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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0.1	Preliminary Version	Feb 2006
1.0	Released: Updated descriptions of Fill Input and added VistaLINK® screen shots	Jan 2008
1.1	Updated section 5.5.25	Apr 2008
1.2	Updated to add Time Code Transfer menu items	Dec 2008
1.3	Added port settings to section 6.2	Aug 2010

1. OVERVIEW

The 7725VBI-K-HD module is a multi-function VBI keyer. Every program input vertical interval video line can be programmed to pass upstream video, blank the line, insert any VBI line from the HD/SD Fill input, insert a selectable VITS (vertical interval test signal) for SD, and insert user selected data such as Wide Screen Signaling (WSS) and Active Format Description (AFD). The 7725VBI-K-HD allows for up to 70 lines to be programmed. The module provides the capability to store different VBI configurations as presets and recall them from the On-Screen Display (via Program Monitor Out), VistaLINK®, or via 8 opto-isolated GPI inputs.

The 7725VBI-K-HD has two re-clocked program outputs and one program monitor output. The module is often used in critical on-air applications and hence bypass relay protection of the program video path is provided. The 7725VBI-K-HD is setup via the On-Screen Display or VistaLINK®.

VistaLINK® enables remote monitoring, control and configuration capabilities via Simple Network Management Protocol (SNMP). This offers the flexibility to manage operations including signal monitoring and module configuration from SNMP enabled control systems (Manager or NMS) locally or remotely.

The 7725VBI-K-HD occupies one card slot in the 3RU 7700FR-C frame, which will hold up to 15 1-slot modules or the 1RU 7701FR frame, which will hold up to three 1-slot modules.

Features:
- One serial digital 1.5 Gb/s HD input per SMPTE 292M, or 270 Mb/s SD input per SMPTE 259M
- Two re-clocked HD or SD program outputs
- Video input relay bypass for power failure bypass protection
- One HD input or SD input digital Fill video input
- One HD or SD monitor program output with On-Screen Display
- A comprehensive on screen menu is available to configure the various features of the module
- 128 different presets for storing VBI keying configurations
- Up to 16 line patterns may be captured from any fill input line and stored in User Memories for later insertion on any VBI line
- Up to 70 lines of output video can be programmed
- Each line of VBI independently programmable to pass, blank, insert from fill signal, insert from user memory or insert factory test signals
- On-Air Preset configuration selected with GPI, OSD, or VistaLINK® selection
- Non-volatile memory protects current configuration in case of power loss
- Fully hot-swappable from front of frame
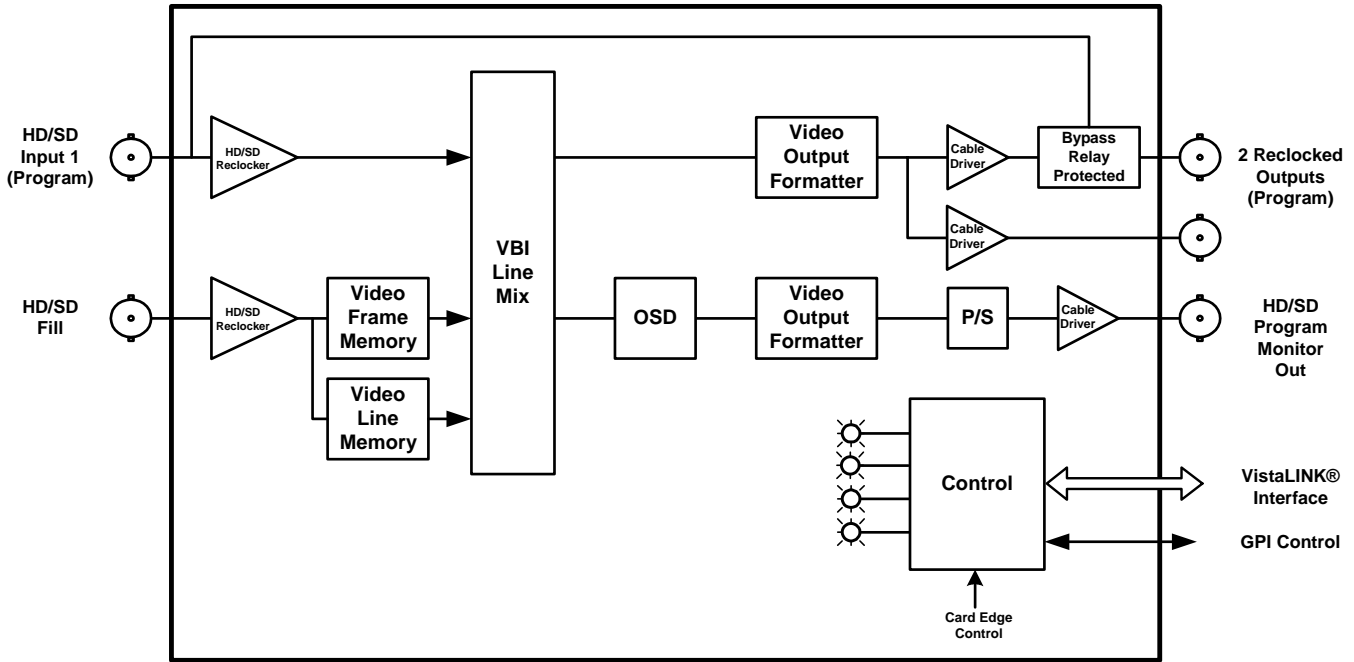
Figure 1-1: 7725VBI-K-HD Block Diagram

The following sections outline several possible applications.

1.1. MASTER CONTROL OUTPUT CHAIN PROTECTION

Typically there are several units "chained" together on the output of a master control switcher. Units such as caption encoders, AMOL encoders, VITS inserters, data encoders, etc. are typically connected in a series in the program output so that if one unit fails the network output will fail. The 7725VBI-K-HD allows you to have one point of insertion in the program output path.
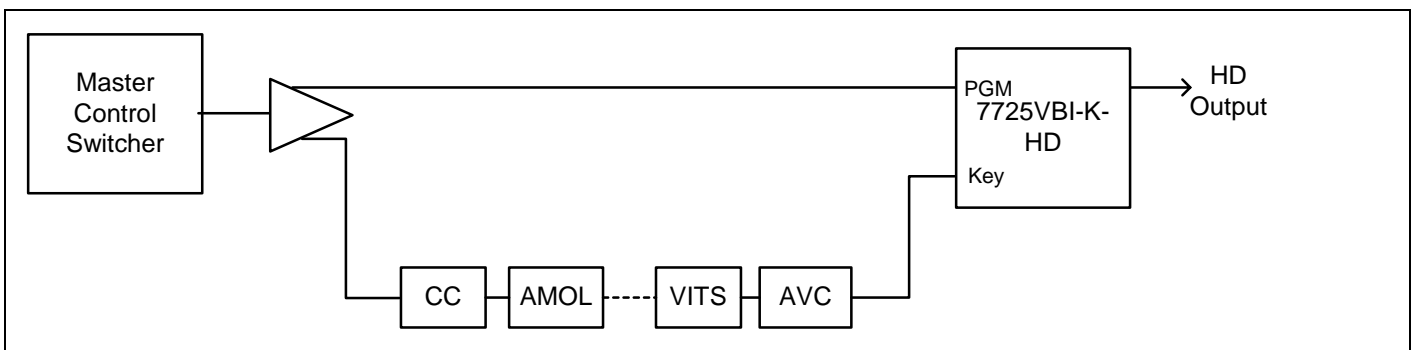
Figure 1-2: Master Control VBI Insertion Application

1.2.   VANC BRIDGING

Some processing devices modify or destroy VBI data such as captioning or VITC. An example of this occurs with some DVE's during a squeeze back application or with HD colour correction. The 7725VBI-K-HD device will provide a bypass of VBI around the processing device.
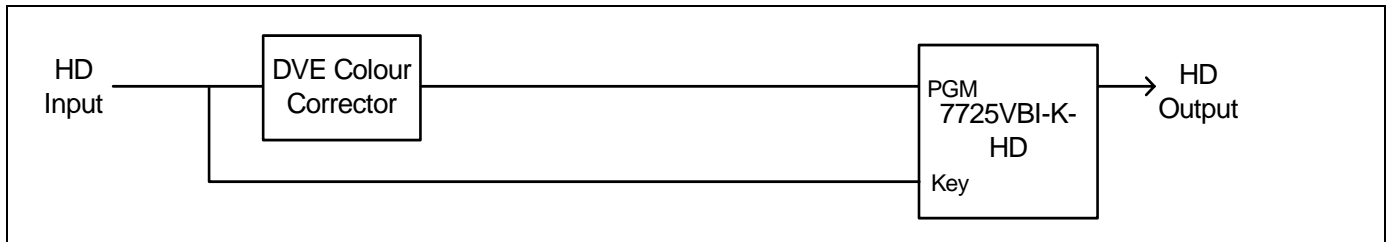
Figure 1-3: VANC Bridge Application

1.3.   VBI LINE SHUFFLER

By providing the same feed to both inputs of the 7725VBI-K-HD, the unit will allow the user to modify the VBI and move lines as necessary.
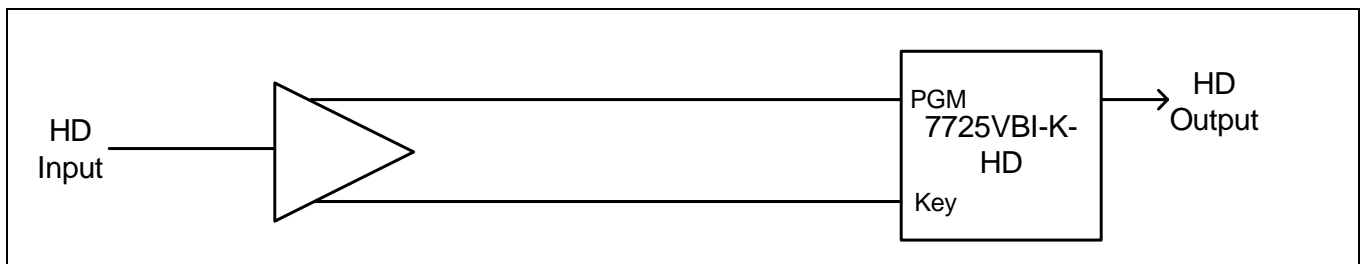
Figure 1-4: VBI Line Shuffle Application

2.   INSTALLATION

The 7725VBI-K-HD comes with a companion rear plate that has five BNC connectors and one 9 pin female D connector. Modules occupy one slot in the 7700FR-C frame. For more information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.
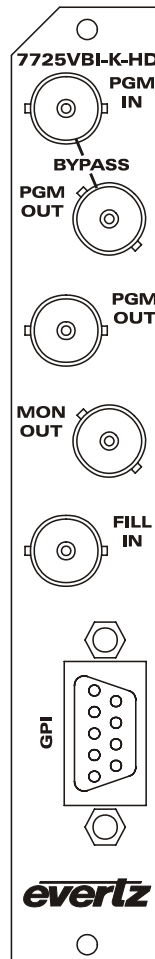
Figure 2-1: 7725VBI-K-HD Rear Panel

2.1.   VIDEO IN AND OUT

PGM IN: Input BNC connector for 10-bit serial digital signals compatible with the SMPTE 292M or SMPTE 259M-C standards. This BNC connector is used to supply the program video to the module.

FILL IN: Input BNC connector for 10-bit serial digital signals compatible with the SMPTE 292M or SMPTE 259M-C standards. This BNC connector is used to supply the signal that you want to insert into the VBI of the program video. This input will be referred to as the Fill input throughout this manual.

PGM OUT: There are two BNC connectors that contain the PGM input video with the VBI signals inserted. One of these outputs (marked as **BYPASS**) is protected by a bypass relay, which will activate in the event of power loss to the module.

MON OUT: This BNC connector contains the PGM input video with the VBI signals and is used for monitoring purposes. The HD/SD output is also used to display the On Screen Display.

2.2.   GENERAL PURPOSE INPUTS

Table 2-1 shows the pinout of the 9 pin Female D GPI connector. The GPI inputs are active low. This means that if you leave an input floating (not connected) then it will not be activated. 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.

Figure 2-2 shows the input circuit for the General Purpose inputs. The *GPI Mode* menu item is used to configure the operation of the GPI inputs. (See section 5.7)

+12V or +5V

20mA

GPI

10
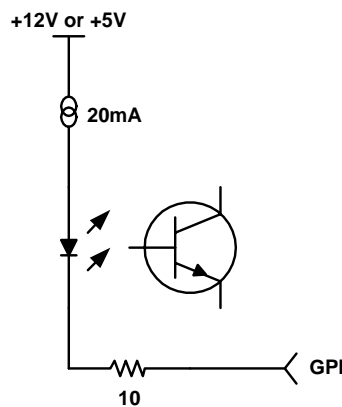
Figure 2-2: GPI Input Circuitry

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

Table 2-1: GPI Pinouts

3.   SPECIFICATIONS

3.1.   SERIAL VIDEO INPUT

Standard: Auto-detect
                          SMPTE 292M (1080i/59.94, 1080i/60, 1080i/50, 1080p/23.98, 1080p/23.98sF,
                           720p/59.94, 720p/60, and 720p/50)
                          SMPTE 259M-C (525i/59.94, 625i/50)
Number of Inputs: 1 for Program video (PGM)
                          1 for Fill Signal to insert (FILL)
                          PGM and FILL need to be synchronous and timed w.r.t. each other (+/- 1/2 line)
Connector: BNC per IEC 61169-8 Annex A
Equalization: Automatic 125m @ 1.5 Gb/s with Belden 8281 or equivalent cable
Return Loss: > 14 dB (PGM input)

3.2.   SERIAL VIDEO OUTPUTS

Number of Outputs: 3 (re-clocked for program, 1 bypass protection) same as input
                       1 (program monitor) same as input
Connector: BNC per IEC 61169-8 Annex A
Signal Level: 800mV nominal
DC Offset: 0V ±0.5V
Rise and Fall Time: 200ps nominal (HD)
Overshoot: <10% of amplitude
Wide Band Jitter: < 0.13UI
Return Loss: > 15 dB

3.3.   GENERAL PURPOSE INPUTS

Number of Inputs: 8
Type: Opto-isolated, active low with internal pull-ups to +5 or +12V (jumper settable)
Connector: Female DB-9
Input signal: Closure to ground

3.4.   ELECTRICAL

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

3.5.   PHYSICAL

7700 or 7701 Frame Mounting:
   Number of Slots: 1

4. STATUS INDICATORS

4.1. STATUS INDICATOR

The 7725VBI-K-HD has 11 LED status indicators on the front of the card edge to show operational status of the card at a glance. Figure 4-1 displays the location of the LEDs and card edge controls.
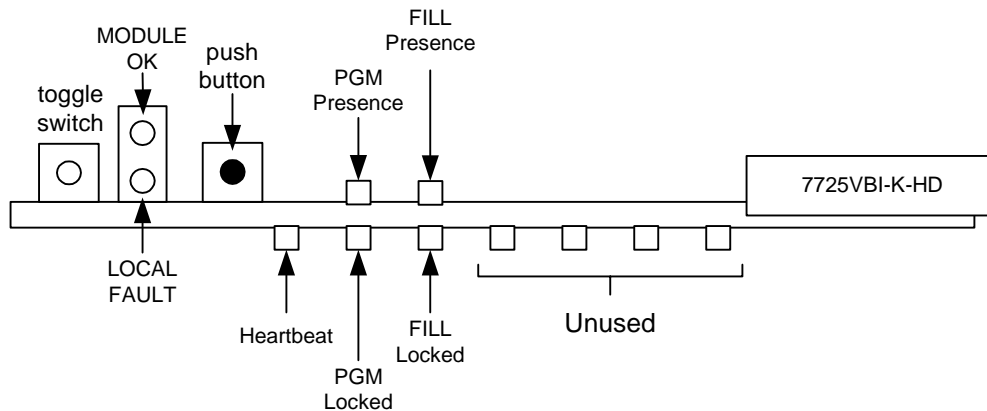
Figure 4-1: Status LED Locations

There are two large LEDs that indicate the general health of the module.

LOCAL FAULT: This Red LED indicates poor module health and will be On if a local input power fault exists (i.e.: a blown fuse) or if the module fails to boot (e.g.: upgrade jumper left on). 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 the board power is good and the module has booted successfully.

The remaining LED status indicators are listed below:

HEARTBEAT (RUN): This Green LED will be blinking when the module is operating normally.

PGM PRESENCE: This Green LED indicates the presence of a signal on **PGM IN**.

PGM LOCKED: This Green LED indicates a valid standard on **PGM IN**.

FILL PRESENCE: This Green LED indicates the presence of a signal on **FILL IN**.

FILL LOCKED: This Green LED indicates a valid standard on **FILL IN**.

The other 4 LEDs near the card extractor are for future use.

4.2. DIP SWITCHES

The 7725VBI-K-HD has a set of DIP switches accessible from the card edge. These are currently reserved for future use.

5. ON SCREEN MENUS

5.1. NAVIGATING THE ON SCREEN MENU SYSTEM

A toggle switch and pushbutton at the front card edge are used to navigate a set of on-screen menus, which are 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. There is also a line of text at the bottom of the screen to give instructions about the function of the menu item. 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 choices, 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. If the parameter contains a list of choices, you can cycle through the list by pressing the toggle switch in either direction.

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.

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

5.2. ON SCREEN DISPLAY – MAIN MENU

Table 5-1 provides a brief description of the top level of the menu tree that appears when you enter the OSD menu. Selecting one of these items will take you down into the next menu level. Sections 5.3 to 5.8 provide detailed descriptions on each of the sub-menus.

Module Status	Shows the status of the module (input presence, video standard, etc.)
User Line Capture	Used to capture signals to the User Signal Memories.
Edit Presets	Main configuration section used to configure each of the 128 Presets.
Active Preset Number	Selects which preset is active.
Preset GPI Mode	Configures the mode of the GPI.
Utilities	Miscellaneous utilities such as firmware version, firmware upgrade, and clearing out the preset and user capture memories.

Table 5-1: Menu Tree

5.3. DISPLAYING THE MODULE STATUS

The *Module Status* menu item is used to display the current status of the module. A screen with the following options will be displayed:

PGM Video	Displays the presence of input video.
PGM Standard	Displays the detected standard (also operating standard of the module).
Fill Video	Displays the presence of input fill video.
Fill Standard	Displays the detected standard of the fill video.
Fill to PGM Delay	Displays the detected delay from the fill video to the PGM video.
Preset Control	Displays if the preset is being set from GPI or manually from the menu.
Active Preset	Displays the active preset number.

Table 5-2: Module Status

5.4. CONFIGURING USER CAPTURE LINES

The 7725VBI-K-HD has the ability to capture up to 24 line patterns from any VBI line of the fill and store them in memory locations for later insertion on any VBI line of the program video. The *User Capture Line* menu is used to capture signals to the various user memories. Sections 5.4.1 to 5.4.3 give detailed descriptions of the menu items.

Fill Video Line Number	Selects the line number of the fill video signal that will be captured.
Memory Destination Number	Selects the user memory location where the signal will be stored.
Start the Line Capture	Enables the line capture function.

5.4.1. Selecting the Fill Video Line Number

	Selects the line number of the fill input video that will be captured.
User Line Capture	
Fill Video Line Number	The range of lines is based on the video standard of the input Fill video
1	signal that is applied to the module.
1 to Max Line	

5.4.2. Selecting the Memory Destination for Capture Line

	Selects the memory location to which the captured line from the fill input
User Line Capture	video is stored.
Memory Destination Number	
1	The memory location range is 1 to 16.
1 to 16	

5.4.3. Capturing the Line from Fill Video Input

	This parameter will enable the line capture function.
User Line Capture	
Start the Line Capture	When set to *Yes*, the 7725VBI-K-HD will begin to capture the line from the
Cancel	Fill input video. This operation MAY take a few seconds to complete.
Yes	Once the operation is complete, the module will return to the *User Line Capture* menu.

When *Cancel* is selected, the capture function is not enabled and the user is returned to the *User Line Capture* menu.

> ✍ **The capture process MAY take a few seconds to complete.**

5.5. CONFIGURING USER PRESETS

The 7725VBI-K-HD has 128 presets to store VBI Line Configuration. Each preset contains a complete set of (up to 70) VBI line signal settings. The *Edit Presets* menu is used to configure each of the preset memories. Sections 5.5.1 to 5.5.3 provides detailed descriptions of the menu items.

Edit Preset Number	Selects the preset that will store the configuration.
Edit Preset Configuration	Selects the desired processing for each VBI line of the preset.
Display Preset Configuration	Provides a quick overview of the preset and shows the processing for all VBI lines.

5.5.1. Selecting the Preset Number to Edit or View

Edit Presets
Edit Preset Number
<u>0</u>
0 to 127

Selects one of the 128 presets to edit or view the configuration.

The range of memory locations is 0 to 127.

5.5.2. Configuring the VBI Processing for a Preset

There are a number of parameters that can be configured for each preset. These parameters include: *Output Line*, *Line Source*, *Source Line Number*, and the *additional delay*. The user can configure up to 70 lines per preset. Sections 5.5.2.1 to 5.5.2.5 describe each parameter in further detail.

5.5.2.1. Selecting the VBI Line of the Program Output

Edit Presets
Edit Presets Configuration
Output Line Number
<u>1</u>
1 to 70

Selects a particular VBI line of the program output video. The permitted line numbers include lines for both field 1 and field 2 of the input video standard. The valid VBI lines are shown below:

	Field 1	Field 2
1080i	7-31, 554-563	570-594, 1114-1125
720p	7-56, 731-750	
NTSC	8-32, 254-263	271-295, 516-525
PAL	6-30, 303-312	319-343, 616-625

5.5.2.2. Selecting the Signal Source for a VBI Line

```
Edit Presets
    Edit Presets Configuration
        Line Source
            Program Video
            Fill Video
            User Line Capture
            Factory Line
            Blank Line
```

This control enables the user to select the source line that is to be keyed onto the selected VBI Line.

Selecting *Program Video* will pass the video through the program video unchanged.

Selecting *Fill Video* will insert a line from the Fill video over the program video. Select the specific line of the Fill video that you wish to insert using the *Source Line Number* menu item.

Select *User Line Capture* to insert a line from one of the User Memories over the program video. Select the specific User memory that is to be inserted using the *Source Line Number* menu item.

Select *Factory Line* to insert one of the factory supplied signals over the program video. Select the specific factory signal that is to be inserted using the *Source Line Number* menu item.

Select *Blank Line* to blank the selected line of the program video.

5.5.2.3. Selecting the Signal Line Number to Insert

```
Edit Presets
    Edit Presets Configuration
        Source Line Number
            1
            1 to Max
```

The function of this menu item depends on the setting of the *Line Source* menu item.

When *Line Source* is set to *Program Video*, this menu item does nothing. The module will simply pass the program video. The range of the parameter will depend on the input video standard.

When *Line Source* is set to *Fill Video*, this parameter selects a particular line of the fill video to insert. The permitted line numbers include lines for both field 1 and field 2 of the input video standard. The range of the parameter will depend on the input fill video standard.

When *Line Source* is set to *User Line Capture*, this parameter selects a captured line stored in one of the user memories for future insertion. The range of the parameter will be 1 to 16.

When *Line Source* is set to *Factory Line*, this parameter selects one of the factory supplied SD signals for future insertion. See Table 5-3 for a list of the Factory supplied test signals and their signal numbers.

5.5.2.4. Selecting the Amount of Delay to Add to the Source Line

Edit Presets
Edit Presets Configuration
Add Frames of Delay
0
0 to 6

This menu item allows the user to add one or more frames of delay to the Fill Video line before it is inserted. This menu only has effect when the *Line Source* menu item is set to *Fill Video*.

5.5.2.5. Factory Supplied SD Test Signals

The following SD test signals are available within the 7725VBI-K-HD. For frame rates of 59.94Hz and 60Hz, NTSC test signals will be used. For frame rates of 50Hz, PAL test signals will be used.

	Name	Name
Number	**NTSC**	**PAL**
1	100% White	100% White
2	50% Gray	50% Gray
3	75% SMPTE Colourbars	CCIR Line 17
4	100% SMPTE Colourbars	CCIR Line 18
5	FCC Composite	CCIR Line 330
6	FCC Multiburst	CCIR Line 331
7	GCR System C	75% Colourbars
8	GCR Waveform	100% Colourbars
9	Linear 5 Step Staircase	GCR System C
10	Multiburst 100% / 4.2 MHz	Linear 5 Step Staircase
11	Multiburst 60% / 4.2 MHz	Multiburst 100% / 5.8 MHz
12	Modulated 5-Step Staircase	Multiburst 60% / 5.8 MHz
13	Modulated Ramp	Modulated Staircase
14	Multipulse 4.2 MHz	Pulse & Bar
15	NTC7 Combination	Modulated Ramp
16	NTC7 Composite	Ramp
17	Ramp	Shallow Ramp
18	Red Line	Sin (X)/X
19	Shallow Ramp	Sweep 60% to 5.5 MHz
20	Sin (X)/X 4.75 MHz	Sweep 100% t0 5.5 MHz
21	Sweep 60% / 4.2 MHz	Black
22	Sweep 60% / 5.5 MHz	Black
23	Valid Ramp	Black
24	VIRS	Black
25	75% Full Field Colourbars	Black
26	100% Full Field Colourbars	Black
27	Black	Black
28	Black	Black
29	Black	Black
30	Black	Black
31	Black	Black
32	Black	Black

Table 5-3: Factory Programmed SD Test Signals

**5.5.2.6. Transferring Ancillary Time Code from the Fill Input to the PGM
           (HD Video Only)**

```
Edit Presets
   Edit Presets Configuration
      Transfer Fill Timecode
         Off
         On
```

This control enables the user to whether ancillary timecode (ATC) from the Fill input will be transferred to the PGM or not. This control is only valid When the input video is operating in one of the support HD formats.

Selecting *Off* will pass the video through the program video unchanged.

Selecting *On* will insert a ancillary timecode (ATC) from the Fill video to the program video. Any ATC existing on the incoming PGM input will be overwritten.

5.5.2.7. Selecting the Amount of Delay to Add to the Ancillary Time Code

```
Edit Presets
   Edit Presets Configuration
      Add Frames of Delay to
      TimeCode
         0
         0 to 6
```

This menu item allows the user to add one or more frames of delay to the ATC from the Fill Video before it is inserted in the PGM video. This menu only has effect when the *Transfer Fill Timecode* menu item is set to *On.*

5.5.3. Displaying Preset Configurations

The *Display Preset Configuration* under the *Edit Presets* menu allows the user to view the complete configuration for the preset number specified under section 5.5.1. The OSD will display the *Output Line Number*, *Video Line Number*, *Line Source*, *Source Line Number* and *Frames of Delay*. The OSD will also show whether the Timecode is coming from the Program or Fill video.

5.6.   SELECTING AN ACTIVE PRESET

The 7725VBI-K-HD module has 128 memory locations to store user defined VBI Line Configuration presets. Each preset contains a complete set of VBI line signal settings.

```
Active Preset Number
   GPI
   GPI, 0 to 127
```

This menu item allows the user to determine the active preset or to configure the GPI inputs to recall the active preset.

When this menu item is set to one of the preset numbers, that preset will become active when you press the pushbutton.

When this menu item is set to *GPI*, then the GPI inputs will control which preset is active. The GPI inputs operate in one of two modes controlled by the *GPI Mode* menu item.

5.7.   CONFIGURING THE GPI MODE

Preset GPI Mode
One-Hot
Binary

The 7725VBI-K-HD has 8 GPI inputs that can be used to recall one of the presets remotely. This menu item is used to configure one of two GPI modes.

When this menu item is set to *One-Hot* the 8 GPI inputs will activate presets 1 to 8 respectively when they are closed to ground. Preset 0 will be selected when none of the GPIs are active

When this menu item is set to *Binary*, the GPI inputs 1 to 7 are binary encoded to select one of the 128 presets. When GPI input 8 is closed to ground, then the preset selected by GPI inputs 1 to 7 will become active.

5.8.   CONFIGURING MISCELLANEOUS FUNCTIONS

The *Utilities* menu is used to configure various miscellaneous items.

Upgrade	Allows the user to upgrade the module firmware
Factory Reset	Clears all the Card Configuration menus and sets the Presets to pass all VBI lines. It will not clear memory containing User Line Captures.
Reset User Line Captures	Clears all memory containing User Line Captures.
About…	Displays the module firmware and hardware version information.

5.8.1. Initiating a Software Upgrade

Utilities
Upgrade
Yes
Cancel

This menu item is used to initiate an upgrade of the module firmware.

In addition to the firmware upgrade support detailed in this manual (See the *Upgrading Firmware* section of this manual for more information), you can initiate an upgrade with this command. 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. 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.

5.8.2. Restoring the Module to its Factory Default Configuration

Utilities
Factory reset
Yes
Cancel

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.

✎ | **Factory reset will NOT clear memory containing User Line Captures.**

5.8.3. Clearing the Memory Containing User Line Captures

Utilities
Clear User Line
Captures
Yes
Cancel

This menu item is used to remove all captured lines from the User memories.

After selecting the clear operation, you must change the command to *Yes* and press the pushbutton before the command takes place. After the command, all user memories will be cleared. You can abort the operation by pressing the pushbutton when *Cancel* is displayed.

5.8.4. Accessing Information About this Module and its Firmware

Utilities
About…

This menu item lists the particulars 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.
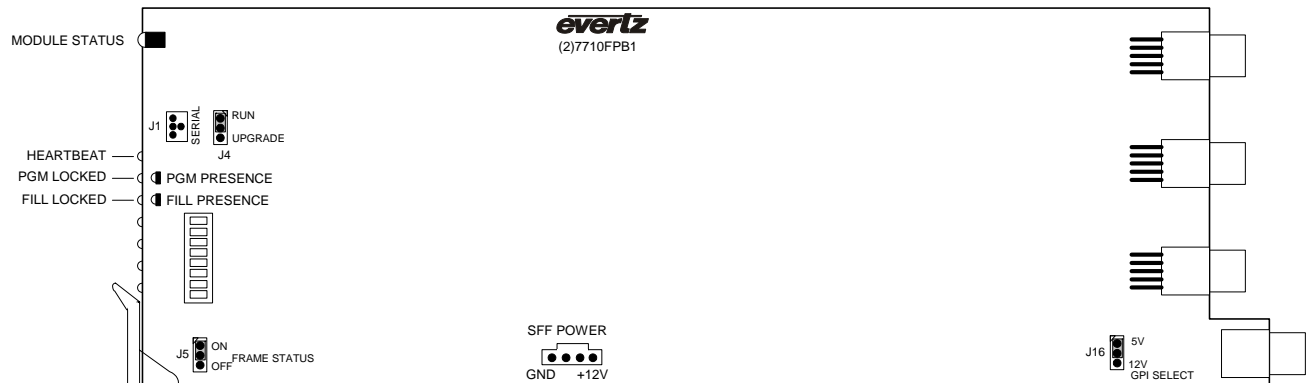
6.   JUMPERS AND LOCAL CONTROLS

Figure 6-1: Location of Jumpers on Main Board (Rev. 2)

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

The FRAME STATUS jumper J5, located at the front of the main board, 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.

6.2.   CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

UPGRADE: The UPGRADE jumper located on the top module at the bottom, front is used when firmware upgrades are being done to the module. For normal operation it should be installed in the *RUN* position. Firmware upgrades can also be initiated from the *Utilities* menu (See section 5.8.1) See the *Upgrading Firmware* section in the front of the binder for more information.

To upgrade the firmware in the module using the manual procedure, pull the module out of the frame. Move the jumper into the *UPGRADE* 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 in the front of the manual binder. Once the upgrade is complete, remove the module from the frame, move the jumper into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

To upgrade the firmware in the module using the *Upgrade* menu item, install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the SERIAL header at the card edge. Go to the *Upgrade* menu item as described in section 5.8.1. Complete the upgrade as described in sections 1.2.1.2 to 1.2.1.4 of the *Upgrading Firmware* section of this manual binder. Once the upgrade is complete, remove the upgrade cable. The module is now ready for normal operation.

The port settings of the terminal program are as follows:

Baud	**115200**
Parity	**no**
Data bits	**8**
Stop bits	**2**
Flow Control	**None**

7.   VISTALINK® REMOTE MONITORING/CONTROL

7.1.   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 7725VBI-K-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.

7.2. VISTALINK GUI SCREENS

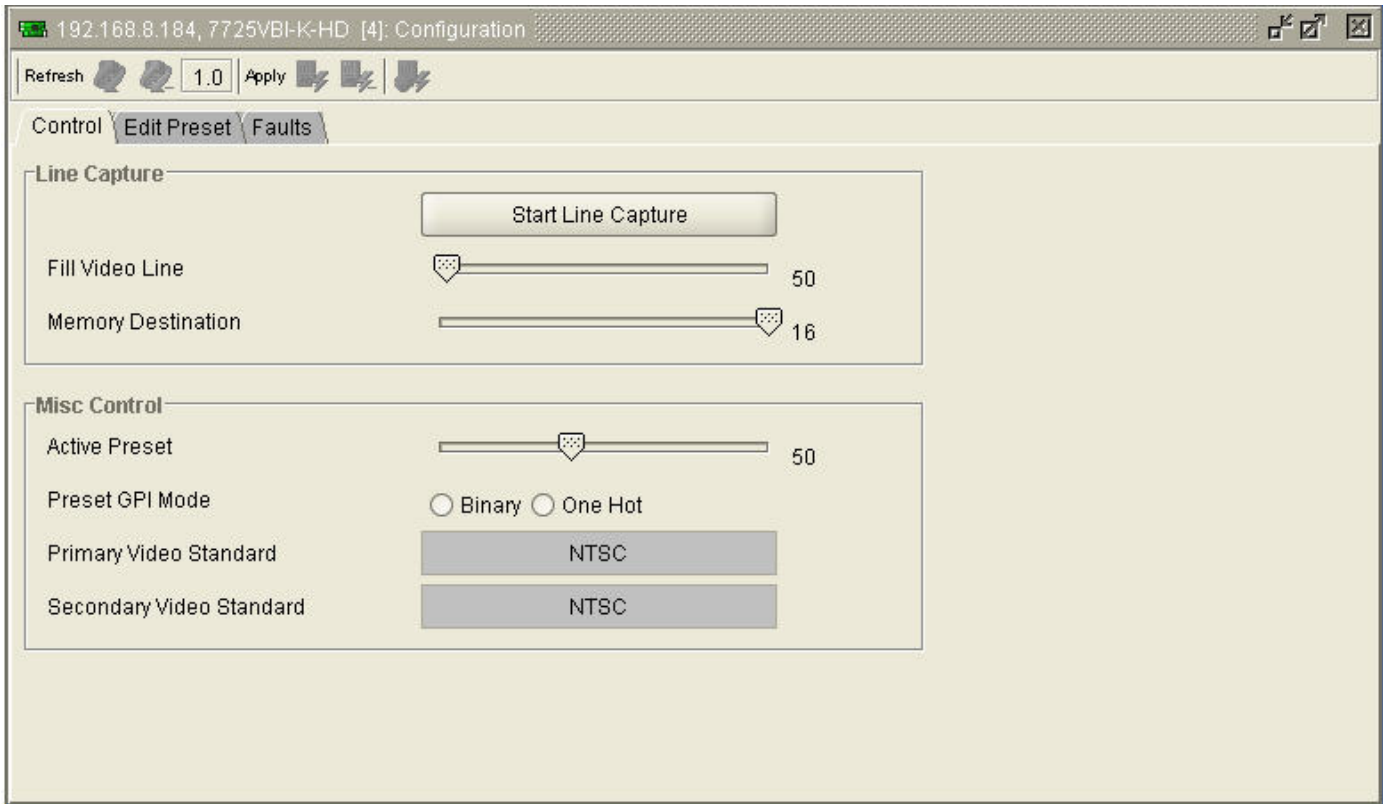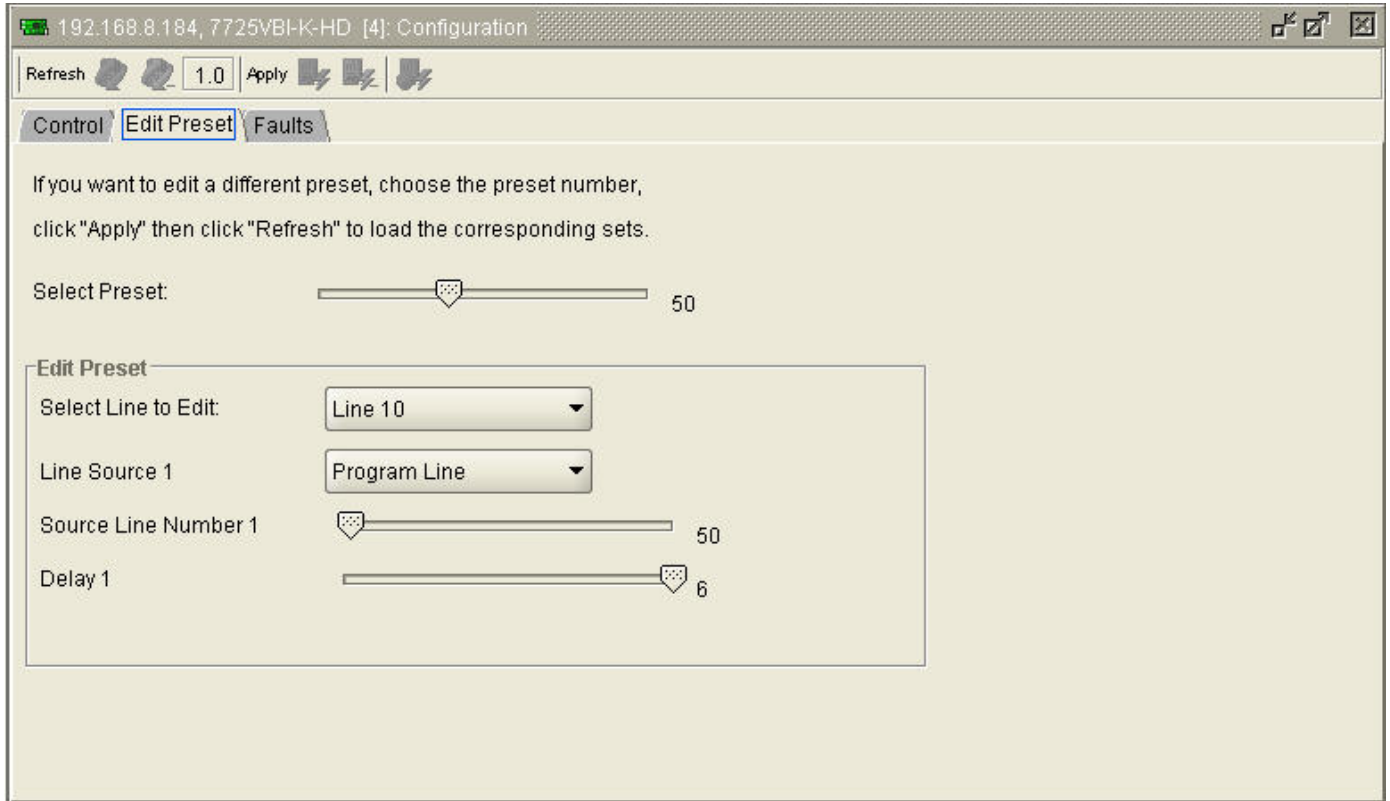The following screen shots show the VistaLINK® GUI screens.
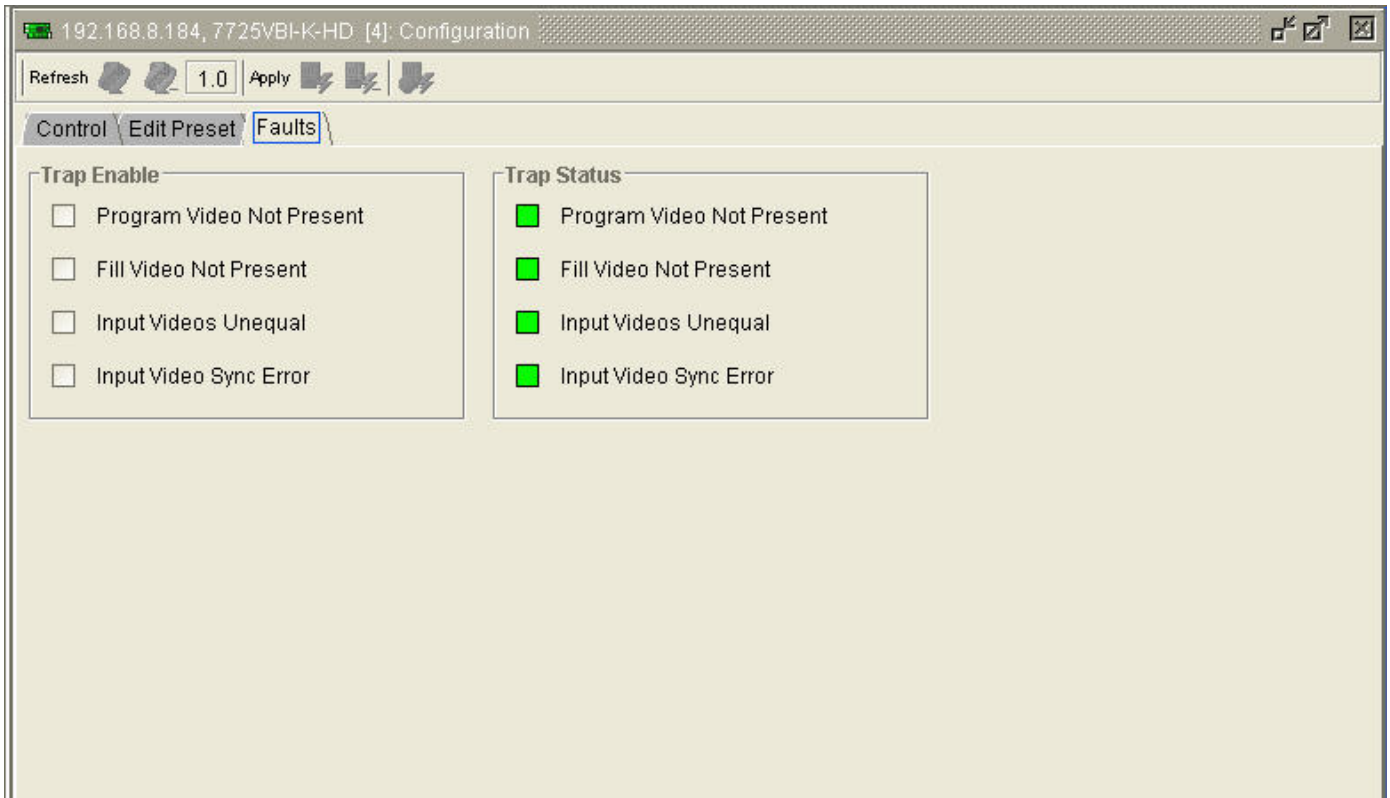

Figure 7-1: Control Tab

Figure 7-2: Edit Preset Tab

Figure 7-3: Faults Tab

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