

TABLE OF CONTENTS

1. OVERVIEW	1
2. INSTALLATION	2
2.1. HDSDI VIDEO INPUTS AND OUTPUTS	2
2.2. GENERAL PURPOSE INPUTS & OUTPUTS.....	3
3. SPECIFICATIONS	4
3.1. SERIAL VIDEO INPUT	4
3.2. SERIAL VIDEO OUTPUTS	4
3.3. GPIO CONTROL PORT.....	4
3.4. INPUT TO OUTPUT PROCESSING DELAY (HD INPUT VIDEO)	4
3.5. ELECTRICAL	4
3.6. PHYSICAL.....	4
4. STATUS INDICATORS.....	5
4.1. AUDIO STATUS LEDS	6
5. CARD EDGE CONTROLS.....	7
6. CARD EDGE MENUS.....	8
6.1. TOP LEVEL MENU STRUCTURE	8
6.2. CONFIGURING THE VIDEO CONTROLS.....	9
6.2.1. Setting the Video Standard.....	10
6.2.2. Selects the Action to Take when Input Video Is Missing	10
6.2.3. Controlling whether the Left Eye Video is Flipped	10
6.2.4. Controlling whether the Right Eye Video is Flipped.....	10
6.2.5. Selecting the Horizontal Shift Mode.....	11
6.2.6. Horizontally Shifting the Left Eye Image.....	11
6.2.7. Horizontally Shifting the Right Eye Image	11
6.2.8. Selecting the Vertical Shift Mode.....	12
6.2.9. Vertically Shifting the Left and Right Eye Images.....	12
6.2.10. Inverting the Left and Right Eye Luminance Values.....	12
6.2.11. Selecting the Mix Output Video Mode	13
6.2.12. Selecting Whether Source ID is Inserted on the Left and Right Eye Outputs.....	13

6.3. UTILITIES	14
6.3.1. Recalling Card Configurations from the User Presets	14
6.3.2. Storing Card Configurations to the User Presets.....	15
6.3.3. Selecting the function of the GPI inputs.....	15
6.3.4. Enabling the Status Window	16
6.3.5. Initiating a Software Upgrade	16
6.3.6. Restoring the Module to its Factory Default Configuration	16
6.3.7. Accessing Information About this Module and its Firmware	17
7. LOCATION OF LEDS AND JUMPERS	18
7.1. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS	18
7.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES	18
7.3. CONTROLLING GPI PULLUP VOLTAGE	19
8. MENU QUICK REFERENCE	20

Figures

Figure 1-1: 7732DVP-3D-HD Block Diagram	1
Figure 2-1: 7732DVP-3D-HD Rear IO Module.....	2
Figure 2-2: Typical GPI Input Circuitry	3
Figure 7-1: LED and Jumper Locations.....	18

Tables

Table 2-1: GPI Pinouts	3
Table 4-1: Audio Group Status LEDs	6
Table 5-1: DIP Switch Functions	7

REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
0.1	Preliminary version	May 06
0.2	Added controls to adjust vertically, added additional GPIs and allow GPIs to be independently programmed	Dec 06
0.3	Added control for Source ID to identify left and right eye	Jan 06
0.4	Updated Block diagram and features	Mar 06
0.5	Added <i>Left Cb</i> and <i>Left Cr</i> menu options to section 6.2.11. Minor Corrections.	Jul 07
0.6	Removed references to bypass relay and updated specs	Nov 08
0.7	Updated GPI label in Figure 7-1 & GPI text in section 7.3	Sept 09

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Preliminary

1. OVERVIEW

The Evertz 7732DVP-3D-HD Video Processor module is a multi-purpose module designed specifically to aid in the production and post production of 3D high definition video productions.

This 7700 series module provides for Left eye and Right eye inputs and processed outputs. In addition, it also provides a mix output that is a combination of the left eye and right eye.

The 7732DVP-3D-HD occupies one card slot in the 3RU frame, which will hold up to 15 modules or the 1RU frame, which will hold up to three modules.

Features:

- Two serial digital 1.5 Gb/s HD inputs per SMPTE 292M
- Three serial digital 1.5 Gb/s HD outputs per SMPTE 292M
- Supports most international standards including 1080i/60, 1080i/59.94, 1080i/50, 1080p/24sF, 1080p/23.98sF, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080p/23.98, 720p/60, 720p/59.94, 720p/50
- Horizontal flip can be applied to left or right eye input
- Programmable left or right horizontal can be applied to either left or right eye inputs
- Programmable up or down vertical shift can be applied to either left or right eye inputs
- Mix output provides a processed combination of the left and right eyes in the following modes – 50/50 linear mix, left – right difference, horizontal 50/50 split
- Left and right eye source ID embedded in ATC user bits on left and right eye outputs – requires 7760AVM2-HD+SID decoder card to view the source ID codes.
- 8 Programmable GPI control inputs - select mix modes, adjust horizontal and vertical shift
- Card edge menu using OSD on Mix output to configure the operating modes
- Card Edge LEDs for signal presence, module status

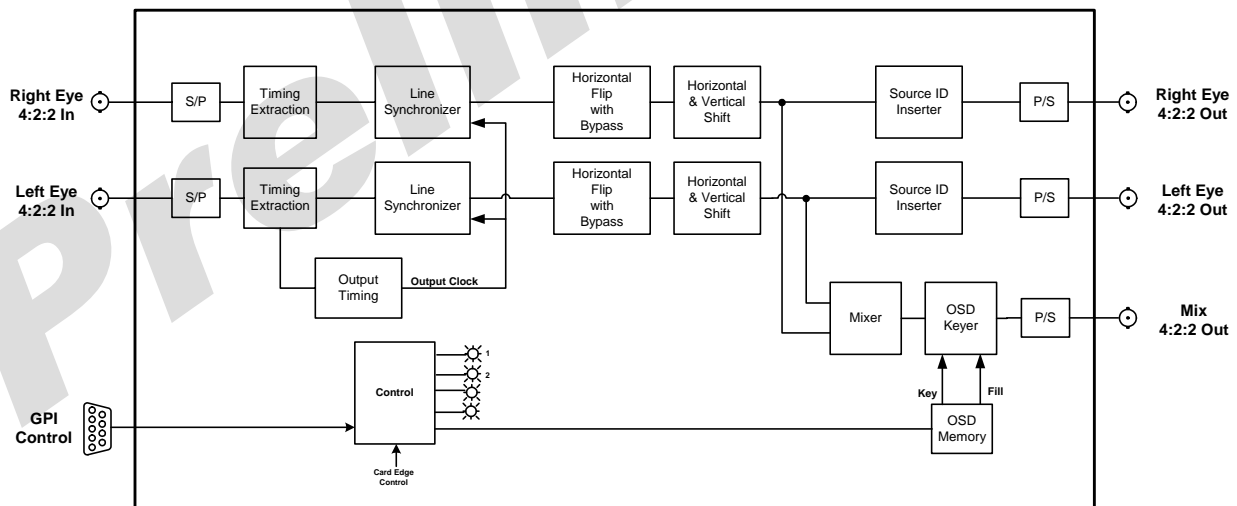


Figure 1-1: 7732DVP-3D-HD Block Diagram

2. INSTALLATION

The 7732DVP-3D-HD comes with a companion rear plate that occupies one slot in the frame. For information on inserting the module into the frame see section 3 of the 7700FR chapter.

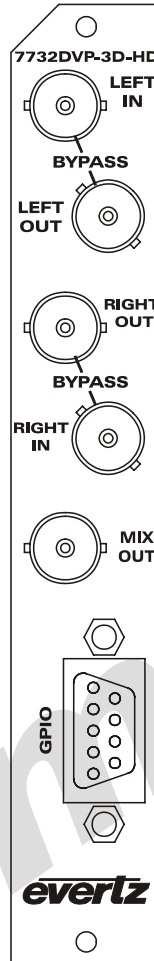


Figure 2-1: 7732DVP-3D-HD Rear IO Module

2.1. HDSDI VIDEO INPUTS AND OUTPUTS

LEFT IN, RIGHT IN: Input BNC connectors for 10-bit serial digital signals compatible with the SMPTE 292M standard.

LEFT OUT, RIGHT OUT: Output BNC connectors with processed outputs for left eye and right eye video in the same standard as the video input.

MIX OUT: This BNC connector is used as a combined output of the left and right inputs in the same standard as the video input. This output also contains the On Screen display used by the card edge menu.

2.2. GENERAL PURPOSE INPUTS & OUTPUTS

Table 2-1 shows the pinout of the 9 pin Female D GPI connector. The 9 pin D connector has 8 general purpose inputs. The GPI inputs are active low. This means that if you leave an input floating (not connected) then it will not be activated. Lowering the GPI input to a voltage below 0.8 volts will activate the input. The user can activate GPIs simply by connecting the GPI input pins to Ground using a button, switch, relay or an open collector transistor. The inputs are internally pulled up to either +5 or +12 volts DC set by jumper J16. The *GPI* menu items on the *UTILITY* menu are used to configure the operation of the GPI inputs. (See section 6.3.3)

DB-9	Name	Description
1	GPI6	General Purpose Input 6
2	GPI2	General Purpose Input 2
3	GND	Ground
4	GPI1	General Purpose Input 1
5	GPI8	General Purpose Input 8
6	GPI3	General Purpose Input 3
7	GPI4	General Purpose Input 4
8	GPI5	General Purpose Input 5
9	GPI7	General Purpose Input 7
Shell	Ground	Ground

Table 2-1: GPI Pinouts

Figure 2-2 shows the input circuit for the General Purpose inputs.

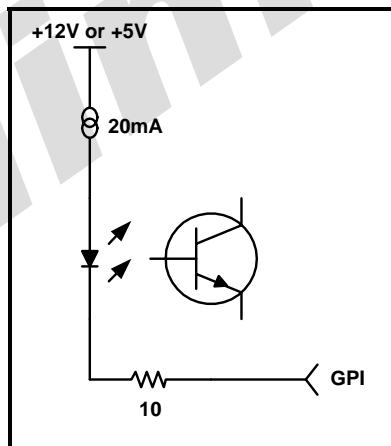


Figure 2-2: Typical GPI Input Circuitry

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standard:	1.485 Gb/sec SMPTE 292M – auto-detects standard SMPTE 274M, SMPTE 296M – 1080i/60, 1080i/59.94, 1080i/50, 1080p/24sF, 1080p/23.98sF, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080p/23.98, 720p/60, 720p/59.94, 720p/50
Connector:	2 BNC per IEC 61169-8 Annex A
Input Equalization:	Automatic to 65m @ 1.5Gb/s with Belden 1694 or equivalent cable.
Return Loss:	>12 dB up to 1.5GHz

3.2. SERIAL VIDEO OUTPUTS

Standard:	Same as input
Number of Outputs:	2 Program outputs 1 Mix output
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	800mV nominal
DC Offset:	0V \pm 0.5V
Rise and Fall Time:	200ps nominal for HD
Overshoot:	<10% of amplitude
Return Loss:	> 15 dB at 1.5 Gb/s
Jitter:	< 0.16UI (HD) or < 0.10UI (SD)

3.3. GPIO CONTROL PORT

Number of Inputs:	8
Type:	Opto-isolated, active low with internal pull-ups to +5 or +12V (jumper settable)
Connector:	9 pin female D
Signal Level:	closure to ground

3.4. INPUT TO OUTPUT PROCESSING DELAY (HD INPUT VIDEO)

Video Delay:	2 lines
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3.5. ELECTRICAL

Voltage:	+12VDC
Power:	10 Watts
EMI/RFI:	Complies with FCC regulations for class A devices. Complies with EU EMC directive.

3.6. PHYSICAL

Number of slots:	1
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4. STATUS INDICATORS

The 7700DVP-3D-HD has 10 LED Status indicators on the main circuit board front card edge to show operational status of the card at a glance. Figure 7-1 shows the location of the LEDs and card edge controls.

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 input signal 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 is present, and board power is good.

There are two small LEDs on the top side of the board (beside the DIP switch) that indicate that the 7732DVP-3D-HD video inputs are present. The input signal must match the video standard setting for these LEDs to be on.

LEFT EYE PRESENT: This Green LED will be On when there is a valid signal present on the module Left Eye input.

RIGHT EYE PRESENT: This Green LED will be On when there is a valid signal present on the module Right Eye input.

There are two small LEDs on the bottom side of the board.

L EYE LOCKED: This Green LED will be On when the HDSDI input circuitry has locked to a valid signal present on the module Left Eye input.

R EYE LOCKED: This Green LED will be On when the HDSDI input circuitry has locked to a valid signal present on the module Right Eye input.

4.1. AUDIO STATUS LEDs

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

Audio LED	Colour	Audio Group Status
1	Off	Neither group 1 nor group 2 present on input 1 video.
	Flashing	Only group 1 or group 2 present on input 1 video.
	Green	Both group 1 and group 2 present on input 1 video.
2	Off	Neither group 3 nor group 4 present on input 1 video.
	Flashing	Only group 3 or group 4 present on input 1 video.
	Green	Both group 3 and group 4 present on input 1 video.
3	Off	Neither group 1 nor group 2 present on input 2 video.
	Flashing	Only group 1 or group 2 present on input 2 video.
	Green	Both group 1 and group 2 present on input 2 video.
4	Off	Neither group 3 nor group 4 present on input 2 video.
	Flashing	Only group 3 or group 4 present on input 2 video.
	Green	Both group 3 and group 4 present on input 2 video.

Table 4-1: Audio Group Status LEDs

5. CARD EDGE CONTROLS

The 7732DVP-3D-HD is equipped with an 8 position DIP switch, toggle switch, and a pushbutton to allow the user to select various functions. All card functions are available through a menu system controlled by the toggle switch and pushbutton and displayed on the On Screen character display (OSD). (See section 6.)

DIP switch 1 is located at the top of the DIP switch (farthest from to the card ejector). Table 5-1 gives an overview of the DIP switch functions.



There are two types of DIP switches possible. For slide switches the On (closed) position is farthest from the front edge of the printed circuit board. For 'piano key' switches the On (closed) position is down or closest to the printed circuit board.

DIP Switch	Function
1	Reserved – set to Off
2	
3	
4	
5	
6	
7	
8	

Table 5-1: DIP Switch Functions

6. CARD EDGE MENUS

A toggle switch and pushbutton allow card edge navigation for a set of on-screen menus used to configure the card. To enter the on-screen menu system, press the pushbutton once. This will bring you to the main Setup menu where you can use the toggle switch to move up and down the list of available sub-menus. An arrow (➔) moves up and down the left hand side of the menu items to indicate which item you are currently choosing. Once the arrow is on the desired item, press the pushbutton to select the next menu level.

On all menus, there are two extra selectable items: *Back* and *Exit*. Selecting *Back* will take you to the previous menu (the one that was used to get into the current menu) while *Exit* will return the display to its normal operating mode. On the main menu, BACK and EXIT will both take you to the normal operating mode.

Once in a sub-menu, there may be another menu layer, or there may be a list of parameters to adjust. If there is another set of menu options, use the toggle switch to select the desired menu item and press the pushbutton.

To adjust any parameter, use the toggle switch to move up or down to the desired parameter and press the pushbutton. The arrow will move to the right hand side of the line (↔) indicating that you can now adjust the parameter. 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.

When you have stopped at the desired value, depress the pushbutton. This will update the parameter to the selected value and move the arrow back to the left side of the parameter list (➔). Continue selecting and adjusting other parameters or use the BACK or EXIT commands.

6.1. TOP LEVEL MENU STRUCTURE

The OSD menu is arranged in a layered structure that groups similar configuration items together. The following section gives a brief description of the first level of menus that appear when you enter the OSD screens. Selecting one of these items will take you to the next menu level. Sections 6.2 to 6.3 provide detailed descriptions of each of the sub-menus. The tables in sections 6.2 to 6.3 are arranged in an indented structure to indicate the path taken to reach the control. Menu items or parameters that are underlined indicate the factory default values.

<u>VIDEO</u>	Configures Video setup items
<u>UTILITY</u>	Configures miscellaneous setup items

6.2. CONFIGURING THE VIDEO CONTROLS

The *VIDEO* menus are used to configure parameters associated with the video input and output functions and the Source ID decoders. The chart below shows the items available in the *VIDEO* menu. Sections 6.2.1 to 6.2.8 give detailed information about each of the menu items.

<i>Video standard</i>	Selects the input video standard
<i>Loss of video</i>	Selects the action to take when the input video is missing
<i>Left Video H Flip</i>	Selects whether the Left Eye video will be flipped or not
<i>Right Video H Flip</i>	Selects whether the Right Eye video will be flipped or not
<i>Video H Shift Mode</i>	Selects whether the image will wrap or be filled with black when shifted horizontally
<i>Left Image Shift</i>	Sets the amount of horizontal shift for the Left Eye video
<i>Right Image Shift</i>	Sets the amount of horizontal shift for the Right Eye video
<i>Video V Shift Mode</i>	Selects whether the image will wrap or be filled with black when shifted vertically
<i>Vertical Video Shift</i>	Sets the amount of vertical shift for the Left or Right Eye video
<i>Video Luma Invert</i>	Selects whether the Luminance will be inverted or normal on the Left Eye and Right Eye
<i>Mix Output Mode</i>	Selects what will be output on the MIX OUT video output
<i>Source ID</i>	Selects whether the left eye / right eye source identification will be inserted

6.2.1. Setting the Video Standard

VIDEO
<i>Video standard</i>
<u>Auto</u>
1080i/60
1080i/59.94
1080i/50
1080p/24sF
1080p/23.98sF
1080p/30
1080p/29.97
1080p/25
1080p/24
1080p/23.98
720p/60
720p/59.94
720p/50

This control is used to set the video standard for the card. If set to *Auto* mode, the card will adjust operation as needed for the incoming standard.

6.2.2. Selects the Action to Take when Input Video Is Missing

VIDEO
<i>Loss of video</i>
<u>Blue</u>
Black
Pass

This control is used to determine what action to take when the video input is missing. The user can either have the output video go to black or blue or pass whatever data is at the input.

6.2.3. Controlling whether the Left Eye Video is Flipped

VIDEO
<i>Left video H Flip</i>
<u>Off</u>
On

This control is used to select whether a horizontal flip will be applied to the Left eye video.

When set to On the Left eye video output will be mirrored horizontally from the Left Eye input video.

6.2.4. Controlling whether the Right Eye Video is Flipped

VIDEO
<i>Right video H Flip</i>
<u>Off</u>
On

This control is used to select whether a horizontal flip will be applied to the Right eye video.

When set to On the Right eye video output will be mirrored horizontally from the Right Eye input video.

6.2.5. Selecting the Horizontal Shift Mode

VIDEO
Video H shift mode
Wrap
Black

This control is used to select how the horizontal shift function works.

When set to *Wrap* the left side of the image will wrap around to the right side when the image is shifted left. The right side of the image will wrap around to the left side when the image is shifted right.

When set to *Black* the right side of the image will be replaced with black as the image is shifted left. The left side of the image will be replaced with black as the image is shifted right.

6.2.6. Horizontally Shifting the Left Eye Image

VIDEO
Left image shift
-511 to + 511
0

This control is used to shift the active Left eye image horizontally on the video raster by a specific number of pixels. The range of numbers depends on the image raster in use.

To shift the image left, press the toggle switch down. The numbers will become negative when the image is shifted to the left of its nominal position. To shift the image right, press the toggle switch up. The numbers will become positive when the image is shifted to the right of its nominal position.

The *Video H Shift Mode* menu item controls whether the image will wrap around or be replaced with black as it is shifted. See section 6.2.5.

6.2.7. Horizontally Shifting the Right Eye Image

VIDEO
Right image shift
-511 to + 511
0

This control is used to shift the active Right eye image horizontally on the video raster by a specific number of pixels. The range of numbers depends on the image raster in use.

To shift the image left, press the toggle switch down. The numbers will become negative when the image is shifted to the left of its nominal position. To shift the image right, press the toggle switch up. The numbers will become positive when the image is shifted to the right of its nominal position.

The *Video H Shift Mode* menu item controls whether the image will wrap around or be replaced with black as it is shifted. See section 6.2.5.

6.2.8. Selecting the Vertical Shift Mode

VIDEO
Video V shift mode
Wrap
Black

This control is used to select how the vertical shift function works.

When set to *Wrap* the top of the image will wrap around to the bottom when the image is shifted up. The bottom of the image will wrap around to the top when the image is shifted down.

When set to *Black* the bottom of the image will be replaced with black as the image is shifted up. The bottom of the image will be replaced with black as the image is shifted down.

6.2.9. Vertically Shifting the Left and Right Eye Images

VIDEO
Vertical Video shift
-511 to + 511
0

This control is used to shift either the Left or Right eye image vertically with respect to the other. The range of numbers depends on the number of lines in the image raster in use.

When the value of this control is set to Zero, both the Left Eye or Right Eye images are displayed at their nominal vertical position.

To shift the Left Eye image down from its nominal position, (Left Eye above Right Eye) press the toggle switch up. The numbers will become positive when the Left Eye image is shifted down (with respect to the Right Eye). This action will keep the Right Eye at the nominal position (that will be below the Left Eye).

To shift the Right Eye image down from its nominal position, press the toggle switch down. The numbers will become negative when the Right Eye image is shifted down (with respect to the Left Eye). This action will keep the Left Eye at the nominal position (that will be below the Right Eye).

The *Video V Shift Mode* menu item controls whether the image will wrap around or be replaced with black as it is shifted. See section 6.2.8.

6.2.10. Inverting the Left and Right Eye Luminance Values

VIDEO
Video Luma Invert
Off
On

This control is used to select whether a luminance inversion will be applied to the Left Eye and Right Eye video.

When set to *On* the Luminance values of the Left Eye and Right Eye video signals will be subtracted from white. These inverted signals will also be presented to the video mixer.

6.2.11. Selecting the Mix Output Video Mode

VIDEO
Mix Output Mode
Mix
Difference
H Split
H Split with Marker
Left Cb
Left Cr

This control is used to control the operation of the video mixer and determine what video will be presented on the Mix Output.

When set to *Mix* the Left Eye image and Right Eye image are mixed at 50% each and presented on the **MIX OUT** BNC.

When set to *Difference* the Right Eye video is subtracted from the Left Eye video and presented on the **MIX OUT** BNC.

When set to *H Split* the **MIX OUT** BNC will contain a split screen output from Left Eye and Right Eye video with the Left Eye video on the left side and the Right Eye video on the right side. The split horizontal position is set to the horizontal center of the screen.

When set to *H Split with marker* the **MIX OUT** BNC will be similar to the *H Split* mode and there will be a vertical white line marking the split position.

When set to *Left Cb*, the Cb and corresponding Y samples are taken from the Left Eye video and the Cr and corresponding Y samples are taken from the Right Eye video and presented on the **MIX OUT** BNC.

When set to *Left Cr*, the Cr and corresponding Y samples are taken from the Left Eye video and the Cb and corresponding Y samples are taken from the Right Eye video and presented on the **MIX OUT** BNC.

6.2.12. Selecting Whether Source ID is Inserted on the Left and Right Eye Outputs

VIDEO
Source ID
Off
On

This control is used to control whether the source identification codes are inserted into the left eye and right eye outputs. This source Ident signal can be decoded using the 7760AVM2-HD+SID Source ID decoder module.

When set to *Off*, the source ID signal is not inserted.

When set to *On*, the source Identification code is inserted in the left eye and right eye outputs.

6.3. UTILITIES

The *UTILITY* menus are used to list the module firmware version, upgrade the firmware, and manage the user presets. The chart below shows the items available in the *UTILITY* menu. Sections 6.3.1 to 6.3.7 give detailed information about each of the parameters.

<i>Recall Preset</i>	Allows the user to recall configurations from a user preset.
<i>Store Preset</i>	Allows the user to store the current configuration of the card to a user preset.
<i>GPI 1</i>	Allows the user to select the function of GPI input 1.
<i>GPI 2</i>	Allows the user to select the function of GPI input 2.
<i>GPI 3</i>	Allows the user to select the function of GPI input 3.
<i>GPI 4</i>	Allows the user to select the function of GPI input 4.
<i>GPI 5</i>	Allows the user to select the function of GPI input 5.
<i>GPI 6</i>	Allows the user to select the function of GPI input 6.
<i>GPI 7</i>	Allows the user to select the function of GPI input 7.
<i>GPI 8</i>	Allows the user to select the function of GPI input 8.
<i>Status Window</i>	Allows the user to turn the Status window OSD on and off.
<i>Upgrade</i>	Used to upgrade the firmware in the module.
<i>Factory Reset</i>	Used to perform a reset of the module to factory defaults.
<i>About...</i>	Shows the firmware version of the module.

6.3.1. Recalling Card Configurations from the User Presets

<i>UTILITY</i>	This control is used to restore the current card configuration from one of the saved user presets.
<i>Recall preset</i>	
<i>Cancel</i>	After selecting the recall preset operation, you must select the preset number you want to recall and press the pushbutton before the recall will take place. You can abort the operation by pressing the pushbutton when <i>Cancel</i> is displayed.
<i>Preset 1</i>	
<i>Preset 2</i>	
<i>...</i>	
<i>Preset 10</i>	



On a new unit that has been reset to the Factory default values; Preset 1 to Preset 10 will also be preloaded with the Factory Reset values.

6.3.2. Storing Card Configurations to the User Presets

UTILITY
Store preset
Cancel
Preset 1
Preset 2
...
Preset 10

This control is used to store the current card configuration into one of the saved user presets.

After selecting the store preset operation, you must select the preset number you want to use to save the card configuration and press the pushbutton before the store will take place. You can abort the operation by pressing the pushbutton when *Cancel* is displayed.

6.3.3. Selecting the function of the GPI inputs

There are eight menu items that are used to program the functions of the GPI inputs. For the sake of simplicity only the menu item for GPI1 will be described in the manual.

UTILITY
GPI 1
Off
Preset 1
Preset 2
...
Preset 10
Left H flip On/Off
Increment left H shift
Decrement left H shift
Reset left H shift
Right H flip On/Off
Increment right H shift
Decrement right H shift
Reset right H shift
Increment V shift
Decrement V shift
Reset V shift
Reset all shift settings
Toggle mix output mode
OSD Disable
Status window on/off

This control is used to select the function of GPI input 1.

- Turns off the GPI.
- Recalls Preset 1
- Recalls Preset 2
- ...
- Recalls Preset 10
- Enables/disables the Left video H flip mode
- Increments Left Eye Horizontal shift (moves Left Eye to the left)
- Decrements Left Eye Horizontal shift (moves Left Eye to the right)
- Resets Left Eye Horizontal shift to zero (nominal position)
- Enables/disables the Right video H flip mode
- Increments Right Eye Horizontal shift (moves Right Eye to the left)
- Decrements Right Eye Horizontal shift (moves Right Eye to the right)
- Resets Right Eye Horizontal shift to zero (nominal position)
- Increments Vertical shift (moves Left Eye up)
- Decrements Vertical shift (moves Right Eye up)
- Reset Vertical shift (resets Left and Right Eye to nominal position)
- Reset Vertical and Horizontal shift
- Toggles through the various Mix Output modes
- Disables the On Screen Display on the Mix Out
- Turns the Status Window on or Off (set *Status Window* menu to *GPI*)

6.3.4. Enabling the Status Window

UTILITY
Status Window
Off
On
GPI

This control is used to turn the status window on or off. The Status window shows the card status at a glance and is visible on the **MIX OUT** video output.

When set to *On* the status window will always be On.
When set to *GPI* the status window can be controlled by one of the GPIs when the respective GPI function is set to *Status window on/off*. See section 6.3.3 for information about programming the GPI functions.

6.3.5. Initiating a Software Upgrade

UTILITY
Upgrade
Cancel
Yes

This control is used to initiate an upgrade of the module software.

In addition to the software upgrade support detailed in the *Upgrading Firmware* chapter in the front of the binder, you can initiate an upgrade with this control. This will allow you to upgrade the software without unplugging the card and changing the upgrade jumper.

After selecting the upgrade operation, you must change the command to *Yes* and press the pushbutton before the upgrade can take place. Follow the remainder of the instructions in the *Upgrading Firmware* chapter. You can abort the operation by pressing the pushbutton when *Cancel* is displayed.

After the upgrade has finished, the unit will automatically restart and run in normal operating mode.



The Upgrade baud rate for the 7732DVP-3D-HD modules is 115,200 baud.

6.3.6. Restoring the Module to its Factory Default Configuration

UTILITY
Factory reset
Cancel
Yes

This menu item is used to restore all controls back to their factory defaults.

After selecting the reset operation, you must change the command to *Yes* and press the pushbutton before the command takes place. After the command, all parameters will be set to their factory default. You can abort the operation by pressing the pushbutton when *Cancel* is displayed.



When you reset the module to its Factory default values, Preset 1 to Preset 10 will also be preloaded with the Factory Reset values.

6.3.7. Accessing Information About this Module and its Firmware

UTILITY

About...

This control lists the specifications about this module and the firmware residing within it. It gives quick access to information about revisions that can be used to determine when upgrades are required.

Preliminary

7. LOCATION OF LEDS AND JUMPERS

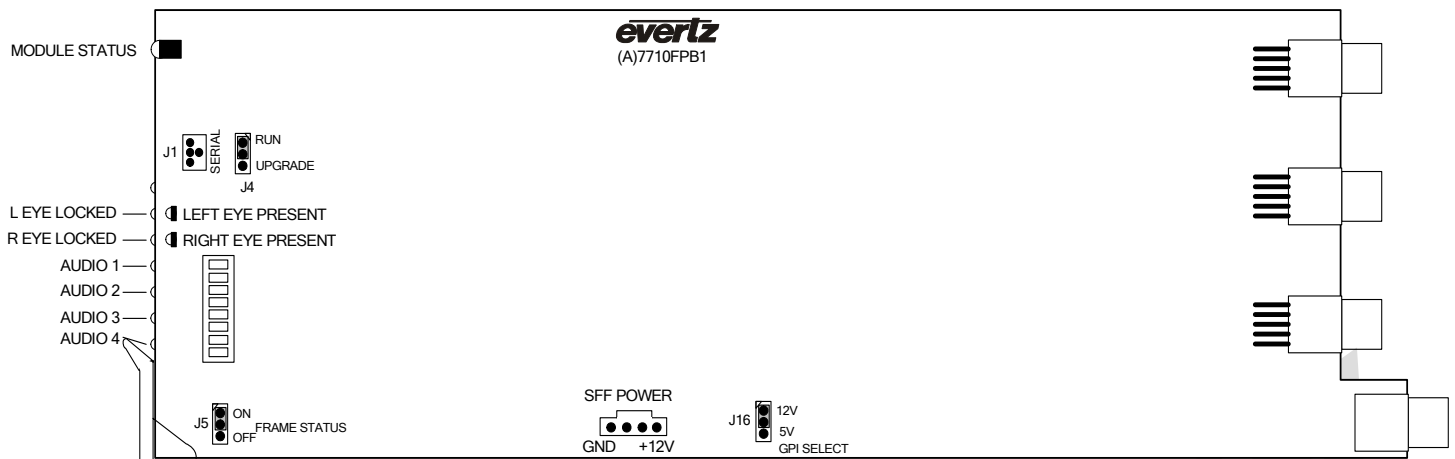


Figure 7-1: LED and Jumper Locations

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

The FRAME STATUS jumper J5, located at the front of the module 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's FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position.

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 jumper J4, located at the front edge of the module, near the serial port header, is used when firmware upgrades are being done to the module. For normal operation it should be installed in the *RUN* position. See the *Upgrading Firmware* section in the front of the binder for more information.

To upgrade the firmware in the module pull it out of the frame. Move Jumper J4 into the *UPGRADE* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto header J24 near the card ejector. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* section in the front of the binder. Once the upgrade is completed, remove the module from the frame, move J4 into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.



Note that the baud rate for firmware upgrades is 115200 baud.

7.3. CONTROLLING GPI PULLUP VOLTAGE

Jumper J16, located at the rear of the module, controls whether the GPI inputs and outputs are pulled up to 5 volts or 12 volts.

GPI SELECT: To pull the GPI inputs and outputs up to 5 volts install this jumper in the position closest to edge of the module.

To pull the GPI inputs and outputs up to 12 volts install this jumper in the position closest to center of the module.

Preliminary

8. MENU QUICK REFERENCE

VIDEO

- Video standard
- Loss of video
- Left Video H Flip
- Right Video H Flip
- Video H Shift Mode
- Left Image Shift
- Right Image Shift
- Video V Shift Mode
- Vertical Video Shift
- Video Luma Invert
- Mix Output Mode
- Source ID

Utility

- Recall Preset
- Store Preset
- GPI 1
- GPI 2
- GPI 3
- GPI 4
- GPI 5
- GPI 6
- GPI 7
- GPI 8
- Status Window
- Upgrade
- Factory Reset
- About...

Preliminary