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REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1.0	First Release	Sept 09
1.1	Added 7708DVIT options, updated electrical specifications.	Oct 09

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Although every attempt has been made to accurately describe the features, installation and operation of this product in this manual, no warranty is granted nor liability assumed in relation to any errors or omissions unless specifically undertaken in the Evertz sales contract or order confirmation. Information contained in this manual is periodically updated and changes will be incorporated into subsequent editions. If you encounter an error, please notify Evertz Customer Service department. Evertz reserves the right, without notice or liability, to make changes in equipment design or specifications.

WARNING

Never look directly into an optical fiber. Irreversible eye damage can occur in a matter of milliseconds.

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1. OVERVIEW

The 7708RGBT SFP Fiber Transmitter 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 optimum compatibility with different display types. Two optional analog audio inputs are also available, as well as optional serial data, USB, keyboard, and mouse. These options facilitate complete remote computer control and display, including the ability to connect USB peripherals. The 7708RGBT is designed to operate with a companion 7708RGRB receiver to allow communication over fiber optic cable with minimal latency.

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

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

The 7708RGBT uses Evertz SFP modules to interface to and from the fiber optic domain. SFP transmitters and transceivers are available in 1310nm, 1550nm, and CWDM wavelengths.

Features:

- Digital (DVI) and analog (RGB) display technologies are supported through one interface on the 7708RGBT
- 2970Mb/s and 3125Mb/s user selectable Link Rates for normal and routing applications
- VESA video resolutions supported up to WUXGA (1920x1200)
- Two optional analog audio inputs
- Optional keyboard, mouse and serial data
- Optional USB 2.0 interface
- Full 24 bits per pixel color resolution
- True DC restoration with AGC for analog RGB input signals
- Ideal for use with high resolution LCD, plasma or projection screens
- 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
- 7708RGBT is fully hot swappable from front of frame
- All configuration settings are controlled locally through the card-edge user interface, or remotely through *VistaLINK*®
- Comprehensive signal and card status monitoring are available locally on the four-digit card-edge display, or remotely through *VistaLINK*®
- Optical output wavelengths of 1310nm, 1550nm, and up to sixteen CWDM wavelengths (ITU-T G.694.2 compliant)
- Selectable continuous or discontinuous laser operation modes

Fiber Type	Optical/Link Budget	Transmit Side		Receive Side		Description
		Ordering Product Info	TX Power	Ordering Product Info	RX Sensitivity	
Multi-Mode	< 500m	7708RGBT13-A2	-1dBm	7708RGBR-A2	-20dBm	1310nm on Tx and Rx fibers
Single-Mode	12dB/34km	7708RGBT13-A2	-1dBm	7708RGBR-A2	-20dBm	1310nm on Tx and Rx fibers
Single-Mode	18.5dB/53km**	7708RGBTxx-A2	+2dBm	7708RGBR-A2	-20dBm	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 ± 1 dBm
 Fiber loss = 0.35/0.25dB per km @ 1310nm/1550nm

Table 1-1: Sample Typical Fiber Application Configurations

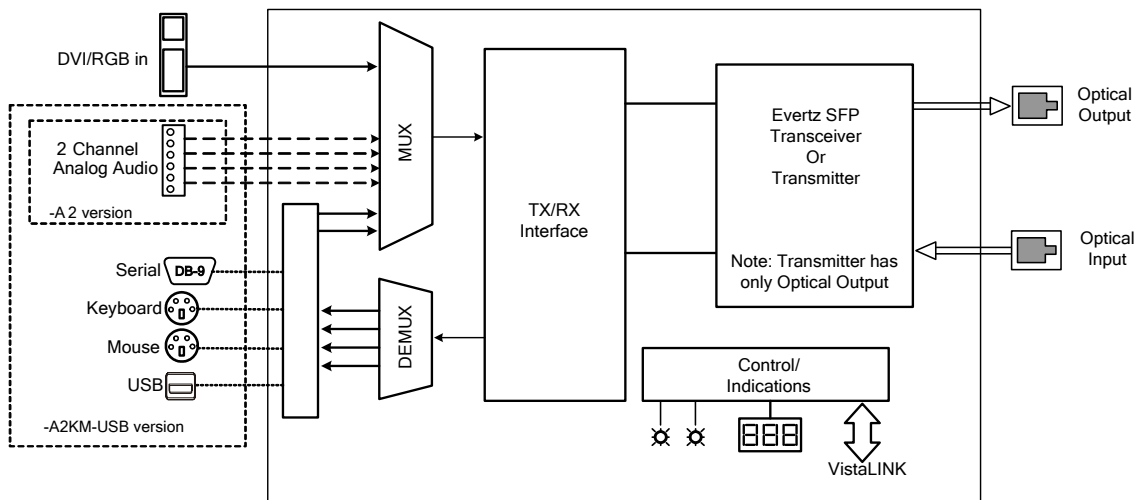


Figure 1-1: 7708RGBT Block Diagram

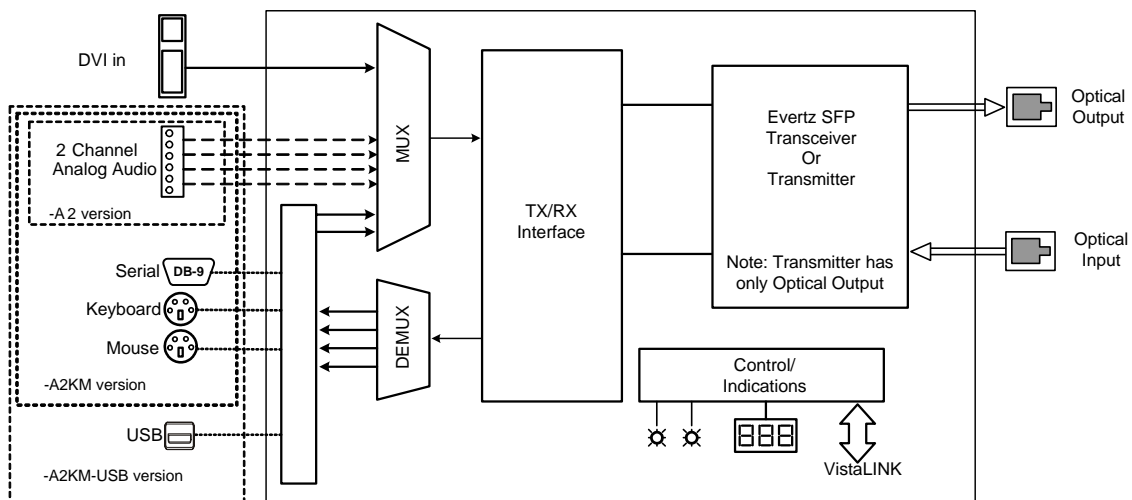


Figure 1-2: 7708DVIT Block Diagram

1.1. SETTING UP THE DDC VALUE

DDC (Display Data Channel) is a series of protocols that enables plug and play communication between a graphics adapter and a computer monitor. It allows the display to communicate its supported display modes and display parameters to the graphics adapter.

The DDC emulation mode will need to be set on the transmitter card (RGBT/DVIT) before plugging a PC into the RGBT/DVIT card. If the DDC is subsequently changed then a full re-boot will need to occur to allow the DDC change to take effect.

1. Ensure that the PC is off or not connected to the RGBT/DVIT card.
2. Set the DDC emulation mode depending on your system configuration:

LCD: Emulate display with digital (DVI) input and output.

CRTA: Emulate display with analog (RGB) input and analog (RGB) output.

CRTD: Emulate display with analog (RGB) input and digital (DVI) output.

3. Connect the PC to the RGBT/DVIT card and power on the computer.

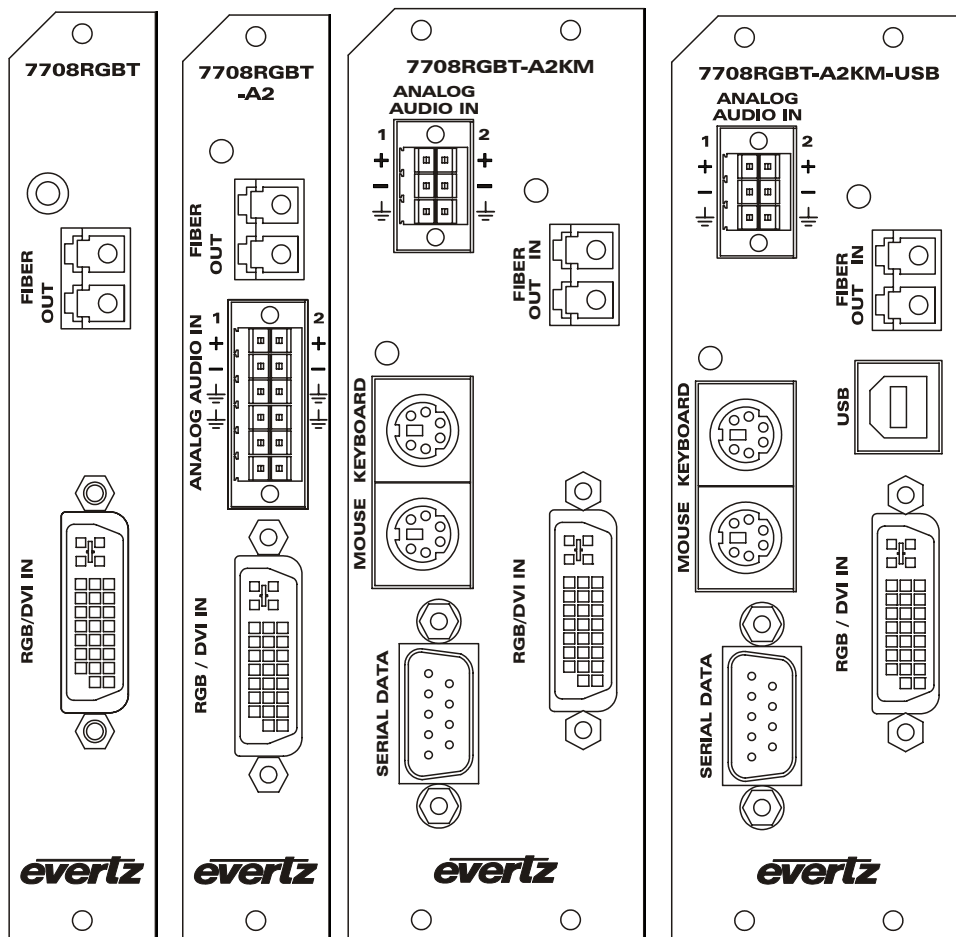


Please note: The DDC setting can not be set and applied while the PC is on and connected to the RGBT card. Please ensure that the PC is not connected or is turned off when changing the DDC.

2. INSTALLATION

Each 7708RGBT 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, PS2 keyboard and mouse connectors, a DB9 serial connector, and a type-B USB connector. In addition, there is a dual channel LC/PC SFP slot to house an Evertz SFP transmitter or an Evertz SFP transceiver. 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. The following diagrams show all rear plate options for the 7708RGBT.

When installing the Evertz SFP module into the rear plate SFP housing, align the transmit and receive arrow indicators to the LEFT with the rear plate upright. Gently slide the SFP module into the rear plate SFP housing until it clicks into place.



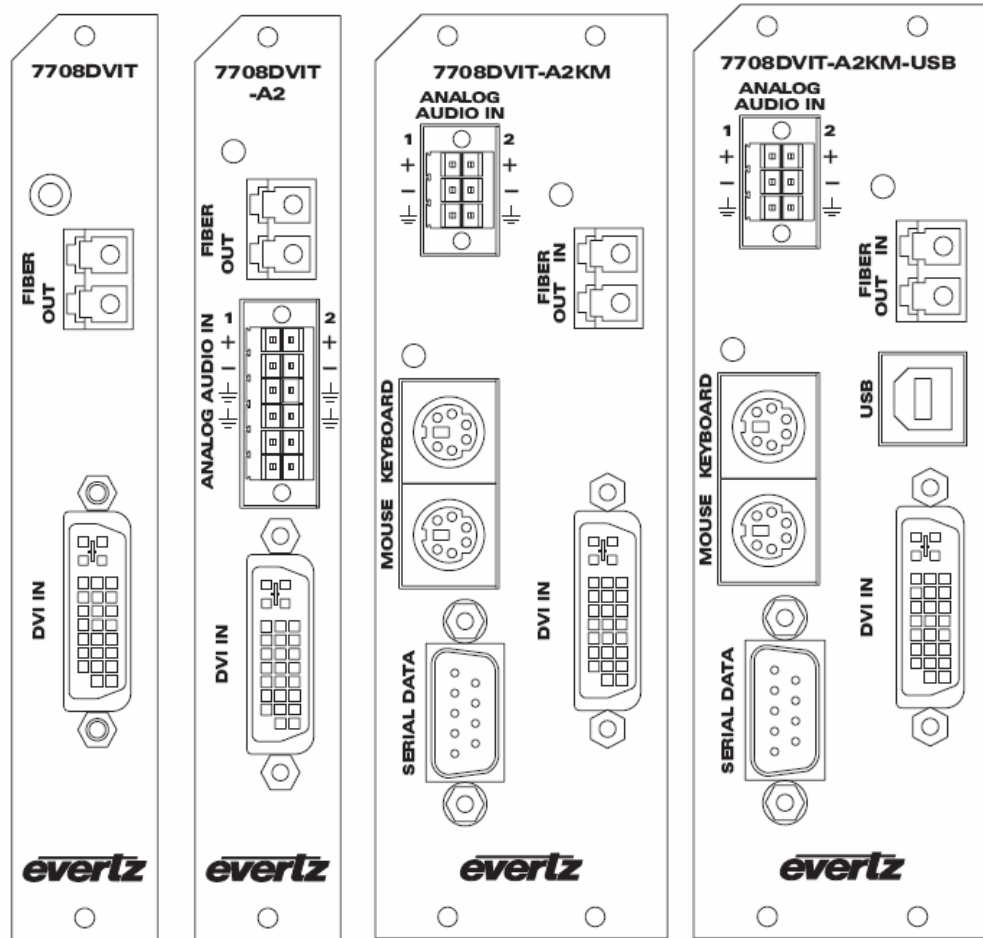


Figure 2-1: 7708RGBT & 7708 DVIT Rear Plates

2.1. OPTICAL CONNECTIONS

SFP FIBER OUTPUT: There is one LC/PC female connector when the 7708RGBT/DVIT is equipped with an Evertz Transmitter or Transceiver SFP module. The optical output is available in 1310nm, 1550nm, and CWDM (ITU-T G.694.2 compliant) wavelengths. This connector is compatible with multimode fiber when connected directly to a companion 7708RGR/DVIR receiver.

SFP FIBER INPUT: There is one LC/PC female connector when the 7708RGBT/DVIT is equipped with an Evertz Transceiver SFP module. This wide band optical input accepts optical wavelengths of 1270nm to 1610nm and is compatible with multimode fiber when connected directly to a companion 7708RGR/DVIR receiver.

2.2. SIGNAL CONNECTIONS

VIDEO INPUT: The 7708DVIT accommodates digital DVI input signals only. The 7708RGBT DVI-I connector accommodates analog and digital display technologies, promoting optimal compatibility with different display types. Input DVI signals 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.



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

AUDIO INPUTS (A2 & A2KM Versions): The 7708RGBT/DVIT-A2, 7708RGBT/DVIT-A2KM, and 7708RGBT/DVIT-A2KM-USB modules provide a terminal block for input connections compatible with either balanced or unbalanced analog audio. Balanced audio signals should be connected to the positive (+) and negative (-) input 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 (\perp).

KEYBOARD (A2KM Versions): The 7708RGBT/DVIT-A2KM and 7708RGBT/DVIT-A2KM-USB provides a PS2 port for a keyboard connection. Using a PS2 cable, connect this port to the PS2 keyboard port on the computer.

MOUSE (A2KM Versions): The 7708RGBT/DVIT-A2KM and 7708RGBT/DVIT-A2KM-USB provides a PS2 port for a mouse connection. Using a PS2 cable, connect this port to the PS2 mouse port on the computer.

SERIAL (A2KM Versions): Female DB9 RS232 serial port with standard PC style layout. Connect this port to the computer using a straight-through serial cable. This port may also operate in RS422 mode by changing a user-selectable menu item (see section 4.2.12).

USB (A2KM-USB Version): When equipped with the USB option, the 7708RGBT/DVIT-A2KM-USB provides a single type-B USB port. Connect this port to the computer using a USB cable. To the computer, the 7708RGBT/DVIT-A2KM-USB will appear as a USB hub.

2.3. INTERFACING WITH 3G OPTICAL ROUTER

Figure 2-2 illustrates a typical setup using an optical router with a bidirectional 7708RGBT transmitters and a compatible 2408RGRB receiver. To ensure proper system operation in bidirectional configurations, it is important that the Tx OUT and Rx OUT from 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.

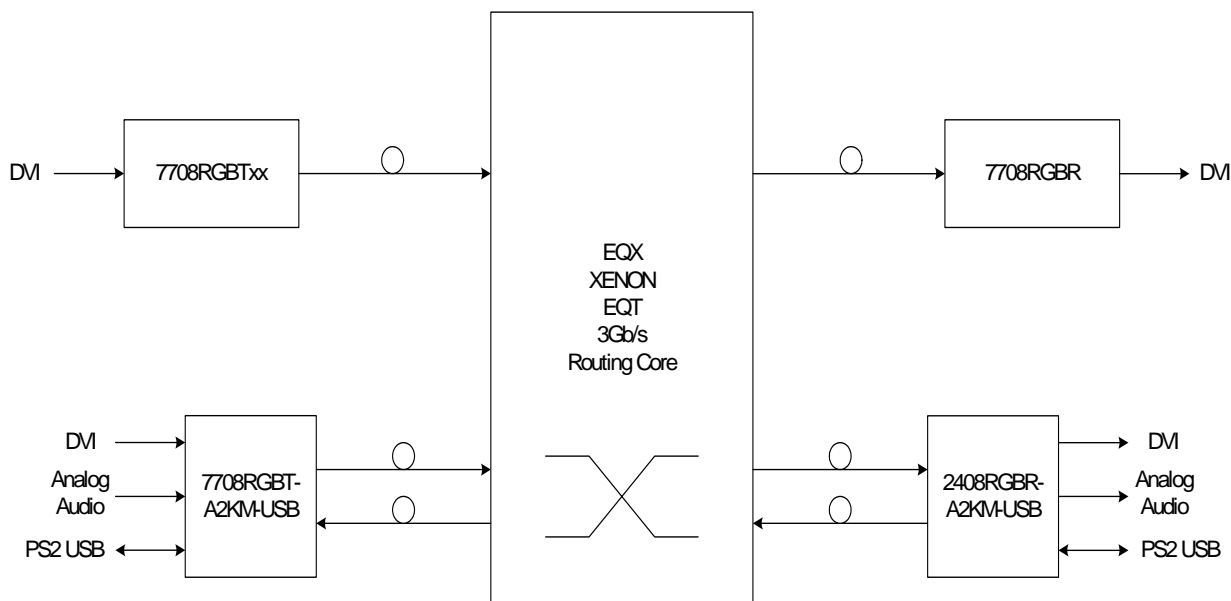


Figure 2-2: Setup Using an Optical Router

2.4. CARE AND HANDLING OF OPTICAL FIBER

2.4.1. Safety



Background colour: yellow
Triangular band: black
Symbol: black

2.4.2. Assembly

Assembly or repair of the laser sub-module is performed only at the Evertz facility 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 the bar code label placed on the printed circuit board of each Evertz plug-in module
- The model number is one of: 7708RGBT/DVIT+13, 7708RGBT/DVIT-A2+13, 7708RGBT/DVIR-A2KM+13, 7708RGBT/DVIT-A2KM-USB+13, or +Cxx where +13 is shown for CWDM option, (xx = 27, 29, 31, 33, 35, 37, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61) with additional suffixes as above



Figure 2-3: Reproduction of Laser Certification and Identification Label

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 clean the optical end face of a connector properly 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 caused by 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. Evertz fiber optic modules come with lockout devices to prevent the user from damaging the fiber connector by installing a module into a slot in the frame that does not have a suitable rear plate. 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



Video and audio performance specifications are measured at the output of a companion 7708RGRB/DVIR Receiver.

3.1. ANALOG VIDEO INPUTS

Number of Signals:	1
Signal Type:	RGB
Sync Type:	H and V, or Sync on Green
Connector:	DVI-I 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 (max)
Impedance:	75Ω
SNR:	>55dB
Input Level:	1Vp-p (max)
Linear Distortion:	2% (max)
Intensity Distortion:	2% (max)

3.2. DIGITAL VIDEO INPUTS

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 INPUTS (A2 & A2KM VERSIONS)

Number of Signals:	2
Connector:	Removable Terminal Block
Input Level:	+24dBu (max)
Input Impedance:	20kΩ (min, differential)
Frequency Response:	±0.1dB (max, 20Hz to 20KHz)
THD:	< 0.005% (max, 20Hz to 20KHz, @ 0dBFS)
S/N Ratio:	>85dB (min)
Channel Phase:	±1° (max, 20Hz to 20KHz)
Signal Quantization:	24 bits

3.5. KEYBOARD/MOUSE INPUT/OUTPUT (A2KM VERSIONS)

Number: 2
Connector: 1 PS2 each for keyboard and mouse

3.6. SERIAL PORT (A2KM VERSIONS)

Standard: RS232 or RS422 (user selectable)
Number: 1
Connector: DB9F

3.7. USB PORT (A2KM-USB VERSION)

Standard: USB 2.0
Number: 1
Connector: USB type-B

3.8. OPTICAL OUTPUT

Connector: LC/PC (female)
Fiber Size and Type: Single Fiber versions: 9 μ m 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 \pm 1dBm
 CWDM DFB: +2 dBm \pm 1dBm

3.9. OPTICAL INPUT (A2KM VERSIONS)

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

3.10. ELECTRICAL

Voltage: 12V DC (nominal)
Power: 11 Watts (max)

3.11. PHYSICAL**7700, 7800, or 7701 Frame Mounting:**

Number of Slots	Model
1	7708RGBT/DVIT 7708RGBT/DVIT-A2
2	7708RGBT/DVIT-A2KM 7708RGBT/DVIT-A2KM-USB

4. CARD-EDGE MONITORING AND CONTROL

The 7708RGBT/DVIT has ten LED status indicators and a four-digit dot-matrix display on the front card-edge to show the card's operational status at a glance. The card-edge pushbutton and toggle switch are used to select various control and status indicators on 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.

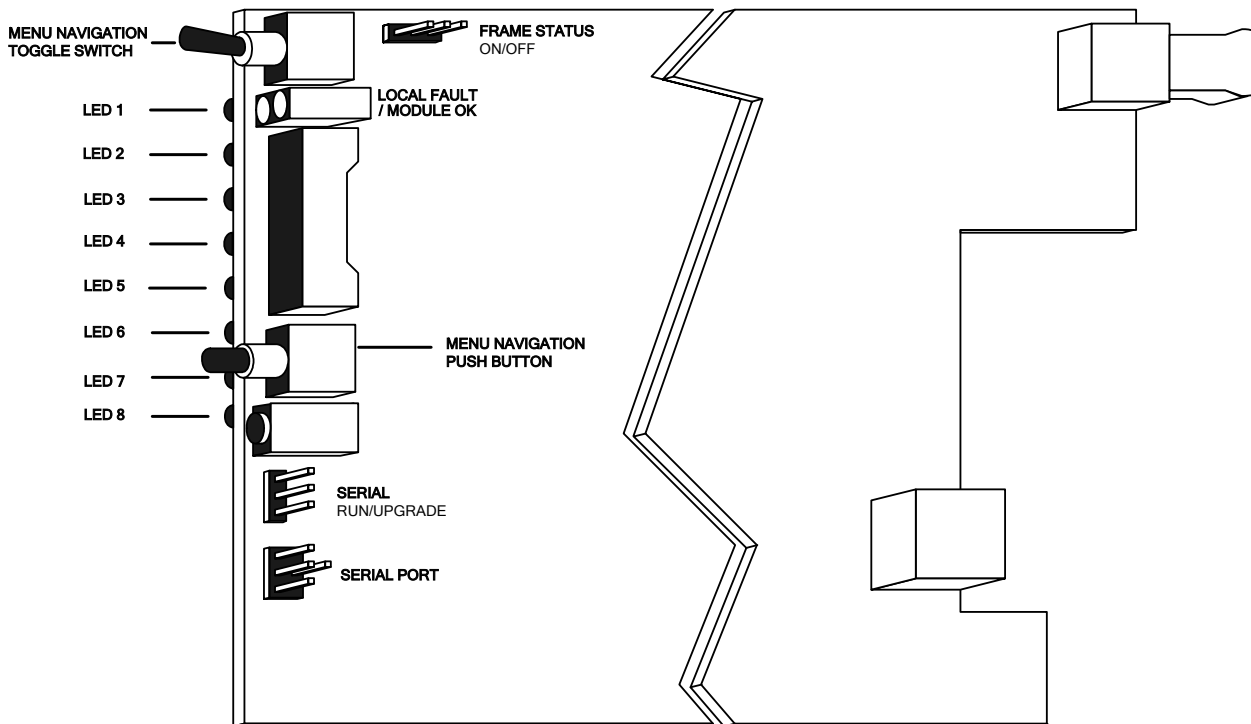


Figure 4-1: Location of Status Indicators and Jumpers

	7708RGBT/DVIT	7708RGBT/DVIT-A2	7708RGBT/DVIT-A2KM	7708RGBT/DVIT-A2KM-USB
LED 1	RGB PRESENT	RGB PRESENT	RGB PRESENT	RGB PRESENT
LED 2	DVI PRESENT	DVI PRESENT	DVI PRESENT	DVI PRESENT
LED 3	(reserved)	AUDIO 1	AUDIO 1	AUDIO 1
LED 4	(reserved)	AUDIO 2	AUDIO 2	AUDIO 2
LED 5			(reserved)	USB PRESENT
LED 6			(reserved)	(reserved)
LED 7			(reserved)	(reserved)
LED 8			(reserved)	(reserved)

Table 4-1: LEDs Functionality

4.1. STATUS INDICATOR LEDES

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

- Laser fault
- Optical link not established (-A2KM versions only)
- Input video not present
- A card power fault exists (i.e. a blown fuse)

This 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 the output laser is operating properly, and the card power is good.

RGB PRESENT: This green LED indicates the presence of an analog video input signal.

DVI PRESENT: This green LED indicates the presence of a digital video input.

USB PRESENT: This green LED indicates the presence of a USB connection (-USB versions only).

AUDIO PRESENT (A2 & A2KM Versions Only): These two green LEDs indicate the signal presence of the two respective audio input channels. Signal presence indication considers the audio detection threshold set by the user. Refer to section 4.2.6 and 4.2.7 for details about setting the audio detection threshold.

4.2. CARD-EDGE DISPLAY AND CONTROLS

Additional signal and status monitoring is provided via the four-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 to 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.

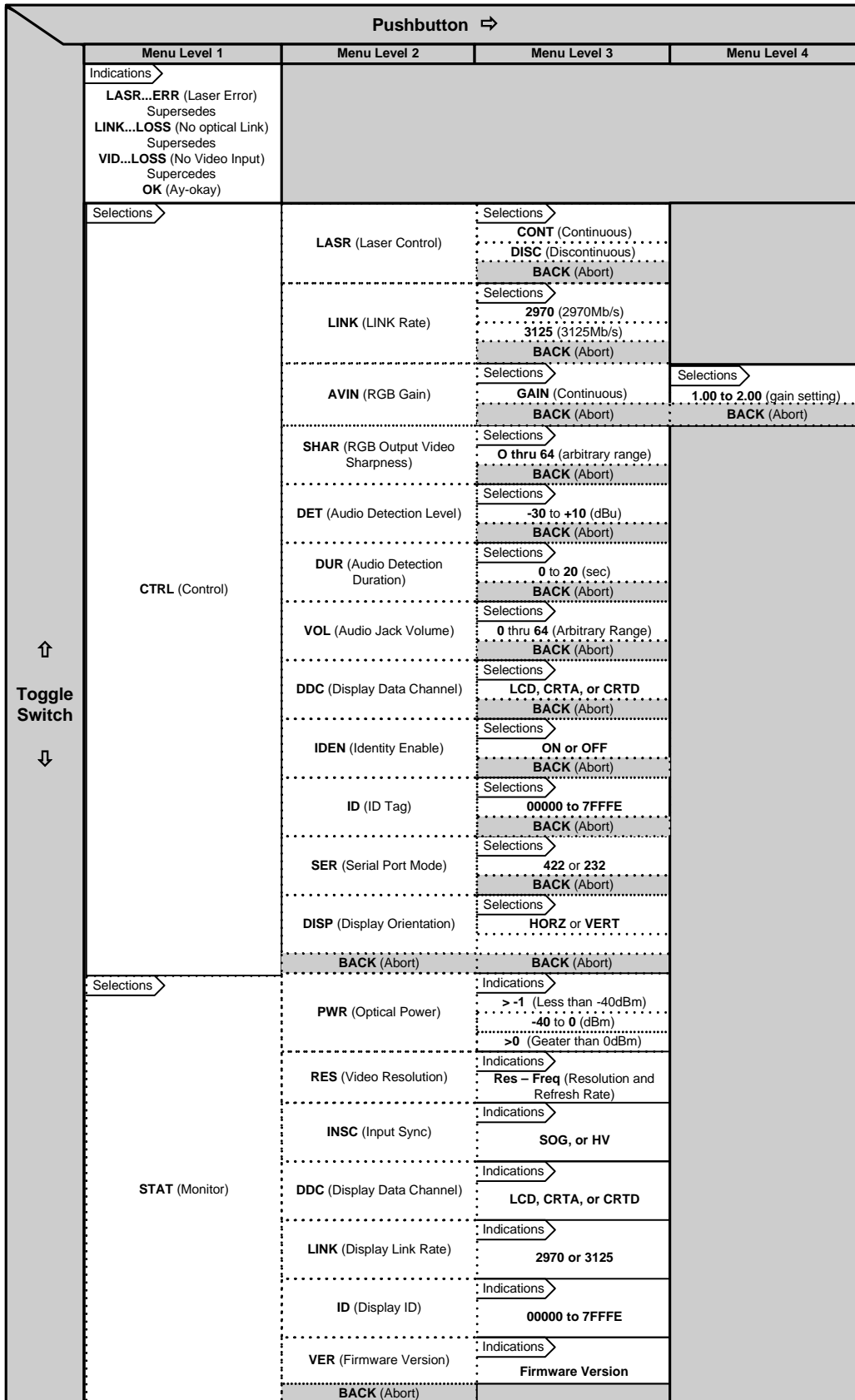


Figure 4-2: 7708RGBT/DVIT Card Edge Menu Flow Cart

4.2.1. Card-Edge Display Warning Indications

There are flashing warning indicators that may appear on the display of the 7708RGBT/DVIT. These warning indicators can overwrite other displayed text. Pressing the pushbutton will clear a warning indicator from the display and will allow access to other menu items. Possible warning indicators are:

LASR...ERR :	Laser error - warns of laser end-of-life condition.
LINK...LOSS :	Optical link not established.
VID...LOSS :	Input Video not detected
OK :	Optical link established. No video input or laser problems.

4.2.2. Selecting the Output Laser Enable Mode

In some applications, it is beneficial to disable the laser output with no input signal present. Alternatively, it may be preferable to maintain an optical output signal, even with no input. The 7708RGBT/DVIT supports both modes of operation.

CTRL
LASR
CONT
DISC

To configure the mode *Laser Enable*, select the CTRL menu item in the first menu level. Use the toggle switch to select the LASR 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:

CONT :	Continuous operation. Laser is always enabled, even without an active input signal.
DISC :	Discontinuous operation. Laser is disabled when no active input signal is detected.

4.2.3. Selecting Link Rate

In applications with 3G routing, the *Link Rate* of the 7708RGBT/DVIT 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. Setting Input RGB Gain (7708RGBT models only)

When RGB video is applied, the *Input ADC Gain* level can be adjusted to affect the brightness of the RGB video seen out of the 7708RGBR. The affect of this menu item is seen when 2 sets of 7708RGBTs and 7708RGBRs are connected in sequence.

CTRL
AVIN
GAIN
1.00 to 2.00

To configure *Input RGB Gain*, select the CTRL menu item in the first menu level. Use the toggle switch to select the GAIN 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:

1.00 to 2.00: Input RGB Gain

4.2.5. Setting the RGB Output Video Sharpness (7708RGBT models only)

This menu item allows control over the sharpness of the RGB video output at the 7708RGBR receiver. Note that this menu item is only available when there is RGB video input present at the 7708RGBT.

CTRL
SHAR
0 - 64

To control the sharpness, select the CTRL menu item in the first menu level. Use the toggle switch to select the SHAR menu item and press the pushbutton. The toggle switch can then be used to set the value. Press the pushbutton to apply the displayed selection and return to the first menu level. The following selections are available for this menu item:

0-64: Output RGB video sharpness

4.2.6. Setting the Analog Audio Detection Threshold (A2 & A2KM Versions Only)

Two card-edge LEDs indicate signal presence of the two respective analog audio channels. A *Detection Threshold* is used to indicate audio signal presence. The audio detection threshold adjustment is implemented in the digital domain, and applies to both channels. The range of threshold adjustment is –30dBu to +10dBu, in 1dB increments. Threshold adjustment is completed using the card-edge interface or through VistaLINK® control.

CTRL
DET
-30 to +10

To change the *Audio Detection Threshold*, select CTRL, the first menu item in menu level. Use the toggle switch to select the DET menu item and press the pushbutton. The toggle switch may then be used to change the threshold value. Select the desired value then press the pushbutton to apply the displayed selection and return to the first menu level. The following selections are available for this menu item:

-30 to +10: Detection threshold range, describing a dBu value.

4.2.7. Setting the Analog Audio Detection Duration (A2 & A2KM Versions Only)

The **DUR** control sets the amount of time (in seconds) the audio is below the level set by the **DET** control before the audio is considered missing. The range of adjustment is 1 to 20 seconds, in one-second increments. Adjustment is completed using the card-edge interface or through *VistaLINK*[®] control.

CTRL
DUR
1 - 20

To change the *Audio Detection Duration*, select the **CTRL** menu item in menu level 1. Use the toggle switch to select the **DUR** menu item and press the pushbutton. The toggle switch may then be used to change the value. Select the desired value then press the pushbutton to apply the displayed selection and return to menu level 1. The following selections are available for this menu item:

1 to 20: Detection duration range in seconds.

4.2.8. Adjusting the Headphone Jack Volume (A2 & A2KM Versions Only)

The 7708RGBT/DVIT 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 7708RGBT/DVIT 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 selection 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

4.2.9. Selecting the Display Data Channel Mode (7708RGBT Models Only)

The *Display Data Channel* is a digital connection between a computer display and a graphics adapter that allows the display to communicate its specifications to the adapter. The 7708RGBT can emulate either a display with a digital input connection (DVI – to be used when connecting to a graphics adapter with DVI output) or a display with an analog input connection (RGB – to be used when connecting to a graphics adapter with RGB output).

CTRL
DDC
LCD CRTA CRTD

To configure the *Display Data Channel*, select the **CTRL** menu item in the first menu level. Use the toggle switch to select the **DDC** menu item and press the pushbutton. The toggle switch may then be used to change the value. Press the pushbutton to apply the displayed selection and return to the first menu level. The following selections are available for this menu item:

LCD: Emulate display with digital (DVI) input and output.

CRTA: Emulate display with analog (RGB) input and analog (RGB) output.

CRTD: Emulate display with analog (RGB) input and digital (DVI) output.

4.2.10. Selecting IDEN

The *IDEN* card edge menu item works in conjunction with the module ID card edge menu item for the purpose of audio soft switching on the 7708RGBR/DVIR modules. For audio soft switching, select ON under the *IDEN* card edge menu item.

CTRL
IDEN
ON
OFF

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

- ON: Enables module Identity for audio soft switching.
- OFF: Disables module Identity.

4.2.11. Setting the ID Tag

Router switches occur so rapidly that when a switch occurs, the cards do not detect a switch. An *ID Tag* is added to the audio data packet to allow detection of a switch. This triggers the soft switch circuit which prevents audio pops during a switch. The default ID is the product string serial number.

CTRL
ID
00000 to 7FFFE

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

- 00000 to 7FFFE: Each 7708RGBT/DVIT card must have a unique ID tag.

4.2.12. Selecting the Serial Port Mode (-A2KM versions)

The 7708RGBT/DVIT serial port can operate in RS232 or RS422 modes.

CTRL
SER
232
422

To configure the *Serial Port Mode*, select the CTRL menu item in the first menu level. Use the toggle switch to select the SER menu item and press the pushbutton. The toggle switch may then be used to change the value. Press the pushbutton to apply the displayed selection and return to the first menu level. The following selections are available for this menu item:

- 232: RS232 serial port.
- 422: RS422 serial port.

4.2.13. 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.

<code>CTRL</code>
<code>DISP</code>
<code>HORZ</code>
<code>VERT</code>

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.

4.2.14. Displaying the Input Optical Power (–A2KM Versions Only)

The 7708RGBT/DVIT can measure and display the *Input Optical Power* over a range of -1dBm to –40dBm in increments of 1dBm. To display the input optical power, select the `STAT` menu item in the first menu level, then use the toggle switch to display the `PWR` option and press the pushbutton to select it. The display will show one of the following:

<code>STAT</code>
<code>PWR</code>
<code>OVER</code>
<code>-1 to -40</code>
<code>LOW</code>

The display will show one of the following:

OVER: Indicates optical input power exceeding –1dBm.

-1 to -40: Optical input power within this range.

LOW: Input optical power low (< -40 dBm).

4.2.15. Displaying Input Signal Resolution

The 7708RGBT/DVIT can display the *Input Resolution*. To display the input signal resolution, select the `STAT` menu item in the first menu level, then use the toggle switch to display the `RES` option and press the pushbutton to select it. The display will show `NONE` if no input signal is detected. If an input video signal is present, the display will show the detected resolution and refresh rate.

<code>STAT</code>
<code>RES</code>
<code>RES - FREQ</code>

The *Resolution* will be displayed similar to the following:

For example: 1600X1200/60

4.2.16. Displaying the Video Input Sync (7708RGBT Models Only)

The 7708RGBT can display the type of sync signal that is present at the video input. 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.

<code>STAT</code>
<code>ISNC</code>
<code>SOG</code>
<code>HV</code>

The *Video Input Sync* will indicate one of the following:

SOG Sync signal at the RGBT input is Sync On Green

HV Sync signal at the RGBT input is RGB H and V

4.2.17. Displaying the Selected Display Data Channel Mode

The 7708RGBT can display the *Selected Display Data Channel Mode*. To indicate the *Selected Display Data Channel Mode*, select the `STAT` menu item in menu level 1. Use the toggle switch to select the `DDC` menu item and press the pushbutton.

STAT
DDC
LCD
CRTA
CRTD

The display will show one of the following:

- `LCD` DDC set to emulate display with digital (DVI) input and output.
- `CRTA` DDC set to emulate display with analog (RGB) input and analog (RGB) output.
- `CRTD` DDC set to emulate display with analog (RGB) input and digital (DVI) output.

4.2.18. Displaying the Selected Link Rate

The 7708RGBT/DVIT can display the active *Link Rate*. To indicate 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.

STAT
LINK
2970
3125

The display will show one of the following:

- `2970`: Link Rate set to 2790Mb/s.
- `3125`: Link Rate set to 3125Mb/s.

4.2.19. Displaying the Selected ID Tag

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

STAT
ID
00000 to 7FFFFE

The display will show one of the following:

- `00000 to 7FFFFE`: ID Tag

4.2.20. Displaying the 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.

STAT
VER
Firmware Version

The firmware version will be displayed similar to the following:

- For example: `VER 1.0 BLD 067`

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 LEDs and on the Frame's Fault Tally output); install this jumper in the On position (default)

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

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 completed, remove the module from the frame, move J16 into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

6. VISTALINK[®] REMOTE MONITORING/CONTROL

6.1. WHAT IS VISTALINK[®]?

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

There are 3 components of SNMP:

1. An SNMP manager, also known as a Network Management System (NMS), is a computer running special software that communicates with the devices in the network. Evertz VL-Fiber demo Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz VistaLINK[®] enabled fiber optic products.
2. Managed devices (such as 7708RGBT/DVIT cards), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz VistaLINK[®] enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC VistaLINK[®] frame controller module, which serves as the Agent.
3. A virtual database, known as the Management information Base (MIB), lists all the variables being monitored 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.

6.2. VISTALINK[®] MONITORED PARAMETERS

The following parameters can be remotely monitored through the VistaLINK[®] interface. Note that some items may not be available depending on the type/options on the particular card.

Parameter Name	Description
Input Video Resolution	Input video resolution
Optical Power	Input optical power
Card Type	Card Type
RGBR Optical Power	Optical input power present at receiver
Output Video Resolution	Resolution of video output at the receiver
RGBT Input Sync	Input video sync type

Table 6-1: VistaLINK[®] Monitored Parameters

6.3. VISTALINK® CONTROLLED PARAMETERS

The following parameters can be remotely controlled through the VistaLINK® interface.

Parameter Name	Notes	Description
Sharpness	7708RGBT only when RGB video at input	Controls output video sharpness at 7708RGBR
Detection	-A2 versions	Audio detection level threshold
Duration	-A2 versions	Audio detection duration
FTP Upgrade Destination	RGBT RGBR	Selects whether this card or the connected receiver is the target of the FTP upgrade
Laser	0 = discontinuous 1 = continuous	Laser continuous or discontinuous mode
Link Rate	2970 3125	Sets Link Rate
RGB Gain	1.00 to 2.00	Sets RGB Gain
ID Enable	On Off	Sets Soft Switch
ID Tag	00000 to 7FFFE	Sets ID tag
Optical Power Alarm Threshold	-A2KM versions	Low optical power level for alarm trap
Receiver Video Output on Link Loss	Black Suspend Off	Receiver video output mode on optical link loss
Receiver Output Video Control	Normal Black Suspend Off	Control of video output on receiver – allows output of link video, black or DPMS modes
RGBR Output Sync	Auto SOG RGBHV	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

Table 6-2: VistaLINK® Controlled Parameters

6.4. VISTALINK® TRAPS

The following traps can be *VistaLINK®* enabled and monitored.

Trap	Description
DVI Input	Triggers when valid DVI input is lost
RGB Input	Triggers when valid RGB input is lost
Laser	Triggers when Laser Fault is detected
Audio 1	Triggers when Audio 1 is lost
Audio 2	Triggers when Audio 2 is lost