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REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1.0	Original Version	May 09
1.1	Added GPO Menu Item	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. Non-reversible damage to the eye can occur in a matter of milliseconds.



Do not hook up the 7707EO-3G DWDM cards directly with a short fiber optic cable. The 7707EO-3G DWDM cards produce +7dBm of power which will damage the receiver if connected directly.



Do not hook up the 7707EO-3G cards that output more than -7dBm of power (see 7707EO-3G specifications for output power of various laser types) and 7707OE-3G-H high sensitivity receiver cards directly with a short fiber optic cable. The 7707EO-3G cards that produce more than -7dBm of power will damage the receiver if connected directly.

1. OVERVIEW

The 7707EO-3G is a VistaLINK[®] enabled, electrical to optical converter for SMPTE 424M (2.97Gb/s), SMPTE 292M (1.485Gb/s), SMPTE 259M-C (270Mb/s), SMPTE 305M (SDTi), and DVB-ASI (270Mb/s) signals. Monitoring and control of card status and parameters is provided locally at the card edge, and remotely via VistaLINK[®] capability. The 7707EO-3G accepts one coaxial SDI input, and provides one reclocked fiber output and two reclocked coaxial SDI outputs. Also, the 7707EO-3G provides one user selectable GPO.

The fiber output is available in an assortment of optical wavelengths, accommodating standard, CWDM, or DWDM transmission schemes. (See Specifications, section 3, for complete information).

7707EO13-3G	1310 nm FP	-7dBm output, suitable for distances up to 50 Km
7707EO15-3G	1550 nm DFB	0dBm output, suitable for distances up to 75 Km

There are several versions with built in isolators specifically suited to coarse wave division multiplexing (CWDM) applications. These versions all have 0dBm output and are suitable for distances up to 75 Km.

7707EO27-3G	1270 nm DFB
7707EO29-3G	1290 nm DFB
7707EO31-3G	1310 nm DFB
7707EO33-3G	1330 nm DFB
7707EO35-3G	1350 nm DFB
7707EO37-3G	1370 nm DFB
7707EO43-3G	1430 nm DFB
7707EO45-3G	1450 nm DFB
7707EO47-3G	1470 nm DFB
7707EO49-3G	1490 nm DFB
7707EO51-3G	1510 nm DFB
7707EO53-3G	1530 nm DFB
7707EO55-3G	1550 nm DFB
7707EO57-3G	1570 nm DFB
7707EO59-3G	1590 nm DFB
7707EO61-3G	1610 nm DFB

There are several versions with built in isolators specifically suited to dense wave division multiplexing (DWDM) applications. The DWDM versions are suitable for distances >50 km @ 2.97 Gb/s (for DWDM applications contact factory).

7707EODyyy-3G	DWDM DFB laser output, yyy – ITU channel number
----------------------	---

The 7707EO-3G occupies one card slot and can be housed in either a 1RU frame, which will hold up to three modules, or a 3 RU frame, which will hold up to 15 modules.

Features:

- Supports all SMPTE 424M standards at 2.970Gb/s
- Supports all SMPTE 292M standards at 1.485Gb/s
- Supports all SMPTE 259M-C standards at 270Mb/s
- Supports DVB-ASI (270Mb/s), and SMPTE 305M (SDTi) rates
- Auto rate selection, indication and reclocking for all SDI, HD-SDI, 3G-SDI data rates from 270Mb/s to 2.970Gb/s
- Selectable non-reclock mode for other data rates
- Detection and display video format rate
- User enabled GPO configurable to normally open or normally closed
- Automatic coaxial input equalization to 70m at 2.97Gb/s, 100m at 1.485Gb/s, and 250m at 270Mb/s (Belden 1694A)
- Optical Output wavelength of 1310nm, 1550nm, and up to sixteen CWDM wavelengths (ITU-T G.694.2 compliant)
- DWDM wavelengths (ITU-T G.694.1 compliant) also available
- Supports single-mode and multi-mode fiber optic cable
- Fully hot-swappable from front of frame
- Comprehensive signal and card status monitoring via four digit card edge display or remotely through SNMP and VistaLINK®
- Can be housed in either a 1RU frame which will hold up to 3 modules, a 3RU frame which will hold up to 15 modules, 3RU portable frame that holds up to 7 modules or a standalone frame which will hold 1 module
- VistaLINK® capability is available when modules are used with the 3RU 7700FR-C or 350FR portable frame and a 7700FC VistaLINK® Frame Controller module in slot 1 of the frame

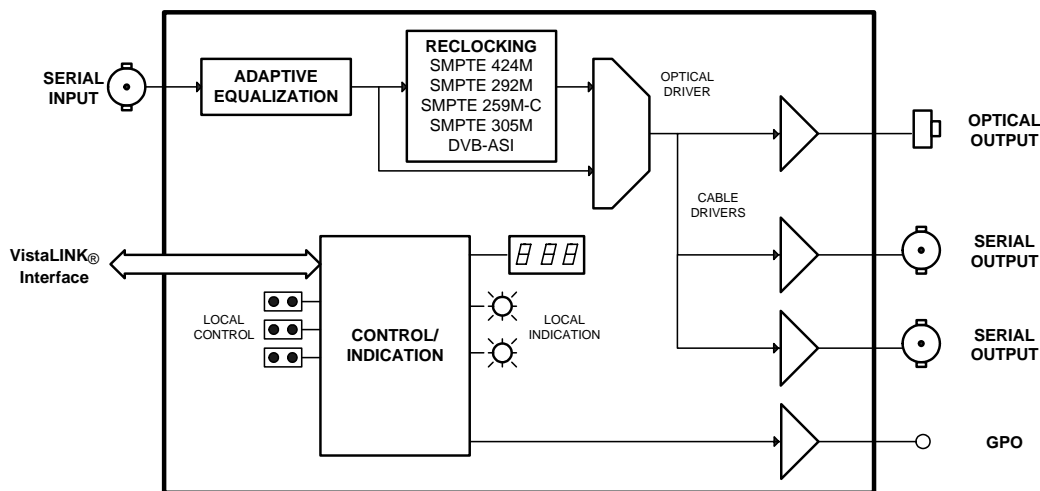


Figure 1-1: 7707EO-3G Block Diagram

2. INSTALLATION

The 7707EO-3G comes with a companion rear plate that has three BNC connectors and one SC/PC (shown), ST/PC or FC/PC optical connector. For information on mounting the rear plate and inserting the module into the frame see section 3 of the 7700FR chapter.

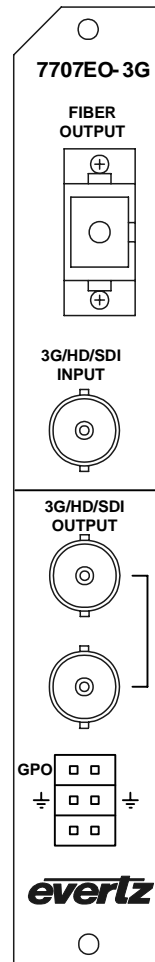


Figure 2-1: 7707EO-3G Rear Panel

2.1. ELECTRICAL SIGNAL CONNECTIONS

3G/HD/SDI INPUT: Input BNC connector for 10-bit serial digital video signals compatible with SMPTE 424M, SMPTE 292M, SMPTE 259M-C, SMPTE 305M, and DVB-ASI. This input provides adaptive compensation for up to 70m of industry standard Belden 1694A cable at rates to 2.970Gb/s, 100m at 1.485Gb/s, and 250m at 270Mb/s.

3G/HD/SDI OUTPUT: There are two BNC connectors with serial component video outputs, compatible with SMPTE 424M, SMPTE 292M, SMPTE 259M-C, SMPTE 305M, and DVB-ASI. Reclocking is provided or may be disabled by the user in Non-Reclock mode.

GPO:

The 7707EO-3G provides the user with 1 General Purpose Output. It is dry-contact relay closure. The GPO polarity is user selectable normally open or normally closed, and always open on power loss. Figure 2-2 shows the output circuitry. Refer to 3.4 for electrical specifications.

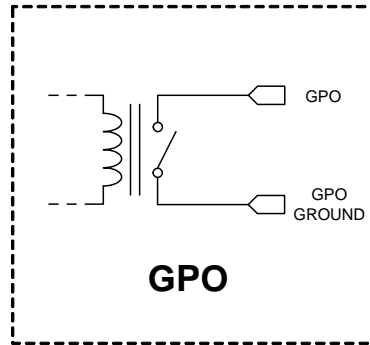


Figure 2-2: General Purpose Output

2.2. OPTICAL CONNECTIONS

FIBER OUTPUT: There is one SC/PC (shown), ST/PC or FC/PC female connector with the video output converted to an optical signal as specified in section 3.3.

This optical output is available in 1310nm, 1550nm, up to sixteen CWDM wavelengths (ITU-T G.694.2 compliant) and up to 40 DWDM wavelengths (ITU-T G.694.1 compliant). The output wavelength is marked on the rear panel of each module. When connected directly to a companion module, the output is compatible with multi-mode fiber optic cable. If not connected directly (i.e. connected through CWDM, DWDM, WDM, or splitter/combiner) the output is compatible only with single-mode fiber optic cable.



Do not hook up the 7707EO-3G DWDM cards directly with a short fiber optic cable. The 7707EO-3G DWDM cards produce +7dBm of power, which will damage the receiver if connected directly.



Do not hook up the 7707EO-3G cards that output more than -7dBm of power (see 7707EO-3G specifications for output power of various laser types) and 7707OE-3G-H high sensitivity receiver cards directly with a short fiber optic cable. The 7707EO-3G cards that produce more than -7dBm of power will damage the receiver if connected directly.

2.3. CARE AND HANDLING OF OPTICAL FIBER

2.3.1. Safety



Background colour: yellow
Triangular band: black
Symbol: black

CLASS 1 LASER PRODUCT

2.3.2. Assembly

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

2.3.3. 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: 7707EO13-3G, 7707EO15-3G, 7707EOxx-3G, (xx = 27, 29, 31, 33, 35, 37, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61) 7707EODyyy-3G (Dyyy represents ITU Grid Channel: D200, D210, D220, D230, D240, D250, D260, D270, D280, D290, D300, D310, D320, D330, D340, D350, D360, D370, D380, D390, D400, D410, D420, D430, D440, D450, D460, D470, D480, D490, D500, D510, D520, D530, D540, D550, D570, D580, D590, D600)

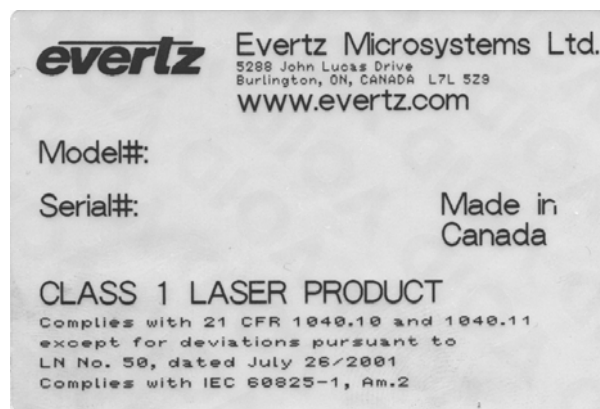


Figure 2-3: Reproduction of Laser Certification and Identification Label

2.3.4. Handling and Connecting Fibers



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

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

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standards:**Reclocked:** SMPTE 424M, SMPTE 292M, SMPTE 259M-C, SMPTE 305M, DVB-ASI**Non-Reclocked:** Any bi-level signal type at rates of 270Mb/s – 2.970Gb/s**Connector:** 1 BNC input per IEC 61169-8, Annex A**Equalization:** Automatic to 70m @ 2.970Gb/s with Belden 1694A or equivalent cable
Automatic to 100m @ 1.485Gb/s with Belden 1694A or equivalent cable
Automatic to 250m @ 270Mb/s with Belden 1694A or equivalent cable**Return Loss:** > 15dB to 1.5GHz

> 10dB to 3GHz

3.2. SERIAL VIDEO OUTPUTS

Number of Outputs: 2 Per Card

Both outputs maintain polarity from input to output for DVB-ASI applications

Connector: BNC per IEC 61169-8, Annex A**Signal Level:** 800mV ±80mV**DC Offset:** 0V ±0.5V**Rise and Fall Time:** <135ps (HD/3G)

<900ps (SD)

Overshoot: <10% of amplitude**Return Loss:** >12dB to 1.5Ghz

>10dB to 3.0Ghz

Alignment Jitter: < 0.2UI (Reclocked) to 1.485Gb/s

< 0.3UI (Reclocked) to 2.970Gb/s

3.3. OPTICAL OUTPUT

Standard: SMPTE 297M**Number of Outputs:** 1**Connector:** Female SC/PC, ST/PC or FC/PC**Return Loss:** > 14dB**Rise and Fall Time:** <135ps (HD/3G)

<900ps (SD)

Alignment Jitter: < 0.2UI (Reclocked) to 1.485Gb/s

< 0.3UI (Reclocked) to 2.970Gb/s

Fiber Size: 9 μm core / 125 μm overall**Wavelengths:****Standard:** 1310nm, 1550nm (nominal)**CWDM:** 1270nm to 1610nm (ITU-T G.694.2 compliant)**DWDM:** ITU channel 20 to 60, 100GHz spacing, (ITU-T G.694.1 compliant)**Output Power:****1310nm FP (Standard)** -7dBm ± 1dBm**1550nm & CWDM DFB** 0dBm ± 1dBm**DWDM DFB** +7dBm ± 1dB

3.4. GENERAL PURPOSE OUTPUTS

Number of Signals: 1 output
Connector at Breakout: Multi-pin Removable Terminal Block
Output Type: Dry contact relay closure to GPO ground, user selectable polarity (Normally Open or Normally Closed), normally open (without power).
Output Current (min): 100mA

3.5. ELECTRICAL

Voltage: +12VDC
Power: 8 Watts (Non DWDM)
11 Watts (DWDM)
EMI/RFI: Complies with FCC Part 15, Class A
EU EMC Directive

3.6. COMPLIANCE

Electrical Safety: CSA Listed to UL 60065-03, IEC 60065
Complies with CE Low voltage directive
Laser Safety: Class 1 laser product
Complies with 24 CFR 1040.10 and 1040.11
IEC 60825-1
EMI/RFI: Complies with FCC Part 15, Class A
EU EMC directive

3.7. PHYSICAL

7700 or 7701 frame mounting:
Number of slots: 1

4. STATUS INDICATORS AND DISPLAYS

The 7707EO-3G has 3 LED Status indicators and a 4 digit alphanumeric display on the front card edge to show operational status of the card at a glance. The card edge pushbutton is used to select various displays on the alphanumeric display. Figure 4-1 shows the locations of the indicators, jumpers and pushbutton.

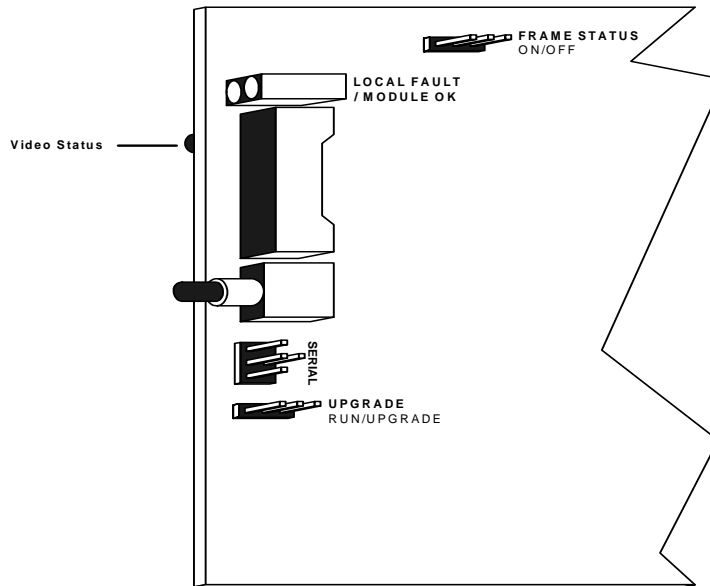


Figure 4-1: Status Indicator and Jumper Locations

4.1. STATUS INDICATOR LEDs

LOCAL FAULT: This Red LED indicates poor module health and will be On during the absence of a valid input signal, if a laser fault exists, or if a local input power fault exists (i.e.: a blown fuse). The LOCAL FAULT indication can also be reported to the frame through the FRAME STATUS jumper.

MODULE OK: This Green LED indicates good module health. It will be On when a valid input signal is present, and the laser and board power are good.

VIDEO STATUS: This LED indicates the status of the input video signal. When a valid input video signal is detected the LED will be green. When in bypass mode the LED will be yellow. When no video is detected on the serial video input of the 7707EO-3G the LED will remain off.

4.2. DOT-MATRIX DISPLAY

Additional monitoring and control functions are implemented via the 4-digit dot-matrix display and controls 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 previous menu level.

Pushbutton ⇨				
Menu Level 1	Menu Level 2	Menu Level 3	Menu Level 4	
Indications >				
LASR...ERR (Laser Error) Supersedes LOS (Video Loss) Supersedes OK (Okay)				
Selections >	Selections >	Indications >		
STAT (Status)	RATE (Signal Rate)	2970 (2970Mbps Rate) 1485 (1495Mbps Rate) 270 (270Mbps Rate) BYP (Reclocker Bypass) LOS (Loss of Signal)		
	VER (Software Version)	Indications > Software Version		
	BACK (Abort)			
CTRL (Control)	Selections >	Indications >		
	RATE (Signal Rate)	AUTO (Auto Rate / Bypass) 2970 (2970Mbps Rate) 1485 (1495Mbps Rate) 270 (270Mbps Rate) BYP (Reclocker Bypass)		
	LASR (Laser Mode)	Selections > CONT (Continuous) DISC (Discontinuous)		
	GPO (GPO Settings)	Selections >	LOS (Loss of Signal) LASR (Laser Error)	Selections > EN (Enable Trigger) DIS (Disable Trigger)
		Selections >	POL (GPO Polarity)	Selections > OPEN (Normally Open) CLOS (Normally Close)
	DISP (Display Orientation)	Selections > HORZ (Horizontal) VERT (Vertical)		
	FRST (Factory Reset)	Selections > NO (Abort) YES (Accept)		
BACK (Abort)				

Figure 4-2: 7707EO-3G Card-edge Menu Quick Reference

4.2.1. Displaying the Video Rate

The card-edge display of the 7707EO-3G can report the signal rate present at the active video input. To indicate the input video rate, select STAT (Status) menu item in menu level 1, followed by RATE (Video Rate) menu items.

STAT
RATE
2970
1485
270
BYP
LOS

The following list describes the available selections.

- 2970 SMPTE 424M: 2.97Gb/s 3G.
- 1485 SMPTE 305M: 1.485Gb/s HD.
- 270 SMPTE 259M C: 270Mb/s 525i or 625i, DVB-ASI.
- BYP Indicates reclocker is in non-reclock mode.
- LOS Indicates that no valid input signal is present.

4.2.2. Displaying the Software Version

Software operating on the 7707EO-3G has a version number associated with it. This version number can be indicated to the display. By this means, it can be verified that the module is operating with the most recent software. To reveal the software version, select the *STAT* (Status) menu item in menu level 1, followed by the *VER* (Software Version) menu item.

<i>STAT</i>
<i>VER</i>
<i>VER x.x BUILD xxx</i>

The following describes the function of version menu item:

VER x.x BUILD xxx Software version. Character string scrolls across four digit display.

4.2.3. Selecting the Output Video Rate

User configuration selects the video standard rate for transmission over the optical interface. If the *AUTO* mode is selected, then the output video rate will match the input video rate. Otherwise, the output video rate will be as selected, regardless of the input rate. To configure the output video rate sent across the optical link by the 7707EO-3G, select the *CTRL* (Control) menu item in menu level 1, followed by the *RATE* (Video Rate) menu items.

<i>CTRL</i>
<i>RATE</i>
<i>AUTO</i>
<i>2970</i>
<i>1485</i>
<i>270</i>
<i>BYP</i>

The following list describes possible user selections for this menu item:

AUTO	Sets the input rate to auto detect.
2970	Sets the input rate to 2970Mb/s.
1485	Sets the input rate to 1485Mb/s.
270	Sets the input rate to 270Mb/s.
BYP	Sets the input rate to bypass mode.

4.2.4. Selecting the Output Laser Enable Mode

In some applications it is desirable to have the laser output disabled while no input video signal is present. Alternatively, it may be preferable to maintain an optical output signal, even with no input video. The 7707EO-3G supports both modes of operation. To configure the output laser enable mode, select the *CTRL* (Control) menu item in menu level 1 followed by the *VOUT* (Video Output) and *LASR* (Laser) menu items.

<i>CTRL</i>
<i>VOUT</i>
<i>LASR</i>
<i>CONT</i>
<i>DISC</i>

The following list describes possible user selections for this menu item:

CONT	Continuous operation. Laser is always enabled, even without valid video signal.
DISC	Discontinuous operation. Laser is disabled when no valid input video is detected.

4.2.5. Selecting GPO Triggers

The 7707EO-3G provides 1 user-enabled GPO. It has logical functions for loss of input video and laser error. To configure the GPO enable mode, select the CTRL (Control) menu item in menu level 1 followed by the GPO (GPO) and LOS (Loss of Input) or LASR (Laser) menu items.

CTRL
GPO
LOS
LASR
EN
DIS

The following list describes possible user selections for this menu item:

- EN Enables GPO.
- DIS Disables GPO.

Note: When *Loss of Input* and *Laser Error* GPO are enabled, either fault will trigger GPO.

4.2.6. Selecting GPO Polarity

The GPO polarity of the 7707EO-3G is user selectable. When set to *Normally Open*, GPO and GPO Ground are connected only when card fault exists. When set to *Normally Closed*, GPO and GPO Ground are connected until card fault exists, at which point GPO and GPO Ground become disconnected. To configure the GPO Polarity mode, select the CTRL (Control) menu item in menu level 1 followed by the GPO (GPO) and POL (Polarity) menu items.

CTRL
GPO
POL
OPEN
CLOS

The following list describes possible user selections for this menu item:

- OPEN GPO Polarity Normally Open.
- CLOS GPO Polarity Normally Close.

Note: Card fault exists when Video Input is Lost or Laser fault exists.

4.2.7. Selecting the Orientation of the Display

The 7707EO-3G provides the ability to adjust the orientation of the display. When using a 3RU frame it is convenient to have the text read vertical whereas when using a 1RU frame a horizontal display is desirable. To change the orientation of the display select the CTRL (Control) menu item in menu level 1, followed by the DISP (Display) menu item.

CTRL
DISP
HORZ
VERT

The following list describes possible user selections for this menu item:

- HORZ Sets the orientation of the text to horizontal.
- VERT Sets the orientation of the text to vertical.

4.2.8. Selecting the Factory Reset Configuration

It is convenient to have a quick method of returning all configuration settings to a known value. The 7707EO-3G provides a factory reset for this purpose. All values which are user configurable will be returned to a known state, as indicated below. To initialize a factory reset, select the `CTRL` (Control) menu item in menu level 1, followed by the `FRST` (Factory Reset) menu item.

<code>CTRL</code>
<code>FRST</code>
<code>NO</code>
<code>YES</code>

The following list describes possible user selections for this menu item:

<code>NO</code>	Return to previous menu item, without modification of configuration settings.
<code>YES</code>	Initialize factory reset.

5. JUMPERS AND LOCAL CONTROLS

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

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

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

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

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

5.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

UPGRADE: The 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 NOTE 1). See the *Upgrading Firmware* section of this manual for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move the UPGRADE jumper into the *UPGRADE* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the SERIAL header at the card edge. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* section of this manual. Once the upgrade is complete, remove the module from the frame, move the UPGRADE jumper 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 7707EO-3G and 7707OE-3G 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.

Parameter	Description
Signal Rate	A range of values describing the detected video signal rate.

Table 6-1: VistaLINK[®] Monitored Parameters

6.3. VISTALINK® CONTROLLED PARAMETERS

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

Parameter	Description
Signal Rate	Sets reclocking rate.
Laser Mode	Sets output laser mode.
LOS GPO Trigger	Sets loss of signal GPO mode.
LASR...ERR GPO Trigger	Sets laser error GPO mode.
GPO Polarity	Sets GPO polarity mode.

Table 6-2: *VistaLINK®* Controlled Parameters

6.4. VISTALINK® TRAPS

The following parameters can be remotely enabled and monitored through the *VistaLINK®* interface as traps in the *Alarm View*.

Parameter	Description
Signal Loss	Indicates the absence of a valid input signal. (The state of the SIGNAL VALID LED)
Laser Error	Indicates deficient operation of the optical output laser. (The state of the LASER FAULT LED)

Table 6-3: *VistaLINK®* Traps