
https://www.rossvideo.com/support/product-documentation/pivotcam/

PIVOT

# PIVOTCam-SE
## User Manual

ROSS

# Thank You For Choosing Ross

You've made a great choice. We expect you will be very happy with your purchase of Ross Technology.

Our mission is to:

1. Provide a Superior Customer Experience
   - offer the best product quality and support
2. Make Cool Practical Technology
   - develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at *solutions@rossvideo.com*.

David Ross

CEO, Ross Video

*dross@rossvideo.com*

## Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.

**9.** We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right.* (*You may rent helicopters if necessary.*)

# Document Information

- Ross Part Number: **5000DR-304-01**
- Release Date: January, 2020.

## Copyright



## Important Regulatory and Safety Notices to Service Personnel

Before using this product and any associated equipment, refer to the “**Important Safety Instructions**” listed in the front of this manual to avoid personnel injury and to prevent product damage.

Product may require specific equipment, and/or installation procedures to be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these specific requirements.

### Symbol Meanings

*Protective Earth: This symbol identifies a Protective Earth (PE) terminal, which is provided for connection of the supply system's protective earth (green or green/yellow) conductor.*

*Important: This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage or injury to persons or equipment.*

*Warning: The symbol with the word " Warning " within the equipment manual indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.*

*CAUTION: The symbol with the word " Caution " within the equipment manual indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.*

*Warning Hazardous Voltages: This symbol is intended to alert the user to the presence of uninsulated " dangerous voltage " within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons.*

*ESD Susceptibility: This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.*

## Important Safety Instructions

1. **Read Instructions** All the safety and operating instructions should be read before the product is operated.
2. **Retain Instructions** The safety and operating instructions should be retained for future reference
3. **Heed Warnings** All warnings on the product and the operating instructions should be adhered to.
4. **Follow Instructions** All operating and use instructions should be followed.
5. The camera power input range is 100-240VAC (50-60Hz). Ensure the power supply input is within this range before powering on.
6. The camera power voltage is 12VDC with a rated current of 2A. We suggest you use it with the original power supply adapter supplied by the factory.
7. Please keep the power cable, video cable, and control cable in a safe place. Protect all cables, especially the connectors.
8. Operational environment: 0°C-50°C, humidity less than 90%.
9. To avoid any danger, do not put anything inside the camera, and keep it away from corrosive liquids.
10. Avoid stress, vibration, and damp during transportation, storage, and installation.
11. Do not detach the camera housing and cover. For any service, please contact the authorized dealer.
12. RF cable and control cable should be individually shielded, and cannot be substituted with other cables.

13. Do not direct the camera lens towards a strong light source, such as the sun or an intense light.
14. Use a dry soft cloth to clean the camera housing. A neutral cleaning agent can be applied when needed. To avoid damage to the camera lens, never use strong or abrasive cleaning agents on the camera housing.
15. Do not move the camera by holding the camera head. To avoid mechanical trouble, do not rotate the camera head by hand.
16. Put the camera on a fixed, smooth desk or platform. The camera should not be leaning on anything when installed.
17. Power Supply Polarity:


*Note: The video quality may be affected by specific frequencies in electromagnetic field.*

*CAUTION: Do NOT pick up the camera by the lens barrel. Doing so may damage the rotary mechanism and internal cables.*

*CAUTION: Do NOT move or rotate the lens barrel by hand. Doing so may damage the rotary mechanism as well as the rotation limiters.*

## Warranty and Repair Policy

Ross Video Limited (Ross) warrants its cameras and related options, to be free from defects under normal use and service for a period of ONE YEAR from the date of shipment.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross Video's notification of change of ownership.

## Environmental Information

**The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.**

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

## Company Address

**Ross Video Limited** — 8 John Street Iroquois, Ontario, Canada, K0E 1K0

**Ross Video Incorporated** — P.O. Box 880, Ogdensburg, New York, USA, 13669-0880

| | |
|---|---|
| General Business Office: | (+1)613-652-4886 |
| Fax: | (+1)613-652-4425 |
| Toll Free Technical Support (North America): | 1-844-652-0645 |

| | |
|---|---|
| Toll Free Technical Support (International): | +800 1005 0100 |
| Technical Support: | (+1)613-652-4886 |
| After Hours Emergency: | (+1)613-349-0006 |
| E-Mail (Support): | *techsupport@rossvideo.com* |
| E-Mail (General): | *solutions@rossvideo.com* |
| Website | *www.rossvideo.com* |

## Technical Support

At Ross Video, we take pride in the quality of our products, but if a problem does occur, help is as close as the nearest telephone.

Our 24-Hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support are provided directly by Ross Video personnel. During business hours (eastern standard time), technical support personnel are available by telephone. Outside of normal business hours and on weekends, a direct emergency technical support phone line is available. If the technical support personnel who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. Our Technical support staff are available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

## Supporting Documentation

Ross Video provides a wide variety of helpful documentation for the setup and support of your equipment. Most of this documentation can be found on the Ross Video website (*www.rossvideo.com*), or on the Ross Video Community site (*discussions.rossvideo.com/*)

# Contents

# Box Contents

Verify the contents of the box against the packing list. If any items are missing or damaged, contact Ross Video Technical Support.

| Item | Qty |
|---|---|
| PIVOTCam-SE  Camera | 1 |
| Power Supply | 1 |
| Power Cord | 1 |
| Serial Control Cable (male 8-pin miniDIN to female DB9) | 1 |
| Remote Control | 1 |
| User Guide (this document) | 1 |
| Double-sided Tape | 1 |

# Camera Overview

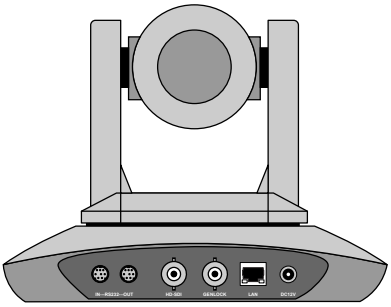


*Figure 1: Rear View*

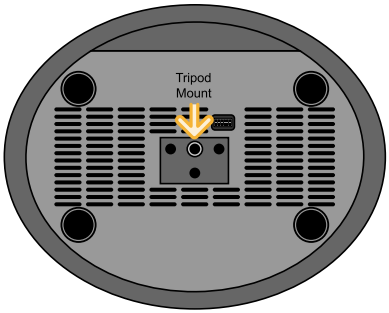



*Figure 2: Bottom View*

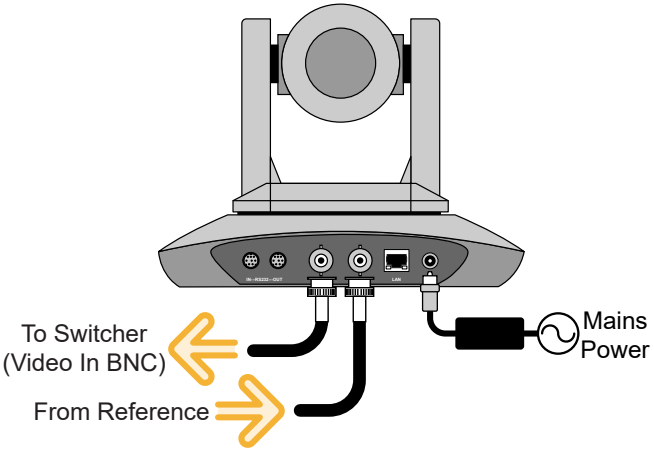
- **RS232 IN** — 8-Pin miniDIN for RS-232 or RS-485 serial VISCA IN control.
- **RS232 OUT** — 8-Pin miniDIN for RS-232 or RS-485 serial VISCA OUT control.
- **HD-SDI** — BNC for HD-SDI video output. This is the main video output of the camera.
- **GENLOCK** — BNC for external reference input.
- **LAN** — RJ45 for standard ethernet connection.
- **DC12V** — 12V DC power from external brick. Use only the external power supply provided with your camera.
- **Tripod Mount** — 1/4" - 20 UNC tripod mounting hole (6.5mm depth)
- **Tally** — tally light on the front of the camera base shows red (on-air), blue (operating), green (on preview). Tally status is implemented in the VISCA protocol.

# Cabling

Camera cabling includes power and video cabling, and control cabling.

The camera can be controlled using the included remote control. It can also be controlled by an external device such as a production switcher or a DashBoard computer running the PTZ Camera Control plugin. Communication with an external control device can be through either the ethernet port (LAN), or the serial port (RS232 IN).

Power and video cabling are the same regardless of the control method used.




*Note: Control cabling is not required if you are controlling the camera from the remote control.*

## Supported Reference Formats

The camera can accept analog blackburst, trilevel, and 1080p 23.98/24Hz

***Table 1: Supported Reference Formats***

| Input Reference | Usable Format |
|---|---|
| 480i | 1080p 59.94Hz |
| | 1080p 29.97Hz |
| | 1080i 59.94Hz |
| | 720p 59.94Hz |

| Input Reference | Usable Format |
|---|---|
| 576i | 1080p 50Hz |
| | 1080p 25Hz |
| | 1080i 50Hz |
| | 720p 50Hz |
| 720p 50Hz | 1080p 50Hz |
| | 1080p 25Hz |
| | 1080i 50Hz |
| | 720p 50Hz |
| 720p 59.94Hz | 1080p 59.94Hz |
| | 1080p 29.97Hz |
| | 1080i 59.94Hz |
| | 720p 59.94Hz |
| 1080i 59.94Hz | 1080p 59.94Hz |
| | 1080p 29.97Hz |
| | 1080i 59.94Hz |
| | 720p 59.94Hz |
| 1080i 50Hz | 1080p 50Hz |
| | 1080p 25Hz |
| | 1080i 50Hz |
| | 720p 50Hz |
| 1080p 23.98Hz | 1080p 23.98Hz |
| 1080p 24Hz | 1080p 24Hz |

## Cabling for Control via Ethernet Port

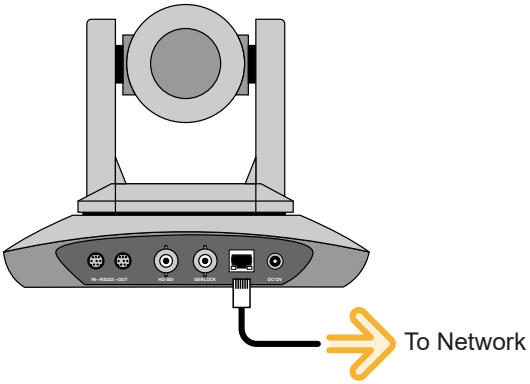
Each network device requires a unique IP address. Use the IP portion of the on-screen menu to assign the camera a unique IP address. For more information, see *IP* on page 24.

Connect an ethernet cable to the LAN port on the camera, and to the network. The camera must be on the same network as the device or DashBoard computer that controls the camera.

For direct control by devices such as production switchers, you must connect to the camera on port 52381.

*Note: The camera accepts PoE (Power over Ethernet) and can be powered either by the ethernet connection or the mains power connection. Both can be connected at the same time.*

*Note: When powered by PoE, the camera may require more power than the PoE standard provides by default. We recommend that you run the camera from a PoE + capable switch and manually increase the power available to the camera from the switch control panel up to the PoE+ level of 25.5W.*




The 1Gb/s ethernet connection can stream ITU-T H.264 and H.265.

*Note: To control the camera via the ethernet port, you must set the **SYSTEM** > **VISCA** setting in the on-screen menu to **OVER IP**.*

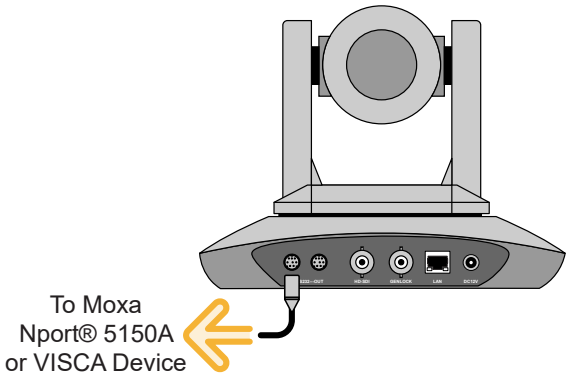
## Cabling for Control via Serial Port

You can either connect directly to a device that can control the camera via serial VISCA, or add a serial-to-ethernet converter to connect to a device that can control the camera via VISCA over IP.

To connect directly, connect the Serial Control Cable (included) between the RS232 IN port and the serial VISCA device.

To use a serial-to-ethernet converter, connect the Serial Control Cable (included) between the RS232 IN port and the converter (such as such as the Moxa Nport® 5150A available from Ross®). Connect the converter to the same network as the device or DashBoard computer that controls the camera.

The Moxa Nport® 5150A is a serial to ethernet converter that allows DashBoard and the switcher to connect to a serial device over ethernet, but any serial to ethernet converter device can be used.




## DIP Switches

The DIP switches on the bottom of the camera are used for diagnostics as well as turning some features on or off. The settings of the DIP switches is broken up into three pairs. Each pair of switches are used together to set the functionality and are not affected by the other two pairs.

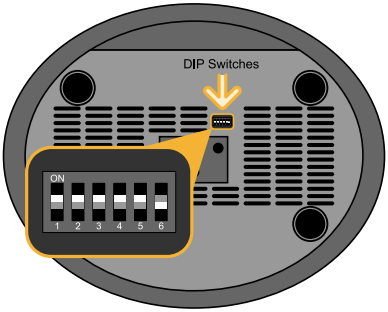



***Table 2: DIP Switch Functions***

| SW1 | SW2 | SW5 | SW6 | Description |
|---|---|---|---|---|
| OFF | OFF | - | - | n/a |
| ON | OFF | - | - | Upgrade Mode for Motor Driver firmware |
| OFF | ON | - | - | Upgrade Mode for ARM firmware |
| ON | ON | - | - | Working Mode (default) |
| - | - | OFF | OFF | n/a |

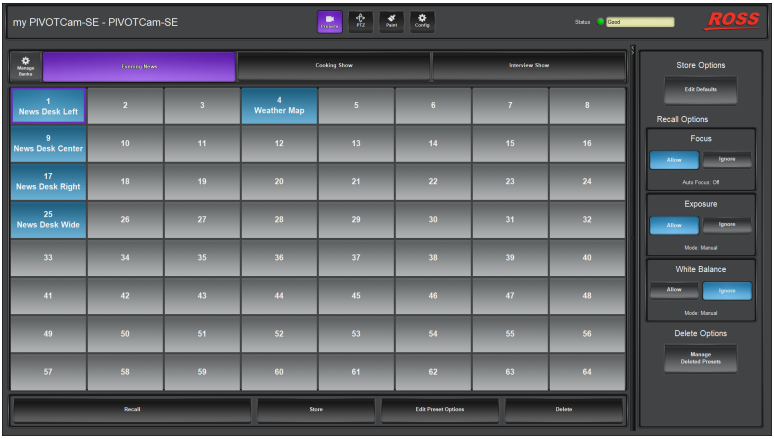
| SW1 | SW2 | SW5 | SW6 | Description |
|---|---|---|---|---|
| - | - | ON | OFF | Working Mode (default) |
| - | - | OFF | ON | *n/a* |
| - | - | ON | ON | n/a |

*Note: By default, DIP switches SW1-5 should be set to ON and SW6 set to OFF.*

*Note: DIP switches 3 and 4 are not used at this time.*

# PTZ Camera Control Plugin

The PTZ Camera Control Plugin is a DashBoard application that enables you to configure and control supported PTZ cameras such as the PIVOTCam-SE. You can control cameras manually, store and recall presets, and configure camera settings.




For optimal control of your PTZ cameras, you can add an off-the-shelf USB joystick (or other game controller) to DashBoard. A USB controller enables you to perform pan/tilt/zoom movements with a joystick, and select a different camera at the push of a button.

DashBoard, which includes the PTZ Camera Control plugin, is available for free download from *www.rossvideo.com/dashboard*.

For more information about the PTZ Camera Control Plugin, see the document, " User Manual for PTZ Camera Control Plugin (8351DR-015-xx) " , which is available for free download from *www.rossvideo.com/pivotcam*

# Remote Control


- **POWER** — Turns the camera on or off. The camera recalls to Home position when turned on. Camera must be in Working Mode.
- **FREEZE** — Freezes or unfreezes the output video of the camera.
- **IRT** — Turns IR pass-through on or off. Signals from the remote control are passed through the serial port to other cameras or devices.
- **SET1-SET4** — Sets the address of the camera. Press and hold a button for 3 seconds to set the camera to that address. For example **SET1** corresponds to **CAM1**.
- **CAM1-4** — Selects a specific camera.
- **Numbers 0-9** — Store or recall camera presets. Press and hold a number button for 3 seconds to store the current camera setting to that preset memory. Alternatively, you can press **LEARN** and then press a number button to store a preset. To recall a preset, press and release its number button.
- **LEARN** — Used with the **LIMIT L**, **LIMIT R**, and **LMT CLR** buttons to set and clear the pan limits. Also used with the number buttons (0 to 9) to store presets.
- **CLR PRE** — Deletes a camera preset. Press **CLR PRE** and the number of the preset you want to delete. Press and hold **CLR PRE** to delete all presets.
- **FOCUS +/-** — Increase or decrease focus manually. Focus must be set to manual.
- **ZOOM +/-** — Increase or decrease zoom.
- **Navigation Buttons** — Pans and tilts the camera head or navigate the onscreen menus when the menu system is active. Camera must be in Working Mode
- **OK** — Recalls the Home position or select a menu item when the menu system is active. Camera must be in Working Mode.
- **AF** — Turns auto focus on. Manual focus is turned off.

- **MF** — Turns manual focus on. Auto focus is turned off.
- **RESET** — Resets all camera settings to defaults, except Web Interface login credentials and presets. Press and hold the **RESET** button for three seconds to reset the camera.
- **MENU** — Turns the onscreen menu system on or off.
- **F1-F4** — These button are not used at this time.
- **LIMIT L** — Sets the left pan limit. Press **LEARN** and then press **LIMIT L** to set the left limit.
- **LIMIT R** — Sets the right pan limit. Press **LEARN** and then press **LIMIT R** to set the right limit.
- **LMT CLR** — Clears both pan limits. Press **LEARN** and then press **LMT CLR** to clear the limits.
- **SCAN** — This button is not used at this time.
- **BLC OFF** — Turns off backlight compensation.
- **BLC ON** — Turns on backlight compensation.
- **BRIGHT-** — Decreases the brightness of the output video of the camera. Only available in Bright Priority Exposure Mode.
- **BRIGHT +** — Increases the brightness of the output video of the camera. Only available in Bright Priority Exposure Mode.
- **Video Format Buttons** — Selects a video format for the output video of the camera. Press and hold the format button for 3 seconds to select the format.

# On-screen Menu System

The menu system is displayed on the video output of the camera and allows you to set up and configure various aspects of the camera. You can access the on-screen menu either within the PTZ Camera Control interface in DashBoard (**Config** > **Open On-Screen Menu**), or by pressing the **MENU** button on the remote control.

Within the on-screen menu, press the navigation buttons to highlight an item, and press the **OK** button to select it.

Press the **MENU** button again to go up one layer in the menu tree or exit the menu system. You are prompted to save your settings when you exit the menu system.

## System

| Item | Settings |
|---|---|
| **PROTOCOL** | VISCA (fixed) |
| **ADDRESS** (applies only for control via serial port) | 1 to 7 |
| **BAUD RATE** (applies only for control via serial port) | 2400, 4800, 9600, 115200 |
| **PTL LOCK** (protocol lock) | • **ON** — protocol setting (above) is locked<br>• **OFF** — protocol setting is unlocked |
| **RS485** | • **ON** — serial communication set to RS-485 (2-wire only)<br>• **OFF** — serial communication set to RS-232 |
| **VISCA** | • **OVER COM** — remote control (VISCA protocol) on serial port.<br>• **OVER IP** — remote control (VISCA protocol) on ethernet port. |
| **LANGUAGE** (menu language) | — English, Chinese |

## Exposure

| Item | Settings |
|---|---|
| **EXPOSURE MODE** | Auto, Manual, Shutter, Iris, Bright |

| Item | Settings |
|---|---|
| **SHUTTER** (manual exposure mode only) | 1080p59.94, 1080i59.94, 1080p29.97, 720p59.94, 720p29.97, 1080p60, 1080p30, 720p60, 720p30, 1080i60: 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10,000 |
| | 1080p50, 1080i50, 1080p25, 720p50, 720p25, 1080p24, 1080p23.98: 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10,000 |
| **IRIS** (manual exposure mode only) | Closed to F1.6 (manual exposure mode only) |
| **GAIN** | 0bB to +30dB (in 2dB increments) |
| **EBRIGHT** (bright exposure mode only) | 000 to 027 |
| **BRIGHT** (auto, iris, or shutter exposure modes only) | 000 to 015 |
| **WD Mode** (wide dynamic range) | • **ON** — turns on WD mode and enables the WD level.<br>• **OFF** — turns off WD mode |
| **WD Level** | 001 to 006 (when WD Mode is on only) |
| **BLC** | • **ON** — turns on backlight compensation<br>• **OFF** — turns off backlight compensation |

## Image

| Item | Settings |
|---|---|
| **WB Mode** (white balance) | ATW, Manual, Sodium, Flores, Auto, Indoor, Outdoor, Push |
| **R GAIN** (red gain) | 0 to 255 (manual white balance mode only) |
| **B GAIN** (blue gain) | 0 to 255 (manual white balance mode only) |
| **FLICK** (anti-flicker) | 50Hz, 60Hz, OFF |
| **FOCUS** | Auto, Manual |

## Quality

| Item | Settings |
|---|---|
| **2D NR** (image noise reduction) | • **ON** — turn image noise reduction on<br>• **OFF** — turn image noise reduction off |
| **3D NR** (motion noise reduction) | OFF, AUTO, 001, 002, 003, 004 |
| **SHARPNESS** | 000 to 015 |
| **CONTRAST** | 000 to 015 |
| **SATURATION** | 000 to 015 |
| **GAMMA** | 000 to 004 |
| **AF SENSIT** (auto focus sensitivity) | NORMAL, HIGH, LOW |

## PTZ

| Item | Settings |
|---|---|
| **SPEEDBYZ** (speed by zoom) | • **ON** — proportional pan/tilt speed based on zoom level (Higher value gives slower pan/tilt speed at higher zoom levels.)<br>• **OFF** — pan/tilt speed not affected by zoom level |
| **MOUNT M** (mount mode) | • **OFF** — camera is mounted right-side-up<br>• **ON** — camera is mounted upside-down and pan/tilt controls are reversed |
| **FLIP HOR** (flip horizontally) | • **ON** — flip video image horizontally<br>• **OFF** — don't flip image |
| **FLIP VER** (flip vertically) | • **ON** — flip video image vertically<br>• **OFF** — don't flip image |
| **PT SPD** (pan/tilt speed) | 005 to 024 |
| **ZOOM SPD** (zoom speed) | 1 to 7 |
| **DZOOM** (digital zoom) | • **ON** — digital zoom on<br>• **OFF** — digital zoom off |
| **MENU MIR** (menu mirroring) | • **NORMAL** — onscreen menu is displayed normally<br>• **MIRROR** — onscreen menu is mirrored |

## Format

The video format information on this menu applies to the SDI output.

| Item | Settings |
|---|---|
| Available video formats | 1080p60, 1080p59.94, 1080p50, 1080p30, 1080p29.97, 1080p25, 1080p24, 1080p23.98, 1080i60, 1080i59.94, 1080i50, 720p60, 720p59.94, 720p50, 720p30, 720p29.97, 720p25 |

## IP

*Note: You must power cycle the camera for the network settings (DHCP, IP Address) to be applied.*

| Item | Settings |
|---|---|
| **DHCP** | • **ON** — use DHCP to obtain IP address<br>• **OFF** — use fixed IP address (default is 192.168.1.188) |
| **IP** | IP address for camera |
| **MASK** (protocol lock) | Network Mask for camera |
| **GW** | Gateway for camera |
| **MAIN** | Main Stream format (1920×1080, 3840×2160) |
| **BITRATE** (main) | Main Stream bit rate |
| **SUB** | Sub Stream format (1280×720, 1024×576, 640×360) |
| **BITRATE** (sub) | Sub Stream bit rate |

## Reset

To reset a setting you must select **YES** for the item you want to reset and then press **OK** on the remote to commit the change.

| Item | Settings |
|---|---|
| **SYS RESET** | Resets all properties in the **SYSTEM** menu to default values, except the VISCA setting |
| **CAM RESET** | Resets all properties in the **Exposure**, **Image**, **Quality**, and **Format** menus to default values. The default video format is 1080i50. |
| **PT RESET** | Resets pan and tilt to home positions. Does not affect presets. |

| Item | Settings |
|---|---|
| **ALL RESET** | Resets all settings to factory defaults, except the **SYSTEM** > **VISCA**setting, Web Interface login credentials, and presets. The default IP address is 192.168.1.188. |

## INFO

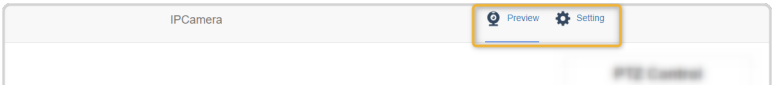
| Item | Settings |
|---|---|
| **IR ADDR** | infrared control address of camera |
| **FOCUS** | focus mode |
| **CLIENT** | client protocol |
| **MODEL NO** | model number |
| **ARM VER** | ARM firmware version |
| **MD VER** | motor driver firmware version |
| **FPGA VER** | FPGA firmware version |
| **CAM VER** | camera version |
| **RELEASE** | firmware release date |

# Web Interface

The web interface allows you to control various aspects of the camera as well as preview the camera output.

To connect to the web interface of the PIVOTCam-SE, you must point your browser to the IP address of the camera. You can find the IP address on the **IP** menu.

The web interface operates in two modes, **Preview** and **Settings**. Preview allows you to preview the output of the camera as well as control the Pan/Tilt/Zoom (PTZ) of the camera, and store and recall shots on the camera. Settings allows you to configure various parameters of the camera. The mode is selected in the upper right corner of the page.

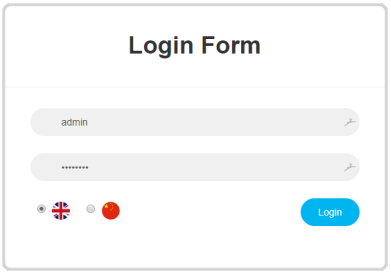



## To Log Into the Web Interface

The web interface requires a user-name and password.

*Important: The web interface uses Adobe® Flash® Player for the video preview. You may have to turn on permissions and add the camera IP address to allow the preview. Refer to the documentation for your particular browser for information on setting permissions for Flash®.*

1. Point your web browser to the IP address of the camera.

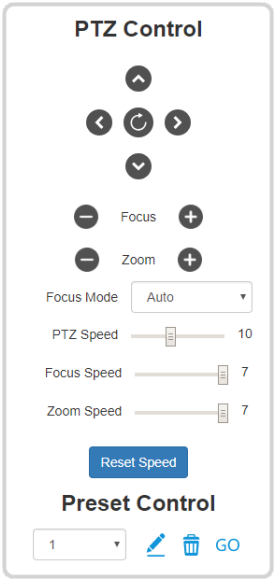



2. Select the language you want the interface to be in.
3. Enter the name and password for the camera and click **Login**.

*Tip: There is only one account per camera. The default user-name is `admin` and the password is `admin`. You can change these settings from the web interface.*

# Preview

The **Preview** page has a PTZ Control area for controlling the camera manually, and a Preset Control area for saving and loading shots on the camera.




## PTZ Control

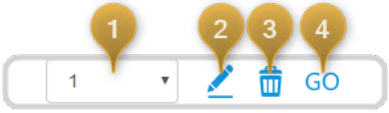
The controls in PTZ area allow you to pan the camera head in both axis as well as increase or decrease the focus and zoom.

*Tip: The button moves the camera to the home position and reset the focus and zoom settings.*

- **Focus** — increase or decrease focus.
- **Zoom** — increase or decrease the zoom level.
- **Focus Mode** — set the focus mode to manual or automatic. The **Focus Mode** is set to **Manual** when you press the **Focus** buttons.
- **PTZ Speed** — set how fast the camera head moves when the PTZ buttons are used. This does not affect the speed of a shot recall.
- **Focus Speed** — set how fast the camera manually focuses when the **Focus** buttons are used.
- **Zoom Speed** — set how fast the camera zooms when the **Zoom** buttons are used.

## Preset Control

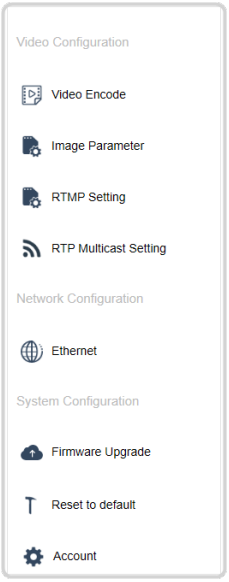
Up to 128 presets can be stored on the camera. Once stored, the preset can be recalled or deleted. If a register has not had a preset stored to it, the camera will not move when that preset is recalled.




1. Select the preset register you want to use.
2. Store the current camera preset to the selected register.
3. Delete the camera preset stored in the selected register.
4. Recall the camera preset from the selected register.

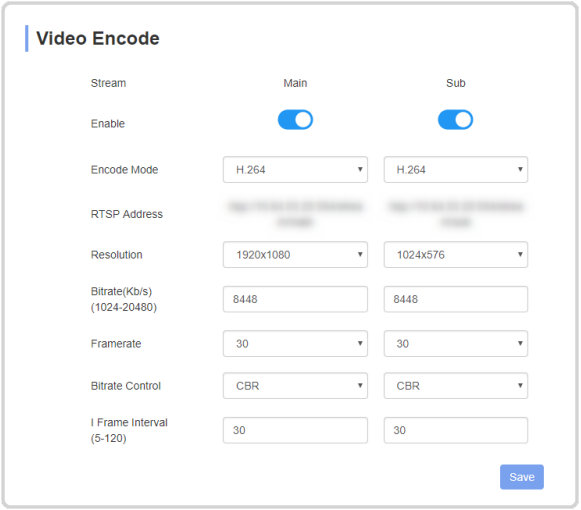
# Settings

The **Settings** page offers a number of configuration options for the camera.




## Video Encoding

The **Video Encoding** tab (**Settings** > **Video Encoding**) allows you to set the video mode and parameters for the main and sub video streams




- **Stream** — identifies the Main and Sub streams.
- **Enable** — enable or disable the main or sub streams.
- **Encode Mode** — select the encoding mode you want to use (H.264 or H.265).
- **RTSP Address** — identifies the main and sub Real Time Streaming Protocol (RTSP) addresses.
- **Resolution** — select the resolution for the main (1920x1080, 3840x2160) and sub (1280x720, 1024x576, 640x360) streams.
- **Bitrate(Kb/s)** — enter a bit-rate for the main and sub streams.
- **Framerate** — select a frame-rate for the main and sub streams.
- **Bitrate Control** — select a Constant Bit Rate (CBR) or a Variable Bit Rate (VBR) for the main and sub streams.
- **I Frame Interval** — select how often the I-Frame, or full frame, is transmitted for the main and sub streams.

### To Use VLC® to View RTSP Video

The VLC media player® can be used to view the RTSP stream from the camera.

*Note: Download and install the VLC media player® to use this procedure.*

1. Launch the VLC media player®.
2. Click **Media** > **Open Network Stream...**

3. In the **Please enter a network URL:** field, enter the address of the RTSP stream that you want to view.

> *Tip: If there is too much lag in the video update, select **Show more options** and set **Caching** to a lower value.*

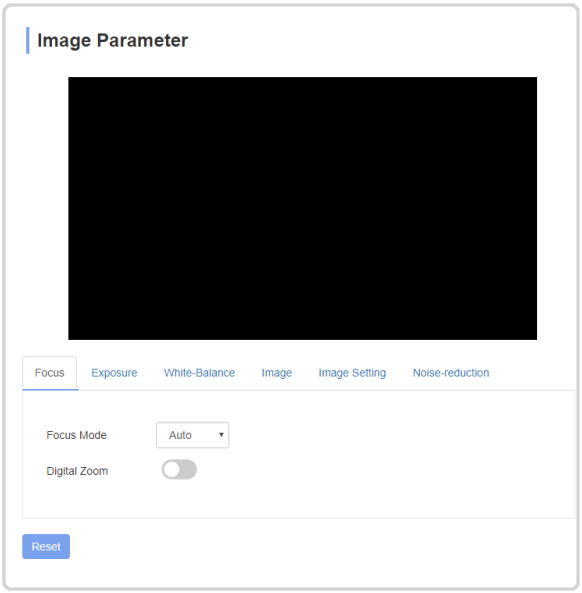
4. Click **Play**.

## Image Parameters

The **Image Parameter** page allows you to adjust the various image settings on the camera. These parameters are broken down into a number of sub pages.

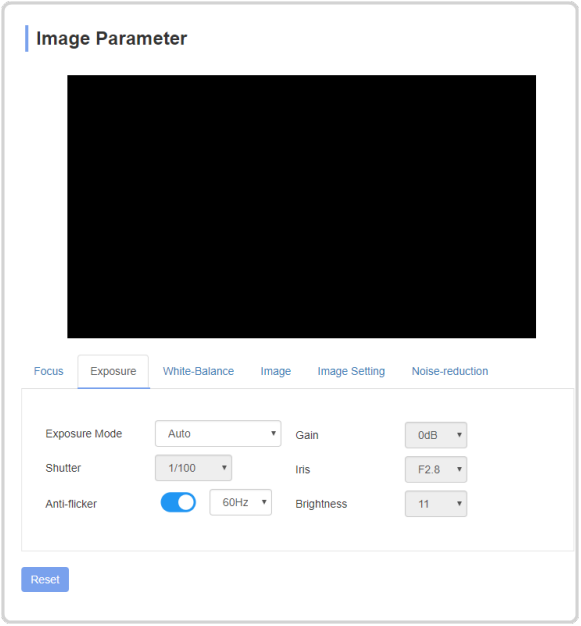
> *Tip: The **Reset** button at the bottom of the page resets all of the **Image Parameter** settings.*

### Focus



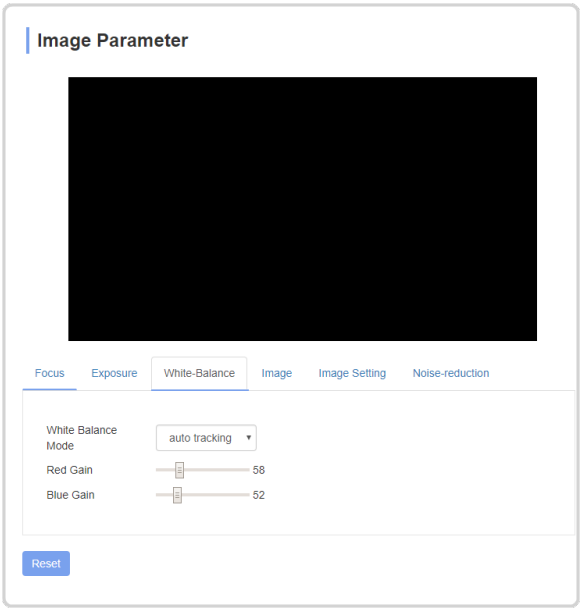

- **Focus Mode** — select **Auto** or **Manual** focus mode.
- **Digital Zoom** — turn digital zoom on or off.

## Exposure



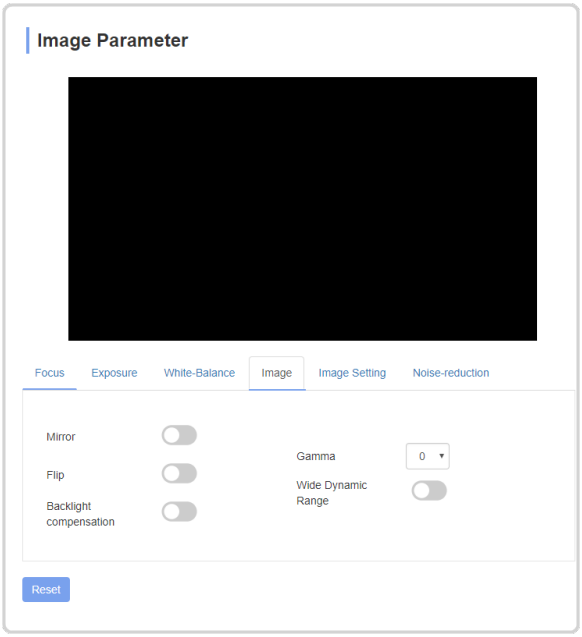

- **Exposure Mode** — select the exposure mode (Auto, Manual, Iris Priority, Shutter Priority, Brightness Priority) you want the camera to operate in.
- **Shutter** — select the shutter speed you want to use. The **Exposure Mode** must be set to **Manual** or **Shutter Priority** to set the shutter speed.
- **Anti-flicker** — turn anti-flicker on and select the frequency (50Hz or 60Hz).
- **Gain** — adjust the gain (30-0dB). The **Exposure Mode** must be set to **Manual** to adjust the gain.
- **Iris** — adjust the iris. The **Exposure Mode** must be set to **Manual** or **Iris Priority** to adjust the iris.
- **Brightness** — adjust the brightness (0-27). The **Exposure Mode** must be set to **Manual** or **Brightness Priority** to adjust the brightness.

## White Balance



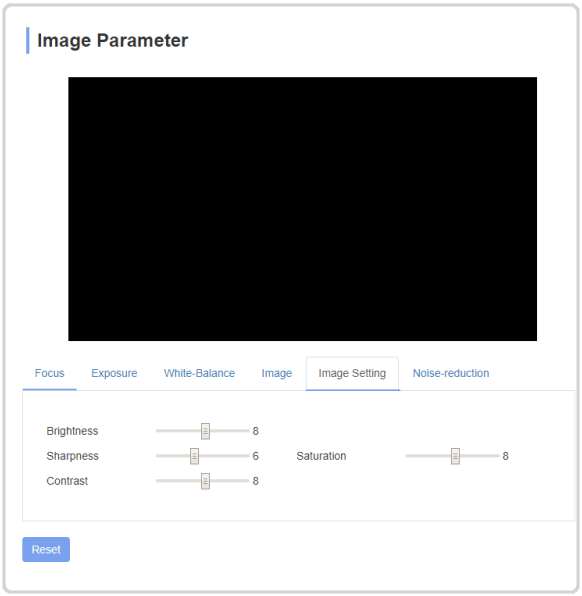

- **White Balance Mode** — select a preset white balance mode (Auto, Sodium, Fluorescent, Indoor, Outdoor, One Push, Auto Tracking) or set the mode to **Manual** to be able to adjust the **Red Gain** and **Blue Gain**.
- **Red Gain** — manually adjust the red gain.
- **Blue Gain** — manually adjust the blue gain.

## Image



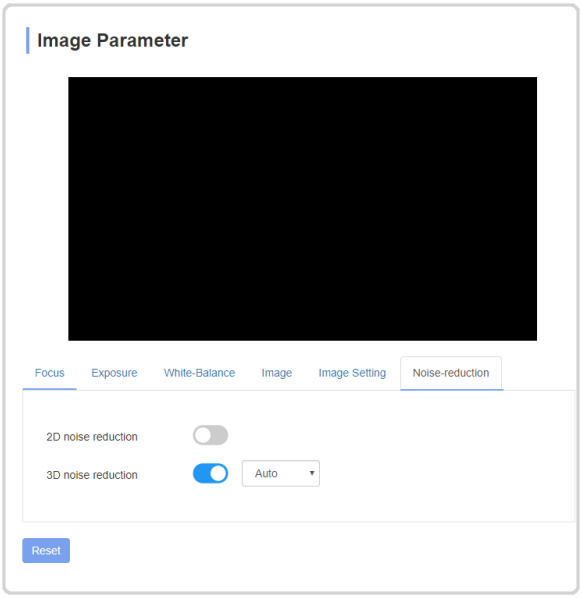

- **Mirror** — flip the image horizontally.
- **Flip** — flip the image vertically.
- **Backlight Compensation** — turn backlight compensation on or off.
- **Gamma** — select the gamma level (0-4).
- **Wide Dynamic Range** — turn wide dynamic range (WDR) on or off. Select the WDR level you want to use.

## Image Setting




- **Brightness** — adjust the brightness of the image (0-15).
- **Sharpness** — adjust the sharpness of the image (0-15).
- **Contrast** — adjust the contrast of the image (0-15).
- **Saturation** — adjust the saturation of the image (0-15).

### Noise-Reduction




- **2D Noise Reduction** — turn image noise reduction on or off.
- **3D Noise Reduction** — turn motion noise reduction on or off. Select the level of noise reduction (Auto, Level 1-4) you want to use.

## RTMP Settings

The **RTMP Setting** tab consists of settings for features that are currently under development, and are not supported.

## RTP Multicast Settings

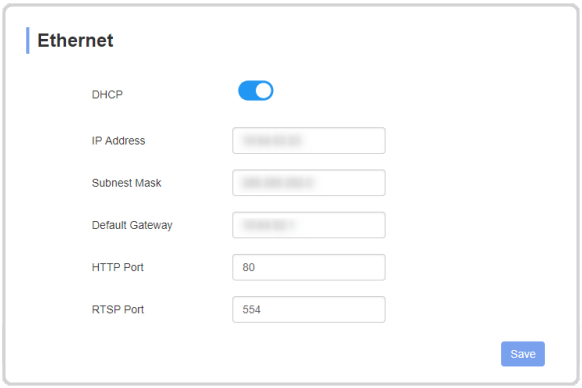
The **RTP Multicast Setting** tab consists of settings for features that are currently under development, and are not supported.

## Ethernet

The **Ethernet** tab allows you to set confirm and set the ethernet settings for the camera.

*Note: You must power cycle the camera to use the new ethernet settings. When the camera powers back on it will be using the new ethernet settings and you will have to point your browser to the new address.*

*Tip: You can also view the current ethernet settings form the onscreen menus.*




- **DHCP** — select DHCP (on) or a static (off) IP address.
- **IP Address** — the current IP address of the camera. If **DHCP** is off you can enter a new value.
- **Subnet Mask** — the current subnet mask for the camera. If **DHCP** is off you can enter a new value.
- **Default Gateway** — the current default gateway for the camera. If **DHCP** is off you can enter a new value.
- **HTTP Port** — the port being used for the web interface.
- **RTSP Port** — the port being used for RTSP communication.

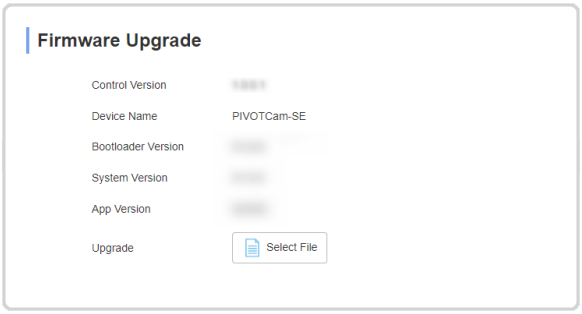
*Note: If you make any changes, you must click **Save** to store the new settings and then power cycle the camera.*

## CAM Firmware Upgrade

The **Firmware Upgrade** page enables you to upgrade the CAM component of the firmware on the camera. There are additional upgradeable firmware components on the camera. The firmware components must all be upgraded as a set, and in the correct order.

Firmware upgrade packages are available for free download from the Ross Video website. Each package includes a set of firmware upgrade files and detailed instructions about how to perform required upgrades.

*Tip: To access the latest firmware upgrade package and related documentation, go to https://www.rossvideo.com/support/software-downloads/pivotcam/.*




### To Upgrade the CAM Firmware

Use the web interface to select the upgrade file and upload it to the camera.

*Important: Do NOT power off or operate the camera during the upgrade.*

1. Click **Select File**.
2. Locate the CAM upgrade file and select it.

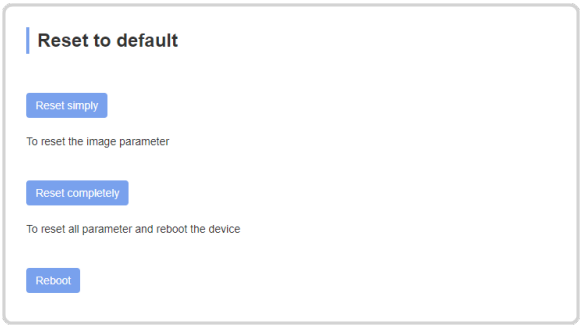
   *Tip: The CAM firmware file name starts with `3_PIVOTSE_CAM`, and ends in a `.bin` extension, as in the following example: `3_PIVOTSE_CAM_V305_20191129.bin`*

3. Click **Open**.
4. Click **Upgrade**.
5. Follow any prompts to upgrade the camera.

*Tip: You may have to reset the camera parameters to get the updated camera settings.*

## Reset to Default

The **Reset to Default** page allows you to reset just the image parameters or all the camera settings and reboot the camera.

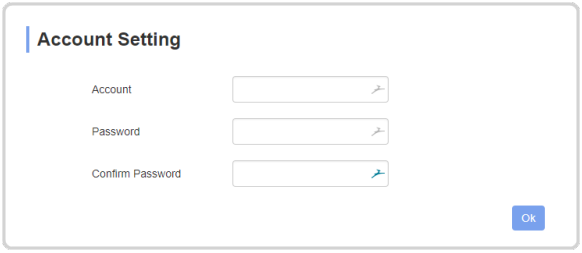



- **Reset Simply** — click this button to reset only the image parameters.
- **Reset Completely** — click this button to reset all settings to factory defaults, except the **SYSTEM** > **VISCA** setting, Web Interface login credentials, and presets. If the IP address has been set to a value other than the default, the Web Interface loses connection with the camera. To re-establish a Web Interface connection, you can either set the IP address using the remote control, or navigate to the default IP address (192.168.1.188).
- **Reboot** — click this button to reboot the camera.

## Account

The **Account Setting** page allows you to change the account name and password used to access the camera.

*Note: There is only ONE account for a camera. If you change the account name and password you cannot use the old account to access the camera.*




### To Set a New Account Name and Password

1. Enter a new account name in the **Account** field.
2. Enter a new password in the **Password** field.
3. Enter the same password in the **Confirm Password** field.

4. Click **Ok** to set the new account name and password.

*Note: If you forget the new account name and/or password, please contact Ross Video Technical Support for assistance.*

# Troubleshooting

- **Grinding noise near limits** — The camera may have lost position reference. Either power-cycle the camera or use the PT Reset function to reset the pan/tilt positioning.

# Specifications

| Item | PIVOTCam-SE |
|---|---|
| Video Formats (SDI) | 1080p 60/59.94/50/30/29.97/25/24/23.98Hz |
| | 1080i 60/59.94/50Hz |
| | 720p 60/59.94/50/30/29.97/25Hz |
| Video Formats (Main Stream) | 3840×2160, 1920×1080 (1-30Hz) |
| Video Formats (Sub Stream) | 1280×720, 1027×576, 640×360 (1-30Hz) |
| Video Outputs | HD-SDI: 3G SDI |
| | LAN: H.264, H.265 |
| Image Sensor | 1/1.7 inch (½ inch type), 12.4M Pixel CMOS |
| Lens | f6.5(wide), 149.5mm(tele) |
| | FOV: 60°(wide), 2.02°(tele) |
| | 23× Optical Zoom + 2× Lossless Digital Zoom |
| Rotation Angle | Pan: ±170° |
| | Tilt: -30° to +90° (upside-down mounting supported) |
| Rotation Speed | Pan: 0.1° to 120°/s |
| | Tilt: 0.1° to 80°/s |
| Presets | Remote Control: first 10 presets (buttons 0-9) |
| | Camera Storage: 128 presets |
| | Preset Accuracy: 0.1° |
| Serial Control | RS-232, RS-485 (2-wire only) |
| Ethernet Control | 1Gb Ethernet Direct (port 52381) |
| IP Address (default) | 192.168.1.188 |
| Tally | Red/Blue/Green (VISCA protocol) |
| Minimum Lux | 0.01 |
| White Balance | ATW, Manual, Auto, Indoor, Outdoor, One Push |
| Focus | Auto/Manual |
| Iris | Auto/Manual |
| Shutter | Auto/Manual |

| Item | PIVOTCam-SE |
|---|---|
| Exposure Compensation | Supported |
| WDR | Supported |
| BLC | Supported |
| 2D/3D Noise Reduction | Supported |
| Input Voltage | 12VDC Brick and/or PoE[1] |
| Dimension | 220mm × 173mm × 117mm (8.7in × 6.8in × 4.6in) |
| Net Weight | 1.25kg (2.8lb) |

## Notes

[1] When powered by PoE, the camera may require more power than the PoE standard provides by default. We recommend that you run the camera from a PoE+ capable switch and manually increase the power available to the camera from the switch control panel up to the PoE+ level of 25.5W.

# Ports

## RS232 (VISCA IN/OUT)

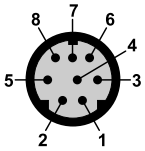



*Table 3: RS232 Port Pinouts*

| Pin | Signal |
|---|---|
| 1 | DTR |
| 2 | DSR |
| 3 | TXD |
| 4 | GND |
| 5 | RXD |
| 6 | A(+) |
| 7 | IR OUT |
| 8 | B(-) |