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BOLIN TECHNOLOGY

SD530H (Gen 3) Outdoor PTZ Camera 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.

	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

	FHD, 30X, HEVC, Grey PTZ Camera (SD530H)
	36VDC 4A, Power Supply Adapter (P36-4)
	Safety Cable

Optional Accessories

	ES-WM - Outdoor Wall Mount Bracket
	SD-TCA - Tail cable adapter for SD530H Series (Grey)



C-PMSB - PTZ Camera Pendant Mount System for Drop Ceiling/Hard Surface Ceiling

Recommended Peripherals



BL-PP97 - 97W High Power POE Power Supply Unit



EG40F - FAST HEVC Decoder with HDMI/SDI Output



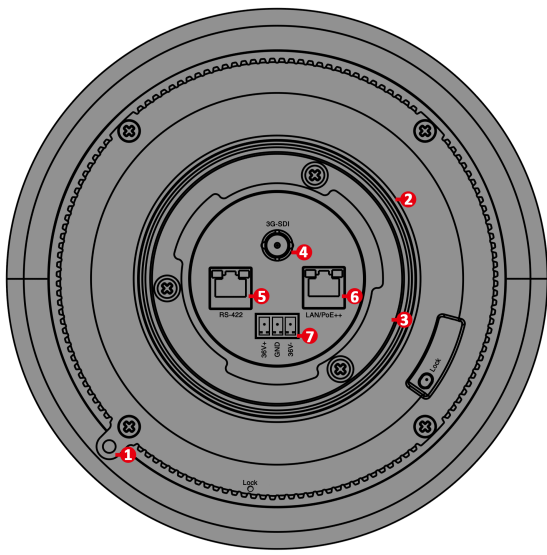
KBD-1010-RNV - PTZ Controller

Overview

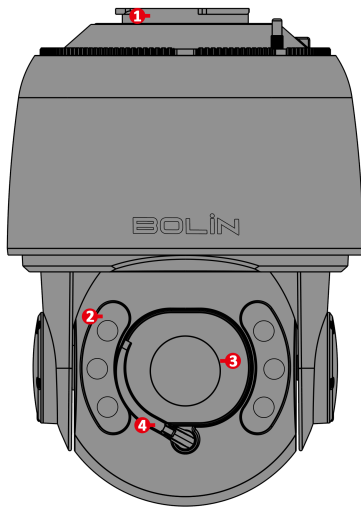
The SD530H outdoor PTZ camera, upgraded from Bolin's legacy outdoor SD500 Series, is equipped with the newest Sony image block with 30x zoom range UHD lens to provide Full HD (1080P60) crystal high-quality color image in a tough low light environment and stable image with super image stabilizer to output 3G-SDI and IP video streaming for POV, broadcast, operational awareness, spots application in outdoor environment and even in extreme weather conditions.

Features	Gen 3 Upgrades
<ul style="list-style-type: none"> • Sony 1/2.8 type CMOS sensor STARVIS II • 30X zoom range • Resolution 1080i59.94, 1080p60 • IP Video Resolution: Up to 1080p60 • Video Output: Simultaneous 3G-SDI, IP • RTSP, RTMP, SRT Supported • Visca Over IP, Onvif, FreeD, Serial Control Supported • Extreme Low Light Performance • Super Image Stabilizer • Weatherproof IP67 rated • NDAA Compliant 	<ul style="list-style-type: none"> • New Sony Image Block • Smooth Control and Accuracy • Fine PT Movement - Supports up to 255 VISCA steps • Horizontal plane Rolling Axis Adjustment • FreeD Control Protocol Enabled • Image Character Generator • Reinforced Rain Wiper • Quick Install and Release Mount • Tail Cable - Optional • C5 Corrosion Resistant Power Coating

Camera Diagrams and Dimensions

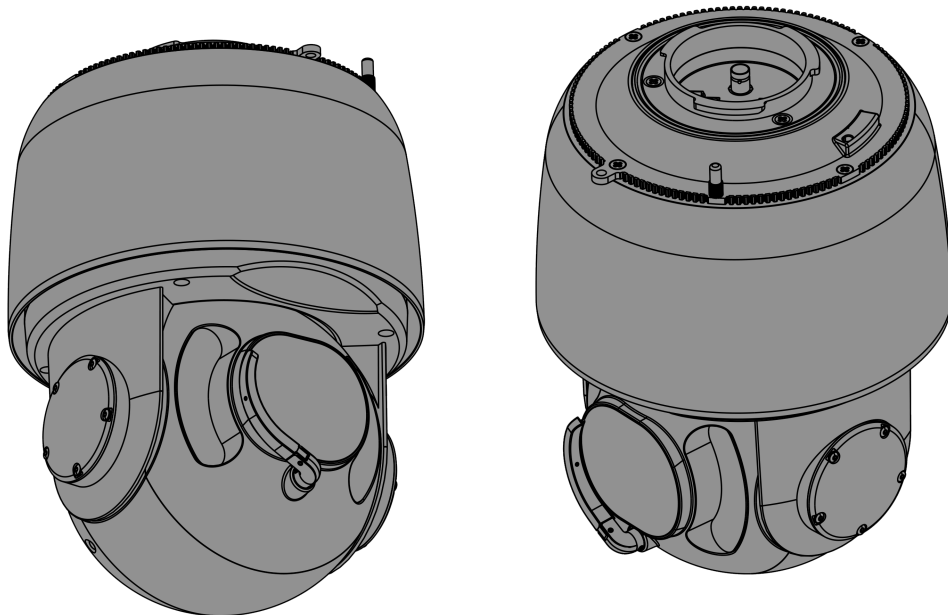
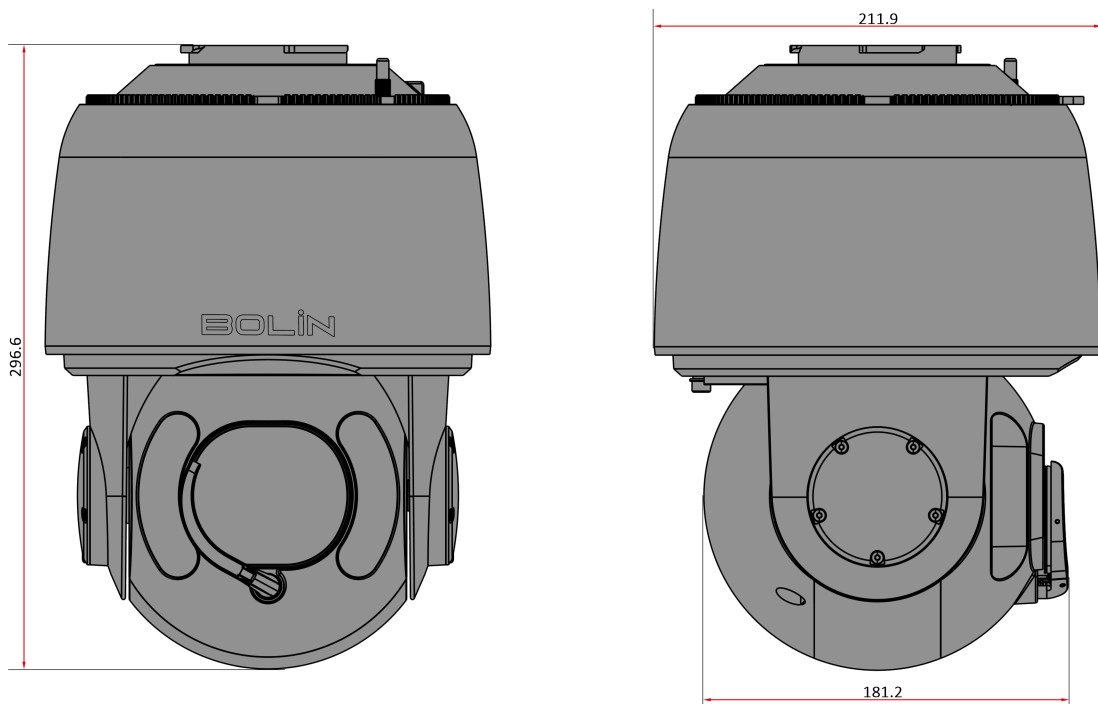


- ❶ Safety Cable Locking Ring
- ❷ IP67 Waterproof Ring Seal
- ❸ Quick install and release mount ring, used with ES-WM
- ❹ 3G-SDI port
- ❺ RS422 Serial control port
- ❻ 1G Network port with PoE++ power input
- ❼ Power input port (DC36V/AC24V)



- ❶ Quick install and release mount ring, used with ES-WM
- ❷ IR LED Illuminator
- ❸ Camera Lens
- ❹ Rain Wiper

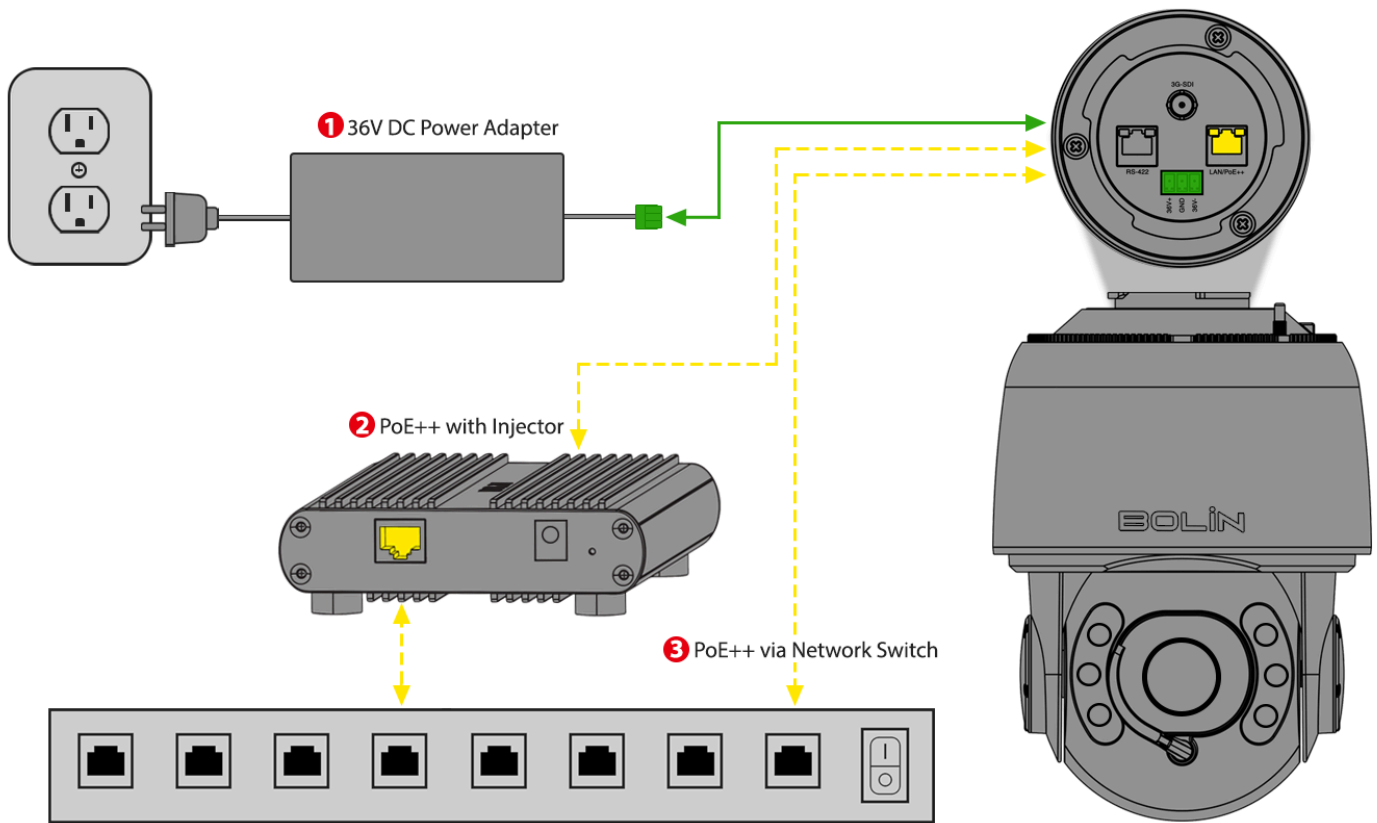
 **NOTE:** All dimensions listed below are in millimeters.



Quick Start Guide

The SD500 Series outdoor PTZ Camera has multiple connection options for video output, power input, control input, audio input and output, and synchronization. The user can choose the appropriate connection points based on their requirements.

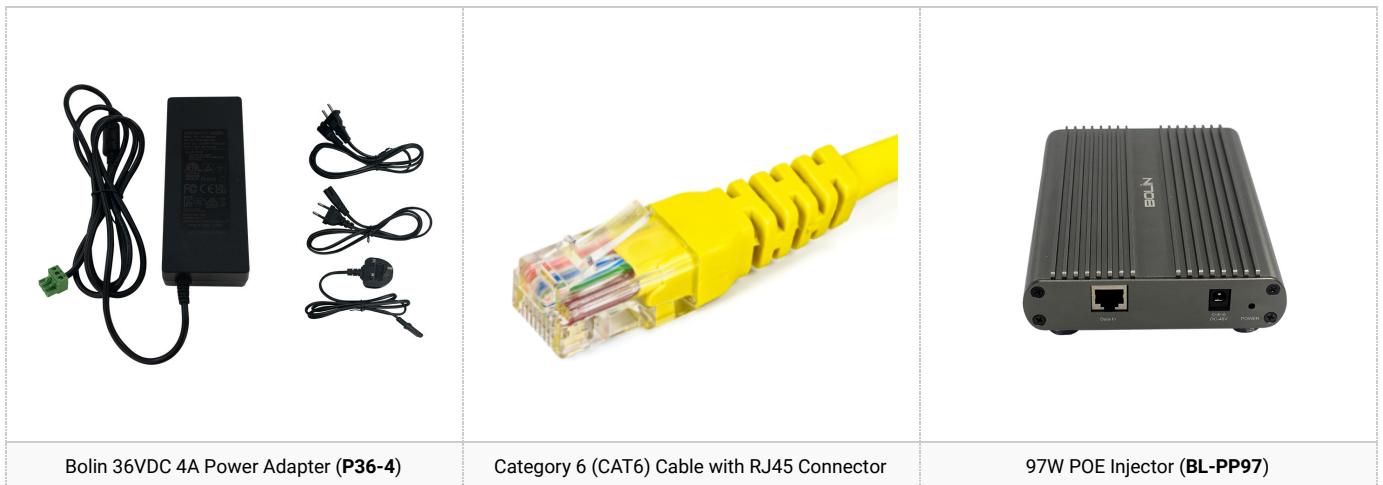
Power Options



The camera can be powered by:

- 36VDC 4A Power Adapter (Part # P36-4), which is included in the box.
- PoE++(IEEE802.3bt, Type 4 Class8) through a Category 6 (CAT6) cable with RJ45 connector plugged into the 10/100/1000 LAN port. The other end of that CAT6 cable can be plugged in to a network switch that supports POE++ (90 Watts of Power Output per Port).

NOTE: If the network switch doesn't provide POE++ power, the Bolin's POE++ power injector can be used. (See below)



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

CAUTION: If using POE++ power, ensure that the POE power source has a sufficient power budget for the camera, or some features may not function properly. CAT6 cable runs from the camera to the POE power source has a limit of 90 meters before the signal and power loss occurs.

Network

This camera offers a variety of functionalities via a network connection. Besides being powered over Ethernet, a network connection enables the user to adjust camera settings remotely, stream video from the camera to a distant location, and control the PTZ camera functions via the Web Interface. To connect the camera to the network, the user should adhere to the following steps:

1. Acquire a standard Category (CAT) 6 cable and insert one end of the cable into the camera. Connect the other end into a network switch.
2. Power on the camera.
3. To retrieve the IP address of the camera, the user should open the OSD Menu and navigate to the Status section. Alternatively, the user can download Bolin's IPC search tool from the website (www.bolintechnology.com) onto a Windows computer and execute the tool to locate the camera on the network.
4. The user should ensure that their camera 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

Video Output

3G-SDI Out

1. Connect one end of a properly rated SDI cable to the 3G-SDI output on the camera. Ensure the BNC connector is securely fastened to avoid any disconnections during operation. Connect the other end of the cable to your chosen destination, such as a switcher, video router, converter, or display.
2. Power on the camera and wait for it to fully initialize. Once it's ready, video will appear on the connected display. During the first five seconds, the camera's initial settings will be briefly shown on the screen.
3. To adjust the output resolution and frame rate, you can use the OSD (On-Screen Display) menu or access the Web Interface. For detailed instructions on configuring these settings, refer to the Web Interface Configuration and System Menu section of this guide.

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
12G-SDI	12 Gigabit/Second	4K, 60FPS

IP Stream Out

The IP stream(s) can be enabled and configured from the Web Interface of the camera. The camera must be connected to a Local Area Network (LAN) using a CAT6 cable through either a switch or direct connection to a computer in order to access the web interface. Streaming from the camera requires internet (WAN) access. The following steps should be followed:

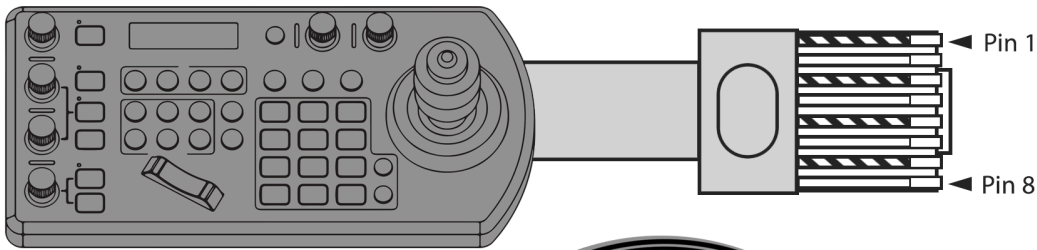
1. Connect the camera to the network by inserting one end of a CAT6 cable into the 10/100/1000 LAN port of the camera and the other end either into a switch or directly into a computer.
2. Open an HTML5-enabled web browser on a computer and enter the IP address of the camera. By default, the camera is set to 192.168.0.13. The IP address can also be located under the "Status" menu of the camera's On-Screen Display (OSD) or by using Bolin Technology's IPC Search Tool in the Download Center.
3. Select "AV Setup" from the menu on the left-side of the Web Interface. From here, enable and configure the IP streams as needed. For more details, refer to the "Web Interface Configuration" section of this user guide.

RS-422 Serial Commands (VISCA)

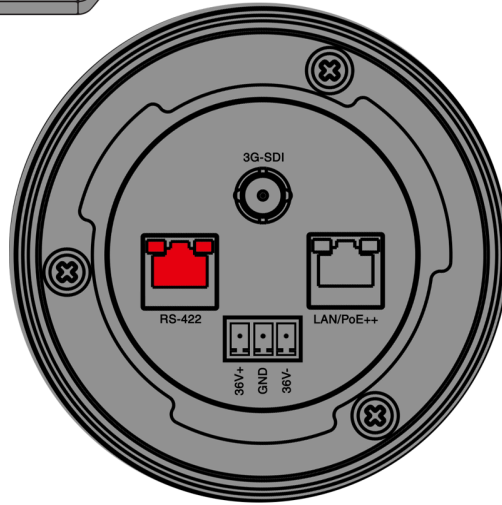
The camera is equipped with an RS-422 port, which facilitates VISCA control over serial commands. This RS-422 port is also compatible with RS-485. The camera can be connected via a serial connection to a PTZ controller or a computer. This allows for the execution of pan, tilt, and zoom operations, as well as the performance of preset recalls.

CAUTION: When one connects the camera via serial to a Sony PTZ controller, it differs from the process with a non-Sony PTZ controller. It is crucial to verify the pin settings for the specific controller in use.

1. The camera should be powered on, and the OSD menu should be opened or the Web Interface should be logged into using any web browser. Proceed to the system settings and adjust the baud rate to match that of the controller. The VISCA ID should be set to a number between 1 and 7.
2. A standard terminated CAT5 or CAT6 cable can be used to directly connect the camera to the controller. Alternatively, the included RJ45 to RS422 Control Cable Adapter can be used to connect unterminated CAT5/CAT6 cables between the camera and controller. The pin connection diagrams provided below should be followed, taking into account the specific controller in use and the desired connection.



1	RX-	Orange/White
2	RX+	Orange
3	GND	Green/White
4	-	Blue
5	-	Blue/White
6	-	Green
7	TX-	Brown/White
8	TX+	Brown

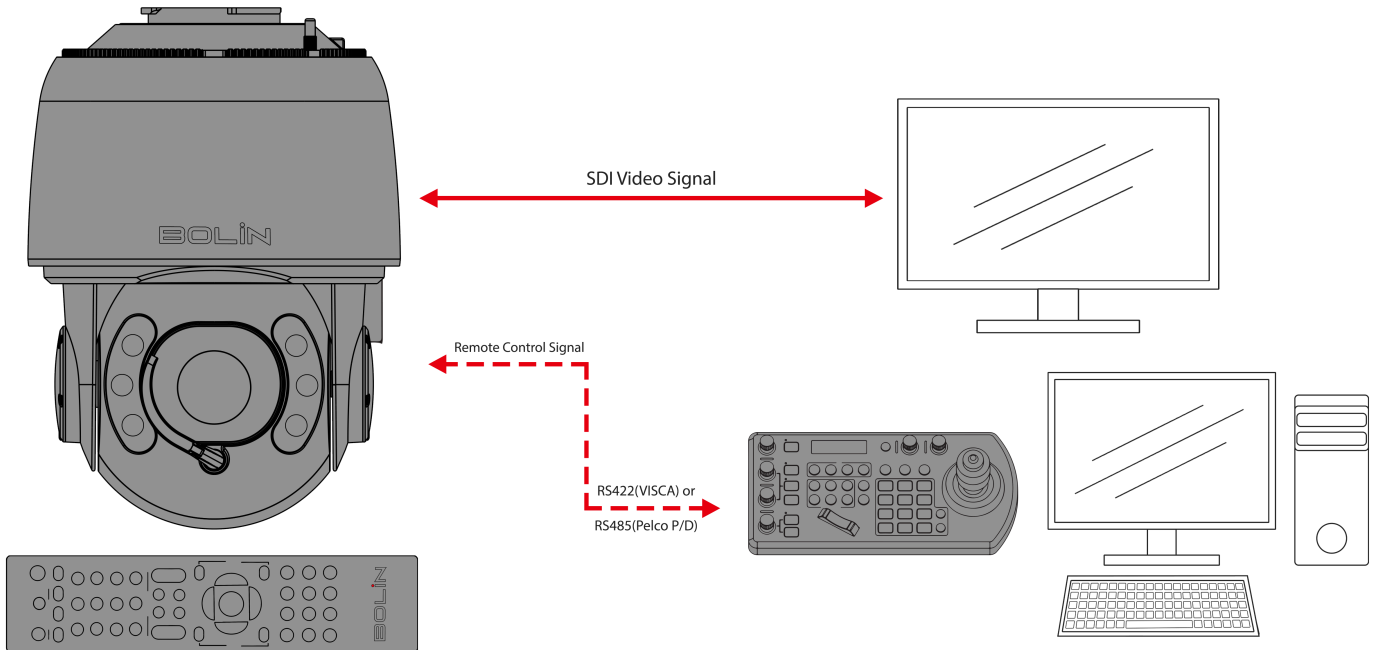


NOTE: Please refer to the KBD-1010-RNV user guide for instructions on how to establish an RS422 connection with the controller.

Use RS-422 (VISCA) / RS485 (PELCO P/D)

For camera operations, the RS-422/485 port can be utilized to connect controllers, such as a joystick keyboard or a PC station. This allows for the effortless management of pan, tilt, and zoom functions, as well as access to all preset functions using the controller's buttons.

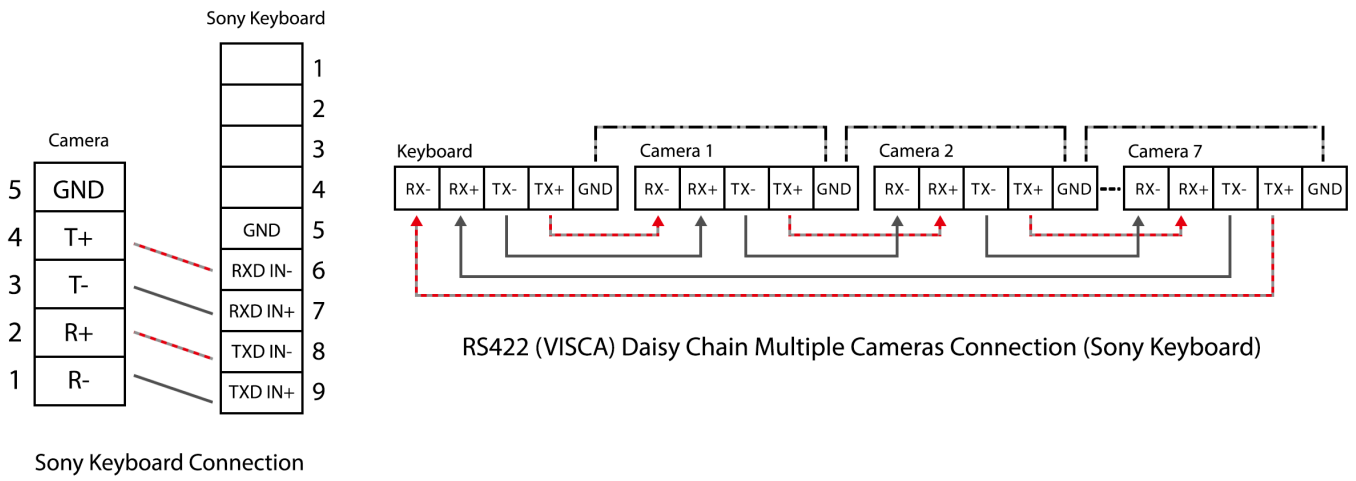
To operate a PC station, it is essential to have a software application that is compatible with this unit.



IR Remote Controller

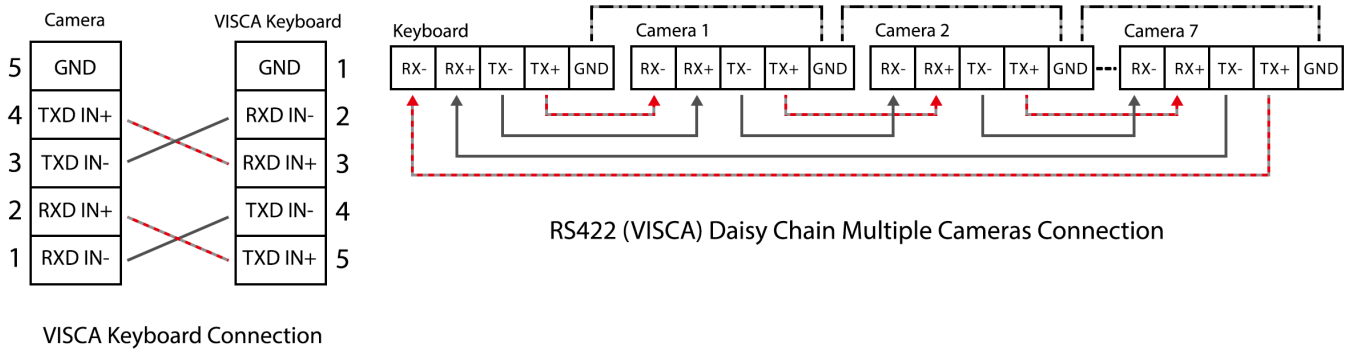
SONY Keyboard RS422 Connection

Guide for Establishing RS422 Connection and Daisy Chain Configuration for Multiple Cameras with a SONY Controller.



VISCA (Non-Sony) Keyboard RS422 Connection

Guide for Establishing RS422 Connection and Daisy Chain Configuration for Multiple Cameras with a Non-Sony Controller:



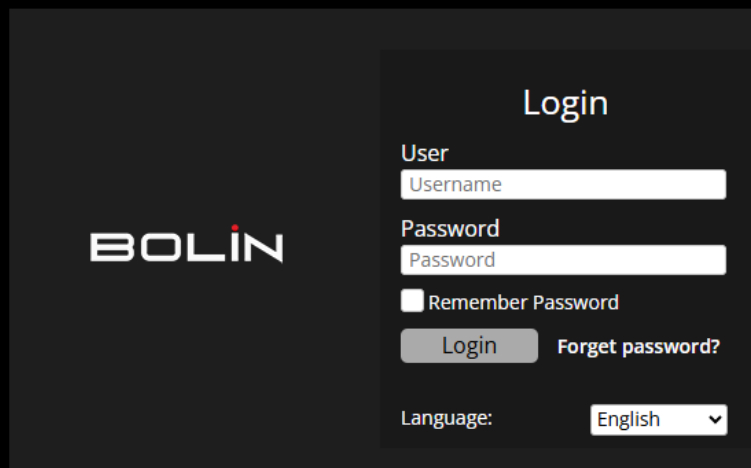
The included extension cables, along with the RJ45 to RS422 Phoenix connector adapter, should be utilized to establish an RS422 connection for the control device.

Web Interface Configuration

Once connected to the network, the camera can be configured and controlled 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.

Login Page

To log in to the web interface, first, make sure that the camera is connected to the network and the computer is on the same subnet as the camera.




Factory-Default Camera Network Settings:

Static IP Address: **192.168.0.13**

Subnet Mask: **255.255.255.0**


Gateway: **192.168.0.1**

 **NOTE:** To obtain the IP address of the camera, open the OSD Menu and scroll down to the Status section. Alternatively, download Bolin's IPC search tool from the website (www.bolintechnology.com) onto a Windows computer and run the tool to discover the camera on the network.


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.

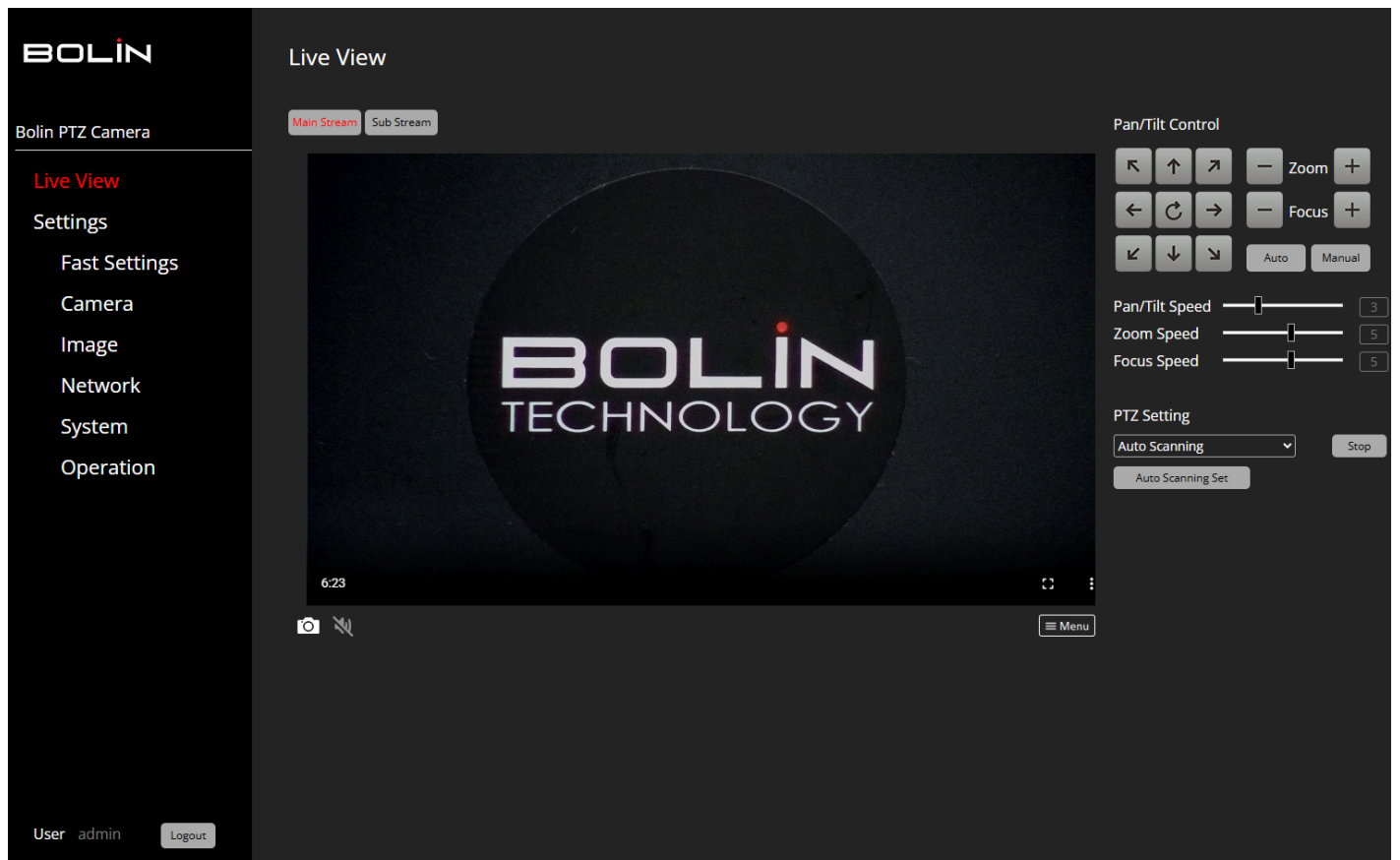
 **NOTE: Forgot Your Password?** If the user forgets/loses the password to their camera, our support team can help them recover it. The user must first download the IPCSearch tool from our website (www.bolintechnology.com) onto a Windows computer that is on the same subnet as the camera. Then, run the 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.

The program will provide the user with a generated key. Email "support@bolintechnology.com" with the key. Our support team will generate and provide the user with a temporary password that is valid for only 24 hours. The user should enter this temporary password to create a new password within 24 hours of receiving the key, otherwise, they will need to follow this procedure again. The user should not turn their camera off while waiting to receive the temporary password, otherwise, the temporary password associated with the key will become invalid.

Live View

Once the user logs in to the camera, they will be taken to the Live View page. From the "Live View" page, the user will be able to:

- See a preview of the video output (NOTE: This feed will be delayed by 1–2 seconds.)
- Adjust and control PTZ functions
- Set and recall camera presets
- Access cameras OSD Menu



Adjusting and Controlling PTZ Functions

On the “Live View” page, the user will observe a “Menu” icon situated at the bottom right of the live view image. Additionally, on the right side of the page, there are “Pan/Tilt Controls”. This section comprises a set of arrows and sliders, specifically designed to control the camera.

The arrows are utilized to pan (move side to side) and tilt (move up and down) the camera. The focus and zoom buttons are provided for the user to adjust the view. The user can zoom in (+) or out (-), and manually adjust the focus to be closer (+) or further (-).

Furthermore, there are speed-setting sliders that permit the user to alter the speed of the camera’s movements, including pan, tilt, focus, and zoom. This allows the user to customize the camera’s operations to suit their needs.

Within the **PTZ Setting** drop-down menu, the user will discover the following options:

1. **Auto-Scanning:** The camera image pans automatically from left to right or right to left at a speed defined by the user (Speeds 1-8).
2. **Preset:** The user can set and recall up to 64 camera presets (The camera supports saving a total of 255 presets). These presets can be recalled through the web interface, IR Remote, or PTZ Controller.
3. **Tracking:** The camera will record a series of presets that are recalled in a specified order.
4. **Scanning:** The camera image pans from left to right or right to left between up to 12 points defined by the user at a speed also defined by the user (Speeds 1-8).
5. **Power On Action:** Users can define a set of actions that a camera performs (preset recall, scan, trace, or cruise) once powered on.
6. **Cruise:** The camera will record a series of movements that an operator makes, which can then be recalled whenever a user prefers.

Creating and Recalling Presets

To save presets, the user should adhere to the following steps:

1. Utilize the PTZ controls of the web interface, IR controller, or a PTZ controller to adjust the camera to the position(s) they wish to save as a preset.
2. After positioning the camera, click on the ‘Create’ button. Subsequently, select the preset number under which they want to save this setting. Label the preset in the ‘Name’ field and click ‘Save’.
3. To recall a preset, select the preset number on the Web Interface and click the “Go” button.
4. A saved preset can also be deleted by selecting it and clicking on the Delete button.

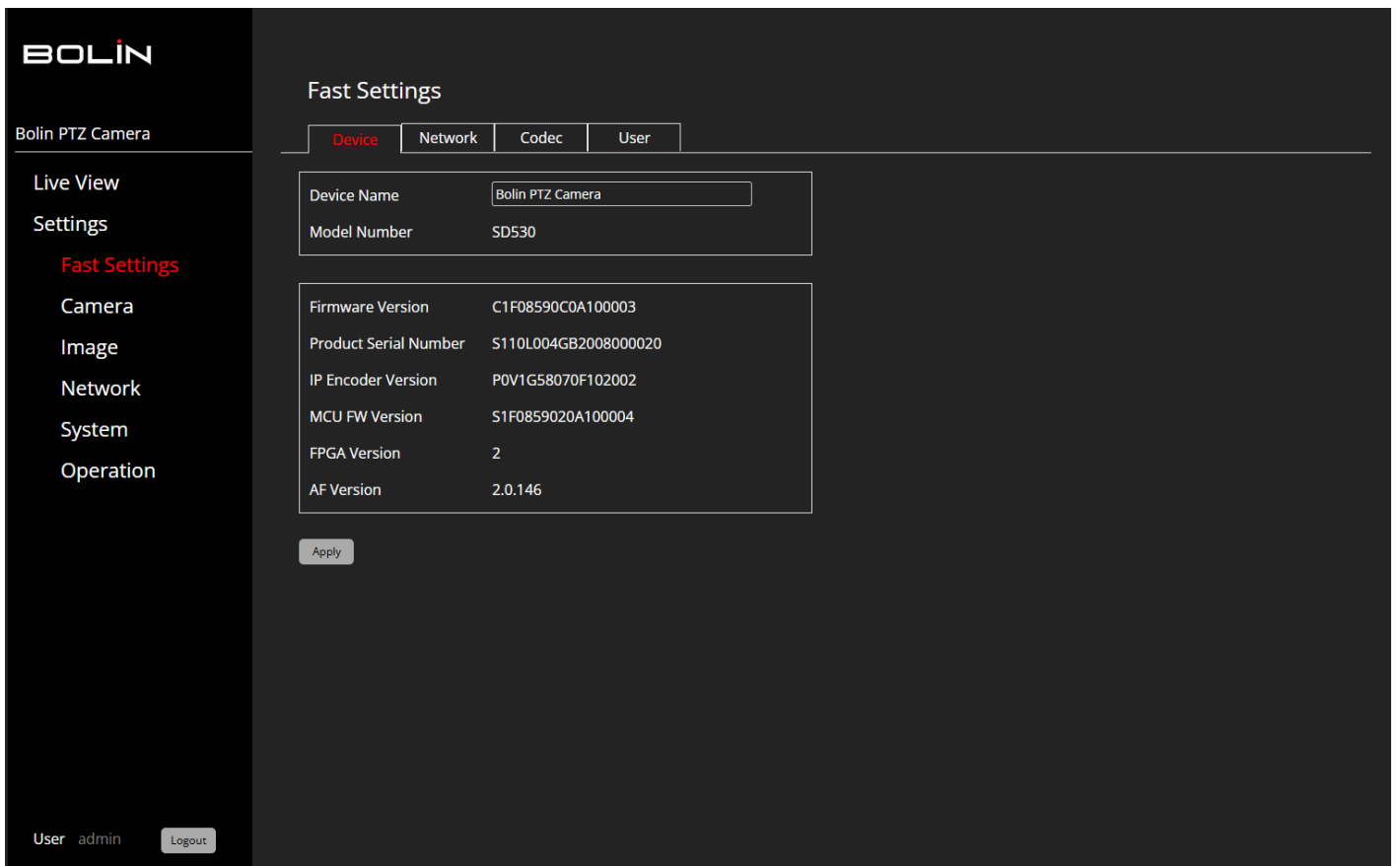
Adjusting OSD Menu Settings from the Web Interface

The OSD Menu settings can be accessed and adjusted from the Web Interface. On the “Live View” page, locate and click the “Menu” icon situated at the bottom right of the live view image to display the OSD menu. The user can navigate through these settings using the arrows under “Pan/Tilt Control”. The middle button is used to select, and the right arrow button is used to modify the setting. To exit this menu, simply click on the “Menu” icon again. The settings available in this menu encompass:

- Adjust Exposure, White Balance, Picture (Noise Reduction, E-Flip, ND Filter, IR Filter), Gamma, Lens (Focus, Stabilization), Pan & Tilt, Genlock, System (Pelco, Visca, IR, Baud Rate, Tally, Audio, Video Format) settings, and view System Status.

Fast Settings

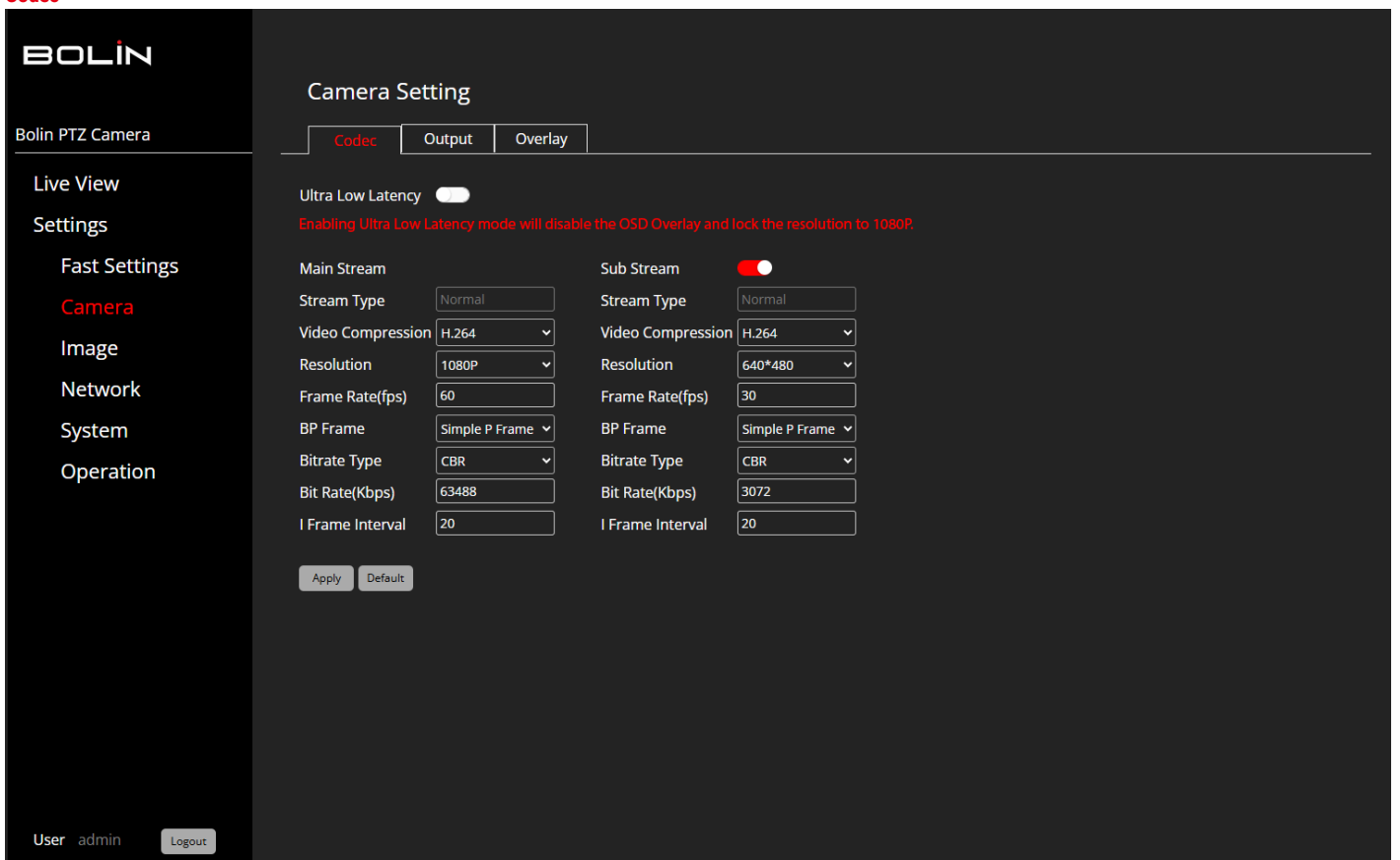
This section provides quick access to frequently used settings. The Fast Settings page has four tabs: Device, Network, Codec, and User. For more information about these settings, please refer to the corresponding section in this user guide.



Camera

The Camera Setting page consists of 3 tabs: Codec, Output, and Overlay.

Codec



From the Codec tab, users can configure the video streams to meet their requirements. The various settings and their functions are described below.

Output

On the "Output" tab, users can define what resolution/frame rates, color space, bit depth, and color format they would like the camera's physical ports to output. Users can click the parameter they would like to modify and select from the drop-down menu. Once the desired settings have been chosen, click on the 'Save' button.

At the bottom of this tab, there is a section for "Output Status" where users can see the settings of what is being output from the device.

Camera Setting

Bolin PTZ Camera

Codec Output Overlay

Live View

Settings

Fast Settings

Camera

Image

Network

System

Operation

SYSTEM FORMAT 1080P60(1920x1080)

Video Settings-SDI

Video Resolution 1080P60(1920x1080)

Color Space YUV 4:2:2

Bit Depth 12

Output status-SDI

Current signal 1080P60(1920x1080) 16:9
YUV 4:2:2
12 bit

Save

User admin

Logout



NOTE: The "System Format" will set the highest resolution and frame rate for the camera. While the frame rates are the same, output resolutions are simultaneous and independent of each other. The HDMI, SDI/Optical Fiber, and IP outputs can be set to different resolutions without impacting each other. Optical Fiber output resolution is determined by the SDI resolution.

Overlay

The Overlay function is a feature that displays characters on your screen, enabling users to incorporate crucial information (either text or image) into their IP video feed.

Camera Setting

Bolin PTZ Camera

Codec Output Overlay

Live View

Settings

Fast Settings

Camera

Image

Network

System

Operation

Main Stream Sub Stream

Pan/Tilt Control

Navigation buttons: Home, Up, Right, Zoom -, Zoom +, Left, Refresh, Right, Focus -, Focus +, Down, Stop, Auto, Manual

1-Title [input] Adjust [checkbox]

2-Title [input] Adjust [checkbox]

3-Title [input] Adjust [checkbox]

4-Title [input] Adjust [checkbox]

5-Logo [Browse...] Update Adjust [checkbox]

6-Title [input] Adjust [checkbox]

7-Title [input] Adjust [checkbox]

8-Date [input] Adjust [checkbox]

Position Adjustment

Current Channel: Unchecked

Adjust by region: top left set

Adjust by step: 5 up set

NOTE: PNG file, 1080p, 32-bit with an alpha channel, and within 1 MB. Main Stream only.

Default

User admin

Logout

Steps to implement an on-screen overlay:

1. Begin by adding text to the title bar, such as in '1-Title', then click on the checkbox located furthest to the left (which will turn red with a white check mark) to display it on the live feed image.
2. The box closest to the text bar is initially set in white. To alter the text color, click on this box. The user can select from white, black, yellow, red, and blue.
3. To reposition the text within the live feed image, make use of the 'position adjustment' section situated on the left of the page.

4. The '5-logo' option allows the user to upload an image. The image must be in PNG format and have dimensions less than 1920x1080 pixels. Please note that this image will only be displayed on the user's main stream.

Image
