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REVISION HISTORY

| <u>REVISION</u> | <u>DESCRIPTION</u> | <u>DATE</u> |
|------------------------|---|--------------------|
| 0.1 | Preliminary Version | Jan 06 |
| 0.2 | Updated VistaLINK [®] text and description for blanking the Input Video HANC Fixed typos and formatting | Jun 07 |
| 0.3 | Updated block diagram and menu descriptions for sections 6.5.2.1 and 6.5.2.3 | Nov 08 |

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Preliminary

1. OVERVIEW

The 7721AE-A4-HD Analog Audio Embedder inserts 4 analog audio signals (as one audio group) into a 1.5 Gb/s serial HD input video signal or a 270 Mb/s serial SD input video signal as specified by SMPTE 299M/272M. The companion 7721AD-A4-HD Audio De-embedder facilitates audio de-multiplexing of the HD-SDI or SDI signal at the destination.

The 7721AE-A4 Analog Audio Embedder is a similar product that inserts 4 analog audio signals (as one audio group) into a 270 Mb/s serial SD input video signal only as specified by 272M. The companion 7721AD-A4 Audio De-embedder facilitates audio de-multiplexing of the SDI signal at the destination.

Throughout this manual the 7721AE-A4 and 7721AE-A4-HD will be referred to as the 7721AE-A4 series modules unless there are specific differences in behaviour.

The 7721AE-A4 series embedders occupy one card slot in the 3RU frame (7700FR-C), which will hold up to 15 1-slot modules or one slot in the 1RU frame (7701FR), which will hold up to three modules. The 7721AE-A4 (-HD) also comes in a standalone unit (S7701FR).

VistaLINK[®] enables control and configuration capabilities via Simple Network Management Protocol (SNMP). This offers the flexibility to manage the module status monitoring and configuration from SNMP enabled control systems such as Evertz VistaLINK[®].

Features:

- Automatic detection of video input format
- Supports 1.5 Gb/s HDSDI per SMPTE 292M, (HD versions only) 270Mb/s SDI per SMPTE 259M-C, and SDTi per SMPTE 305M
- Programmable audio delays (up to 5 frames or 84 milliseconds)
- Selectable ancillary packet cleaning mode removes all audio before embedding
- Individual audio channel assignment for embedded audio group
- Audio mixer per audio channel to provide voice-over
- Upstream embedded Dolby-E[™] compatible (passed through)
- Monitoring headphone jack for audio input and embedder group channels
- Comprehensive signal and card status monitoring via four-character card-edge display and LEDs
- VistaLINK[®] control capabilities for module configuration. VistaLINK[®] capabilities are available when modules are used with the 3RU 7700FR-C frame and a 7700FC VistaLINK[®] Frame Controller module in slot 1 of the frame.

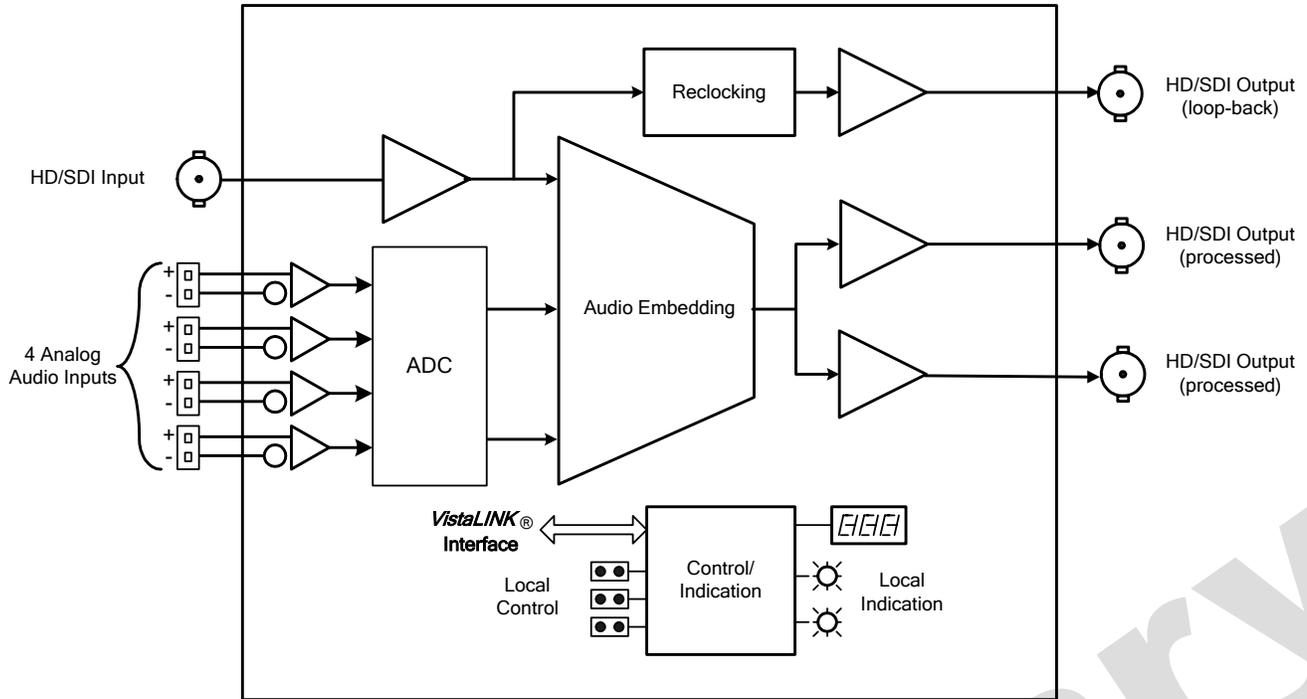


Figure 1-1: 7721AE-A4 (-HD) Block Diagram

2. INSTALLATION

The 7721AE-A4 series embedders come with a companion rear plate that occupies one slot in the frame. For information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.

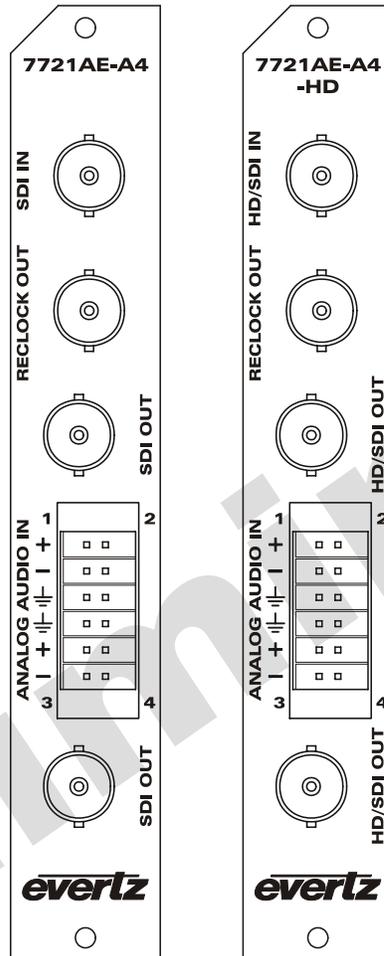


Figure 2-1: Rear Panel

2.1. VIDEO CONNECTIONS

2.1.1. Model 7721AE-A4

SDI IN: This BNC connector is used to input 10-bit serial digital video signals compatible with the SMPTE 259M standard.

SDI OUT: This BNC connector is used to output the video as serial component video, compatible with the SMPTE 259M standard (same as input) with embedded audio.

RELOCK OUT: This BNC connector is a reclocked output. The output signal is the same as the input without any changes to embedded audio.

2.1.2. Model 7721AE-A4-HD

HD/SDI IN: The BNC connector is used to input 10-bit serial digital video signals compatible with the SMPTE 292M or SMPTE 259M standard.

HD/SDI OUT: This BNC connector is used to output the video as serial component video, compatible with the SMPTE 292M or SMPTE 259M standard (same as input) with embedded audio.

RECLOCK OUT: This BNC connector is a reclocked output. The output signal is the same as the input without any changes to embedded audio.

2.2. ANALOG AUDIO INPUTS

The 7721AE-A4 series modules have a 12 pin terminal block containing balanced analog audio that will be embedded into the HD/SDI video. The input 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.

ANALOG INPUT 1 to 4: Analog audio input from channels 1 to 4 for the audio group to be embedded in the HD/SD video signal.

3. SPECIFICATIONS

3.1. SERIAL DIGITAL VIDEO INPUTS

| | |
|----------------------------|--|
| Standards: | Auto-detect SMPTE 292M (1.5Gb/s), (1080i/60, 1080i/59.94, 1080i/50, 1035i/60, 1035i/59.94, 720p/60, and 720p/59.94) – 7721AE-A4-HD only SMPTE 259M-C (270 Mb/s) 525 or 625 line component SMPTE 305M (SDTi) NTSC or PAL |
| Number of Inputs: | 1 |
| Connector: | BNC per IEC 61169-8 Annex A |
| Input Equalization: | Automatic to 110m @ 1.5Gb/s with Belden 1694 or equivalent cable. Automatic to 300m @ 270Mb/s with Belden 1694 or equivalent cable. |
| Return Loss: | |
| SD Standards: | >15 dB up to 270MHz |
| HD Standards: | >15 dB up to 1.5GHz |

3.2. SERIAL DIGITAL VIDEO OUTPUTS

| | |
|-------------------------------|---|
| Standard: | Same as input |
| Number of Outputs: | 1 Reclocked loopback 2 (with embedded audio group added) |
| Connector: | BNC per IEC 61169-8 Annex A |
| Signal Level: | 800mV nominal |
| DC Offset: | 0V ±0.5V |
| Rise and Fall Time: | Per standard |
| Overshoot: | <10% of amplitude |
| High Frequency Jitter: | <0.20UI |
| Return Loss: | |
| SD Standards: | >15 dB up to 270MHz |
| HD Standards: | >12 dB up to 1.5GHz |

3.3. ANALOG AUDIO INPUTS

| | |
|--------------------------------|---------------------------------|
| Number of Outputs: | 4 |
| Type: | Balanced Analog Audio |
| Connectors: | 12 pin removable terminal block |
| Input Impedance: | High impedance (>20KΩ) |
| Freq. Response: | +/-0.1 dB, 20Hz to 20 kHz |
| THD 20Hz – 20kHz: | < 0.005% |
| Channel Phase Diff.: | +/- 1 deg |
| SNR (weighted): | >85dB |
| Max. Audio Input Level: | +24 dBu |
| Signal Quantization: | Up to 24 bit |

3.4. ELECTRICAL

| | |
|----------|--|
| Voltage: | +12VDC |
| Power: | 10 Watts |
| EMI/RFI: | Complies with FCC Part 15, class A Complies with EU EMC directive |

3.5. PHYSICAL

| | |
|----------------------|---|
| Number of slots: | |
| 7700 frame mounting: | 1 |
| 7701 frame mounting: | 1 |

Preliminary

4. STATUS INDICATORS

The 7721AE-A4 series modules have 7 LED Status indicators on the front card edge to show operational status of the card at a glance. Figure 4-1 shows the location of the LEDs and card edge controls.

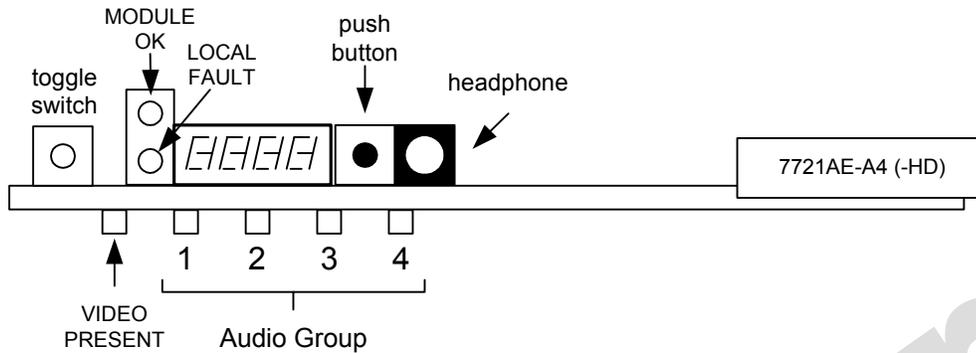


Figure 4-1: Status LED Locations

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 or if a local input power fault exists (For example, 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 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.

4.1. AUDIO STATUS LEDs

The 4 LEDs located on the sub card of the module indicate which embedded audio groups are present. Embedded audio group 1 is located at the top leftmost LED.

| Audio Input LED | Colour | Analog Audio Inputs |
|-----------------|--------|---------------------------------------|
| 1 | Off | Embedded audio group 1 is not present |
| | Green | Embedded audio group 1 is present. |
| 2 | Off | Embedded audio group 2 is not present |
| | Green | Embedded audio group 2 is present. |
| 3 | Off | Embedded audio group 3 is not present |
| | Green | Embedded audio group 3 is present. |
| 4 | Off | Embedded audio group 4 is not present |
| | Green | Embedded audio group 4 is present. |

Table 4-1: Embedded Audio Group Presence LEDs

5. CARD EDGE CONTROLS

The 7721AE-A4 (-HD) can be configured by the card edge controls. There are some key control components that can be found at the card edge:

1. Toggle Switch
2. 4 Character Dot Matrix Display
3. Push Button

Toggle Switch: This component will become active once 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 once 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 once the card has completed booting. It is primarily used for navigating through the menu system.

6. CARD EDGE MENU SYSTEM

6.1. NAVIGATING THE MENU SYSTEM

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

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

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

6.2. CARD EDGE STATUS MESSAGES

There are two messages that may appear on the card edge display during normal operation of the module. The messages are:

| | | |
|-----------------|--------------------|---|
| <i>OK</i> | Operating Status | Message to indicate that the card is operating normally and has no active warning conditions. |
| <i>VID..LOS</i> | Video Loss Message | Message indicating loss of input video. |

6.3. TOP LEVEL MENU STRUCTURE

The following is a brief description of the top level of the menu tree (see Table 6-1: Top Level Menu Structure) 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 the each of the menu items are described in sections 6.4 to 6.5.

| | | |
|-------------|---------|---|
| <i>STAT</i> | Status | The Status menu displays the signal input status items. |
| <i>CTRL</i> | Control | The Control menu sets parameters relating to the audio channel routing. |

Table 6-1: Top Level Menu Structure

6.4. MONITORING THE MODULE STATUS

The *STAT* menu is used to show the status of the input video and card firmware. The chart below shows the items available in the *STAT* menu. Sections 6.4.1 to 6.4.2 provide detailed information about each of the menu items.

| | |
|-----|---|
| VIN | Displays the status of the input video and audio groups. |
| VER | Displays the version of firmware that is running on the module. |

Table 6-2: Status Menu

6.4.1. Displaying the Status of the Input Video Signal

The VIN menu is used to show the status of the input video and embedded audio groups in the input video signal. The chart below shows the items available in the *STAT* menu. Sections 6.4.1.1 to 6.4.1.2 provide detailed information about each of the menu items.

| | |
|------|--|
| STD | Displays the standard of the input video signal. |
| GRP1 | Displays the status of Embedded Audio Group 1 of the Input Video Signal. |
| GRP2 | Displays the status of Embedded Audio Group 2 of the Input Video Signal. |
| GRP3 | Displays the status of Embedded Audio Group 3 of the Input Video Signal. |
| GRP4 | Displays the status of Embedded Audio Group 4 of the Input Video Signal. |

6.4.1.1. Displaying the Standard of the Input Video Signal

| | |
|-------------|---|
| STAT | This display shows the type of the video input. |
| VIN | |
| STD | |
| NONE | Loss of Video |
| 1080i/60 | 1080i/60 |
| 1080i/59.94 | 1080i/59.94 |
| 1080i/50 | 1080i/50 |
| 1035i/60 | 1035i/60 |
| 1035i/59.94 | 1035i/59.94 |
| 1080i/48 | 1080i/48 |
| 1080i/47.96 | 1080i/47.96 |
| 720p/60 | 720p/60 |
| 720p/59.94 | 720p/59.94 |
| N270 | NTSC-M |
| P270 | PAL-B |
| SDTI-N270 | SDTI- NTSC |
| SDTI-P270 | SDTI-PAL |

6.4.1.2. Displaying the Status of the Embedded Audio Group

There may be four embedded audio groups in the input video signal. For simplicity only the menu items for the Embedded Audio Group 1 will be shown.

| |
|------|
| STAT |
| VIN |
| GRP1 |
| FREE |
| USED |
| CLN |
| LOS |

This display shows the status of the Embedded Audio Group 1 in the input video signal.

FREE indicates that the audio group is unused.

USED indicates that the audio group is used.

CLN indicates that the audio group has been cleaned (or blanked). This would appear if an existing embedded audio group would be overwritten or if cleaning is enabled.

LOS indicates a Loss of Input Video error.

6.4.2. Displaying the Firmware Version

| |
|---------------------|
| STAT |
| VER |
| eg.: "1.00 Build 2" |

This item displays the version and build number of the software on the module.

6.5. CONFIGURING THE MODULE

The *CTRL* menu is used to configure the 7721AE-A4 (-HD). The chart below shows the items available in the *CTRL* menu. Sections 6.5.1 to 6.5.6 provide detailed information about each menu items.

| |
|------|
| VIN |
| AIN |
| EMBD |
| JACK |
| DISP |
| FRST |

Sets the parameters for the input video signal.

Sets the parameters for the analog audio inputs.

Sets the behaviour of the Audio Embedder.

Sets the headphone jack controls for monitoring the audio.

Sets the orientation of the card edge display.

Performs a factory reset of the module.

Table 6-3: Control Menu

6.5.1. Setting the Handling of the Input Video

The *VIN* menu is used to configure the management of the input video signal and the incoming embedded audio groups. The chart below shows items available in the *VIN* menu. Sections 6.5.1.1 and 6.5.1.2 provide detailed information about each menu item.

| |
|-------------|
| <i>CLN</i> |
| <i>EDET</i> |

Enables the blanking of the input video's horizontal ancillary data (HANC).

Enables the input video error detection reporting.

6.5.1.1. Blanking the Input Video HANC

| |
|-------------|
| <i>CTRL</i> |
| <i>VIN</i> |
| <i>CLN</i> |
| <i>ON</i> |
| <i>OFF</i> |

This parameter will clean (ie. blank) or pass the input video's horizontal ancillary data.

Sets the cleaning mode to *ON* if there is existing embedded audio on the upstream video signal.

Sets the cleaning mode to *OFF* if there is no existing embedded audio on the upstream video signal.



Note: If there is embedded audio on the upstream video signal and the embedders are activated the cleaning mechanism will not engage automatically. This is done to provide minimal processing delay. The processing delay of the cleaning mode is approximately 1/2 a line.

6.5.1.2. Input Video Error Detection Reporting

| |
|-------------|
| <i>CTRL</i> |
| <i>VIN</i> |
| <i>EDET</i> |
| <i>ON</i> |
| <i>OFF</i> |

This parameter will set the module's behaviour to error detected in the input video signal.

When set to *ON*, the module indicates video errors to a card edge LED.

When set to *OFF*, the module will not indicate any video errors.

6.5.2. Setting the Handling of the Analog Audio Inputs

The *AIN* menu is used to configure the handling of the analog audio inputs. The chart below shows the items available in the *AIN* menu. Sections 6.5.2.1 to 6.5.2.3 provide detailed information about each menu item.

| |
|------------|
| <i>FSA</i> |
| <i>DET</i> |
| <i>DLY</i> |

Sets the digital full-scale amplitude for the analog audio inputs.

Sets the parameters for silence detection of the analog audio inputs.

Sets the delay for the analog audio inputs.

6.5.2.1. Setting the Full-Scale Amplitude

This parameter will set the full-scale amplitude of the input analog audio signal to a digital audio equivalent.

| |
|--------------|
| CTRL |
| AIN |
| FSA |
| 16.0 to 24.0 |

This parameter will adjust the full-scale amplitude of the input analog audio signal. The range of the parameter is 16.0 to 24.0 dBu, in 0.1 dBu increments. The accuracy of the selection is +/-2dB.

6.5.2.2. Setting the Silence Detection Parameters

These two parameters will set the silence detection of the input analog audio signals.

| |
|----------|
| CTRL |
| AIN |
| DET |
| LVL |
| -60 to 0 |

This parameter sets the level at which the input analog audio is determined to be silent. The module will report audio signals below this level for a duration of time (see the DUR parameter) as an error. A card edge LED will indicate this condition.

The range for this parameter is -60 to 0 dBu and can be adjusted in increments of 1 dBu.

| |
|---------|
| CTRL |
| AIN |
| DET |
| DUR |
| 1 to 20 |

This parameter sets the duration that the input analog audio is below a defined level (see previous parameter) before it's determined to be silent. The module will report audio signals below this level for a duration of time as an error. A card edge LED will indicate this condition.

The range for this parameter is 1 to 20 seconds and can be adjusted in increments of 1 second.

6.5.2.3. Setting the Audio Delay

These two parameters will set delay for the input analog audio.

| |
|------|
| CTRL |
| AIN |
| DLY |
| UNIT |
| MS |
| FR |

This parameter sets the units to which audio delay will be expressed in.

When set to *MS*, the audio delay is expressed in milliseconds.

When set to *FR*, the audio delay setting uses a Field Rate unit.

Note: Changing this selection will reset delay to MIN.

| |
|------------|
| CTRL |
| AIN |
| DLY |
| SET |
| MIN to 84 |
| Or |
| MIN to 5.0 |

This parameter specifies the amount of audio delay to apply to the input audio.

The range for this parameter is MIN to 84 milliseconds (if the *UNIT* is set to *MS*) and can be adjusted in increments of 1 millisecond.

The range for this parameter is MIN to 5 fields (if the *UNIT* is set to *FR*) and can be adjusted in increments of 0.1 fields.

Note: MIN is dependant on the operating video standard.



When switching between units to express audio delay, users will have to set the amount of delay. The module does not translate milliseconds into frames and visa versa.

6.5.3. Configuring the Audio Embedder

The *EMBD* menu is used to configure the audio embedder on the module. These parameters will specify which group is embedded into the video signal and the sources for the group channels. The chart below shows the items available in the *EMBD* menu. Sections 6.5.3.1 to 6.5.3.6 provide detailed information about each menu item.

| |
|------|
| GRP |
| GCH1 |
| GCH2 |
| GCH3 |
| GCH4 |

Selects which audio group to embed into the video signal.

Sets the audio source for audio group channel 1.

Sets the audio source for audio group channel 2.

Sets the audio source for audio group channel 3.

Sets the audio source for audio group channel 4.

6.5.3.1. Selecting the Audio Group to Embed

| |
|------|
| CTRL |
| EMBD |
| GRP |
| GRP1 |
| GRP2 |
| GRP3 |
| GRP4 |
| NONE |

This parameter selects which audio group to embed into the video signal. If the audio group exists in the input video signal, it will be cleaned, and the new audio will be embedded into the group. The status of the group (*STAT->VIN->GRP_x*) will change from *USED* to *CLN*. If the group does not already exist, then the new audio will be embedded and the status of the group will remain the same (*STAT->VIN->GRP_x* will stay as *FREE*).

GRP1 specifies that Audio Group 1 will be embedded.

GRP2 specifies that Audio Group 2 will be embedded.

GRP3 specifies that Audio Group 3 will be embedded.

GRP4 specifies that Audio Group 4 will be embedded.

NONE specifies that no audio group will be embedded.

6.5.3.2. Selecting the Source for the Group Channel

There are four channels (*GCH1* to *GCH4*) in each audio group. Each group channel has a mixer with two inputs (A and B) that can be used to combine different audio sources over one mono channel. Voice-over mixing would be the typical application for the mixer. For simplicity only the menu items for the Group Channel 1 will be shown.

| |
|------|
| MIXA |
| MIXB |

Sets the audio input source, audio gain, and audio inversion for Mixer A for Group Audio Channel 1.

Sets the audio input source, audio gain, and audio inversion for Mixer B for Group Audio Channel 1.

6.5.3.3. Configuring Mixer Input A

The controls for Mixer Inputs A and B are identical. For simplicity only the menu items for the Mixer Input A will be shown.

| |
|------------------|
| A _{IN} |
| G _{AIN} |
| I _{NV} |

Selects the audio input source for Mixer Input A.

Sets the audio gain of the input source.

Sets inversion to the input source if required.

6.5.3.4. Selecting the Audio Input Source for Mixer Input A

| |
|------|
| CTRL |
| EMBD |
| GCH1 |
| MIXA |
| AIN |
| AIN1 |
| AIN2 |
| AIN3 |
| AIN4 |
| MUTE |

This parameter sets which audio input to use as a source for Mixer Input A.

AIN1 represents Audio Input 1.

AIN2 represents Audio Input 2.

AIN3 represents Audio Input 3.

AIN4 represents Audio Input 4.

MUTE represents Audio Mute.

6.5.3.5. Setting the Gain of the Audio Input Source for Mixer Input A

| |
|-----------|
| CTRL |
| EMBD |
| GCH1 |
| MIXA |
| GAIN |
| -20 to 10 |

This parameter sets the gain of the audio input source for Mixer Input A. The range for this parameter is -20 to 10 dB and can be adjusted in 1dB increments.

6.5.3.6. Inverting the Audio Input Source for Mixer Input A

| |
|------|
| CTRL |
| EMBD |
| GCH1 |
| MIXA |
| INV |
| ON |
| OFF |

This parameter will invert the audio input source for Mixer Input A if required. This may be used to correct wiring issues (e.g. reversed + and - connections) upstream from the module.

When set to *ON*, the audio input source for Mixer Input A is inverted.

When set to *OFF*, the audio input source for Mixer Input A is not inverted.

6.5.4. Configuring the Headphone Jack

There are two parameters used to configure the headphone jack: Audio Channel (*CHAN*) to monitor and the Volume (*VOL*).

| |
|-------------|
| <i>CTRL</i> |
| <i>JACK</i> |
| <i>CHAN</i> |
| <i>AIN1</i> |
| <i>AIN2</i> |
| <i>AIN3</i> |
| <i>AIN4</i> |
| <i>GCH1</i> |
| <i>GCH2</i> |
| <i>GCH3</i> |
| <i>GCH4</i> |

This parameter selects which audio channel the user can monitor by the card edge headphone jack.

AIN1 specifies Audio Input 1.

AIN2 specifies Audio Input 2.

AIN3 specifies Audio Input 3.

AIN4 specifies Audio Input 4.

GCH1 specifies Group Channel 1 of the Audio Group that is being embedded.

GCH2 specifies Group Channel 2 of the Audio Group that is being embedded.

GCH3 specifies Group Channel 3 of the Audio Group that is being embedded.

GCH4 specifies Group Channel 4 of the Audio Group that is being embedded.

| |
|----------------|
| <i>CTRL</i> |
| <i>JACK</i> |
| <i>VOL</i> |
| <i>0 to 64</i> |

This parameter sets the volume of the headphone jack. The range of the parameter is 0 to 64 and can be adjusted in increments of 1.

6.5.5. Setting the Orientation of the Card Edge Display

| |
|-------------|
| <i>CTRL</i> |
| <i>DISP</i> |
| <i>HORZ</i> |
| <i>VERT</i> |

This control enables the user to select a horizontal or vertical orientation for the displays to accommodate mounting the module in the 3RU or 1RU frames.

6.5.6. Performing a Factory Reset

| |
|-------------|
| <i>CTRL</i> |
| <i>FRST</i> |
| <i>NO</i> |
| <i>YES</i> |

This control enables the user to perform a factory reset, which will restore factory default for all the control parameters.

7. JUMPERS

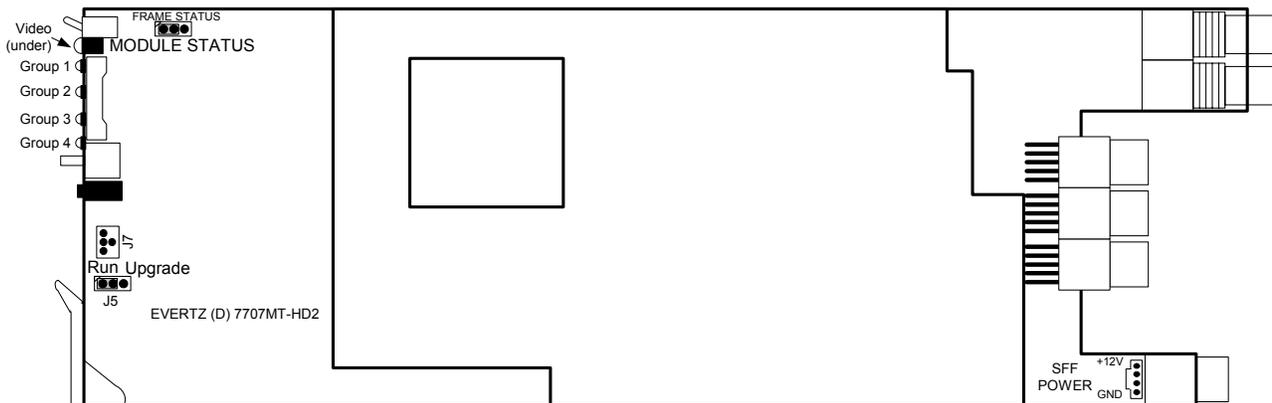


Figure 7-1: Location of Jumpers – Rev D Main Board

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

FRAME STATUS: The FRAME STATUS jumper J6, located at the top near 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 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. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

Firmware updates can be performed using the **UPGRADE** jumper.

UPGRADE: The UPGRADE switch is located at the J5 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 this manual binder for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move Jumper J5 into the *UPGRADE* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto header J7 at the card edge. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* chapter. Once the upgrade is complete, remove the module from the frame, move J5 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 7721AE-A4 (-HD) module is 57,600 baud.

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 VistaLINK[®] Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz VistaLINK[®] enabled products.
2. Managed devices (such as 7721AE4-HD), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz VistaLINK[®] enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC VistaLINK[®] frame controller module, which serves as the Agent.
3. A virtual database, known as the Management Information Base (MIB), lists all the variables being monitored, which both the Manager and Agent understand. Please contact Evertz for further information about obtaining a copy of the MIB for interfacing to a third party Manager/NMS.

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

9. MENU QUICK REFERENCE

Status (STAT)

- VIN
- VER

Control (CTRL)

- VIN
- AIN
- EMBD
- JACK
- DISP
- FRST

Video Input (VIN)

- CLN
- EDET

Audio Input (AIN)

- FSA
- DET
- DLY

Embedding (EMBD)

- GRP
- GCH1
- GCH2
- GCH3
- GCH4

Headphone Jack (JACK)

- CHAN
- VOL

Preliminary