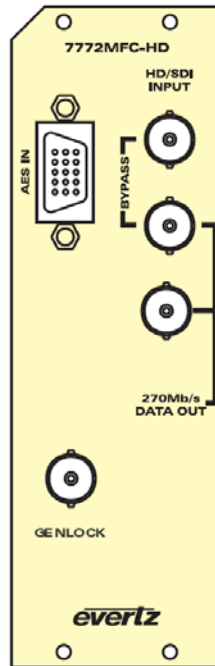


Figure 2: 7772MFC-HD Rear Panels

2.1. VIDEO CONNECTIONS

Connect a source of HD serial component video, compatible with the SMPTE 292M standard, to the BNC labeled **HD/SDI INPUT**. See Table 3 for a list of the video formats supported. Compressed 270Mb/s data is available on the **270Mb/s DATA OUT** BNCs.

2.2. AUDIO CONNECTIONS

The 7772MFC-HD has the ability to embed up to four AES groups of audio streams (16 channels) onto the compressed video output. No compression is applied to the AES audio streams. The audio source can be either embedded audio on the HD video input or AES audio connected to the DB15 connector labeled **AES IN**. Selection of the audio source is completed via card edge control.

Name	Description	DB-15 Pin
	Reserved for Future Use	1
	Reserved for Future Use	2
	Reserved for Future Use	3
	Reserved for Future Use	4
	Reserved for Future Use	5
	Reserved for Future Use	6
AES In 2	AES Input 2 - Unbalanced	7
	Reserved for Future Use	8
AES In 6	AES Input 6 – Unbalanced	9
AES In 5	AES Input 5 – Unbalanced	10
AES In 1	AES Input 1 - Unbalanced	11
AES In 8	AES Input 8 – Unbalanced	12
AES In 7	AES Input 7 – Unbalanced	13
AES In 4	AES Input 4- Unbalanced	14
AES In 3	AES Input 3- Unbalanced	15
GND	Ground	Shell

Table 1: AES INPUT Audio Connector Pin Out

The 7772MFC-HD module is shipped with a breakout cables for the DB-15 connector (Evertz Part # WPAES8-BNCM-6F), which can be used to facilitate wiring the AES audio connections. The pin out of the cables is shown in Table 2.

DB-15 PIN	Wire	Ground/Shield Connection	Label Name	Connector Type	AES IN FUNCTION
1	Not Functional				
2					
3					
4					
5					
6					
7	Coax	DB15 Shell	AES A2	BNC MALE	AES In 2
8					
9	Coax	DB15 Shell	AES B2	BNC MALE	AES In 6
10	Coax	DB15 Shell	AES B1	BNC MALE	AES In 5
11	Coax	DB15 Shell	AES A1	BNC MALE	AES In 1
12	Coax	DB15 Shell	AES B4	BNC MALE	AES In 8
13	Coax	DB15 Shell	AES B3	BNC MALE	AES In 7
14	Coax	DB15 Shell	AES A4	BNC MALE	AES In 4
15	Coax	DB15 Shell	AES A3	BNC MALE	AES In 3
Shell	Black		GND	WIRE	GND

Table 2: Example AES Audio Breakout Cable (Evertz Part # WPAES8-BNCM-6F)



The AES Breakout Cable (Evertz Part # WPAES8-BNCM-6F) may have GPIO terminations labeled. Please note that GPIOs are not active on the 7772MFC-HD or 7772MFD-HD, and are reserved for future use.

2.3. GENLOCK REFERENCE

For proper synchronization of the input/output video, the module must be locked to a Genlock signal of the output video format.



It is highly recommended that a Genlock source is provided to the 7772MFC-HD and 7772MFD-HD during operation.

GENLOCK This BNC is for connecting a bi-level or tri-level sync reference and is auto-detected by the module. Jumper J5 selects whether the reference input is terminated to 75 ohms or high impedance (default).

- The 7772MFC-HD should be locked to bi-Level genlock source for 720p, and bi-Level or tri-Level Genlock source for 1080i.
- The 7772MFD-HD can be locked to bi-Level or tri-Level sync for both 1080i or 720p.

3. SPECIFICATIONS

3.1. HD SERIAL VIDEO INPUT

Standard: 1.485 Gb/sec SMPTE 292M – standards supported are shown in Table 3.
Connector: 1 BNC per IEC 169-8
Equalization: Automatic to 100m @ 1.5Gb/s with Belden 1694 or equivalent cable

HD Input					270Mb/s Output	Genlock Type
Common Name	Pixels / Active Lines	Frame Rate	Progressive /Interlace	SMPTE Standard		
1080i/59.94	1920 x 1080	29.97	I	274M	525/29.97	NTSC
720p/59.94	1280 x 720	29.97	P	296M	525/29.97	NTSC
1080i/50	1920 x 1080	25	I	274M	625/25	NTSC
720p/50	1280 x 720	25	P	296M	625/25	NTSC

Table 3: Video Input Formats

THE AUTOMATIC VIDEO FORMAT DETECTION ON THE 7772 MODULES WILL BY-PASS DVB-ASI AND SD-SDI SIGNALS WITHOUT COMPRESSION

3.2. 270Mb/s DATA OUTPUT

Standard: SMPTE 259M-C – 270 Mb/s
 Video compressed in accordance with SMPTE 305M
Number of Outputs: 2
Connector: BNC per IEC 169-8
Signal Level: 800mV nominal
DC Offset: 0V ±0.5V
Rise and Fall Time: 900ps nominal
Overshoot: <10% of amplitude
Return Loss: > 15 dB at 270 Mb/s
Wide Band Jitter: < 0.2UI

3.3. AES AUDIO INPUTS

Number of Inputs: 8 unbalanced
Standard: SMPTE 276M, single ended synchronous or asynchronous AES
Signal Level: 0.1 to 2.5 Vp-p (5Vp-p tolerant)
Connectors: Female High Density DB-15, breakout cable to BNC connectors supplied
Resolution: 24 bits
Sampling Rate: 48 kHz
Impedance: 75 Ohms

3.4. DELAY

7772MFC-HD Delay ≤ 2 frames interlaced

	≤ 3 frames progressive
Total Link Delay (7772MFC-HD + 7772MFD-HD)	≤ 4 frames interlaced ≤ 6 frames progressive

3.5. ELECTRICAL

Voltage:	+12VDC
Power:	15 Watts.
EMI/RFI:	Complies with FCC regulations for class A devices. Complies with EU EMC directive.

3.6. PHYSICAL

7700 frame mounting: 2 slots
7701 frame mounting: 1 slots

4. STATUS INDICATORS AND DISPLAYS

The 7772MFC-HD modules have 17 LED status indicators on the front card edge to show operational status of the card at a glance. Figure 3 shows the location of the LEDs and card edge controls.

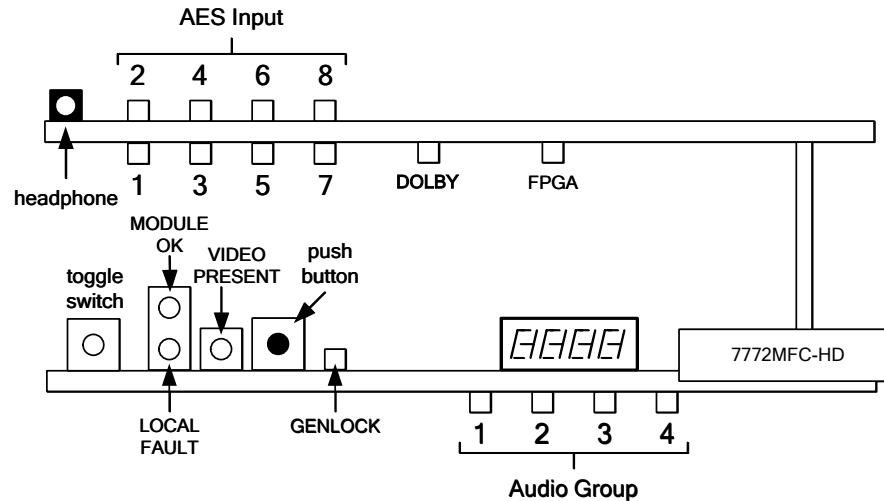


Figure 3: Status LED Locations

Three large LEDs on the front of the main 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 input signal, an invalid Genlock, 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 input signal and valid genlock is present, and the board power is good.
- VIDEO PRESENT** This green LED will be ON when there is a valid video signal present at the module input.

The other LEDs are:

- GENLOCK** This green LED will be ON when there is a signal present at the module genlock input.
- DOLBY STATUS** This LED will be GREEN and ON when the Dolby Decoder is processing or active. The LED will be RED and ON if there is an error with the Dolby Decoder. The LED is off when the Dolby Decoder is not active
- FGPA CONFIG** This LED will be RED and ON when the FPGA is loading on power up. The LED is OFF during normal module operation.

4.1. EMBEDDED AUDIO STATUS LEDs

Four LEDs located on the lower end of the main board of the module (near the card extractor) indicate which embedded audio groups are present in the input video. Audio Group LED 1 is located closest to the center of the module.

Audio Group LED	Colour	Audio Group Status
1	Off	No group 1 present on input video
	Green	Group 1 present on input video
2	Off	No group 2 present on input video
	Green	Group 2 present on input video
3	Off	No group 3 present on input video
	Green	Group 3 present on input video
4	Off	No group 4 present on input video
	Green	Group 4 present on input video

Table 4: Audio Group Status LEDs

Eight LEDs located on the sub card of the module indicate which AES input channels are present. AES input channel 1 is located top leftmost LED, and AES input channel 2 to the right.

AES Input Channel LED	Colour	AES Input Channel Status
1	Off	AES input channel 1 is not present
	Green	AES input channel 1 is present
	Yellow	AES input channel 1 is present with encoded Dolby
2	Off	AES input channel 2 is not present
	Green	AES input channel 2 is present
	Yellow	AES input channel 2 is present with encoded Dolby
3	Off	AES input channel 3 is not present
	Green	AES input channel 3 is present
	Yellow	AES input channel 3 is present with encoded Dolby
4	Off	AES input channel 4 is not present
	Green	AES input channel 4 is present
	Yellow	AES input channel 4 is present with encoded Dolby
5	Off	AES input channel 5 is not present
	Green	AES input channel 5 is present
	Yellow	AES input channel 5 is present with encoded Dolby
6	Off	AES input channel 6 is not present
	Green	AES input channel 6 is present
	Yellow	AES input channel 6 is present with encoded Dolby
7	Off	AES input channel 7 is not present
	Green	AES input channel 7 is present
	Yellow	AES input channel 7 is present with encoded Dolby
8	Off	AES input channel 8 is not present
	Green	AES input channel 8 is present
	Yellow	AES input channel 8 is present with encoded Dolby

Table 5: AES Input Channel Presence LEDs

5. CARD EDGE CONTROLS

The 7772MFC-HD module can be configured by the card edge controls. Key control components can be found at the card edge:

- Toggle Switch
- Four-Character Dot Matrix Display
- Push Button
- Four Audio LEDs

Toggle Switch: This component will become active when the card has completed booting. Its primary function is to navigate through the menu system.

4 Character Dot Matrix Display: This component will become active when power is applied to the card. This component is used to relay text-based information to the user. It will be used to scroll build and card information, or display the menu options to the user.

Push Button: This component will become active when the card has completed booting. It is primarily used for navigating through the menu system.

4 Audio Group LEDs: These LEDs are primarily used to indicate what groups are embedded in the input video signal during normal operation. However, when navigating the card edge menu, these LEDs are used to indicate menu depth status. For example, when at the top-level menu, all the LEDs are OFF. When the user navigates into another menu (e.g. Video Control), Audio group 1 LED turns ON. Audio group LED 1 is located closest to the centre of the module. If the user enters a sub-menu (e.g. Video Control -> Video Standard Select), then both Audio Group LEDs 1 and 2 turn ON, indicating another depth within the menu system.



NOTE: during card edge menu system navigation, if all the Audio LEDs are OFF, the user is at the Top Level menu.

The 7772MFC-HD modules are also equipped with an eight-position DIP switch. **Currently, the DIP switches are not functional and are reserved for future use.**

6. CARD EDGE MENU SYSTEM

6.1. TOP LEVEL MENU STRUCTURE

Table 6 provides a brief description of the top level of the menu tree that appears when you enter the card edge menu system. Selecting one of these items will take you down into the next menu level to set the value of that parameter. The details of each of the menu items are described in sections 6.2 to 6.5.

<i>ACTR</i>	Audio Control	Sets audio controls for the module such as: Sample Rate Converter mode; C-bit control; the demux behavior with a loss of video and input video source selection
<i>HEAD</i>	Headphone Monitor	Sets the headphone volume level and selects the source for headphone monitoring
<i>STAT</i>	Status	Reports the status of the firmware, FPGA revisions, input/output video standard
<i>MISC</i>	Miscellaneous	Enables VistaLINK®, sets display orientation, and performs factory reset

Table 6: Top Level Menu Structure

6.2. CONFIGURING THE AUDIO CONTROLS

The *Audio Control* menus are used to configure the audio delay; the mode of the sample rate converter, C-bit control, which embedded group to enable, and input audio source selection. The chart below shows the items available in the *Audio Control* menus. Following sections give detailed information about each of the menu items.

<i>SRC</i>	SRC Mode	Sets the audio sample rate converter mode.
<i>CBIT</i>	C-Bit Control	Sets the AES channel status bit handling.
<i>SRCS</i>	Input source selection	Choose input source between AES and embedded audio

Table 7: Audio Controls Menu

6.2.1. Setting the SRC Mode

<i>Audio Control</i>	
<i>SRC</i>	
<i>Bypass</i>	<i>BYPS</i>
<i>Enable</i>	<i>ON</i>
<i>Automatic</i>	<i>AUTO</i>

This sets the bypass mode of the audio sample rate converter.

When *Enabled*, audio is sample rate converted at 48 kHz that is synchronous to the input video. Audio can be either synchronous or asynchronous to the video source.

When in *Bypass* mode, the content of the audio is preserved without any loss, and directly embedded into the input video. Audio must be synchronous to the video source. If not, there may be samples that are dropped or repeated.

When set to *Automatic*, the sample rate converter will be automatically enabled when the module detects a PCM signal.

6.2.2. Setting the C-bit Control

<i>Audio Control</i>	
<i>CBIT</i>	
<i>Preserve</i>	<i>PRO</i>
<i>Replace</i>	<i>STMP</i>

This control determines how the AES channel status bits are handled when being routed from input to output. When set to *preserve*, the module will preserve as many bits as possible, but always change to professional 48 kHz. When set to *replace*, all the C-bit will be replaced with static channel status message that reads professional 48 kHz.

6.2.3. Setting Audio Input Sources

<i>Audio Control</i>	
<i>SRCS</i>	
<i>SRC12</i>	
<i>SRC34</i>	
<i>SRC56</i>	
<i>SRC78</i>	
<i>SRC9A</i>	
<i>SRCBC</i>	
<i>SRCDE</i>	
<i>SRCFG</i>	

The parameter selects input audio source between demuxed (embedded) audio from the input video signal or the external AES inputs

6.2.4. Setting the Audio Input Sources for AES Channels 1-16

<i>Audio Control</i>	
<i>SRCS</i>	
<i>SRC12</i>	
<i>Normal</i>	<i>DMX1</i>
<i>AES Input 1</i>	<i>AES1</i>

This parameter will select the source for audio channels 1 and 2.

The source can be the demuxed audio from the input signal or the external AES 1 Input.

Audio Control	
SRCS	
SRC34	
<u>Normal</u>	<u>DMX2</u>
AES Input 2	AES2

This parameter will select the source for audio channels 3 and 4.

The source can be the demuxed audio from the input signal or the external AES 2 Input.

Audio Control	
SRCS	
SRC56	
<u>Normal</u>	<u>DMX3</u>
AES Input 3	AES3

This parameter will select the source for audio channels 5 and 6.

The source can be the demuxed audio from the input signal or the external AES 3 Input.

Audio Control	
SRCS	
SRC78	
<u>Normal</u>	<u>DMX4</u>
AES Input 4	AES4

This parameter will select the source for audio channels 7 and 8.

The source can be the demuxed audio from the input signal or the external AES 4 Input.

Audio Control	
SRCS	
SRC9A	
<u>Normal</u>	<u>DMX5</u>
AES Input 5	AES5

This parameter will select the source for audio channels 9 and 10.

The source can be the demuxed audio from the input signal or the external AES 5 Input.

Audio Control	
SRCS	
SRCBC	
<u>Normal</u>	<u>DMX6</u>
AES Input 6	AES6

This parameter will select the source for audio channels 11 and 12.

The source can be the demuxed audio from the input signal or the external AES 6 Input.

Audio Control	
SRCS	
SRCDE	
<u>Normal</u>	<u>DMX7</u>
AES Input 7	AES7

This parameter will select the source for audio channels 13 and 14.

The source can be the demuxed audio from the input signal or the external AES 7 Input.

Audio Control	
SRCS	
SRCFG	
<u>Normal</u>	<u>DMX8</u>
AES Output 8	AES8

This parameter will select the source for audio channels 15 and 16.

The source can be the demuxed audio from the input signal or the external AES 8 Input.

6.3. CONFIGURING THE HEADPHONE MONITOR

The *Headphone Monitor* menus are used to configure parameters associated with the headphone jack on the module. The chart below shows the items available in the *Headphone Monitor* menu. The following sections give detailed information about each of the menu items.

<i>HVOL</i>	Headphone volume	Sets the volume for the headphone
<i>HSRC</i>	Headphone source	Selects the source for the headphone monitoring

6.3.1. Setting the Headphone Volume

<i>Headphone Monitor</i>	With this control you can set the headphone volume to one of 16 levels. Total adjustment range is over 50 dB. Level 00 is the lowest volume and is effectively mute.
<i>HVOL</i>	
<i>HV00 to HV15</i>	
<i>HV07</i>	

6.3.2. Selecting the Source for the Headphone Monitoring

<i>Headphone Monitor</i>	This selects the audio source for the headphone monitoring. If the parameter is set to <i>AES1</i> to <i>AES8</i> , then the headphone will be monitoring the external discrete AES inputs. If the parameter is set to <i>DMX1</i> to <i>DMX8</i> , then the headphone will be monitoring the incoming embedded audio.	
<i>HSRC</i>		
<i>AES1</i>	<i>AES1</i>	
<i>AES2</i>	<i>AES2</i>	
<i>AES3</i>	<i>AES3</i>	
<i>AES4</i>	<i>AES4</i>	
<i>AES5</i>	<i>AES5</i>	
<i>AES6</i>	<i>AES6</i>	
<i>AES7</i>	<i>AES7</i>	
<i>AES8</i>	<i>AES8</i>	
<i>DMX Ch. 1 & 2</i>	<i>DMX1</i>	
<i>DMX Ch. 3 & 4</i>	<i>DMX2</i>	
<i>DMX Ch. 5 & 6</i>	<i>DMX3</i>	
<i>DMX Ch. 7 & 8</i>	<i>DMX4</i>	
<i>DMX Ch. 9 & 10</i>	<i>DMX5</i>	
<i>DMX Ch. 11 & 12</i>	<i>DMX6</i>	
<i>DMX Ch. 13 & 14</i>	<i>DMX7</i>	
<i>DMX Ch. 15 & 16</i>	<i>DMX8</i>	

6.4. DISPLAYING THE MODULE STATUS

The *Status* menus are used to show the status of various parameters of the 7772-MFC-HD. The chart below shows the items available in the *Status* menu. Sections 6.4.1 to 6.4.5 give detailed information about each of the menu items.

<i>UPRV</i>	Module Firmware	Displays the firmware revision of the module
<i>F1RV</i>	FPGA1 Revision	Displays the FPGA revision of the module's main board
<i>F2RV</i>	FPGA2 Revision	Displays the FPGA revision of the module's J2K sub board
<i>F3RV</i>	FPGA3 Revision	Displays the FPGA revision of the module's Audio sub board
<i>IVSD</i>	Input Video Standard	Displays the detected input video standard

6.4.1. Checking the Module Firmware

<i>Status</i>
<i>UPRV</i>
Ex. "V1.0 BUILD 100"

The status parameter will report the firmware version that is operating on the module.

6.4.2. Checking FPGA 1 revision

<i>Status</i>
<i>F1RV</i>
Ex. "7"

The status parameter will report the revision of FPGA 1 (main board) on the module.

6.4.3. Checking FPGA 2 revision

<i>Status</i>
<i>F2RV</i>
Ex. "8"

The status parameter will report the revision of FPGA 2 (J2K sub board) on the module.

6.4.4. Checking FPGA 3 revision

<i>Status</i>
<i>F3RV</i>
Ex. "9"

The status parameter will report the revision of FPGA 3 on the module.

6.4.5. Checking the Input Video Standard

<i>Status</i>
<i>IVSD</i>
<i>Ex. "1159"</i>

The status parameter will report the input video standard. See section 3.1 for supported standards.

Unknown
None ----- "NONE"
625i50(PAL-B) ----- "PALB"
525i59(NTSC) ----- "NTSC"
DVB ASI ----- "DVBA"
1080i50 ----- "1150"
1080i59 ----- "1159"
720p50 ----- "7P50"
720p59 ----- "7P59"

6.5. CONFIGURING MISCELLANEOUS PARAMETERS

The *Miscellaneous* menu is used to configure miscellaneous parameters, to enable VistaLINK® control, display orientation, and to perform a factory reset. The chart below shows the items available in the *Miscellaneous* menu. Sections 6.5.1 to 6.5.3 give detailed information about each of the parameters.

<i>VLNK</i>	VistaLINK® control enable	Enables the ability to control the module through VistaLINK®
<i>DISP</i>	Display Orientation	Sets the orientation of the card edge dot matrix display
<i>FRST</i>	Factory Resets	Resets various components of the module to their factory settings

6.5.1. Enabling VistaLINK® control of the module

<i>Miscellaneous</i>
<i>VLNK</i>
<i>Enable</i> <i>RMTE</i>
<i>Disable</i> <i>LCAL</i>

This configures the VistaLINK® control of the module.

RMTE enables VistaLINK® control of the module. The user is able to use VistaLINK® to monitor and configure the module in addition to the card edge controls.

LCAL disables VistaLINK® control of the module. The user is only able to monitor and configure the module from the card edge controls.

6.5.2. Setting Card Edge Display Orientation

<i>Miscellaneous</i>
<i>DISP</i>
<i>Horizontal</i> <i>HORZ</i>
<i>Vertical</i> <i>VERT</i>

With this control you can select a horizontal or vertical orientation for the displays to accommodate mounting the module in the 3RU or 1RU frames.

6.5.3. Resetting the Module to its Factory Defaults

<i>Miscellaneous</i>	
<i>FRST</i>	
<i>Reset All</i>	<i>ALL</i>
<i>Audio Control Reset</i>	<i>ACR</i>

With this control you can reset the entire module or certain functional blocks to its factory default condition.

ALL will reset the entire module to the factory settings.

ACR will reset the Audio Control only to factory settings. All the other module settings will remain the same.

6.5.3.1. Resetting the Module to Factory Settings

The resetting of module and its components to factory settings behave the same way. For the sake of brevity, only the reset menu for the *Reset All* will be described.

<i>Miscellaneous</i>	
<i>FRST</i>	
<i>ALL</i>	
<i>Yes</i>	<i>YES</i>
<i>No</i>	<i>NO</i>

With this control you can reset the entire module to the factory settings.

YES will reset the module to the factory settings.

NO will not reset the module to factory settings.

7. JUMPERS

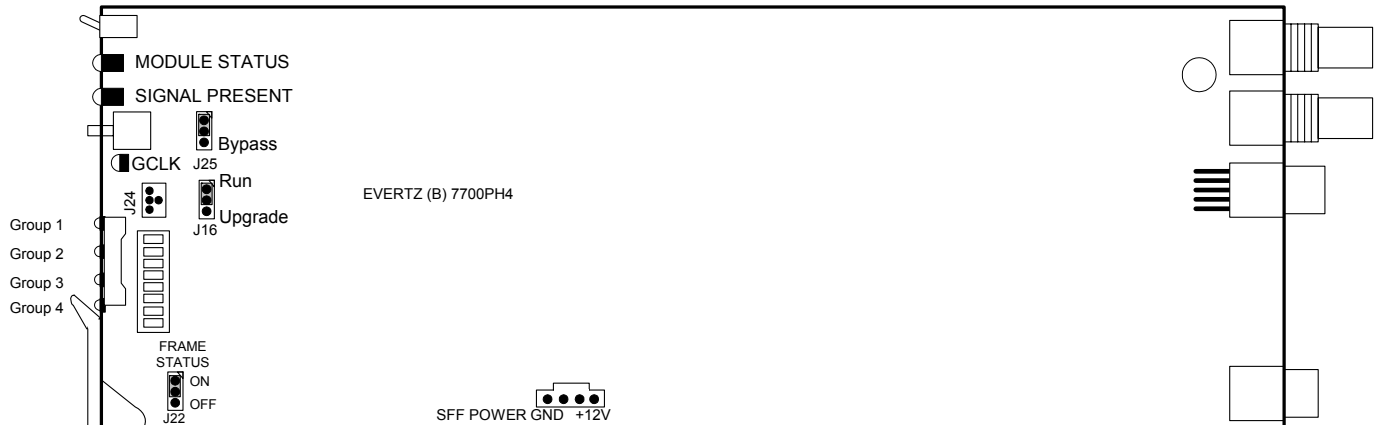


Figure 4: Location of Jumpers – Rev B Main Board

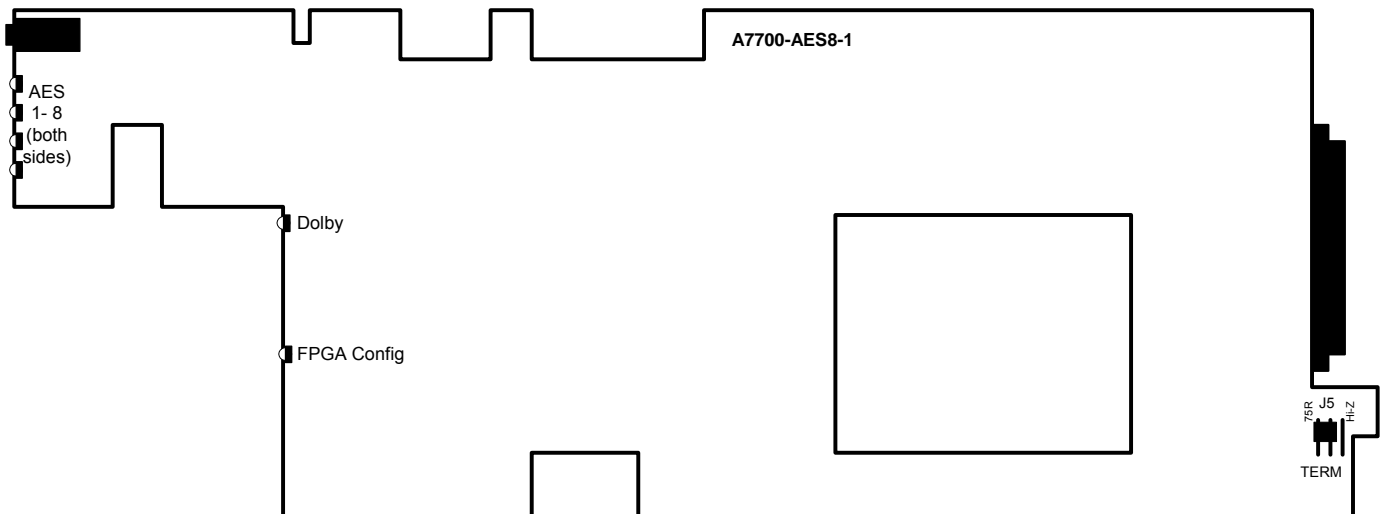


Figure 5: Location of Jumpers/LEDs – Rev. 1 Sub Board

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

FRAME STATUS The FRAME STATUS jumper J22 located at the front of the main module determines whether local faults (as shown by the Local Fault indicator) will be connected to the 7700FR frame's global status bus.

To monitor faults on this module with the frame status indicators (on the PS FRAME STATUS LEDs 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. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

UPGRADE

The UPGRADE switch is located at J16 jumper location on the front side of the main module and is used when firmware upgrades are being done to the module. For normal operation it should be switched to the *RUN* position as shown in the diagrams above. See the *Upgrading Firmware* chapter in the front of the binder for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move Jumper J16 into the *UPGRADE* position. (Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto header J24 at the card edge. Re-install the module into the frame. Run the upgrade as described in *Upgrading Firmware* chapter. Once the upgrade is completed, remove the module from the frame, move J16 into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.



The Upgrade baud rate for the 7772MFC-HD module is 57600 baud.

7.3. SELECTING WHETHER THE GENLOCK REFERENCE INPUT IS TERMINATED

TERM

The TERM jumper J5 (located at the rear of the sub board) is used to terminate the genlock loop input. Then it is in the 75R position a 75 ohm terminating resistor will connect the input to ground. When it is in the HI-Z position the genlock input will be high impedance.

7.4. SELECTING WHETHER THE INPUT VIDEO IS BYPASS

BYPASS

The BYPASS jumper J25 located at the front of the module enables the bypass relay to always remain in the closed position.

8. VISTALINK[®] REMOTE MONITORING/CONTROL

8.1. WHAT IS VISTALINK[®]?

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

There are 3 components of SNMP:

1. An SNMP manager also known as a Network Management System (NMS) is a computer running special software that communicates with the devices in the network. Evertz VL-Fiber demo Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz VistaLINK[®] enabled fiber optic products.
2. Managed devices (such as 7772MFC-HD and 7772MFD-HD 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 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[®] 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
Visterlink Local Remote Mode	Indicates the whether the 7772MFC-HD is under local control or <i>VistaLINK®</i> control
Input Video Standard	Indicates video standard of input signal
Card Type	This identifies the cardType parameter and it currently returns either '7772MFC-HD' or '7772MFX-HD-ENCODER' (if 7772MFX is supported)
FPGA 1 Revision	This is the revision code of the main board FPGA
FPGA 2 Revision	This is the revision code of the J2K sub-board FPGA
FPGA 3 Revision	This is the revision code of the audio sub-board FPGA
Firmware Revision	This displays the firmware version string.

Table 8: *VistaLINK®* Monitored Parameters

8.3. VISTALINK® CONTROLLED PARAMETERS

Parameter	Description
SRC Mode	The mode of sample rate converter
Cbit Control	This determines whether the c-bit is preserved or replaced
Audio Input Source	This selects audio input source between AES and embedded
Headphone Volume	Headphone volume adjustment
Headphone Source	Source selection for headphone monitoring
Factory Reset All	Reset all configuration to factory default
Factory Reset ACR	Reset only audio control configuration to factory default

Table 9: *VistaLINK®* Controlled Parameters

8.4. VISTALINK® TRAPS

The 7772MFC-HD will raise a *VistaLINK®* trap for conditions listed below:

- ✓ Input Video Not Present
- Genlock Not Present