7708SFP Series
Fiber Optic SFP Card Module
User Manual

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Version 1.0, February 2015

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IMPORTANT SAFETY INSTRUCTIONS

⚡	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "Dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
!	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.

- Read these instructions
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

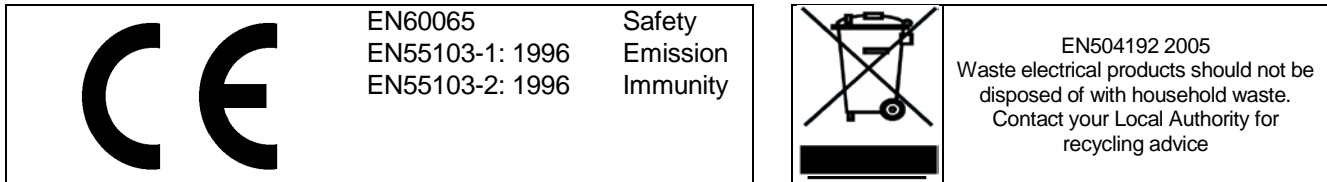| **WARNING**
TO REDUCE THE RISK OF FIRE OR ELECTRIC – SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE |
|---|
| **WARNING**
DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS ARE PLACED ON THE EQUIPMENT |
| **WARNING**
TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE |
| **WARNING**
THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE |

INFORMATION TO USERS IN EUROPE

NOTE

CISPR 22 CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the European Union EMC directive. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

C E	EN60065 EN55103-1: 1996 EN55103-2: 1996	Safety Emission Immunity

EN504192 2005
Waste electrical products should not be disposed of with household waste. Contact your Local Authority for recycling advice

INFORMATION TO USERS IN THE U.S.A.

NOTE

FCC CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

Changes or Modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must be used.

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REVISION HISTORY

REVISION	**DESCRIPTION**	**DATE**
1.0	First Release	Feb 2015

Information contained in this manual is believed to be accurate and reliable. However, Evertz assumes no responsibility for the use thereof nor for the rights of third parties, which may be affected in any way by the use thereof. Any representations in this document concerning performance of Evertz products are for informational use only and are not warranties of future performance, either expressed or implied. The only warranty offered by Evertz in relation to this product is the Evertz standard limited warranty, stated in the sales contract or order confirmation form.

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.

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1. OVERVIEW

The Evertz 7708SFP series is a card-based equivalient to the 3405FR series fiber optic SFP frames. The 7708SFP series can accommodate any 3405 series SFP, allowing the SFP cages to be populated as needed with optical transmit, receive, regenerator or electrical distribution amplifier SFP's. The 7708SFP series offers a very high-density and cost-effective solution for constructing modern fiber optic infrastructures. Benefits of fiber optics for video transport include longer attainable distances, smaller/lighter cabling, reduced cable tray loads and electrical isolation. The 7708SFP series provides a low-overhead means for simple electrical/optical conversion for interfacility transport, as well as over coming the limitations imposed by coaxial cable in intra-facility applications.

The 3405 series SFP's are able to handle ASI, SDI, HD-SDI and 3G digital video signals, as well as other signal rates up to 3 Gig on non-reclocked versions (e.g. MADI). The SFP modules are hot-swappable on the rear panel, allowing for quick servicing or easy configuration or expansion at any time. 16 CWDM wavelengths are also available, which when combined with Evertz CWDM products allows up to 16 signals to be multiplexed on to a single fiber, greatly conserving fiber usage.

The 7708SFP modules support full remote monitoring and control over SNMP/VistaLINK® when used in conjunction with an Evertz fame with frame controller module. Numerous paramaters such as optical power and electrical signal presence and rate can be accessed remotely to monitor system integrity.

Features & Benefits

- Models available to hold one, two or four SFP's to suit different capacity requirements
- Models available with BNC or DIN 1.0/2.3 connectors to suit different density or connector preferences
- Any combination of 3405SFP types may be installed in a single card including optical transmit, receive, regenerator and electrical distribution amplifiers
- SFP modules are hot-swappable from the rear plate
- 7708SFP card modules are hot swappable through the front of the frame
- Comprehensive signal and card status monitoring via four digit card edge display or remotely through SNMP and VistaLINK® when used in conjunction with an Evertz frame controller module

1.1.   7708SFP VERSIONS

The 7708SFP series is available in four different versions:

| Model	Description	Connector	Number of Slot	Density
7708SFP	Single SFP BNC card module	BNC	1	Up to 2 EO or OE conversions in 1 card slot
7708SFP-2	Dual SFP BNC card module	BNC	2	Up to 4 EO, OE, or mixture of EO and OE in 2 card slots
7708SFP-2-DIN	Dual SFP DIN card module	DIN 1.0/2.3	1	Up to 4 EO, OE, or mixture of EO and OE in 1 card slot
7708SFP-4-DIN-A	Quad SFP DIN card module	DIN 1.0/2.3	2	Up to 8 EO, OE, or mixture of EO and OE in 2 card slots

Table 1: Types of 7708SFP Modules
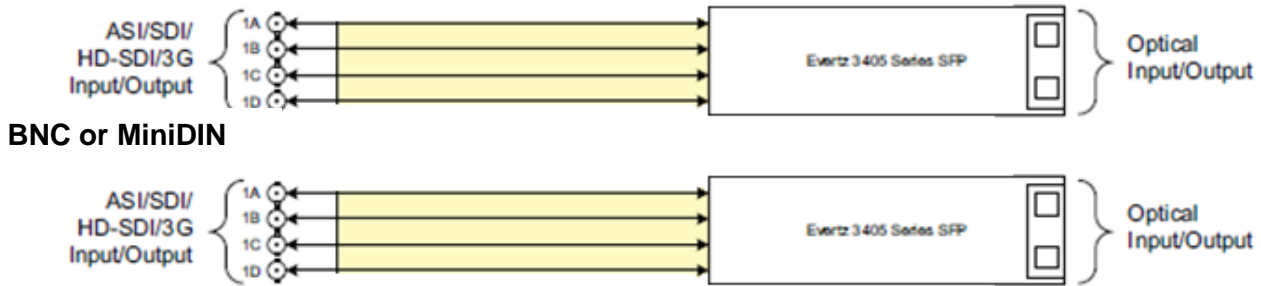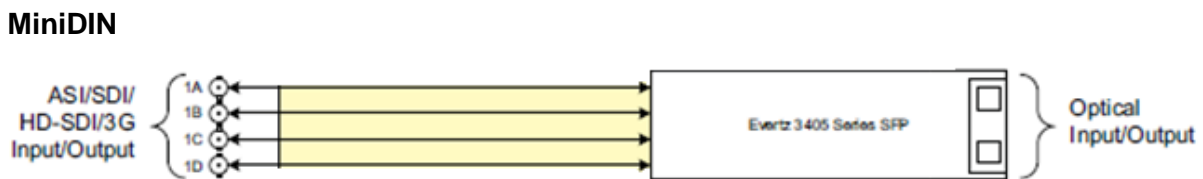
BNC
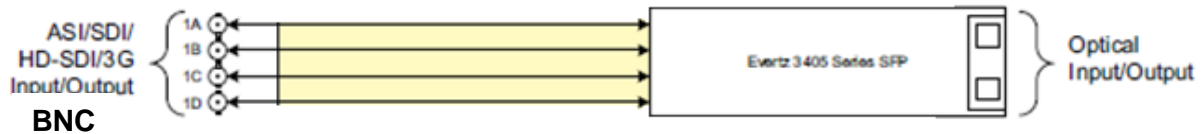
Figure 1-1: 7708SFP Block Diagram
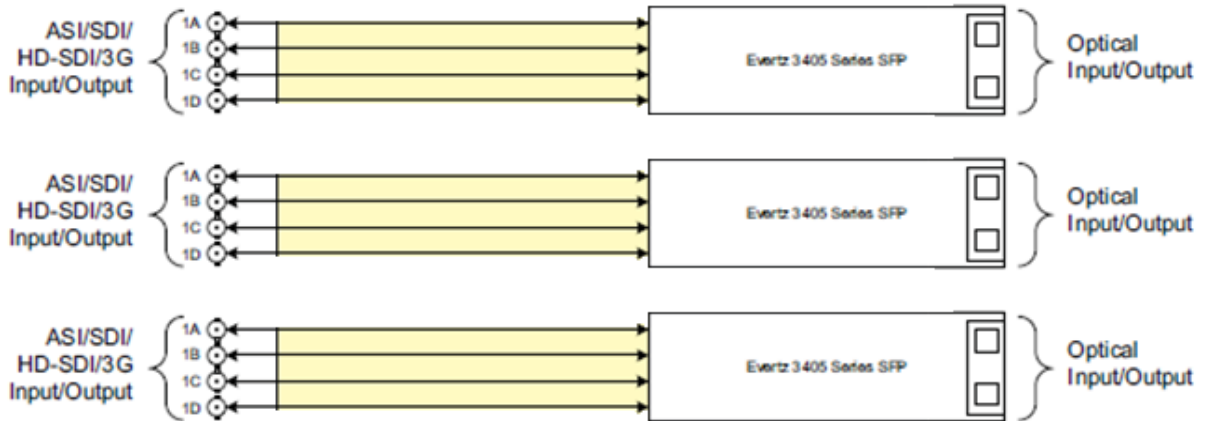
BNC or MiniDIN

Figure 1-2: 7708SFP-2 and 7708SFP-2 DIN Block Diagram

MiniDIN

Figure 1-3: 7708SFP-4-DIN-A
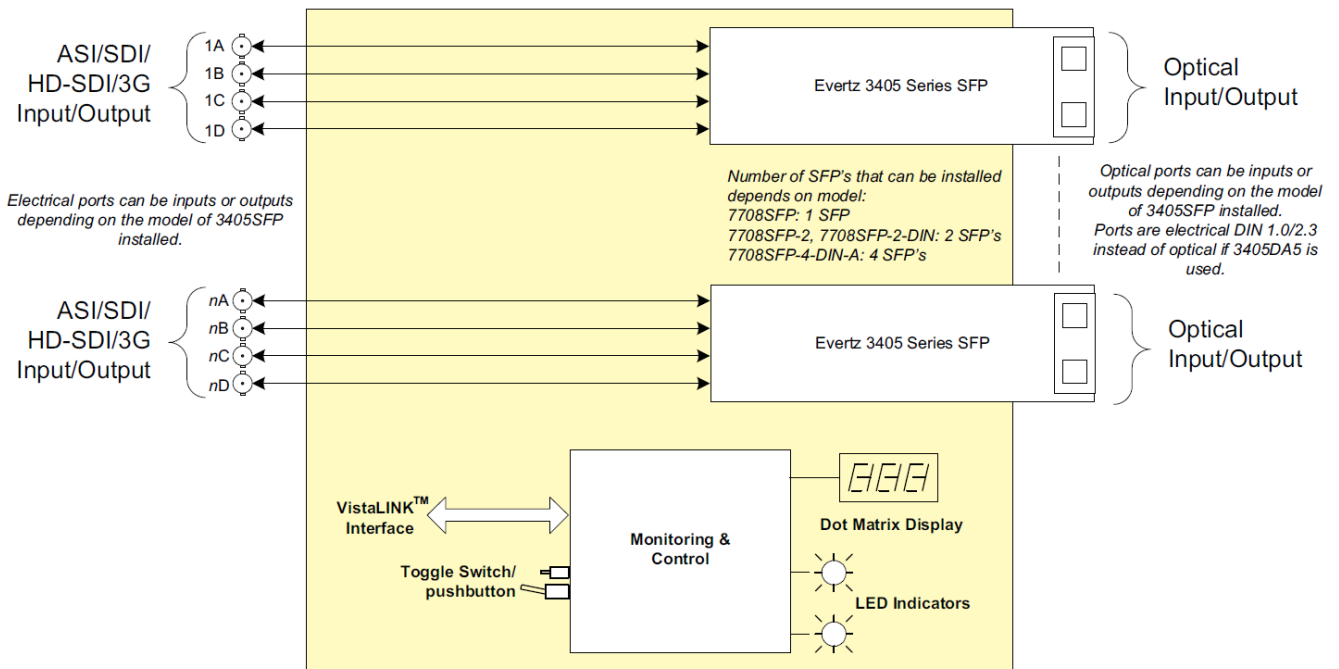
Figure 1-4: Complete Block Diagram Overview

1.2. SFP OPTIONS

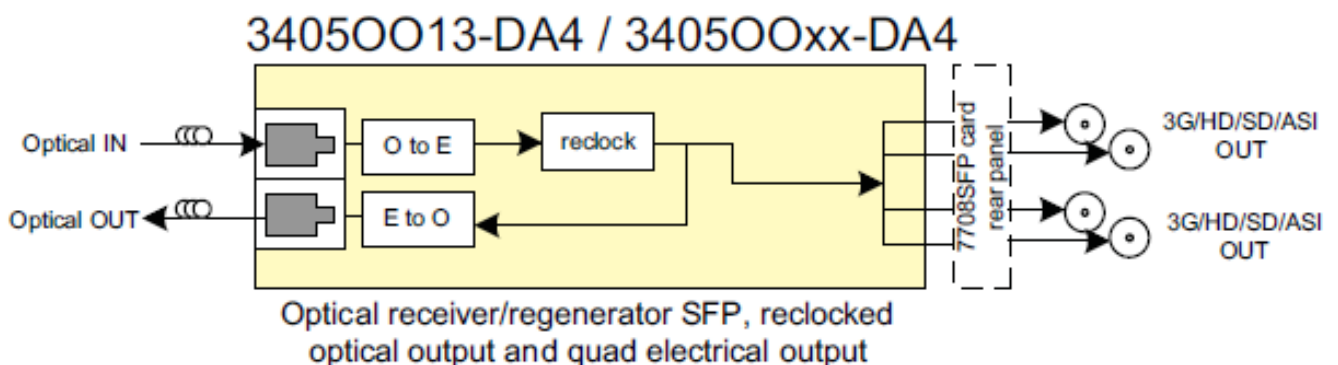| SFP Type	Optical and Electrical Layout
3405T13-2/ 3405Txx/yy-2	Electrical Input A maps to Optical Out A Electrical Input B maps to Optical Out B Electrical input C and D not used
3405T13-R/ 3405Txx-R	Electrical Input A maps to Optical Output A Electrical Input A maps to Electrical output B, C, D Optical Out B not used
3405R-2R (reclocked)	Optical Input A maps to Electrical Output A and C (reclocked) Optical Input B maps to Electrical Output B and D (reclocked)
3405R-2	Optical Input A maps to Electrical Output A and C Optical Input B maps to Electrical Output B and D
3405R-DA4R (reclocked)	Optical input B maps to Electrical Output A, B, C, D (reclocked)
3405OO13-DA4/ 3405OOxx-DA4 (reclocked)	Optical Input B maps to Electrical Output A, B, C, D (reclocked) and Optical Output A
3405DA5 (reclocked)	SFP Electrical Input A maps to Electrical Output A, B, C,D (reclocked) and SFP Electrical Output B

Table 2: 7708SFP Optical and Electrical Mapppings

3405T13-2 / 3405Txx/yy-2

1310nm/CWDM dual transmitter SFP

3405T13-R / 3405Txx-R

1310nm/CWDM single reclocked transmitter SFP, triple loop out

3405R-2R

Dual reclocked receiver SFP

3405R-2

Dual receiver SFP

3405R-DA4R

Optical receiver SFP, reclocked quad electrical output

3405OO13-DA4 / 3405OOxx-DA4

Optical receiver/regenerator SFP, reclocked optical output and quad electrical output
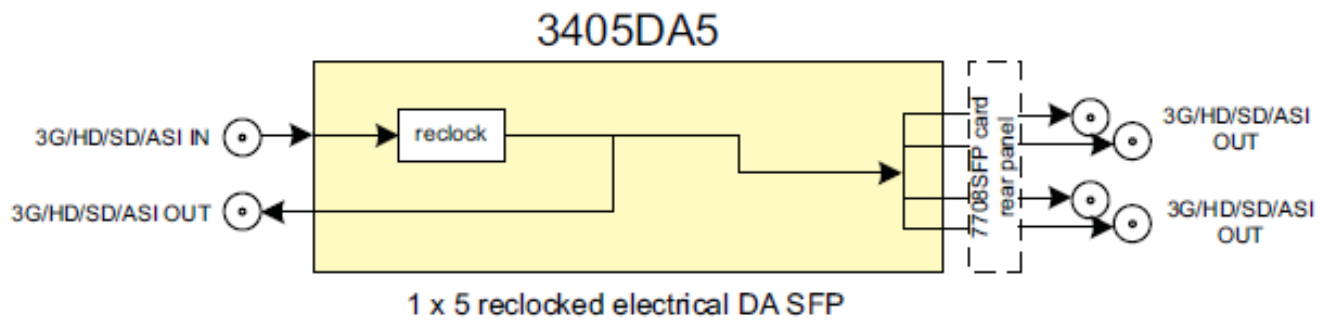
Figure 1-5: SFP Options

2. GETTING STARTED

Each 7708SFP module comes with a companion rear plate that has at least one SFP connector (depending on the options ordered). In addition, there can be an array of BNC or DIN connectors used to to suit different density or connector preferences.
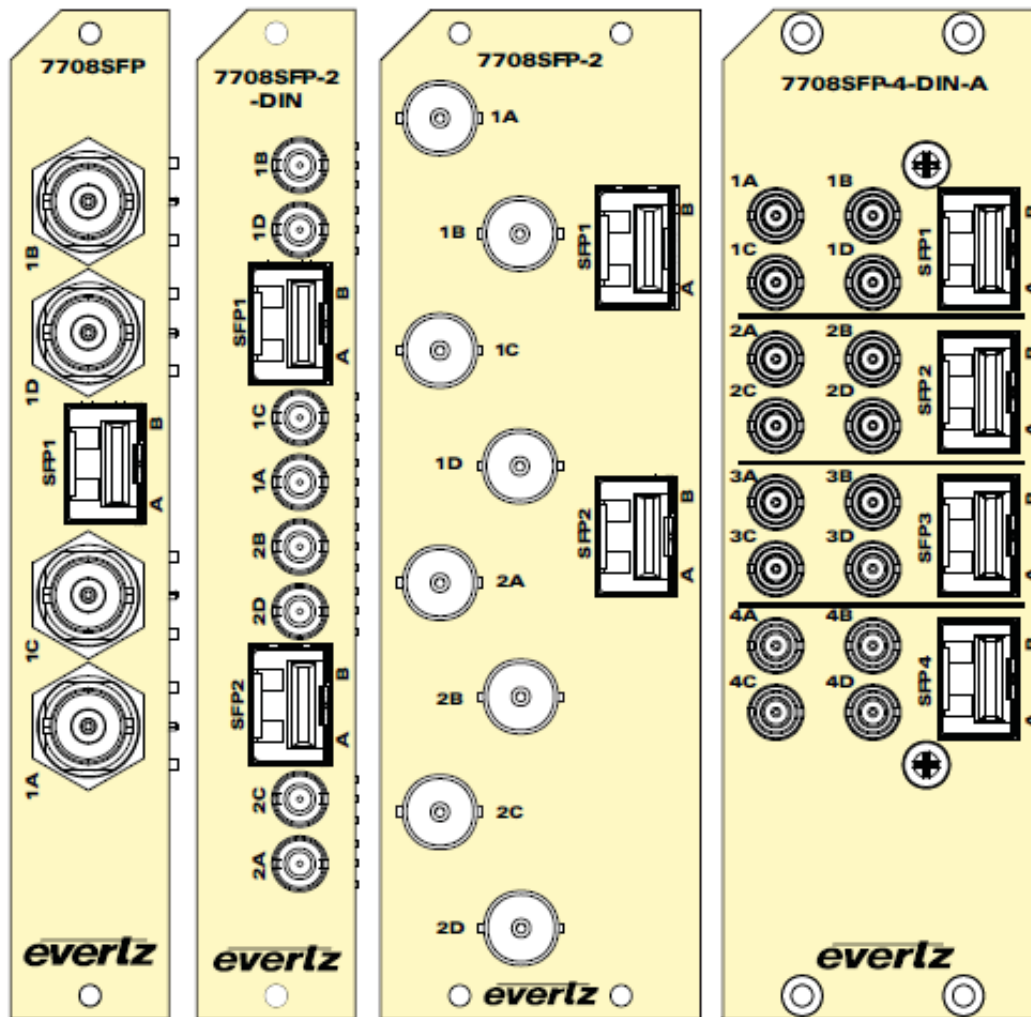

Figure 2-1: Rear Plate Options

✎ **NOTE: SFP's must be ordered separately.**

To successfully install the 7708SFP module you will require the following:

1. VistaLINK® PRO Server IP address.
2. 7700 or 7800 Series Frame.
3. 7700 or 7800 Frame Controller.

Before handling the card it is important to minimize the potential effects of static electricity. It is therefore recommended that an ESD strap be worn.

Locate on the chassis one or two vacant slots depending on the module size. Unpack the 7708SFP and separate the rear panel from the main card. Locate on the rear of the rack the one or two empty slots and remove the blank panels. Insert the rear panel into the back of the chassis and secure using the screws provided.

Now insert the 7708SFP card into the corresponding front slots ensuring the card lines up with the slot runners on the bottom and the top of the chassis. Push the card firmly into the slot ensuring that when it mates with the rear card it has been firmly pushed into a seated position.

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.

3. TECHNICAL SPECIFICATIONS

3.1. SYSTEM

Density:
7708SFP:	1 SFP module
7708SFP-2:	Up to 2 SFP modules
7708SFP-2-DIN:	Up to 2 SFP modules
7708SFP-4-DIN-A:	Up to 4 SFP modules

Impedance: 75Ω

Connector:
7708SFP:	BNC per IEC 61169-8 Annex A
7708SFP-2:	BNC per IEC 61169-8 Annex A
7708SFP-2-DIN:	DIN 1.0/2.3
7708SFP-4-DIN-A:	DIN 1.0/2.3

3.2. OPTICAL OUTPUT

Number of Outputs: Up to 2 per SFP
Connector: LC/UPC
Rise/Fall Time: <270ps
Optical Power:
Standard:	-2dBm +/-1dBm
CWDM:	+3.5dBm +/-1dBm

3.3. OPTICAL INPUT

Number of Inputs: Up to 2 per SFP
Connector: LC/UPC
Operating Wavelength: 1270nm to 1610
Maximum Input Power:
Standard:	-1dBm

Optical Sensitivity:
Standard:	-21dBm at 2.97Gb/s pathological Level A
	-23dBm at 2.97Gb/s color bars

3.4. ELECTRICAL INPUTS

Reclocked Standard: SMPTE 424M (3Gb/s)
              SMPTE ST 292-1 (1.5Gb/s)
              SMPTE ST 259 (270Mb/s)
              DVB-ASI

Connector:
7708SFP:	BNC per IEC 61169-8 Annex A
7708SFP-2:	BNC per IEC 61169-8 Annex A
7708SFP-2-DIN:	DIN 1.0/2.3
7708SFP-4-DIN-A:	DIN 1.0/2.3

Equalization:	Automatic to 80m @ 3Gb/s 100m @ 1.5Gb/s 250m @ 270Mb/s (wih Belden 1694A or equivalent)
Return Loss:	>15dB up to 1.5GHz
	>10dB to 3GHz

3.5. RECLOCKED ELECTRICAL OUTPUTS

Signal Level:	800mV (nominal)
DC Offset:	0V +/0.5V
Rise and Fall Time:	
HD/3G:	<135ps
SD:	<900ps
Overshoot:	<0.2UI (Reclocked) to 1.485Gb/s
	<0.3UI (Reclocked) to 2.97 Gb/s

3.6. ELECTRICAL OUTPUTS

Connector:	
7708SFP:	BNC per IEC 61169-8 Annex A
7708SFP-2:	BNC per IEC 61169-8 Annex A
7708SFP-2-DIN:	DIN 1.0/2.3
7708SFP-4-DIN-A:	DIN 1.0/2.3
Impedance:	75Ω (nominal)
Return Loss:	>15dB to 1.5GHz
	>10dB to 3GHz

3.7. COMPLIANCE

Laser Safety:	Class 1 laser product, Complies with 24 CFR 1040.10 and 1040.11, IEC 60825-1
EMR/RFI:	Complies with FCC part 15, Class A complies with EU EMC Directives

3.8. PHYSICAL (NUMBER OF SLOTS)

7708SFP:	1
7708SFP-2:	2
7708SFP-2-DIN:	1
7708SFP-4-DIN-A:	2

3.9. ELECTRICAL

Voltage:	+12V DC
Power:	11W (max)

4. VISTALINK PRO INTERFACE

4.1. CONNECTING TO VLPRO

This chapter assumes that the VistaLINK® PRO server and client are already configured for your network and you have basic knowledge of the VistaLINK® PRO interface. It also assumes that the user or network administrator has already added the appropriate jar file to the server, and both the client and server applications have been restarted. Please refer to the VistaLINK® PRO manual for instructions on how to load a jar file.

Open VistaLINK® PRO and click on the refresh tree icon. Expand the hardware tree by clicking on the "**+**" button. Your card should appear as a newly listed device under the IP address used for the frame controller.

> **Please consult your network administrator if you continue to have problems connecting the card with VistaLINK® PRO, alternatively contact Evertz Microsystems Ltd. or your authorized reseller for technical support.**

4.2.   7708SFP ON VISTALINK PRO

4.2.1. Control
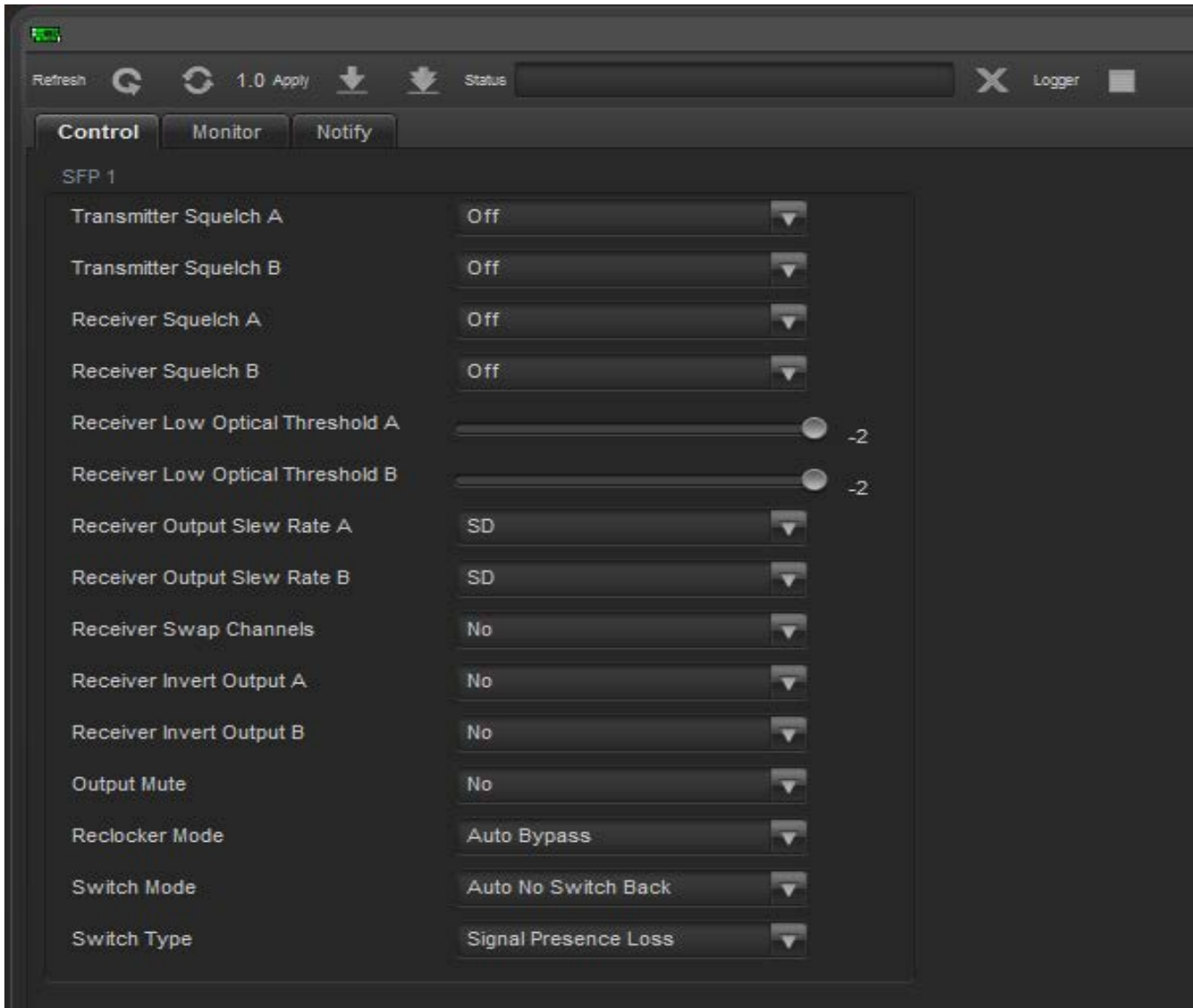
Figure 4-1: Control Conguration Screen

Transmitter Squelch: This control allows the user to either enable or disable the ability to Squelch transmitted signals.

Receiver Squelch: This control allows the user to either enable or disable the ability to Squelch received signals.

Receiver Low Optical Threshold: This control allows the user to set the minimum optical level drop being received in in dB. Range for this value can be from -2dB to -40dB.

Receiver Output Slew Rate: This control allows the user to set the slew rate to either SD,or HD/3G on the receiver output.

Receiver Swap Channels: This control allows channel swapping for input streams.

Receiver Invert Output: This control allows the user to invert the output being received on Output A or B.

Output Mute: This control allows the user to mute the output.

Reclocker Mode: This control allows the user to set the reclocking method to either Auto Bypass or Forced Bypass.
Switch Mode: This control allows the user to set the switching method to Auto No Switch Back, Auto with Switch Back, Forced Channel A, or Forced Channel B.

Switch Type: This control allows the user to define the method switch type to detect based on Signal Presence Loss, or Reclock Loss.
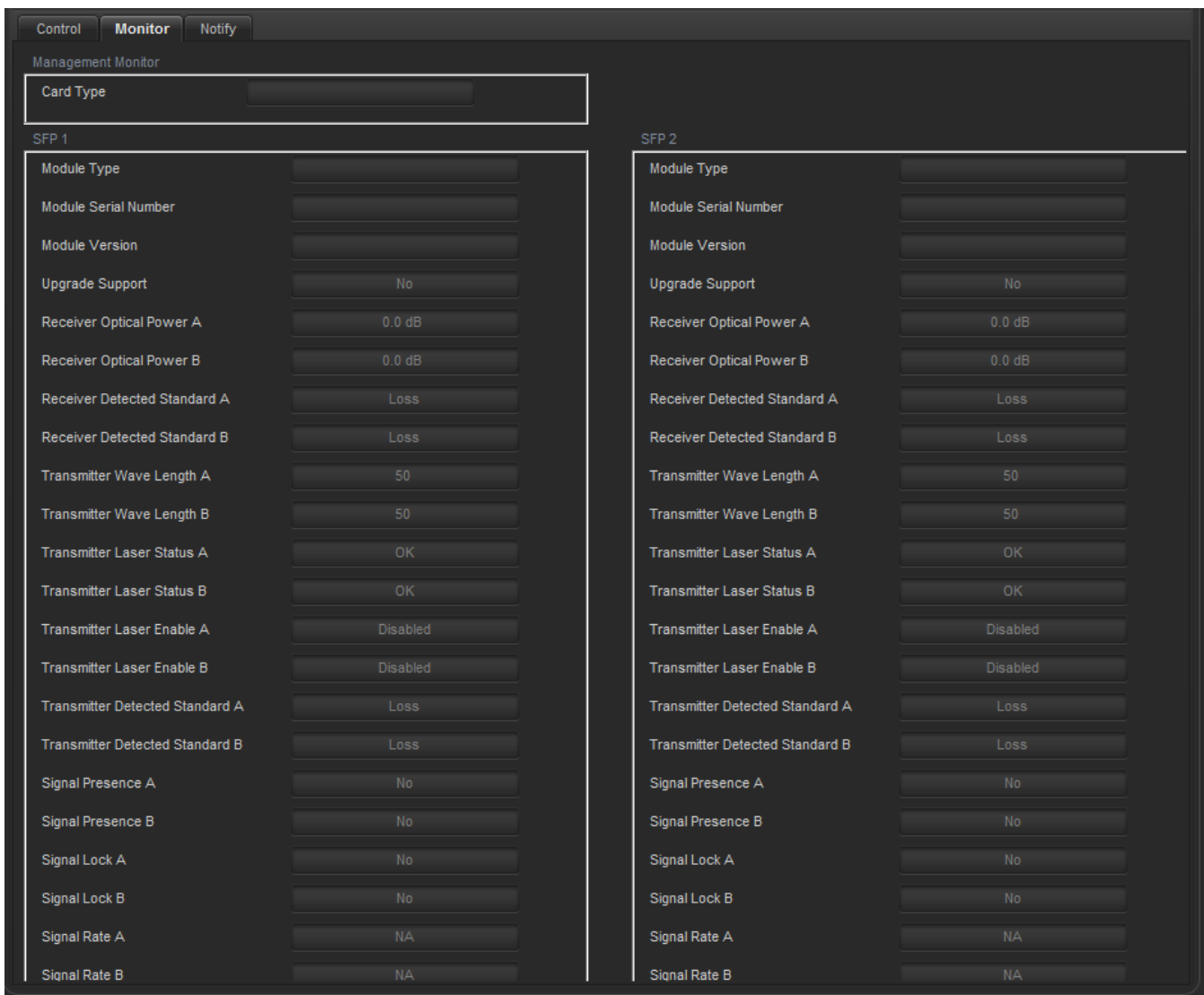
4.2.2. Monitor
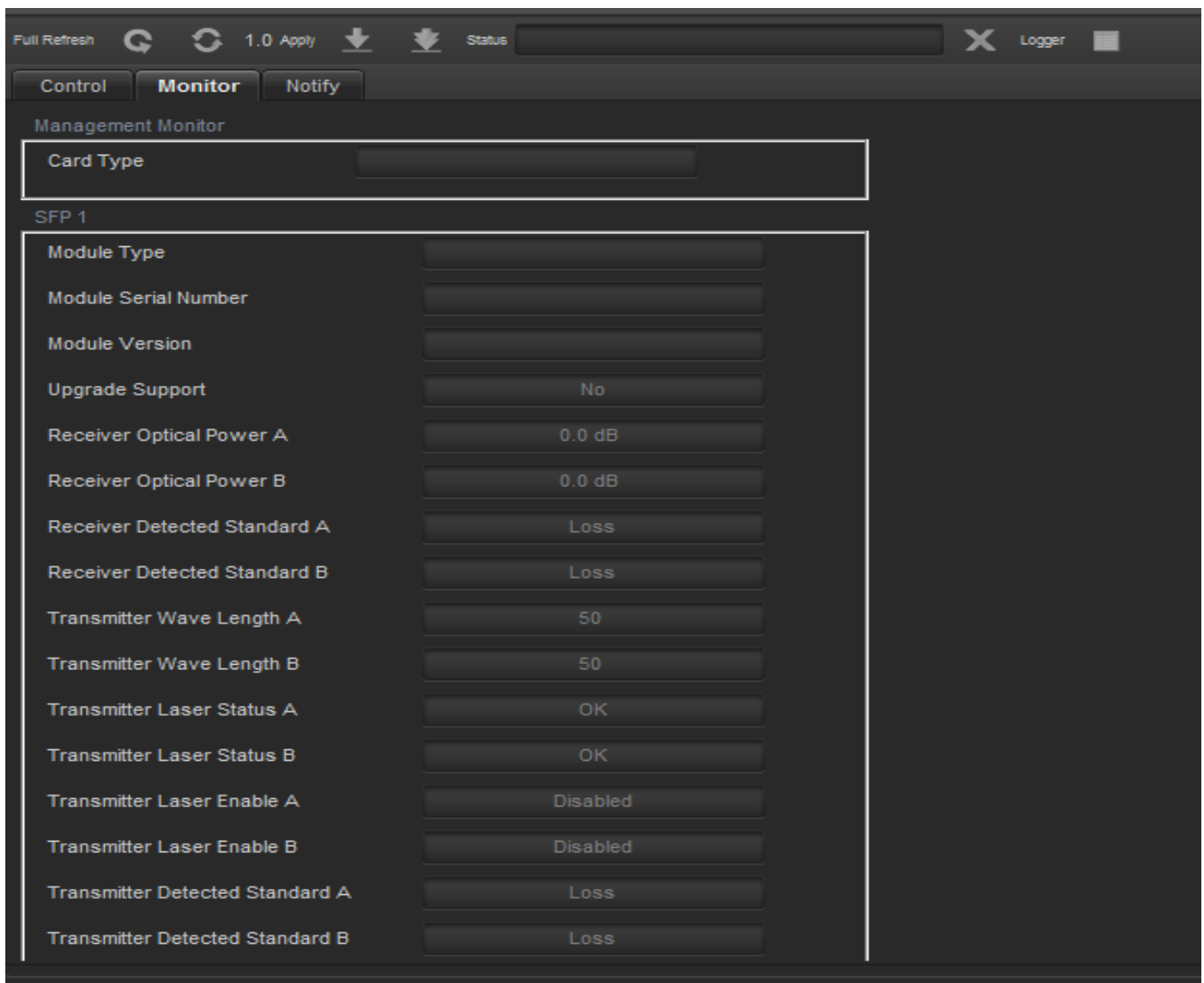
Figure 4-2: Monitor Screen

Module Type: Displays the 7708SFP series module type

Module Serial Number: Displays the part serial number, this is required to access the card via Evertz Product Support Services Web page.

Module Version: Displays the current firmware version being used on the card.

Upgrade Support: Displays whether or not there is Upgrade Support that is provided for the current firmware version.

Receiver Optical Power: This control displays the currently measured optical power on the receiver input in dB.

Receiver Detected Standard: Displays video output standard

Transmitter Wave Length: This control displays the current wavelength in nanometres(nm) being transmitted.

Transmitter Laser Status: This control displays the current transmitter laser status.

Transmitter Laser Enable: This control displays will confirm if the transmitter laser is either 'Enabled' or 'Disabled'.

Transmitter Detected Standard: Displays Video input standard
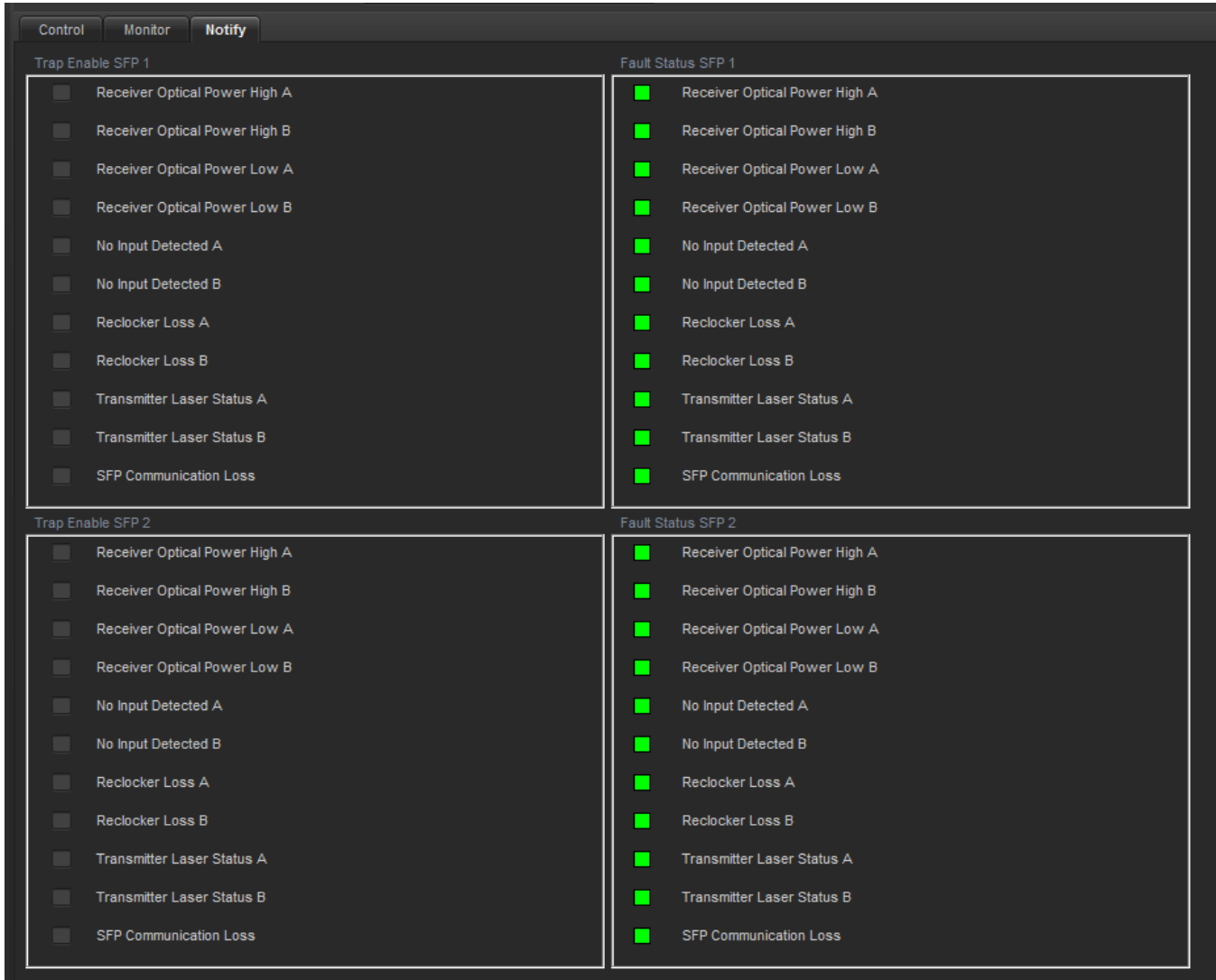
4.2.3. Notify
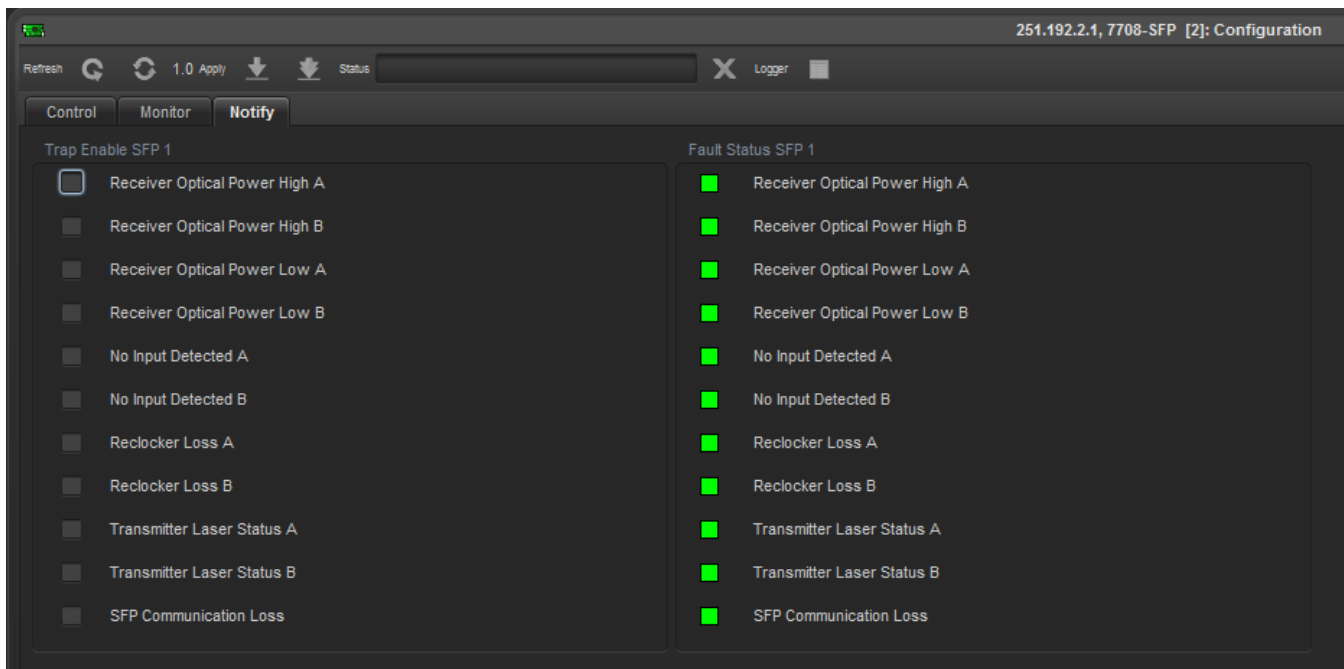
Figure 4-3: Trap Enable & Fault Status

Receiver Optical Power High: Optical input power exceeds max input power specification.

Receiver Optical Power Low: Optical input power below threshold.

No Input Detected: Video not present.
Reclocker loss: Video not detected by reclocker.

Transmitter Laser Status: Laser health.

SFP Communication Loss: SFP communication with FC not present.

4.3. 7708SFP-2 ON VISTALINK PRO

4.3.1. Control
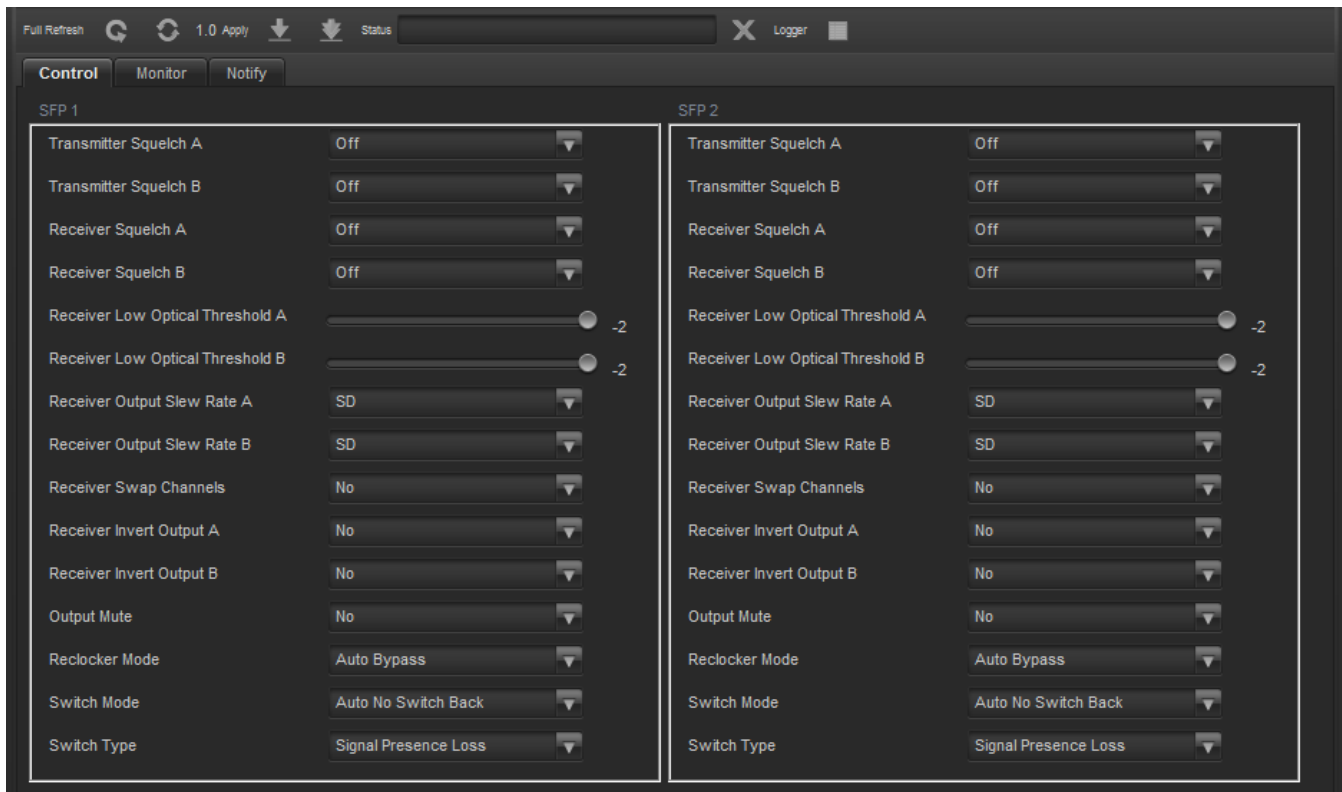
Figure 4-4: Control Configuration Screen

Transmitter Squelch: This control allows the user to either enable or disable the ability to Squelch transmitted signals.

Receiver Squelch: This control allows the user to either enable or disable the ability to Squelch received signals.

Receiver Low Optical Threshold: This control allows the user to set the minimum optical level drop being received in in dB. Range for this value can be from -2dB to -40dB.

Receiver Output Slew Rate: This control allows the user to set the slew rate to either SD, HD, or 3G on the receiver output.

Receiver Swap Channels: This control allows channel swapping for input streams.

Receiver Invert Output: This control allows the user to invert the output being received on Output A or B.

Output Mute: This control allows the user to mute the output.

Reclocker Mode: This control allows the user to set the reclocking method to either Auto Bypass or Forced Bypass.

Switch Mode: This control allows the user to set the switching method to Auto No Switch Back, Auto With Switch Back, Forced Channel A, or Forced Channel B.

Switch Type: This control allows the user to define the method switch type to detect based on Signal Presence Loss, or Reclock Loss.
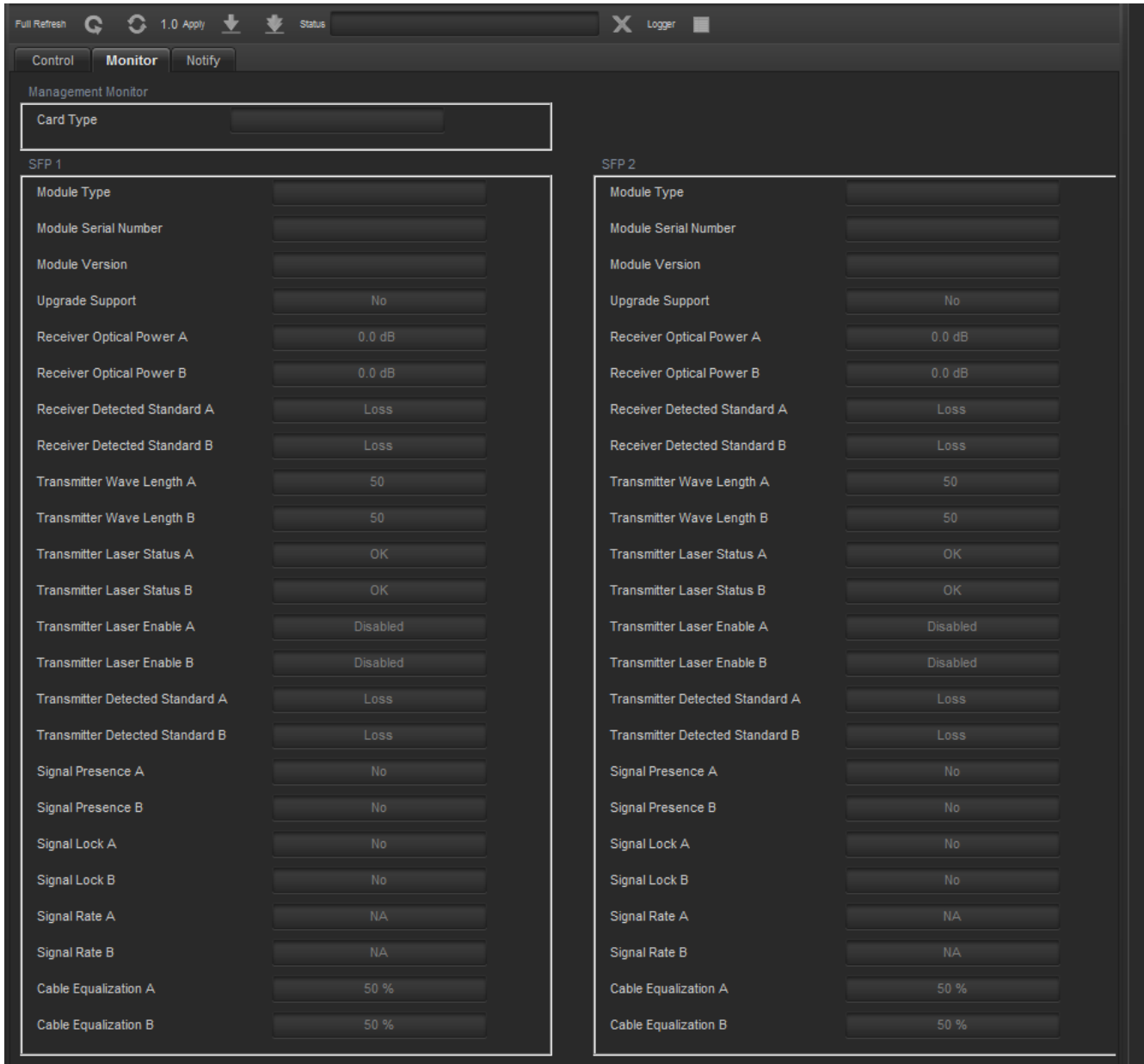

Figure 4-5: Monitor Screen

Module Type: Displays the 7708SFP series module type

Module Serial Number: Displays the part serial number, this is required to access the card via Evertz Product Support Services Web page.
Module Version: Displays the current firmware version being used on the card.

Upgrade Support: Displays whether or not there is Upgrade Support that is provided for the current firmware version.

Receiver Optical Power: This control displays the currently measured optical power on the receiver input in dB.

Receiver Detected Standard: Displays video output standard

Transmitter Wave Length: This control displays the current wavelength in nanometres(nm) being transmitted.

Transmitter Laser Status: This control displays the current transmitter laser status.

Transmitter Laser Enable: This control displays will confirm if the transmitter laser is either 'Enabled' or 'Disabled'.

Transmitter Detected Standard: Displays video input standard

Signal Presence: Displays the current signal presence status.

Signal Lock: Displays if the current lock status of the signal being transmitted.

Signal Rate: Displays the surrent signal rate being transmitted.

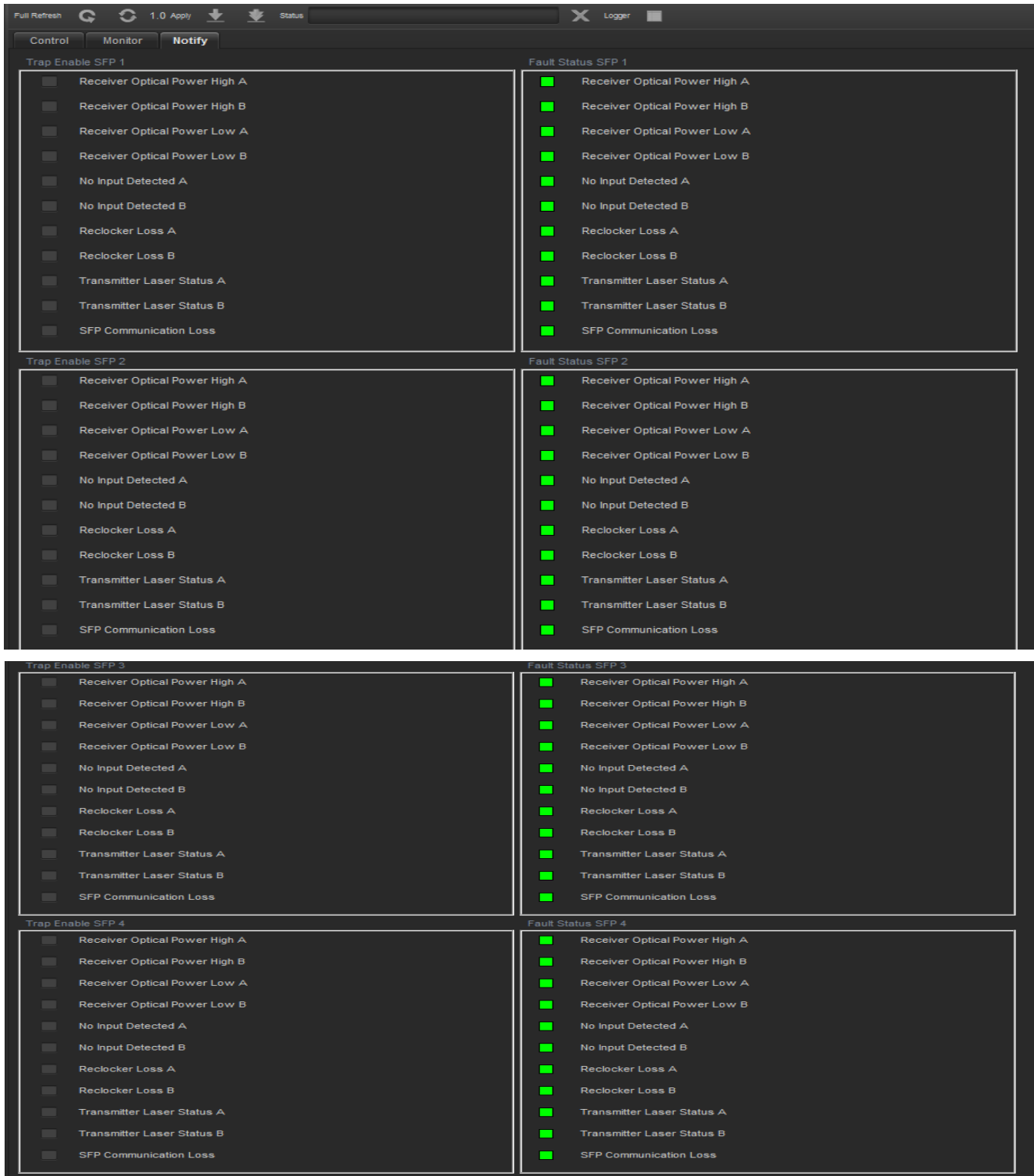**Figure 4-6: Trap Enable & Fault Status**

Receiver Optical Power High: Optical input power exceeds max input power specification.

Receiver Optical Power Low: Optical input power below threshold.

No Input Detected: Video not present.

Reclocker loss: Video not detected by reclocker.

Transmitter Laser Status: Laser health.

SFP Communication Loss: SFP communication with FC not present.

4.4. 7708SFP-2-DIN ON VISTALINK PRO
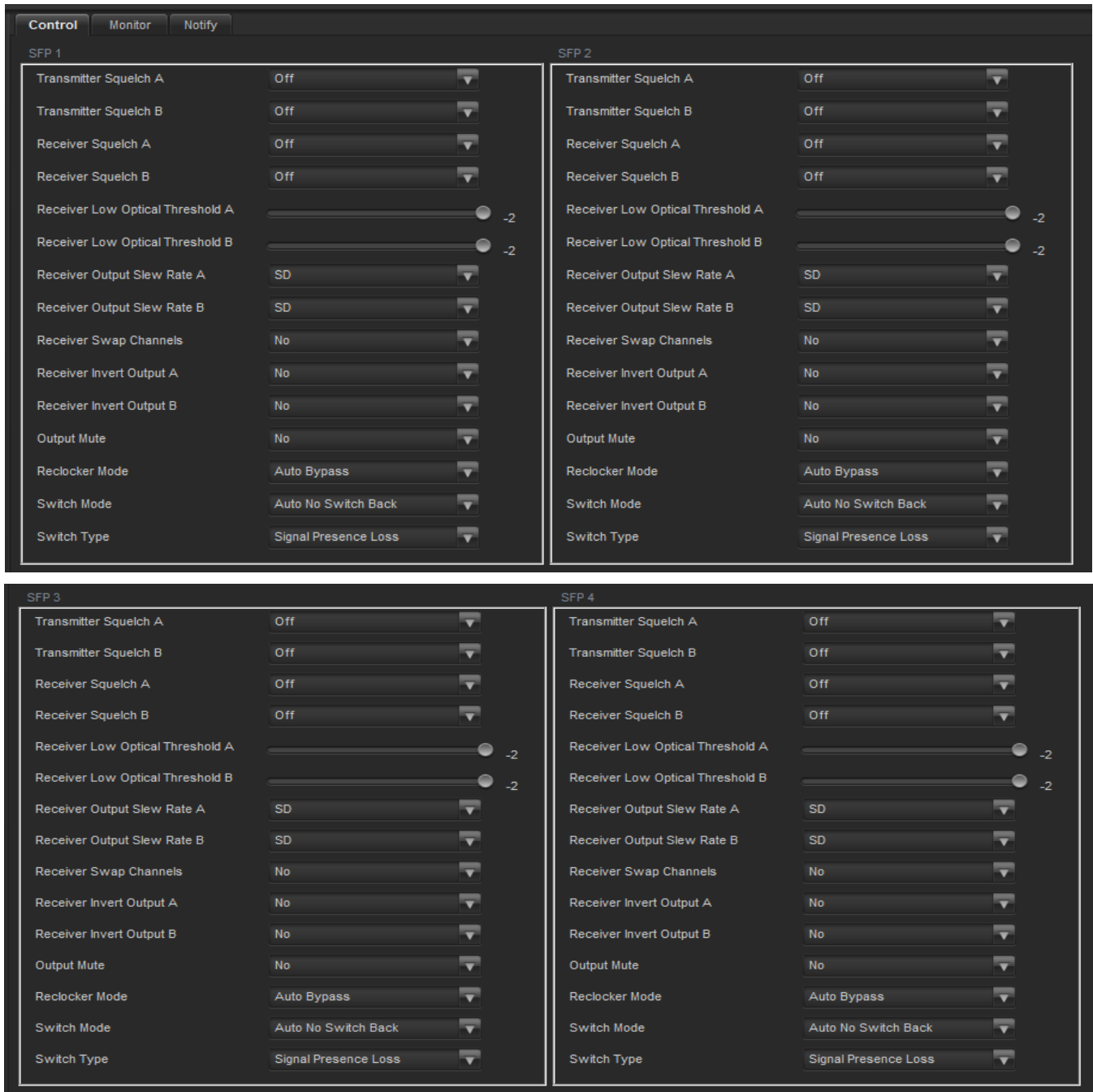
4.4.1. Control
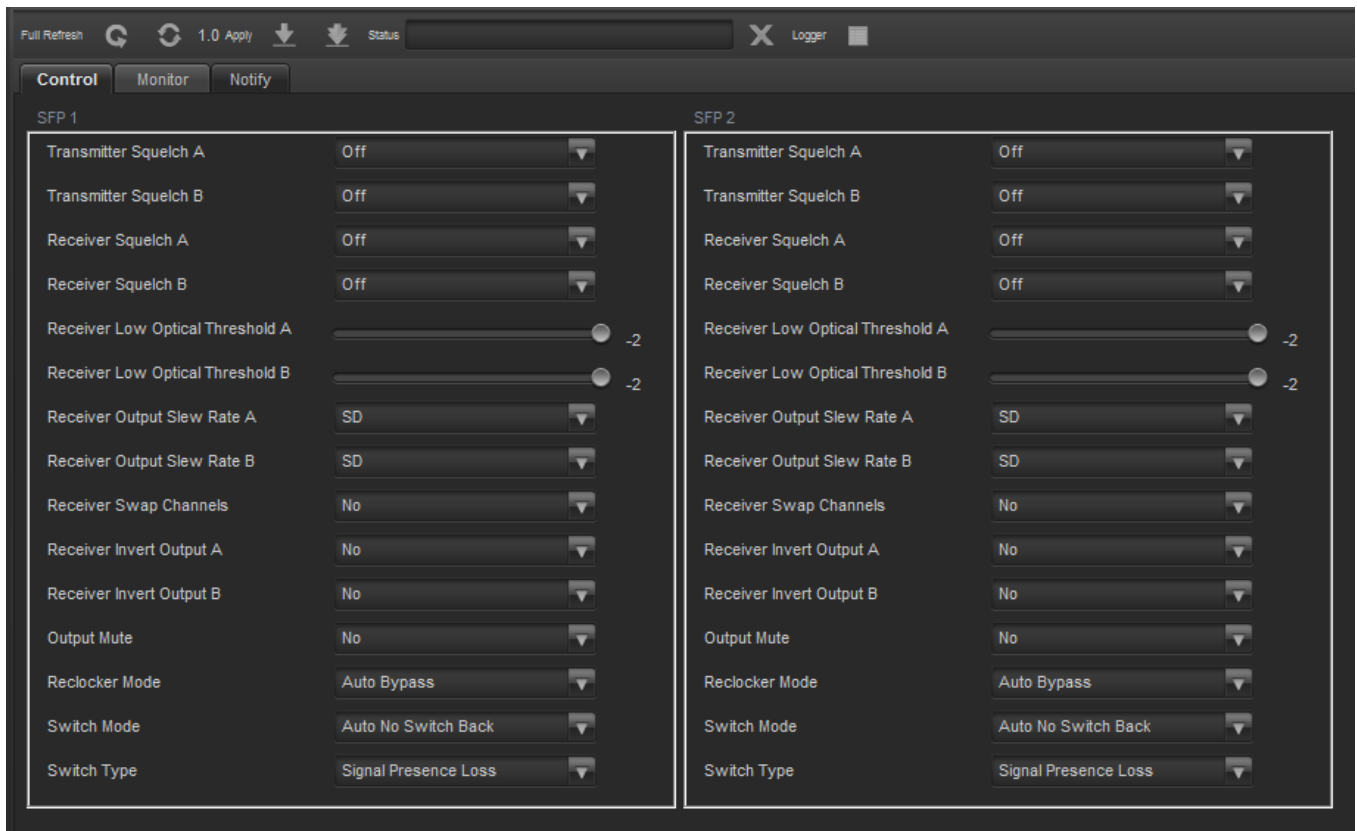
Figure 4-7: Control Configuration Screen

Transmitter Squelch: This control allows the user to either enable or disable the ability to Squelch transmitted signals.

Receiver Squelch: This control allows the user to either enable or disable the ability to Squelch received signals.

Receiver Low Optical Threshold: This control allows the user to set the minimum optical level drop being received in in dB. Range for this value can be from -2dB to -40dB.

Receiver Output Slew Rate: This control allows the user to set the slew rate to either SD, HD, or 3G on the receiver output.

Receiver Swap Channels: This control allows channel swapping for input streams.

Receiver Invert Output: This control allows the user to invert the output being received on Output A or B.

Output Mute: This control allows the user to mute the output.

Reclocker Mode: This control allows the user to set the reclocking method to either Auto Bypass or Forced Bypass.

Switch Mode: This control allows the user to set the switching method to Auto No Switch Back, Auto With Switch Back, Forced Channel A, or Forced Channel B.

Switch Type: This control allows the user to define the method switch type to detect based on Signal Presence Loss, or Reclock Loss.

4.4.2. Monitor

Figure 4-8: Monitor Screen

Module Type: Displays the 7708SFP series module type

Module Serial Number: Displays the part serial number, this is required to access the card via Evertz Product Support Services Web page.

Module Version: Displays the current firmware version being used on the card.

Upgrade Support: Displays whether or not there is Upgrade Support that is provided for the current firmware version.

Receiver Optical Power: This control displays the currently measured optical power on the receiver input in dB.

Receiver Detected Standard: Displays video output standard

Transmitter Wave Length: This control displays the current wavelength in nanometres(nm) being transmitted.

Transmitter Laser Status: This control displays the current transmitter laser status.

Transmitter Laser Enable: This control displays will confirm if the transmitter laser is either 'Enabled' or 'Disabled'.

Transmitter Detected Standard: Displays video input standard

Signal Presence: Displays the current signal presence status.

Signal Lock: Displays if the current lock status of the signal being transmitted.

Signal Rate: Displays the surrent signal rate being transmitted.

Cable Equalization: Displays the frequency losses being experienced on the current cable due to possible attenuation caused by external cabling.

4.4.3. Notify

Figure 4-9: Trap Enable & Fault Status

Receiver Optical Power High: Optical input power exceeds max input power specification.

Receiver Optical Power Low: Optical input power below threshold.

No Input Detected: Video not present.

Reclocker loss: Video not detected by reclocker.

Transmitter Laser Status: Laser health.

SFP Communication Loss: SFP communication with FC not present.

4.5. 7708SFP-4-DIN-A

4.5.1. Control

Figure 4-10: Control Configuration Screen

Transmitter Squelch: This control allows the user to either enable or disable the ability to Squelch transmitted signals.

Receiver Squelch: This control allows the user to either enable or disable the ability to Squelch received signals.

Receiver Low Optical Threshold: This control allows the user to set the minimum optical level drop being received in in dB. Range for this value can be from -2dB to -40dB.

Receiver Output Slew Rate: This control allows the user to set the slew rate to either SD, HD, or 3G on the receiver output.

Receiver Swap Channels: This control allows channel swapping for input streams.

Receiver Invert Output: This control allows the user to invert the output being received on Output A or B.

Output Mute: This control allows the user to mute the output.

Reclocker Mode: This control allows the user to set the reclocking method to either Auto Bypass or Forced Bypass.

Switch Mode: This control allows the user to set the switching method to Auto No Switch Back, Auto With Switch Back, Forced Channel A, or Forced Channel B.

Switch Type: This control allows the user to define the method switch type to detect based on Signal Presence Loss, or Reclock Loss.

4.5.2. Monitor

| Control | **Monitor** | Notify |

Management Monitor

Card Type

SFP 1		SFP 2	
Module Type		Module Type	
Module Serial Number		Module Serial Number	
Module Version		Module Version	
Upgrade Support	No	Upgrade Support	No
Receiver Optical Power A	0.0 dB	Receiver Optical Power A	0.0 dB
Receiver Optical Power B	0.0 dB	Receiver Optical Power B	0.0 dB
Receiver Detected Standard A	Loss	Receiver Detected Standard A	Loss
Receiver Detected Standard B	Loss	Receiver Detected Standard B	Loss
Transmitter Wave Length A	50	Transmitter Wave Length A	50
Transmitter Wave Length B	50	Transmitter Wave Length B	50
Transmitter Laser Status A	OK	Transmitter Laser Status A	OK
Transmitter Laser Status B	OK	Transmitter Laser Status B	OK
Transmitter Laser Enable A	Disabled	Transmitter Laser Enable A	Disabled
Transmitter Laser Enable B	Disabled	Transmitter Laser Enable B	Disabled
Transmitter Detected Standard A	Loss	Transmitter Detected Standard A	Loss
Transmitter Detected Standard B	Loss	Transmitter Detected Standard B	Loss
Signal Presence A	No	Signal Presence A	No
Signal Presence B	No	Signal Presence B	No
Signal Lock A	No	Signal Lock A	No
Signal Lock B	No	Signal Lock B	No
Signal Rate A	NA	Signal Rate A	NA
Signal Rate B	NA	Signal Rate B	NA
Cable Equalization A	50 %	Cable Equalization A	50 %
Cable Equalization B	50 %	Cable Equalization B	50 %

SFP 3		SFP 4	
Module Type		Module Type	
Module Serial Number		Module Serial Number	
Module Version		Module Version	
Upgrade Support	No	Upgrade Support	No
Receiver Optical Power A	0.0 dB	Receiver Optical Power A	0.0 dB
Receiver Optical Power B	0.0 dB	Receiver Optical Power B	0.0 dB
Receiver Detected Standard A	Loss	Receiver Detected Standard A	Loss
Receiver Detected Standard B	Loss	Receiver Detected Standard B	Loss
Transmitter Wave Length A	50	Transmitter Wave Length A	50
Transmitter Wave Length B	50	Transmitter Wave Length B	50
Transmitter Laser Status A	OK	Transmitter Laser Status A	OK
Transmitter Laser Status B	OK	Transmitter Laser Status B	OK
Transmitter Laser Enable A	Disabled	Transmitter Laser Enable A	Disabled
Transmitter Laser Enable B	Disabled	Transmitter Laser Enable B	Disabled
Transmitter Detected Standard A	Loss	Transmitter Detected Standard A	Loss
Transmitter Detected Standard B	Loss	Transmitter Detected Standard B	Loss
Signal Presence A	No	Signal Presence A	No
Signal Presence B	No	Signal Presence B	No
Signal Lock A	No	Signal Lock A	No
Signal Lock B	No	Signal Lock B	No
Signal Rate A	NA	Signal Rate A	NA
Signal Rate B	NA	Signal Rate B	NA

Figure 4-11: Monitor Screen

Module Type: Displays the 7708SFP series module type

Module Serial Number: Displays the part serial number, this is required to access the card via Evertz Product Support Services Web page.

Module Version: Displays the current firmware version being used on the card.

Upgrade Support: Displays whether or not there is Upgrade Support that is provided for the current firmware version.

Receiver Optical Power: This control displays the currently measured optical power on the receiver input in dB.

Receiver Detected Standard: Displays video output standard

Transmitter Wave Length: This control displays the current wavelength in nanometres(nm) being transmitted.

Transmitter Laser Status: This control displays the current transmitter laser status.

Transmitter Laser Enable: This control displays will confirm if the transmitter laser is either 'Enabled' or 'Disabled'.

Transmitter Detected Standard: Displays video input standard

Signal Presence: Displays the current signal presence status.

Signal Lock: Displays if the current lock status of the signal being transmitted.

Signal Rate: Displays the surrent signal rate being transmitted.

Cable Equalization: Displays the frequency losses being experienced on the current cable due to possible attenuation caused by external cabling.

4.5.3. Notify

Figure 4-12: Trap Enable & Fault Status

Receiver Optical Power High: Optical input power exceeds max input power specification.

Receiver Optical Power Low: Optical input power below threshold.

No Input Detected: Video not present.

Reclocker loss: Video not detected by reclocker.

Transmitter Laser Status: Laser health.

SFP Communication Loss: SFP communication with FC not present.

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5.   UPGRADING THE FIRMWARE

5.1.   CHECKING FIRMWARE VERSION ON THE 7708SFP SERIES

From time to time, the 7708SFP series modules will need to be upgraded with the latest information ("image") to maintain the most up-to-date monitoring and control capabilities.

There are two methods for checking the firmware version.
- Using VistaLink (see Figure 5-1 – Version Information)

> **Ensure that the 7708SFP series module is running the latest firmware, to check this simply right click on the cards in VLPro Client and select *Version Information*.**
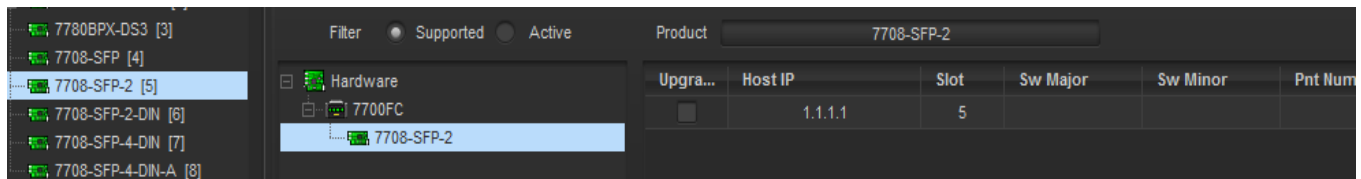
Figure 5-1: Version Information

5.1.1.   Downloading the 7708SFP Image

1)   Download the image file " 7708SFP Image File". To retrieve the firmware contact your Evertz sales representative or check Evertz web site for availability (www.evertz.com – Support> Downloads > Firmware Downloads link > Type "7708SFP" in the Model search and press "Go"). Save the files to the hard drive.

> **Please contact Evertz for image file if it not available on Evertz web site**.

2)   Unzip the downloaded file and store the .bin file in a selected sub-directory. Record the location of the stored file.

The 7708SFP image can be upgraded by a couple different procedures, which are outlined in sections 5.2 and 5.3.

5.2. REMOTE UPGRADE PROCEDURE USING VistaLINK®

To perform the remote upgrade for the 7708SFP you will need the following setup:

- A working install of a VistaLINK® Pro client or VLPRO-C that's version 10.0.7 or greater.
- A downloaded and unzipped FC image file (.bin file) from http://www.evertz.com

5.2.1. Upgrading the 7708SFP Image using VistaLINK®

1) Use the right-click mouse button on the '7708SFP' in the tree and select **Version Information** …' option.

2) Open hardware tree and select card to be upgraded

3) Check mark card or cards to be upgraded.

4) Click the 'Upgrade' button on bottom right corner.

5) Click the 'Browse' button to select the unzipped 7708SFP Image .bin file downloaded in section 5.1.1.

6) Click the 'Upgrade' button and wait for the upload to complete. This will take approximately 5 to 10 minutes depending on network traffic.

Upon completion, the 7708SFP series modules will reboot automatically and return online in normal "run" mode.

5.3. UPGRADING SERIALLY THROUGH THE SERIAL PORT

5.3.1. Setting the 7708SFP to Upgrade Mode

The RS232 serial port connector J5 located at the front of the module is used when "image" upgrades are being done to the 7708SFP series module.

There are two ways to enter upgrade mode:

1)   Boot up module in upgrade mode – see section 5.4
2)   Boot up module in run mode and use the menu to select to upgrade - see section 5.5

5.3.2. Setting up the Serial Baud Rate

Open TeraTerm and set up the Baud Rate for communication as follows on the COM port that is being used:
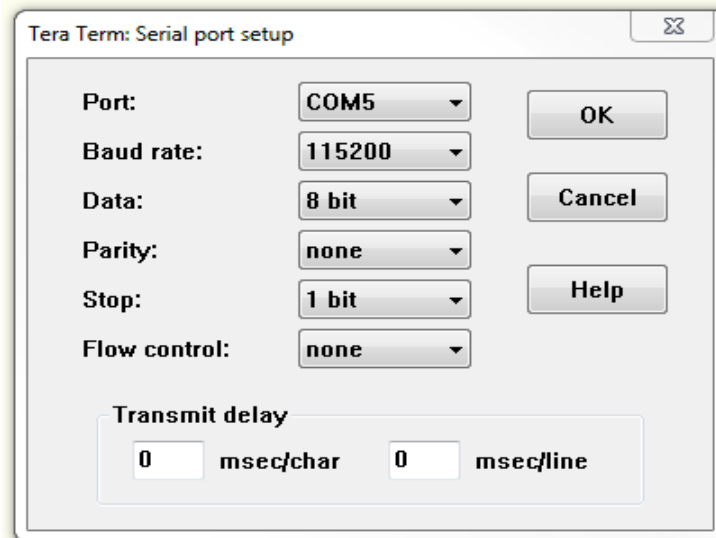
Figure 5-2: Baud Rate Settings on COM port

5.4. UPGRADING IN UPGRADE MODE
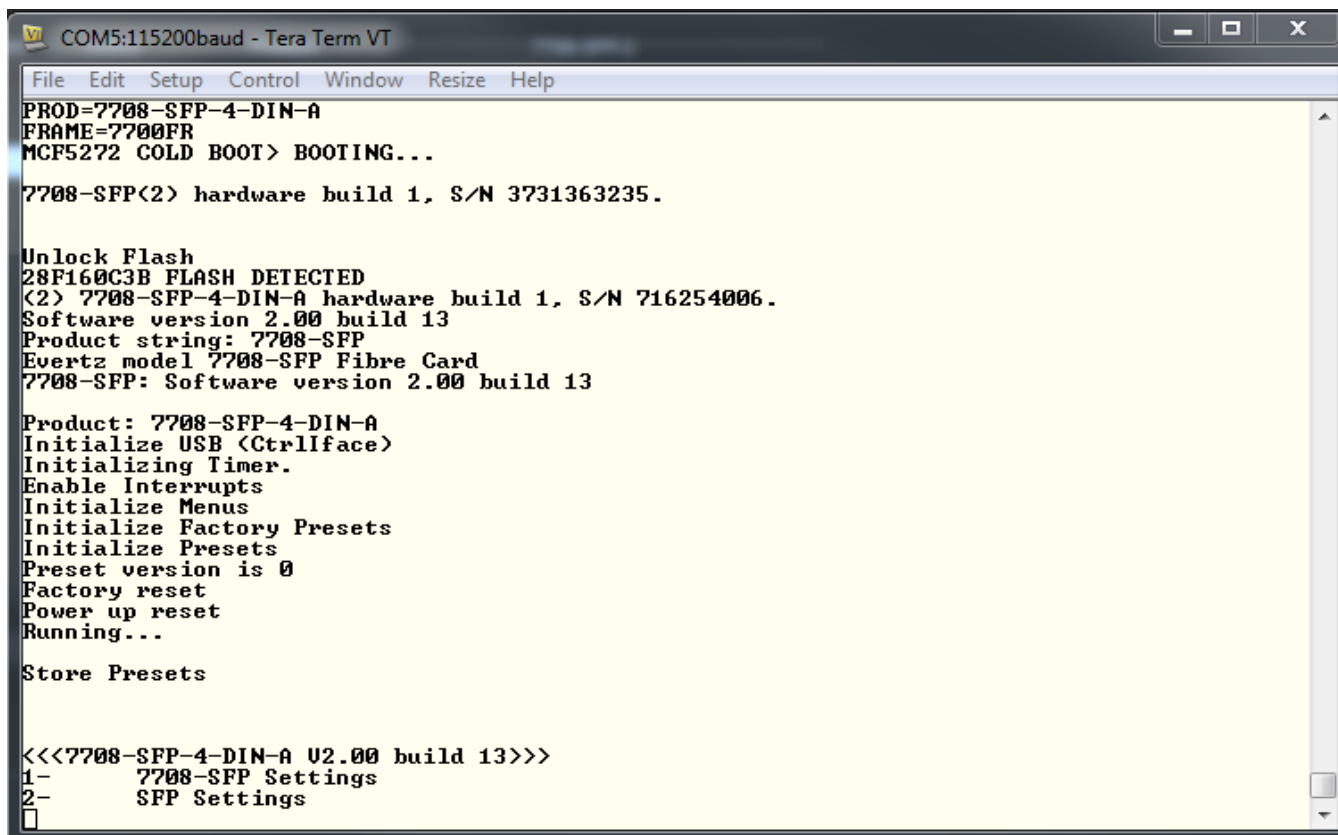
For normal operation the jumper is set in the *RUN* position. To upgrade the firmware in the module unit pull it out of the frame. Move Jumper J5 into the **UPGRADE** position. Connect Once Tera Term is connected, insert the 7708SFP series module into its slot.

> **NOTE:** *Make sure to put it back to the RUN postion when done. Skip to section 5.5.1*
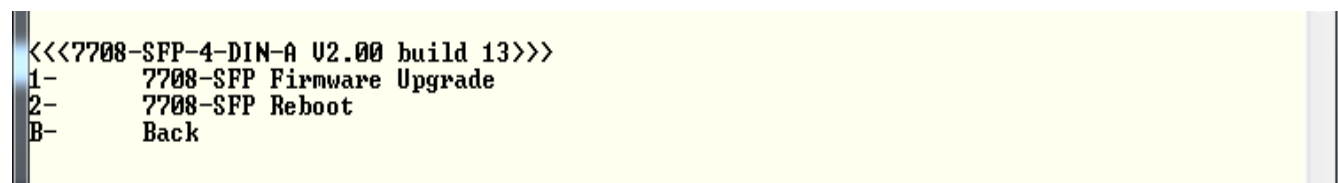
5.5. UPGRADING IN RUN MODE

1)   Boot up card and press 'enter'.

2)   Select '1' for '7708-SFP Settings"

3)   Select '1' for 'Firmware Upgrade'.

5.5.1. Viewing Upgrade Information

1)   Booting information will then be sent to the Tera Term window. After the card powers up the "upload" message is displayed.

2)   Using XMODEM select to 'Send'.
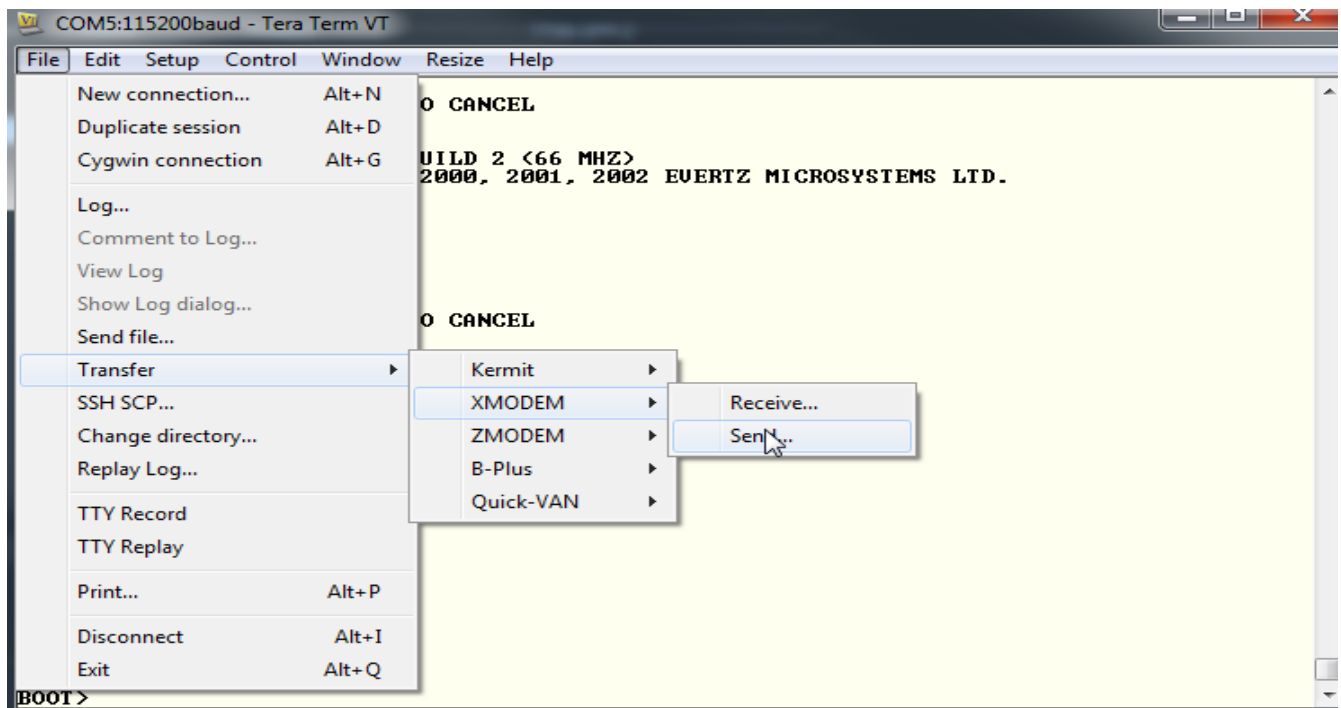
3)   Locate the unzipped image file and select 'Open'. File will now download. This make take several minutes.
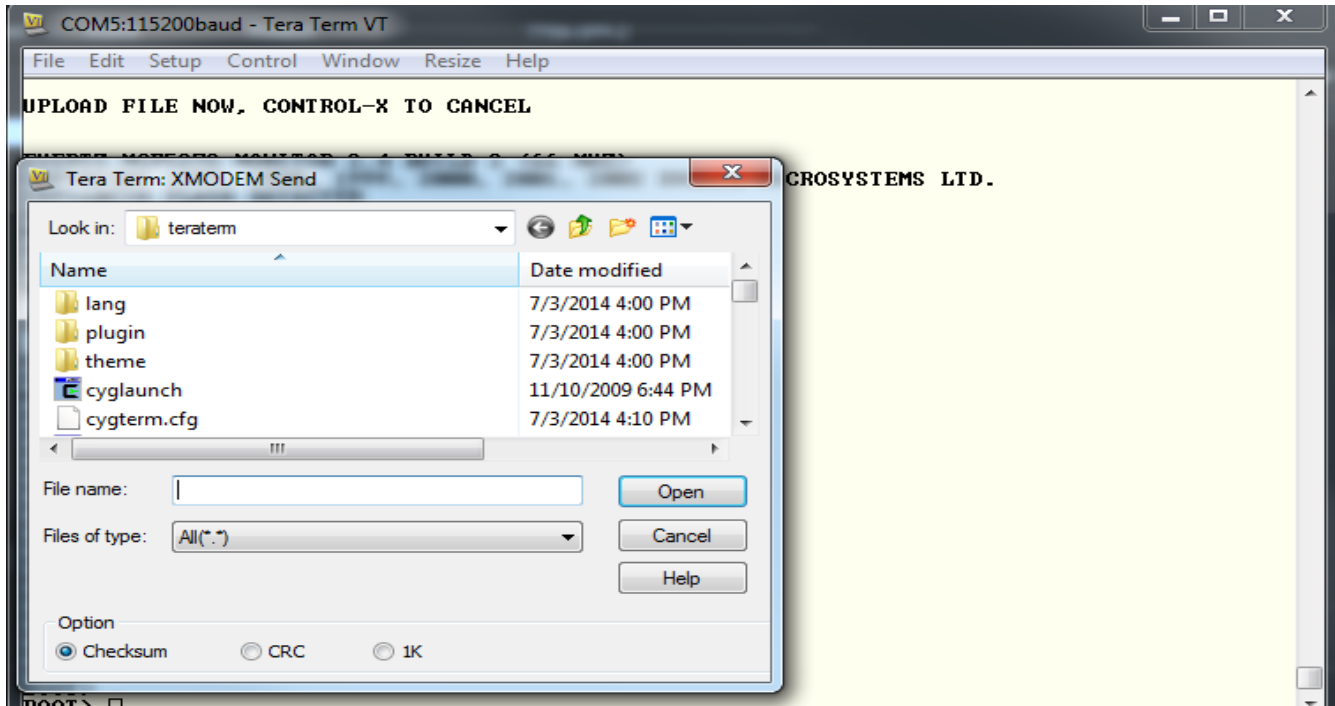
4)   Select image file downloaded and unzipped in section 5.1.1 and upload file. Module will automatically reboot.

✎   **If jumper J5 was used in UPGRADE mode then place jumper J5 back in RUN mode and reboot module.**

6. JAR UPGRADE PROCEDURES

6.1. VISTALINK PRO JAR FILE UPGRADE

Evertz products are constantly evolving and new features are often added. It is therefore important to update the JAR files in use to provide access to all the latest features or enhancements. It will also be necessary to add JAR files for new products. If your new product has not appeared even after waiting a few minutes for the Ethernet switch negotiation to complete, then it is possible that your JAR file may be old or missing.

> ✎ **Ensure that the 7708SFP series module is running the latest JAR file, to check this simply right click on the cards in VLPro Client and select *Version Information*.**
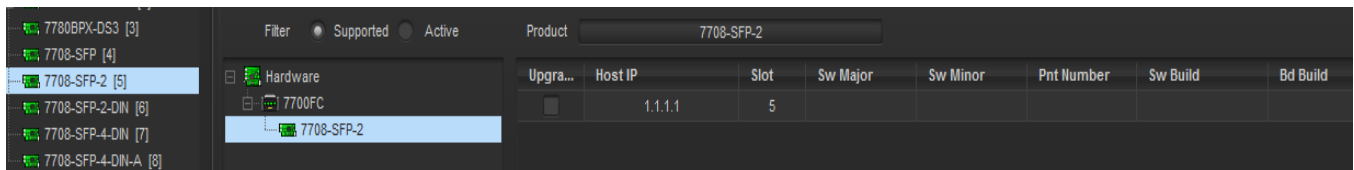

Figure 6-1: Jar File Version Information

Download the JAR file "7800SFP". To retrieve the JAR file contact your Evertz sales representative or check Evertz web site for availability (www.evertz.com – Support> Downloads VistaLINK® PRO JAR File Downloads> > Type "7708SFP" in the Model search and press "Go"). Save the files to the hard drive.

Figure 6-2: Downloading Jar File from Everts.com

> ✎ **Please contact Evertz for JAR file if it not available on Evertz web site.**

To perform a JAR update, ensure that all VistaLINK® PRO clients are closed (those clients which are not closed will automatically be disconnected as soon as the VistaLINK® PRO Server is restarted). Maximize the VistaLINK® PRO Server window from the Windows task bar, select *Help> Apply Update> Product* from the menu.
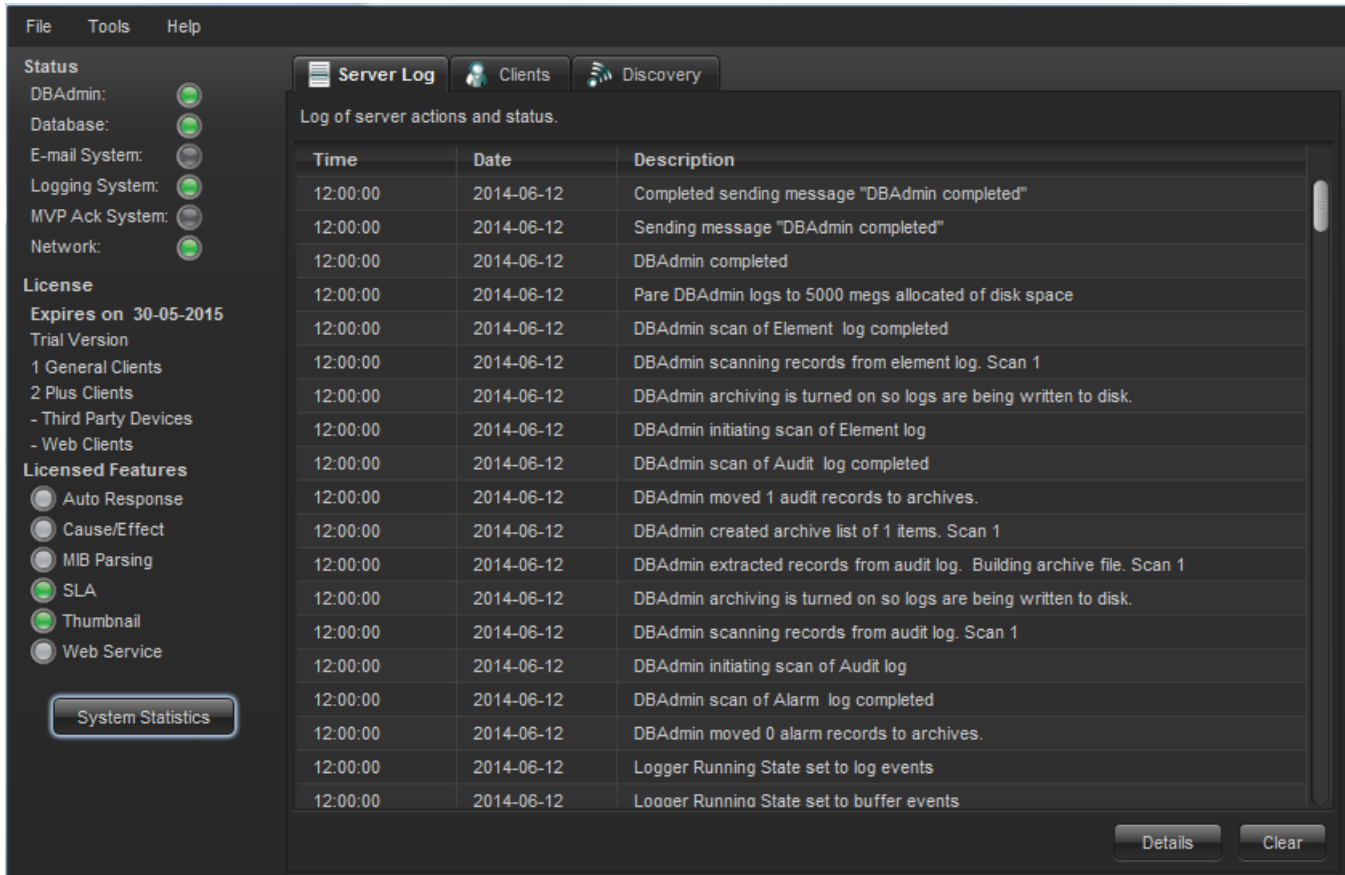

Figure 6-3: VistaLINK® PRO Server

A window will appear, as shown in Figure 7-2: VistaLINK® PRO Server, navigate to the location of the new JAR file and double click to select the file. The window will automatically close and the update will be applied in the background. VistaLINK® PRO Server must be restarted in order for changes to take effect.
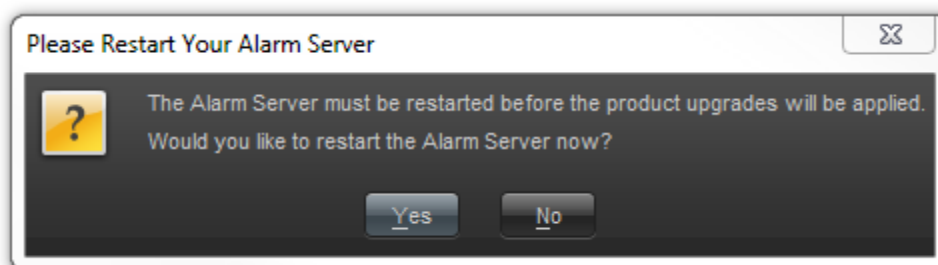

Figure 6-4: Alarm Server Restart Notification