EG40F - EDGE Series FAST HEVC Decoder

User Guide

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Important Information

Thank you for purchasing our product. If there are any questions, please contact the authorized dealer. Before operating the unit, please read this manual thoroughly and retain it for future reference.

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Attention:

To ensure account security, the user should change the password after their first login. The user is recommended to set a strong password (no less than eight characters). Password login does not apply to certain models that do not need password login.
The contents of this document are subject to change without prior notice. Updates will be added to the new version of this manual. Improvements or updates to the products or procedures described in the manual will be made readily.
The best effort has been made to verify the integrity and correctness of the contents in this document, but no statement, information, or recommendation in this manual shall constitute a formal guarantee of any kind, expressed or implied. Responsibility for any technical or typographical errors in this manual will not be held.
The product appearance shown in this manual is for reference only and may be different from the actual appearance of the user's device.
This manual is a guide for multiple product models and so it is not intended for any specific product.
In this manual, the illustrations of the displayed interface, parameters displayed, drawings, and value ranges may vary with models. The user should refer to the actual product for details.
Due to uncertainties such as the physical environment, discrepancies may exist between the actual values and reference values provided in this manual.
Use of this document and the subsequent results shall be entirely on the user's own responsibility.
Before operating the unit, the user should read this manual thoroughly and retain it for future reference.

Symbols

Symbol	Description
	**WARNING** Contains important safety instructions and indicates situations that may cause bodily injury.
	**CAUTION** Users must be careful. Improper operations may cause damage or malfunction of product.
	**NOTE** Indicates useful or supplemental information about the use of the product.

Safety Information

 **WARNING:**

Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.
• If the product does not work properly, please contact your dealer. Never attempt to disassemble the camera yourself. (We will not assume any responsibility for problems caused by unauthorized repair or maintenance.)
• This installation should be made by a qualified service person and should conform to all the local codes.
• When shipping, the camera should be packed in its original packaging.
• Make sure the power supply voltage is correct before using the camera.
• Do not drop the camera or subject it to physical shock.
• Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
• Do not aim the camera lens at the strong light such as sun or incandescent lamp. The strong light can cause fatal damage to the camera.

Maintenance Precautions:

• If there is dust on the front glass surface, remove the dust gently using an oil-free brush or a rubber dust blowing ball.
• If there is grease or a dust stain on the front glass surface, clean the glass surface gently from the center outward using anti-static gloves or an oil-free cloth. If the grease or the stain still cannot be removed, use anti-static gloves or an oil-free cloth dipped with detergent and clean the glass surface gently until it is removed.
• Do not use organic solvents, such as benzene or ethanol, when cleaning the front glass surface.

Regulatory Compliance

FCC Part 15

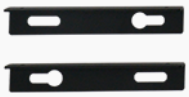
This equipment has been tested and found to comply with the limits for digital devices, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, 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.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
This device may not cause harmful interference.
This device must accept any interference received, including interference that may cause undesired operation.

CE	**LVD/EMC Directive** This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.
	WEEE Directive–2002/96/EC The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

What's In The Box

	EDGE Series Decoder (EG40F)
	12V, 4A Power Supply with International Plugs (P12-4)
	IR Remote Controller (VCC-RC-2)
	RS422 RJ45 Adapter

	Surface Mount Kit (B-SM10)
	Base Mount Kit (B-BM10)
	HDMI Cable Secure Mount
	Mounting Screw Set
	Din Rail Mount Kit (B-DR10)

Optional Accessories

	Single Rack Mount Kit (B-RM20)
	Dual Rack Mount Kit (B-RM22)
	Tri Rack Mount Kit (B-RM23)

Overview

This user guide will provide users of the EG40F Decoder with in-depth knowledge of the various features and functions of the camera and how it can be utilized. Functions limited to a specific camera model will be noted as such in the various sections.

Features

- Support up to 4K60
- FAST HEVC FPGA codec back compatible with standard HEVC codec without having Ultra-Low-Latency
- HDMI 2.0 + 12G-SDI video output
- True Dual-Output
- All video with audio embedded
- Audio intercom with frontend device
- On-screen character generator
- All firmware upgrades via IP
- POE+ and 12VDC power input

Quick Start Guide

Get Started with the FAST HEVC Decoder

1. CONNECTING THE DECODER

Power up the decoder using the included power supply or by connecting a Cat6 Ethernet cable from the decoder to a PoE+ supplying switch. Connect the decoder to your network via an Ethernet cable (unless it's also powering up through this connection). Utilize the OUT ports on the decoder to connect an HDMI cable to a monitor or an SDI cable to an SDI monitor.

2. ACCESSING THE WEB INTERFACE

- To access the decoder via the web, enter the decoder's default IP address (192.168.0.13) into your browser. Ensure that the computer being used is in the same subnet (you can adjust this by changing the computer's adapter settings).
- Log in using the default username and password (both are 'admin'). You will then be prompted to change the password.

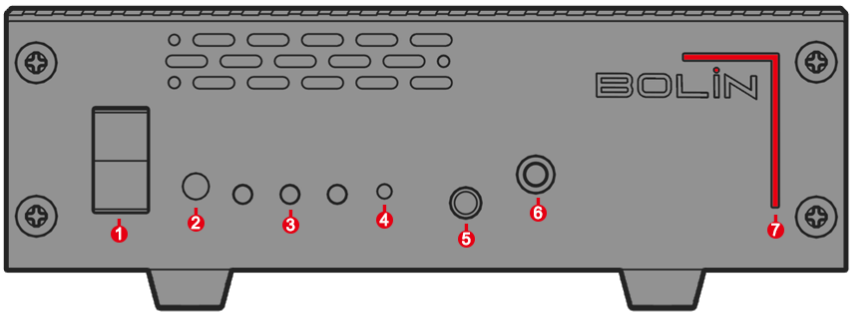
3. SETTING UP YOUR DEVICE

- After successfully logging in, update the unit's IP address to match your local network's subnet. This will reboot the device.
- Upon logging back in, specify the video and audio processing parameters and add the streams to be decoded.

4. SELECTING THE SIGNAL TO BE DECODED

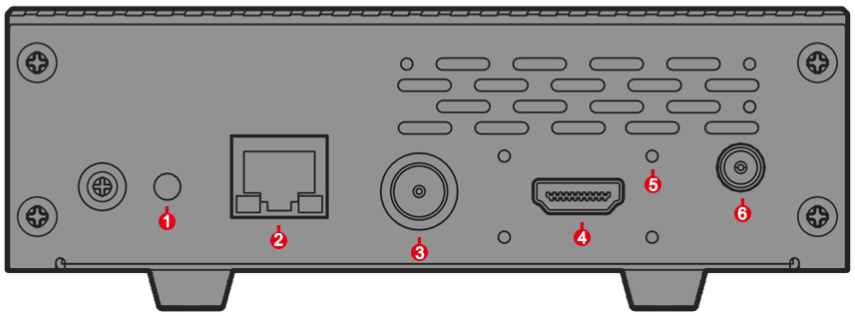
- Click on an empty 'No Source' box and select the channel type. For this example, we will use RTSP.
- Enter your camera's RTSP URL (e.g., 'rtsp://192.168.0.13:554/media/video1') and click 'Apply'.
- Select the source to enable it to play.

Decoder Diagrams and Dimensions

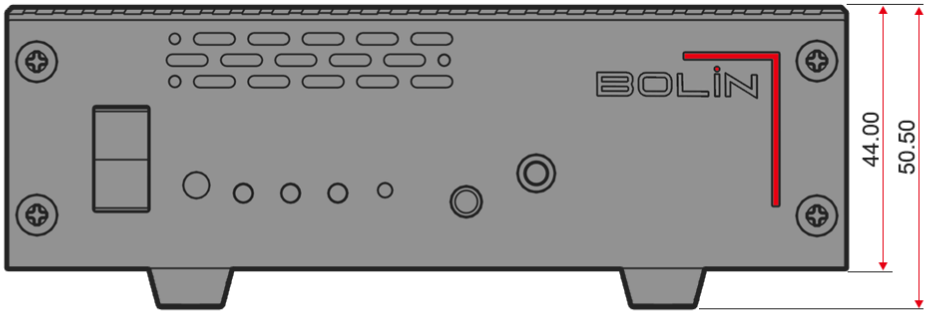


1. Power Switch
2. IR Receive Sensor
3. Operation Status Indicator
4. Factory Reset Pin Button
5. Intercom Audio Port
6. Audio Line Out
7. Power On Light

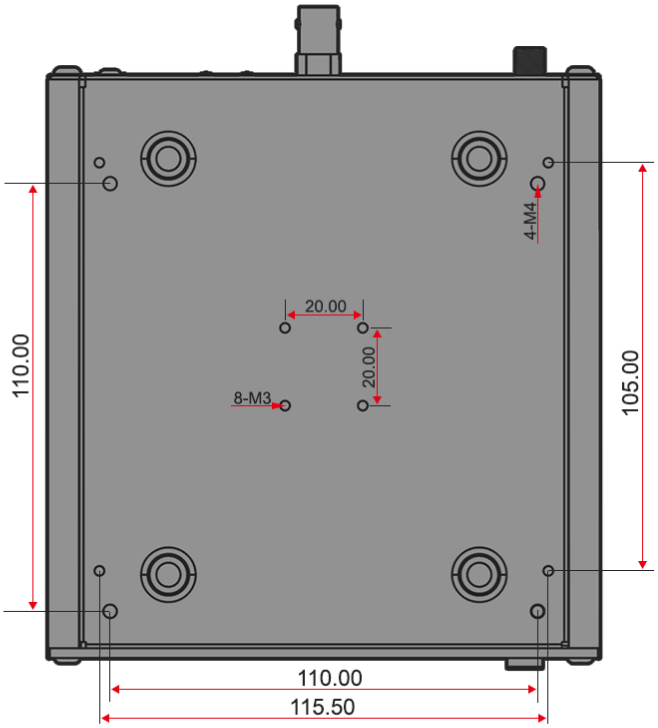
1. IR Receiver Sensor
2. 1G Network Port with PoE+ power input Audio Line Out
3. 12G-SDI Output (audio embedded)
4. HDMI 2.0 (audio embedded)
5. HDMI Cable Secure Mount
6. Power Input Port with Lock

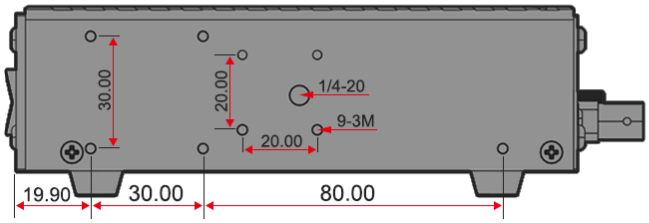


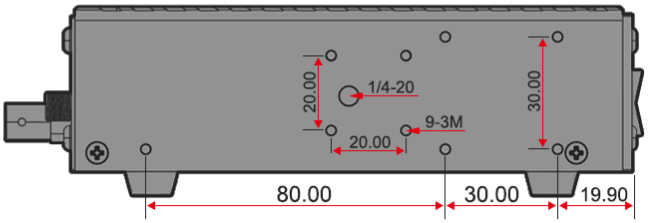
NOTE: **All dimensions listed below are in millimeters.**


BOLIN
44.00
50.50

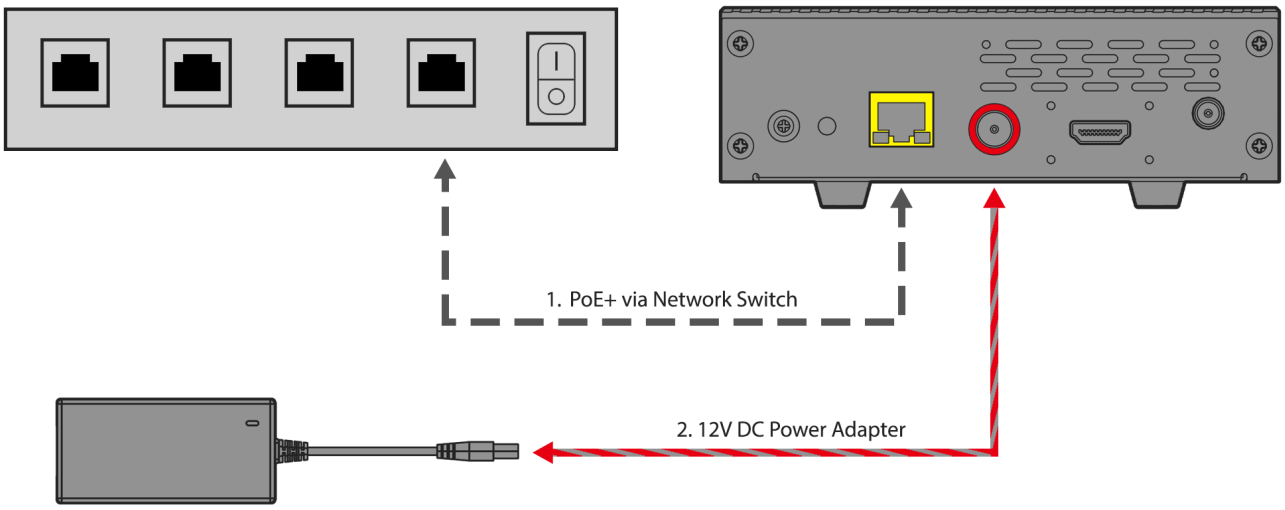

BOLIN
149.80
142.00


4-M4
20.00
20.00
8-M3
110.00
105.00
110.00
115.50


30.00
20.00
1/4-20
9-3M
20.00
19.90
30.00
80.00


20.00
1/4-20
9-3M
20.00
30.00
80.00
30.00
19.90

Power

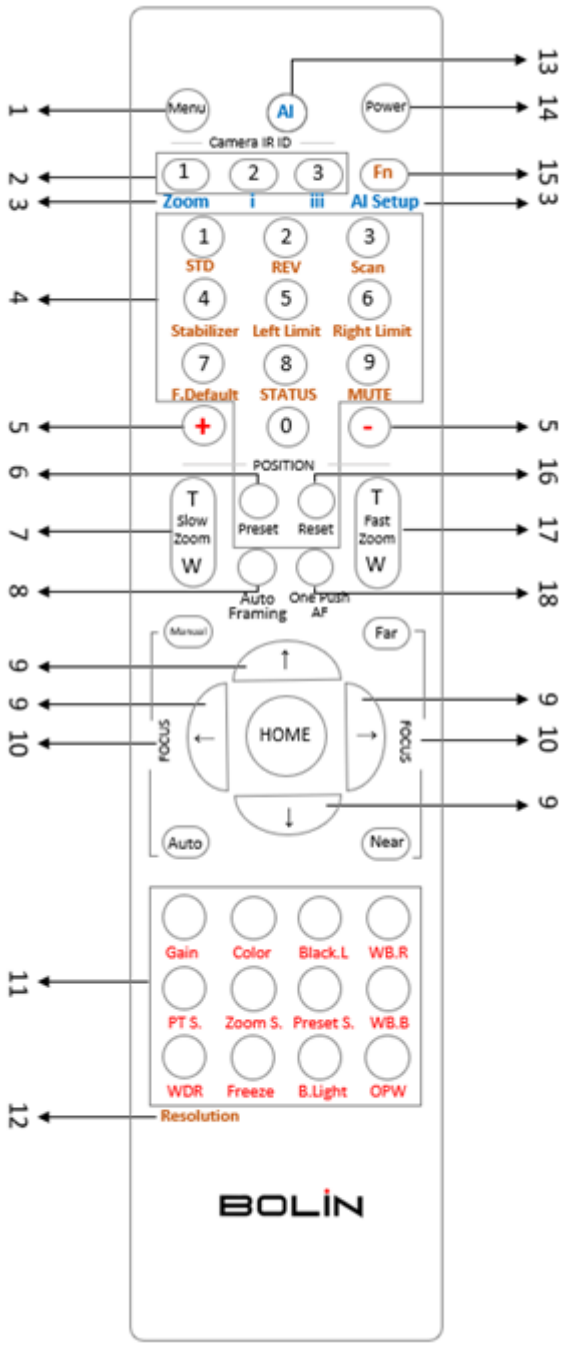


The decoder can be powered two ways:

- 12VDC 4A Power Adapter (P12-4), which is included in the box, plugged into the DC 12V Power Input
- POE+ (IEEE802.3at) is supported for powering the decoder.

CAUTION: Only use the DC power adapter supplied with the camera. Do not use any other DC power adapter.

Functions of the IR Controller



1. **Menu** - On-Screen Display (OSD) Toggle
2. **IR ID Selector** - Select which IR Channel (Camera) to be controlled
3. **AI Function Buttons** - Disabled
4. **Buttons 1-9** - Used to set & recall corresponding presets. (See #6 to set a preset and #16 to erase a preset)
5. **+ & - Buttons** - Used in conjunction with image adjustment buttons (11) to increase or decrease parameters.
6. **Preset** - To save a preset, hold down the "Preset" button and the preset number you would like to assign it to.
7. **Slow Zoom** - Zoom's the camera in or out in a slow speed.
8. **Auto Framing** - Disabled

9. **Direction Arrows** - Pan and Tilt the camera in the corresponding direction. Navigate the OSD Menu when open.
10. **Focus Adjustments** - Use the "Auto" button to enable auto-focus. To make manual focus adjustments, press the "Manual" button first, followed by the "Far" or "Near" buttons to adjust.
11. **Image Adjustments** - Select the property you would like to adjust, followed by the + and - buttons (5) to make the appropriate adjustment, unless otherwise noted below. The selected function and corresponding options will glow when selected.
    - ***Gain*** - Image gain settings
    - ***Color*** - Color saturation settings
    - ***Black.L*** - Image black level settings
    - ***WB.R*** - White Balance, Red settings
    - ***PT.S*** - Pan/Tilt speed settings
    - ***Zoom.S*** - Zoom speed settings
    - ***Preset.S*** - Preset speed settings
    - ***WB.B*** - White Balance, Blue settings
    - ***WDR*** - Wide Dynamic Range Settings
    - ***Freeze*** - Freeze the video on the current frame. (Doesn't use + and - buttons)
    - ***B.Light*** - Back light compensation
    - ***OPW*** - One Push White Balance (Hold the button down while pointing the camera at a gray card to set white balance.)
12. **Resolution** - Used to change the video format/resolution. Press and hold the Fn button (15) and Resolution button to select the desired format. The image block will restart after the format is changed, and the screen will go black for a few seconds.
13. **AI Button** - Disabled
14. **Power** - Press and hold for three seconds to turn the camera on/off.
15. **Fn Button** - Press and hold in conjunction with other buttons in dark brown text (Stabilizer, Mute, Scan, etc...) to adjust parameters.

Video Output

The decoder has multiple video outputs, which can be used simultaneously, and the resolutions can be configured independently.

HDMI Out (HDMI 2.0)

HDMI Standard Classifications

HDMI Standard	Bandwidth	Max Resolution Supported
HDMI 1.4	10.2 Gigabit/Second	1080p, 120 Hz 4K, 30 Hz
HDMI 2.0	18.0 Gigabit/Second	4K, 60 Hz
HDMI 2.1	48.0 Gigabit/Second	8K, 120 Hz

NOTE: It is recommended for the user to utilize a certified "Premium High Speed HDMI" cable to guarantee the attainment of the maximum signal quality from their camera.

Dual SDI Out (12G-SDI)

SDI Standard Classifications

SDI Standard	Bandwidth	Resolution Supported
SD-SDI	270 Megabits/Second	480i
HD-SDI	1.485 Gigabit/Second	720p / 1080i
3G-SDI	2.970 Gigabit/Second	1080P, 60FPS
6G-SDI	6 Gigabit/Second	4K, 30FPS
12-SDI	12 Gigabit/Second	4K, 60FPS

NOTE: The SDI Output labeled as "Program Out" or "P/G Out" will only display the video and not any OSD Menu's or overlays.

Network

This Decoder offers a variety of functionalities via a network connection. To connect the decoder to the network, the user should adhere to the following steps:

- Acquire a standard Category (CAT) 6 cable and insert one end of the cable into the decoder. Connect the other end to a network switch.
- Power on the decoder.
- To retrieve the IP address of the decoder, the user can download Bolin's IPC search tool from the website download center (www.bolintechnology.com) onto a Windows computer and execute the tool to locate the camera on the network.
- The user should ensure that their decoder and computer are on the same subnet of the network to gain access to the Web Interface.

NOTE: **Factory-Default Camera Network Settings**
Static IP Address: 192.168.0.13
Subnet Mask: 255.255.255.0
Gateway: 192.168.0.1

To change these settings, refer to the Web Interface Configuration section of this guide.

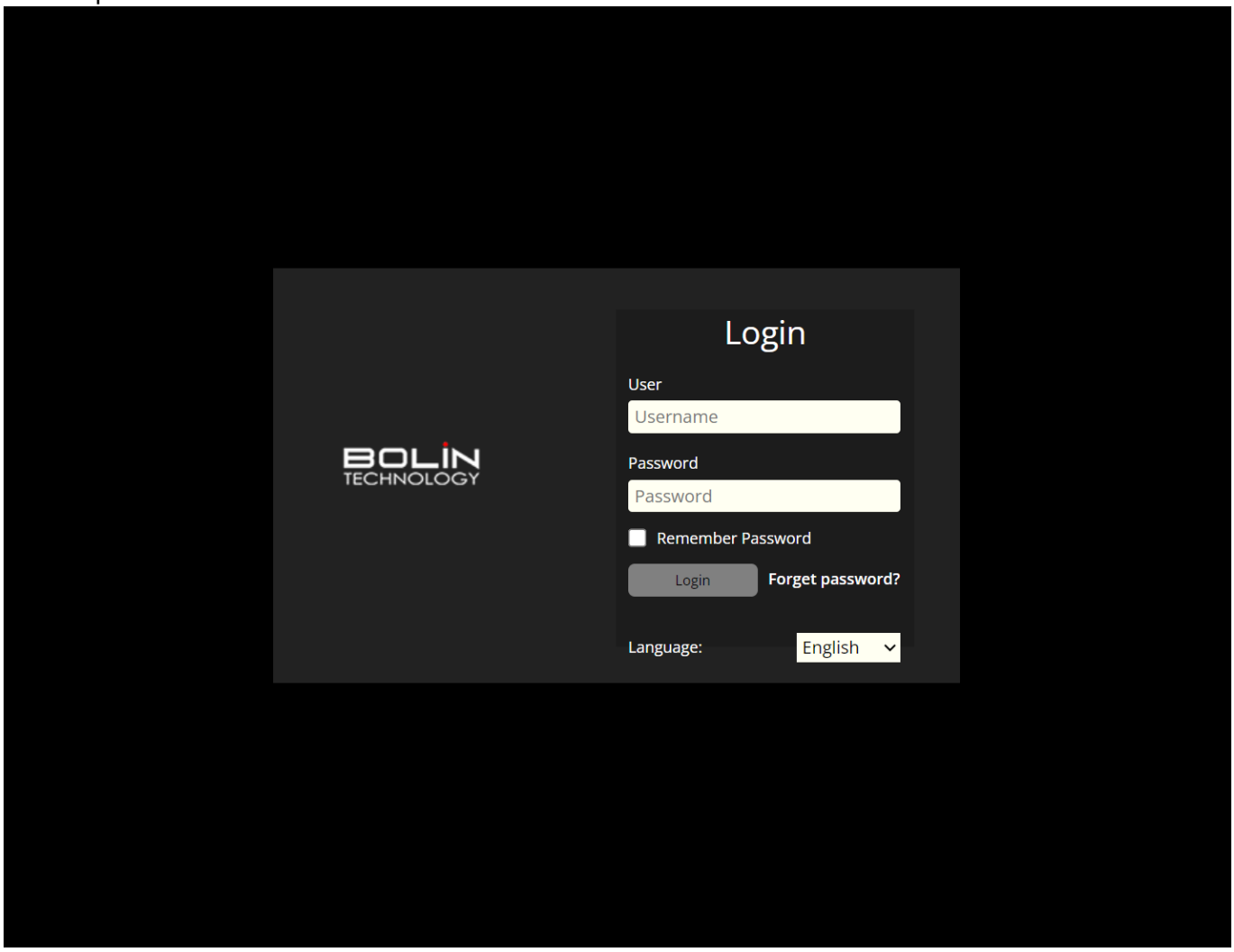
Web Interface Configuration

Once connected to the network, the decoder can be configured and managed through the web interface on any web browser that supports HTML5. This next section will explain the various sections of the web interface and what they can do.

WEB INTERFACE LOGIN

To log in the web interface, first, make sure that the decoder is connected to the network and that

the computer is on th same subnet as the decoder.



1. Once the camera's IP address has been obtained, the user should enter it into the web browser on their computer.
2. The user will be prompted to enter a username and password. By default, the credentials are:
   Username: admin
   Password: admin

   NOTE: The first time you log in to the web interface, you will be prompted to set a new password. For best security practices, enter a password that is at least 8 digits long, and contains one capital letter, one lowercase letter, one number, and one symbol.

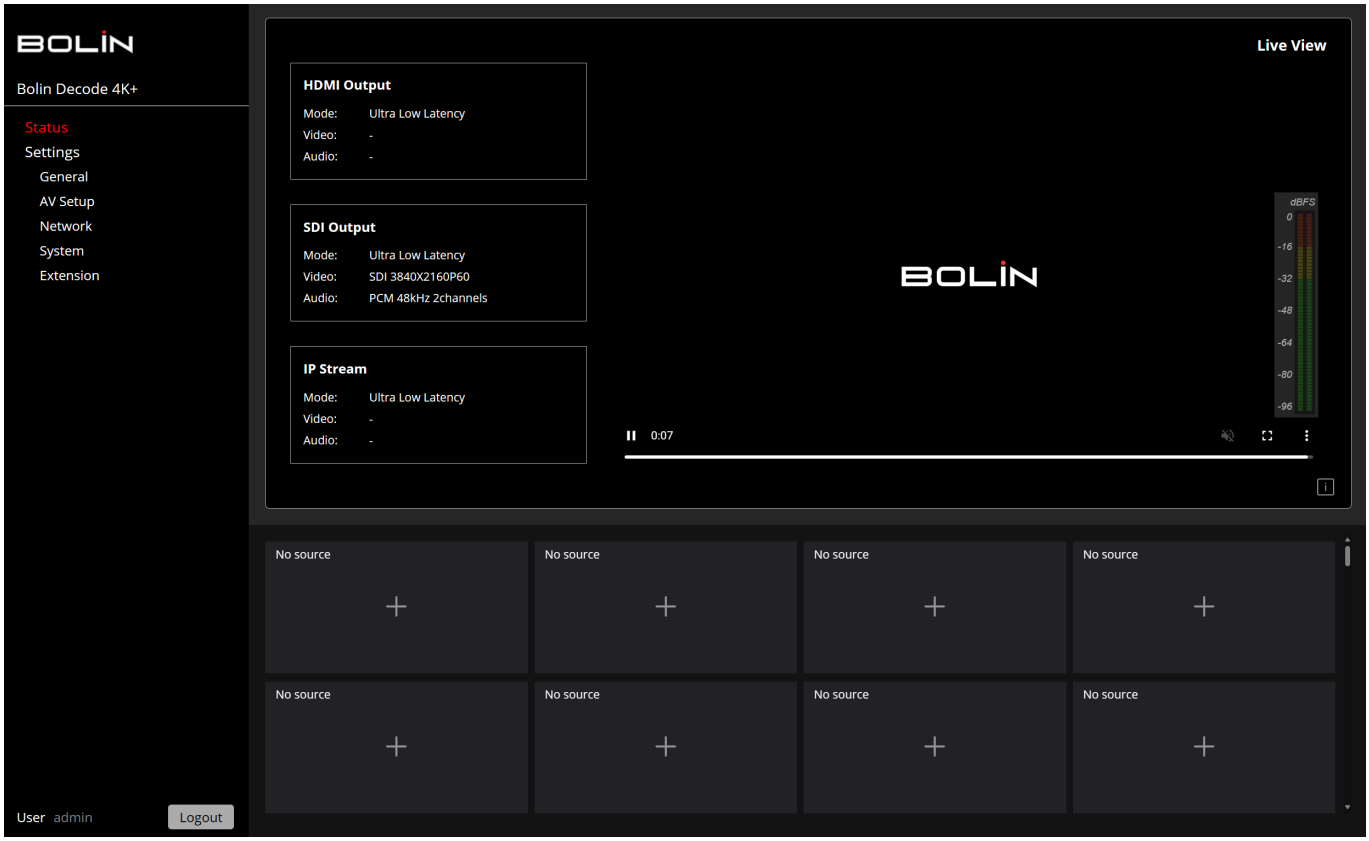
3. Once the user enters the credentials, they should press the login button.

NOTE: Forgot Your Password? If the user forgets/loses the password to their camera, our support team can help them recover it. The user must first download the IPCSearch tool from our website (www.bolintechnology.com) onto a Windows computer that is on the same subnet as the camera. Then, run the tool to search for their camera. Select the camera that they wish to recover and click the "Forgot Password" button at the bottom of the window.

STATUS

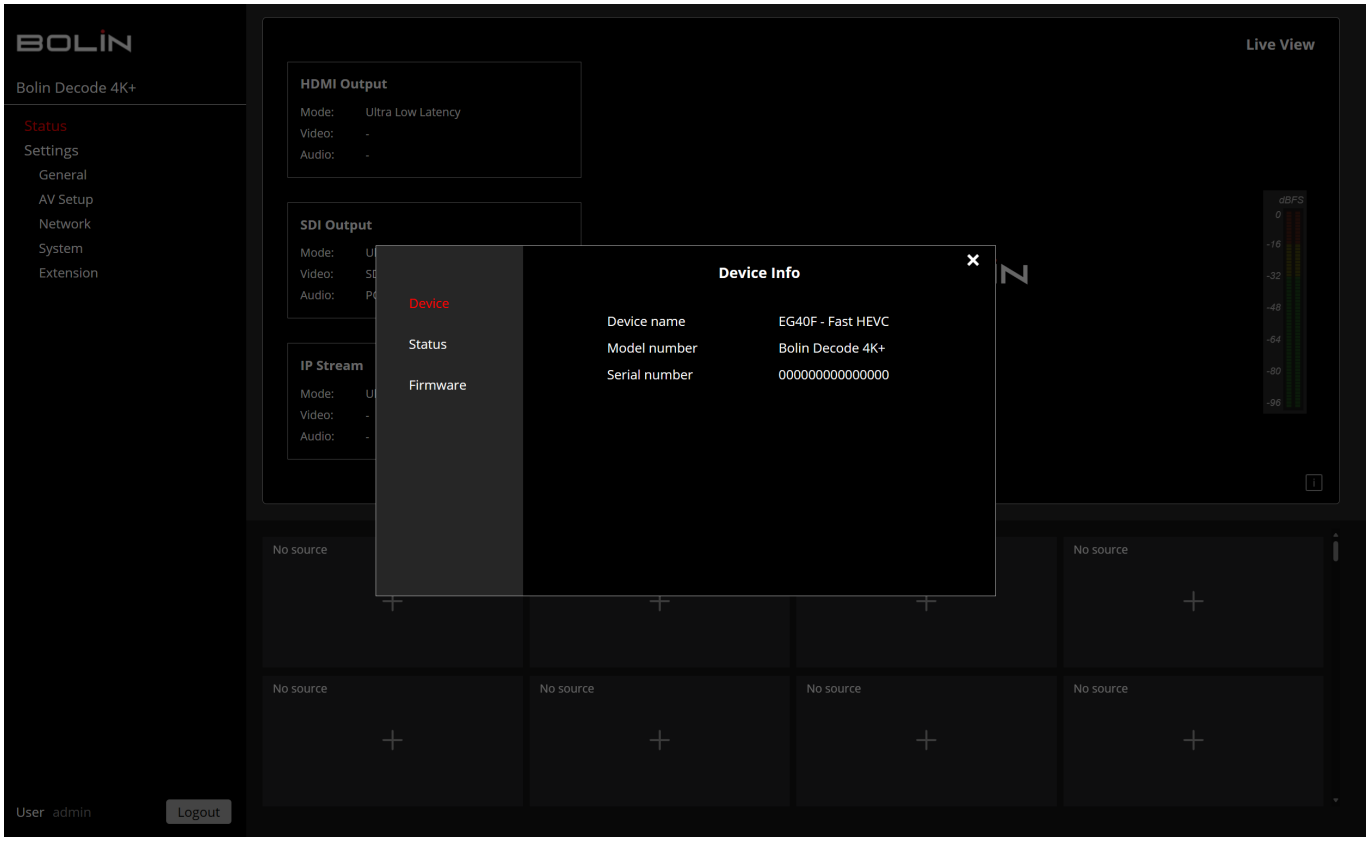
Live View

Upon successful login, you will be directed to the home page, which doubles as the status page featuring the “Live View”.

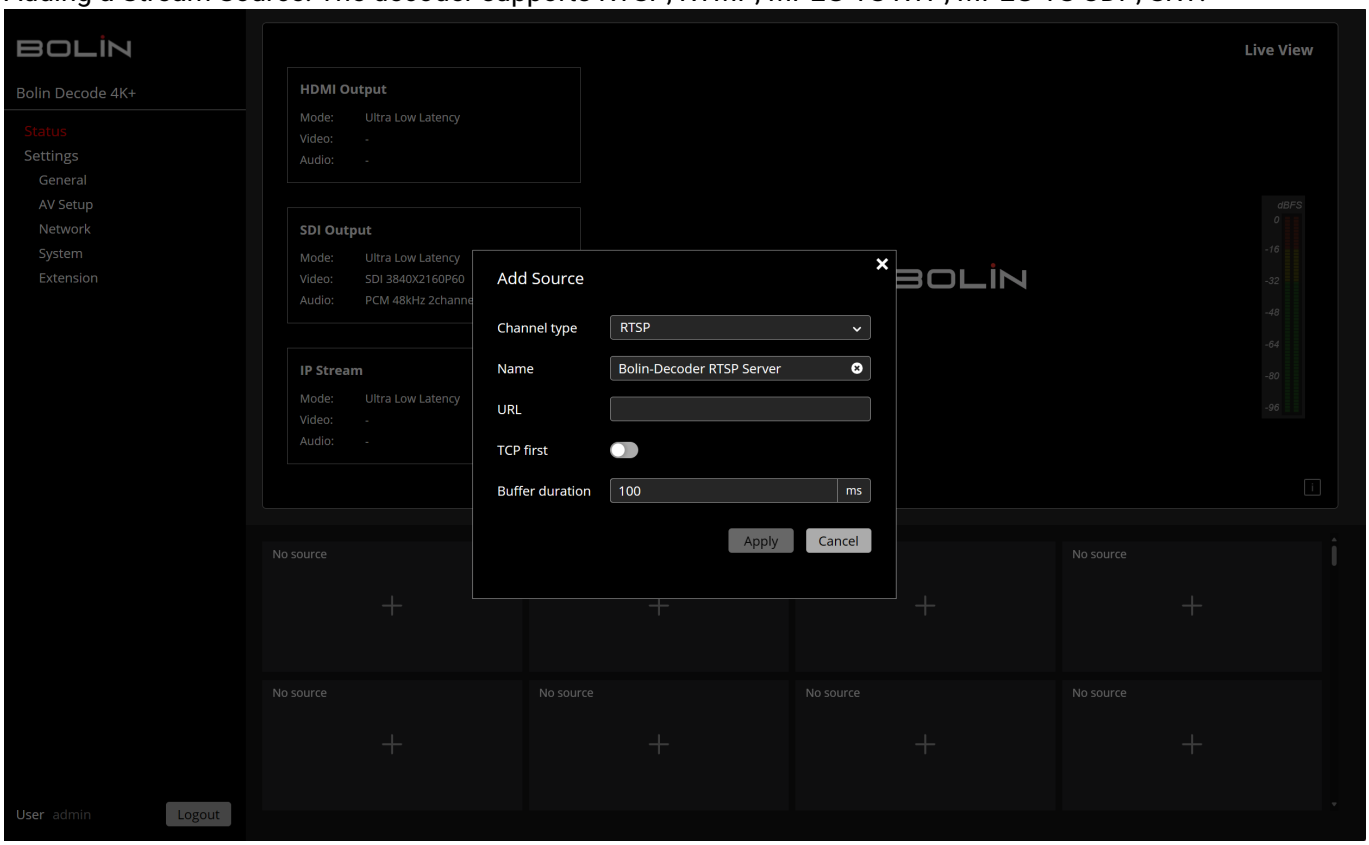


The “Live View” page offers you access to the following features:

- Viewing a preview of the video output.
- Adding video sources (up to 64 sources can be added)
- **EG40F Device Info** - To access the EG40F Device Info, click on the ‘i’ icon located at the bottom right corner of the Live View image.
  - **Device** - Device Name, Model Number, Serial Number.
  - **Status** - ARM Temp., FPGA Temp., Power Consumption, Up Time, Fan Speed, Bandwidth.
  - **Firmware** - Firmware Version, Web Plugins Version, Hardware Version.



Adding a Stream Source: The decoder supports RTSP, RTMP, MPEG-TS RTP, MPEG-TS UDP, SRT.

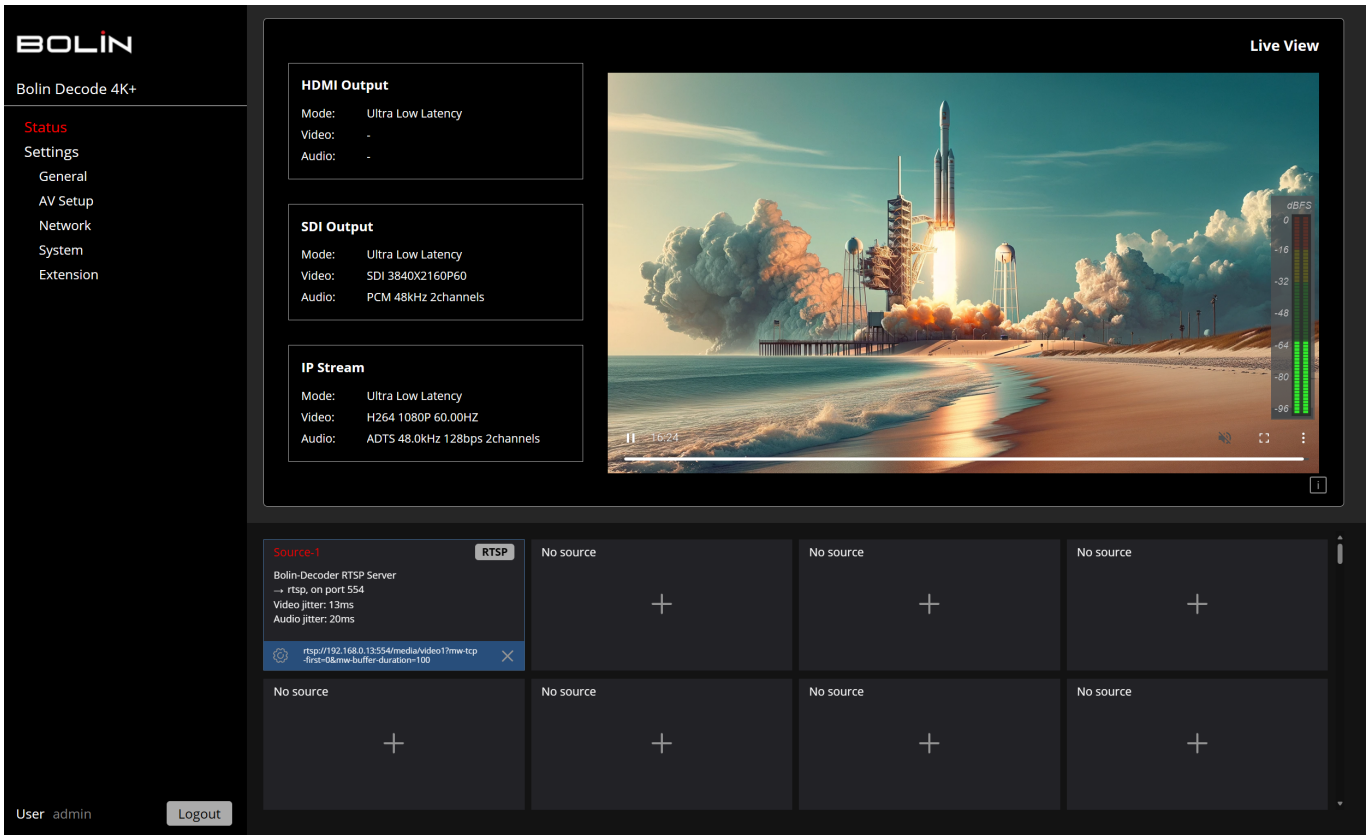


Adding a source involves the following steps:

1. Find an empty box that is marked with a ‘+’ sign and labeled ‘No Source’.
2. Click on this box, which will open a new window.
3. In this window, choose a channel type. The available options are: RTSP, RTMP, MPEG-TS RTP, MPEG-TS UDP, and SRT.

4. Input the URL address of the camera. For instance, rtsp://admin:admin@192.168.0.13:554/media/video1
5. Click ‘Apply’ to save the changes.
6. To activate the stream, click on the box that was just created.
7. To edit the stream’s URL, click on the gear icon located at the bottom left corner of the source box. Make the necessary changes and click ‘Apply’ to save.
8. If the source needs to be deleted, simply click on the ‘X’ located at the bottom right corner of the source box.

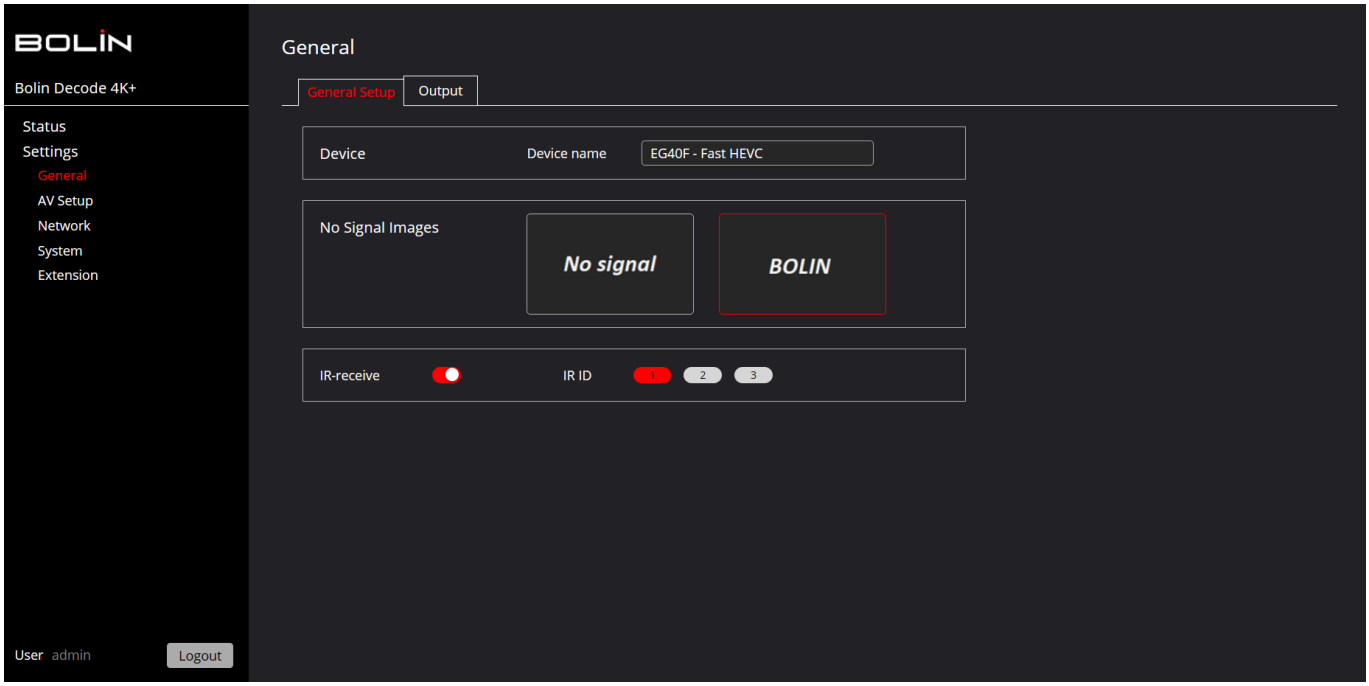
NOTE: Multicast streaming uses MPEG-TS over UDP.



SETTINGS - GENERAL

General Setup

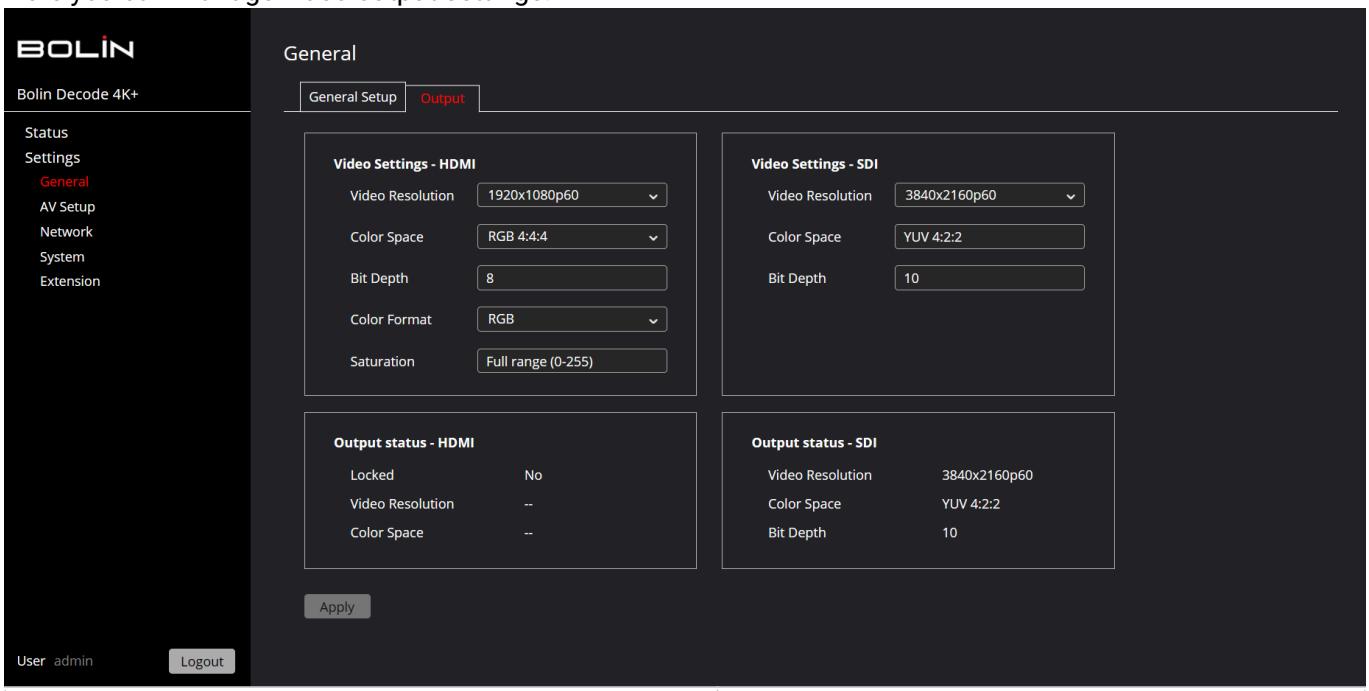
Under General is the General Setup and Output Tab.



- **Device:** This option allows for the modification of the device name.
- **No Signal Images:** This setting enables the selection of a preferred image to be displayed when there is no signal. The options include “no signal” and the Bolin logo.
- **IR-receive:** This is a toggle for turning the remote control on or off.
- **IR ID:** This setting allows for the selection of a remote control ID number. The options are 1, 2, and 3.

Output

Here you can manage video output settings.



Video Settings - HDMI
- Video Resolution
- Color Space
- Bit Depth
- Color Format
- Saturation

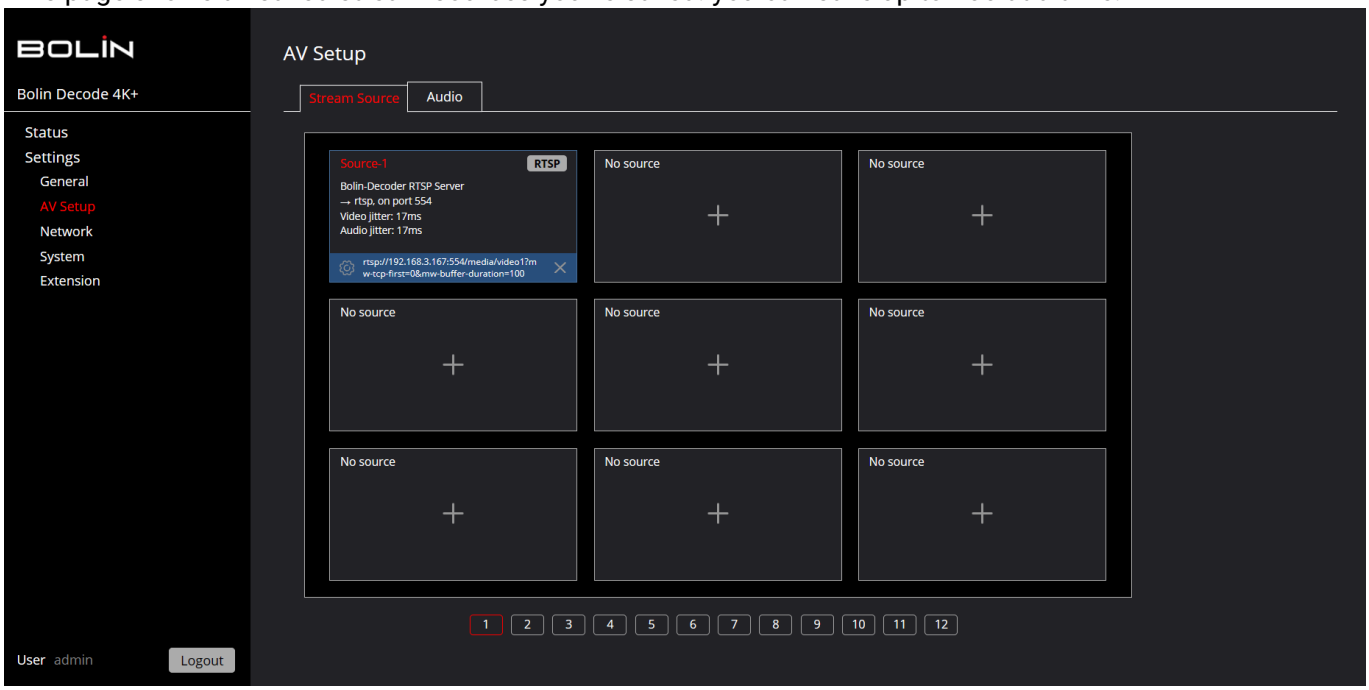
Video Settings - SDI
- Video Resolution
- Color Space
- Bit Depth

Output status - HDMI	Output status - SDI
• Locked • Video Resolution • Color Space	• Video Resolution • Color Space • Bit Depth

AV SETUP

Stream Source

This page shows all saved stream sources you've saved. you can save up to 100 at a time.



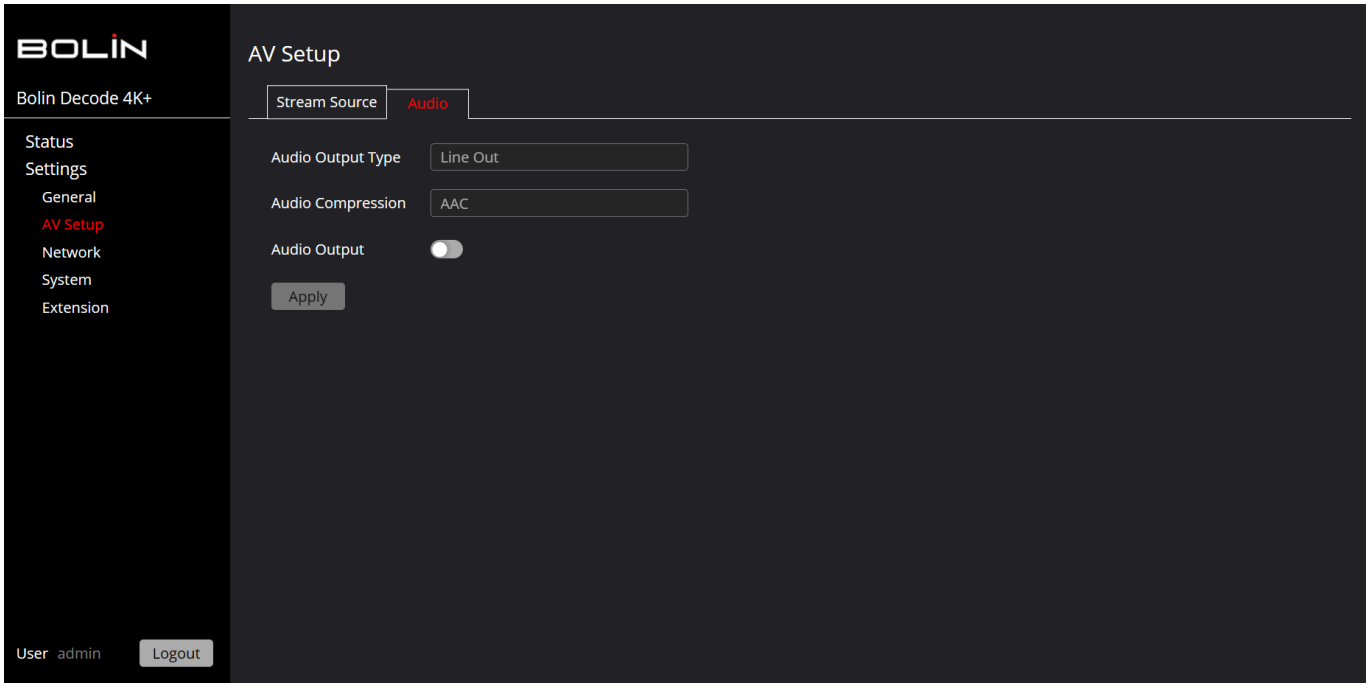
Adding a source involves the following steps:

1. Find an empty box that is marked with a '+' sign and labeled 'No Source'.
2. Click on this box, which will open a new window.
3. In this window, choose a channel type. The available options are: RTSP, RTMP, MPEG-TS RTP, MPEG-TS UDP, and SRT.
4. Input the URL address of the camera. For instance, rtsp://admin:admin@192.168.0.13:554/media/video1
5. Click 'Apply' to save the changes.
6. To activate the stream, click on the box that was just created.
7. To edit the stream's URL, click on the gear icon located at the bottom left corner of the source box. Make the necessary changes and click 'Apply' to save.
8. If the source needs to be deleted, simply click on the 'X' located at the bottom right corner of the source box.

NOTE: Multicast streaming uses MPEG-TS over UDP.

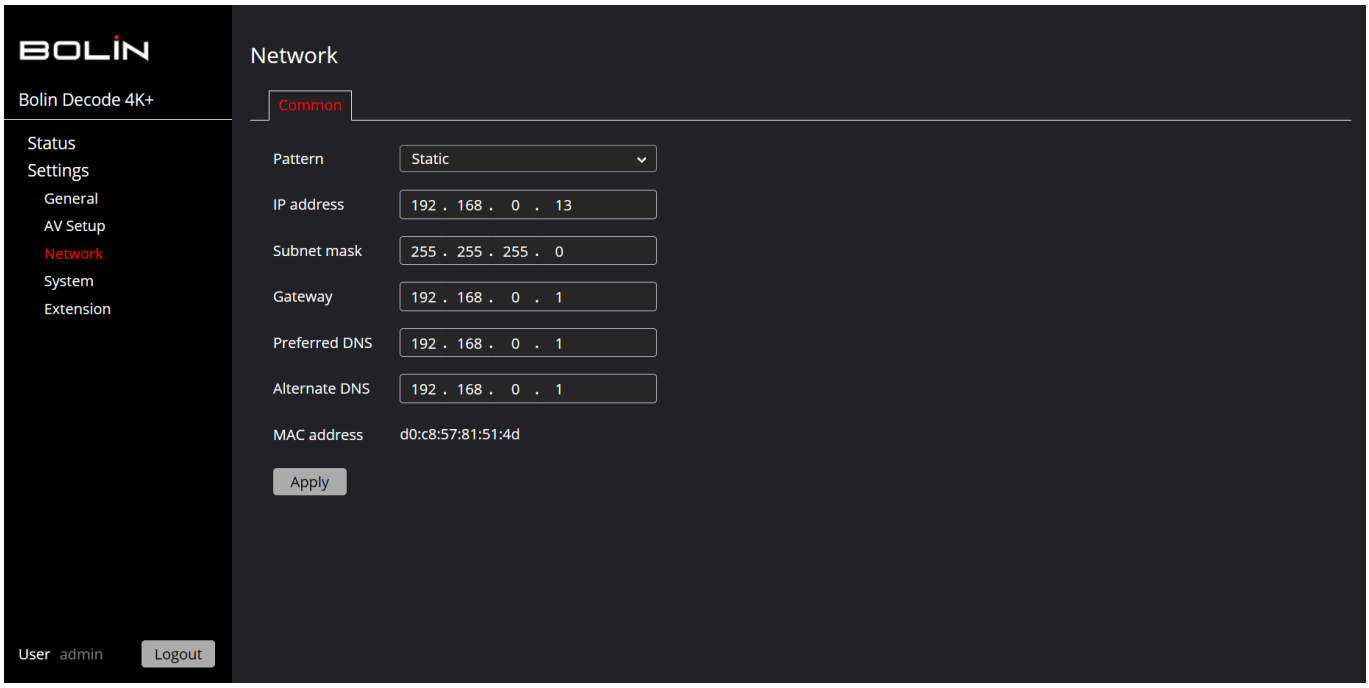
Audio

From the Audio tab, users can configure the audio settings on the camera to meet their requirements. The various settings and their functions are described below.



NETWORK

Common



- **Pattern:** Static and DHCP
  - DHCP - The IP Address of the device will be determined and dynamically assigned from the network gateway (router). This is recommended when the device is being installed on a network where the available IPs are unknown and a quick setup is required.
  - Static IP- The user will define and enter the IP address of the device. It is recommended to put the device on a known, constant IP address and guarantee the device will retain its IP address after a reboot or power failure. If not sure what IP addresses are available on a network, a user can set the camera to DHCP and use the assigned address as a static IP.

> NOTE: Static IP is recommended. By default, the camera is set to a Static IP Address of 192.168.0.13.

- **Subnet Mask:** A subnet mask is a filter for IP addresses, helping to organize and divide a large network into smaller groups, so devices within each group can communicate more efficiently.

> NOTE: By default, the camera is set to a subnet mask of 255.255.255.0.

- **Default Gateway:** When configuring the device, the default gateway IP address should be set to the IP address of the router that serves as the gateway for the local network. This address allows the device to communicate with destinations outside its immediate network.

> NOTE: By default, the gateway is set to 192.168.0.1.

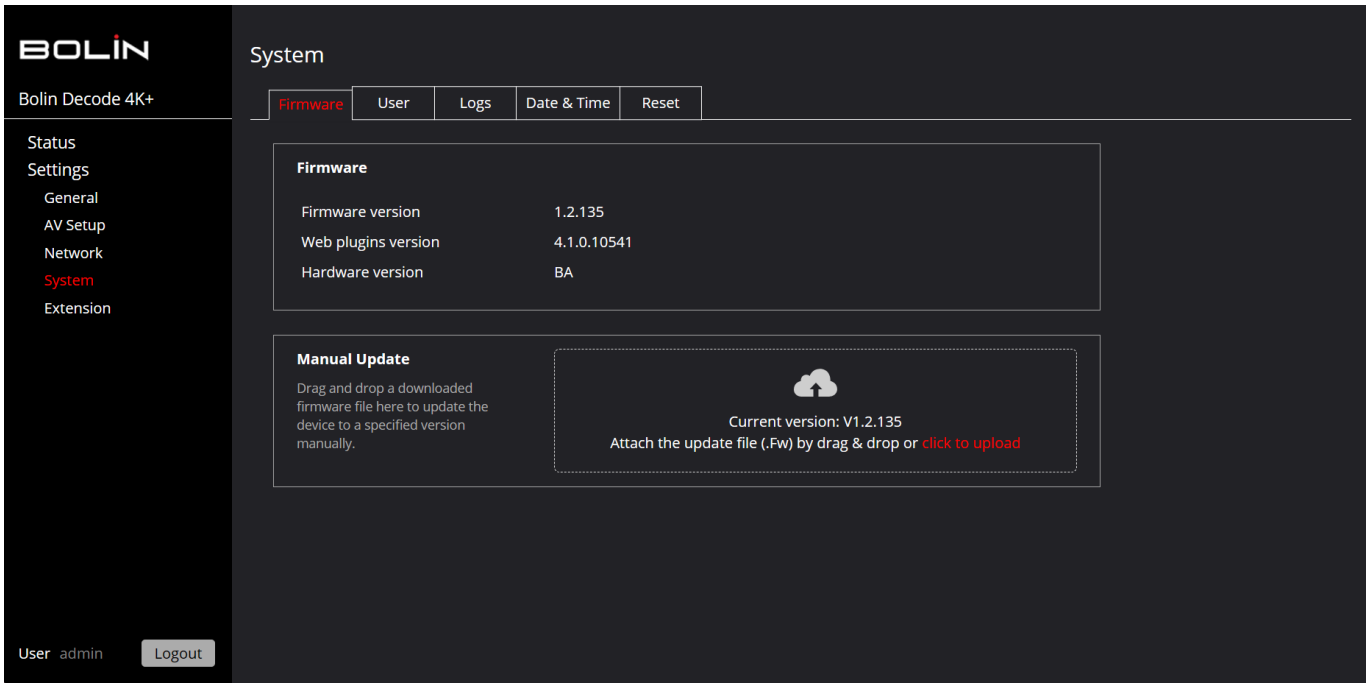
- **Preferred DNS Server:** DNS (Domain Name System) servers are the addresses specified on a device for translating domain names into IP addresses. The preferred DNS server is the primary server used for this translation, and the alternate DNS server serves as a backup in case the preferred server is unavailable or experiences issues, ensuring access to the internet and other network resources.
  - On a network that is not connected to the Internet, this can be left blank.

- **Alternate DNS Server:** allows the user to specify a secondary DNS (Domain Name System) server. This server is used for resolving domain names to IP addresses in case the primary DNS server is unavailable or cannot be reached.
- **MAC Address:** This is a fixed address, used as a unique identifier of the device on a network. This cannot be changed.

SYSTEM

Firmware

There are two parts to the Firmware tab. The upper part identifies the firmware version that the device is currently running. The lower part is where users can upload a new firmware file to update the device firmware.



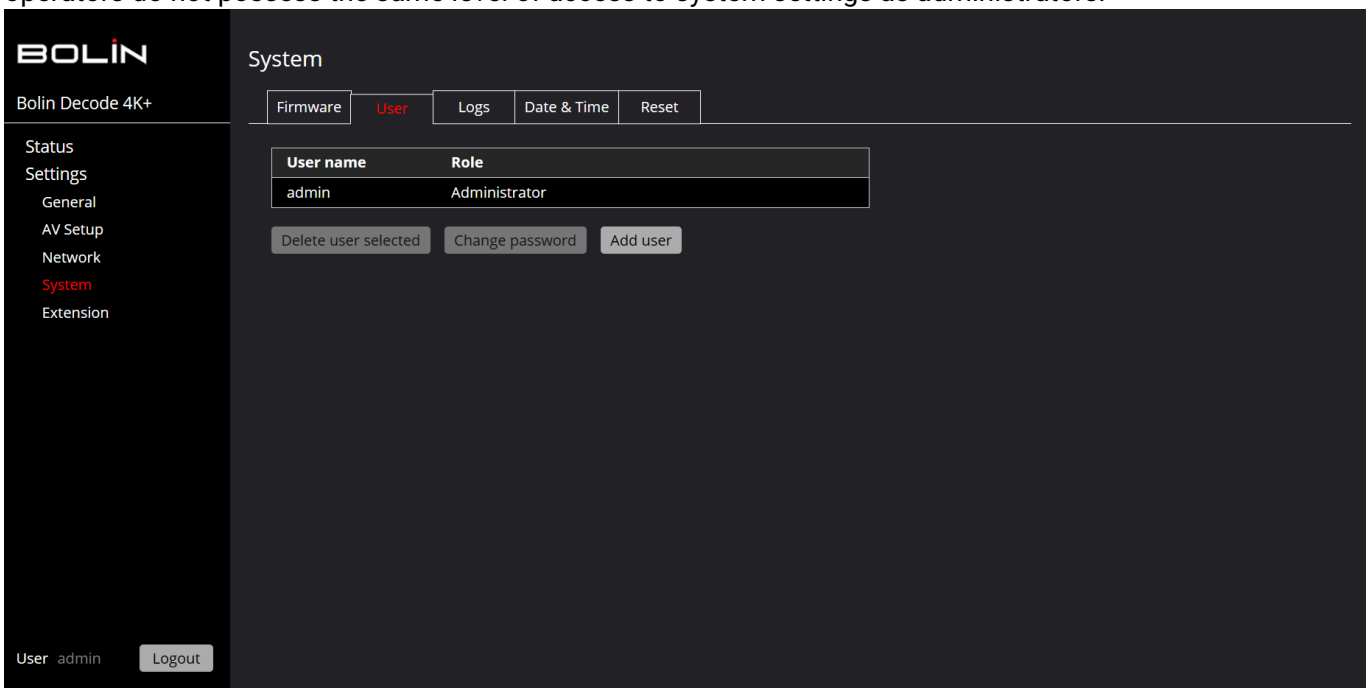
To update the **firmware**, follow these steps:

1. Visit Bolin Technology's official website at www.BolinTechnology.com.
2. Navigate to the "Support Center" and select the "Download Center" option.
3. Input the model number of the device and select the corresponding device from the list.
4. Download the firmware file and save it to a location on the computer.
5. Access the web interface of the device. The downloaded firmware file can be dragged and dropped into the designated box or the box can be clicked to manually select the file for upload.
6. After the device has verified the validity of the file, initiate the update process by clicking on the red "Update" button. During the update process, refrain from navigating away from the current tab, page, or window, and avoid clicking elsewhere on the page to prevent the update from failing.
7. Upon successful installation of the update, a prompt will appear instructing to restart the device. Follow this prompt to complete the update process.

CAUTION: It is crucial to maintain the current page active during the update process to ensure a successful update. Any navigation away from the page could result in a failed update.

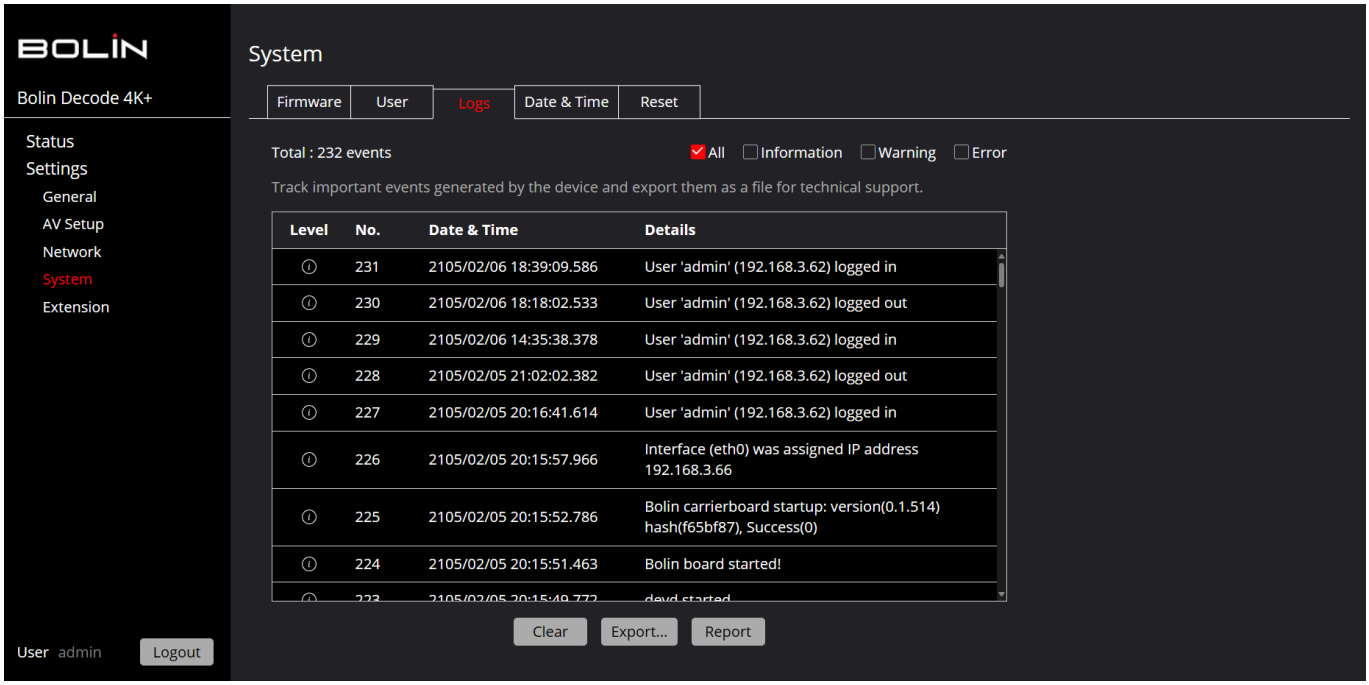
User

This tab is where operators who have access to the decoder can be managed. It should be noted that operators do not possess the same level of access to system settings as administrators.



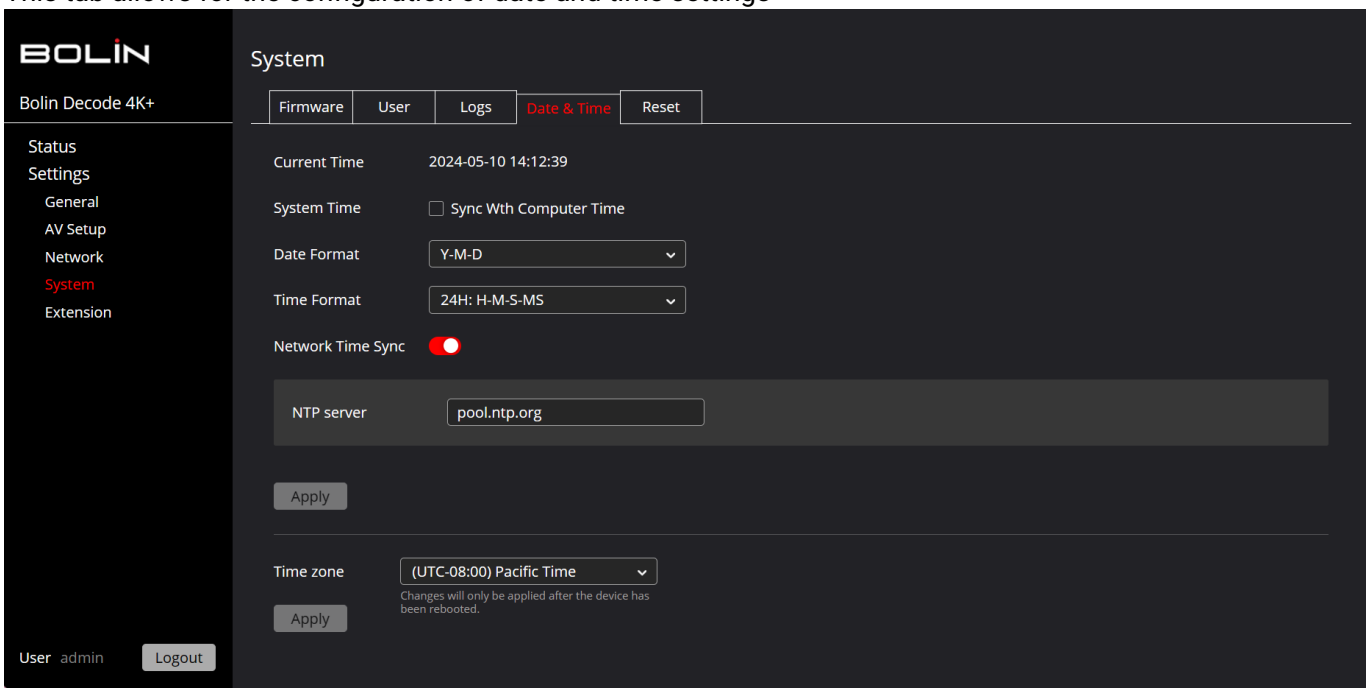
Logs

Users can see the actions that are performed by the device. The log can be filtered by All, Information, Warnings, and Errors. At the bottom of the page, there are options to clear the log or export the data as an HTML file.



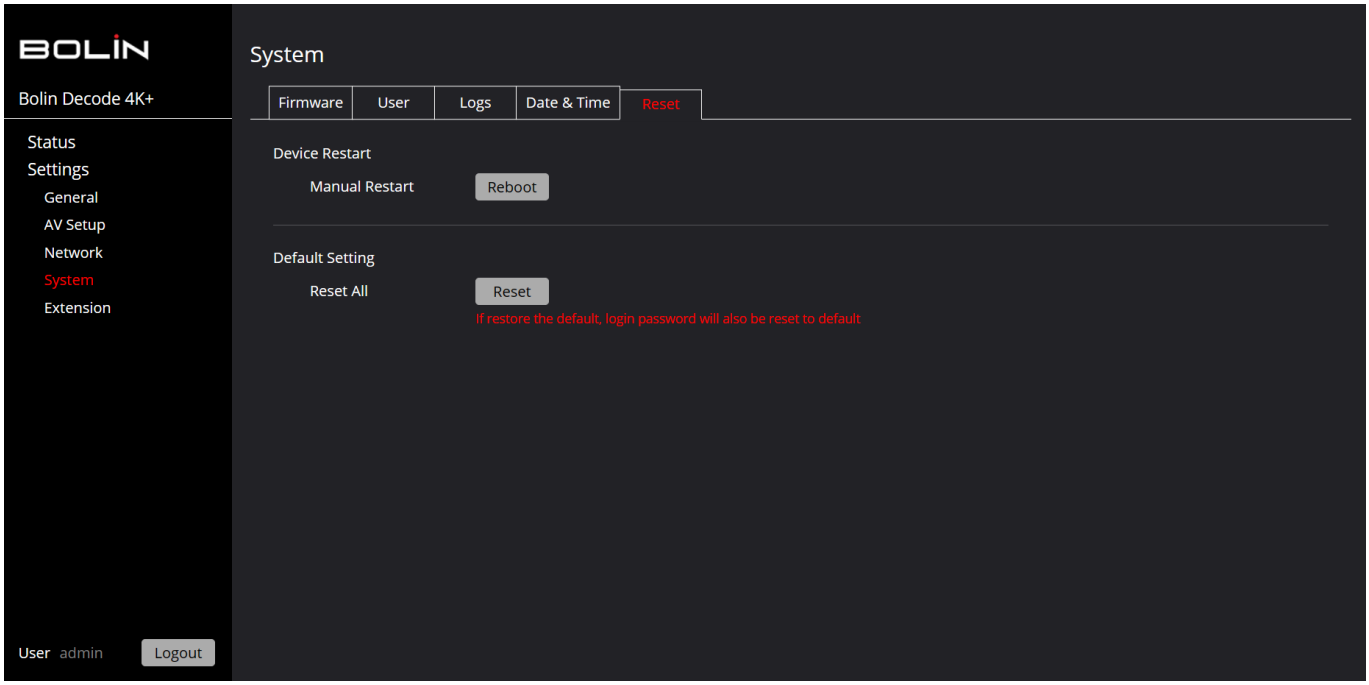
Date & Time

This tab allows for the configuration of date and time settings



Reset

This tab provides options to either reboot the unit or perform a factory reset.



Device Restart:

- The Manual Restart option allows for a manual reboot of the decoder.

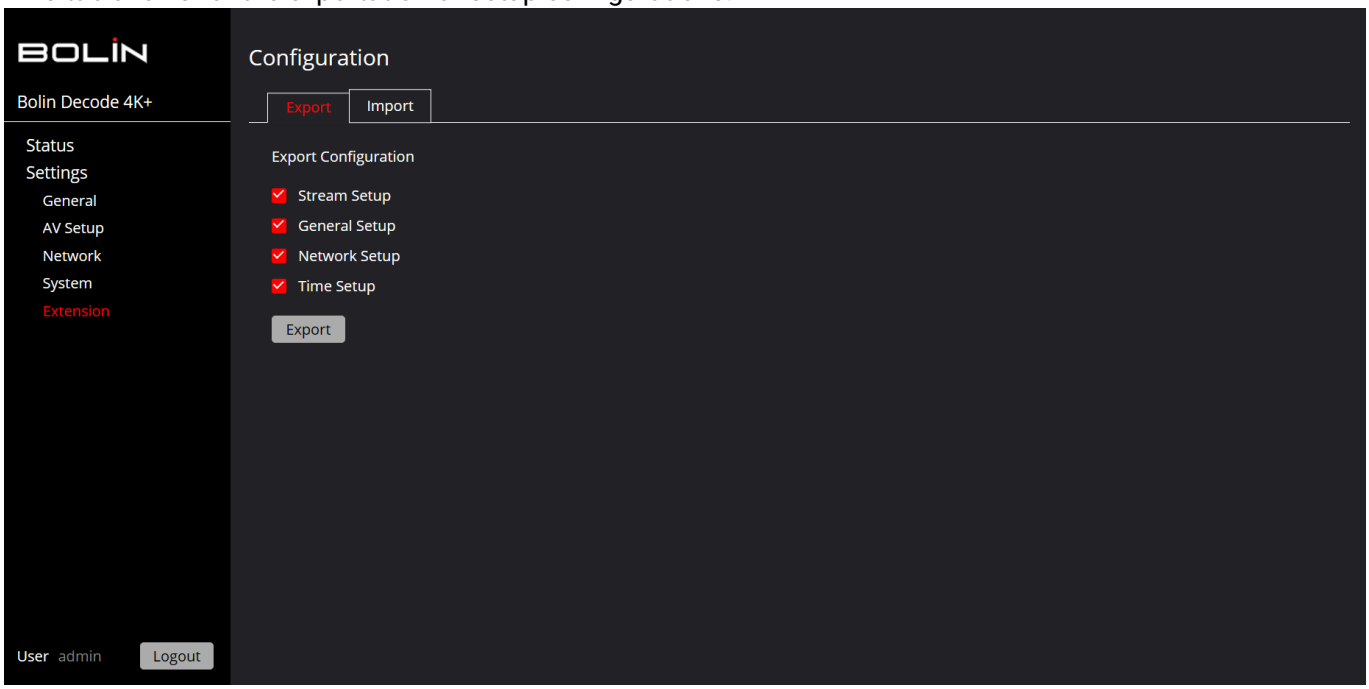
Default Setting:

- The Reset All option enables a reset of the unit to its factory default settings.

EXTENSION

Export

This tab allows for the exportation of setup configurations.



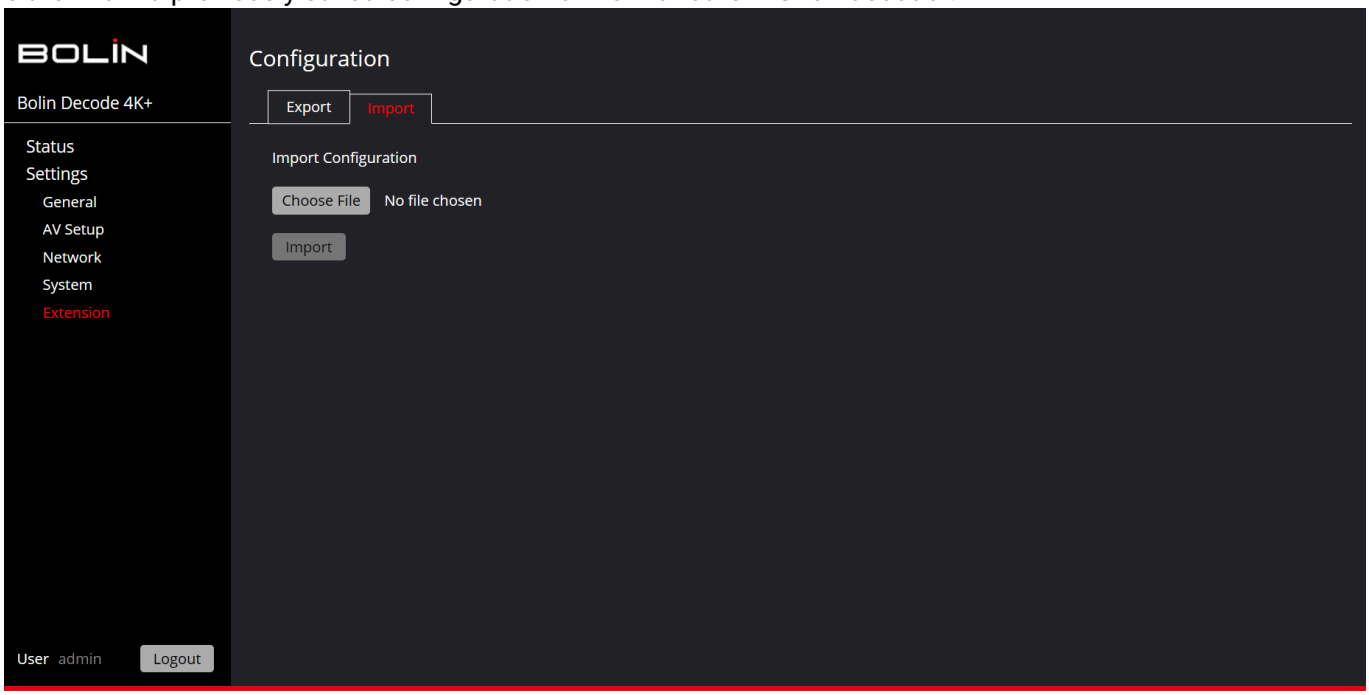
Export Configuration Options:

- **Stream Setup**
- **General Setup**
- **Network Setup**

- **Time Setup**

Import

The **Import** tab is useful when performing a factory reset on the unit. It allows for the importation of settings either from a previously saved configuration or from another EG40F decoder.



Technical Specifications