USER MANUAL

Equipment Description	PCB CS 2CH Video Encoder
Ixys Part Number:	101614

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10.01.2024	A	Issued for release	VHA
Prepared		**Checked**	**Approved**
VHA		SHA	OMH

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1. INTRODUCTION

1.1. GENERAL NOTES

This document outlines and defines the installation, operation, and maintenance procedures for the PCB CS 2CH Video Encoder. The manual will contain all relevant data and methods to be able to use and maintain the device for its intended purpose.

It will be stated in the manual everything from technical specifications, installation, and maintenance to troubleshooting.

1.2. PURPOSE AND SCOPE

The purpose of this manual is to give instructions to install, operate and maintain the PCB CS 2CH Video Encoder supplied by Ixys AS.

The manual is to be used by trained and competent personnel only.

1.3. ABBREVIATIONS

Abbreviation	Description
PCB	Printed Circuit Boards
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
ESD	Electrostatic Discharge
IP	Internet Protocol

1.4. SUPPLIER CONTACT INFORMATION

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www.ixys.no

2. HEALTH, SAFETY AND ENVIRONMENT

2.1. GENERAL

Safety Notes and General Precautions shall be presented to all personnel concerned prior to testing, operation, maintenance, and repair. The operations shall be performed by the responsible engineer/supervisor. The personnel using this equipment must have knowledge of this type of equipment and have familiarized themselves with the applicable procedures and manuals for this product.

2.2. SAFETY MESSAGE LEVELS

Safety message level		Indication
	DANGER:	A hazardous situation which, if not avoided, will result in death or serious injury
	WARNING:	A hazardous situation which, if not avoided, could result in death or serious injury
	CAUTION:	A hazardous situation which, if not avoided, could result in minor or moderate injury or damage to equipment
	Electrical Hazard:	The possibility of electrical risks if instructions are not followed in a proper manner
NOTICE:		A potential situation which, if not avoided, could result in an undesirable result or state. A practice not related to personal injury

3. SPECIFICATIONS

3.1. DESCRIPTION

The PCB CS 2CH Video Encoder is used to either encode or decode two composite video inputs to h264 compressed video streams.

Inbuilt network switch and two external 100Mbps ports enables daisy chaining of multiple devices.

Configuration is possible through Web interface in each of the two channels.

3.2. TECHNICAL DATA

General	
Manufacturer	Ixys AS
Description	PCB CS 2CH Video Encoder
Weight	~150g
Dimensions	96 x 104 x 15mm (PC104 compatible format)

Electrical Data	
Supply Voltage	24 (9 – 30) VDC
Power Consumption	~ 5W

Cable Connectors	
Ethernet Ports	RJ45
J4 Power Supply	Wago 2091-1124
J1-2 Composite video in/out	SMB

Other	
Speed on network ports	100 Mbps
Default IP address channel 1	192.168.24.53
Default IP address channel 2	192.168.24.54
Recommended spacers under PCB	16mm

3.3. WARRANTY CONDITIONS AND GUARANTEE

- Improper use of equipment where use is not reflected in what it was intended to.
- Where general maintenance is not performed leading to defective parts or other type of defect.
- Incorrect handling or use of equipment.
- Packing not carried out in an ESD protective way.

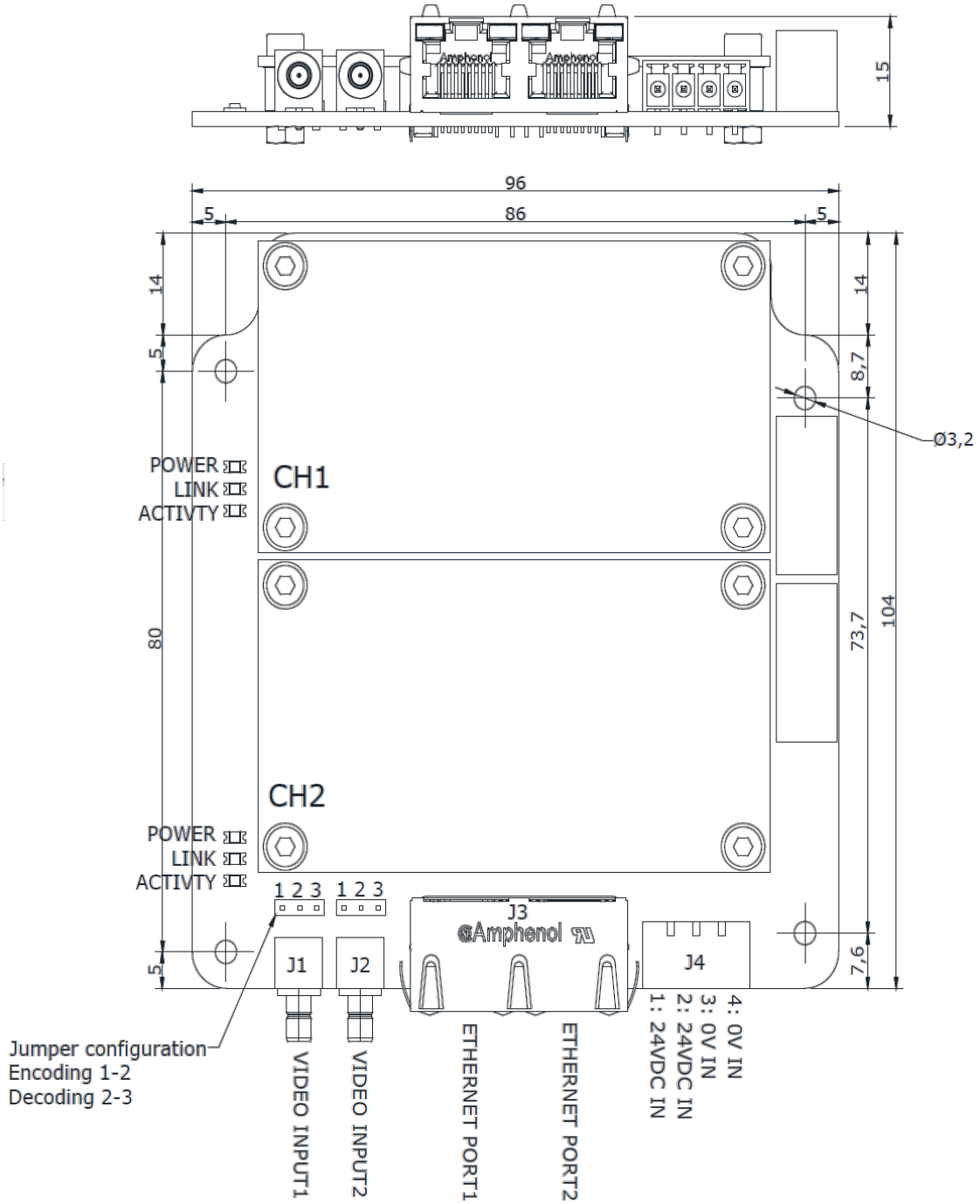
3.4. ORDERING

Ixys Part Number	Description
101614	PCB CS 2CH Video Encoder

3.5. ACCESSORIES

Ixys Part Number	Description
100365	Connector RJ45
100958	Connector SMB RG169 Right Angle
112073	Connector Wago 3.5mm 4way Plug 2091-1124

4. DRAWING


Amphenol
Amphenol
15
96
5
86
5
14
5
14
8,7
Ø3,2
POWER
LINK
ACTIVTY
CH1
80
73,7
104
CH2
POWER
LINK
ACTIVTY
1 2 3
1 2 3
J3
Amphenol
J1
J2
J4
5
7,6
Jumper configuration
Encoding 1-2
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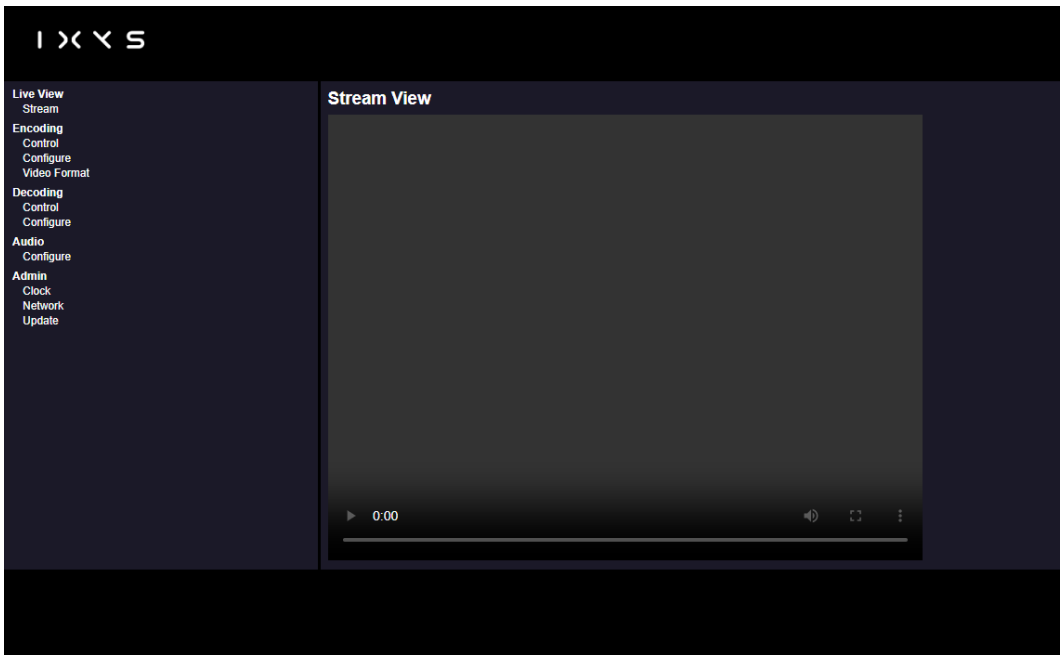
VIDEO INPUT1
VIDEO INPUT2
ETHERNET PORT1
ETHERNET PORT2
1: 24VDC IN
2: 24VDC IN
3: 0V IN
4: 0V IN

5. OPERATION

Inbuilt web server in each of the two channels are available by browsing to the IP address in a web browser. The following subchapters will describe the configuration pages available.

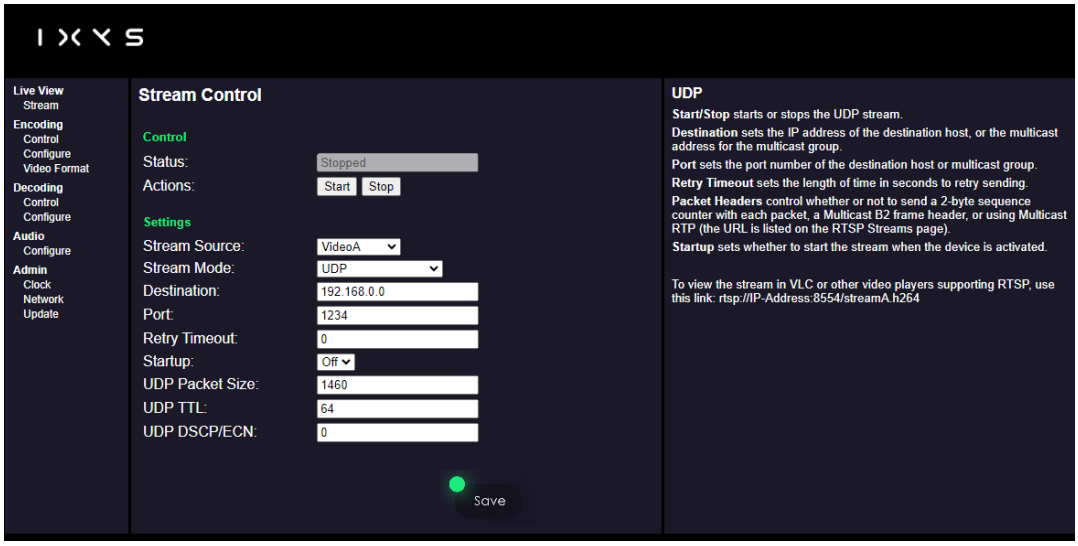
5.1. LIVE VIEW - STREAM

The live view stream page will show live video from the channel, this is meant for troubleshooting and other video decoding software is recommend for low latency display for real operation.



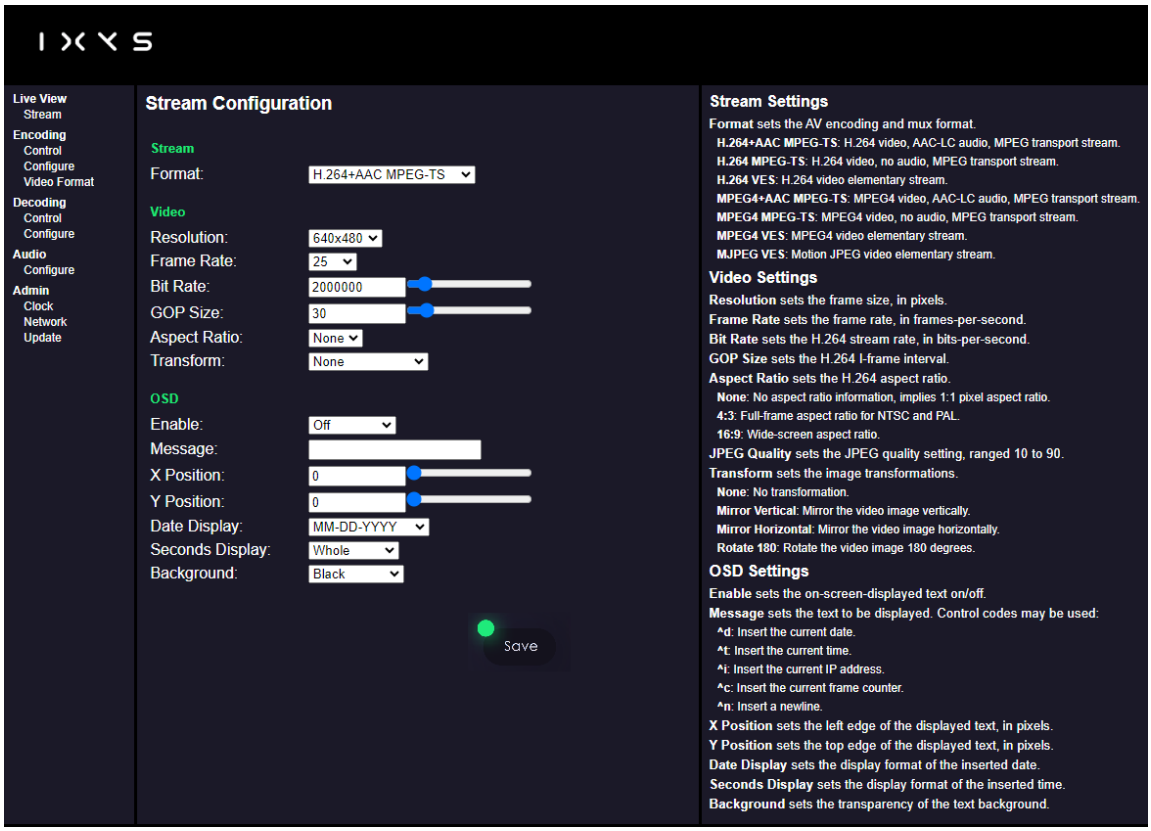
5.2. ENCODING - CONTROL

The encoding control page is used to select the outgoing stream type and destination.



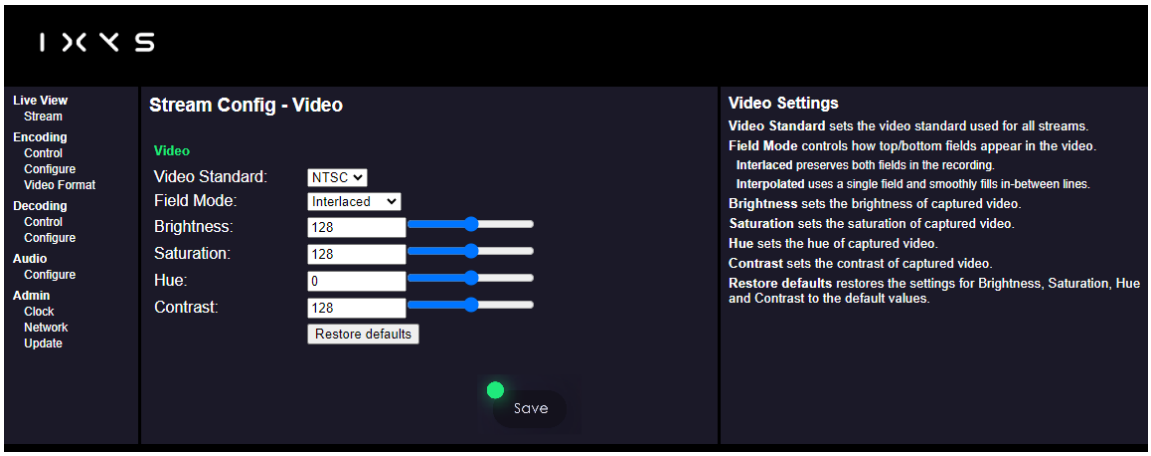
5.3. ENCODING - CONFIGURATION

The encoding configuration page is used to select the encoding parameters in addition to an on-screen display feature. The bitrate can be adjusted to reduce the bandwidth usage for low bandwidth transmission formats.



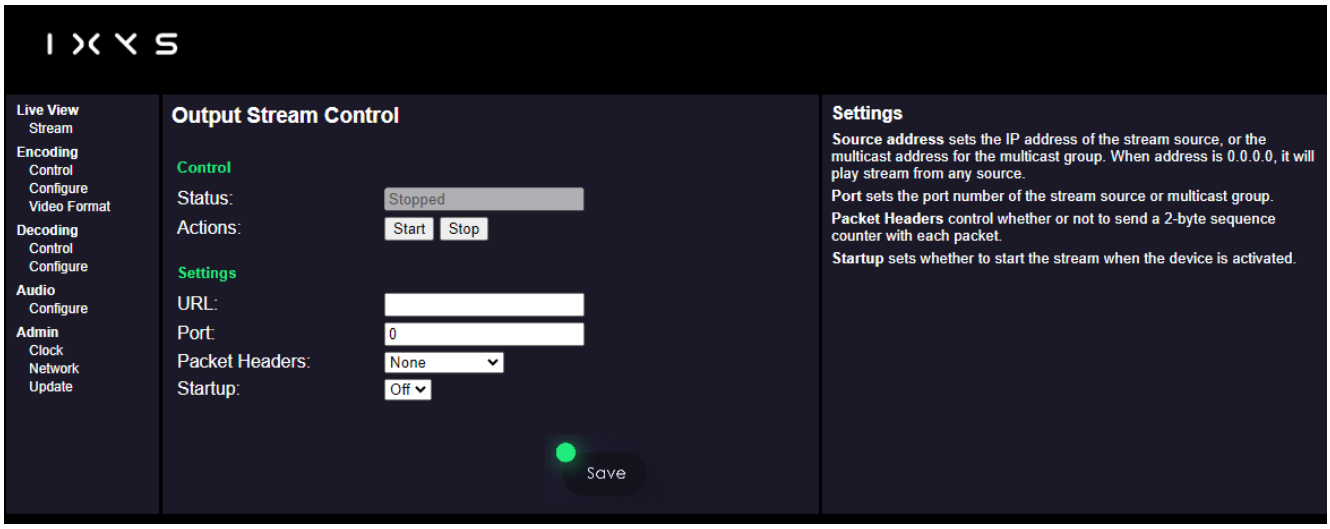
5.4. ENCODING – VIDEO FORMAT

The encoding video format page is used to configure the composite video parameters for the video input.



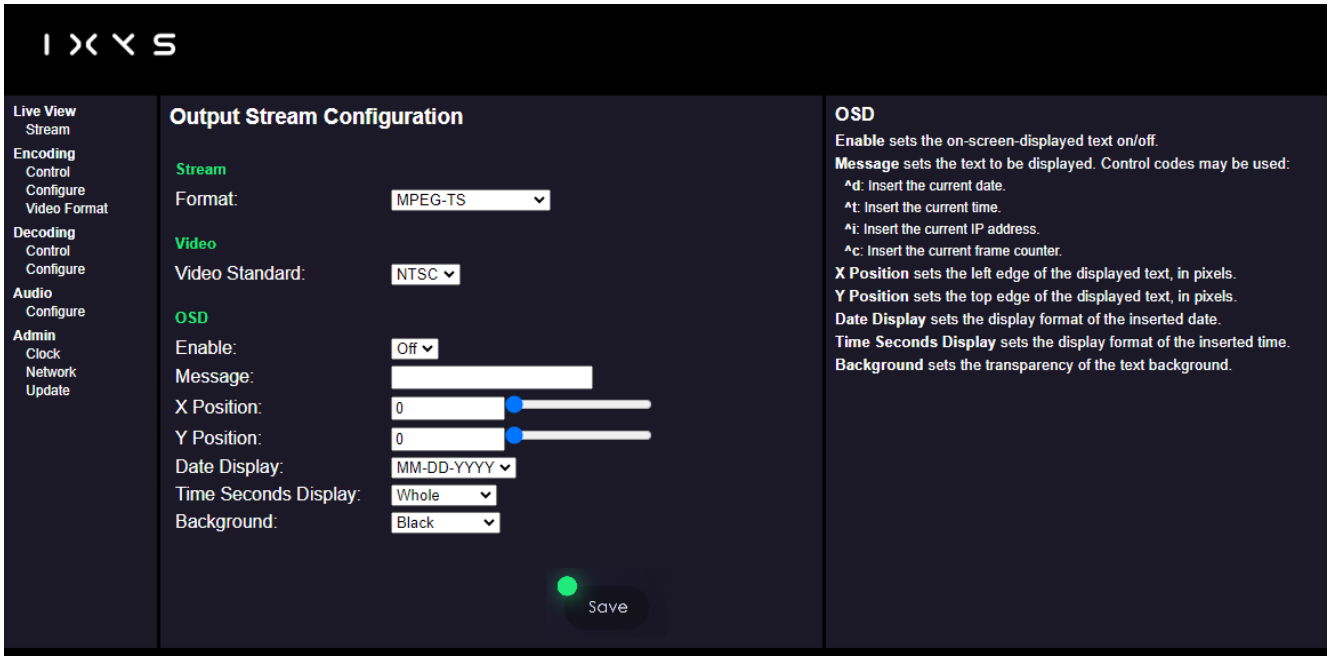
5.5. DECODING – CONTROL

The decoding control page is used to select the incoming stream type and source.



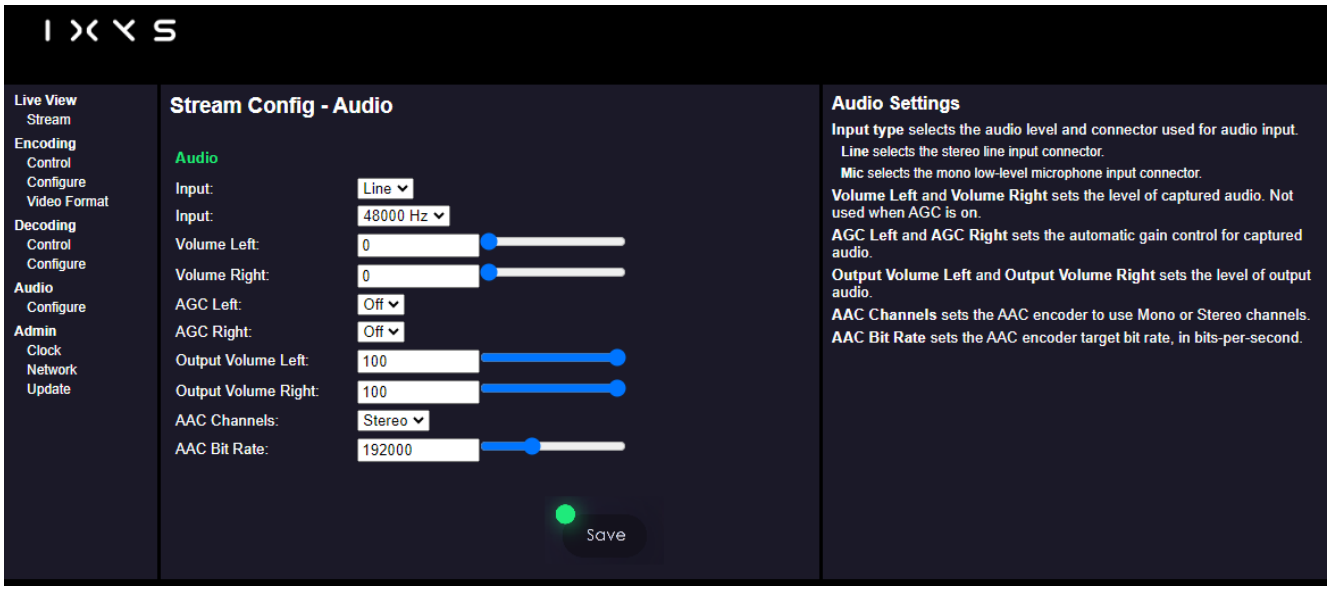
5.6. DECODING – CONFIGURE

The decoding configure page is used to set both the decoding parameters and the image standard as well as the on-screen display feature.



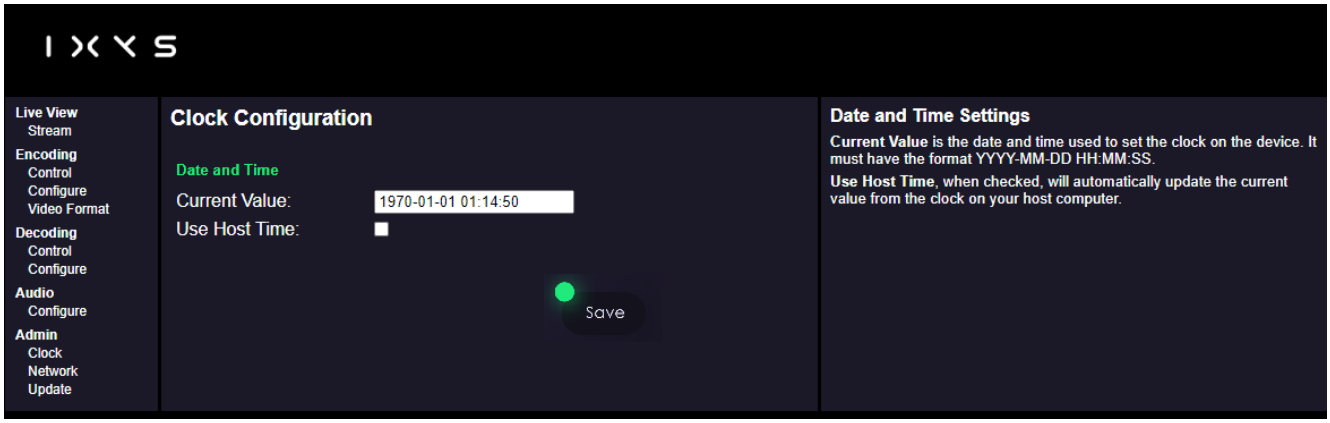
5.7. AUDIO – CONFIGURE

The audio configure page is used to set both the audio input and the output parameters.



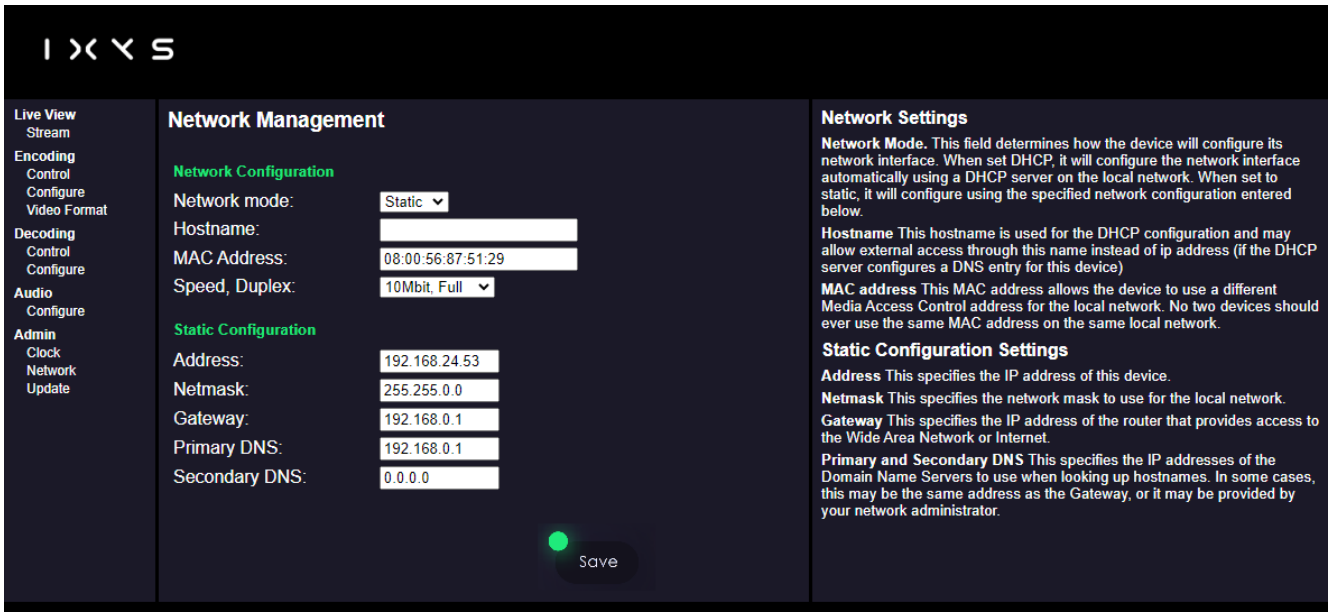
5.8. ADMIN – CLOCK

The admin clock page is used to adjust the internal clock. There is no internal backup battery and the clock setting will be lost when power is turned off.



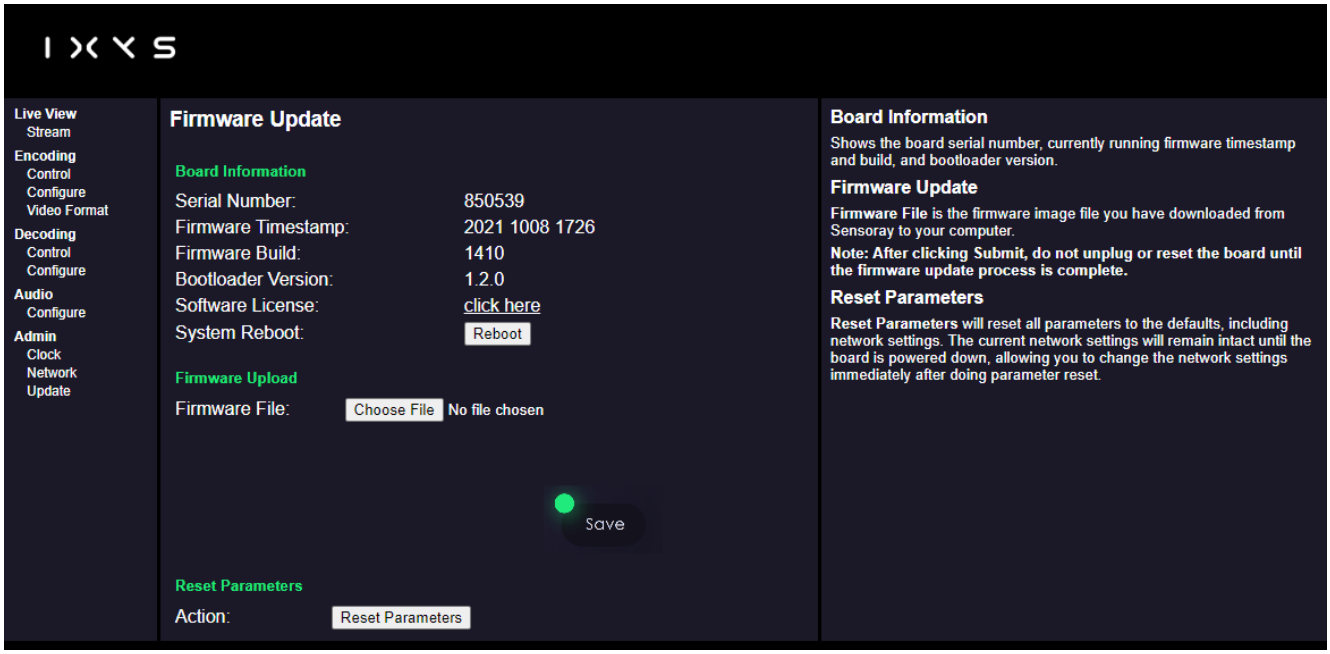
5.9. ADMIN – NETWORK

The admin network page is used to set the network configuration.



5.10. ADMIN – UPDATE

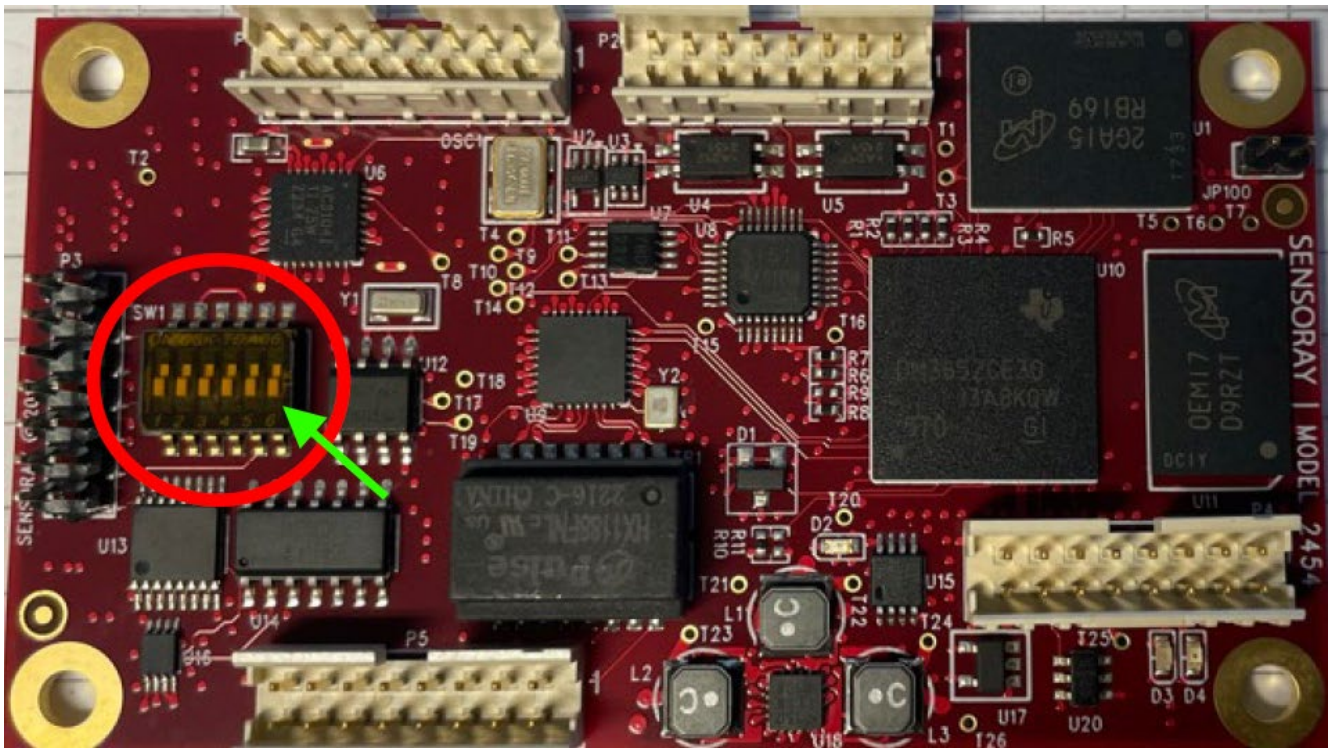
The admin update page is used to read device information, perform factory reset and to update the firmware.



5.11. RESET TO FACTORY DEFAULT SETTINGS

Switch #6 can be used to reset all settings to factory defaults in case there is no Ethernet access to the unit. Set switch #6 to On, power the board on. Turn the power off after approximately 10 seconds. Set switch #6 back to Off. All settings will be reset to the factory defaults.

After factory reset, go to the “Network” page, and set “Speed, Duplex” to “10Mbit, Full”. This is the speed used between the module and the inbuilt Ethernet switch on the mother board. For the external network ports, the speed is fixed to 100Mbps Full Duplex.



5.12. TROUBLESHOOTING / FAULTFINDING

Preliminary fault isolation Check

- ✓ The electrical connections are correct as described in drawing in chapter 4.

Trouble shooting		
Symptom	**Possible Causes**	**Remedy**
No communication with web interface	• No power to board.	• Be sure power in a range from 9 – 30VDC is provided to the board.
	• Wrong IP address being used.	• Verify correct IP address being used.
	• Wrong network settings	• Reset to factory default, see section 5.11
No video or black picture	• Jumpers set to the wrong configuration	• Set jumpers to encode or decode depending on the need
Image is unstable	• Half duplex somewhere along the network	• Check each section of the network lines to verify full duplex link on all segments