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Tables

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0.0.1	Original Version – Preliminary Quick Reference Guide	Aug 04
0.1.0	Updated Preliminary QRG	Nov 04
0.1.1	Minor updates	Dec 04
0.1.2	Minor updates, GPI/O support & Preliminary Maestro VIP Release	Dec 04
0.1.3	Updated configuration menu & added Maestro VIP details	Dec 04
1.0.0	Upgrade corresponding to firmware 1.2.1 and Maestro 1.0.0.5	Feb 05
1.0.2	Minor correction to BHP-AUX, firmware upgrade proc. and audio maps	Mar 05
1.3.0	Updated manual corresponding to Firmware/Maestro 1.3.0 release	May 05
1.4.0	Updated manual corresponding to Firmware/Maestro 1.4.0 release	Jun 05
1.4.1	Minor corrections to 1.4.0	Jul 05
1.4.2	Additional notes about Virtual GPIs, VistaLINK® PRO Configuration and minor corrections	Jul 05
1.8.1	Added info for VIP8, Reformatting, Safety notices for –G versions	May 06

WARNING

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

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1. OVERVIEW

The VIP™ series of multi-input display and signal monitoring products is ideally suited for dedicated signal monitoring applications with limited rack space and/or number of signals. Ultimately displaying up to WUXGA (1920x1200) resolution the VIP™ modules accept up to 12 inputs and conveniently fit into Evertz's widely installed, universal 7700FR-C frame. Furthermore, the VIP™ modules are also VistaLINK® enabled, offering remote monitoring, control and configuration capabilities via Simple Network Management Protocol (SNMP). This product feature offers another solution to manage operations including signal monitoring and module configuration from SNMP-enabled control systems (Manager or NMS) locally or remotely.

The 7767VIP video monitoring and display modules provide a combination of the most commonly requested MVP™ and Quattro™ features, yet in a more compact format. The 7767VIP4, 7767VIP8 and 7767VIP12 modules simultaneously accept, auto-detect, analyze and display four, eight or twelve asynchronous HD/SD/ Composite Analog video (NTSC/PAL) signals on the same BNC. An additional computer graphic input (via DVI connector) is also available as a monitored input or for dynamic background images.

Additional features include: a user-configurable HD/SD serial output for facility routing or evidence monitoring & recording, and streaming, an optional fiber output and support for embedded as well as both analog and discrete audio inputs. Display configuration is provided through Maestro VIP, while signal monitoring user-configurations for durations and thresholds is managed via VistaLINK® PRO.

Key VIP™ features:

- Accepts up to 4 (VIP4), 8 (VIP8) or 12 (VIP12) video inputs with support for embedded or discrete audio
- Auto-sensing HD/SD and Composite Analog inputs, including 23.98sF or 24psF
- Additional computer input for dynamically updated background images
- Support for embedded as well as both analog and discrete AES audio inputs
- Built-in video & data fault monitoring, parameters include:

    - Loss of Video
    - Freeze detection
    - Loss of VITC
    - Loss of program Rating
    - Loss of Text 1 to Text 4
    - Loss CC waveform
    - Loss of WSS
    - Video Format Change
    - Black detection
    - Loss of Source ID
    - Loss of CC1 to CC4
    - Loss of XDS
    - Loss of Teletext
    - Max/Min APL

- Built-in audio fault monitoring, parameters include:

    - Loss of audio ch1 to ch8
    - Audio over ch1 to ch8
    - Audio mono ch1 to ch8
    - Audio silence ch1 to ch8
    - Phase reversal ch1 to ch8

- Output display up to WUXGA (1920x1200) resolution or HD/SD serial output (Provides an HD-SDI output (720p, 1080i or 1080p) over DVI @ 50 or 60Hz)
- DVI output RGB proc adjustment for gamma, black level and gain
- Optional fiber output (-G) version

- User-controlled on-screen display elements including display presets, borders, tallys and static/dynamic UMDs
- Internal video and audio routing to serial and AES monitor output ports
- Thumbnail support through VistaLINK® Thumbnail Server
- VistaLINK® enabled for configuration and monitoring via SNMP
- 3RU module conveniently fits into Evertz's widely-installed, universal 7700FR-C frame
- Modules can be cascaded for more inputs to a single display - up to 40 signals in a 3RU frame
- Web server built in for simple configuration using a web browser
- Does not require the frame to have a 7700FC VistaLINK® Frame Controller module as all SNMP configuration and monitoring handled through the built-in Ethernet interface

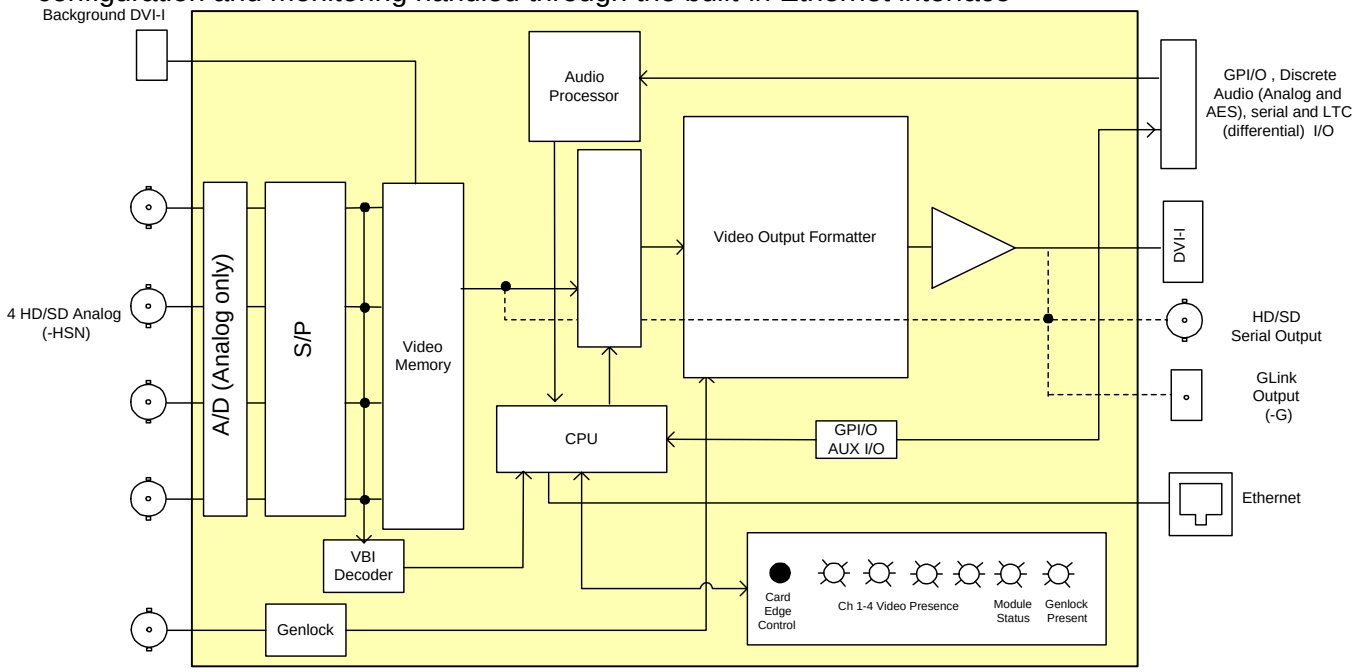


Figure 1: 7767VIP4-x Block Diagram

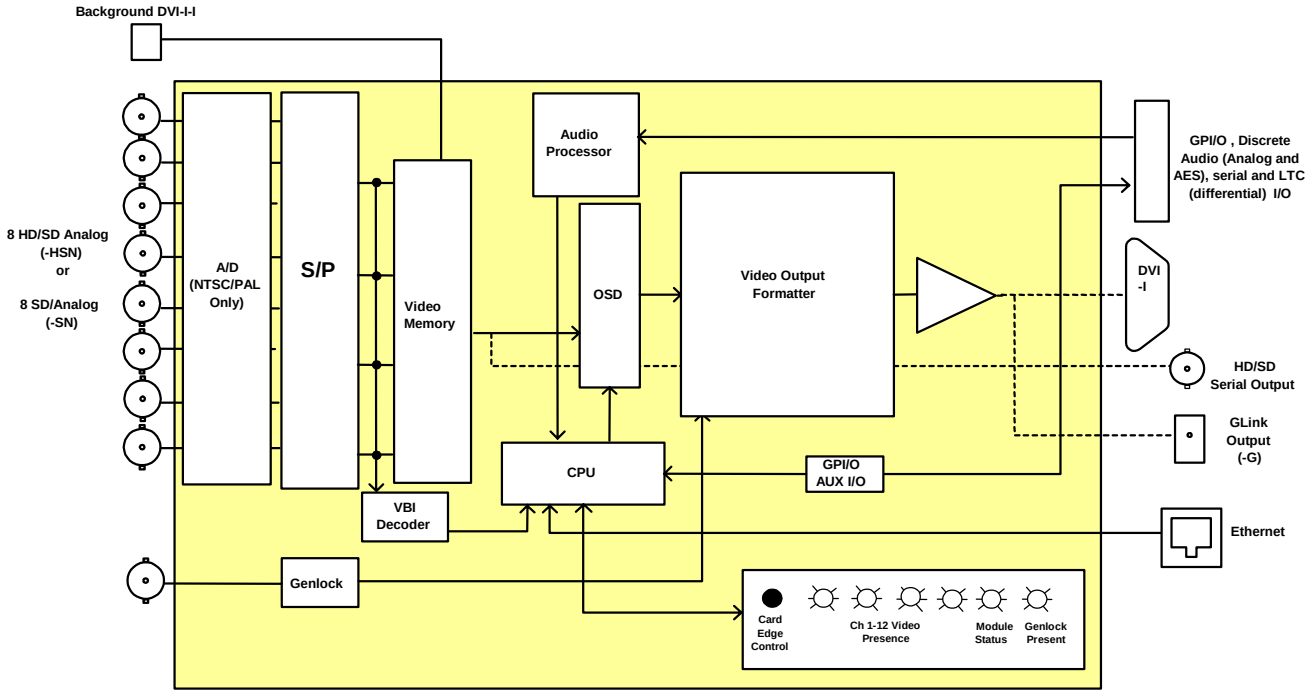


Figure 2: 7767VIP8-x Block Diagram

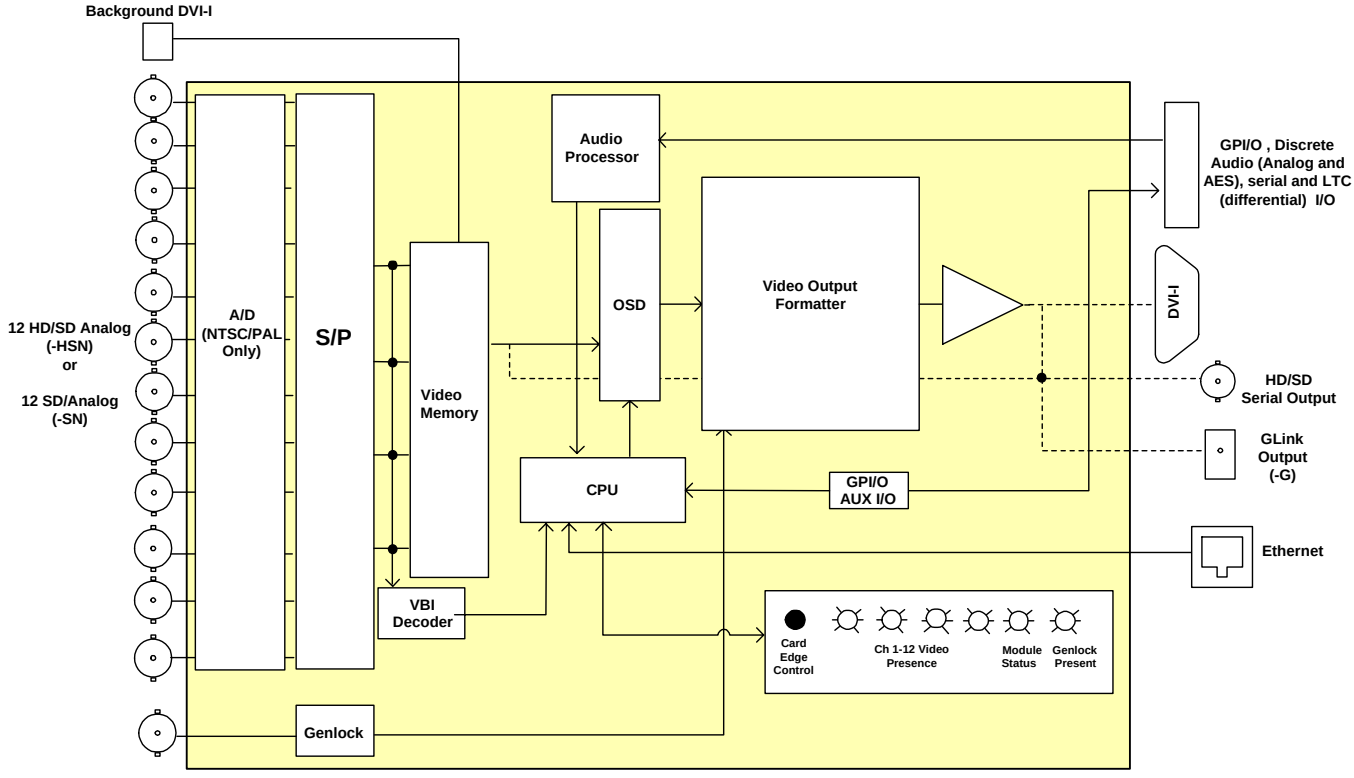


Figure 3: 7767VIP12-x Block Diagram

2. INSTALLATION

The 7767VIP modules come with a companion rear plate. The 7767VIP4 and 7767VIP8 modules occupy 3 slots in a 7700FR frame, while the 7767VIP12 modules occupy 4 slots. The connections for the various versions are the same except for the number of video inputs. The SN versions accept composite analog or SDI video signals on the video inputs. The HSN versions accept composite analog, SDI or HDSDI on the video inputs. (See note regarding VIP12 versions) For information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.

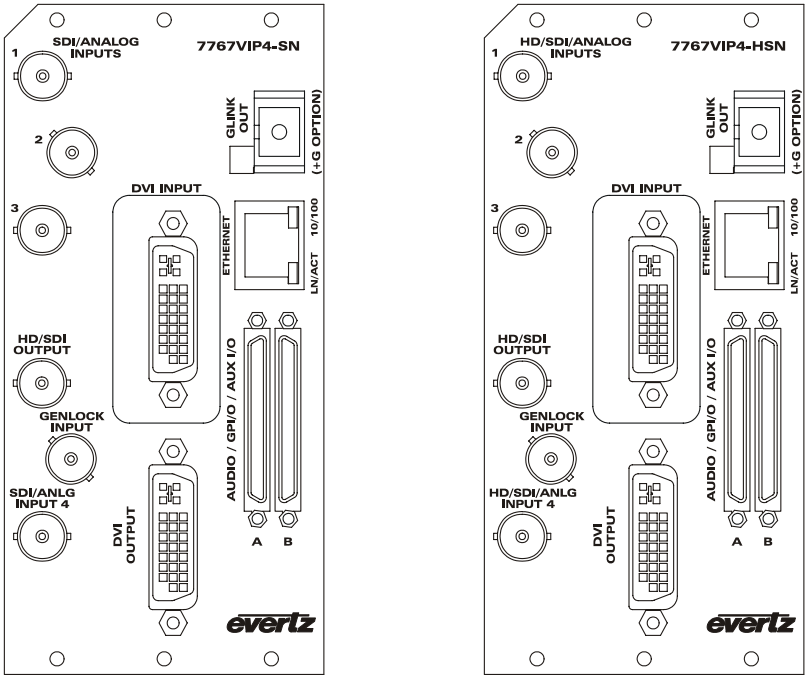


Figure 4: VIP4 Rear Plates

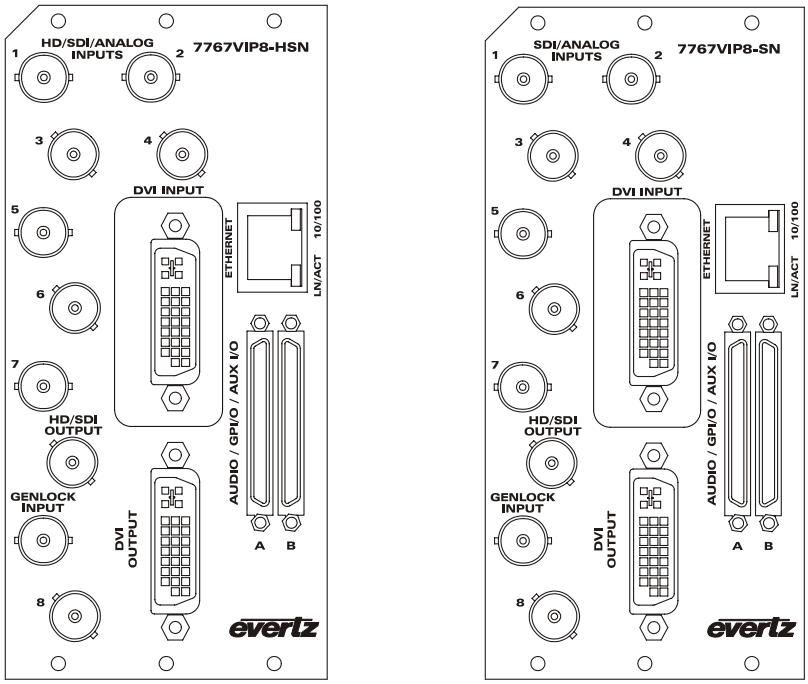


Figure 5: VIP8 Rear Plates

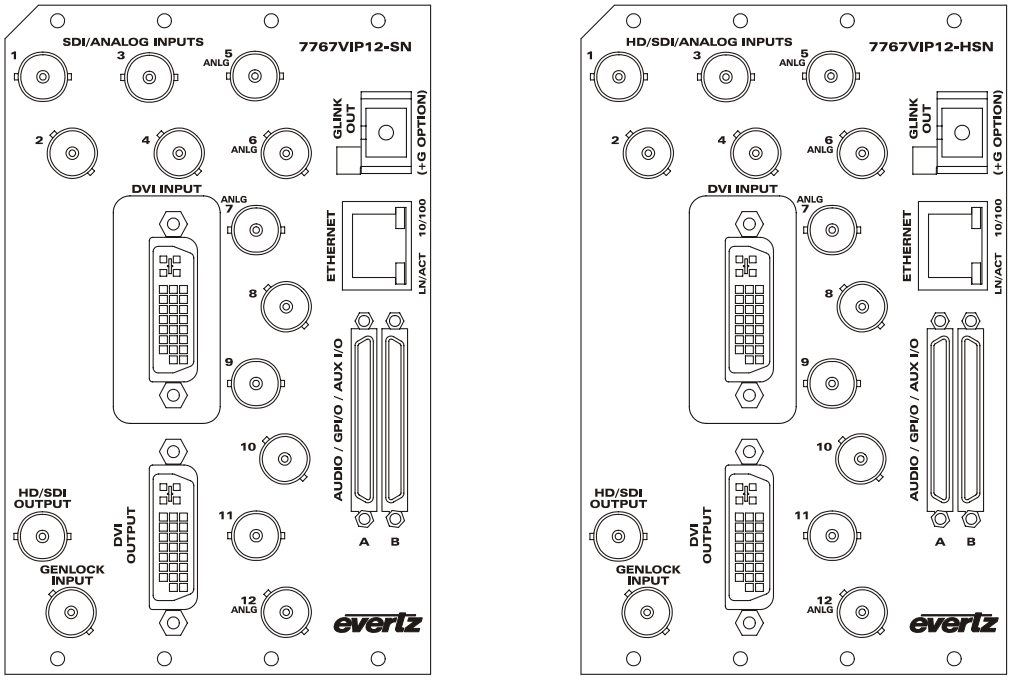


Figure 6: VIP12 Rear Plates

2.1. VIDEO INPUTS AND OUTPUTS

INPUTS On the SN versions there are 4, 8 or 12 BNC connector inputs that auto sense composite analog NTSC or PAL, or 10-bit serial digital video signals compatible with the SMPTE 259M-C standards.

On the HSN versions there are 4, 8 or 12 BNC connector inputs that auto sense composite analog NTSC or PAL, or 10-bit serial digital video signals compatible with the SMPTE 259M-C or SMPTE 292M standards.

Note: There are two VIP12 rear plates. One (older version) is labeled as shown above with four BNCs indicating auto-sensing analog video (ANLG) inputs along with HD-SDI and SD-SDI. Newer rear plates and VIP modules have all twelve BNCs auto-sensing HD, SD and Composite Analog input video formats.

OUTPUT When the output resolution of the card is set to 720 or 1080, this BNC connector has 10-bit serial digital video signals compatible with the SMPTE 259M-C or SMPTE 292M standards. When the output resolution of the card is set to other resolutions, this output will not be active.

2.2. GENLOCK REFERENCE

For proper synchronization of the output video to a station reference, the module must be locked to a genlock signal of the output video format.

GENLOCK The genlock signal may be NTSC or PAL colour black or tri-level sync (the same as the output video format). The reference input type is auto detected. The genlock reference input is terminated to 75 ohms.

2.3. DVI VIDEO CONNECTIONS

The 7767VIP modules are shipped with DVI to VGA adaptors. Additional adaptors can be ordered from Evertz (Part number JDVIVGAMF).

640x480/60	640x480/72	640x480/75
640x480/85	800x600/60	800x600/72
800x600/75	800x600/85	1024x768/60
1024x768/70	1024x768/75	1024x768/85
1280x1024/60	1280x1024/75	1600x1200/60

Table 1: Computer Input Resolutions Supported

DVI INPUT This VESA DVI-I connector provides computer inputs from VGA (640 x 480) to UXGA (1600 x 1200) resolution. Computer inputs can auto-detect from VESA standard inputs.

DVI OUTPUT This VESA DVI-I connector provides progressive RGBHV and DVI-D outputs suitable for driving a computer video monitor. The monitor must be capable of scanning at the line and pixel rate of the video input standard you are using.

Recommended maximum cable lengths:

- DVI digital max length = 3 meters, or 10 feet

- VGA analog max length = 5 meters, or 15 feet

2.4. AUDIO INPUTS

The 7767VIP handles up to 24 channels of analog audio (or up to 2 channels of analog audio per video input) and up to 4 AES inputs per video input (up to 2 groups/video input). Audio is connected to the 7767VIP via dual SCSI connectors on the rear plate with optional BNC and terminal block connectors via breakout panels. Balanced analog audio or AES is connected using the 7767VIP-AI-BAL breakout panel and unbalanced AES is connected using the 7767VIP-AI-U breakout panel. See section 2.9 for more information on using the breakout panels.

2.5. GENERAL PURPOSE INPUTS AND OUTPUTS

GPI interfacing with the 7767VIP is possible through 20 general purpose inputs and 8 general purpose outputs available on the 68 pin dual SCSI connector. The 7767VIP is shipped with 7767BHP-AUX breakout panels (that are connected using the SCSI cable provided) and provide access to 16 GPIs. When the 7767BHP-BAUX and 7767BHP-UAUX breakout panel is connected the use has access to 20 GPI inputs and 8 GPO outputs. See section 2.9 for more information on using the breakout panels.

The GPI inputs are opto-isolated that are internally pulled up to either +5 or +12 volts DC set by the GPI SUPPLY jumper. (See section 8.4 for information about changing the pull-up voltage) The GPI outputs are normally open relay contacts. When the VIP is powered off the GPO Relay contacts are open. An alarm or tally will cause a contact closure.

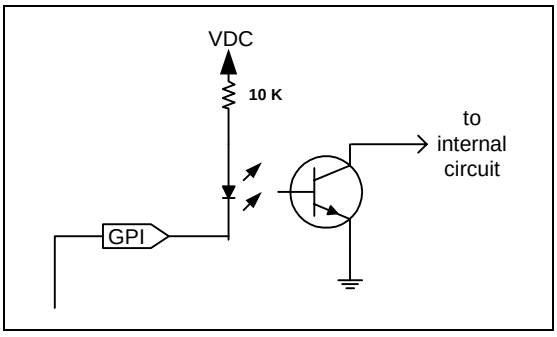


Figure 7: GPI Diagram

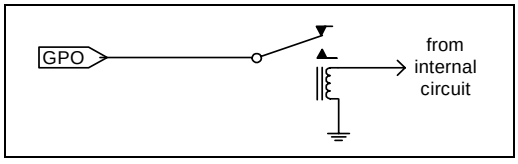


Figure 8: GPO Diagram

2.6. LTC AND SERIA DATA INPUTS

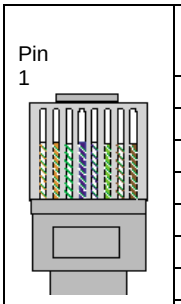
The 7767VIP has an LTC input and a serial data port available on the 68 pin dual SCSI connector. The 7767VIP is shipped with 7767BHP-AUX breakout panels (that are connected using the SCSI cable provided) and provide access to the LTC input and the serial data port. See section 2.9 for more information on using the breakout panels.

2.7. ETHERNET NETWORK CONNECTIONS

ETHERNET This RJ-45 connector is an Ethernet port used for control using the VistaLINK® PRO or Maestro software. It is also used for FTP firmware upgrades.

The 7767VIP is designed to be used with either 10Base-T (10 Mbps) or 100Base-TX (100 Mbps) also known as *Fast Ethernet*, twisted pair Ethernet cabling systems. When connecting for 10Base-T systems, category 3, 4, or 5 UTP cable as well as EIA/TIA – 568 100Ω STP cable may be used. When connecting for 100Base-TX systems, category 5 UTP cable is required. Make the network connection by plugging one end of a "straight through" cable into the RJ-45 receptacle of the 7767VIP and the other end into a port of the supporting hub. If you are connecting the 7767VIP directly to an Ethernet port on a computer you will have to use a "crossover" cable.

The straight-through RJ-45 cable can be purchased or can be constructed using the pinout information in Table 2. A colour code wiring table is provided in Table 2 for the current RJ 45 standards (AT&T 258A or EIA/TIA 258B colour coding shown). Also refer to the notes following the table for additional wiring guide information.



Pin #	Signal	EIA/TIA 568A	AT&T 258A or EIA/TIA 568B	10BaseT or 100BaseT
1	Transmit +	White/Green	White/Orange	X
2	Transmit –	Green/White or White	Orange/White or Orange	X
3	Receive +	White/Orange	White/Green	X
4	N/A	Blue/White or Blue	Blue/White or Blue	Not used (required)
5	N/A	White/Blue	White/Blue	Not used (required)
6	Receive –	Orange/White or Orange	Green/White or Green	X
7	N/A	White/Brown	White/Brown	Not used (required)
8	N/A	Brown/White or Brown	Brown/White or Brown	Not used (required)

Table 2: Standard RJ45 Wiring Color Codes

Note the following cabling information for this wiring guide:

- Only two pairs of wires are used in the 8-pin RJ 45 connector to carry Ethernet signals.
- Even though pins 4, 5, 7 and 8 are not used, it is mandatory that they be present in the cable.
- 10BaseT and 100BaseT use the same pins, a crossover cable made for one will also work with the other.
- Pairs may be solid colours and not have a stripe.
- Category 5 cables must use Category 5 rated connectors.

The maximum cable run between the 7767VIP and the supporting hub is 300 ft (90 m). The maximum combined cable run between any two end points (i.e. 7767VIP and PC/laptop via network hub) is 675 feet (205 m).

Devices on the Ethernet network continually monitor the receive data path for activity as a means of checking that the link is working correctly. When the network is idle, the devices also send a link test signal to one another to verify link integrity. The rear panel is fitted with two LEDs to monitor the Ethernet connection.

10/100 This Amber LED is ON when a 100Base-TX link is last detected. The LED is OFF when a 10Base-T link is last detected (the LINK LED is ON). Upon power-up the LED is OFF as the last detected rate is not known and therefore defaults to the 10Base-T state until rate detection is completed.

LN/ACT This dual purpose Green LED indicates that the 7767VIP has established a valid linkage to its hub, and whether the 7767VIP is sending or receiving data. This LED will be ON when the 7767VIP has established a good link to its supporting hub. This gives you a good indication that the segment is wired correctly. The LED will BLINK when the 7767VIP is sending or receiving data. The LED will be OFF if there is no valid connection.

In order to use the Ethernet connection you will have to configure the IP addresses for your network. See sections 5.1.1.

2.8. GLINK FIBER OUTPUT (-G OPTION)

The –G versions of the 7767VIP modules are fitted with an optical G-Link outputs (Evertz proprietary serial connection) on a SC/PC (shown), ST/PC or FC/PC female connector. The G-Link optical output provides a built-in extension to the display device over fiber (75m via multi-mode fiber and up to 10km – subject to sufficient loss budget - using single mode fiber). At the display device you will need a 2430GDAC converter to convert the fiber G-Link signal back to DVI to drive the display device. The optical output is available in 1310nm or CWDM (ITU-T G.694.2 compliant) wavelengths and the card is compatible with multimode fiber when connected directly to a companion 2430GDAC receiver module.

2.8.1. Care And Handling Of Optical Fiber

The following safety information applies to the optical outputs of the 7767VIP –G versions.

2.8.1.1. Safety

CLASS 1 LASER PRODUCT

Background colour: yellow
Triangular band: black
Symbol: black

2.8.1.2. Assembly

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

2.8.1.3. 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: 7767VIP4-SN-G, 7767VIP4-HSN-G, 7767VIP8-SN-G, 7767VIP8-HSN-G, 7767VIP12-SN-G, 7767VIP12-HSN-G, 7767VIP4-SN-Gxx, 7767VIP4-HSN-Gxx, 7767VIP8-SN-Gxx, 7767VIP8-HSN-Gxx, 7767VIP12-SN-Gxx, 7767VIP12-HSN-Gxx, (xx = 27, 29, 31, 33, 35, 37, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61)

Figure 9: Reproduction of Laser Certification and Identification Label

2.8.1.4. 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.

Dust particles on the ends of the optical fiber greatly increase the signal loss at interconnections, and large dust particles can even obscure light transmission altogether. To minimize the effects of dust contamination at the interconnections, the fiber should be cleaned each time it is mated or unmated. When using interconnection housings to mate two optical fibers it is good practice to remove dust particles from the housing assembly with a blast of dry air. Alternatively you should have received a pre-moistened tissue with the optical module. Remove this tissue from its package and wipe the end of the fiber connector before mating it to the module. Whenever a fiber is unmated it must be covered immediately. Most fiber manufacturers provide a plastic boot that fits over the ferrule body for this purpose.

Fiber interconnections must be made securely. The Evertz fiber optical transmitters and receivers come with SC interconnection housings built into the module. With this style of connector, the fiber assembly and the housing assembly can only be connected in one way and with very good repeatability. The rear fiber interconnect panel that is provided with each module can be ordered with optional SC/PC. ST/PC or FC/PC connectors. The customer is required to provide the optical fiber with the correct connectors to connect the modules together. SC/PC, ST/PC and FC/PC interconnection housing and connectors as well as adapters are industry standards with many available sources.

2.9. BREAKOUT PANELS (BHPs)

2.9.1. 7767BHP-AUX

One 7767BHP-AUX breakout panel is included with every VIP module. It provides the user with a breakout solution for auxiliary inputs and outputs including GPI 1 to 20, GPO 1 to 10, LTC inputs and serial communication ports. The interconnection between the BHP and the rear plate are SCSI connectors. The BHP has the pin-outs screened on the board for easy connectivity.

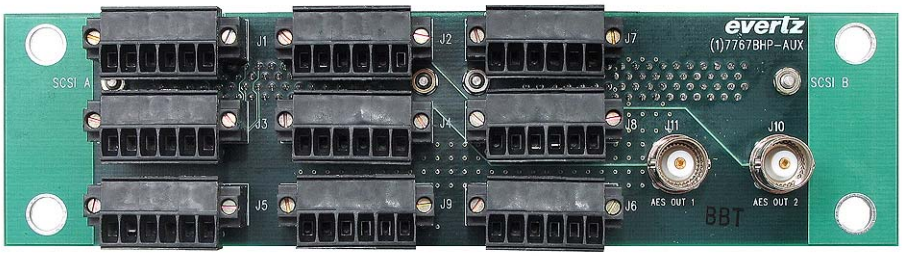


Figure 10: 7767BHP-AUX Terminal-Top View

SCSI A Pin #	Function	SCSI A Pin #	Function		SCSI B Pin #	Function	SCSI B Pin #	Function
1	GND	35	GND		1	GND	35	GND
2	AES 14-	36	AES 14+		2		36	
3	GND	37	GND		3	GND	37	GND
4	AES13-	38	AES13+		4		38	
5	GPI 4	39	GPI 3		5		39	
6	AES 6-	40	AES 6+		6	GPI 20	40	GPI 19
7	GPI 2	41	GPI 1		7		41	
8	AES 5-	42	AES 5+		8	GPI 18	42	GPI 17
9	AES 18+	43	AES 18-		9		43	
10	AES 4-	44	AES 4+		10	GPI 16	44	GPI 15
11	AES 17+	45	AES 17-		11		45	
12	AES 3-	46	AES 3+		12	GPI 14	46	GPI 13
13	AES 16+	47	AES 16-		13		47	
14	AES 2-	48	AES 2+		14	GPI 12	48	GPI 11
15	AES 15+	49	AES 15-		15		49	
16	AES 1-	50	AES 1+		16	GPI 10	50	GPI 9
17	RX1+	51	RX1-		17	RX2+	51	TX2+
18	TX1-	52	TX1+		18	TX2-	52	RX2-
19	GND	53	GND		19	GND	53	GND
20	AES 20+	54	AES 20-		20		54	
21	LTC-	55	LTC+		21		55	
22	AES 19+	56	AES 19-		22		56	
23	GPO 3	57	GPO 4		23		57	
24	AES 12+	58	AES 12-		24	AES OUT 4	58	AES OUT 3
25	GPO 1	59	GPO 2		25	GND	59	GND
26	AES 11+	60	AES 11-		26	AES OUT 2	60	AES OUT 1
27	AES 24-	61	AES 24+		27	GND	61	GND
28	AES 10+	62	AES 10-		28	GPO 7	62	GPO 8
29	AES 23-	63	AES 23+		29		63	
30	AES 9+	64	AES 9-		30	GPO 5	64	GPO 6
31	AES 22-	65	AES 22+		31		65	
32	AES 8+	66	AES 8-		32	GPI 8	66	GPI 7
33	AES 21-	67	AES 21+		33		67	
34	AES 7+	68	AES 7-		34	GPI 6	68	GPI 5

Figure 11: SCSI A and B pin out

2.9.2. Audio Breakout Panels

Discrete audio support on the VIP is available through ordering options:

- 7767VIP-AI-U provides the user with discrete unbalanced AES/EBU support and is shipped with a 7767BHP-UAUX breakout panel.
- 7767VIP-AI-BAL provides the user with discrete balanced analog audio support and is shipped with a 7767BHP-BAUX breakout panel.

*Note: the audio breakout panels also provide the GPI/GPO/LTC and serial connections normally provided by the 7767BHP-AUX.

Both audio breakout panels are shown below:

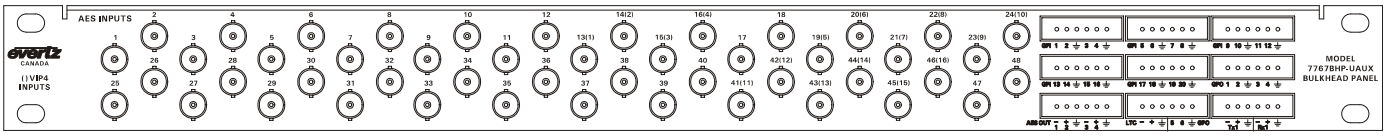


Figure 12: 7767BHP-UAUX Unbalanced AES/EBU and AUX Breakout Panel

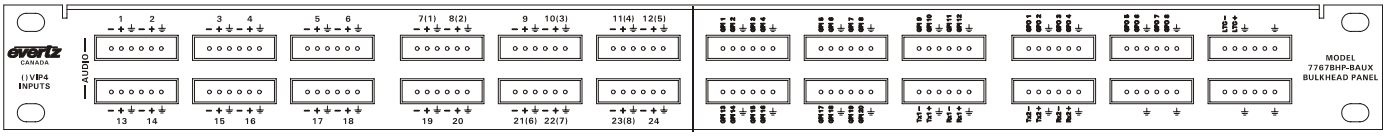


Figure 13: 7767BHP-BAUX Balanced Analog Audio and AUX Breakout Panel

2.9.3. 3000MKT-AUX

A 1RU metal mounting bracket for up to 2x 7767BHP-AUX is also available. In the figure below, two 7767BHP-AUX units are shown mounted to the 3000MKT-AUX mounting bracket.

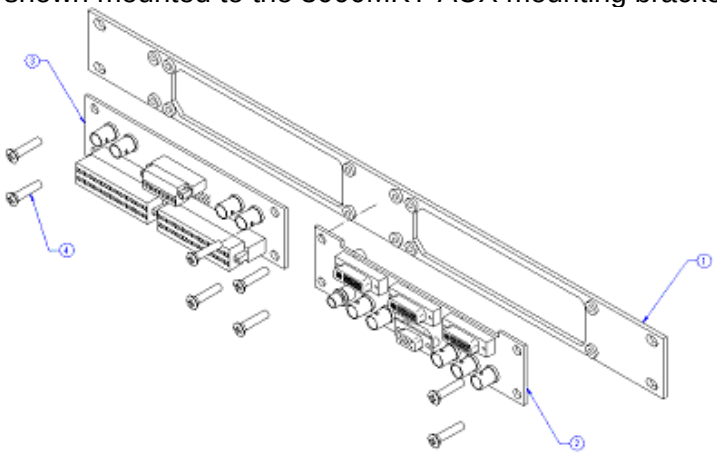


Figure 14: 3000MKT-AUX Mounting Bracket for 7767BHP-AUX Breakout Panels

3. SPECIFICATIONS

3.1. SERIAL DIGITAL VIDEO INPUT

Standard: SMPTE 292M (1080i50, 1080i59.94, 1080i60, 720p60, 720p59.94, 720p50, 1080p24sF, 1080p23.98sF) on HSN version only, SMPTE 259M-C, 525/625 lines component
Number of Inputs: 4 (on 7767VIP4-xx); 8 (on 7767VIP8-xx); 12 (on 7767VIP12-xx)
Connector: BNC per IEC 60169-8 Amendment 2
Termination: 75 ohm
Equalization: SD-SDI: 100m and HD-SDI: 75m with Belden 8281 (or equivalent)
Return Loss: >15dB up to 270MHz
Embedded Audio: SMPTE 272M-A (SD), SMPTE 299M (HD)

3.2. ANALOG VIDEO INPUT

Standard: NTSC, SMPTE 170M or PAL, ITU624-4
Number of Inputs: 4 on VIP4, 8 on VIP8, and 12 on VIP12
Connector: BNC per IEC 60169-8 Amendment 2
Signal Level: 1V nominal
DC Offset: 0V +/- 1V
Input Impedance: 75 Ω
Return Loss: >40dB up to 5MHz

3.3. DIGITAL AES/EBU AUDIO INPUT (REQUIRES 7767VIP-AI-U)

Number of Inputs: 4 AES/EBU per video input (up to 2 groups/video input)
Standard: SMPTE 276M, single ended AES
Connectors: Dual 68-pin (F) SCSI (7767VIP-AI-U includes breakout panel 7767BHP-UAUX)
Resolution: 24 bit
Sampling Rate: 48 kHz
Impedance: 75 Ω unbalanced

3.4. ANALOG AUDIO INPUT (REQUIRES 7767VIP-AI-BAL)

Number of Inputs: 24 mono channels on VIP4, VIP8, or VIP12
Connector: Dual 68-pin (F) SCSI (7767VIP-AI-BAL includes breakout panel 7767BHP-BAUX)
Input Impedance: 20 kΩ minimum (differential)
Sampling Frequency: 48kHz
Peak Signal and Common Mode Level: 30 dBu
Number of Graphs: 2 pair (4 Mono channels per video), VU and PPM

3.5. SERIAL DIGITAL VIDEO OUTPUT

Type: Configurable SD-SDI or HD-SDI (525i, 625i, 720p, 1080i (24p and 23.98pSF))
Connector: BNC per IEC 60169-8 Amendment 2
Quantity: 1

3.6. DIGITAL (DVI) VIDEO OUTPUT

Type: DVI 1.0
Resolution: Up to WUXGA (1920x1200)
Connector: DVI-I

3.7. GLINK FIBER OUTPUT (-G option)

Type: GLINK (Evertz proprietary serial digital format)
Resolution: Up to WUXGA (1920x1200)
Connector: SC/PC, ST/PC, FC/PC female housing
Fiber Size and Type: 9 μm core / single mode
Output Wavelengths:
Standard: 1310nm (nominal)
CWDM: 1270nm to 1610nm (ITU-T G.694.2 compliant).
Output Power:
1310nm FP (Standard): -7 dBm ±1dBm
CWDM DFB: 0 dBm ±1dBm

3.8. GENLOCK INPUT

Type: NTSC (SMPTE 170M) color black
Level: 1Vp-p nominal
Connector: BNC per IEC 169-8

3.9. LTC INPUT

LTC Input: Balanced
Level: 0.2 to 4 V p-p
Connector: Dual 68-pin (F) SCSI (Terminal block on 7767BHP-AUX breakout panel provided)

3.10. GENERAL PURPOSE IN/OUT

Number of Inputs/Outputs: 20/8
Type: Opto-isolated, active low with internal pull-ups to +5V
Connector: Dual 68-pin (F) SCSI (via 7767BHP-AUX breakout panel supplied, 1 per VIP module, with 16 GPI, or full through 7767BHP-BAUX and 7767BHP-UAUX)
Input signal: Closure to ground
Signal Level: +5V (default setting) or +12V, user selectable

3.11. DATA INPUT/OUTPUT SERIAL PORT

Signal Level: RS-232 or RS-422
Connector: Dual 68-pin (F) SCSI (7767BHP-AUX breakout panel provided)
Baud Rate: Configurable

3.12. ELECTRICAL

Voltage: +12VDC
Power:
7767VIP4: <40 Watts
7767VIP8: <45 watts
7767VIP12: <50 Watts
EMI/RFI: Complies with FCC Part 15, Class A and EU EMC directive.

3.13. PHYSICAL

Number of slots:
7767VIP4: 3
7767VIP8: 3
7767VIP12: 4
Enclosure:
7767VIP4, 7767VIP8 3 RU 7700FR-C or the stand alone enclosure S7702FR
7767VIP12 3 RU 7700FR-C only

4. STATUS LEDs

4.1. MODULE STATUS LEDs

MODULE STATUS: This Green LED will be on when the module is operating properly.

LOCAL FAULT: This Red LED makes it easy to identify one module in a frame that is missing an essential input or has another fault.

The Red LED will blink on and off if the microprocessor is not running.

The Red LED will be on when there is a fault in the module power supply or a user configurable error condition exists (as configured through the Frame Status Trigger menu option).

4.2. VIDEO STATUS LED AND CARD EDGE 4-CHARACTER DISPLAY

Some key user components can be found at the card edge:

1. Toggle Switch
2. Local Fault Status LED
3. 4 Character Dot Matrix Display
4. Push Button

Local Fault Status LED: This component will be set upon initial power up to red. Once the card is in a normal operating mode, it will be set to green. If the card has booted, and the led remains red or becomes red, this indicates an internal error.

4 Character Dot Matrix Display: This component will become active once power is applied to the card. This component is used to relay text-based information to the user. It will be used to scroll build and card

information, or display the menu options to the user. When the VIP is installed in a 7700 frame, the text will be displayed in a vertical orientation, on the other hand, if installed in a 1RU frame then the text will be displayed horizontally.

Toggle Switch: This component will become active once the card has completed booting. Its primary function is to navigate through the menu system.

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

5. MODULE CONFIGURATION

The VIP™ module's features and parameters are configured through the following tools:

- **Module serial port**: Module IP address and TRAP destination IP addressing, network identification.
- **Module card-edge**: Access to set the module's output resolution, factory or user-configured preset layouts, backgrounds, audio mapping and resets.
- **Module card-edge DIP switches:** Only to be enabled during boot-up sequence, DIP switches enable the following cases/features:
    1. To enable input router selection "cherry picker" mode - DIP switch 1 open (to the right)
    2. To clear out the non-volatile memory – DIP switch 1 and 3 open (to the right)
    3. To Format the file system (erase all custom layouts) – DIP switch 2 and 4 open (to the right)
    4. To load emergency default factory layout - Dip switch 4 open (to the right)
    5. If none of the above cases/features are required, leave all DIP switches closed (to the left)
- **VIP Maestro:** A software configuration tool included with every VIP module used to design preset layouts for one or multiple VIP systems, along with all on screen display elements including audio bar graphs, UMD, tallys and fault messages. Specifically, color, transparency, borders, etc. that are all included in the final display output.
- **VistaLINK® PRO**: An SNMP software tool that is used to set the fault monitoring thresholds and durations for each VIP module detected on the network and/or for fault message (TRAP) receipt and data logging.
- **Web Server Interface**: A web browser can be used to connect to a VIP for the purpose of control, similar to VLPRO. This interface does not require any additional software to be installed, just web browser software.

5.1. CONFIGURING THE MODULE USING THE MODULE SERIAL PORT

Through the card-edge's serial port, and using the serial 7700 upgrade cable connected to a PC's serial port running HyperTerminal (or equivalent), the VIP module's IP address, subnet, and SNMP TRAP destination address are identified. The 7700 upgrade cable supplied with the 7700FR-C frame is a multi-colored ribbon cable with a six pin header socket on one end and a female 9 pin D connector on the other end, (Evertz part number WA-S76) is normally in the vinyl pouch at the front of the manual binder. Configure the port settings of the terminal program as follows:

Baud	**115200**
Data bits	**8**
Parity	**None**
Stop bits	**2**
Flow Control	**None**

Once the card is powered-up, the HyperTerminal connection displays boot-up status information and once completed, ends with the “Status Message” as shown below:

```
Initialization Completed - 7767VIP Running
```

Press the <Enter> key to see the main Menu. In the Main Menu, the following options are present for module configuration. Once changes completed and saved, the VIP module should be power-cycled for the changes to take effect.

```
 -------------------------------------------------
|              Main Menu                          |
|    (7767VIP12-HSN 1.8.1 b19029)  | < VIP Firmware Version Information
 -------------------------------------------------

(1) Network Configuration
(2) SNMP Configuration
(3) UMD Protocol Setup
(4) Auxiliary Serial Port Setup
(5) Custom Output Resolution
(6) GPI Assignments
(7) Onboard Server Configuration
(8) Engineering Debug Utility

(X) Exit
```

5.1.1. Network Configuration

1) **Network Configuration** - set the IP parameters for this VIP module

```
ip address:          192.168.1.200
netmask address:     255.255.255.0
gateway:             0.0.0.0
broadcast address:   192.168.1.255
DHCP enabled:        False
-----------------------------------
(1) Set IP Address
(2) Set Netmask
(3) Set Gateway
(4) Set Broadcast Address
(5) Use DHCP
```

5.1.2. SNMP Configuration

2) **SNMP Configuration** – set the TRAP destination IP address which originate at this VIP (if enabled)

```
--------------------------------------------------
Trap Destination 1: 192.168.1.88
--------------------------------------------------
(1) Set Trap IP Address
(2) Remove Trap IP Address

(S) Save and exit
(X) Exit without saving
```

5.1.3. UMD Setup

3) **UMD Setup** – set the dynamic UMD (Protocol addresses are set using VIP Maestro.)

```
UMD Setup:

Protocol:   Image Video
Input Type: Serial

 ------------------------------------------------

(1) Set protocol

(S) Save and exit
(X) Exit without saving
```

Select UMD Protocol: (1 - 3)

1. Image Video
2. TSL
3. Crosspoint ‘MC’

Select Input Type: (1 - 2) – option for Image Video Protocol only

1. Serial
2. Network

5.1.4. Auxiliary Serial Port Setup

4) **Auxiliary Serial Port Setup** – if utilizing the serial port for dynamic UMD information, use this menu option to set the serial port parameters.

```
 Auxiliary Serial Port Setup:

 Baud Rate:       9600
 Data Bits:        8
 Parity:         None
 Stop Bits:        2
 Standard:      RS-232
```

---

(1) Set baud rate
(2) Set number of data bits
(3) Set parity
(4) Set number of stop bits
(5) Set standard

(S) Save and exit
(X) Exit without saving

5.1.5. Custom Output Resolution

5) **Custom Output Resolution** – Menu option to set the output resolution parameters of the VIP for displays that are not VESA "standard". To enable this configuration, select "CSTM" in the card-edge ORES menu.

User configurable parameters:

```
Horizontal (pixels): Active   = 1024
                     Total    = 1344
                     Sync time  =  136
                     Back porch =    6
                     Sync pol   =  neg
Vertical (lines):    Active   =  768
                     Total    =  806
                     Sync time  =   24
                     Back porch =    3
                     Sync pol   =  neg
```

Calculated parameters:

Vfreq (Hz)	Hfreq (kHz)	Pixel Clock (MHz)
50.00	40.300	54.163
59.94	48.311	64.928
60.00	48.360	64.995

---

(1) Set horizontal active pixels
(2) Set horizontal total pixels
(3) Set horizontal sync time
(4) Set horizontal back porch pixels
(5) Set horizontal sync polarity
(6) Set vertical active lines
(7) Set vertical total lines
(8) Set vertical sync time
(9) Set vertical back porch lines
(10) Set vertical sync polarity

(S) Save and exit

(X) Exit without saving

5.1.6. GPI to Custom Layout Assignments

6) **GPI to Custom Layout Assignments** – menu option to bind a preset to a GPI trigger.

GPI to Custom Layout Assignments:

GPI 1: not assigned…
:
GPI 20: not assigned

(1) Assign GPI to custom layout
(2) Clear GPI

(S) Save and exit
(X) Exit without saving

Select GPI: (1 - 20) > 1
1. CS01…
20. CS20

5.1.7. Onboard Server Configuration

7) **Onboard Server Configuration**

Server = this should be enabled for normal VIP operation. In a system where the MVP external PC based server is used the server should be disabled.

DCPd = this should be enabled when using the 3000DCP desktop control panel with the VIP, see instructions below for configuring this option.

SYMPHd = this should be enabled when using the Symphony Third Party protocol. The third party protocol allows for external control devices to change layouts on the VIP. The communication of this control is done using TCP/IP default port = 9750. Please see Evertz' Symphony Protocol version 1 for more details regarding the protocol itself.

Set DCP IP address = define the IP address to be used by the 3000DCP control panel.

```
-------------------------------------------------
|        Onboard Server Configuration   |
|      (7767VIP12-HSN 1.8.1 b19029)   |
 -------------------------------------------------
```

Server: Enabled
DCPd: Disabled
SYMPHd: Disabled

DCPd ip: 0.0.0.0

```
 -------------------------------------------------
(1) Onboard server (on/off)
(2) DCPd (on/off)
(3) SYMPHd (on/off)
(4) Set DCP ip address

(S) Save and exit
(X) Exit without saving
>
```

5.2. CONFIGURING THE VIP TO WORK WITH THE 3000DCP DESKTOP CONTROL PANEL:

1. Set IP address of DCP to same subnet address as VIP.
2. Connect serial cable to VIP card edge serial header.
3. Select “Onboard Server Configuration” menu option
4. Select item 1 “Onboard server on/off” set to “on”
5. Select item 2 “DCPd on/off” set to “on”
6. Select item 4 “set DCP IP address” set address to match 3000DCP IP address
7. Select “S” to save and exit

Example of serial interface:

```
-------------------------------------------------
|          Onboard Server Configuration
|        (7767VIP12-HSN 1.8.0)
-------------------------------------------------

Server:  Enabled
DCPd:    Enabled
SYMPHd:  Disabled

DCPd ip: 192.168.0.46
-------------------------------------------------
( 1) Onboard server (on/off)
( 2) DCPd (on/off)
( 3) SYMPHd (on/off)
( 4) Set DCP ip address

(S) Save and exit
(X) Exit without saving
```

8. Transfer DCP setup file to VIP, this file describes how the 3000DCP buttons are mapped:
   - Open a dos window.
   - Type ftp 192.168.9.100 - substitute the correct IP address for the VIP
   - Type put “C:\Program Files\Evertz\VIP\Resources\Sample Scripts\dcpconfig.vssl”
   - Type “quote site reboot” to restart the VIP
9. If the VIP and 3000DCP are connected to the network, upon booting the VIP it will connect to the 3000DCP panel and a connected message should appear on the dot matrix display.
10. The following describes the default configuration for the 3000DCP when using the default dcpconfig file:

5.2.1. DCP Button layout

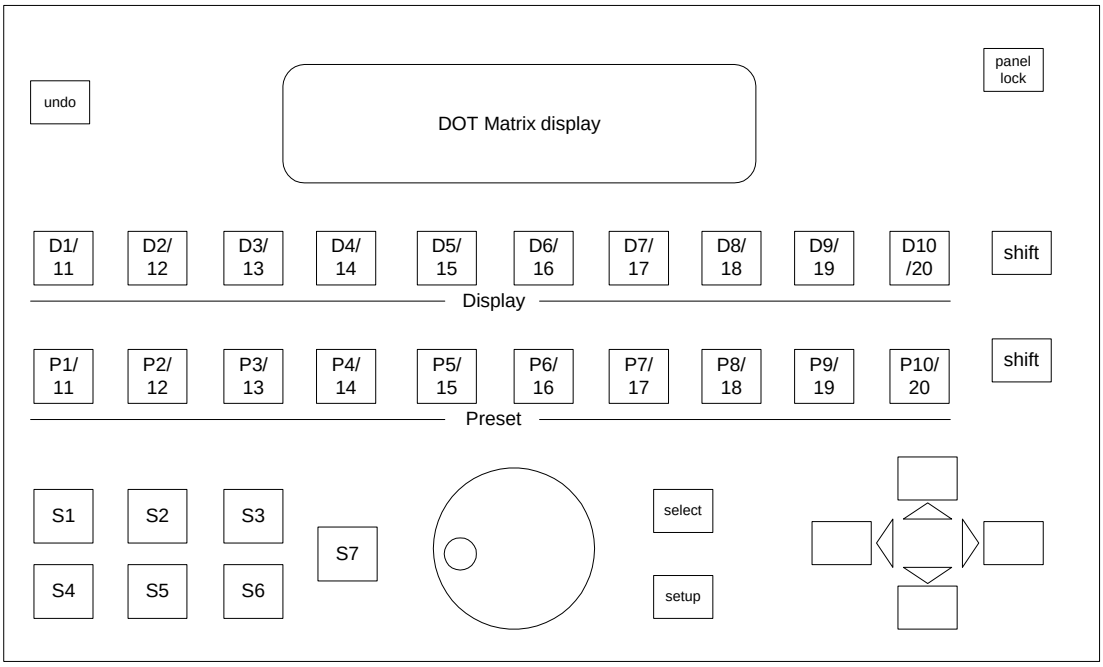


Figure 15: 3000DCP button map reference

5.2.2. DCP Overview

D1-D20: Load “factory” presets1-10 and 11-16 when shift is pressed

P1-P20: Load “custom” presets 1-10, and 11-16 when shift is pressed

Panel Lock: Lock the panel to prevent accidental button presses

***Note: ”Factory” presets are those presets stored on the VIP by default*
“Custom” presets are those presets stored on the VIP after being created by the Maestro preset layout software.

S1 - Select a window and load the dcpfullscreen.vssl preset on the current display

***Note: to create the dcpfullscreen.vssl layout which is used for fullscreen window re-direct use the following instructions:*

1. *Design a layout using the Maestro client that includes a single monitor window (can be any size)*
2. *Double click the monitor object and select the video window*
3. *Under the properties for the video window add: $1 to the video replace tag field*
4. *Go back to the design canvas view and use the upload layout function and select dcpfullscreen.vssl*

S2 - Select a window and enable audio monitoring for the window

S5 - Select a window and disable audio monitoring for the window

S3 - Select a window and enable cherry pick windows source

S6 - disable cherry picked source

5.3. CONFIGURING THE MODULE VIA THE CARD EDGE MENU

When you are not in the menu system, the user will see product identification; build revision, and thermal readings scrolling across the 4 character dot matrix display.

To enter the menu on the card-edge, press the card-edge push-button once and follow the menu headings on the 4-character display. To adjust any parameter, use the toggle switch to move up or down to the desired parameter and press the pushbutton. Using the toggle switch, adjust the parameter to its desired value. If the parameter is a numerical value, the number will increase if you push up on the toggle switch and decrease if you push down on the toggle switch. If the parameter contains a list of choices, you can cycle through the list by pressing the toggle switch in either direction. The parameter values are changed as you cycle through the list.

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

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

Table 3 gives a brief description of the top level of the menu tree that appears when you enter the card edge menu system. Selecting one of these items will take you down into the next menu level to set the value of that parameter. The details of the each of the menu items are described in sections 5.3.1 to 5.3.5.

DISP	Menu items to set vertical refresh, output resolution, preset layouts, and custom display resolution
AUD	Menu items for setting audio sources
RTR	Menu items for controlling audio or video router feature
COLR	Menu items for controlling RGB gamma, gain and black level control for DVI output (not applicable to the SDI output)
UTIL	Miscellaneous menu items

Table 3: Top Menu Structure

5.3.1. Configuring the Display

- *DISP*
  - *BACK*
  - *VFRQ*
  - *ORES*
  - *LYOT*
  - *BKGD*
  - *IHOF*
  - *IVOF*
  - *OHOF*
  - *OVOF*

BACK: Option to navigate back up one level from the current menu position. This is the factory default menu option.

VFRQ: (OUTPUT REFRESH RATE): Option for adjusting the output refresh rate. Options include: 23sF, 24sF, 50Hz, 59.94Hz or 60Hz refresh rate selection for output display

ORES (OUTPUT RESOLUTION): Option for adjusting the output resolution for the active display. Available options include:
VGA (640 x 480), SVGA (800 x 600), XGA (1024 x 768), WXGA (1280 x 768), WXGA2 (1366 x 768), WXGA3 (1280 x 800), SXGA (1280 x 1024), SXGA+ (1440 x 1050), UXGA (1600 x 1200), WUXGA (1920 x 1200), 720p, 108I, 108P, 525i*, 625i*, WXGW (768x1280 rotated**), WX2W (768x1366 rotated**), CSTM***, CNCL (Cancel)

*525 and 625 depends on the VFRQ setting – 60/59.94Hz or 50Hz respectively.
** requires –G option (fiber) and 2430GDAC-WARP
***CSTM is reserved for those displays that require special adjustments, if selected, this option will use the settings from the serial menu option for custom displays

LYOT (LAYOUT): Option to load a layout preset window configuration. Currently, 16 factory presets are provided along with one blank screen:

- LY01 – blank screen
- LY02 – 1 input, full screen
- LY03 – 1 input, full screen with audio bar graphs
- LY04 – quad-split display (2x2 matrix)
- LY05 to LY17 – combinations of video input windows for various output display resolutions
- CS01 to CS20 – recall user generated presets
- CNCL (Cancel)

BKGD (BACKGROUND) – Enable (ON) or disable (OFF) computer graphic input as background content on display

IHOF and *IVOF*: DVI/VGA input horizontal and vertical offset setting
OHOF and *OVOF*: DVI/VGA output horizontal and vertical offset setting

5.3.2. Configuring the Audio Sources

AUD
BACK
IN01-IN12

BACK: Option to navigate back up one level from the current menu position. This is the factory default menu option.

IN01 – IN12 – Select which video input to map audio to.

SRC: Set the audio source
- XAES – External AES
- ANLG – External Analog
- EMBD - embedded
- CNCL - Cancel

MAPX: Maps external AES audio
- BAR1
  - AS01 thru AS48 – select 1of 48 AES BNCs
  - CNCL
- BAR2
  - AS01 thru AS48 – select 1 of 48 AES BNCs
  - CNCL

MAPA: Maps external analog audio
- BAR1
  - SP01 thru SP12 – select one stereo pair
  - CNCL

5.3.3. Configuring the Video and Audio Router

RTR
BACK
SDIO
ARTR
VRTR

BACK: Option to navigate back up one level from the current menu position. This is the factory default menu option.

SDIO: Select SDI output operation mode: The following options are available: NORM = take DVI content and display on SD/HD SDI output (Mosaic output mode). **Note: requires DVI resolution to be equal to 525i or 625i or 720p or 1080i for this feature to function. ROUT = enable video router feature (Cherry Pick mode).

ARTR: Choose video input to route audio from to AES output. ENAB: Enable Audio router, OFF, ON, CNCL. INPT: select input, IN01….IN12.

VRTR: Enabled when SDIO = ROUT
ENAB: Enable video router, OFF, ON, CNCL. INPT: select input, IN01….IN12

5.3.4. Configuring the RGB gamma, gain and black level control for DVI output

COLR
BACK
RGAN
RBLV
RGMA
GGAN
GBLV
GGMA
BGAN
BBLV
BGMA

BACK: Option to navigate back up one level from the current menu position. This is the factory default menu option.

RGAN: Red Gain level value adjust
RBLV: Red Black level value adjust
RGMA: Red Gamma level value adjust

GGAN, GBLV, GGMA, BGAN, BBLV and BGMA are similar for Green and Blue adjustments.

5.3.5. Controlling Miscellaneous Card Functions

UTIL
FACT

FACT – Factory Reset: Option to return the module to factory default status. (Yes/No)

6. VIP MAESTRO SOFTWARE

This section describes VIP Maestro installation and usage instructions.

Minimum PC Requirements for VIP Maestro:

- Standard Pentium 4 class machine
- 512MB RAM
- 100Mb Ethernet Card, TCP/IP configured
- 8MB Video card
- 1024x768 screen resolution
- Windows NT4, 2000, XP, Server 2003 operating system
- CD-ROM drive

Installation Instructions:

1. Copy the VIP Maestro Installation software to your PC
2. Launch the installation by double-clicking the icon
3. Follow the installation instructions detailed on the pop-up windows of the installer
4. Upon completion, the desktop will show the “VIP Maestro” icon

7. Setting up VIP output timing for Sony LMD monitors

The VIP can provide a direct DVI connection to the Sony LMD series of monitors. This monitor has a specific timing requirement that can be setup by following the proceeding instructions. Please note that the VIP also provides RGB colour correction (see VLPRO for details).

1. See “Module Serial port” in manual and review “custom output resolution setting" section.
2. Set horizontal active pixels to 1280
3. Set horizontal total pixels to 1394
4. Set horizontal sync time to 32
5. Set horizontal back porch pixels to 79
6. Set horizontal sync polarity to positive
7. Set vertical active lines to 768
8. Set vertical total lines to 979
9. Set vertical sync time to 7
10. Set vertical back porch lines to 13
11. Set vertical sync polarity to negative

*Note: VIP will calculate VFreq, HFreq and Pixel Clock

12. Set VIP output to “CSTM”, through the card edge select “ORES” in the card edge menu under "DISP".

8. USER JUMPERS

Several jumpers, are used to preset various operating modes. . Figure 16 and Figure 17 show the location of the jumpers on the bottom and top boards respectively.

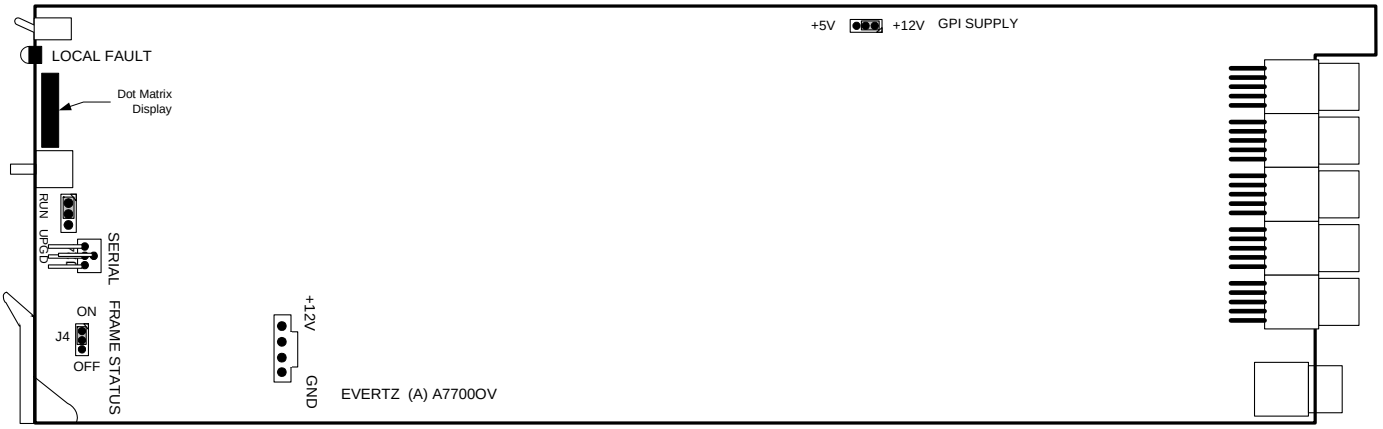


Figure 16: Location of Jumpers Bottom Board (A7700OV)

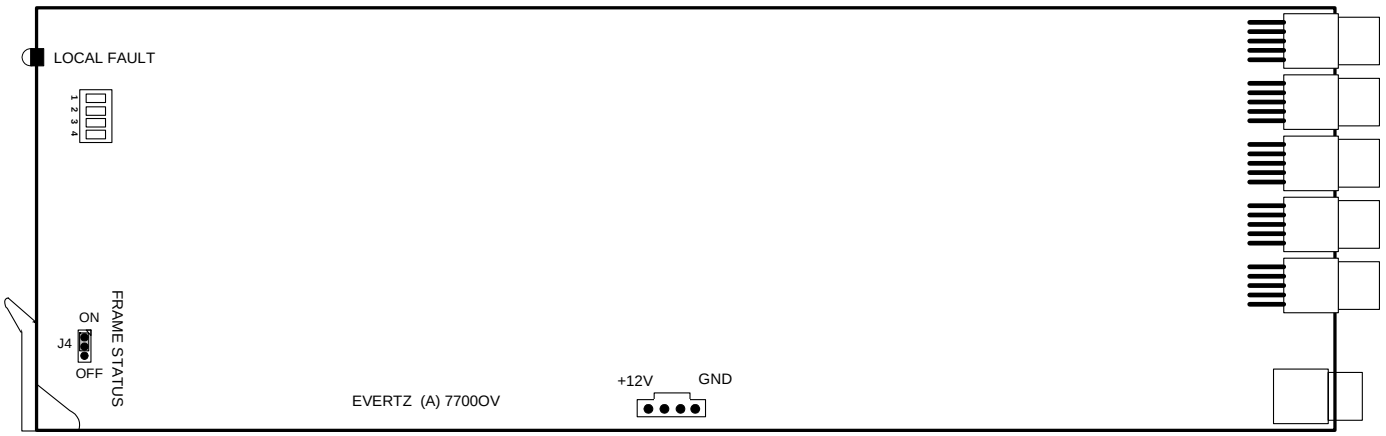


Figure 17: Location of Jumpers Top Board (7700OV)

8.1. SELECTING WHETHER LOCAL FAULTS ON THE BOTTOM BOARD WILL BE MONITORED BY THE GLOBAL FRAME STATUS

The **FRAME STATUS** jumper J4 on the bottom board determines whether local faults (as shown by the Local Fault indicator) on the bottom board 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.

8.2. SELECTING WHETHER LOCAL FAULTS ON THE TOP BOARD WILL BE MONITORED BY THE GLOBAL FRAME STATUS

The **FRAME STATUS** jumper J4 on the top board determines whether local faults (as shown by the Local Fault indicator) on the top board 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.

8.3. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES VIA SERIAL PORT

RUN/UPGRADE The RUN/UPGRADE jumper on the bottom board 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 via the serial port pull it out of the frame. Move the RUN/UPGRADE jumper 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 section 9.2. Once the upgrade is completed, 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.

The serial port method of upgrading the firmware will take over 15 minutes and is not recommended unless the FTP method fails.

8.4. SETTING THE GPI INPUT PULLUP VOLTAGE

On the bottom board the **GPI SUPPLY** jumper controls whether the GPI inputs are pulled up to 5 volts or 12 volts.

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

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

9. UPGRADING FIRMWARE

The 7767VIP contains firmware that is contained in a FLASH EPROM device. From time to time firmware updates will be provided to add additional features to the unit.

There are two methods of updating the firmware in the 7767VIP: File Transfer Protocol (FTP) and Serial Upload. Due to the large size of the firmware binary file the FTP method is the preferred method of updating the firmware.

Prior to initiating the upgrade process

- Confirm the version of code currently installed on the unit by using the front panel display.
- Download the new application code from the Evertz FTP site (www.evertz.com) Unzip the file into a temporary working folder on your PC.

9.1. UPGRADING THE FIRMWARE USING FTP

You will need the following equipment in order to update the Firmware

- PC with available communications port and Ethernet network port.
- "Straight-thru" serial extension cable (DB9 female to DB9 male) or (DB25 female to DB9 male).
- Special upgrade cable supplied with the 7700FR-C frame. This multi-colored ribbon cable with a six pin header socket on one end and a female 9 pin D connector on the other end, (Evertz part number WA-S76) is normally in the vinyl pouch at the front of the manual binder.
- Appropriate Ethernet cable as outlined in section 2.7.
- Terminal program such as HyperTerminal
- New firmware supplied by Evertz.

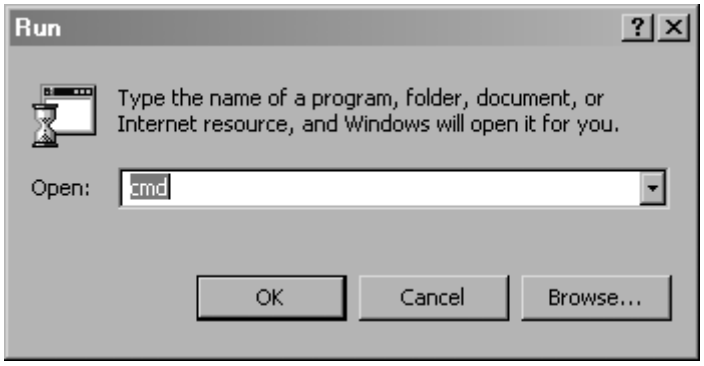
9.1.1. Step 1 – Determine the IP addresses.

Before any FTP (file transfer protocol) upgrades can be initiated, the user must determine the IP address of the 7767VIP card. Both the PC/laptop and the unit must be on the same subnet for the FTP upgrade to work properly. Follow the procedure outlined in section 5.1.1 to set the IP address for the card.

9.1.2. Step 2 – Establishing a valid Network Connection

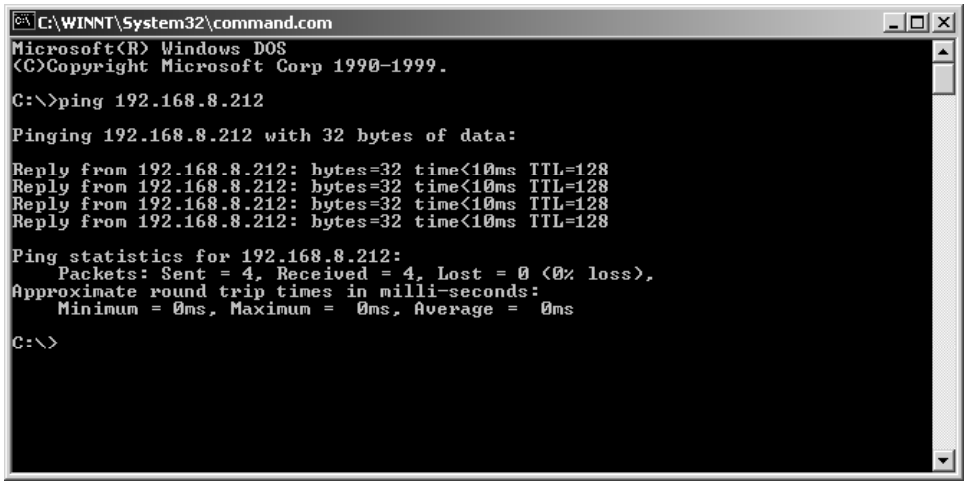
1. Connect a crossover network cable from the PC/laptop to the card

2. Open a DOS window. This can be accomplished by using the run command under the start button, type "cmd"; see figure below for an example:



3. "Ping" the IP address of the module being upgraded to confirm that you have a valid network connection. In the command prompt window type: `ping xxx.xxx.xxx.xxx <Enter>` (IP address of the module)

   If a proper network connection has been established, a "reply" is displayed on the DOS window. If there is a faulty network connection, a "Destination Host Unreachable" message is provided. If this occurs, either the IP addresses of the nodes should be verified or the network (Ethernet) cable is faulty. For more information, please see sections 2.7 and 5.1.1 of this manual.



9.1.3. Step 3 – Upgrading the application code

4. Obtain the new application code and place it on the local drive of the PC

5. In the command prompt window type: `ftp xxx.xxx.xxx.xxx` (IP address of the module)

6. Press the <Enter> key when prompted for a "Username".

7. Press the <Enter> key when prompted for a "Password". A message indicating that you logged in is displayed.

8. At the "FTP>" prompt type `hash` to turn on the progress indicator during the ftp upload.

9. At the "FTP>" prompt type `quote site upgrade` to put the unit in upgrade mode. A message indicating that you are in upgrade mode is displayed.

10. At the "FTP>" prompt type: `put "the name of the file.bin"` to send the firmware to the unit. (For example: `put 7767VIP_1v0b310.bin`)

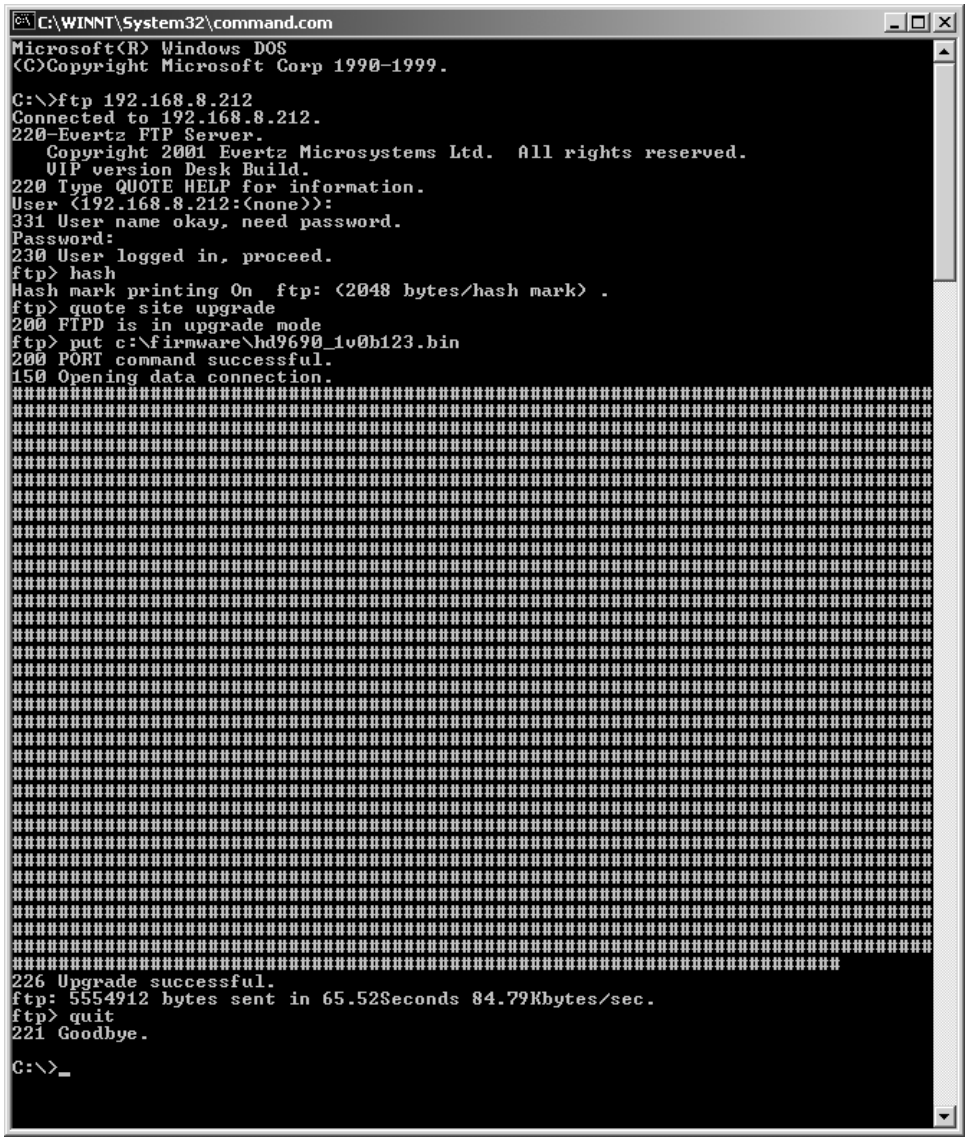
11. If the application file is not local to where you are performing the ftp, then include the path with the name (For example: `put c:\firmware\ 7767VIP_1v0b310.bin`)

During this time it is mandatory that all power cycles of the unit be avoided. The figure below displays a successful FTP session.

12. A message indicating the successful connection to the module is displayed

13. File transfer occurs in several seconds, and the DOS window displays the "FTP>" prompt again

14. At the "FTP>" prompt type `quit` to exit the FTP procedure.



9.1.4. Step 4 – Completing the Upgrade

15. Disconnect the power to the unit and then plug it back in to reboot the unit.

16. You can now close the DOS window and disconnect the network cable.

9.2. UPGRADING THE FIRMWARE USING RS-232 SERIAL CABLE

This method of upgrading the firmware will take over 15 minutes and is not recommended unless the FTP method fails.

You will need the following equipment in order to update the Firmware

- PC with available communications port. The communication speed is 115200 baud, therefore a 486 PC or better with a 16550 UART based communications port is recommended.
- "Straight-thru" serial extension cable (DB9 female to DB9 male) or (DB25 female to DB9 male).
- Special upgrade cable supplied with the 7700FR-C frame. This multi-colored ribbon cable with a six pin header socket on one end and a female 9 pin D connector on the other end, (Evertz part number WA-S76) is normally in the vinyl pouch at the front of the manual binder.
- Terminal program that is capable of Xmodem file transfer protocol. (such as HyperTerminal)
- New firmware supplied by Evertz.

9.2.1. Step 1 – Setup.

17. Connect the 7700PB Serial Upgrade cable to the 2 row x 3 pin header on the bottom board.

18. Connect the 9 pin connector on the end of the Serial Update cable to the PCs' RS-232 communications port

19. Start the terminal program.

20. Configure the port settings of the terminal program as follows:

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

9.2.2. Step 2 – Invoke Upload Mode From The Terminal Program

5. Power up the 7767VIP. After the unit powers up, a banner with the boot code version information should appear in the terminal window. The cursor to the right of the word "BOOT>" should be spinning for about 5 seconds then the unit will continue to boot. While the cursor is spinning press Ctrl-X to abort the boot-up process.

   For example:

```
PPC BOOT>
```

6. The following is a list of possible reasons for failed communications:

   - Defective Serial Upgrade cable.
   - Wrong communications port selected in the terminal program.
   - Improper port settings in the terminal program. (Refer to step 7 for settings). Note that HyperTerminal will not change port settings while connected. Click on HyperTerminal's "Disconnect" Button then click the "Reconnect" button to activate changes to the port settings.

7. Hit the <ENTER> key on your computer once.

8. Type the word "upload", without quotes, and hit the <ENTER> key once.

9. You should now see a prompt asking you to upload the file.

9.2.3. Step 3 – Uploading the new firmware

10. Upload the "*.bin" file supplied using the X-Modem transfer protocol of your terminal program. If you do not start the upload within 10 minutes the unit's Boot code will time out. You can restart the upgrade process by power cycling the unit.

11. When the transfer is complete (can take up to 15+ minutes) the terminal will return to the PPCBOOT prompt

    For Example:

```
UPLOAD OKAY
PPC BOOT> |
```

12. The following is a list of possible reasons for a failed upload:

    - If you get the message "transfer cancelled by remote" you must restart the terminal program and load the bin file, then remove and install the module again.
    - The supplied "*.bin" file is corrupt.
    - Wrong file specified to be uploaded.
    - Wrong file transfer protocol used – make sure you specify Xmodem, not Xmodem 1K.
    - The PCs' RS-232 communications port can't handle a port speed of 57600.
    - Noise induced into the Serial Upgrade cable.

9.2.4. Step 4 – Completing the Upgrade

13. Power cycle the unit. It should proceed through a normal boot up sequence.

18. You can now close the terminal program and disconnect the RS-232 serial cable from the PC and the unit.

10. *VISTA*LINK™ REMOTE MONITORING/CONTROL

10.1. WHAT IS *VISTA*LINK™?

VistaLINK® is Evertz's remote monitoring and control capability 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. For monitoring, there needs to be a detecting device that automatically reports all errors to a central alarm and error logging station. We also need to be able to interrogate individual detector devices from the central station to determine the status of individual channels. Finally, we need to be able to configure devices in the network from the 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 7707RGBT 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 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 *VistaLINK*® network, see the 7700FC Frame Controller chapter.