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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	Sept 09
1.1	Added 7708DVIR options	Oct 09

WARNING

Never look directly into an optical fiber. Non-reversible damage to the eye can occur in a matter of milliseconds.

1.   OVERVIEW

The 7708RGBR SFP Fiber Receiver extends one digital (DVI) or analog (RGB) video display connection over a single fiber optic link with display resolutions up to WUXGA (1920 x 1200). The DVI-I connector combines analog and digital display technologies, promoting optimal compatibility with different display types. Two optional analog audio outputs are also available. The 7708RGBR is designed to operate with a companion 7708RGBT transmitter.

The 7708DVIR provides the same features listed above, however, only accepts a digital (DVI) input.

Monitoring and control of card status and card parameters are provided locally, at the card-edge, or remotely via *Vista*LINK® capability.

The 7708RGBR/DVIR uses Evertz SFP modules to interface from the fiber optic domain. SFP receivers and transceivers have wide-band optical input and can accept any wavelength between 1270nm and 1610nm.

Features:
- Digital (DVI) and analog (RGB) display technologies are supported through one interface on the 7708RGBR
- 2970Mb/s and 3125Mb/s user selectable Link Rates for routing and normal applications
- VESA video resolutions supported up to WUXGA (1920x1200)
- Two optional analog audio channels
- Full 24 bits per pixel color resolution
- Convenient audio monitoring headphone jack with adjustable volume
- Full-bandwidth 3 Gb/s signal transport over fiber – no compression or sub-sampling
- Evertz SFP modules are fully hot swappable from rear plate
- 7708RGBR is fully hot swappable from front of frame
- Ideal for use with high resolution LCD, plasma or projection screens
- All configuration settings are controllable through the card-edge user interface, or *Vista*LINK®
- Comprehensive signal and card status monitoring via four-digit card-edge display, or *Vista*LINK®
- Wide-band optical input is compatible with standard, or CWDM transmission schemes
- Compatible with multi-mode and single-mode fiber
- *Vista*LINK® enabled for remote monitoring and control when installed in 7700FR-C frame with 7700FC Frame Controller

Fiber Type	Optical/Link Budget	Transmit Side		Receive Side		Description
		Ordering Product Info	TX Power	Ordering Product Info	RX Sensitivity	
Multi-Mode	< 500m	7708RGBT-A2+13	-1dBm	7708RGBR-A2	-20dBm	1310nm on Tx and Rx fibers
Single-Mode	14dB/40km	7708RGBT-A2+13	-1dBm	7708RGBR-A2	-20dBm	1310nm on Tx and Rx fibers
Single-Mode	18.5dB/53km**	7708RGBT-A2+Cxx	+2dBm	7708RGBR-A2	-20Bm	Different CWDM Wavelengths for Tx & Rx, with 8Ch CWDM Mux/Demux**
** Assumes 8Ch CWDM Mux/Demux loss of 3.5dB				Tx Power/Rx Sensitivity are nominal values of ± 1dBm Fiber loss =0.35/0.25dB per km @ 1310nm/1550nm		

Table 1-1: Typical Application Configurations
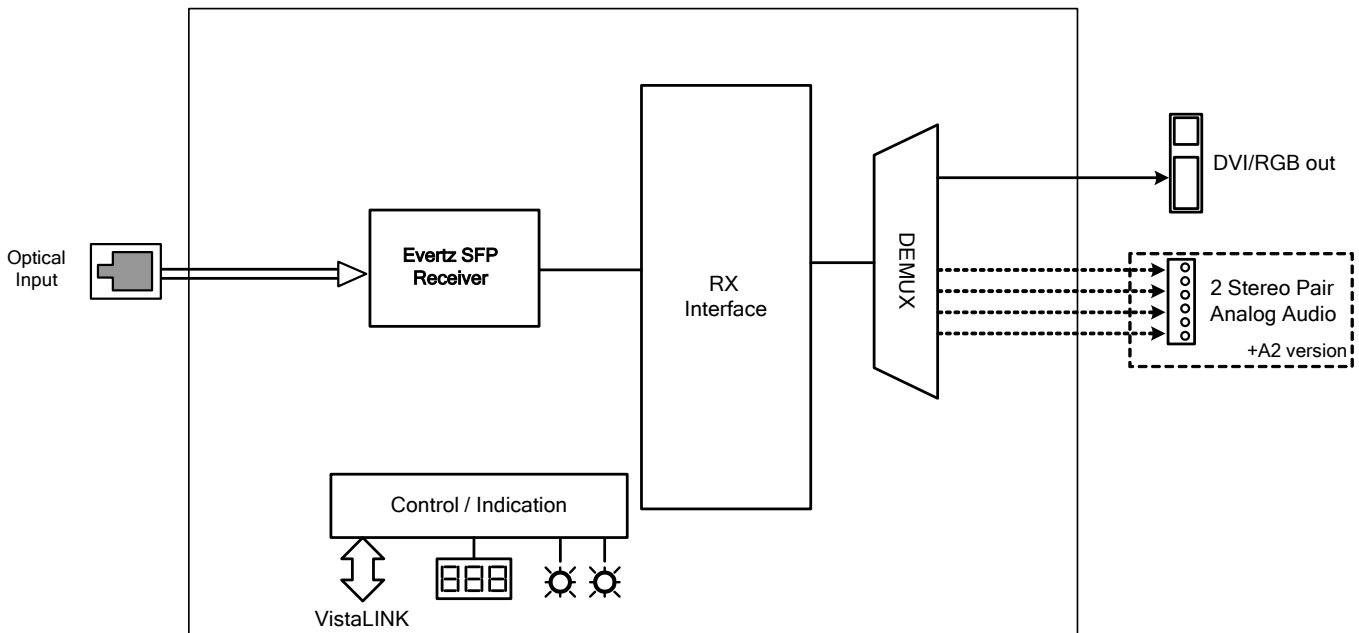
Figure 1-1: 7708RGBR Block Diagram
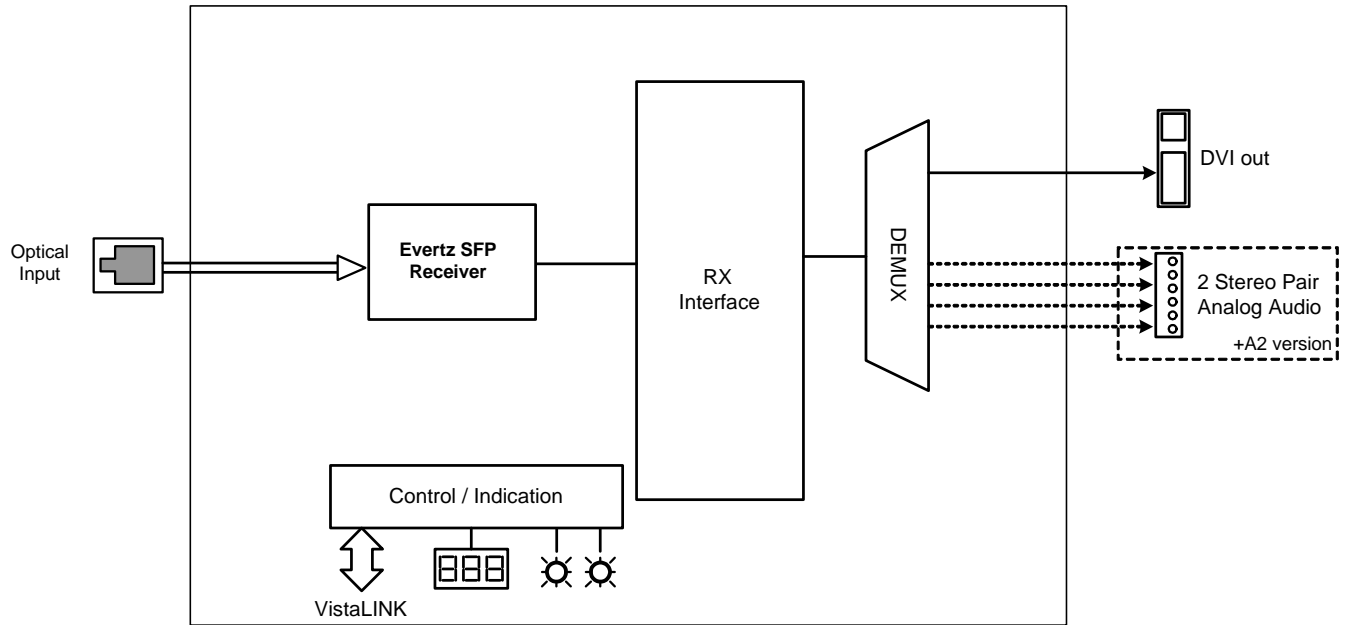
Figure 1-2: 7708DVIR Block Diagram

2. INSTALLATION

Each 7708RGBR/DVIR module comes with a companion rear plate that has one DVI-I video connector and (depending on the options ordered) may also have analog audio terminals. In addition, there is a dual channel LC/PC SFP slot to house an Evertz SFP receiver SFP. The DVI-I connector supports combined analog and digital video through a single interface. An industry-standard DB-15 connector adapter may be used for RGB. For information on mounting the rear plate and inserting the module into the frame, see section 3 of the 7700FR chapter.

When installing the Evertz SFP module into the rear plate SFP housing, align the transmit and receive arrow indicators to the LEFT when the rear plate is upright. Gently slide the SFP module into the rear plate SFP housing until it clicks into place.
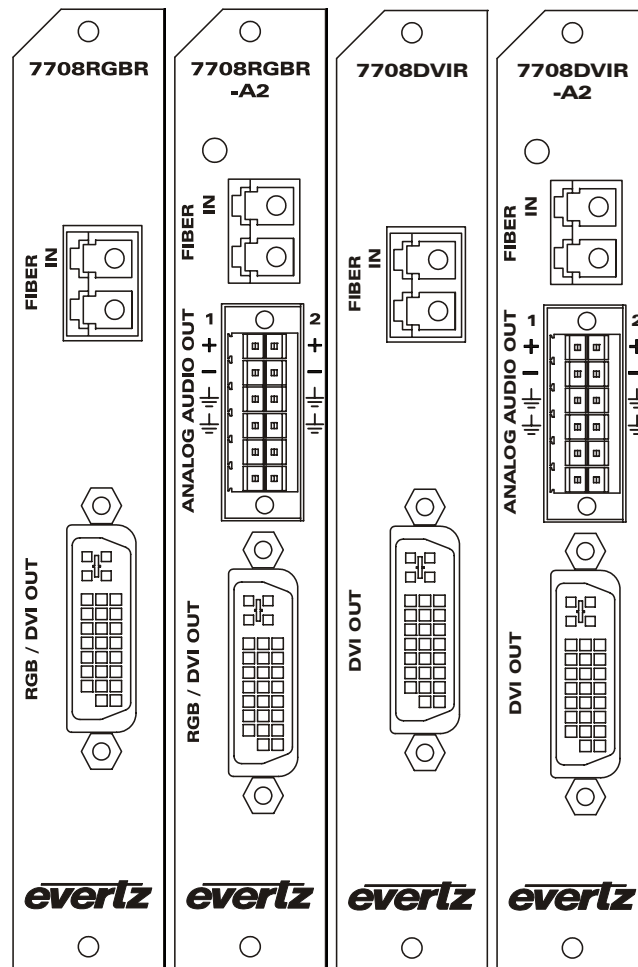
Figure 2-1: 7708RGBR/DVIR Rear Panels

2.1. OPTICAL CONNECTIONS

SFP FIBER INPUT: There is one LC/PC female connector for the optical input to the 7708RGBR/DVIR. This wide band optical input accepts optical wavelengths of 1270nm to 1610nm, accommodating standard or CWDM transmission schemes. This input is compatible with multimode fiber when connected directly to a companion 7708RGBT/DVIT transmitter.

2.2. SIGNAL CONNECTIONS

VIDEO OUTPUT: The 7708DVIR accommodates display devices with digital DVI connections only. The 7708RGBR DVI-I connector accommodates analog and digital display technologies, promoting optimal compatibility with different display types. Display devices with DVI connectors may be connected directly to this port. A DB-15 RGB connection may also be accommodated using an industry standard DB-15 to DVI-I adapter such as the Belkin F2E4162, or appropriately terminated cable assembly such as the Amp 16539332-1.

Note: When making digital DVI connections, Evertz recommends using only high quality DVI cables, no longer than 6 feet (1.8m).

AUDIO OUTPUTS (A2 Version): The 7708RGBR/DVIR-A2 modules provide a terminal block for output connections compatible with either balanced or unbalanced analog audio. Balanced audio signals should be connected to the positive (+) and negative (-) output terminals. Unbalanced audio signals should be connected to the positive (+) input terminal, and a jumper connection should be installed between the negative (-) input terminal and the ground terminal (⏚).

2.3. INTERFACING WITH 3G OPTICAL ROUTER

Figure 2-2 illustrates a typical setup using an optical router with a bidirectional 7708RGBT/DVIT transmitter and a compatible 2408RGBR/DVIR receiver. To ensure proper system operation in bidirectional configurations, it is important that the Tx OUT and Rx OUT are both switched at the same time. This should be taken into account when programming router salvo operations. Note that A2KM transmitter versions can only be routed to A2KM receiver versions and Non-A2KM transmitter versions can only be routed to Non-A2KM receivers.
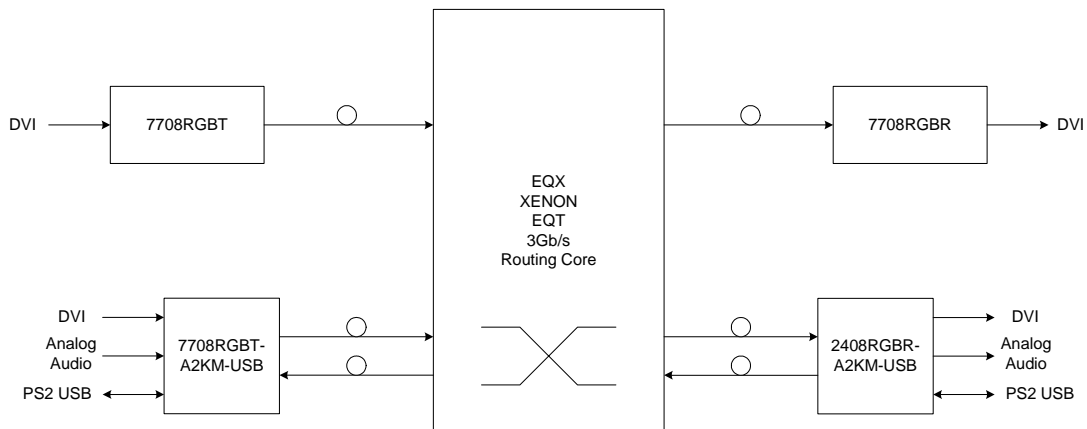
Figure 2-2: Setup Using an Optical Router

2.4. CARE AND HANDLING OF OPTICAL FIBER

2.4.1. Safety

!

Background colour: yellow
Triangular band: black
Symbol: black

CLASS 1 LASER PRODUCT

2.4.2. Assembly

Assembly or repair of the laser sub-module is done only at the Evertz facility and performed only by qualified Evertz technical personnel.

2.4.3. Labeling

Certification and Identification labels are combined into one label. As there is not enough room on the product to place the label it is reproduced here in the manuals.

- There is no date of manufacture on this label as it can be traced by bar code label placed on the Printed circuit board of each Evertz plug-in module
- The Model number is one of: 7708RGBR/DVIR, 7708RGBR/DVIR-A2

2.4.4. Handling and Connecting Fibers

✍ **Never touch the end face of an optical fiber. Always keep dust caps on optical fiber connectors when not connected and always remember to properly clean the optical end face of a connector before making a connection.**

The transmission characteristics of the fiber are dependent on the shape of the optical core and therefore care must be taken to prevent fiber damage due to heavy objects or abrupt fiber bending. Evertz recommends that you maintain a minimum bending radius of 5 cm to avoid fiber-bending loss that will decrease the maximum attainable distance of the fiber cable. The Evertz fiber optic modules come with cable lockout devices, to prevent the user from damaging the fiber by installing a module into a slot in the frame that does not have a suitable I/O module. For further information about care and handling of fiber optic cable see section 3 of the Fiber Optics System Design section of this manual binder.

3. SPECIFICATIONS

3.1. ANALOG VIDEO OUTPUTS

Number of Signals:	1
Signal Type:	RGB
Sync Type:	H and V, or Sync on Green
Connector:	DVI-1 with Analog, or 15-pin HD-15 VGA Analog (with adapter)
Display Resolution:	
Non-A2KM versions:	Up to WUXGA, 1920x1200 @ 75Hz
-A2KM versions:	Up to WUXGA, 1920x1200 @ 60Hz
Colour Depth:	24 Bit
Analog Bandwidth:	300MHz (min)
Impedance:	75Ohm
Analog Output Level:	1.4Vp-p (max)
SNR:	>55dB
Linear Distortion:	2% (max)
Intensity Distortion:	2% (max)

3.2. DIGITAL VIDEO OUTPUTS

Number of Signals:	1
Signal Type:	TMDS, per DVI specification
Connector:	DVI-I
Display Resolution:	
Non-A2KM versions:	Up to WUXGA, 1920x1200 @ 75Hz
-A2KM versions:	Up to WUXGA, 1920x1200 @ 60Hz
Colour Depth:	24-Bit

3.3. DIGITAL VIDEO CONTROL

Number of Signals:	1
Signal Type:	DDC2B, per DVI specification
Connector:	DVI-I

3.4. ANALOG AUDIO OUTPUTS (A2 VERSION)

Number of Signals:	2
Type:	Balanced or unbalanced analog audio
Connector:	12-pin Removable Terminal Block
Output Level:	
Into High Impedance:	+24dBu (max)
Into 600Ω:	+23dBu (max)
Level:	-20dB to +3dB
Frequency Response:	$\pm$0.1dB (max, 20Hz to 20KHz)
THD + Noise:	0.005% (max, 20Hz to 20KHz)
S/N Ratio:	>85dB (min)
Channel Phase:	$\pm$1° (max, 20Hz to 20KHz)
Output Impedance:	>20kΩ (nom, differential)

3.5.   OPTICAL INPUT

Connector:	LC/PC female housing
Input Wavelength:	1270 to 1610nm (min)
Input Power:	0dBm (max)
Input Optical Sensitivity:	-20dBm

3.6.   OPTICAL OUTPUT

Connector:	LC/PC female housing
Fiber Size and Type:	Single Fiber versions: 9 μm core / single mode
Output Wavelengths:	
Standard:	1310nm, 1550nm (nominal)
CWDM:	1270nm to 1610nm (ITU-T G.694.2 compliant)
Output Power:	
1310nm FP (Standard):	-1 dBm ±1dBm
CWDM DFB:	+2 dBm ±1dBm

3.7.   ELECTRICAL

Voltage:	12V DC (nom)
Power:	
Non DWDM Laser:	11 Watts (max)
DWDM Laser:	14 Watts (max)

3.8.   PHYSICAL

7700, 7800, or 7701 Frame Mounting:
  Number of Slots:
      Standard and A2 Versions: 1 slot

4. CARD-EDGE MONITORING AND CONTROL

The 7708RGBR/DVIR has up to ten LED status indicators and a 4-digit dot-matrix display on the front card-edge to show operational status of the card at a glance. The card-edge pushbutton and toggle switch are used to select various control and status indications to the dot-matrix display. Additionally, an optional audio monitoring headphone jack is provided at the card-edge, for verification of signal presence and content. Figure 4-1 shows the locations of the indicators and controls. Refer to Table 4-1 for LED functionality on different cards.
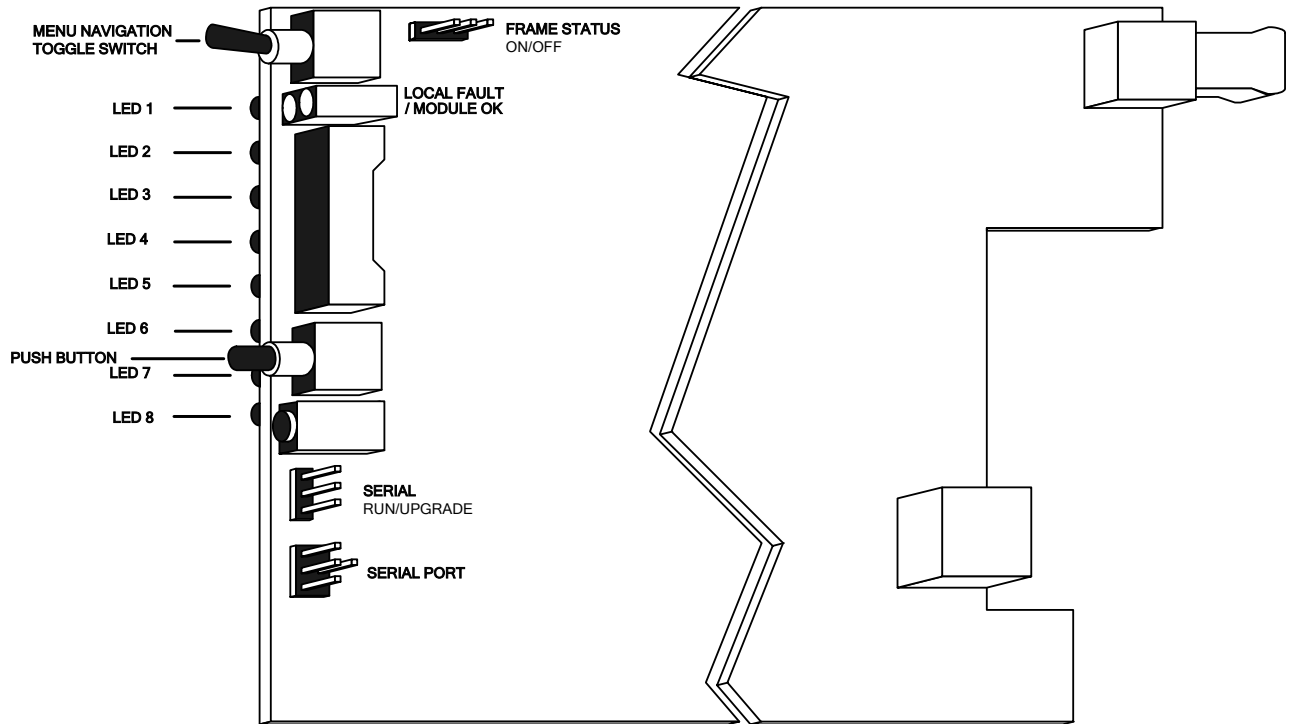
Figure 4-1: Location of Status Indicators and Jumpers

	7708RGBR/DVIR	7708RGBR/DVIR-A2
LED 1	VIDEO PRESENT	VIDEO PRESENT
LED 2	DISPLAY PRESENT	DISPLAY PRESENT
LED 3	(RESERVED)	AUDIO 1
LED 4	(RESERVED)	AUDIO 2
LED 5		
LED 6		
LED 7		
LED 8		

Table 4-1: LED Functionality

4.1. STATUS INDICATOR LEDS

LOCAL FAULT: This red LED indicates poor module health. Several conditions could cause this fault indication to be active:

- o A link with a companion 7708RGBT/DVIT has not been achieved
- o A card power fault exists (i.e. a blown fuse)

The LOCAL FAULT indication can also be reported to the frame by setting the FRAME STATUS jumper.

MODULE OK: This green LED indicates good module health. It will be On while a link is maintained with a companion 7708RGBT/DVIT, and the card power is good.

VIDEO PRESENT: When active, this green LED indicates that a video signal is present at the optical input, and is compatible with the connected video display. Video format compatibility is determined using DDC (Display Data Channel) information detected from the video display. If no DDC information is detected from the video display (Display Present LED is off), then any received video format will be considered valid.

DISPLAY PRESENT: This green LED indicates that DDC (Display Data Channel) control data is detected from the connected video display. If no DDC data is detected, then any received video signal will appear at the outputs without qualification of display compatibility.

AUDIO PRESENT (A2 Version): These two green LED's indicate the signal presence of the two respective audio input channels. Signal presence indication considers the audio detection threshold set by the user on the transmitter card (Refer to 7708RGBT/DVIT manual for more information).

4.2. CARD-EDGE DISPLAY AND CONTROLS

Additional signal and status monitoring is provided via the 4-digit dot-matrix display located at the card-edge. The card-edge pushbutton and toggle-switch are used to navigate through the display menu. Figure 4-2 provides a quick reference of the display menu structure.

Pressing the pushbutton advances the display to the next menu level. The toggle-switch may then be used to move up or down through selections of that menu level. Select BACK to return to the top menu level.

CTRL menu items have user-adjustable configuration values associated with them. STAT menu items display operating conditions or configuration values, but do not allow adjustments.

If a specific menu selection has a configuration value associated with it, then this may be changed using the toggle switch. Pressing the pushbutton will apply the displayed value and return you to the previous menu level.

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

	Pushbutton ⇨		
Menu Level 1	Menu Level 2	Menu Level 3	Menu Level 3
Indications >			
LASR...ERR (Laser Error) Supersedes **LINK...LOSS** (No optical Link) Supersedes **OK** (Ay-okay)			
Selections >	**Selections** > **HSFT** (Horizontal Shift)	**Selections** > **-10** thru **-10** **BACK** (Abort)	
	Selections > **VSFT** (Vertical Shift)	**Selections** > **-10** thru **-10** **BACK** (Abort)	
	Selections > **LINK** (Link Rate)	**Selections** > **2970** (2970Mb/s) **3125** (3125Mb/s) **BACK** (Abort)	
	Selections > **BRT** (Brightness)	**Selections** > **0** thru **64** (Arbitrary Range) **BACK** (Abort)	
	Selections > **OSET** (Output Mode)	**Selections** > **NORM** (Normal) **BLAC** (Black) **SUSP** (Suspend) **OFF** (Off) **BACK** (Abort)	
CTRL (Control)	**Selections** > **OLOS** (Ouput On Loss)	**Selections** > **BLAC** (Black) **SUSP** (Suspend) **OFF** (Off) **BACK** (Abort)	
⇧ **Toggle Switch** ⇩	**Selections** > **OSNC** (Ouput Sync Type)	**Selections** > **SOG** (Sync on green) **HV** (RGBHV) **AUTO** (Same as input to RGBT/DVIT) **BACK** (Abort)	
	Selections > **AUD** (Audio)	**Selections** > **FADE** (Soft Switch)	**Selections** > **ON** (Soft Switch On) **OFF** (Soft Switch Off) **BACK** (Abort)
	Selections > **VOL** (Audio Jack Volume)	**Selections** > **0** thru **64** (Arbitrary Range) **BACK** (Abort)	
	Selections > **DISP** (Display Orientation)	**Selections** > **HORZ** or **VERT** **BACK** (Abort)	
	BACK (Abort)		
Selections >	**Selections** > **RES** (Display Resolution)	**Indications** > **Res – Freq** (Resolution and Refresh Rate)	
	Selections > **TYPE** (Connected Display Type)	**Indications** > **DVI** or **RGB**	
	Selections > **ISNC** (Input Sync Type)	**Indications** > **SOG** (Sync on Green) **HV** (RGBHV)	
	Selections > **PWR** (Optical Power)	**Indications** > **< -40** (Less than -40dBm) **-40** to **0** (dBm) **>0** (Geater than 0dBm)	
STAT (Status)	**Selections** > **LINK** (Link Rate)	**Indications** > **2790** (2790Mb/s) **3125** (3125Mb/s)	
	Selections > **TID** (Transmit ID Tag)	**Indications** > **00000** to **7FFFE** (Transmit ID)	
	Selections > **VER** (Firmware Version)	**Indications** > **Firmware Version**	
	BACK (Abort)		

Figure 4-2: 7708RGBR Card Edge Menu Flow Cart

4.2.1. Card-Edge Display Warning Indications

There are flashing warning indicators that may appear on the display of the 7708RGBR/DVIR. These warning indications can overwrite other display text, and supersede each other by order of priority. By pressing the pushbutton, a warning indication can be cleared from the display, and access to other menu items is maintained. Possible warning indications are:

`LASR…ERR`	Laser error - warns of laser (if equipped) end-of-life condition.
`LINK…LOSS`	Optical link not established.
`OK`	Optical link established, no video input or laser (if equipped) problems.

4.2.2. Adjusting the Horizontal and Vertical Shift (7708RGBR Models Only)

The 7708RGBR module allows the user to adjust the vertical and horizontal position of the DVI output picture when RGB is applied.

CTRL
HSFT
-10 to 10

To adjust the *Horizontal Shift*, select the `CTRL` menu item in the first menu level. Use the toggle switch to select the `HSFT` menu item and press the pushbutton. The toggle switch may then be used to change the value. Press the pushbutton to apply the displayed value and return to the first menu level.

`-10` to `+10`   Horizontal shift range

CTRL
VSFT
-10 to 10

To adjust the *Vertical Shift*, select the `CTRL` menu item in the first menu level. Use the toggle switch to select the `VSFT` menu item and press the pushbutton. The toggle switch may then be used to change the value. Press the pushbutton to apply the displayed value and return to the first menu level.

`-10` to `+10`   Vertical shift range

4.2.3. Setting the Link Rate

In applications with 3G routing, the *Link Rate* of the 7708RGBR/DVIR must be 2970Mb/s to be compatible with 3G routers. Two user selectable Link Rates may be chosen, 2970Mb/s for routing purposes and 3125Mb/s for normal operation.

CTRL
LINK
2970
3125

To configure the *Link Rate*, select the `CTRL` menu item in the first menu level. Use the toggle switch to select the `LINK` menu item and press the pushbutton. The toggle switch can then be used to change the mode of operation. Press the pushbutton to apply the displayed selection and return to the first menu level. The following selections are available for this menu item:

`2970:`   Sets the Link Rate to 2970Mb/s for use with 3G routers.
`3125:`   Sets the Link Rate to 3125Mb/s for normal operation.

4.2.4. Adjusting the Output Brightness (7708RGBR Models Only)

The 7708RGBR allows adjustment of the RGB output signal brightness to accommodate display devices with varying input sensitivities.

CTRL
BRT
0 - 64

To adjust the brightness, select the CTRL menu item in the first menu level. Use the toggle switch to select the BRT menu item and press the pushbutton. The toggle switch may then be used to change the level. Press the pushbutton to apply the displayed value and return to the first menu level. The following selections are available for this menu item:

0 to 64: Range of brightness selection

4.2.5. Adjusting the Output Video Mode

Adjusting the output setting forces the output video to NORMAL, BLACK, SUSPEND, or OUTPUT OFF. Adjusting this setting overrides the video input regardless of its status.

CTRL
OSET
NORM
BLAK
SUSP
OFF

To adjust the *Output* setting, select the CTRL menu item in the first menu level. Use the toggle switch to select the OSET menu item and press the pushbutton. The toggle switch may then be used to change the output mode. Press the pushbutton to apply the displayed value and return to the first menu level. The following selections are available for this menu item:

NORM: Selecting this option sets the output setting to Normal.
BLAK: Selecting this option sets the output setting to Black.
SUSP: Selecting this option suspends the output setting.
OFF: Selecting this option turns the output off.

4.2.6. Adjusting the Output on Loss

The *Output on Loss* setting determines what the output video is set to upon loss of video input.

CTRL
OLOS
BLAK
SUSP
OFF

To adjust the *Output on Loss*, select the CTRL menu item in the first menu level. Use the toggle switch to select the OLOS menu item and press the pushbutton. The toggle switch may then be used to change the mode. Press the pushbutton to apply the displayed value and return to the first menu level. The following selections are available for this menu item:

BLAK: Selecting this option sets the output setting to Black.
SUSP: Selecting this option suspends the output setting.
OFF: Selecting this option turns the output loss off.

4.2.7.   Selecting the Output Sync Type (7708RGBR Models Only)

The 7708RGBR is capable of producing different sync signals, depending on the requirements of the connected display equipment. The available sync types are *Sync on Green* and *RGBHV*. The 7708RGBR will choose an output sync type based on the sync type detected at the 7708RGBT (*AUTO* mode) or it may be forced to produce *Sync on Green* or *RGBHV* regardless of the sync type detected at the 7708RGBT.

```
CTRL
  OSNC
    SOG
    HV
    AUTO
```

To change the output sync type, select the `CTRL` menu item in menu level 1. Use the toggle switch to select the `OSNC` menu item and press the pushbutton. Select from the following options:

SOG: Sync On Green
HV: RGBHV
AUTO: Output same sync type as detected at the input of the 7708RGBT

4.2.8.   Setting the Audio Soft Switch

The 7708RGBR/DVIR is capable of eliminating hot-switch audio pop on the analog output. Turn the Soft Switch feature *ON* to provide popless audio transitions from one audio source to another.

```
CTRL
  AUD
    FADE
      ON
      OFF
```

To change the audio soft switch mode, select the `CTRL` menu item in menu level 1. Use the toggle switch to select the `AUD` menu item and press the pushbutton. Select from the following options under the `FADE` menu item:

ON: Audio Soft Switch On
OFF: Audio Soft Switch Off

4.2.9.   Adjusting the Headphone Jack Volume (A2 Version Only)

The 7708RGBR/DVIR provides a convenient audio monitoring headphone jack at the card-edge. This jack can be used to verify signal presence or content for each audio channel. The headphone jack volume can be adjusted via the card-edge interface.

```
CTRL
  VOL
    15 - 45
```

To configure the headphone jack, select the `CTRL` menu item in the first menu level. The 7708RGBR/DVIR allows the user to control the headphone monitoring jack volume. Use the toggle switch to select the `VOL` menu item and press the pushbutton. The toggle switch may then be used to change the volume. Press the pushbutton to apply the displayed value and return to the first menu level. The following selections are available for this menu item:

15 to 45: Range of volume selection for the headphone monitoring jack.

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

The DISP option allows the user to set a horizontal or vertical orientation for the card edge display.

CTRL
DISP
HORZ
VERT

To set the display orientation, select the CTRL menu item in the first menu level, then use the toggle switch to show the DISP menu selection and use the pushbutton to select it. Use the toggle switch to change between HORZ and VERT. Press the pushbutton to make your selection.

HORZ: Horizontal display used when the module is housed in the one-rack unit 7701FR frame or the stand-alone enclosure.

VERT: Vertical display used when the module is housed in the three-rack unit 7700FR frame.

4.2.11. Displaying the Video Resolution and Refresh

The 7708RGBR/DVIR will detect and indicate the video format present at the optical input. It should be ensured that this format is compatible with the connected video display. Most video displays will return DDC (Display Data Channel) control data to the 7708RGBR/DVIR. This DDC data contains information describing video formats compatible with the connected display. If the format of the received video signal is not compatible with the connected display, then the output is switched off and a TYPE… ERR warning is indicated in the display. If no DDC information is detected from the video display (Display Present LED is off), then any received video format will be considered valid.

STAT
RES
RES - FREQ

To display the video format indication, select the STAT menu item in menu level 1. Use the toggle switch to select the RES menu item and press the pushbutton. Following this selection, a scrolling indication of the video format will appear on the card-edge display, including resolution and refresh rate. If no video signal is detected, the display will indicate NONE. To exit the resolution display, press the pushbutton to return to the previous menu level.

4.2.12. Displaying the Connected Display Type (7708RGBR Models Only)

The 7708RGBR will display the video source type connected to the 7708RGBT.

STAT
TYPE
DVI
RGB

To indicate the *Video Source Type*, select the STAT menu item in menu level 1. Use the toggle switch to select the TYPE menu item and press the pushbutton. One of the following will be indicated:

CRT: 7708RGBT input video is RGB.
LCD: 7708RGBT input video is DVI.

4.2.13.   Displaying the Input Video Sync Type (7708RGBR Models Only)

The 7708RGBR can display the type of sync signal that is present at the video input of the 7708RGBT transmitter when RGB video is applied.

STAT
ISNC
SOG
HV

To indicate the *Input Sync Type*, select the STAT menu item in menu level 1. Use the toggle switch to select the ISNC menu item and press the pushbutton.

SOG: Sync signal at the RGBT input is Sync On Green
HV: Sync signal at the RGBT input is RGB H and V

To exit the Input Sync Type display, press the pushbutton to return to the previous menu level. This menu item is hidden when DVI is present.

4.2.14.   Displaying the Input Optical Power

The 7708RGBR/DVIR can measure and display *Optical Power* over a range of −40 to 0dBm in 1dBm increments.

STAT
PWR
LOW
-40 to 0
OVER

To display the *Optical Power*, select the STAT menu item in menu level 1. Use the toggle switch to select the PWR menu item and press the pushbutton.

LOW: Optical input power is below −40dBm.
-40 to 0:   Optical input power in dBm units.
OVER: Optical input power is in excess of 0dBm.

4.2.15.   Displaying the Link Rate

The 7708RGBR/DVIR can display the active *Link Rate*.

STAT
LINK
2970
3125

To display the *Link Rate*, select the STAT menu item in menu level 1. Use the toggle switch to select the LINK menu item and press the pushbutton.

2970:   *Link Rate* set to 2970Mb/s for 3G routing applications.
3125:   *Link Rate* set to 3125Mb/s for normal operation.

4.2.16.   Displaying the Transmitter ID Tag

The 7708RGBR/DVIR can display the *ID Tag* of the fiber connected 7708RGBT/DVIT.

STAT
TID
00000 to 7FFFE

To display the 7708RGBT/DVIT *ID Tag*, select the STAT menu item in menu level 1. Use the toggle switch to select the TID menu item and press the pushbutton.

00000 to 7FFFE: ID   tag   of   7708RGBT/DVIT   connected   to 7708RGBR/DVIR.

4.2.17.   Displaying the Firmware Version

STAT
VER
Firmware Version

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

For example: VER 1.01 BUILD 3

everlz®

5. JUMPER CONTROLS

Several jumpers, located at the front of the module, are used to preset various operating modes. Figure 4-1 shows the locations of the jumpers.

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

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

FRAME STATUS: To monitor faults on this module with the frame status indicators (on the Power Supply FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position (default)

When this jumper is installed in the Off position local faults on this module will not be monitored.

5.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

RUN/UPGRADE: The RUN/UPGRADE jumper is used when firmware upgrades are being done to the module. For normal operation it should be installed in the *RUN* position. See the *Upgrading Firmware* chapter in the front of the binder for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move the RUN/UPGRADE jumper J16 into the *UPGRADE* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of the binder) onto SERIAL header J7 at the card edge. Re-install the module into the frame. Run the upgrade as described in *Upgrading Firmware* chapter in the front of the binder. Once the upgrade is complete, remove the module from the frame, move J16 into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

6. *VISTA*LINK® REMOTE MONITORING/CONTROL

6.1. WHAT IS *VISTA*LINK®?

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

There are 3 components of SNMP:

1. An SNMP manager also known as a Network Management System (NMS) is a computer running special software that communicates with the devices in the network. Evertz VL-Fiber demo Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *Vista*LINK® enabled fiber optic products.

2. Managed devices (such as 7708RGBR/DVIR cards), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz *Vista*LINK® enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC *Vista*LINK® frame controller module, which serves as the Agent.

3. A virtual database known as the Management information Base (MIB) lists all the variables being monitored and which both the Manager and Agent understand. Please contact Evertz for further information about obtaining a copy of the MIB for interfacing to a third party Manager/NMS.

For more information on connecting and configuring the *Vista*LINK® network, see the 7700FC Frame Controller chapter.

6.2. *VISTA*LINK® MONITORED PARAMETERS

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

Parameter Name	Description
Input Type	Input Type
Input Video Resolution	Input video resolution
Card Type	Card Type
RGBT Input Sync	Input video sync type
Output Video Resolution	Resolution of video output at the receiver
Optical Power	Input optical power
TID Status	Transmitter ID tag

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

6.3. *VISTA*LINK® CONTROLLED PARAMETERS

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

Parameter Name	Notes	Description
Optical Power Alarm Threshold	-1 to -40	Low optical power level for alarm trap
Video Output on Link Loss	Black Suspend Off	Video output mode on optical link loss
Output Video Control	Normal Black Suspend Off	Control of video output – allows output of link video, black or DPMS modes
RGBR Output Sync	Auto RGBHV Sync on Green	Controls sync type on RGB output
V-Shift	-10 to +10	Adjusts the vertical position of the output picture
H-Shift	-10 to +10	Adjusts the horizontal position of the output picture
Link Rate	2970 3125	Sets Link Rate
Audio Soft Switch	ON OFF	Sets audio soft switch On or Off

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

6.4. *VISTA*LINK® TRAPS

The following traps can be *Vista*LINK® enabled and monitored.

Trap	Description
Input Present	Triggers when valid optical input is lost
Optical Link	Triggers when valid optical link is lost
Optical Power	Triggers when input optical power is below threshold
Source Change Status	Triggers when input source is changed

Table 6-3: *Vista*LINK® Traps