

2430RX2-10G Series

10G Video to HDMI/SDI Converter

User Manual

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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.

	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
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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

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
0.1	Preliminary Release	Oct 2015

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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.

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1. OVERVIEW

The 2430RX2-10G is a versatile dual path uncompressed SDI OVER 10G to HDMI/DVI/Display Port processing converter. The 2430RX2-10G is used in applications where high density extension of DVI over IP is required.

This self contained module accepts up to two uncompressed SDI over 10G streaming inputs. It decodes, processes, color corrects and converts the output to a HDM I signal. With integrated auto scaling the 2430RX2-10G device can drive resolutions up to WUXGA (1920x1200).

Features & Benefits

- Full 422 10bit pixel input resolution
- Full 24 bit RGB output pixel resolution
- Color correction, auto rescaling
- Ideal for use with high resolution LCD, plasma and projection screens
- Superior digital data transmission
- Compact form factor with optional VESA mount brackets
- Analog audio outputs supported
- In-band control

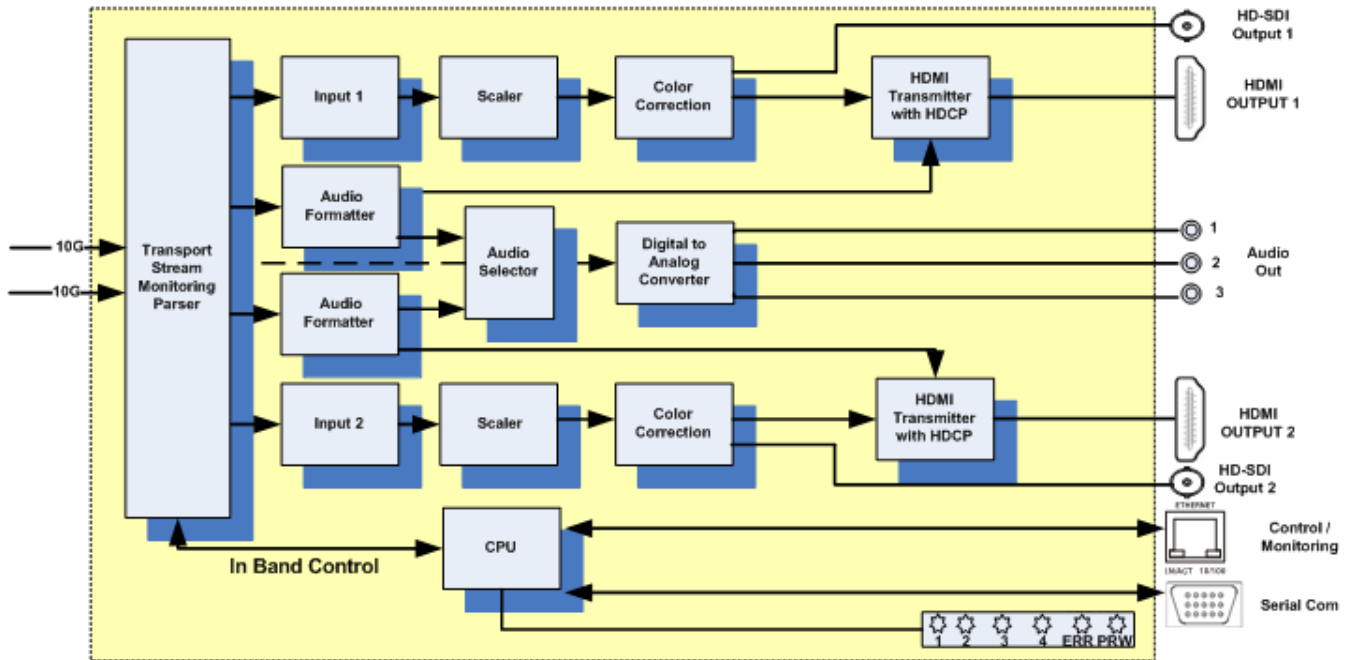


Figure 1-1: 2430RX2-10G Block Diagram

2. GETTING STARTED

2.1. REAR PLATE DESCRIPTION

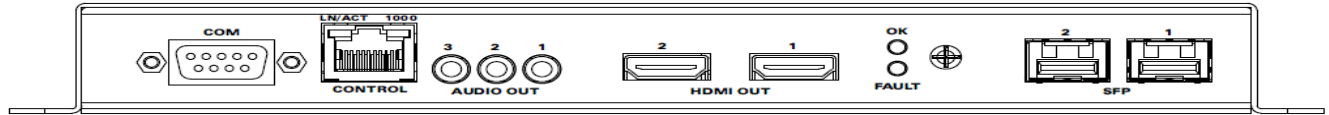


Figure 2-1: 2430RX2-10G Rear Plate

2.1.1. Rear Panel Connectors Description

- COM Port:** DVI, VGA and Component cable
 Supported Resolution: VESA: VGA, SVGA, XGA, WXGA, SXGA, SXGA+, UXGA, WSXGA+, WUXGA, WQXGA (dual-link). CEA-861B: 480p, 576p, 720p, 1080i, 1080p
- Color Resolution: 24 bits
- Control:** Standard CAT5 cable (not included)
- Audio Out:** 1/8" Stereo (3.5mm) Male Mini to 2-RCA Male Audio Y-Cable (not included)
- HDMI Out:** Standard HDMI Cable (not included)
- SFP:**

2.2. FRONT PLATE DESCRIPTION

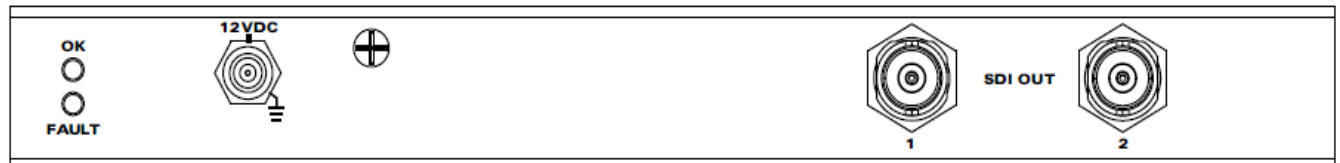


Figure 2-2: 2430RX2-10G Front Plate

POWER

The 2430RX2-10G comes with an auto-ranging DC voltage adapter that automatically senses the input voltage. Power should be applied by connecting a 3-wire grounding type power supply cord to the power entry module on the DC voltage adapter. The power cord should be minimum 18 AWG wire size; type SST marked VW-1, maximum 2.5m in length. The DC cable of the voltage adapter should be connected to the DC power jack on the rear panel. A green LED located beside the power connector will be illuminated when there is power applied to the 2430RX2-10G.

SDI OUT: BNC per IEC 60169-8 Amendment 2

2.3. HARDWARE INSTALLATION

NOTE: SFP's must be ordered separately

To successfully install the 2430RX2-10G you will require the following:

1. Unused IP address on the network.
2. 9Pin RS-232 serial cable

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

Ensure that the device is powered up and the green LED is on. Connect the device via the COM port using a 9-pin Serial Cable. Connect the Female end of the serial cable to the serial port of your PC. Connect the the opposing Male end to the 9-Pin connector on rear of unit. In order to begin configurations ensure the below settings are configured properly:

Baud: 115200
Data: 8-BIT
Parity: none
Stop Bits: 2
Flow Control: none

Open TeraTerm (if using Windows XP or older open Hyper Terminal) to make the required changes to the IP address on the card. Use the login *customer* and password *customer*.

2.4. CONFIGURING BASIC NETWORK SETTINGS

To make changes to the IP address select **Network Setup**. Set the IP address to the desired subnet as well as set the **Gateway**. Make the same changes for the IP address and Gateway of Port 2 as required. When done **Exit (X)** the Network Setup and **Save and Exit (X)** from the Main Menu to ensure all changes are saved.

Power Cycle the 2430RX2-10G to ensure all changes are loaded to the card.

2.4.1. Inband Control Configuration

This sub-menu enables the user to configure the settings for unicast traffic forwarding for each of the two data ports.. The following steps should be followed to ensure proper configuration:

- 1) Connect COM port to 2430RX2-10G
- 2) Login when prompted: username *customer* password *customer*
- 3) Select Option (6) and/or (10) to enable inband control for data ports 1, 2 or both.
- 3) Select (1) for Enable
- 4) Select (Y) to confirm
- 5) Select (X) to save and exit from the 2430RX2-10G main menu

After the Inband control configurations have been enabled, wait for the unit to reboot.

3. SPECIFICATIONS

3.1. INPUT

Format: Uncompressed SDI over 10G
Number of Inputs: 2
Connector: Female LC/UPC

3.2. OUTPUT

Number of outputs: 2 (HDMI)
Connector type: HDMI
Supported resolutions: 525, 624, 720p 59.94/50 Hz, 1080p 59.94/50 Hz and VESA up to WUXGA
(1920x1200)

3.3. SERIAL VIDEO OUTPUT

Number of Outputs: 2
Standard: 525, 625, 720p 59.94/50 Hz, 1080p59.94/50 Hz
Connector: BNC per IEC 60 169-8 Amendment 2

3.4. AUDIO OUTPUT

Number of outputs: 3 stereo pairs
Connector type: 3.5mm female stereo (unbalanced)

3.5. ELECTRICAL

Voltage: 12V DC, Auto ranging 100-240V AC 50/60 Hz adapter included
Power: 30W

3.6. PHYSICAL

Dimensions: 8.13"L x 9.28"W x 0.7" H

3.7. COMPLIANCE

Electrical Safety: Power supply UL listed
Complies with CE Low voltage Directive
EMI/RFI: Complies with FCC Part 15, Class A EU EMC directive

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4. WEBEASY INTERFACE

4.1. SYSTEM

System

Control Port Control

Control Port

IP Address: 192.168.194.177

Netmask: 255.255.192.0

Gateway: 192.168.194.1

Data Port Control

Data Port

1 2

IP Address: 192.168.194.177

Netmask: 255.255.192.0

Gateway: 192.168.8.1

Inband Control: Enable

Data Port Monitor

Data Port

1 2

Port Link Status: Up

Received Data Ethernet Total Bitrate (kbps): 6480397

Transmitted Data Ethernet Total Bitrate (kbps): 0

SFP Monitor

Data Port

1 2

SFP Part Number: SFP10G-TR13S

SFP Type: FIBER

SFP Rx Power Level (dbm): -7

SFP Tx Power Level (dbm): -1

SFP Temperature (celsius): 51

SFP Link Speed (mbps): N/A

Figure 4-1: System Page

Control Port Control

IP Address: This parameter allows user to set IP Address for the control port

Netmask: This parameter allows user to set netmask for the control port

Gateway: This parameter allows user to set gateway for the control port

Data Port Control

For each data port the following controls can be configured.

IP Address: This parameter allows user to set IP Address for the data port

Netmask: This parameter allows user to set netmask for the data port

Gateway: This parameter allows user to set gateway for the data port

Data Port Monitor

For each data port the following parameters can be monitored.

Port Link Status: This parameter returns the status link status for the data port, either Up or Down.

Received Data Ethernet Total Bitrate: This parameter displays the bit rate received on this ethernet port, units are in kbps.

Transmitted Data Ethernet Total Bitrate: This parameter displays the bit rate transmitted on this output ethernet port, units are in kbps.

SFP Monitor

For each SFP data port the following parameters can be monitored.

SFP Part Number: This parameter tells about the SFP part name.

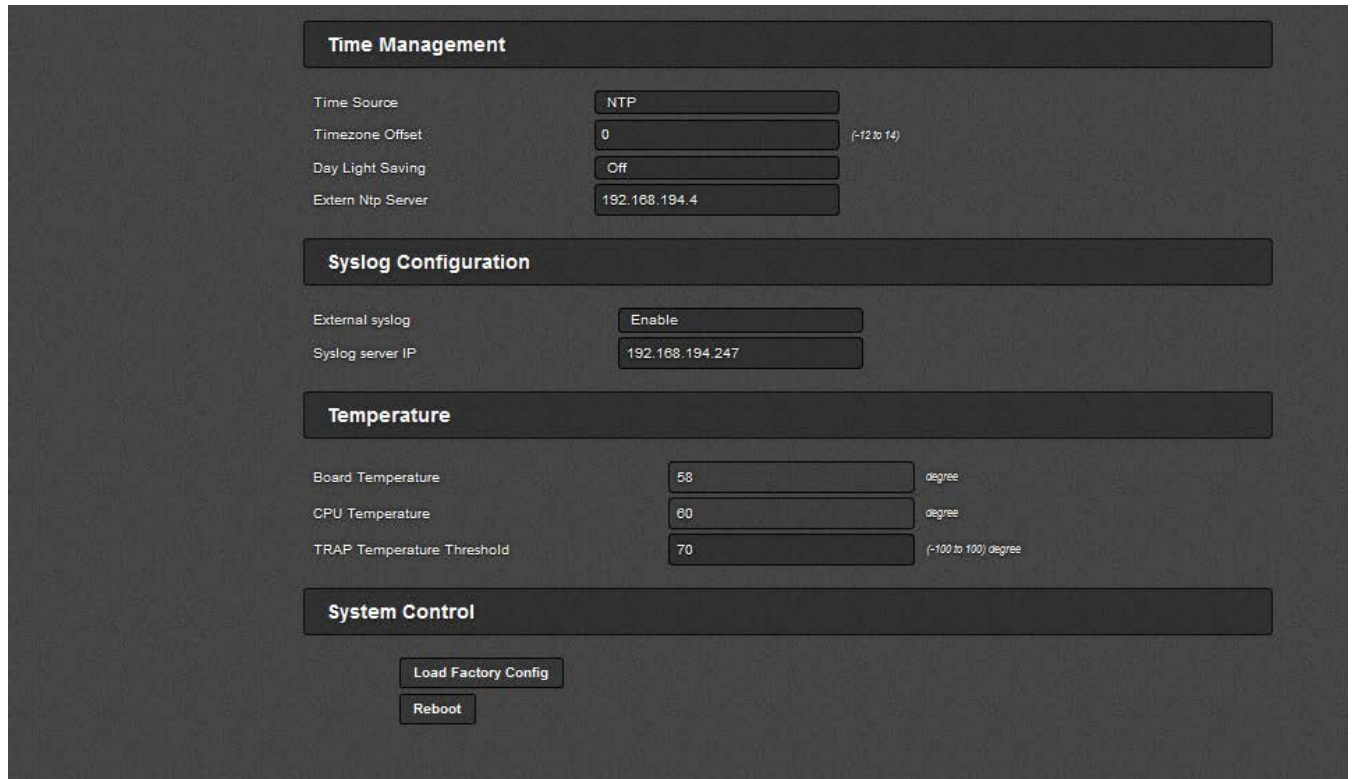
SFP Type: This parameter returns the SFP connection type, options include RJ45, Fiber, DIN or N/A.

SFP Rx Power Level (dbm): This parameter returns the SFP RX power level, in unit of 1 dbm. This parameter is only available for RX class SFPs, named as Received optical power.

SFP Tx Power Level (dbm): This parameter returns the SFP Tx power level, in unit of 1 dbm. This parameter is only available for TX class SFPs, named as Transmitted optical power.

SFP Temperature (Celsius): This parameter returns the SFP temperature level, in unit of degrees. This parameter will display a valid value when there is a fiber connection.

SFP Link Speed (Mbps): This parameter returns the SFP link speed.



The screenshot shows a web interface for system configuration. It is divided into four main sections: Time Management, Syslog Configuration, Temperature, and System Control. Each section contains several configuration parameters with input fields and dropdown menus.

Section	Parameter	Value	Range/Unit
Time Management	Time Source	NTP	
	Timezone Offset	0	(-12 to 14)
	Day Light Saving	Off	
	Extern Ntp Server	192.168.194.4	
Syslog Configuration	External syslog	Enable	
	Syslog server IP	192.168.194.247	
Temperature	Board Temperature	58	degree
	CPU Temperature	60	degree
	TRAP Temperature Threshold	70	(-100 to 100) degree
System Control	Load Factory Config		
	Reboot		

Figure 4-2: System Page cont.

Time Management

Time Source: This parameter allows the user to select the time source to be used for system log timestamp., Either Local or NTP.

Timezone Offset: This parameter allows the user to set the time zone offset.

Day Light Saving: This parameter allows the user to set Day Light Saving to ON or OFF.

Extern Ntp Server: This parameter allows the user to select the external NTP server.

Syslog Configuration

External Syslog: This parameter allows the user to enable/disable the external syslog server.

Syslog Server IP: This parameter allows the user to assign the external syslog server IP.

Temperature

Board Temperature: This control displays the FPGA temperature.

CPU Temperature: This control displays the CPU temperature.

TRAP Temperature Threshold: This control allows the user to set the temperature threshold for the temperature trap.

System Control

Load Factory Config: This control allows the SNMP Manager to revert the decoder configuration to a known factory recommended set. The manager should read the variable prior to setting, to ensure it is in the 'ready' state. Writing the 'load' command will cause the decoder to cease current operations and sources and load the factory default configuration settings. This will NOT include IP interface settings, to ensure network contact is maintained. When the variable returns to the 'ready' state, the operation is complete. The operator can then manually refresh configuration displays.

Reboot: This parameter allows the SNMP Manager to perform a remote reboot of the decoder. This is useful when IP interface (and other) changes have been made, and a reset is needed to make them take affect. The manager should read the variable prior to resetting, to ensure it is in the 'ready' state. Writing the 'reboot' command will cause the decoder to perform a software restart of the decoder. Note that the decoder will react immediately to the reboot command, and will not respond to the SNMP set command.

4.2. INPUT CONTROL

The screenshot shows the web interface for the evertz 2430RX2-10G. The top navigation bar includes the evertz logo, the device model '2430RX2-10G', and buttons for 'Refresh', 'Apply', 'Dynamic Apply', 'Upgrade', and 'Logout'. A left sidebar contains menu items: 'System', 'Input Control' (highlighted), 'Input Monitor', 'Output Control', 'Notify', and 'Product Features'.

The main content area is titled 'Input Control' and is divided into three sections:

- Input Setup:** Contains 'Input' tabs for '1' and '2'. Below are 'Input Port Enable' (set to 'Enable') and 'Input Port Select' (set to 'Main').
- Input Control:** Contains 'Main' and 'Backup' tabs. It features three columns: 'Input IP Address', 'Input UDP Port (0 to 65535)', and 'Input SFP Port'. For Input 1, the IP is 239.53.53.50, UDP Port is 9999, and SFP Port is SFP 1. For Input 2, the IP is 239.53.53.51, UDP Port is 9999, and SFP Port is SFP 1.
- IP Input IGMP Control:** Contains 'Main' and 'Backup' tabs. It features a table with columns for 'IGMP V 3 Mode', 'IGMP V 3 SSM Src 1 IP Address', 'IGMP V 3 SSM Src 2 IP Address', 'IGMP V 3 SSM Src 3 IP Address', 'IGMP V 3 SSM Src 4 IP Address', 'IGMP V 3 SSM Src 5 IP Address', and 'IGMP V 3 SSM Src 6 IP Address'. For Input 1, the Mode is 'Include', and the addresses are 0, 0, 1, 10, 20, and 30. For Input 2, the Mode is 'Include', and the addresses are 0, 0, 1, 10, 20, and 30.

Figure 4-3: Input Control Page

Input Setup

For each Input the following controls can be configured.

Input Port Enable: This parameter allows the user to enable or disable the input port.

Input Port Select: This parameter allows the user to select the input port to be used as either Main, Backup or Auto.

Input Control

For both the Main and Backup inputs the following controls can be configured.

Input IP Address: This parameter allows the user to enter the input multicast address to use for the input.

Input UDP Port: This parameter allows the user to enter the Input multicast port number.

Input SFP Port: This parameter allows the user to select the SFP port the associated input will use.

IP Input IGMP Control

For both the Main and Backup inputs the following IGMP controls can be configured.

IGMP V 3 Mode: This parameter allows the user to set IGMPv3 Mode to either include or exclude.

IGMP V 3 SSM Src <1-6> IP Address: This parameter allows the user to enter an IGMPv3 SSM Source IP Address.

4.3. INPUT MONITOR

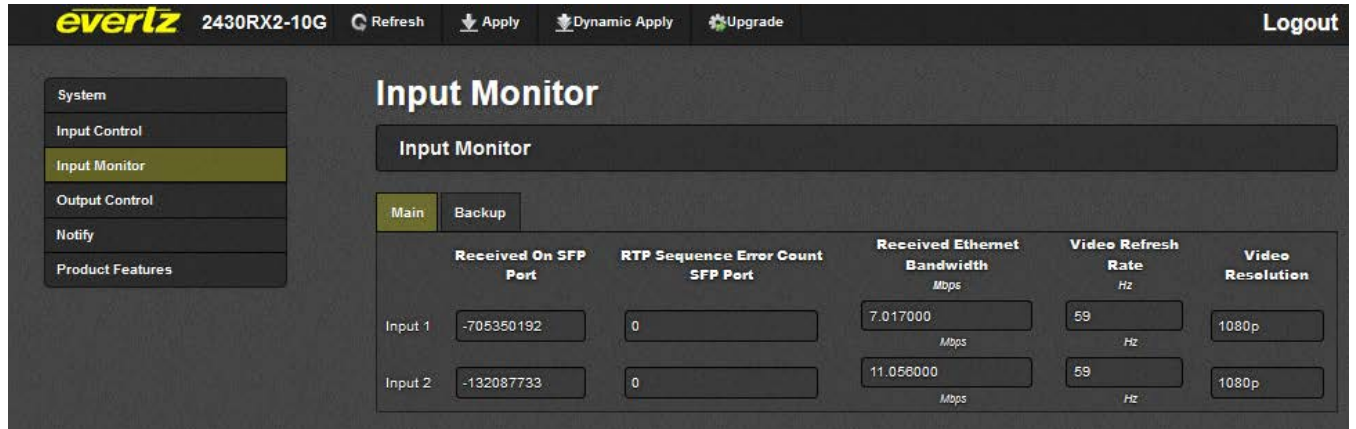


Figure 4-4: Input Monitor Page

Input Monitor

For both the Main and Backup inputs the following parameters can be monitored.

Received On SFP Port: This parameter display the amount of data Received on the SFP Port.

RTP Sequence Error Count SFP Port: This parameter displays the number of RTP Sequence error on the SFP Port.

Received Ethernet Bandwidth: This parameter displays the received ethernet bandwidth for the input stream in Mbps.

Video Refresh Rate: This parameter displays the input video refresh rate.

Video Resolution: This control returns the Resolution of the input video.

4.4. OUTPUT CONTROL

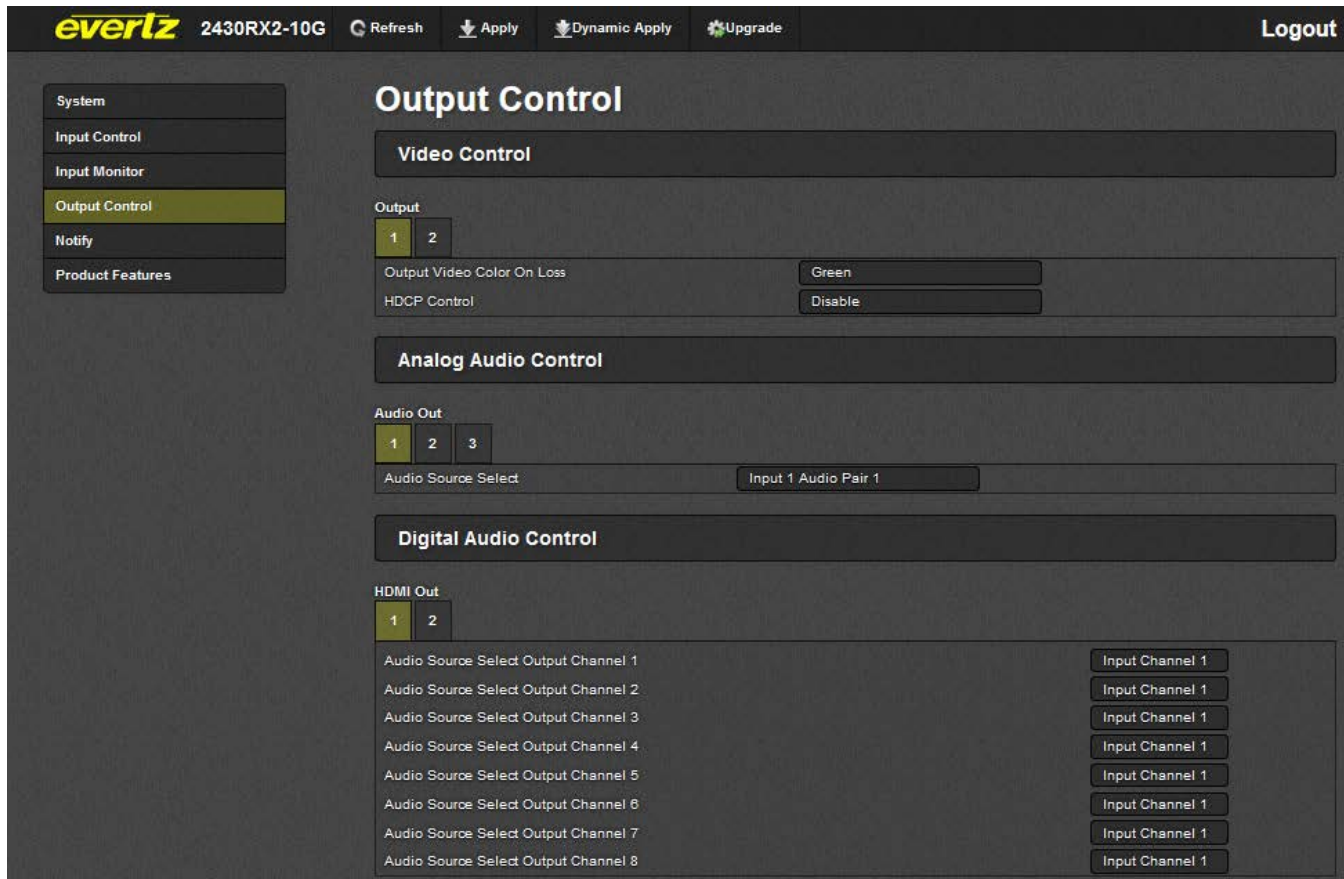


Figure 4-5: Output Control Page

Video Control

For both the video outputs the following controls can be configured.

Output Video Color On Loss: This control allows user to select the output video color that will be sent on output when the input stream is missing. The possible video colours are black, green or freeze.

HDCP Control: This control allows the user to turn on or off the HDCP.

Analog Audio Control

This control allows user to route input audio to any three discreet 1/8" (3.5mm) unbalanced stereo analog outputs provided

Audio Source Select: This control allows the user to select a desired audio pair to each of the 3 analog 1/8"(3.5mm) unbalanced stereo outputs provided.

Digital Audio Control

For each of the HDMI outputs, the following controls can be configured.

Audio Source Select Output Channel <1-8>: This control allows the user to select the input channel to use for the HDMI Digital audio output, the user can select for channel 1 to 16.

4.5. NOTIFY

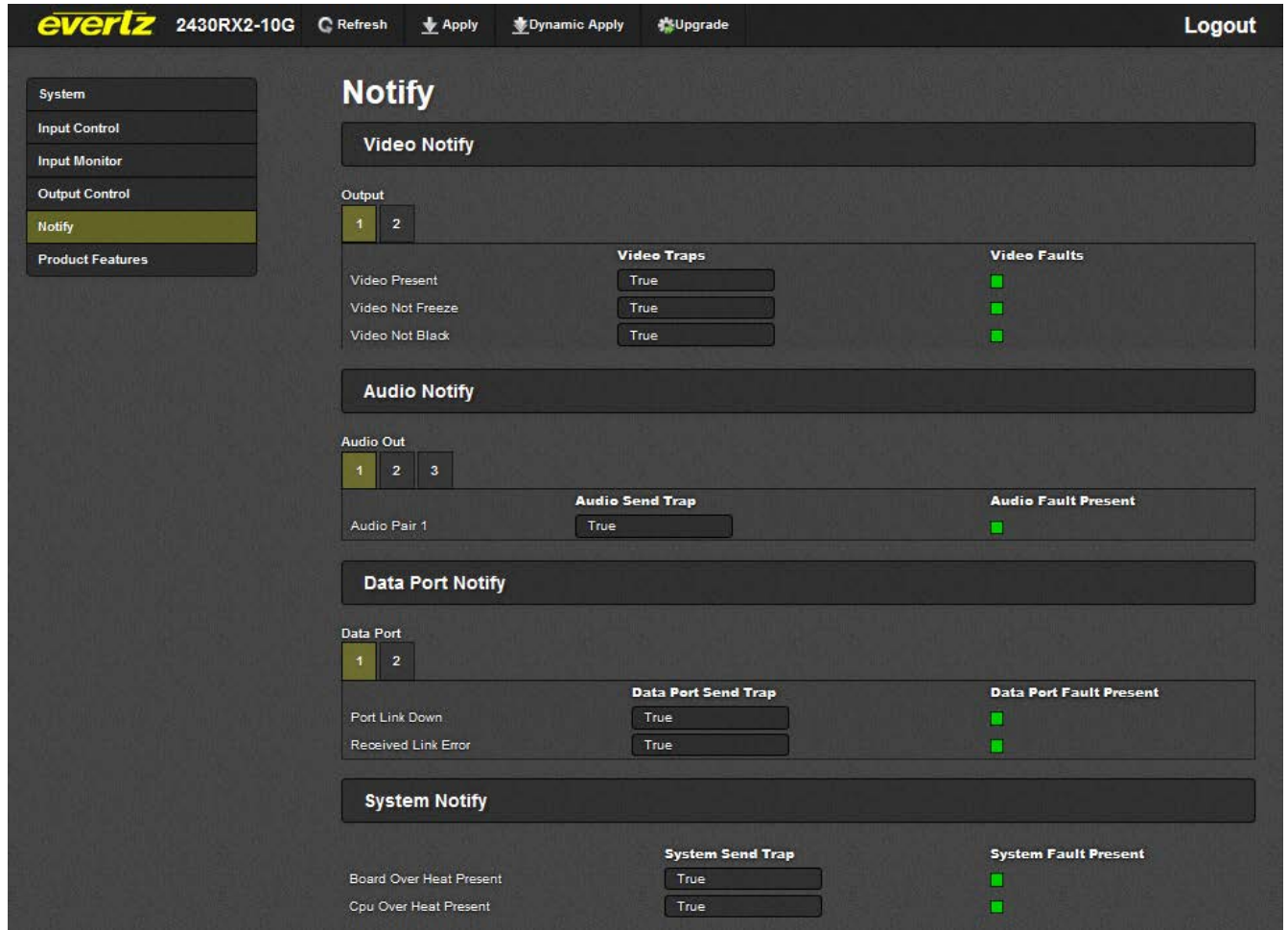


Figure 4-6: Notify page

Video Notify

Video Traps: This control is used to turn video traps on and off.

Video Faults: This control checks whether a video fault is currently present.

Audio Notify

Audio Send Trap: This control is used to turn audio traps on and off.

Audio Fault Present: This control checks whether an audio fault is currently present.

Data Port Notify

Data Port Send Trap: This control is used to turn input traps on and off.

Data Port Fault Present: This control checks whether a input fault is currently present.

System Notify

System Send Trap: This control is used to turn system overheat traps on and off.

System Fault Present: This control checks whether a system overheat fault is currently present.

4.6. PRODUCT FEATURES

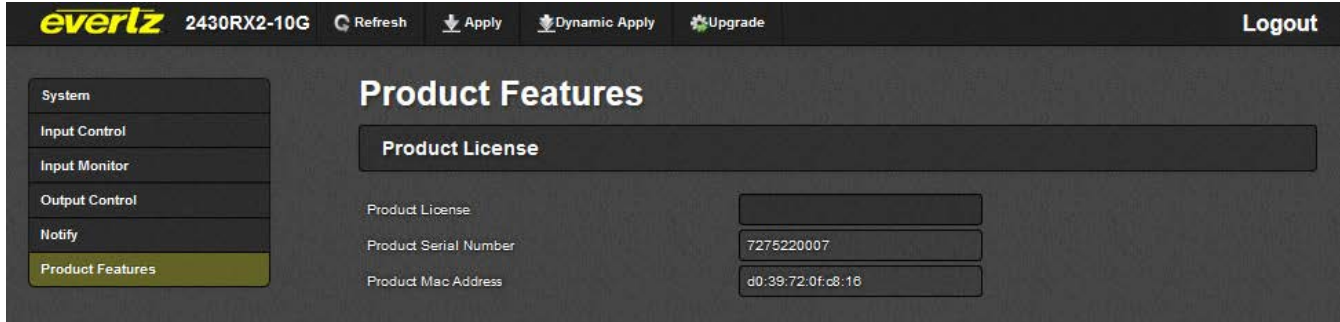


Figure 4-7: Product Features page

Product License

Product License: This field specifies the product license key.

Product Serial Number: This field displays the card serial number, same as the card MIB control. This is needed for the webpage.

Product Mac Address: This field displays the card MAC address.

5. UPGRADE PROCEDURE

5.1. WEB INTERFACE UPGRADE

On the top of the web page for the 2430RX2-10G, there is a tab labeled **Upgrade**. Select this tab and ensure that the latest firmware is running on the 2430RX2-10G card. If it is not upgrade the firmware using the latest .binary (.bin) files which can be found on the Evertz website. Select **Browse** and locate the binary (.bin) file on the computer. Then select **Upgrade**, when the upgrade is complete the 2430RX2-10G will Reboot to apply the firmware upgrades. Upgrade may take several minutes to complete.

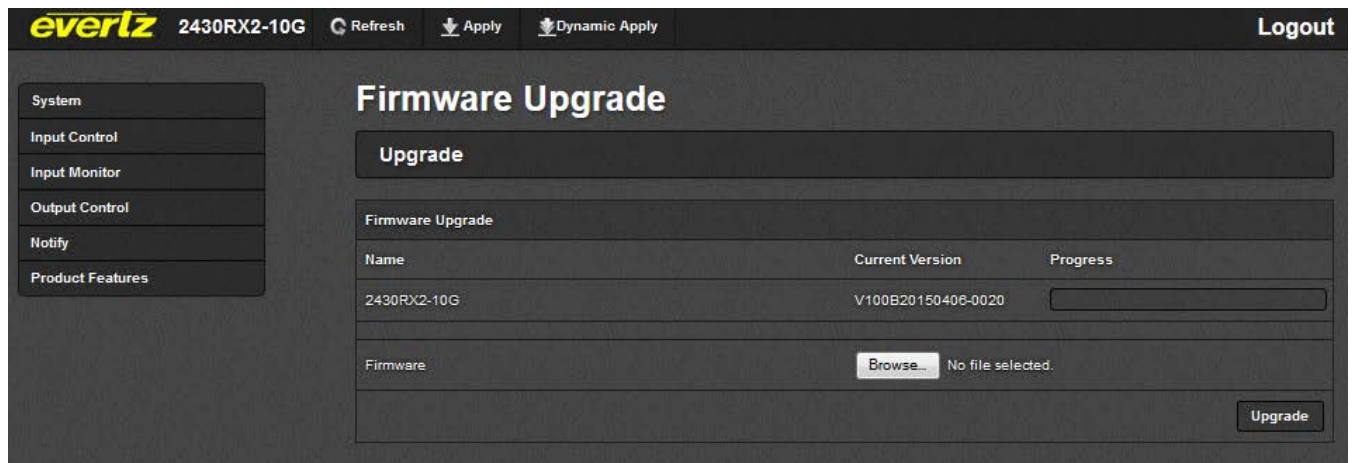


Figure 5-1: WEB GUI Upgrade

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