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REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1.0	First Version	July 2013
1.1	Updates made to sections 3.1 and 3.2	Sept 2013

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1. OVERVIEW

The 7800IDA2Q Dual 3G/HD/SD-SDI Reclocking Distribution Amplifier provides high quality distribution of facility 3G/HD/SD-SDI signals. HD versions support SMPTE ST 292-1 and SMPTE ST 259 signals while 3G versions also support SMPTE 424M signals. This module features dual auto-sensing equalized inputs with unparallelled cable equalization, making it the most-cost effective and ideal solution for long cable run environments.

For maximum flexibility, the module can operate in a dual input to four outputs each configuration or as one input to eight output configuration.

The 7800IDA2Q is VistaLINK[®] enabled, offering remote monitoring, control and configuration capabilities via Simple Network Management Protocol (SNMP) giving the flexibility to manage operations, including signal monitoring and module configuration from SNMP capable control systems (Manager or NMS).

The 7800IDA2Q occupies one card slot and can be housed in the 3RU 7700FR-C, 7800FR and 7800FR-QT frames that have a 15-slot capacity. The 7700FC frame controller is required for configuration.

Features:

- HD/SD-SDI dual input with four reclocked outputs per input
- Support for common 3G-SDI video inputs (-3G versions)
- Configurable as one DA with eight outputs or two DAs with four outputs each (1x8 or 2 - 1x4)
- Industry leading long reach cable performance
- Input signal presence detection
- High density approach offers 14 modules within 3RU (28 DA's in 3RU)
- Real time VistaLINK[®] monitoring and trending for SNMP monitoring



Please note: From this point forward, the 7800IDA2Q-3G and the 7800IDA2Q-HD modules will be referred to as the 7800IDA2Q, unless the feature in question is applicable only to one of the modules, in which case the specific model number will be referenced.

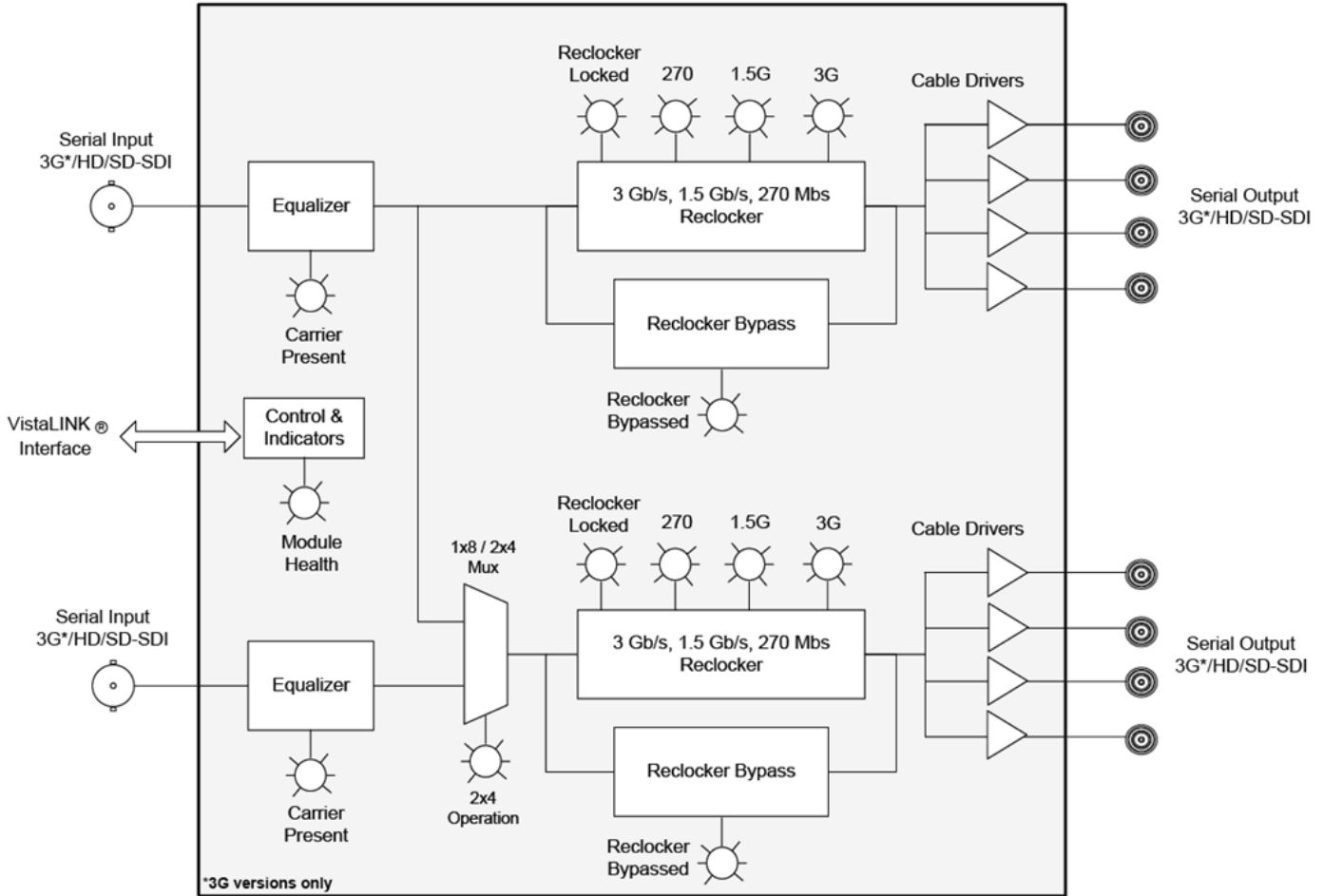


Figure 1-1: 7800IDA2Q-3G Block Diagram

2. INSTALLATION

The 7800IDA2Q comes with a companion rear plate that occupies one slot in the frame. For information on inserting the module into the frame see section 3 of the 7800FR chapter.

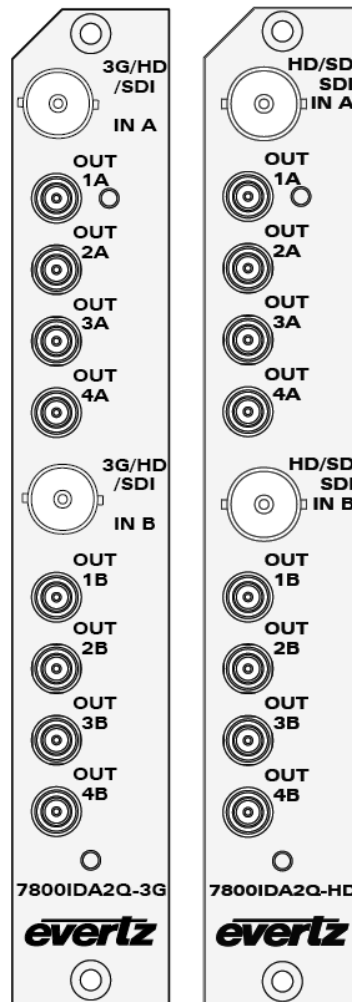


Figure 2-1: 7800IDA2Q-3G Rear I/O Modules

3G/HD/SD-SDI INPUT: There are two input BNC connectors for 10-bit serial digital video signals compatible with the 3Gb/s SMPTE 424M, 1.5Gb/sec SMPTE 292M, and 270Mb/s SMPTE 259M-C (525i/59.94 or 625i/50) standard.

3G/HD/SD-SDI OUTPUT: There are eight DIN 1.0/2.3 connectors with reclocked serial component video outputs, compatible with the 3Gb/s SMPTE 424M, 1.5Gb/sec SMPTE 292M, and 270Mb/s SMPTE 259M-C (525i/59.94 or 625i/50) standard.

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standard: Auto-detects standard 3Gb/s SMPTE 424M, 1.5Gb/sec SMPTE 292M, 270Mb/s SMPTE 259M-C (525i/59.94 or 625i/50)

Connector: 1 BNC per IEC 61169-8 Annex A

Input Equalization: Automatic to
150m @ 3Gb/s (Belden 1694A cable)
200m @ 1.5Gb/s (Belden 1694A cable)
380m @ 270Mb/s (Belden 1694A cable)

Return Loss: > 10dB up to 3Gb/s
> 15dB up to 1.5Gb/s
> 20dB up to 270 Mb/s

3.2. SERIAL VIDEO OUTPUTS

Standard: Auto-detects standard 3Gb/s SMPTE 424M, 1.5Gb/sec SMPTE 292M, 270Mb/s SMPTE 259M-C (525i/59.94 or 625i/50)

Number of Outputs: 4 (2 by 1x4 mode)
8 (1x8 mode)

Connector: DIN 1.0/2.3 connector

Signal Level: 800mV nominal

DC Offset: 0V \pm 0.5V

Rise and Fall Time: 200ps nominal for 3G/HD-SDI
900ps nominal for SD-SDI

Overshoot: < 10% of amplitude

Return Loss: > 10dB for 1.5 - 3Gb/s
> 20dB up to 1.5Gb/s

Alignment Jitter: < 0.3 UI for SMPTE 424M
< 0.20 UI for SMPTE 259M and 292M

3.3. ELECTRICAL

Voltage: + 12VDC

Power: 6 Watts

EMI/RFI: Complies with FCC regulations for class A devices
Complies with EU EMC directive

3.4. PHYSICAL

Number of slots:

350FR:	1
7700-FR-C:	1
7800FR:	1
7800FR-QT:	1
7801FR:	1

4. STATUS LEDS

The 7800IDA2Q has eight LED Status indicators on the front card edge to show operational status of the card at a glance. Figure 7-1 shows the location of the LEDs.

Two large Module Status LEDs on the front of the board indicate the general health of the module:

LOCAL FAULT: This Red LED indicates poor module health and will be On during the absence of a valid input signal (on either of the two inputs if in dual 1x4 mode) 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 (on both inputs if in dual 1x4 mode), and board power is good.

There are 18 small LEDs that are not currently implemented. Figure 4-1 identifies the function of some of the status LEDs present on the board.

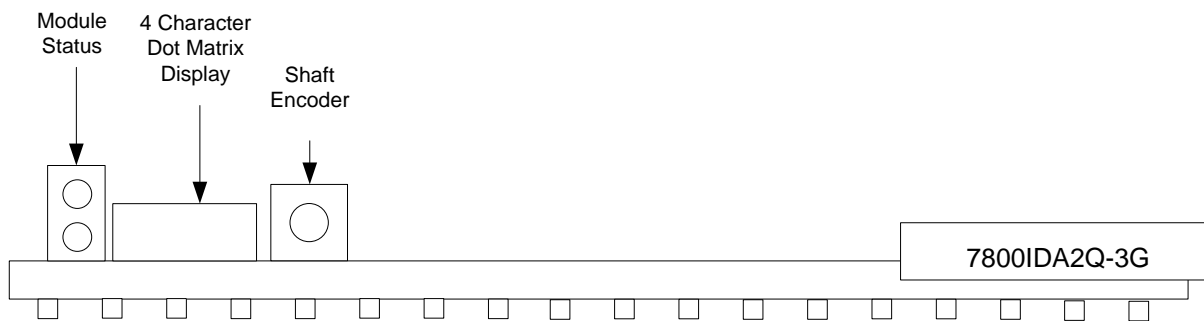


Figure 4-1: Status LEDs

5. CARD EDGE MODULE CONTROL

5.1. CARD-EDGE CONTROL

The 7800IDA2Q is equipped with a push-button shaft encoder and a four character dot matrix display to control various functions on the card. The push-button shaft encoder is used to navigate through a menu system to set and monitor various parameters for the module. When not in the menu system the four character dot matrix display rotates through the module name, firmware version and IP address.

5.1.1. Navigating the Card-Edge

You can use the push-button shaft encoder to move up and down the list of available parameters to adjust. To adjust any parameter, use the shaft encoder to move up or down to the desired parameter and then press the shaft encoder in. If the parameter is a numerical value, the number will increase if you rotate the shaft encoder clockwise and decrease if you rotate the shaft encoder counter-clockwise. If the parameter contains a list of options, you can cycle through the list by rotating the shaft encoder in either direction. The parameter values are changed as you cycle through the list.

When you have stopped at the desired value, depress the shaft encoder. This will return you to the parameter, select the menu item that you are setting (the display shows the parameter name you were setting). To change another parameter, rotate the shaft encoder 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.

Throughout the descriptions of the Menu items, default values are shown with bolded text.

5.2. CARD-EDGE MENU STRUCTURE

The following is a brief description of the top level of the menu tree that appears when you enter the ON screen menu. Selecting one of these items will take you down into the next menu level to set the value of that parameter.

DSPL	Sets the orientation of the four-digit LED display
PRST	Allows the saving or recalling of presets
QUIT	Exits the menu

5.3. SETTING THE DISPLAY ORIENTATION

The **DSPL** parameter controls the display orientation of the four digit LED display.

HORZ	The display will be shown horizontally (ideal when installed in a 1RU or standalone frame).
VERT	The display will be shown vertically (ideal when installed in a 3RU frame).

5.4. PRESET PARAMETERS

The **PRST** menu option enters into a selection menu to either recall or save a preset.

SAVE	Menu option to save current module state to a selected preset.
LOAD	Menu option to load to the module a selected preset.

5.4.1. Saving Presets

The **SAVE** parameter will save the current module settings to a selected preset number. The user can save the settings by assigning a preset number (i.e. Preset 02), which can later be recalled using the *load* parameter.

01-10	Selects the preset to save the current module settings to.
--------------	--

5.4.2. Loading Presets

The **LOAD** parameter will load the settings saved in the preset to the current module settings. The user can recall and load a saved preset by selecting the desired preset number (i.e. Preset 02).

FACT	Loads the factory default settings into the module.
01-10	Selects the preset from which to load settings from.

6. VISTALINK[®] MODULE CONTROL

This section describes the VistaLINK[®] control and monitoring available on the 7800IDA2Q.

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 VistaLINK[®] Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz VistaLINK[®] enabled products.
2. Managed devices, each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz VistaLINK[®] enabled 7700/7800 series modules reside in the 3RU 7800FR 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. GENERAL

The **General** tab shows miscellaneous parameters of the module.

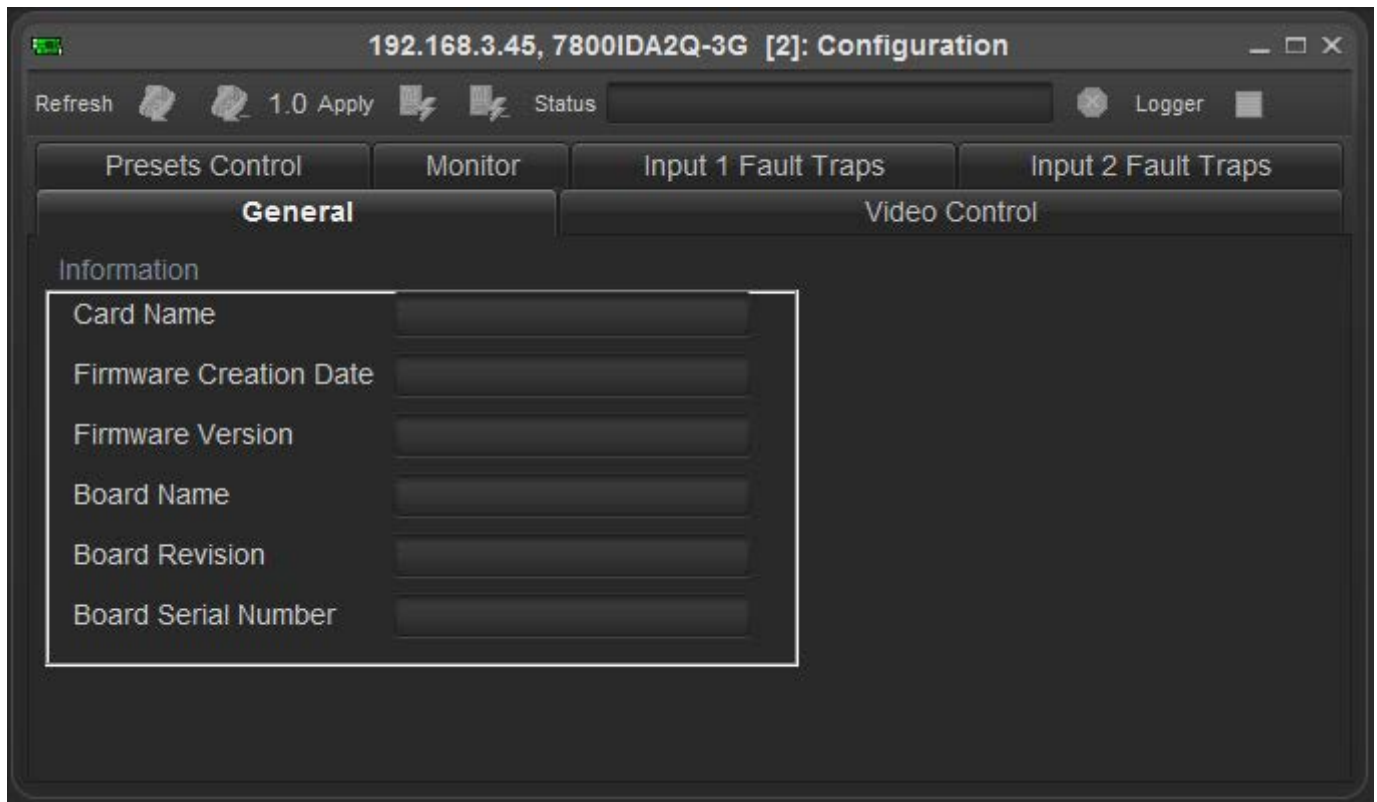


Figure 6-1: General Tab

Card Name: Indicates the product model number of the card (including installed options).

Firmware Creation Date: Indicates the build date of the firmware version.

Firmware Version: Indicates the currently installed firmware version.

Board Name: Indicates the product hardware version of the module.

Board Revision: Indicates the hardware version of the module.

Board Serial Number: Indicates the physical serial number of the module.

6.3. VIDEO CONTROL

The **Video Control** tab is used to select between the modes of operation.

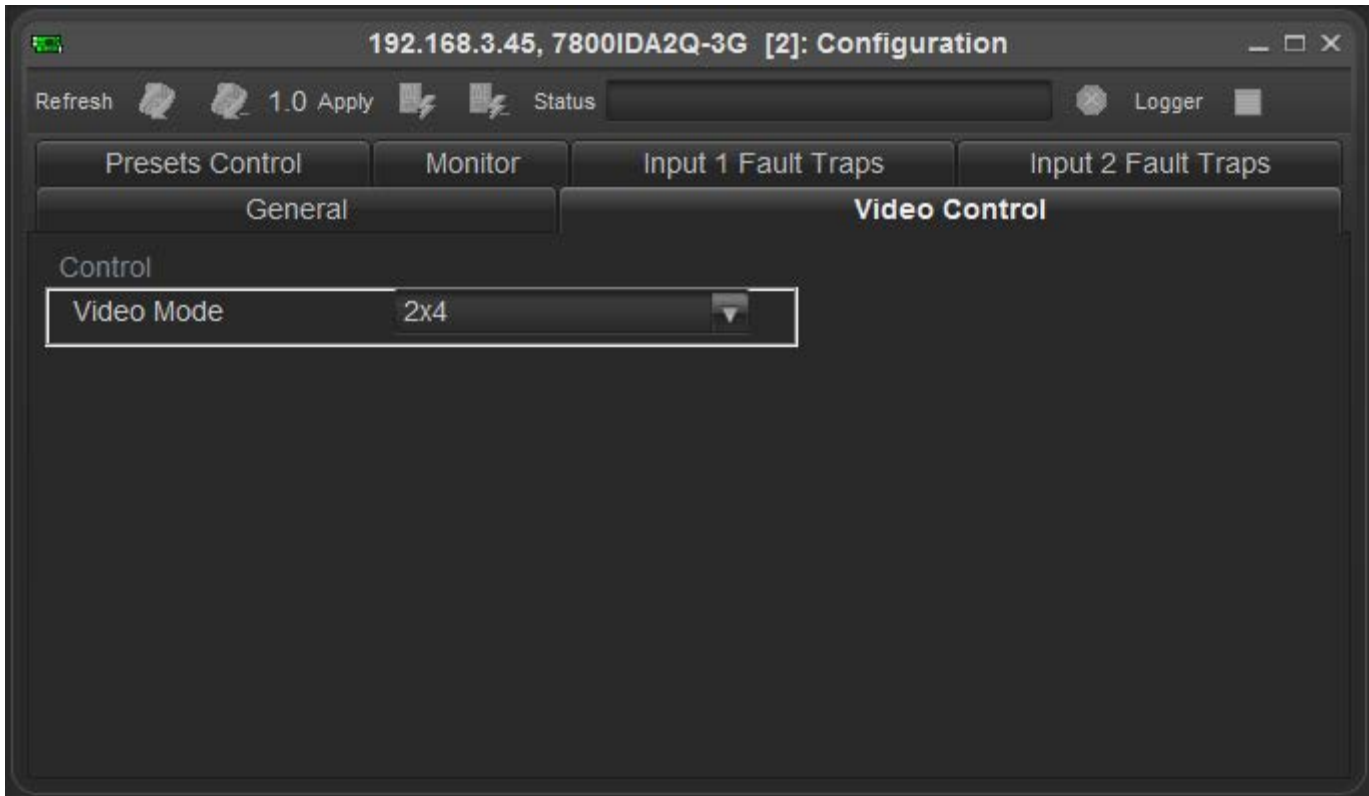


Figure 6-2: Video Control Tab

6.3.1. Selecting the Video Mode

The **Video Mode** drop down menu will set the mode of the card.

2x4	Sets the card in dual 1x4 mode.
1x8	Sets the card in 1x8 mode.

6.4. PRESETS CONTROL

The **Presets Control** tab allows the saving and recalling of presets.

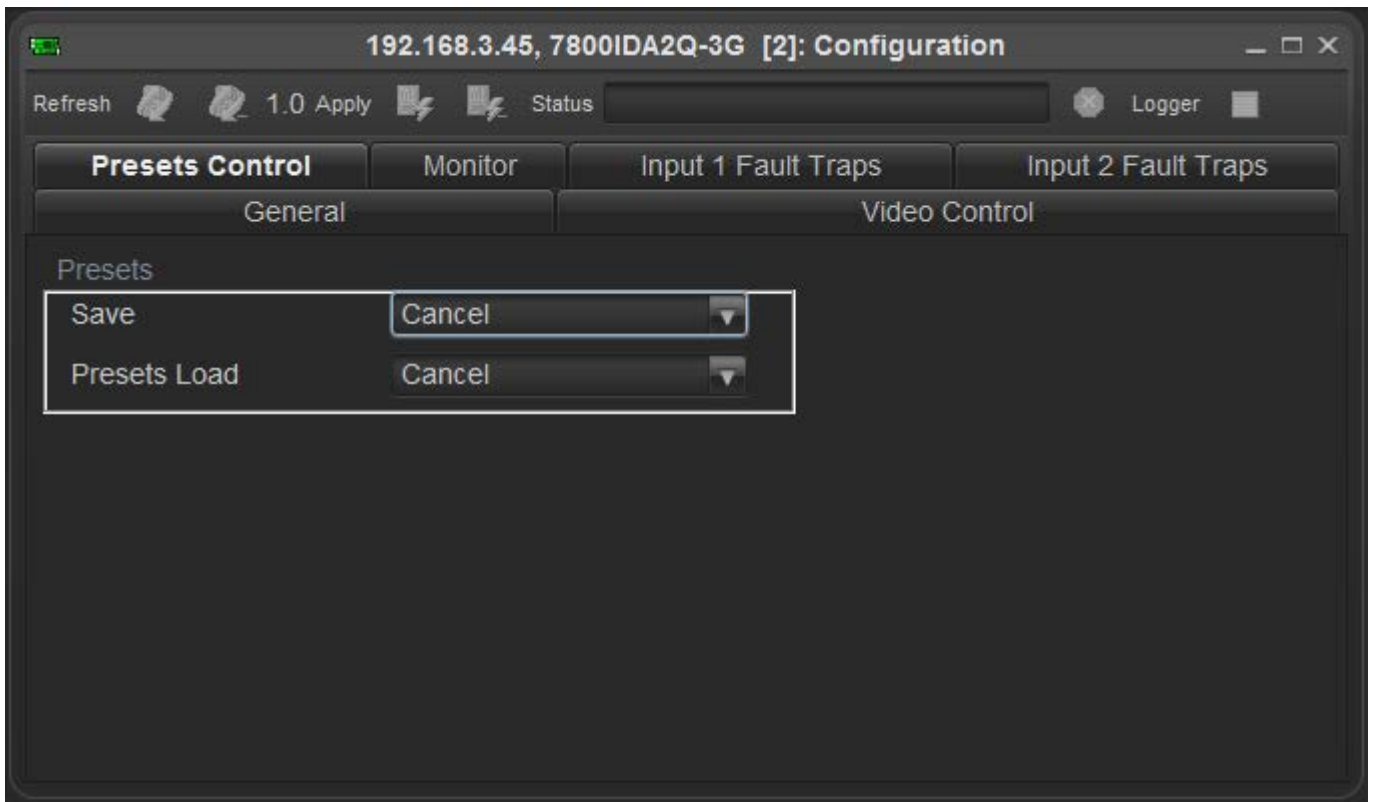


Figure 6-3: Presets Control Tab

6.4.1. Saving Presets

The **Save Preset** drop down menu will save the current module settings to a selected preset number. The user can save the settings by assigning a preset number (i.e. Preset 02), which can later be recalled using the *load* parameter.

Preset 1-10	Selects the preset to save the current module settings to.
Cancel	Cancels the selection.

6.4.2. Loading Presets

The **Load Preset** drop down menu will load the settings saved in the preset to the current module settings. The user can recall and load a saved preset by selecting the desired preset number (i.e. Preset 02).

Factory Defaults	Loads the factory default settings into the module.
Preset 1-10	Selects the preset from which to load settings from.
Cancel	Cancels the selection.

6.5. MONITOR

The **Monitor** tab shows video parameters of the module.

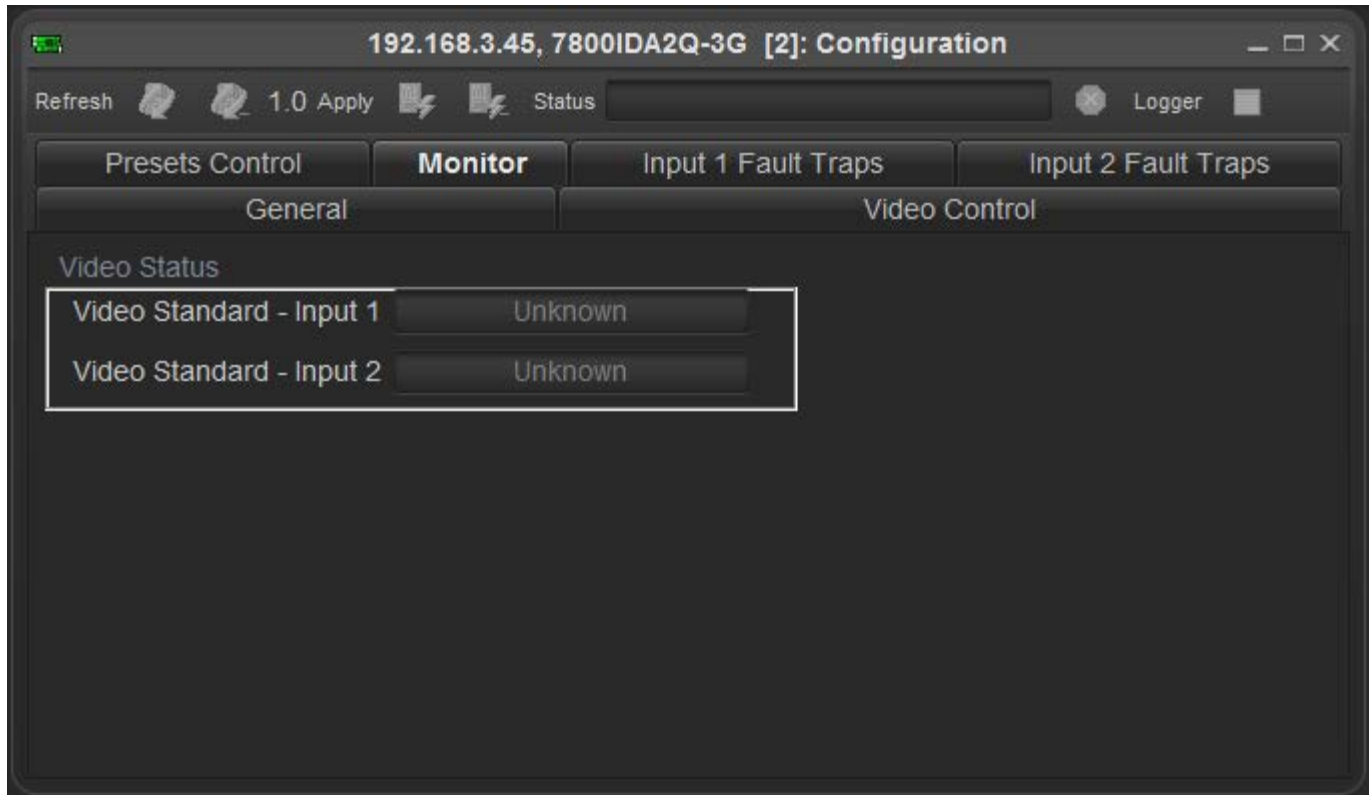


Figure 6-4: Presets Control Tab

6.5.1. Viewing the Detected Video Standard

The **Video Standard – Input 1** field displays the currently detected input video standard of input 1.

The **Video Standard – Input 2** field displays the currently detected input video standard of input 2 when the card is in 2x4 mode.

6.6. INPUT 1 FAULT TRAPS

The **Input 1 Fault Traps** tab shows the trap status for input 1 of the module. To enable a particular trap, simply click the box located beside each trap in the *Trap Enable* section so that a check mark appears. When a check mark is present, the trap is enabled. When a check mark is not present, the trap is disabled.

If a parameter under the *Trap Status* section is green, then the trap is present. If the parameter is red, then the trap is missing.

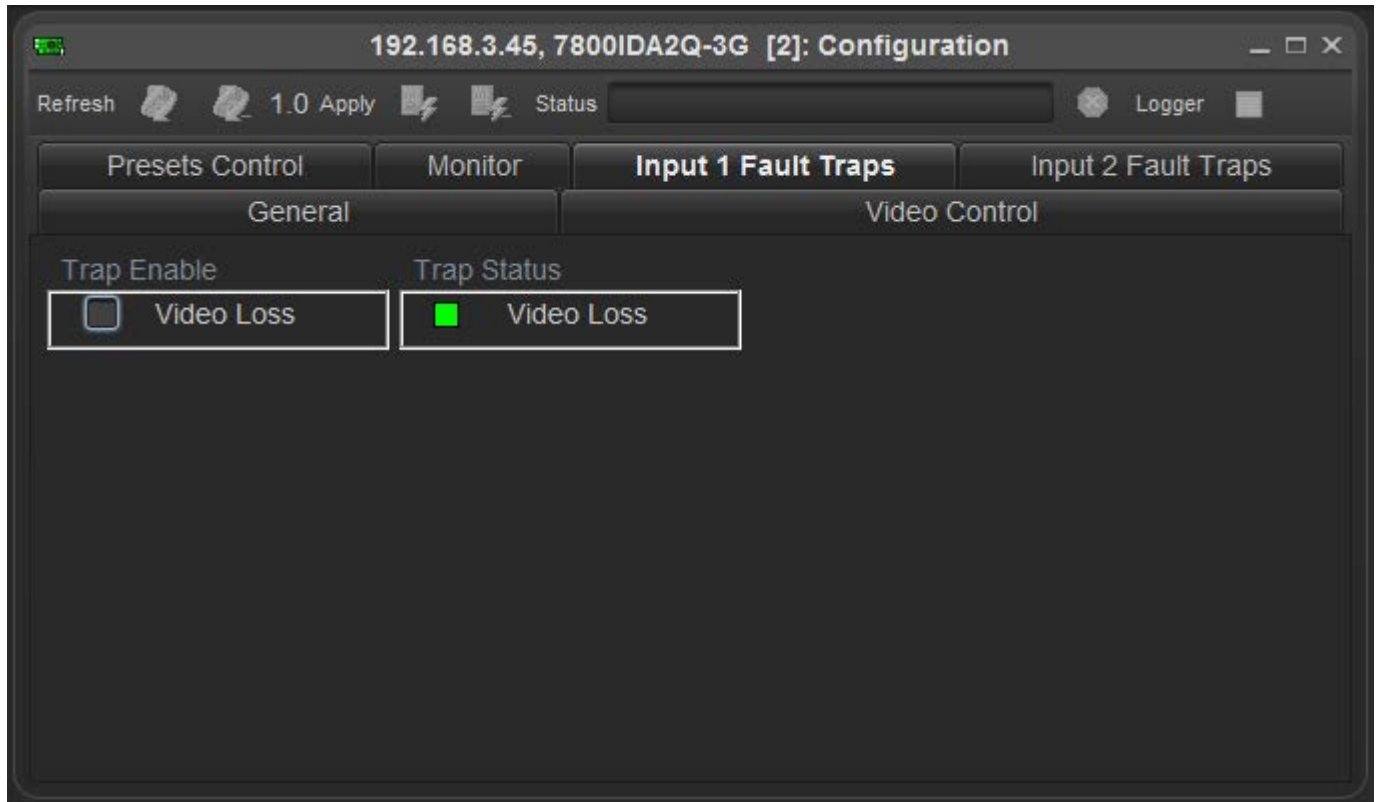


Figure 6-5: Input 1 Fault Traps Tab

6.7. INPUT 2 FAULT TRAPS

The **Input 2 Fault Traps** tab shows the trap status for input 2 of the module. To enable a particular trap, simply click the box located beside each trap in the *Trap Enable* section so that a check mark appears. When a check mark is present, the trap is enabled. When a check mark is not present, the trap is disabled.

If a parameter under the *Trap Status* section is green, then the trap is present. If the parameter is red, then the trap is missing.

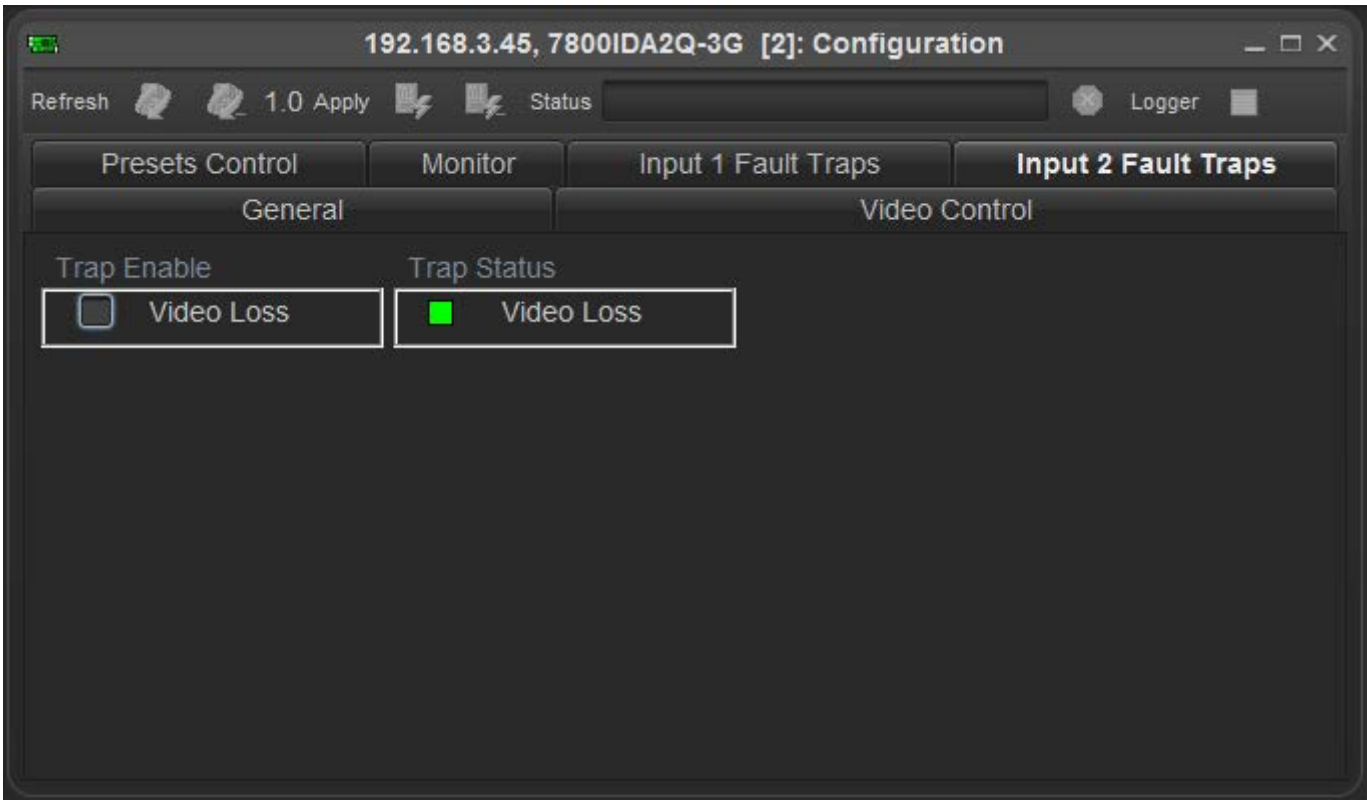


Figure 6-6: Input 2 Fault Traps Tab

7. JUMPERS AND USER ADJUSTMENTS

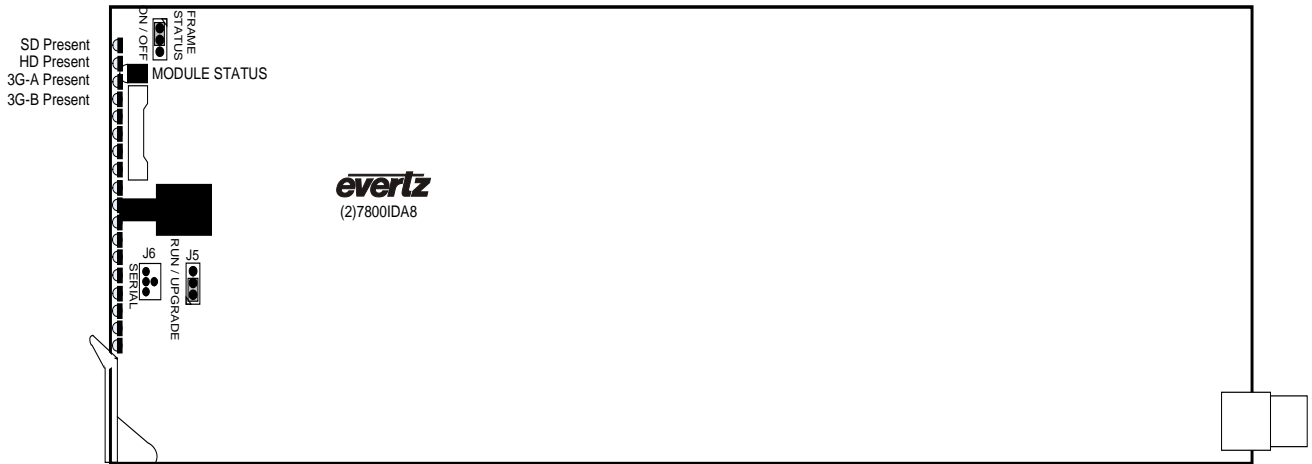


Figure 7-1: LED and Jumper Locations

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

The FRAME STATUS jumper J3, located at the front of the module determines whether local faults (as shown by the Local Fault indicator) will be connected to the 7700/7800 series frame's global status bus.

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

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

7.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

UPGRADE: The UPGRADE jumper J5 located at the front of the module near the card ejector, 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* section in the front of the binder for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move Jumper J16 into the *UPGRADE* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto header J6. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* section in the front of the binder. Once the upgrade is complete, remove the module from the frame, move J5 to the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

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