570J2K-HW-X19
Multi Channel J2K Encoder-Decoder

User Manual

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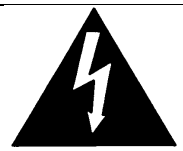
IMPORTANT SAFETY INSTRUCTIONS

	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

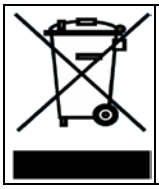
NOTE

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.

CE

EN60065	Safety
EN55103-1: 1996	Emission
EN55103-2: 1996	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.

TABLE OF CONTENTS

1. OVERVIEW 1

2. GETTING STARTED 3

2.1. REAR PLATE 4

2.2. CARE AND HANDLING OF OPTICAL FIBER 4

2.3. HARDWARE INSTALLATION 5

2.4.1 CONNECTION VIA FC PROXY 5

3. SPECIFICATIONS 7

3.1. SERIAL DIGITAL VIDEO 7

3.2. SERIAL VIEDO INPUTS 7

3.3. IP INPUT 7

3.4. SERIAL VIDEO OUTPUT 7

3.5. IP OUTPUT 7

3.6. EMBEDDING OF HANC & VANC 7

3.7. ELECTRICAL 7

3.8. PHYSICAL 7

3.9. ENCLOSURES 8

3.10. ORDERING INFORMATION 8

4. 570J2K-HW-X19 APPLICATION BASED FIRMWARE 9

5. 570J2K-HW-X19 APP A "ENCODER" WEB INTERFACE 11

5.1. SYSTEM 13

5.1.1. System 13
5.1.2. Control Port Configuration 13
5.1.3. Data Port Configuration 13
5.1.4. Data Port Monitor 14
5.1.5. Temperature Monitor 15
5.1.6. Card Control 15

5.2. PRODUCT FEATURES 16

5.2.1. License Control 16
5.2.2. Product Features Supported 16

5.3. SDI INPUT CONTROL 17

5.3.1. Input Status 17

5.4. IP OUTPUT CONTROL 18

5.4.1. Configuration 18
5.4.2. IP Output Control 18
5.4.3. IP Output Advanced Control 19

5.5. IP INPUT CONTROL 19
5.5.1. Input Control 20
5.5.2. Input Port Control 20
5.5.3. Input SFP Port Selection 20
5.5.4. IP Input Advanced Control 21
5.5.5. ARP Control 21

5.6. ENCODER CONTROL 21
5.6.1. Encoder Configuration 21
5.6.2. Encoder Audio Output Control 22
5.6.3. Program Description Control 23
5.6.4. Compliance 23
5.6.5. Encoder Control 23

5.7. IP INPUT MONITOR 24
5.7.1. Input Stream 24
5.7.2. Input IP Packet Monitor 24

5.8. SYSTEM NOTIFY 25
5.8.1. System Monitoring Control 25
5.8.2. System Notify 25

5.9. INPUT NOTIFY 26
5.9.1. Encoder Input Notification 26

6. 570J2K-HW-X19 APP B "DECODER" WEB INTERFACE 27

6.1. SYSTEM 29
6.1.1. System 29
6.1.2. Control Port Configuration 29
6.1.3. Data Port Configuration 29
6.1.4. Data Port Monitor 30
6.1.5. Temperature Monitor: 31
6.1.6. Card Control 31

6.2. PRODUCT FEATURES 32
6.2.1. License Control 32
6.2.2. Product Features Supported 32

6.3. SDI INPUT CONTROL 33
6.3.1. Input Status 33

6.4. SDI OUTPUT CONTROL 34
6.4.1. Output Control 34
6.4.2. Genlock 34
6.4.3. Phase Adjustment 35

6.5. IP OUTPUT CONTROL 35
6.5.1. Configuration 36
6.5.2. IP Output Control 36
6.5.3. IP Output Advanced Control 36

6.6. IP INPUT CONTROL 36
6.6.1. Input Control 37
6.6.2. Input Port Control 37
6.6.3. Input SFP Port Selection 38
6.6.4. IP Input Advanced Control 38

6.6.5. ARP Control....38

6.7. DECODER CONTROL....38
6.7.1. Rx Input Monitor....39
6.7.2. Decoder Input Program Control....39
6.7.3. Manual PID Control....40
6.7.4. MPPM Control....42

6.8. IP INPUT MONITOR....43
6.8.1. Input Stream....44
6.8.2. Input Stream Internal Decoder Core....44
6.8.3. Input IP Packet Monitor....44

6.9. DECODER PROGRAM MONITOR....45
6.9.1. Rx Program Monitor....45
6.9.2. Program Video Monitor....45

6.10. SYSTEM NOTIFY....46
6.10.1. System Monitoring Control....46
6.10.2. System Notify....46

6.11. DECODER NOTIFY....47

7. UPGRADE PROCEDURES....49

7.1. FIRMWARE UPGRADE....49

Figures

Figure 1-1 : 570J2K-HW-X19 Block Diagram 2
Figure 2-1 : 570J2K-HW-X19 Rear Plate and Front Plate Layout. 3
Figure 2-2 : 570FC Proxy Address 5
Figure 5-1 : WebEASY® - Login Menu 11
Figure 5-2 : 570J2K-HW-X19 Main Menu 12
Figure 5-3 : WebEASY® - System Tab (Part 1) 13
Figure 5-4 : WebEASY® - System Tab (Part 2) 14
Figure 5-5 : WebEASY® - System Tab (Part 3) 15
Figure 5-7 : WebEASY® - Product Features Tab 16
Figure 5-8 : WebEASY® - SDI Input Control Tab 17
Figure 5-9 : WebEASY® - IP Output Control Tab 18
Figure 5-10 : WebEASY® - IP Input Control Tab (Part 1) 19
Figure 5-11 : WebEASY® - IP Input Control Tab (Part 2) 20
Figure 5-12 : WebEASY® - Encoder Control Tab (Part 1) 21
Figure 5-13 : WebEASY® - Encoder Control tab (Part 2) 23
Figure 5-14 : WebEASY® - IP Input Monitor Tab 24
Figure 5-15 : WebEASY® - System Notify Tab 25
Figure 5-16 : WebEASY® - Input Notify tab 26
Figure 6-1 : WebEASY® - Login Menu 27
Figure 6-2 : 570J2K-HW-X19 Main Menu 28
Figure 6-3 : WebEASY® - System Tab (Part 1) 29
Figure 6-4 : WebEASY® - System Tab (Part 2) 30
Figure 6-5 : WebEASY® - System Tab (Part 3) 31
Figure 6-6 : WebEASY® - Product Features Tab 32
Figure 6-7 : WebEASY® - SDI Input Control Tab 33
Figure 6-8 : WebEASY® - SDI Output Control Tab 34
Figure 6-9 : WebEASY® - IP Output Control Tab 35
Figure 6-10 : WebEASY® - IP Input Control Tab 36
Figure 6-11 : WebEASY® - IP Input Control Tab Continued 37
Figure 6-12 : WebEASY® - Decoder Control Tab (Part 1) 38
Figure 6-13 : WebEASY® - Decoder Control Tab (Part 2) 41
Figure 6-14 : WebEASY® - Decoder Control Tab (Part 3) 42
Figure 6-15 : WebEASY® - IP Input Monitor Tab 43
Figure 6-16 : WebEASY® - Decoder Program Monitor Tab 45
Figure 6-17 : WebEASY® - System Notify Tab 46
Figure 6-18 : WebEASY® - Input Notify Tab 47
Figure 7-1 : WebEASY® - Upgrade Button on Top Menu Bar 49
Figure 7-2 : WebEASY® - Firmware Upgrade Menu 49
Figure 7-3 : WebEASY® - Firmware Upgrade Menu 50

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	Feb 2017

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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 570J2K-HW-X19 is the optimal multi channel J2K encoding and decoding platform.

With direct conversion of up to 12 signals to direct mezzanine compression via JPEG2000, the 570J2K-HW-X19 series delivers unparallel processing density. Equipped with Advanced Encryption Standard (AES 128), the 570J2K-HW-X19 provides industry leading encryption.

The exceptional density of the 570J2K-HW-X19 supports up to 12 channels of 3G, HD/SDI, SD/SDI or up to 3 channels of UHD JPEG2000 encoding. The 570J2K-HW-X19 will support up to 9 channels of 3G, HD/SDI, SD/SDI JPEG2000 or 2 channels of UHD JPEG2000 decoding.

The 570J2K-HW-X19 features Evertz 4th generation ultra low latency, high density JPEG2000 codec technology over multiple 10G or user configurable 1GE Ethernet.

The 570J2K-HW-X19 will provide auto-timing time stamped Ethernet outputs, multi-resolution JPEG2000 streaming outputs and incorporates patent pending multi-path, multi-flow packet merge base network bit error resilience for 100% QoS.

The 570J2K-HW-X19 can be managed via integrated HTTP web interfaces as well as SNMP management via Frame Controller.

Features & Benefits

- Up to 12x3G/HD/SD or 3xUHD JPEG2000 Encodes
- Up to 9x3G/HD/SD or 2xUHD JPEG2000 Decodes
- Standards supported: 3480x2160p/59.94, 3480x2160p/50, 1080p/59.94, 1080p/50, 1080i/59.94, 1080i/50, 720p/59.94, 720p/50, 525i/59.94 and 625i/50

Mezzanine Encode Processing and encapsulation over IP:

- Video JPEG2000 encoded to native resolution
- 4x groups of audio encapsulation
- Full VANC encapsulation & passthrough

Mezzanine Decode Processing

- Video JPEG2000 decode from native resolution
- 4x groups of audio de-capsulated
- Full VANC de-encapsulation and embedding on SDI outputs

Control and Baseband Processing

- Modules support over frame controller or direct Ethernet interface
- SNMP control from Vistalink or Magnum Unified Control

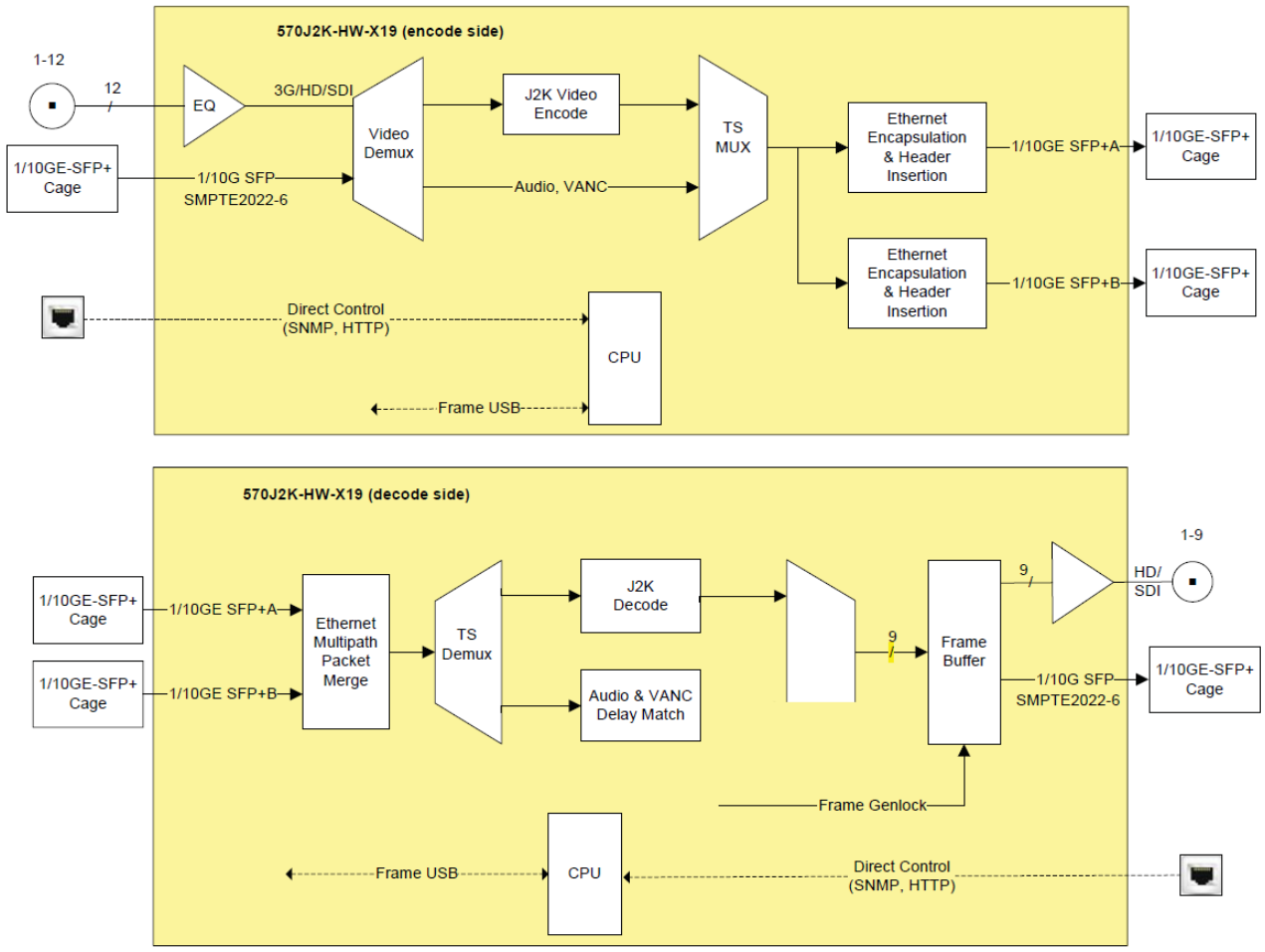

Figure 1-1 : 570J2K-HW-X19 Block Diagram

2. GETTING STARTED

The 570J2K-HW-X19 modules come with a companion rear plate and occupy two slots in 570FR. Refer to Figure 2-1 for 570J2K-HW-X19 Rear and Front plate layout.

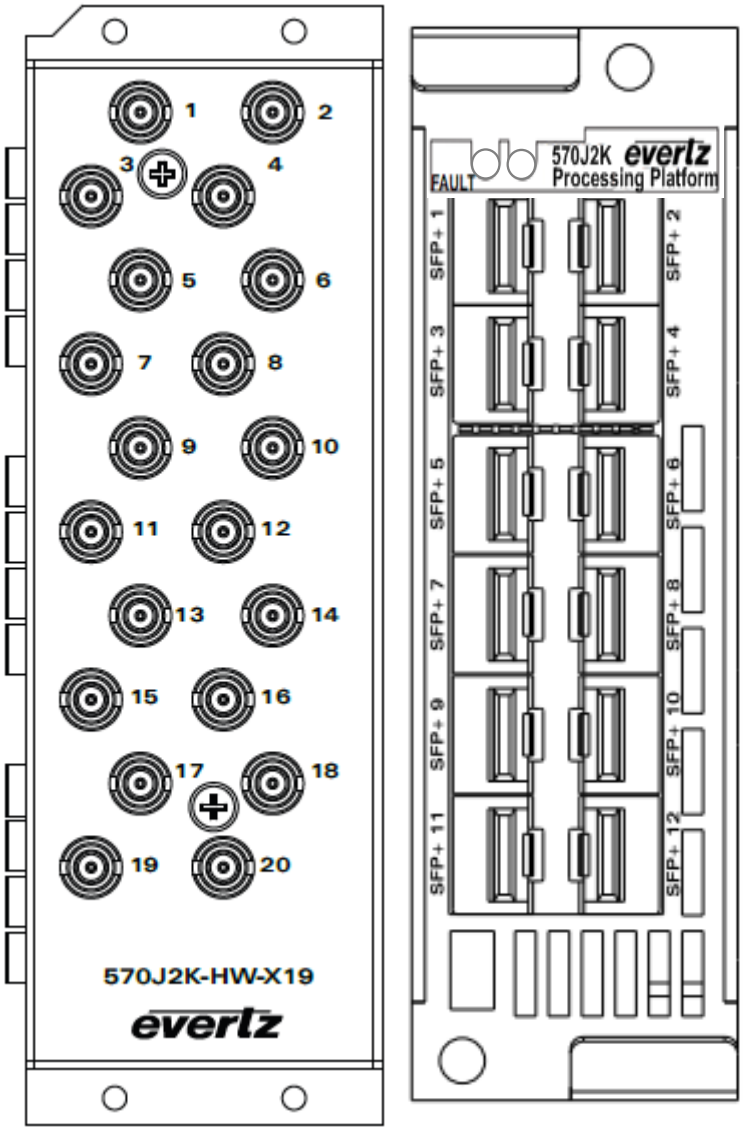

Figure 2-1 : 570J2K-HW-X19 Rear Plate and Front Plate Layout.

2.1. REAR PLATE

The rear plate of 570J2K-HW-X19 is equipped with 20 Mini-Din connectors. When using the module as an encoder, mini dins 1-12 are used for the encoder input sources.
When 570J2K-HW-X19 is being used as a decoder, mini din 1-9 are used for decoder SDI outputs.

The front plate of 570J2K-HW-X19 has 12 available SFP slots. These SFP slots can be populated with SFP10G-TR13-A. This will allow 10G interface to the 570J2K-HW-X19 Encoder and Decoder. Note that up to 4 x 10G interfaces or 4 X SFP10G-TR13-A are supported.

2.2. CARE AND HANDLING OF OPTICAL FIBER

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 the user maintains 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.

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.

2.3. HARDWARE INSTALLATION

To successfully install the 570J2K-HW-X19, the following is required:

1. 570 Series Frame
2. 570 Frame Controller
3. WebEASY® using the 570FC frame controller with 570J2K-HW-X19 installed in frame.

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 2 adjacent vacant slots. Unpack the 570J2K-HW-X19 and separate the rear panel from the main card. Locate on the rear of the rack the two slots and remove the blanking panels. Insert the rear panel into the back of the chassis and secure using the four screws provided.

Now insert the 570J2K-HW-X19 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. Do not connect any cables to the rear card (failure to do this could cause unwanted network issues) until the initial configuration has been completed.

This procedure can be completed to all the other modules and is hot swappable allowing for the frame to be powered on while installing.

2.4.1 CONNECTION VIA FC PROXY

The control of the 570J2K-HW-X19 can be done through FC Proxy. To configure a FC Proxy address for the 570J2K-HW-X19, log into the 570FC webpage using “root” and “evertz” for the username and password respectively. Navigate to the slot that houses the 570J2K-HW-X19 and enable the Proxy Mode Address. Configure the Address, Netmask and Gateway for the required Control Connection. Note the Proxy address must be configured for the second slot that 570J2K-HW-X19 occupies (i.e. if it is placed in slot 2 and 3, configure proxy address for slot 3).

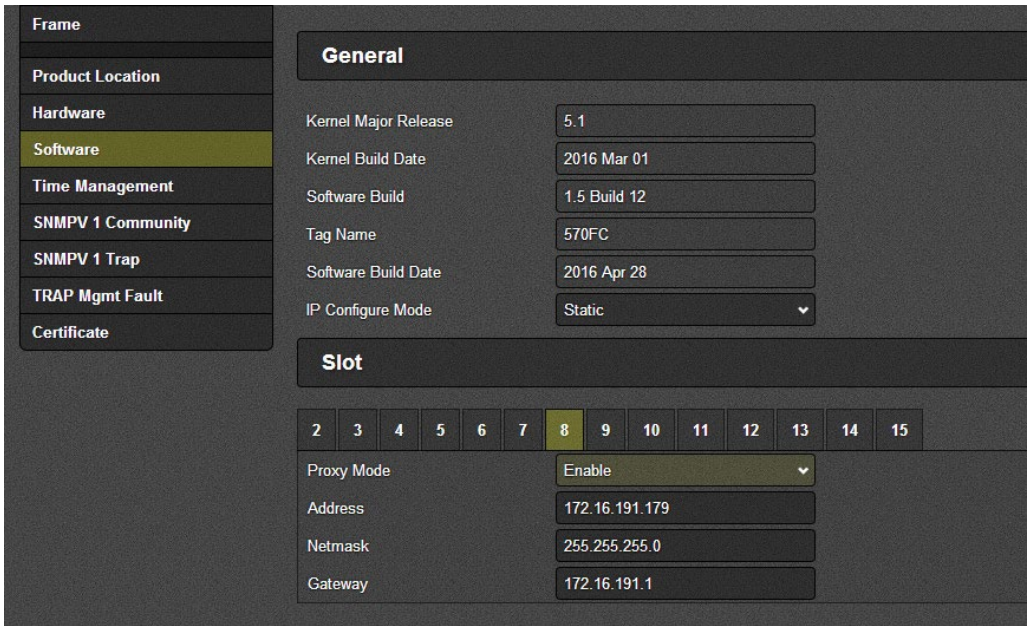

Figure 2-2 : 570FC Proxy Address

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3. SPECIFICATIONS

3.1. SERIAL DIGITAL VIDEO

Standards:

- SMPTE 424M (3Gb/s)
- SMPTE 292M (1.5Gb/s)
- SMPTE 259M (270Mb/s)
- SMPTE 2022-6

3.2. SERIAL VIEDO INPUTS

Number of Inputs:	12 SDI
Connector	DIN

3.3. IP INPUT

Number of Inputs	12 SDI over 4 x 10G input interfaces
Connector	4 x SFP10G-TR13-A

3.4. SERIAL VIDEO OUTPUT

Number of Outputs	9 SDI
Rise and Fall Time	Per SMPTE spec

3.5. IP OUTPUT

Ethernet Interface	4 x 1GE/10GE SFP/SFP+ SMPTE 2022-6
Encapsulation	MPEG2 TS over IP
Ethernet/IP Signalling	Multicast IGMP V2/V3 (SSM Support)

3.6. EMBEDDING OF HANC & VANC

- 4x Groups Audio Pass through per encoder
- All type of VANC data pass through

3.7. ELECTRICAL

Power	90W
Voltage	12VDC
EMI/RFI	Complies with FCC Part 15, Class AEU EMC directive

3.8. PHYSICAL

Number of slots: 2

3.9. ENCLOSURES

570FR	3RU chassis
S570FR	1RU chassis

3.10. ORDERING INFORMATION

570J2K-HW-X19 Enhanced logic capacity 570FR hardware module acting as a bulk J2K encoder/decoder (encoder licenses sold separately), 12 J2K Encodes/ 9 J2K Decodes and up to 4x10GE interfaces using SFP+ cages (SFPs sold separately)

Ordering Options:

SFP Modules:

- SFP10G-TR13-A 10GE optical SFP+

Licensing Options:

- **570IPG-X19-CK-J2KP60** 3G/HD/SD JPEG 2000 Encoder or Decoder license for 570IPG- HW-X19

4. 570J2K-HW-X19 APPLICATION BASED FIRMWARE

The 570J2K-HW-X19 can be loaded with two different application based firmware builds. App A is the encoder application that will allow the 570J2K-HW-X19 to function as an encoder, supporting up to 12 J2K encodes. App B is the decoder application that will allow the 570J2K-HW-X19 to function as a decoder, supporting up to 9 J2K decodes. The manual will first focus on App A related controls and configurations. It will then proceed with APP B related controls and configurations.

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5. 570J2K-HW-X19 APP A "ENCODER" WEB INTERFACE

The 570J2K-HW-X19 series of products are controlled using Web Interface. WebEasy operates using Ethernet and SNMP control protocols.

Login

After the card has been installed and configured with the required network addresses, it can be completely configured using the web interface. For doing this, simply type the IP address of the control port of the 570J2K-HW-X19 module in the web browser.

Note: Computer must be on the same Subnet in order to have communication with the module.

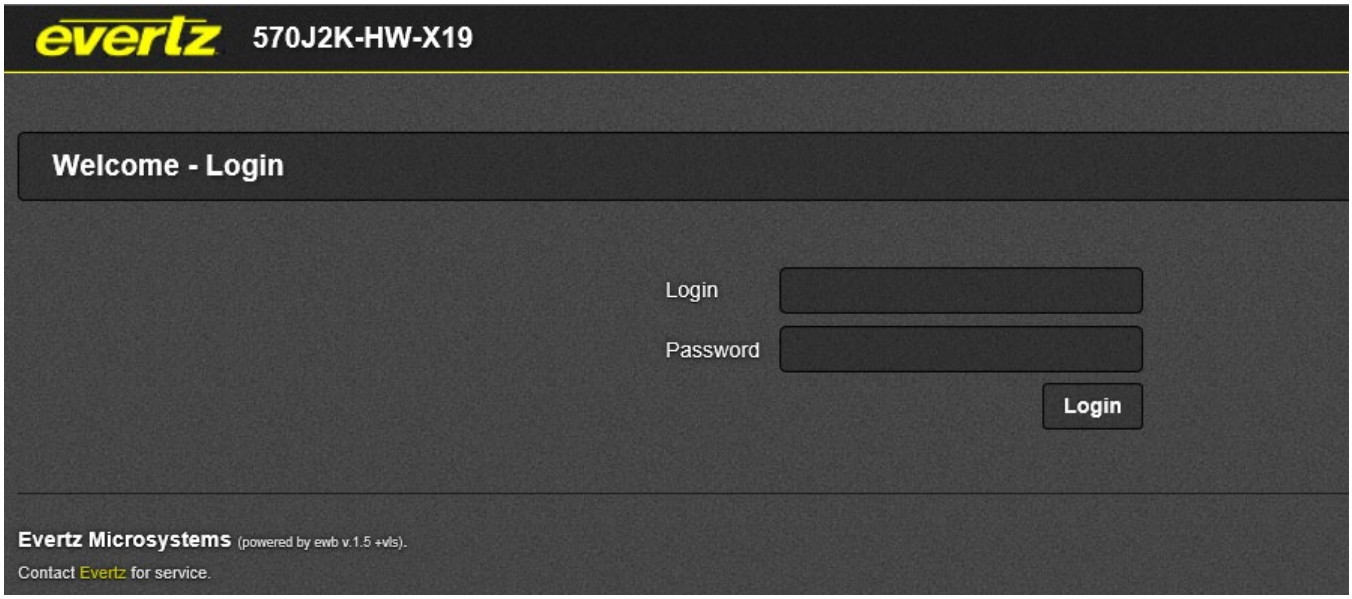

Figure 5-1 : WebEASY® - Login Menu

Login and password is "root" and "evertz" respectively.

On the web interface there are several different types of menus highlighted in Figure 5-2.

Figure 5-2 : 570J2K-HW-X19 Main Menu

5.1. SYSTEM

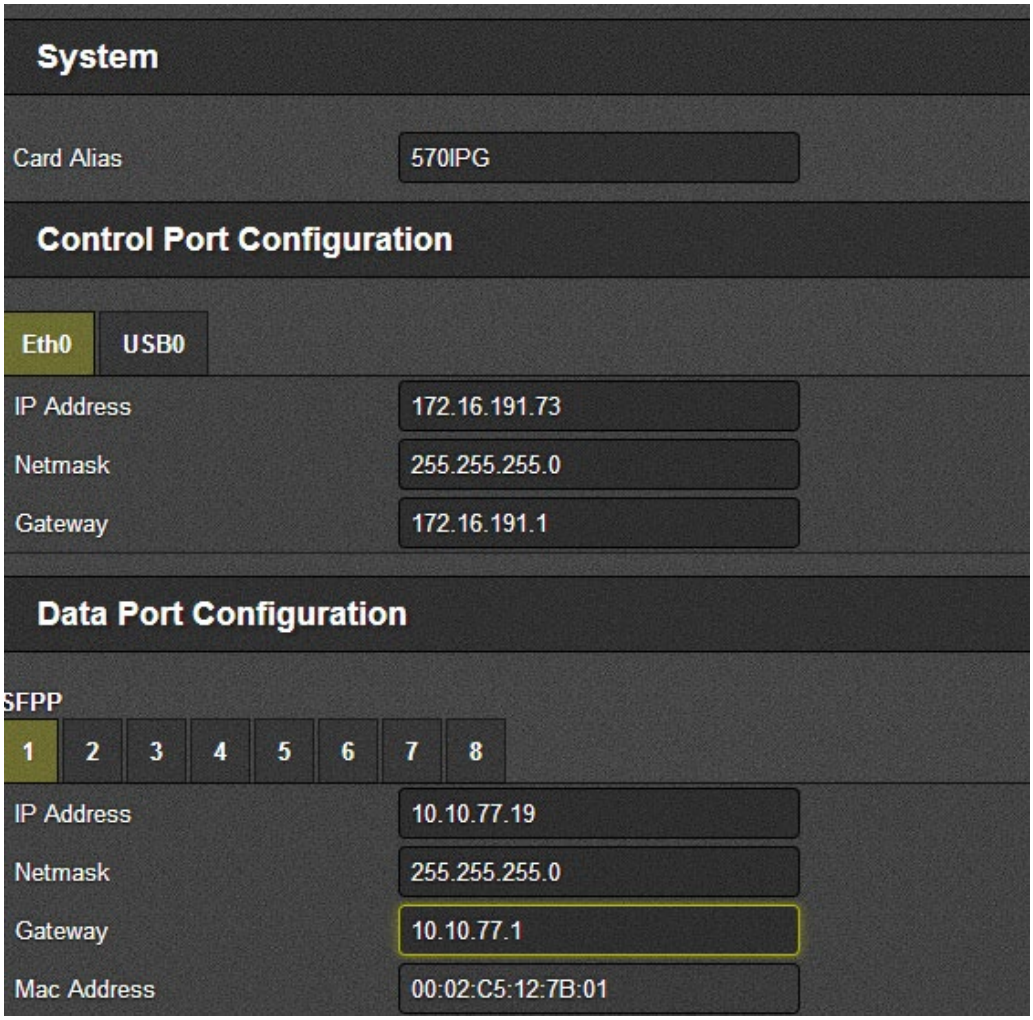

Figure 5-3 : WebEASY® - System Tab (Part 1)

5.1.1. System

Card Alias: This control returns the card alias string.

5.1.2. Control Port Configuration

IP Address: This Parameter allows the user to set the IP address for control port.

Netmask: This Parameter allows the user to set the Netmask for control port.

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

Please note the control port is only used when the 570J2K-HW-X19 is used in the S570FR.

5.1.3. Data Port Configuration

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

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

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

Mac Address: This parameter reflects the MAC Address of the data port.

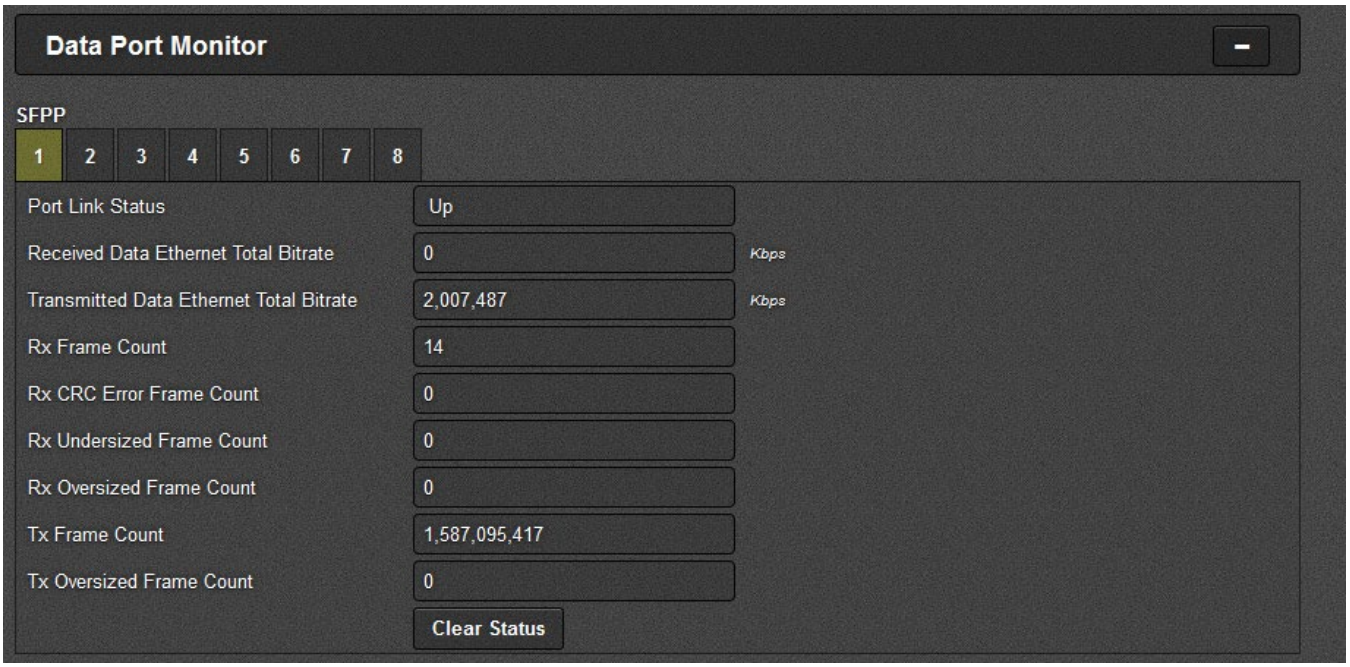

Figure 5-4 : WebEASY® - System Tab (Part 2)

5.1.4. Data Port Monitor

Port Link Status: This parameter returns the link status for Data port.

Received Data Ethernet Total Bitrate: This parameter displays the Total bitrate received on this Data port in kbps.

Transmitted Data Ethernet Total Bitrate: This parameter displays the Total bitrate transmitted on this output Data port in kbps.

Rx Frame Count: This parameter displays the received Rx frames on this Ethernet port.

Rx CRC Error Frame Count: This parameter displays the received Rx frames with CRC errors on this Ethernet port.

Rx Undersized Frame Count: This parameter displays the received Rx undersized frames on this Ethernet port.

Rx Oversized Frame Count: This parameter displays the received Rx oversized frames on this Ethernet port.

Tx Frame Count: This parameter displays the received Tx frames on this Ethernet port.

Tx Oversized Frame Count: This parameter displays the received Tx oversized frames on this Ethernet ports.

Clear Status: This button allows the user to reset the Ethernet monitor statistics.

Figure 5-5 : WebEASY® - System Tab (Part 3)

5.1.5. Temperature Monitor

Temperature: This field monitors the current temperature of module.

5.1.6. Card Control

Load Factory Config: This control is used to load factory configuration to each encoder.

Reboot Card: This control allows the user to perform a soft reboot on the encoder.

5.2. PRODUCT FEATURES

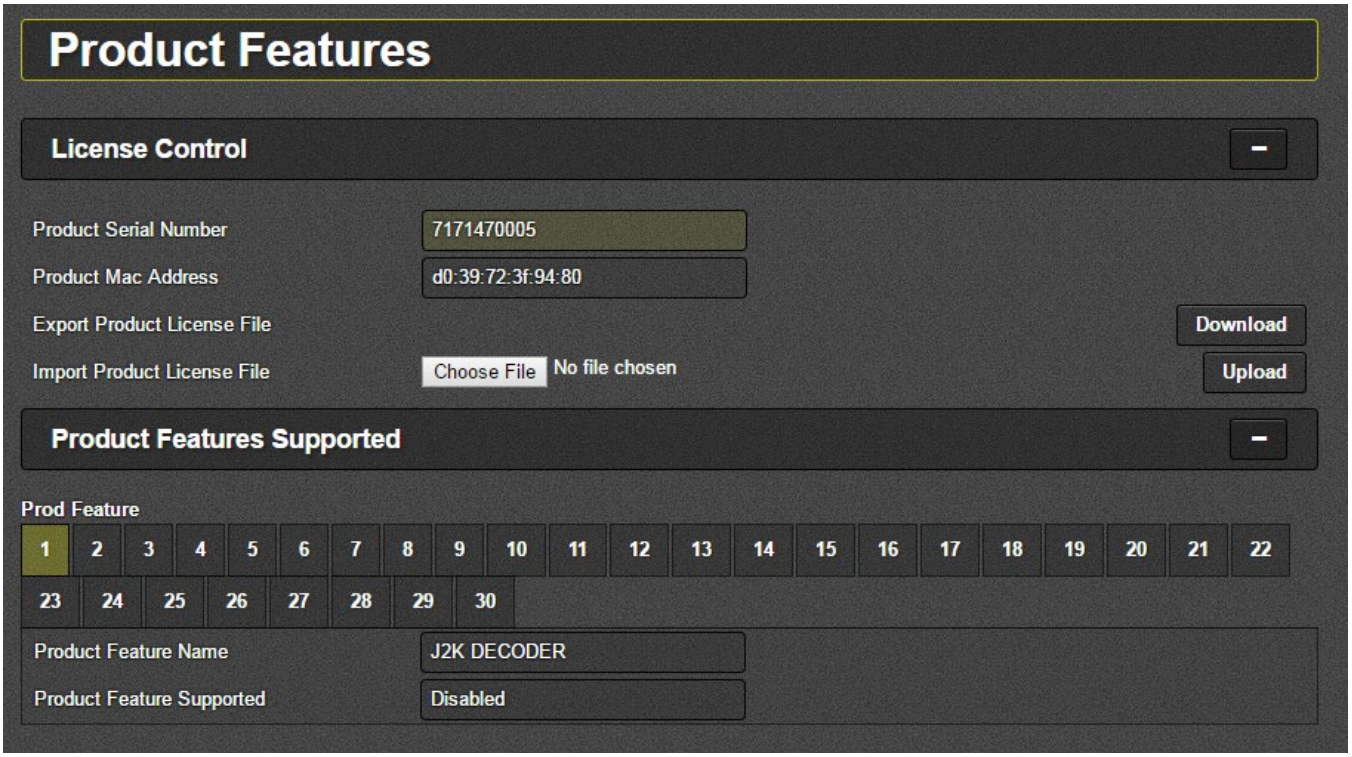

Figure 5-6 : WebEASY® - Product Features Tab

5.2.1. License Control

A product license channel key can be provided to enable J2K encode/decode functionality. It is applied using this control and unlocks feature functionality.

Product Serial Number: This parameter displays the card's serial number.

Product Mac Address: This parameter displays the control port MAC address.

Export Product License File: This parameter exports the product license key file.

Import Product License File: This parameter allows the user to upload the product license file.

5.2.2. Product Features Supported

Product Feature Name: This parameter returns the product features supported on this card. It should display following feature names: J2K ENCODER, up to 12 encoders can be enabled. If the 570J2K-HW-X19 decoder is used, the feature name is: J2K DECODER and up to 9 decoders can be enabled.

Product Feature Supported: This parameter returns the product supported features status which can be enabled or disabled.

5.3. SDI INPUT CONTROL

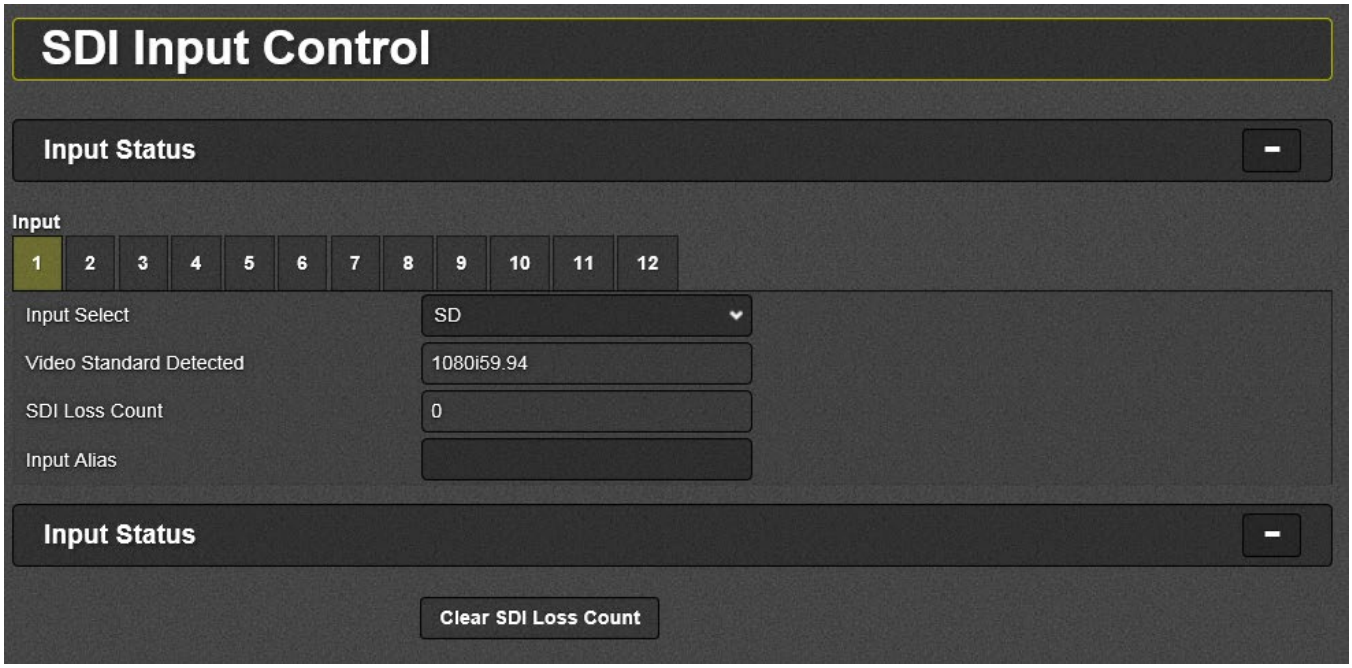

Figure 5-7 : WebEASY® - SDI Input Control Tab

5.3.1. Input Status

Input Select: This parameter configures the Max Link Rate for the specified channel path. It is used only when the channel paths are set for Encapsulation. The user can select the following modes SDI-SD, SDI-HD, 3G-SDI. When configured to SD the max encapsulation on the link can handle up to 270Mbps. If a HD input is provided, the signal will be clipped. If the Input select is configured to HD, the max encapsulation on the link can handle up to 1.5Gbps. If a 3G input is provided the signal will be clipped. When the input select is configured to 3G, the max encapsulation on the link can handle up to 3Gbps.

Video Standard Detected: This parameter displays the current video standard which is detected.

SDI Loss Count: This parameter displays the SDI loss counter.

Input Alias: This parameter displays the input alias.

Clear SDI Loss Count: This button allows the user to clear the SDI loss counter.

5.4. IP OUTPUT CONTROL

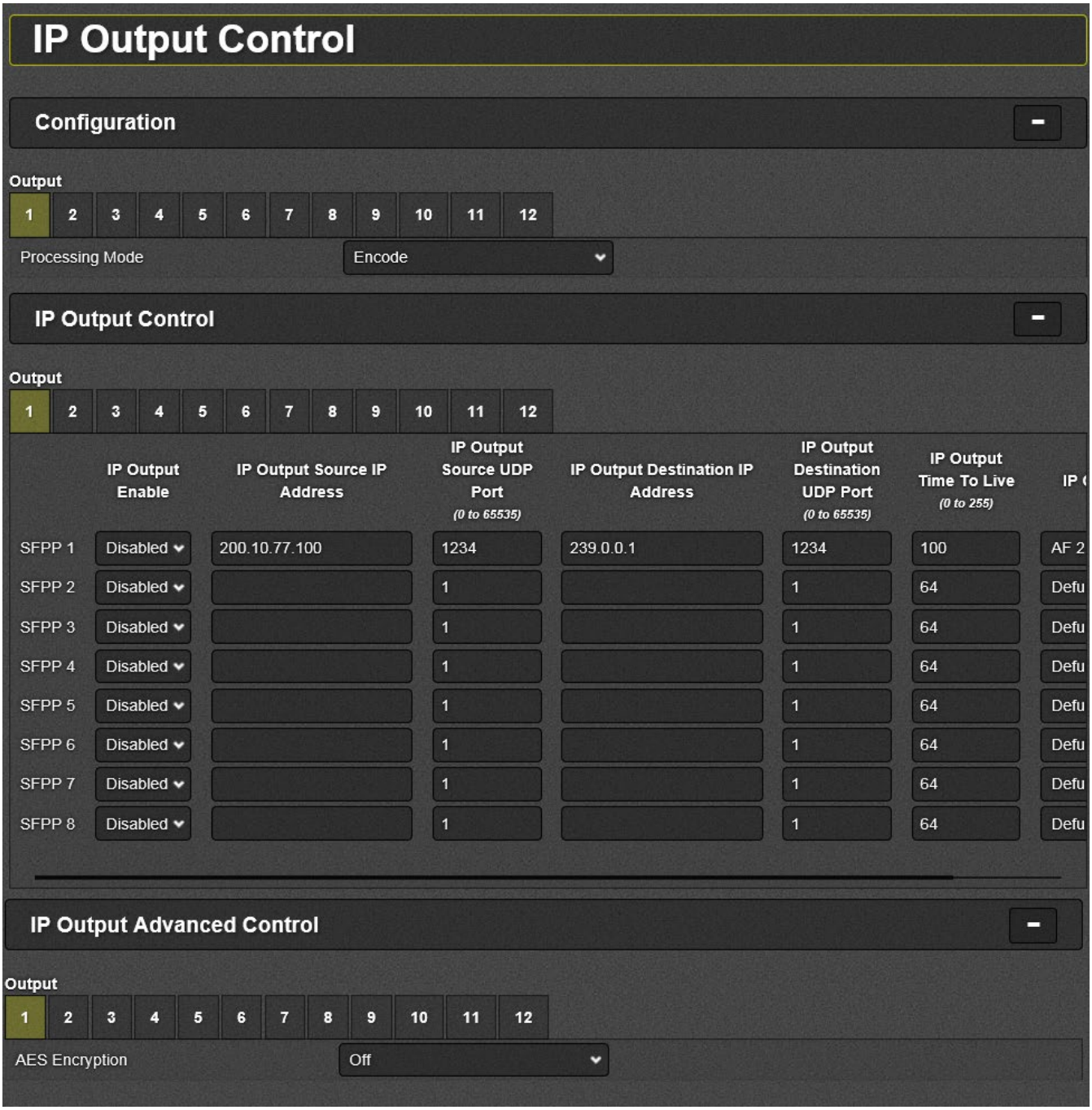

Figure 5-8 : WebEASY® - IP Output Control Tab

5.4.1. Configuration

Processing Mode: This dropdown menu allows the user to select the processing mode which can be Encode or Disable.

5.4.2. IP Output Control

IP Output Enable: This field allows the user to enable or disable the IP output. This control is configurable per SFP output port.

IP Output Source IP Address: This filed allows the user to define the output source IP address.

IP Output Source UDP Port: This field allows the user to define the output source UDP port number.

IP Output Destination IP Address: This parameter allows the user to define the destination IP address.

IP Output Destination UDP Port: This field allows the user to define the destination UDP port.

IP Output Time to Live: This field allows the user to define the output time to live.

IP Output DSCP: This field allows the user to define the output DSCP.

5.4.3. IP Output Advanced Control

AES Encryption: This control allows the user to control AES Encryption. The AES Encryption control allows the user to encrypt the encoded output or disable the AES Encryption on the encoder output.

5.5. IP INPUT CONTROL

The IP Input Control for the 570J2K-HW-X19 reflects the controls related to SMPTE 2022-6 Input IP configuration.

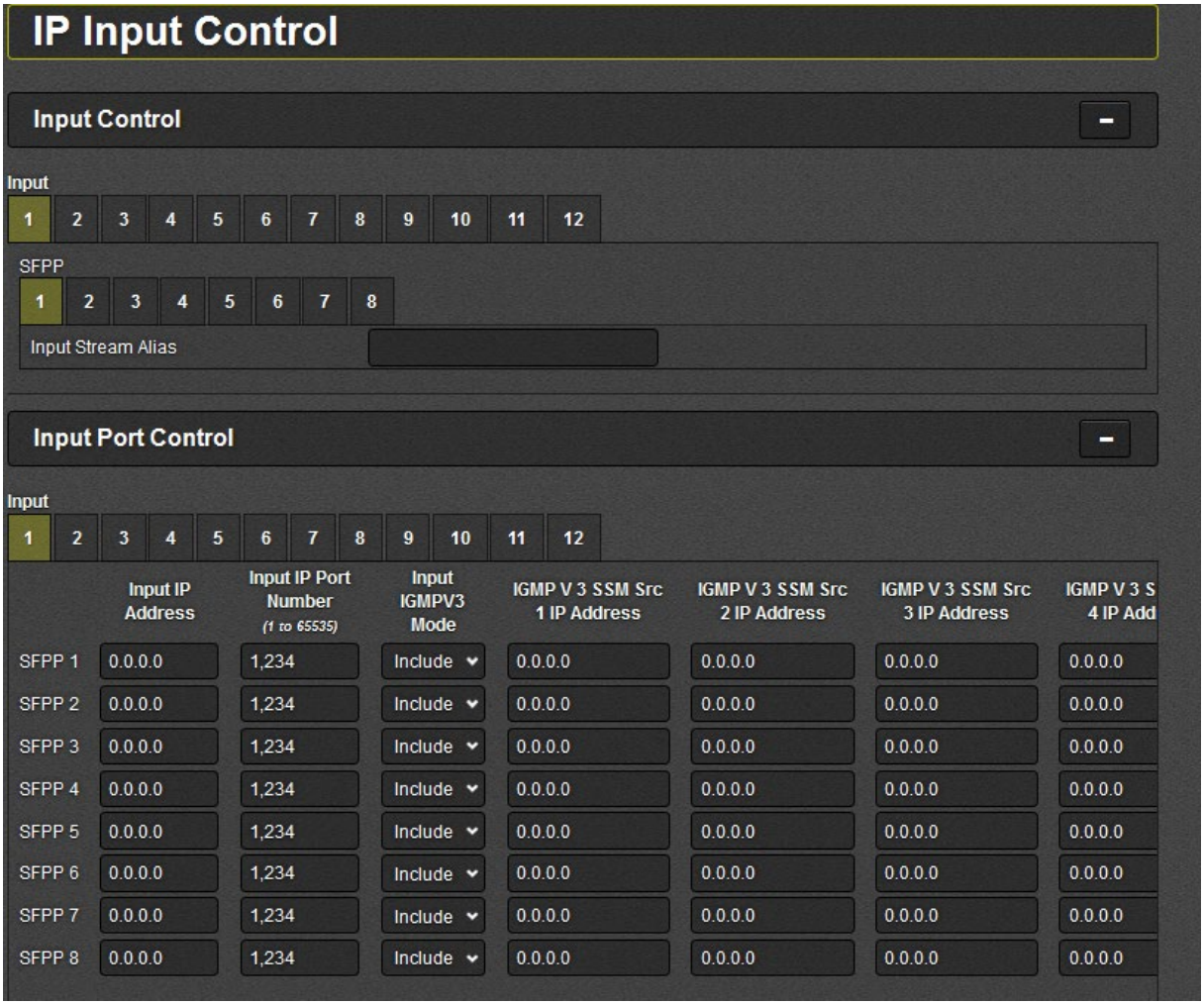

Figure 5-9 : WebEASY® - IP Input Control Tab (Part 1)

5.5.1. Input Control

Input Stream Alias: This field allows the user to define the input stream alias name.

5.5.2. Input Port Control

Input IP Address: This parameter allows the user to define input IP address / multicast address they want to receive.

Input IP Port Number: This parameter allows the user to select the input UDP port number.

Input IGMPV3 Mode: This parameter allows the user to include/exclude input configured SSM Sources.

IGMPV3 SSM Src <1-6> IP Address: This parameter allows the user to set IP addresses which will be used while forming the source filter "SSM sources" for IGMPV3 communications.

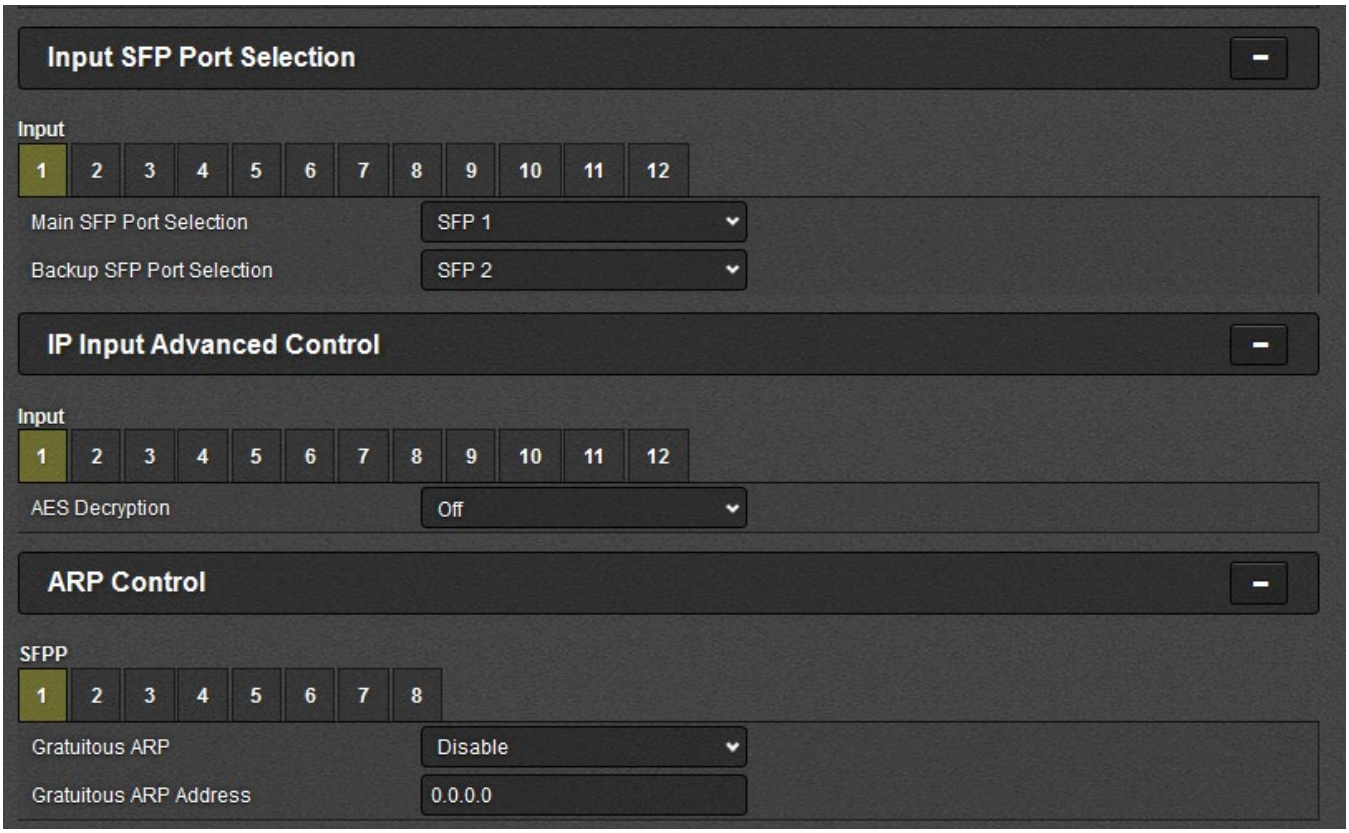

Figure 5-10 : WebEASY® - IP Input Control Tab (Part 2)

5.5.3. Input SFP Port Selection

Main SFP Port Selection: This dropdown menu allows the user to assign an Input Data Port as the Main Data Port. The main data port will accept traffic and provide it to the decoder core.

Backup SFP Port Selection: This dropdown menu allows the user to assign an Input Data Port as the Backup Data Port. The backup data port will accept traffic and provide it to the decoder core based on the fail over state and priority configuration.

5.5.4. IP Input Advanced Control

AES Decryption: Reserved for future use.

5.5.5. ARP Control

Gratuitous ARP: This dropdown menu allows the user to enable/disable the Gratuitous ARP.

Gratuitous ARP Address: This control allows the user to set the IP address used for Gratuitous ARP.

5.6. ENCODER CONTROL

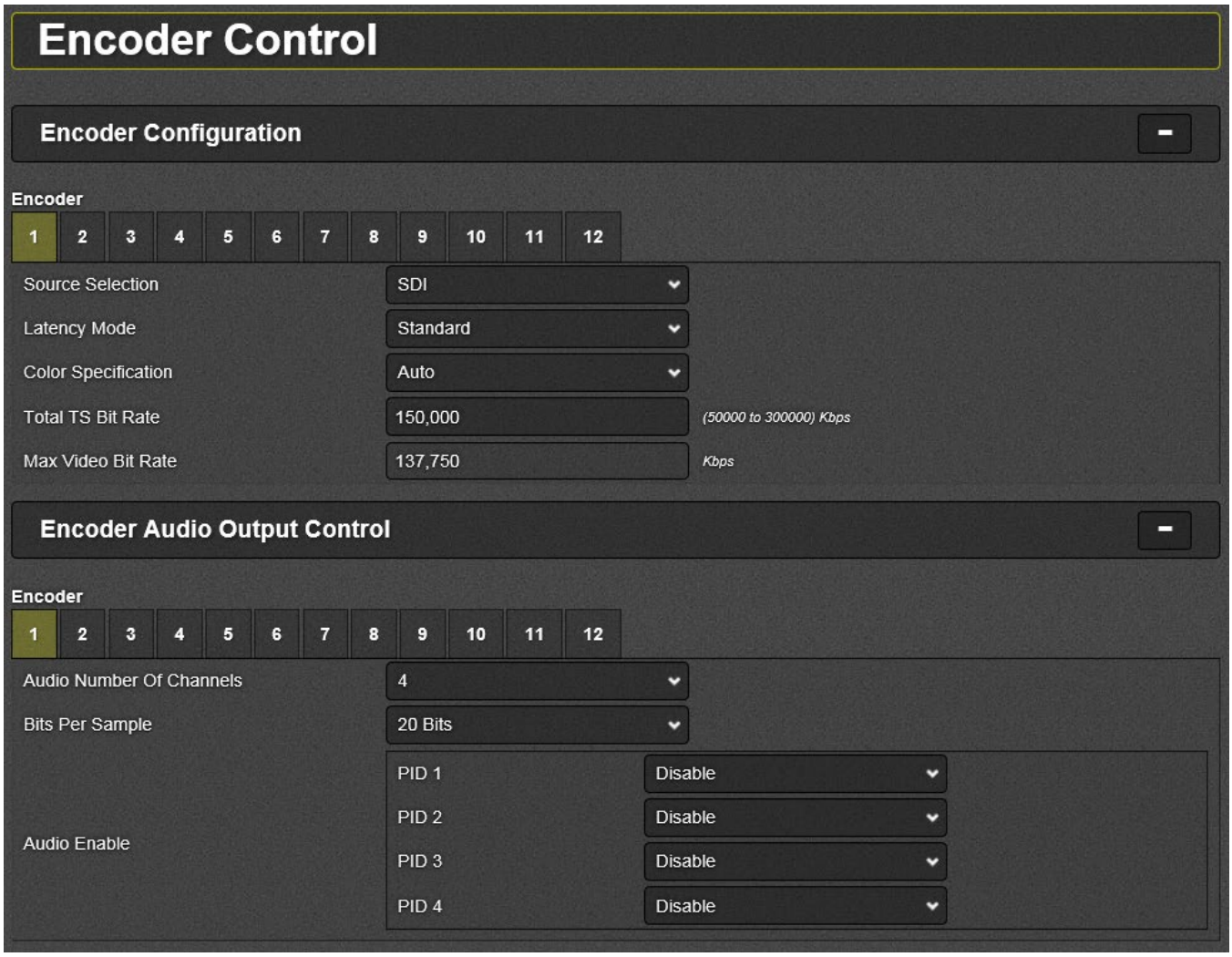

Figure 5-11 : WebEASY® - Encoder Control Tab (Part 1)

5.6.1. Encoder Configuration

Source Selection: This dropdown menu allows the user to select the source for encoder. Possible options are SDI or IP Input SMPTE 2022-6.

Latency Mode: This dropdown menu allows the user to select the latency mode which can be Standard or Ultra low.

Color Specification: This dropdown menu allows the user to specify the color space of the input video. The options include Auto and HDR10 “REC 2020 SMPTE 2084”. Auto will automatically look at the input source PMT if an ASPEN input is provided and confirm if the output encoded stream requires the PMT notification for HDR10. Forcing the mode to HDR10 will modify the PMT to reflect HDR10.

Total TS Bit Rate: This parameter allows the user to define the total TS bitrate in kbps.

Note: Card will adjust the bitrate for video and other pids based on these settings.

For Enc J2K the range is from 50000 to 300000kbps.

Max Video Bit Rate: This parameter reflects the maximum video bitrate used on the encoder.

5.6.2. Encoder Audio Output Control

Audio Number Of Channels: This control allows the user to define the number of channels for the audio. The options include 2 channels per pid or 4 channels per pid.

Bits Per Sample: This control allows the user to select the number of bits per samples. The options include 20 bits or 24 bits.

Audio Enable PID<1-4>: This control allows the user to enable/disable the audio PID.

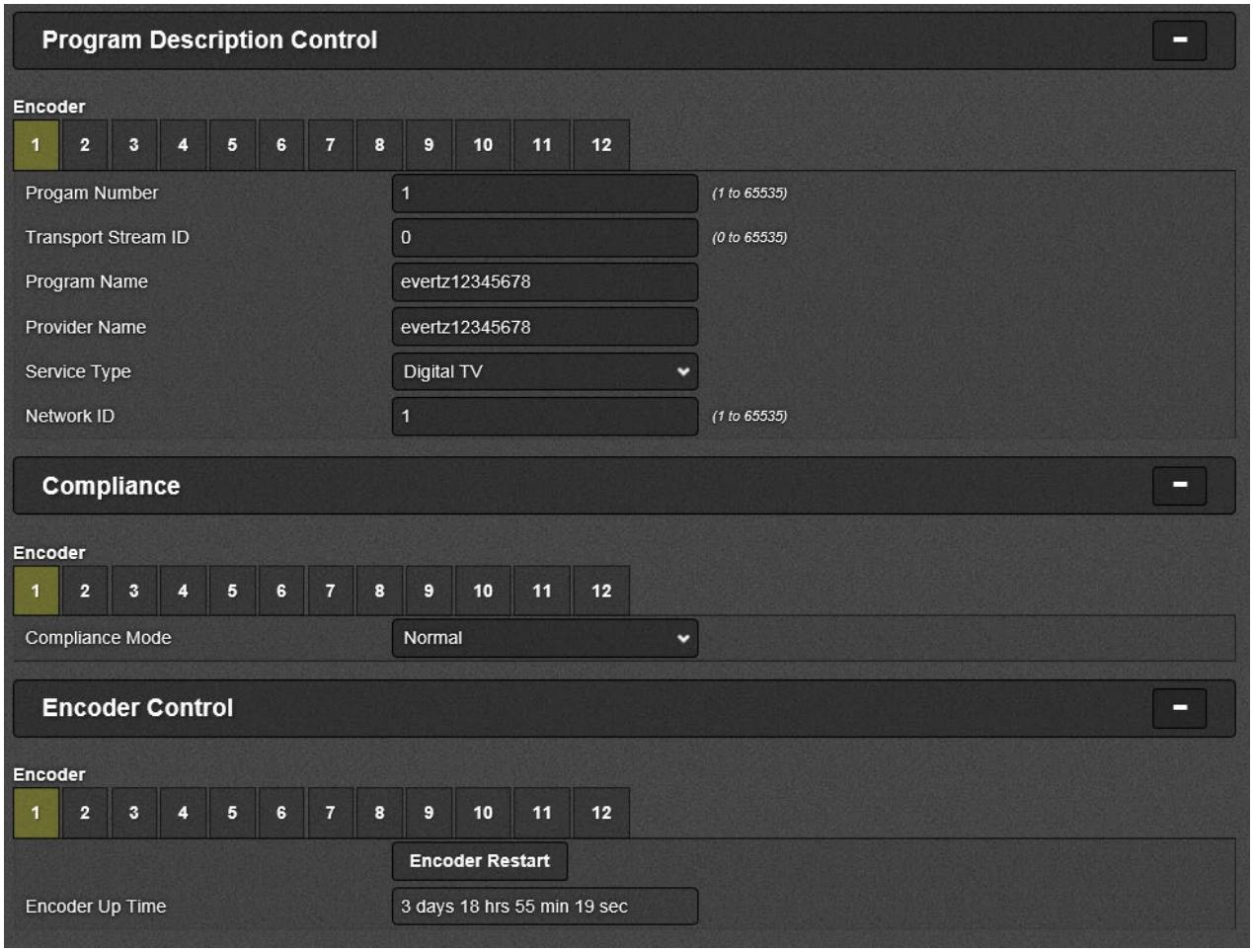

Figure 5-12 : WebEASY® - Encoder Control tab (Part 2)

5.6.3. Program Description Control

Program Number: This control allows the user to set the program number. The default value is 1.

Transport Stream ID: This control allows the user to set the transport stream ID of the stream.

Program Name: This control allows the user to define the program name.

Provider name: This control allows the user to define the provider name.

Service Type: This drop down menu allows the user to choose the service type.

Network ID: This parameter allows the user to set the network ID of origin.

5.6.4. Compliance

Compliance Mode: This dropdown menu allows the user to select the encoder compliance mode. The available options include Normal, TR01 and Evertz Legacy.

5.6.5. Encoder Control

Encoder Restart: This control allows the user to restart each individual encoder.

Encoder Up Time: This parameter displays the encoder up time, reflecting how long has the encoder been running for.

5.7. IP INPUT MONITOR

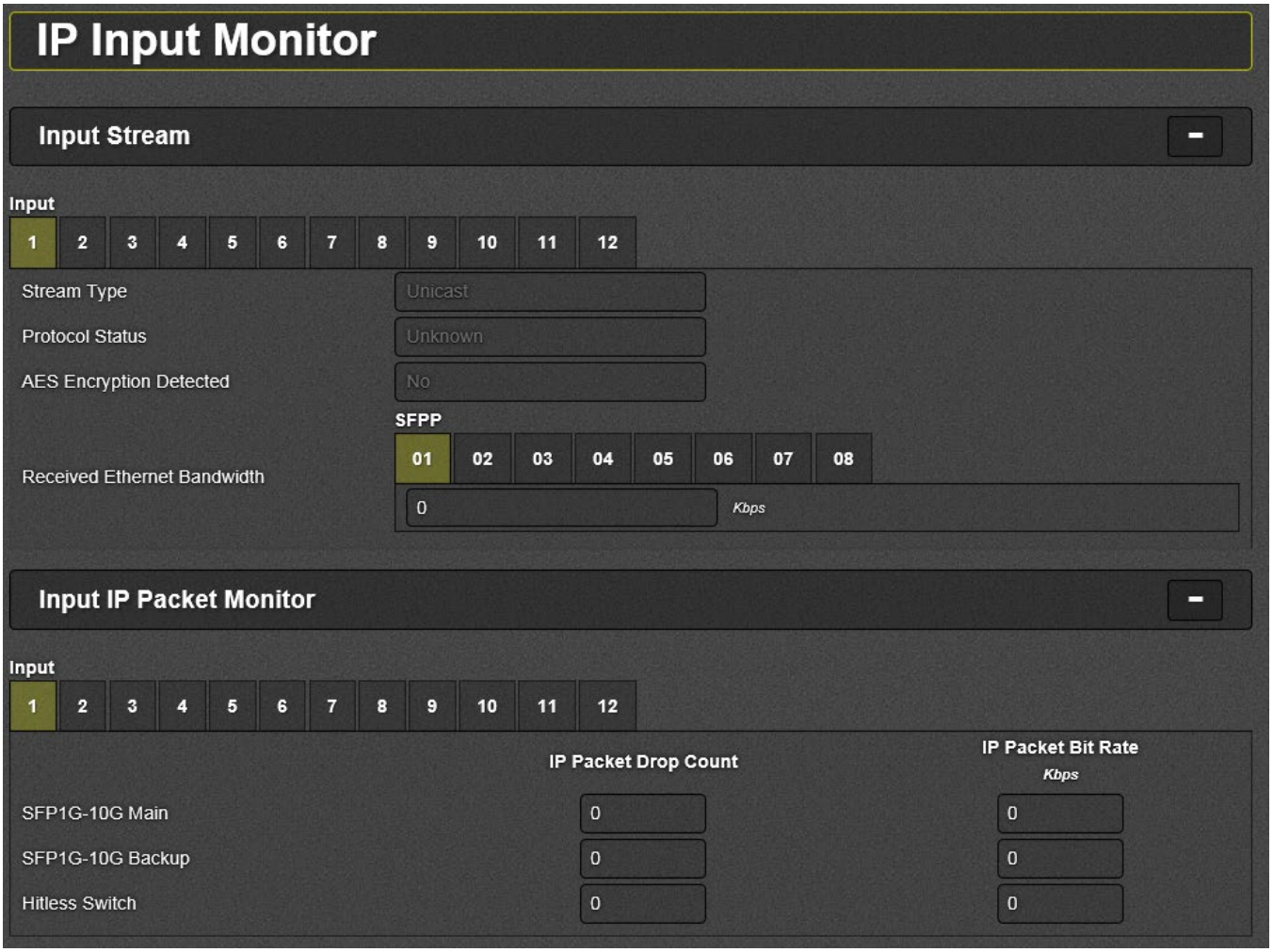

Figure 5-13 : WebEASY® - IP Input Monitor Tab

5.7.1. Input Stream

Stream Type: This parameter displays the type of input stream which could be multicast or unicast.

Protocol Status: This parameter reflects the input protocol. It will reflect unknown, UDP or RTP.

AES Encryption Detected: This parameter displays if the stream has AES Encryption or not.

Received Ethernet Bandwidth: This parameter displays the received Ethernet Bandwidth for each input stream.

5.7.2. Input IP Packet Monitor

IP packet Drop Count: This parameter displays the total count of sync loss.

IP Packet Bit Rate: This parameter displays the IP Packet Bit rate.

5.8. SYSTEM NOTIFY

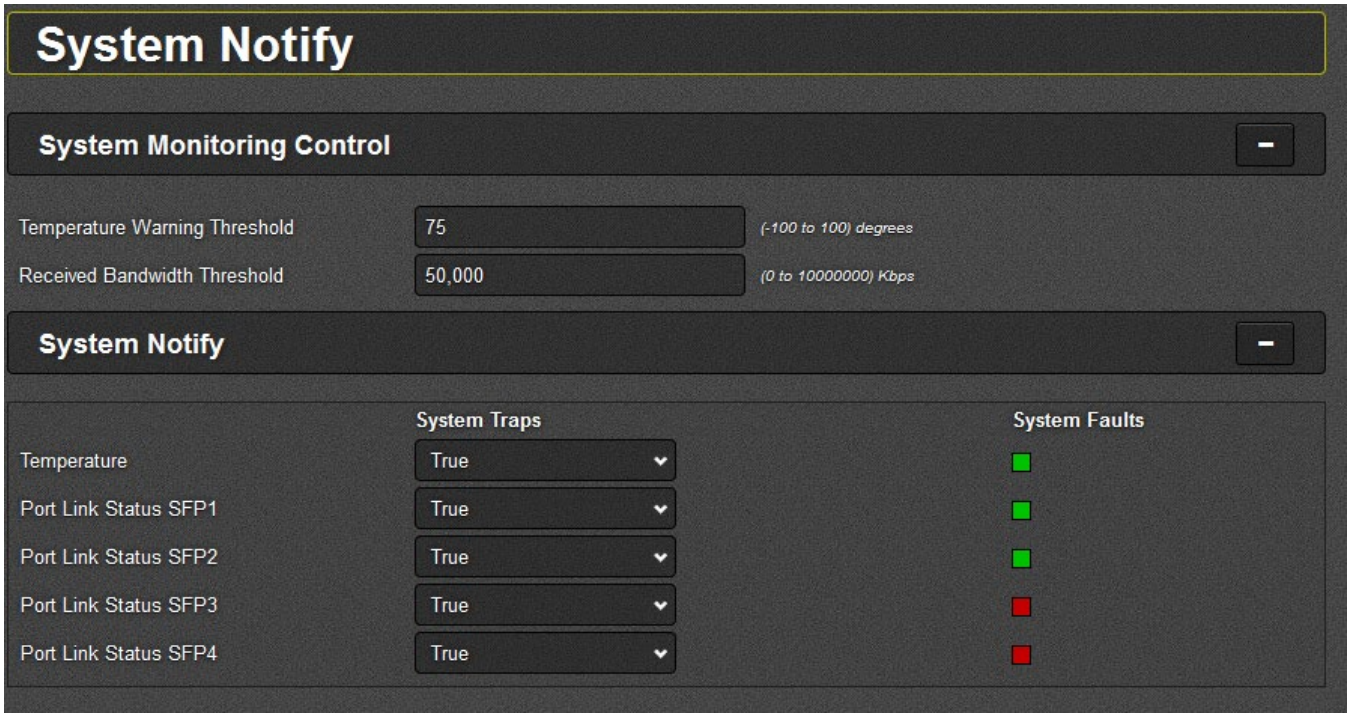

Figure 5-14 : WebEASY® - System Notify Tab

5.8.1. System Monitoring Control

Temperature Warning Threshold: This control allows the user to set the temperature threshold. If the temperature exceeds the configured temperature threshold, the temperate status will change to active.

Received Bandwidth Threshold: Reserved for future use.

5.8.2. System Notify

Temperature Traps: This control allows the user to turn Enable/Disable the Temperature Trap.

Temperature Faults: This temperature status is highlighted with this parameter. If a fault is active: the temperature exceeds the temperature threshold, it is reflected with a red status. If a fault is inactive, it is reflected as a green status.

Port Link Status SFP1: This status highlights Data 1 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP1 Trap: This control allows the user to enable trap receiving when the port 1 is down and an associated correction trap when the port is up.

Port Link Status SFP2: This status highlights Data 2 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP2 Trap: This control allows the user to enable trap receiving when the port 2 is down and an associated correction trap when the port is up.

Port Link Status SFP3: This status highlights Data 3 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP3 Trap: This control allows the user to enable trap receiving when the port 3 is down and an associated correction trap when the port is up.

Port Link Status SFP4: This status highlights Data 4 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP4 Trap: This control allows the user to enable trap receiving when the port 4 is down and an associated correction trap when the port is up.

5.9. INPUT NOTIFY

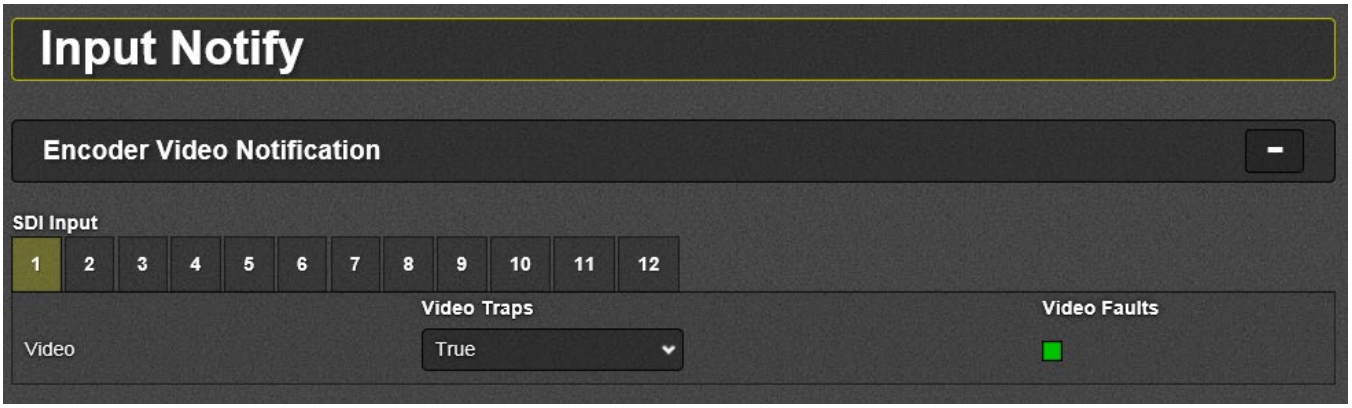

Figure 5-15 : WebEASY® - Input Notify tab

5.9.1. Encoder Input Notification

Video Traps: This control allows the user to enable or disable video presence related traps.

Video Faults: This control allows the user to check whether a fault is currently present or not. The fault in question highlights the presence of a valid video source as green and if input is missing it reflects red.

6. 570J2K-HW-X19 APP B "DECODER" WEB INTERFACE

The 570J2K-HW-X19 series of products are controlled using Web Interface. WebEasy operates using Ethernet and SNMP control protocols.

Login

After the card has been installed and configured with the required network addresses for the control port, it can be completely configured using the web interface. For doing this, simply type the IP address of the control port of the 570J2K-HW-X19 module in the web browser.

Note: Computer must be on the same Subnet in order to have communication with the module.

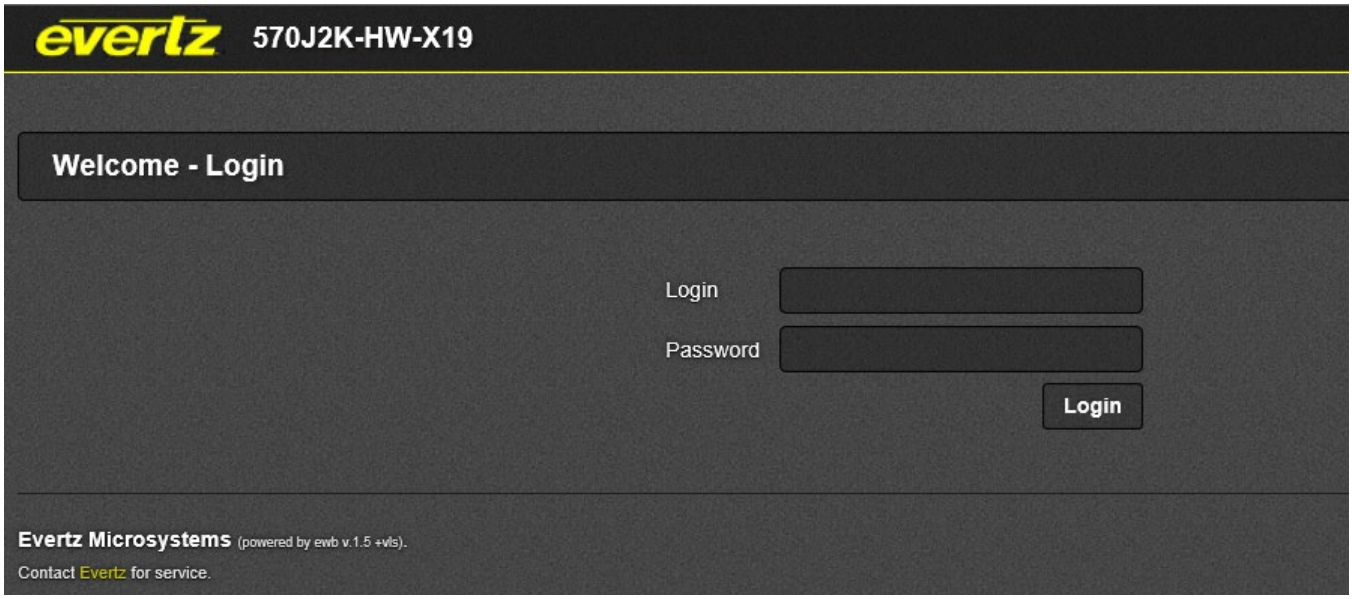

Figure 6-1 : WebEASY® - Login Menu

Login and password is "root" and "evertz" respectively.

On the web interface there are different types of menus as is shown in Figure 6-2.

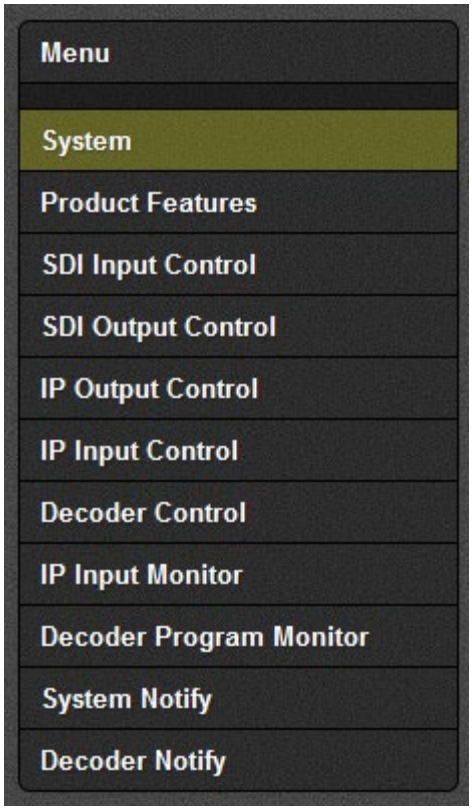

Figure 6-2 : 570J2K-HW-X19 Main Menu

6.1. SYSTEM

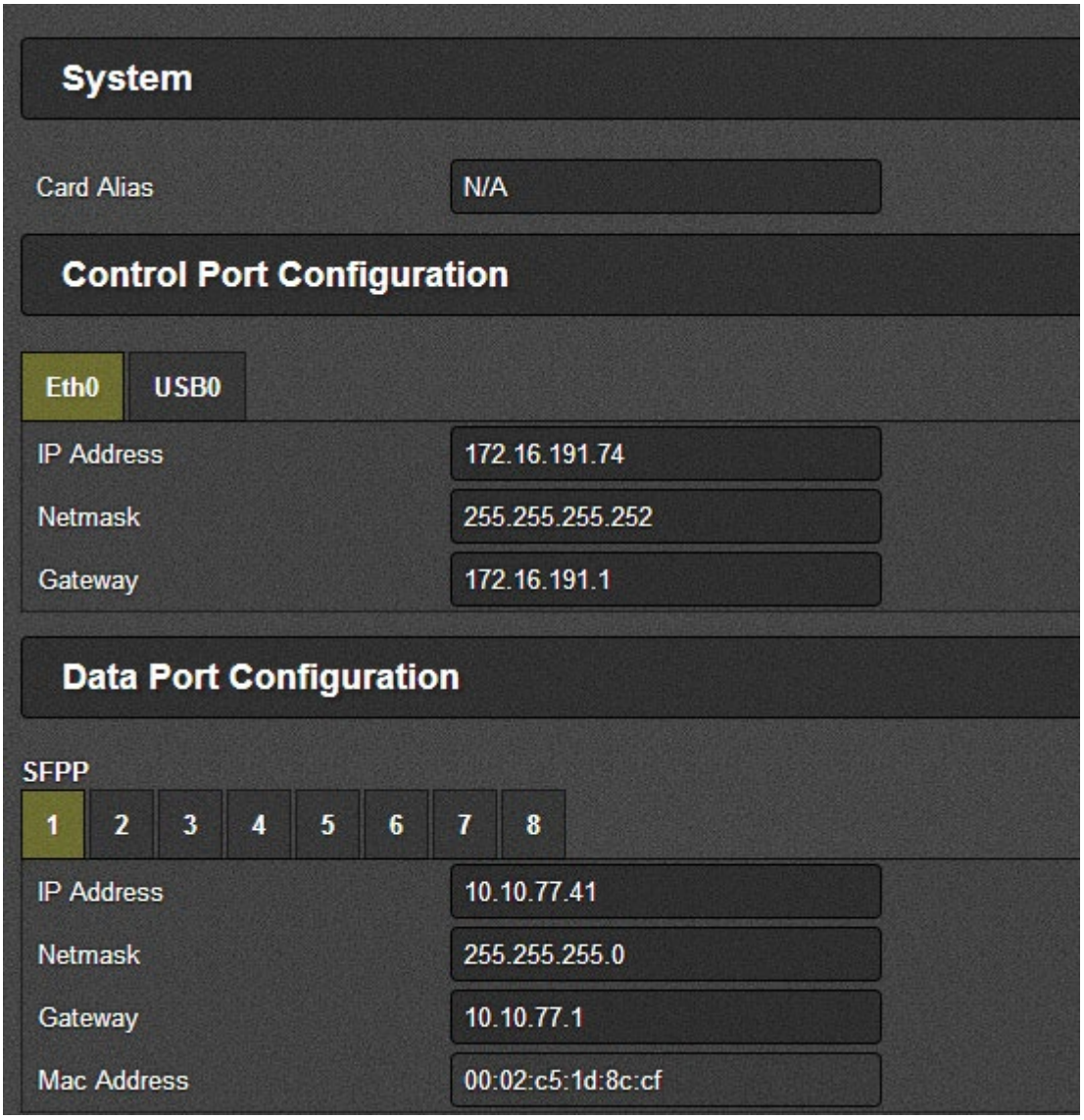

Figure 6-3 : WebEASY® - System Tab (Part 1)

6.1.1. System

Card Alias: This control returns the card alias string.

6.1.2. Control Port Configuration

IP Address: This Parameter allows the user to set the IP address for control port.

Netmask: This Parameter allows the user to set the Netmask for control port.

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

Please note the control port is only used when the 570J2K-HW-X19 is used in the S570FR.

6.1.3. Data Port Configuration

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

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

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

Mac Address: This parameter reflects the MAC Address of the data port.

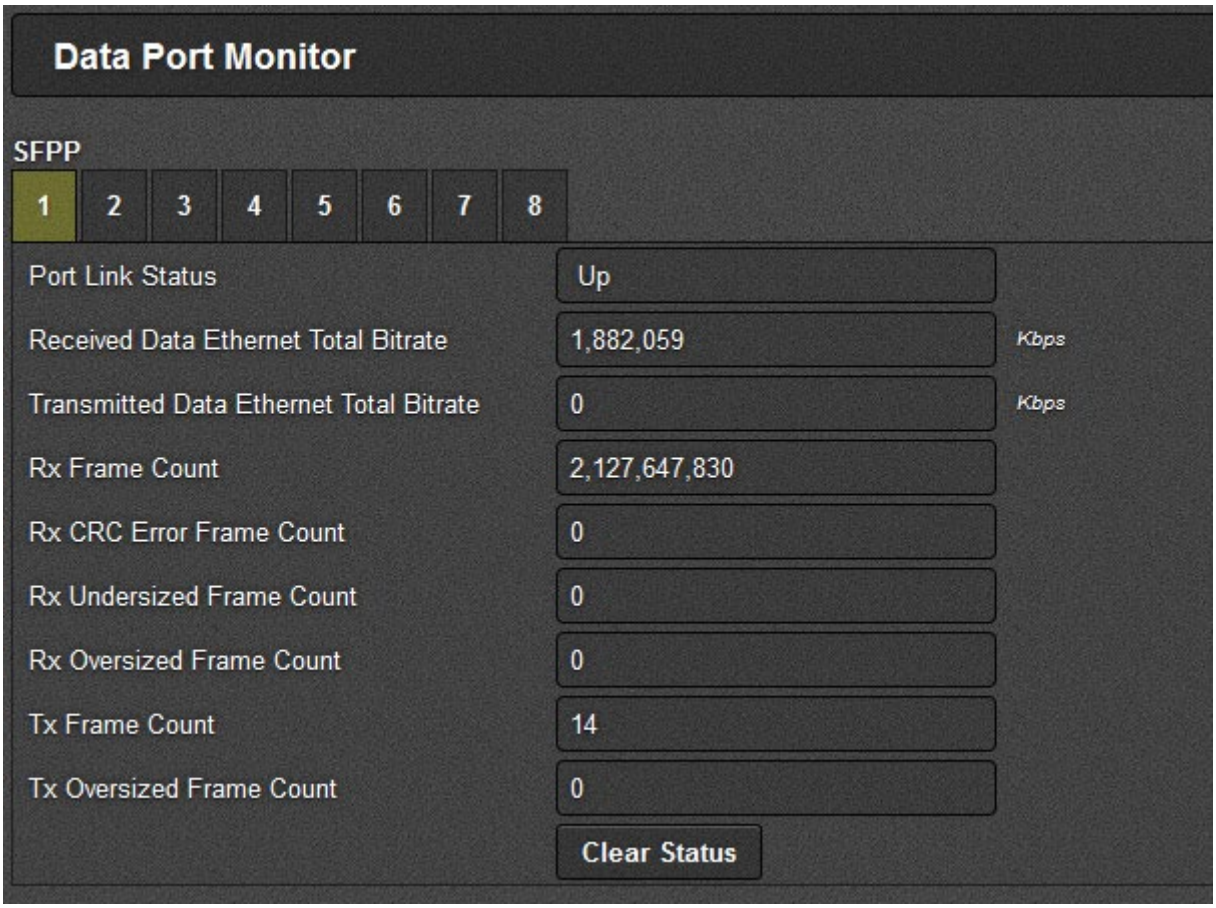

Figure 6-4 : WebEASY® - System Tab (Part 2)

6.1.4. Data Port Monitor

Port Link Status: This parameter returns the link status for Data port.

Received Data Ethernet Total Bitrate: This parameter displays the Total bitrate received on this Data port in kbps.

Transmitted Data Ethernet Total Bitrate: This parameter displays the Total bitrate transmitted on this output Data port in kbps.

Rx Frame Count: This parameter displays the received Rx frames on this Ethernet port.

Rx CRC Error Frame Count: This parameter displays the received Rx frames with CRC errors on this Ethernet port.

Rx Undersized Frame Count: This parameter displays the received Rx undersized frames on this Ethernet port.

Rx Oversized Frame Count: This parameter displays the received Rx oversized frames on this Ethernet port.

Tx Frame Count: This parameter displays the received Tx frames on this Ethernet port.

Tx Oversized Frame Count: This parameter displays the received Tx oversized frames on this Ethernet ports.

Clear Status: This button allows the user to reset the Ethernet monitor statistics.

Figure 6-5 : WebEASY® - System Tab (Part 3)

6.1.5. Temperature Monitor:

Temperature: This field monitors the current temperature of module.

6.1.6. Card Control

Load Factory Config: This control is used to load factory configuration settings on the unit.

Reboot Card: This control allows the user to perform a soft reboot on the decoder.

6.2. PRODUCT FEATURES

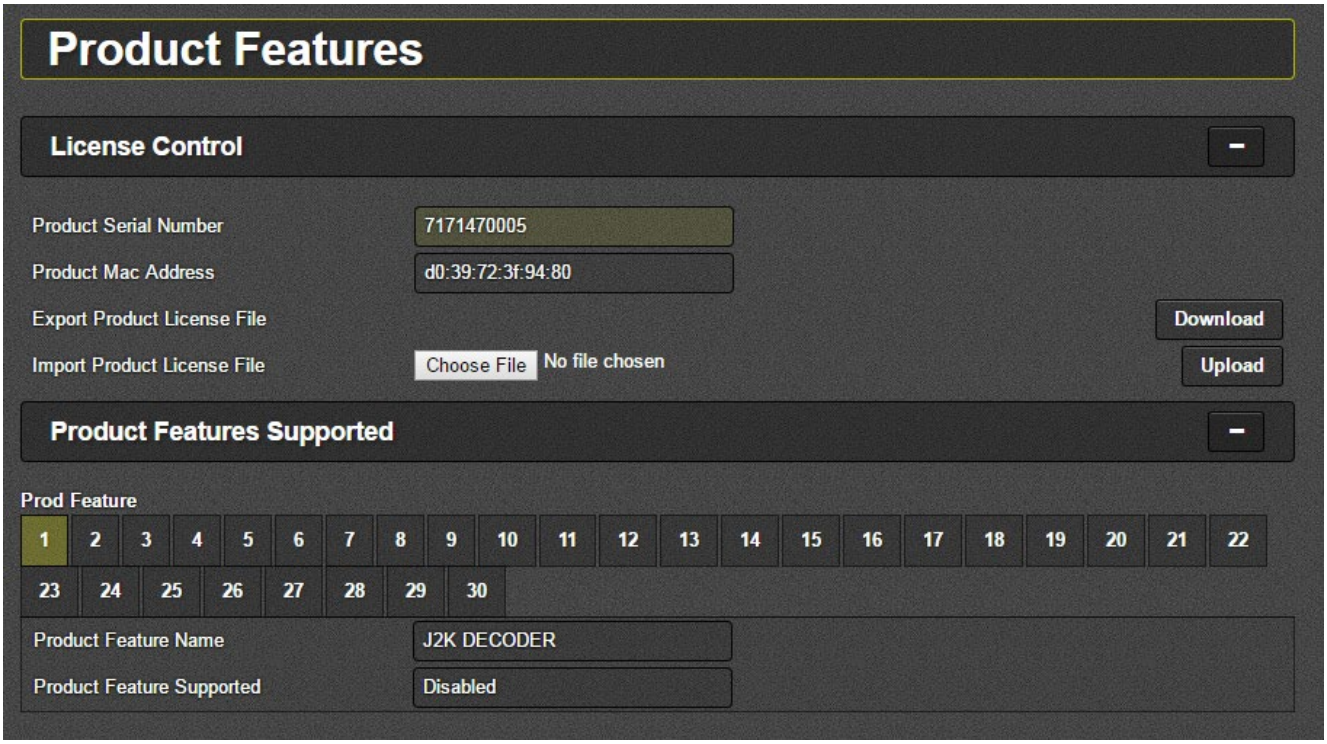

Figure 6-6 : WebEASY® - Product Features Tab

6.2.1. License Control

A product license channel key can be provided to enable J2K encode/decode functionality. It is applied using this control and unlocks feature functionality.

Product Serial Number: This parameter displays the card's serial number.

Product Mac Address: This parameter displays the control port MAC address.

Export Product License File: This parameter exports the product license key file.

Import Product License File: This parameter allows the user to upload the product license file.

6.2.2. Product Features Supported

Product Feature Name: This parameter returns the product features supported on this card. It should display following feature names: J2K ENCODER, up to 12 encoders can be enabled. If the 570J2K-HW-X19 decoder is used, the feature name is: J2K DECODER and up to 9 decoders can be enabled.

Product Feature Supported: This parameter returns the product supported features status which can be enabled or disabled.

6.3. SDI INPUT CONTROL

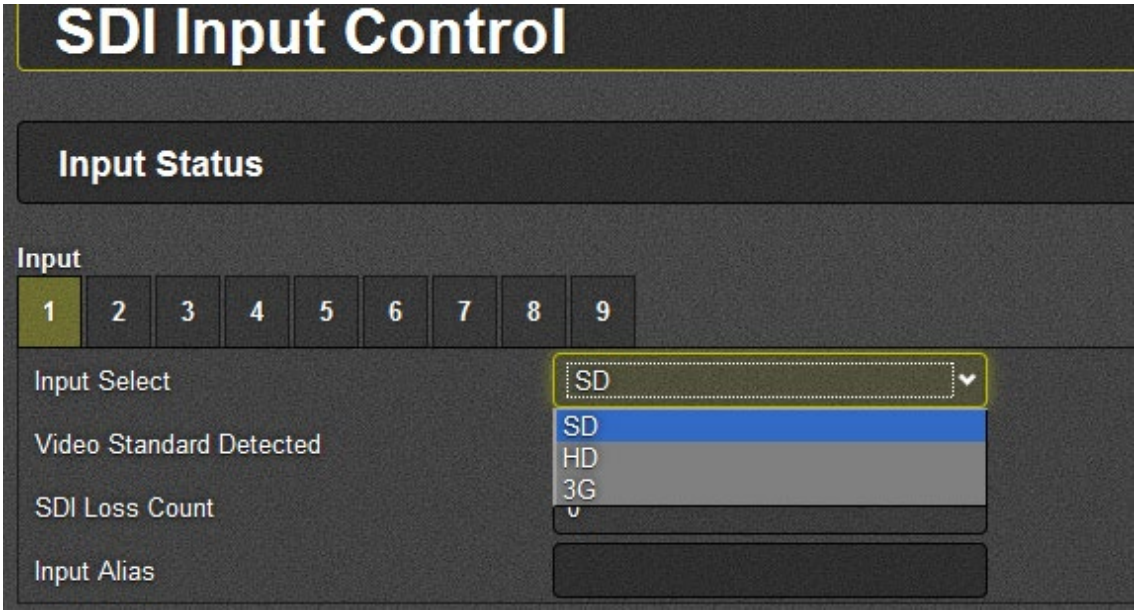

Figure 6-7 : WebEASY® - SDI Input Control Tab

The SDI Input Control on the decoder is used to configure the Max Link Rate for the SMPTE2022-6 output provided from the 570J2K-HW-X19.

6.3.1. Input Status

Input Select: This parameter configures the Max Link Rate for the specified channel path. It is used only when the channel paths are set for Encapsulation. The user can select the following modes SDI-SD, SDI-HD, 3G-SDI. When configured to SD, the max encapsulation on the link can handle up to 270Mbps. If an HD input is provided, the signal will be clipped. If the Input select is configured to HD, the max encapsulation on the link can handle up to 1.5Gbps. If a 3G input is provided the signal will be clipped. When the input select is configured to 3G, the max encapsulation on the link can handle up to 3Gbps.

Video Standard Detected: Reserved for future use.

SDI Loss Count: Reserved for future use.

Input Alias: Reserved for future use.

Clear SDI Loss Count: This button allows the user to clear the SDI loss counter.

6.4. SDI OUTPUT CONTROL

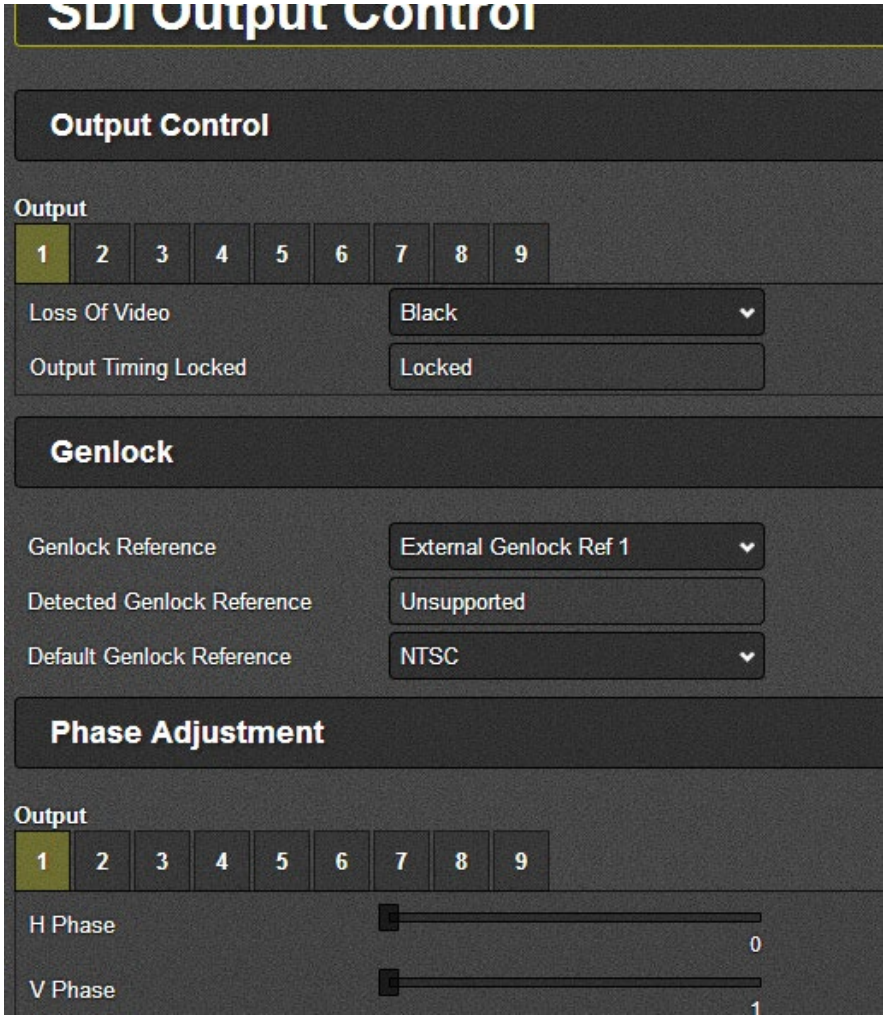

Figure 6-8 : WebEASY® - SDI Output Control Tab

6.4.1. Output Control

Loss of Video: This parameter configures the Decoder Output functionality when input is missing on the decoder. The applicable options include a continuous black output or freeze on the last valid video frame received.

Output Timing locked: Reserved for future use.

6.4.2. Genlock

Genlock Reference: This parameter allows the user to specify the input genlock source. The options include frame reference input 1 or input 2.

Detected Genlock Reference: This will display the detected genlock reference. If no reference is found, this parameter will reflect unsupported.

Default Genlock Reference: Please set this to NTSC if the expected source frequency is 59.94Hz. If the expected source frequency is 50Hz please set this to PAL. This allows the internal frame sync to operate based on input video timing and configures the expected frequency.

6.4.3. Phase Adjustment

For Output 1 to 9:

H Phase: This control allows the user to set the horizontal phase, default is 0.

V Phase: This control allows the user to set the vertical phase, default is 1.

Please note each decoder output has an independent H and V phase configuration.

6.5. IP OUTPUT CONTROL

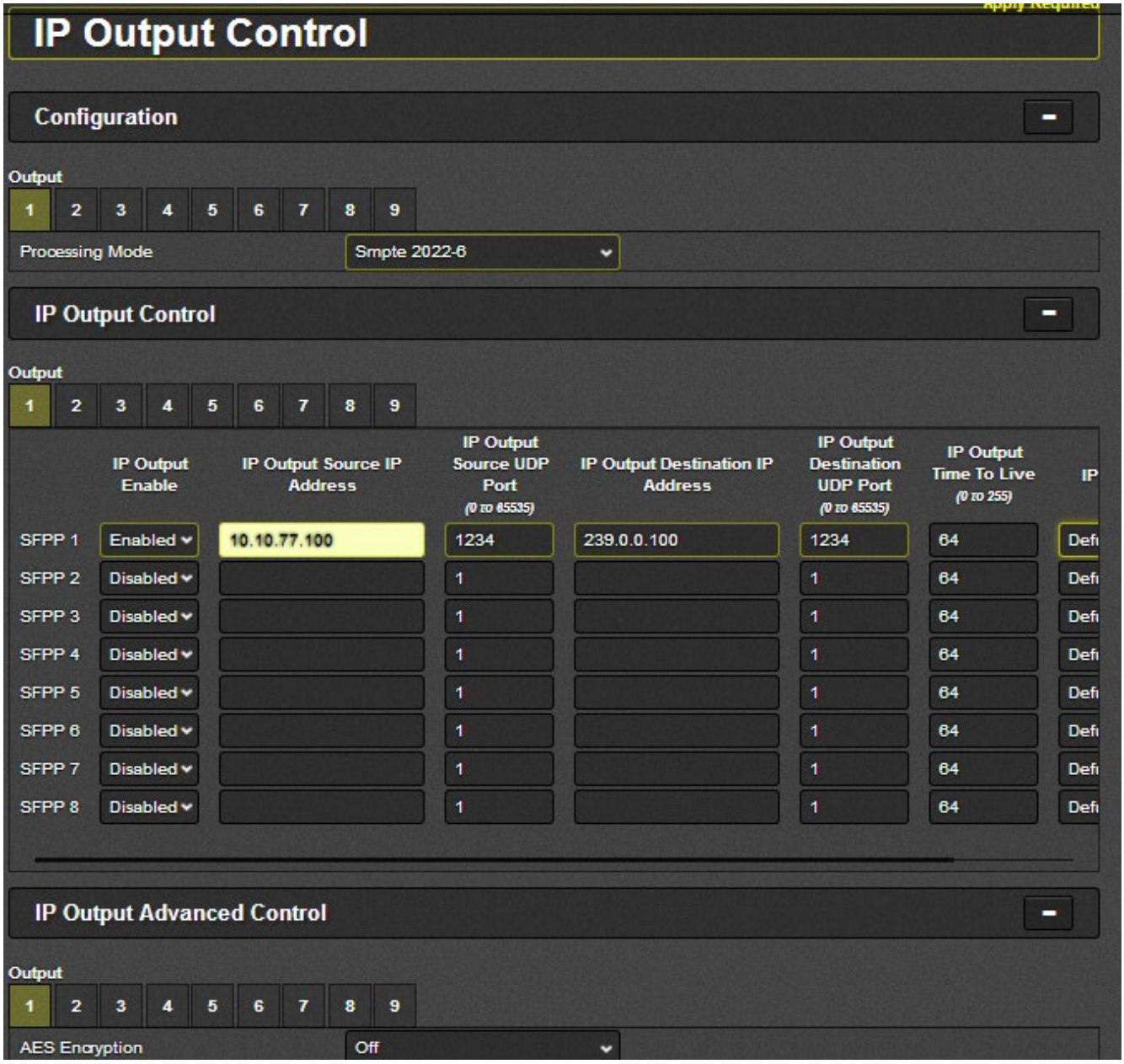

Figure 6-9 : WebEASY® - IP Output Control Tab

6.5.1. Configuration

Processing Mode: This dropdown menu allows the user to select the processing mode which can be SMPTE2022-6 or Disable.

6.5.2. IP Output Control

IP Output Enable: This field allows the user to enable or disable the IP output. This control is configurable per SFP output port.

IP Output Source IP Address: This filed allows the user to define the output source IP address.

IP Output Source UDP Port: This field allows the user to define the output source UDP port number.

IP Output Destination IP Address: This parameter allows the user to define the destination IP address.

IP Output Destination UDP Port: This field allows the user to define the destination UDP port.

IP Output Time to Live: This field displays the IP output time to live.

IP Output DSCP: This field displays the IP output DSCP.

6.5.3. IP Output Advanced Control

AES Encryption: Reserved for future use.

6.6. IP INPUT CONTROL

The IP Input Control for the 570J2K-HW-X19 reflects the controls related to JPEG 2000 Input IP configuration.

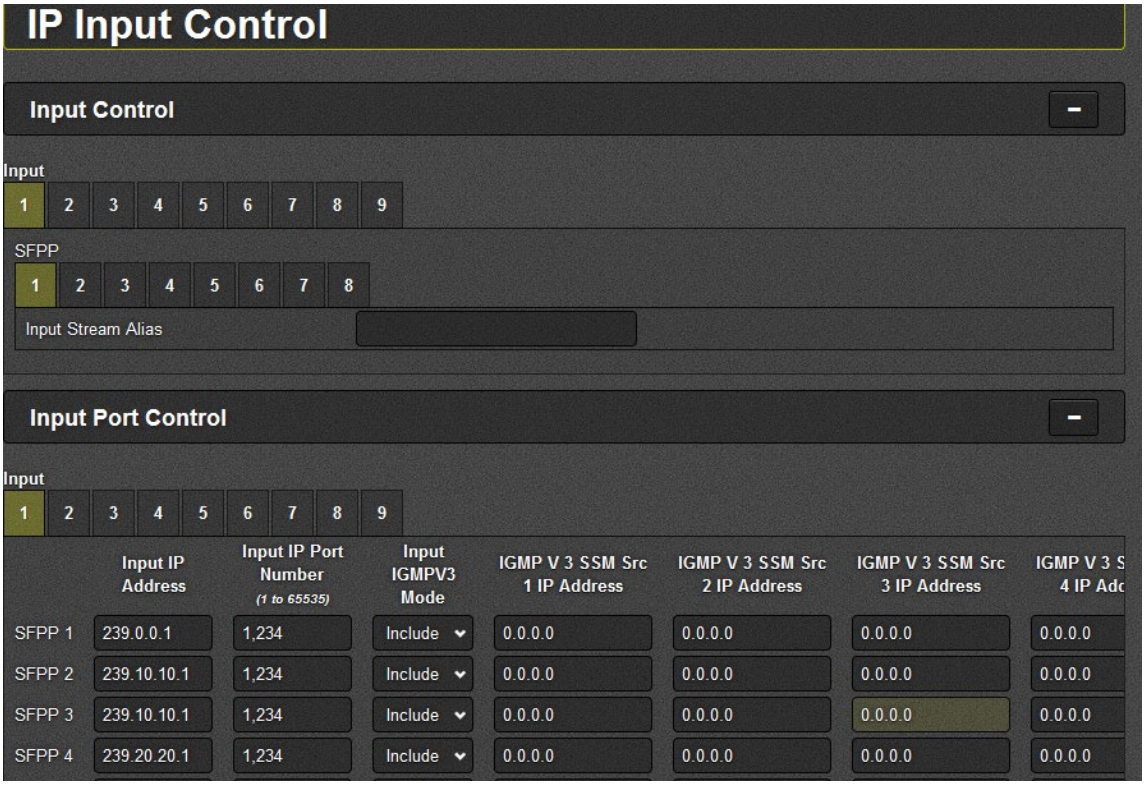

Figure 6-10 : WebEASY® - IP Input Control Tab

6.6.1. Input Control

Input Stream Alias: This field allows the user to define the input stream alias name.

6.6.2. Input Port Control

Input IP Address: This parameter allows the user to define input IP address / multicast address they want to receive.

Input IP Port Number: This parameter allows the user to select the input UDP port number.

Input IGMPV3 Mode: This parameter allows the user to include/exclude input configured SSM Sources.

IGMPV3 SSM Src <1-6> IP Address: This parameter allows the user to set IP addresses which will be used while forming the source filter "SSM sources" for IGMPV3 communications.

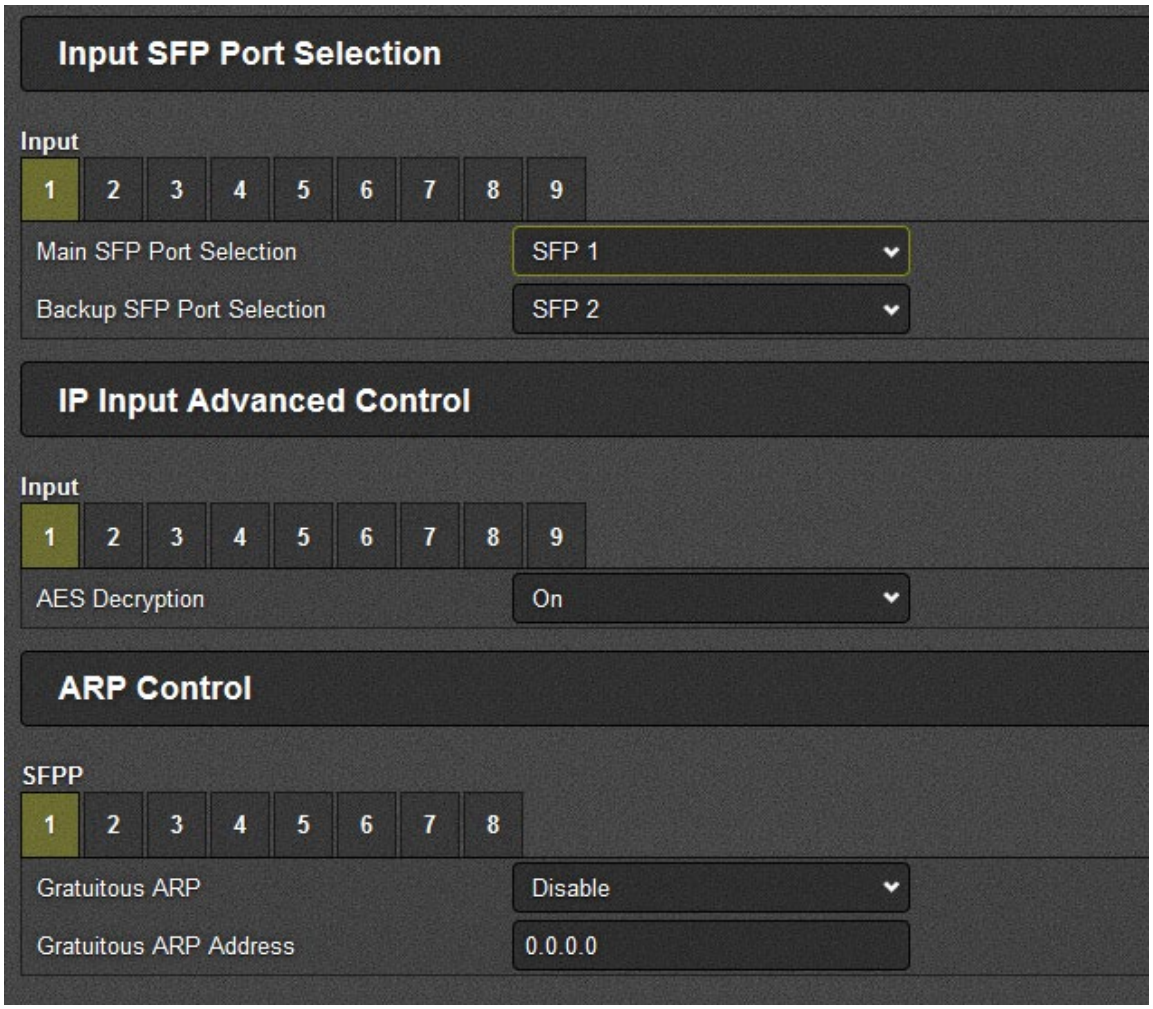

Figure 6-11 : WebEASY® - IP Input Control Tab Continued

6.6.3. Input SFP Port Selection

Main SFP Port Selection: This dropdown menu allows the user to assign an Input Data Port as the Main Data Port. The main data port will accept traffic and provide it to the decoder core.

Backup SFP Port Selection: This dropdown menu allows the user to assign an Input Data Port as the Backup Data Port. The backup data port will accept traffic and provide it to the decoder core based on the fail over state and priority configuration.

6.6.4. IP Input Advanced Control

AES Decryption: This dropdown menu allows the user to enable AES de-encryption. Alternatively if the source isn't encrypted, the user can set AES decryption to disable.

6.6.5. ARP Control

Gratuitous ARP: This dropdown menu allows the user to enable/disable the Gratuitous ARP.

Gratuitous ARP Address: This control allows the user to set the IP address used for Gratuitous ARP.

6.7. DECODER CONTROL

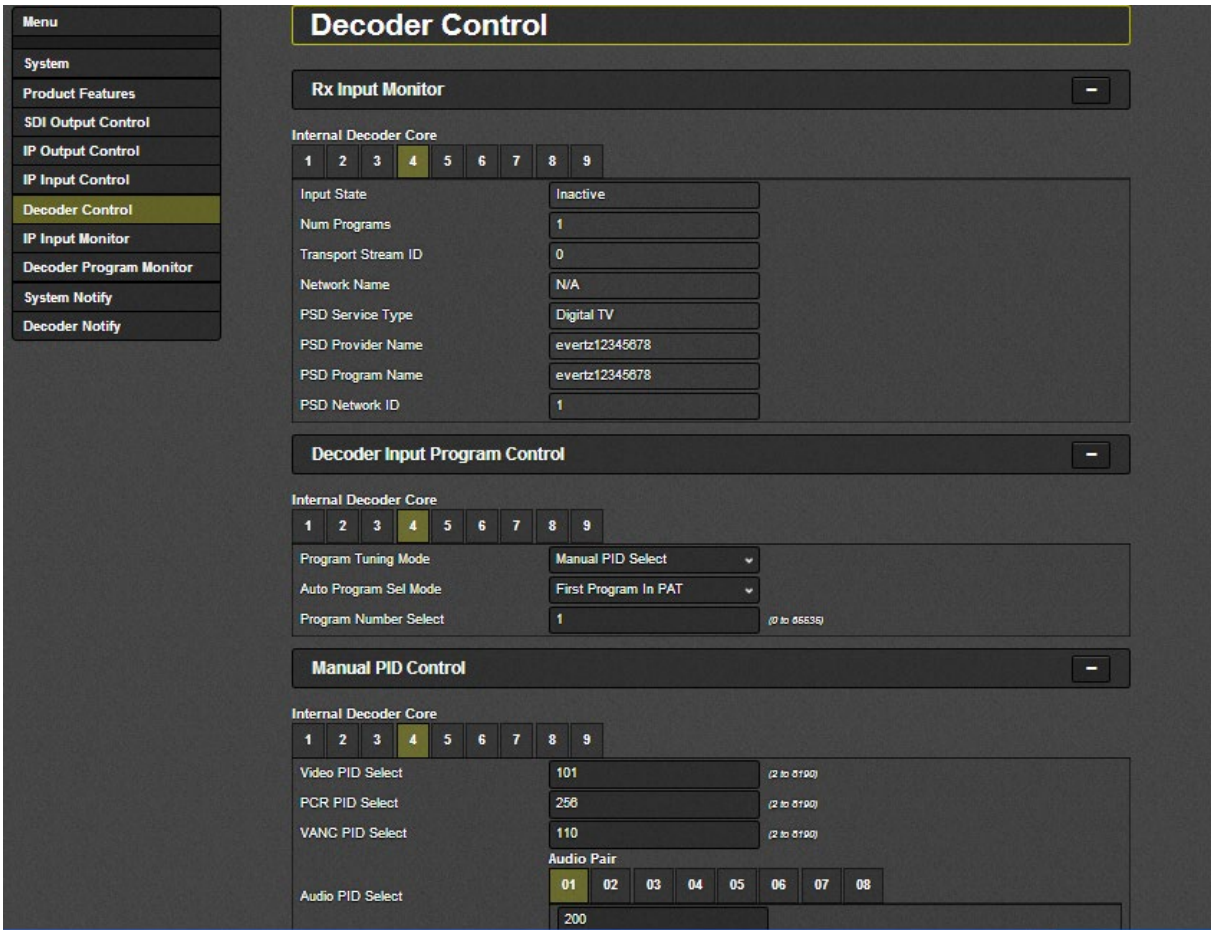

Figure 6-12 : WebEASY® - Decoder Control Tab (Part 1)

6.7.1. Rx Input Monitor

Input State: This parameter returns the status of the input i.e. if the input stream is present/active or missing/inactive.

Num Programs: This parameter displays the number of programs associated with the input.

Transport Stream ID: This parameter returns the transport stream ID associated with input.

Network Name: This parameter returns the Network Name of the Input.

PSD Service Type: This monitor returns the service type read from the Evertz private service descriptor (79) from the PMT. It provides an enumerated string as follows:

- Digital Tv
- Digital Radio Teletext
- NOVD Reference
- NVOD Timeshifted
- Mosaic
- PAL Signal
- SECAM Signal
- DMAC
- FM Radio
- NTSC Signal
- Data Broadcast

N/A - meaning that a valid service type was not found, or there is no private descriptor.

PSD Provider Name: This monitor returns the provider name read from the Evertz private service descriptor (79) from the PMT.

PSD Program Name: This monitor returns the program name read from the Evertz private service descriptor (79) from the PMT.

PSD Network ID: This monitor returns the network id read from the Evertz private service descriptor (79) from the PMT.

6.7.2. Decoder Input Program Control

Program Tuning Mode: This parameter allows user to select the program tuning mode of the decoder. *Auto PID Select* automatically tunes to the incoming transport stream. When *Manual PID Select is configured, the user has to manually enter the required video and audio pids to tune to.* The recommended setting is Auto PID select with Auto Program Sel Mode configured to First Program in PAT.

Auto Program Sel Mode: This control allows the user to set how the decoder will select a program for decoding when ***Program Tuning Mode*** is set to auto.

- In *First Program In PAT* mode, audio PIDs will be chosen from the first program.
- In *Lowest Program Num,* audio PIDs will be selected from lowest program.
- In *Specific Program Select* mode, audio PIDs will be selected from specific program, specified by *Program Number Select* control, for decoding.

Program Number Select: This control allows selecting the program which the decoder will decode. This control is only applicable when the *Program Tuning Mode* is set to Auto PID Select

6.7.3. Manual PID Control

NOTE: 0, 1 and 8191 are reserved PID in MPEG so these are not included.

Video PID Select: This control allows user to configure the Video PID which decoder will decode. This control is only applicable when the ***programTuningMode*** is set to ***manualPidSelect***.

PCR PID Select: This control allows the user to configure the required PCR PID. This control is only applicable when the ***programTuningMode*** is set to ***manualPidSelect***.

VANC PID Select: This control allows the user to select the VANC PID which decoder will decode. This control is only applicable when the ***programTuningMode*** is set to ***manualPidSelect***.

Audio PID Select (1-4): This control allows the user to select the required Audio PIDs which the decoder will embed into the output video. This control is only applicable when the ***programTuningMode*** is set to ***manualpidSelect***.

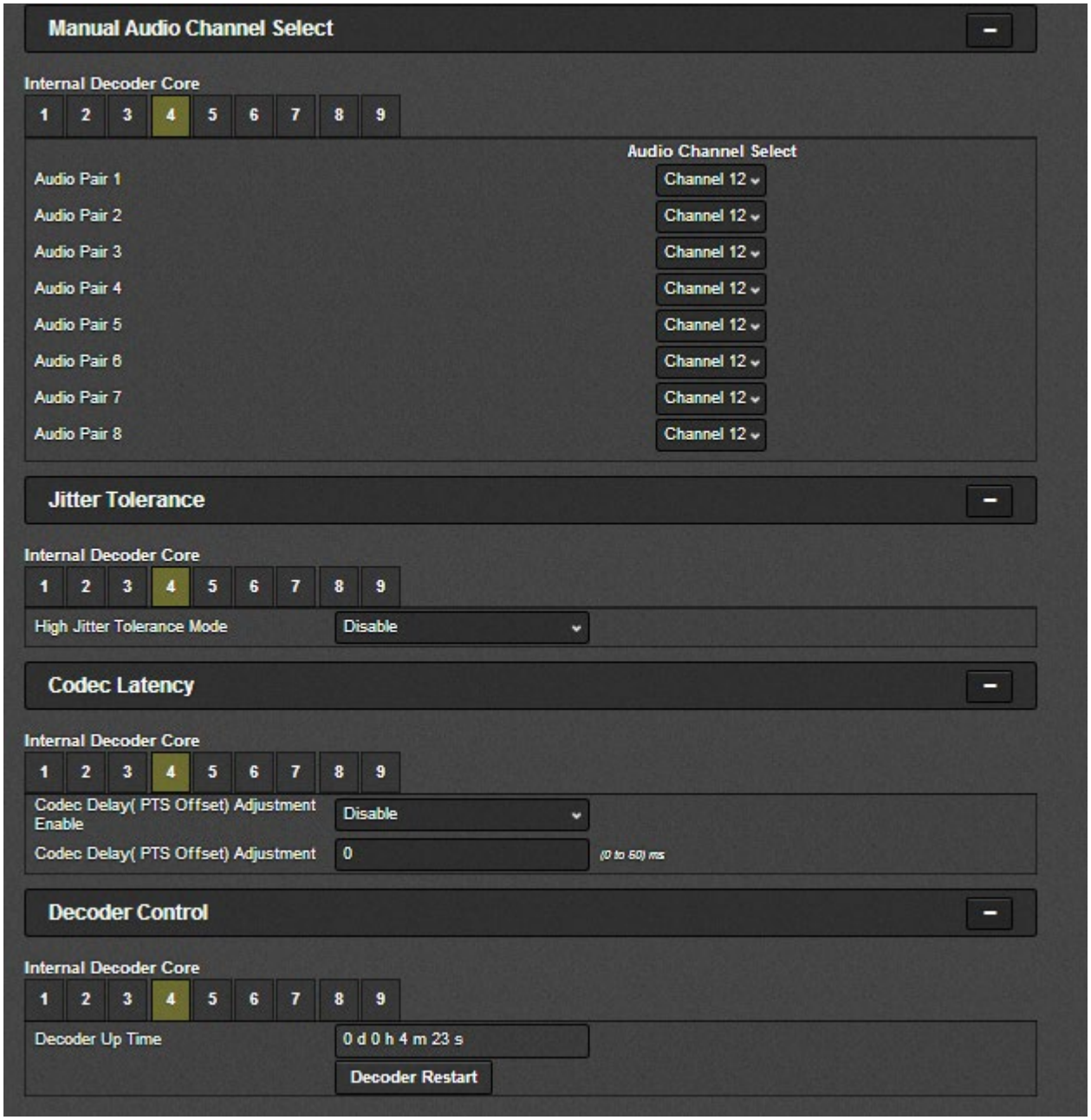

Figure 6-13 : WebEASY® - Decoder Control Tab (Part 2)

Jitter Tolerance: Please consult Evertz Service before configuring this control. When the network jitter is in access of 30ms, Jitter tolerance adds further resilience to the input detection.

Codec Latency: Reserved for future use.

Decoder Up time: This control returns a string representation of the time from last restarting the decoder. It is represented similar to '*xxxx* day's *yy* hrs *zz* min *aa* sec'. Internally, it is a 31 bit unsigned integer, reflecting seconds which will provide for up to 3100 days of operation before it wraps around.

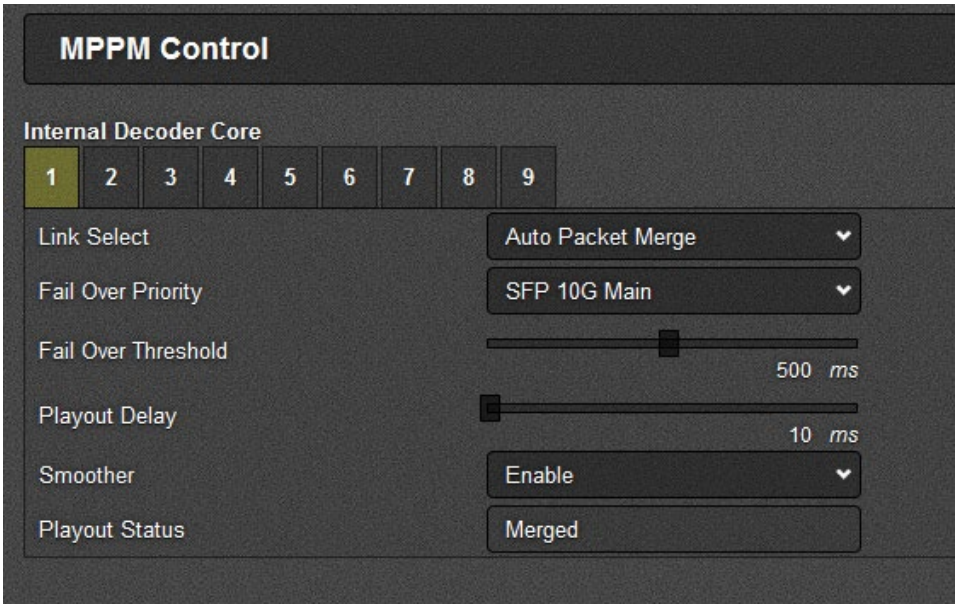

Figure 6-14 : WebEASY® - Decoder Control Tab (Part 3)

6.7.4. MPPM Control

Link Select: The link select control allows the user to configure the decoder link to Auto Packet Merge, Main, Backup or Fail Over.

- **Auto Packet Merge**: Selecting this control will force the decoder link to merge valid packets from both the main and backup links. It will disregard the extra good packet if received. This control employs MPPM multi path packet merge.
- **Main Port:** Selecting this control will force the decoder link to accept packets only from the Main Port.
- **Backup Port:** Selecting this control will force the decoder link to accept packets only from the Backup Port.
- **Fail Over**: Selecting Fail Over, will allow for a simple redundancy model as highlighted with below controls.

Fail Over Priority: This control allows the user to set the Fail Over Priority, the available options include Equal Priority for Fail Over, Priority to Main Port or Priority to Backup Port.

Fail Over Priority Equal: Both the main and backup ports have equal priority. If the Main path has no traffic, the fail over redundancy model will fail over to backup. The input path will remain on backup even if the main path returns as both have equal priority. If the backup path has no traffic, the fail over redundancy model will fail over to the main port.

Fail Over Priority Main: The Main port has the fail over priority. If the Main port has no traffic, the fail over redundancy model will fail over to backup. The input path will revert back to the Main Port once the Main Port has input traffic.

Fail Over Priority Backup: The Backup port has the fail over priority. If the Backup port has no traffic, the fail over redundancy model will fail over to Main port. The input path will revert back to the Backup Port once the Backup Port has input traffic.

Fail Over Threshold: This control allows the user to set the duration threshold after which point the path in question will be considered failed.

Playout Delay: The playout delay adds delay to account for skew / delta between the main path and backup path and is also used to account for jitter along the path. The playout delay is user configurable from 0 to 1000ms.

Smoother: The Smoother control enables Jitter smoothing.

Playout Status: The playout status highlights which path is currently being used. It will reflect Main, Backup or Merged.

6.8. IP INPUT MONITOR

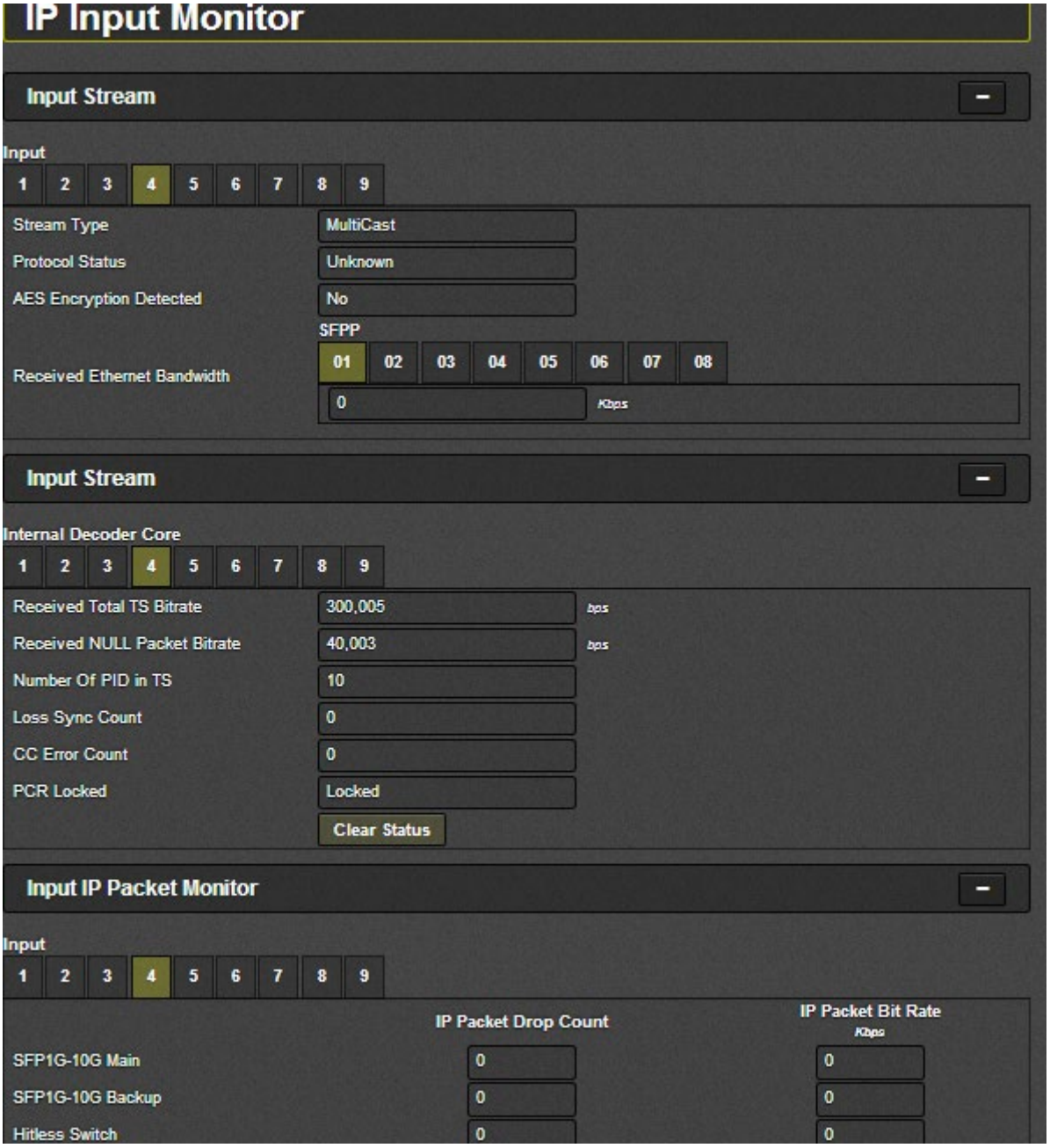

Figure 6-15 : WebEASY® - IP Input Monitor Tab

6.8.1. Input Stream

Stream Type: This parameter displays the type of input stream which could be multicast or unicast.

Protocol Status: This parameter reflects the input protocol. It will reflect unknown, UDP or RTP.

AES Encryption Detected: This parameter displays if the stream has AES Encryption or not.

Received Ethernet Bandwidth: This parameter displays received Ethernet Bandwidth for each input stream.

6.8.2. Input Stream Internal Decoder Core

Received Total TS Bitrate: This monitor reflects the total bit rate received for the specified multicast stream, unit is kbps.

Received NULL Packet Bitrate: This monitor shows total NULL packet bitrate for multicast stream specified.

Number of PID in TS: This monitor shows the total number of PIDs in the TS.

Loss Sync Count: This monitor shows the total count of sync loss.

CC Error Count: This monitor shows the total count of continuity counter (CC) error.

PCR Locked: This monitor shows if the input is locked on the program clock reference (PCR).

Clear Input Stream Status: This control allows the user to reset the Ethernet monitoring status.

6.8.3. Input IP Packet Monitor

IP packet Drop Count: This parameter displays the total count of sync loss.

IP Packet Bit Rate: This parameter displays the IP Packet Bit rate.

6.9. DECODER PROGRAM MONITOR

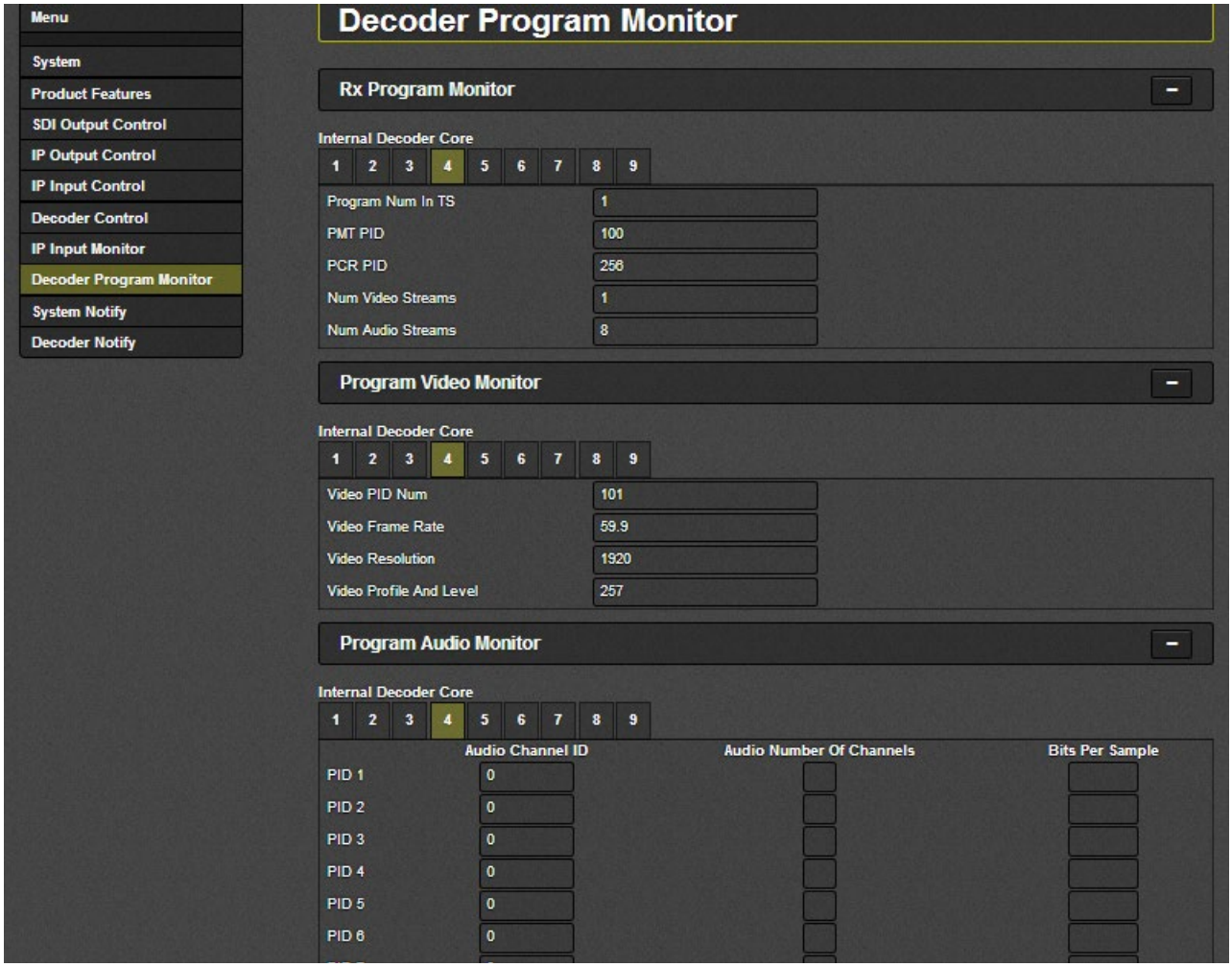

Figure 6-16 : WebEASY® - Decoder Program Monitor Tab

6.9.1. Rx Program Monitor

For Decoder (1-9):

Program Num In TS: This parameter highlights the program number for the encoded transport stream.

PMT PID: This parameter highlights the PMT PID.

PCR PID: This parameter highlights the PCR PID.

Num Video Streams: This monitor returns number of video streams in this program.

Num Audio Streams: This monitor returns the number of audio streams in this program.

6.9.2. Program Video Monitor

For Decoder (1-9):

Video PID Num: This monitor returns the PID which carries the PES for Video.

Video Frame Rate: This monitor returns the incoming video frame rate

Video Resolution: This control returns the Resolution of the video

Video Profile And Level: This monitor returns the profile and level of the video read from video PES.

Program audio monitor: Reserved for future use.

6.10. SYSTEM NOTIFY

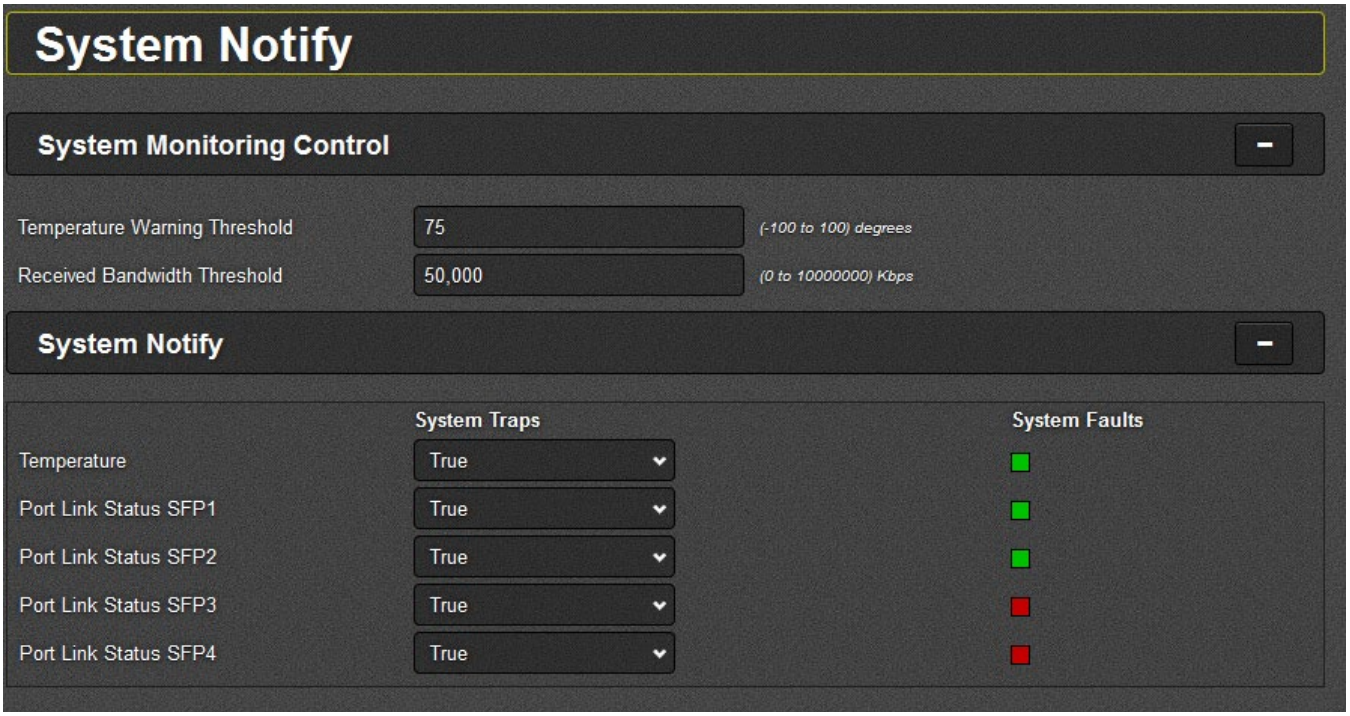

Figure 6-17 : WebEASY® - System Notify Tab

6.10.1. System Monitoring Control

Temperature Warning Threshold: This control allows the user to set the temperature threshold after the warning would be initiated.

Received Bandwidth Threshold: Reserved for engineering use.

6.10.2. System Notify

Temperature Traps: This control allows the user to turn On/Off the Temperature Trap.

Temperature Faults: This control checks whether a fault is currently active/red or inactive/green.

Port Link Status SFP1: This status highlights Data 1 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP1 Trap: This control allows the user to enable trap receiving when the port 1 is down and an associated correction trap when the port is up.

Port Link Status SFP2: This status highlights Data 2 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP2 Trap: This control allows the user to enable trap receiving when the port 2 is down and an associated correction trap when the port is up.

Port Link Status SFP3: This status highlights Data 3 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP3 Trap: This control allows the user to enable trap receiving when the port 3 is down and an associated correction trap when the port is up.

Port Link Status SFP4: This status highlights Data 4 port status. If the port is up, the status will be inactive / green. If the port is down, the status will be active / red.

Port Link SFP4 Trap: This control allows the user to enable trap receiving when the port 4 is down and an associated correction trap when the port is up.

6.11. DECODER NOTIFY

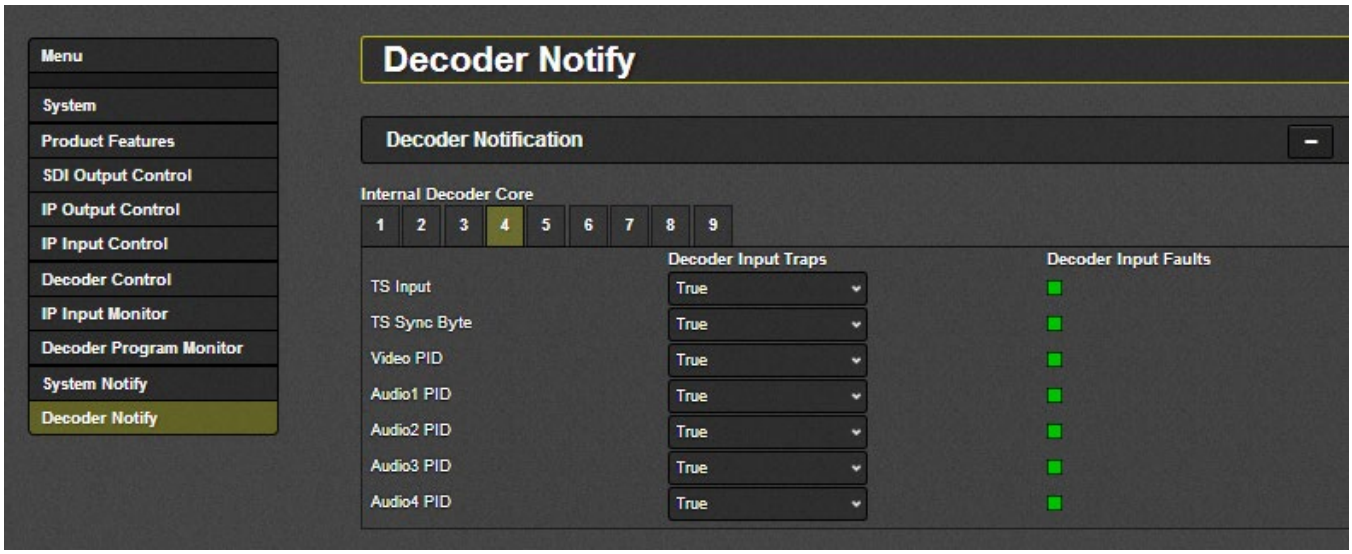

Figure 6-18 : WebEASY® - Input Notify Tab

6.10.1 Decoder Notification

For Decoder (1-9):

TS Input Missing: This will enable an alarm if transport stream is not detected on incoming multicast.

TS Sync Byte Missing: This will enable a fault on the transport stream on a missing sync byte.

Video PID Missing: This will enable a fault on the transport stream on a missing video PID.

Audio (1-4) PID Missing: This will enable a fault on missing audio (1-4) PID.

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7. UPGRADE PROCEDURES

7.1. FIRMWARE UPGRADE

Using the WebEASY® on a web interface is the fasted and recommended way to load the firmware onto the 570J2K modules.

On the top of the web page for the 570J2K modules, there is a button labelled Upgrade. The Upgrade tab is used to check current firmware version and upload the latest firmware (Figure 7-1).

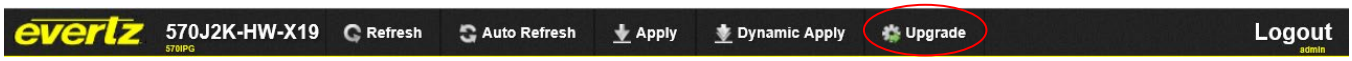

Figure 7-1 : WebEASY® - Upgrade Button on Top Menu Bar

Selecting the Upgrade tab, will take the user to Figure 7-2 where the current firmware version is shown. Should the firmware version be outdated, the user needs to download the firmware image file.

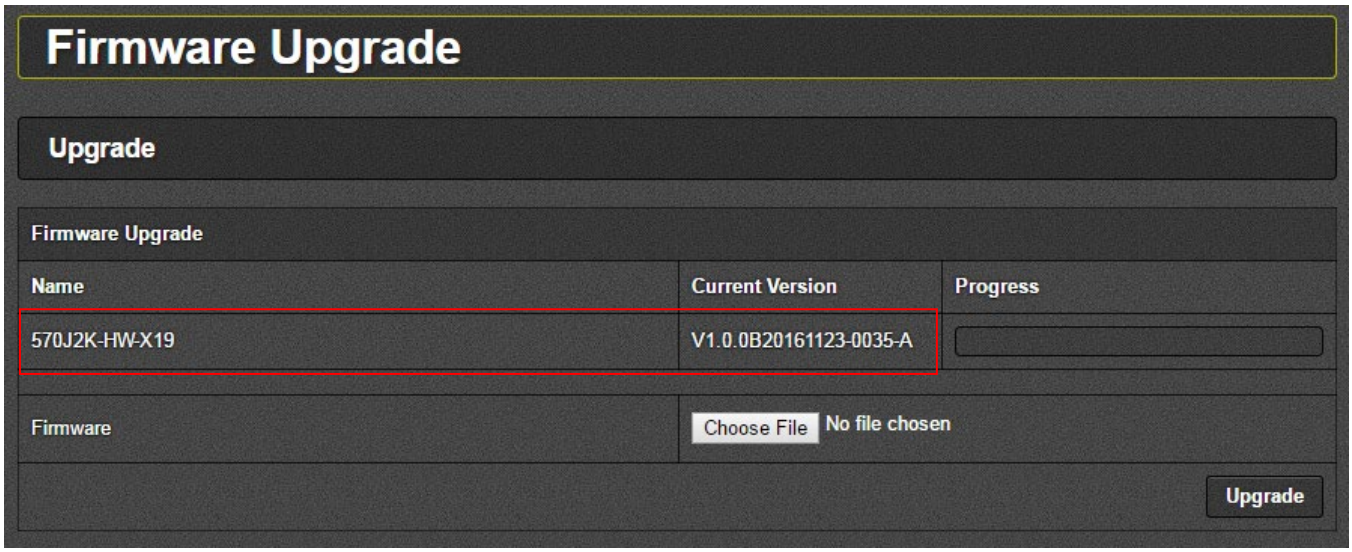

Figure 7-2 : WebEASY® - Firmware Upgrade Menu

Click choose file and browse to locate image file. Once selected, click open to advance to next step. Click upgrade and watch progress bar for status. Once completed, the device will automatically restart.

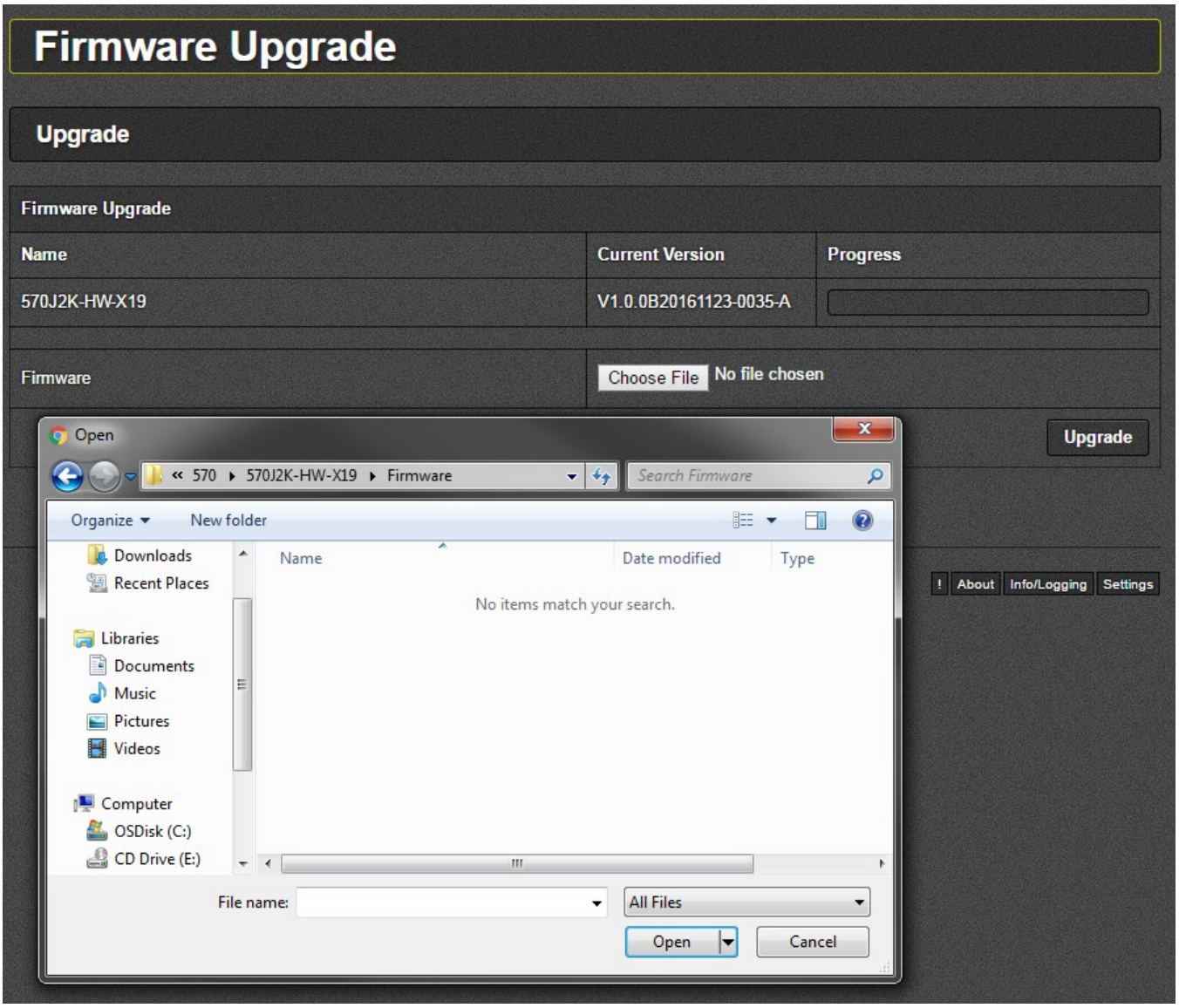

Figure 7-3 : WebEASY® - Firmware Upgrade Menu