IV-CAMPTZ-12-N-W-1B, IV-CAMPTZ-12-N-SLVR-1B, IV-CAMPTZ-12-W-1B, and IV-CAMPTZ-12-SLVR-1B

1 Beyond PTZ Series

Product Manual

Crestron Electronics, Inc.

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Contents

Overview

1 Beyond intelligent video technology brings an essential video conferencing solution into the Crestron ecosystem. Enabling the best video experience for both in-room and remote attendees is vital to hybrid work and ensuring productive and effective collaboration.

The IV-CAMPTZ-12-N-W-1B, IV-CAMPTZ-12-N-SLVR-1B, IV-CAMPTZ-12-W-1B, and IV-CAMPTZ-12-SLVR-1B[1] are high quality PTZ cameras that output up to 1080p60 resolution video via the 3G-SDI or HDMI® ports. They are ideal for any meeting where one camera needs to capture several areas of the room. The cameras support a single Ethernet connection and provide power (PoE+), monitoring, control, and NDI®|HX video[2].

The IV-CAMPTZ-12-N-W-1B, IV-CAMPTZ-12-N-SLVR-1B, IV-CAMPTZ-12-W-1B, and IV-CAMPTZ-12-SLVR-1B are functionally similar. For simplicity within this manual, the term "PTZ" is used except where otherwise noted.

NOTES:

1. The IV-CAMPTZ-12-N-W-1B, IV-CAMPTZ-12-N-SLVR-1B, IV-CAMPTZ-12-W-1B, and IV-CAMPTZ-12-SLVR-1B include integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.
2. NDI|HX is only supported on the IV-CAMPTZ-12-N-W-1B and IV-CAMPTZ-12-N-SLVR-1B cameras.

Features

Key features for the PTZ series cameras include:

- High quality video supporting resolutions up to 1080p60
- Control using VISCA over IP
- Smooth and quiet operation
- Compatible with Automate™ VX multicamera systems
- Image Flip allows for optional inverted mounting
- Single Ethernet connection provides power (PoE+), monitoring, control, and NDI®|HX compatible video

High Quality Video

A high quality Sony Exmor® CMOS sensor enables the camera to output up to 1080p60 resolution video via the 3G-SDI or HDMI ports.

Manual Control Options

Use VISCA over IP to control the camera with a Crestron® control system. 1B Cam Manager Software is included for easy configuration from a computer on the network.

Quiet, Fast Switching Between Presets

Up to 256 pan, tilt, and zoom combination presets can be configured. The camera will move to the selected preset point. A quiet, fast motor (120°/s pan speed) sets camera angles quickly.

Multicamera Capability with Automate Systems

Add the PTZ camera to an Automate multicamera system. Automate can be set to autoswitch between multiple 1 Beyond cameras to focus on the active speaking participant. Incorporate popular microphones and DSPs to switch between the presenter and audience.

Mounting Options

Standard mounting holes make it easy to mount the camera to a IVA-WMT-SHELF-1B (included), or a J-Mount ceiling bracket (sold separately). Image flip allows the camera to be mounted inverted if needed.

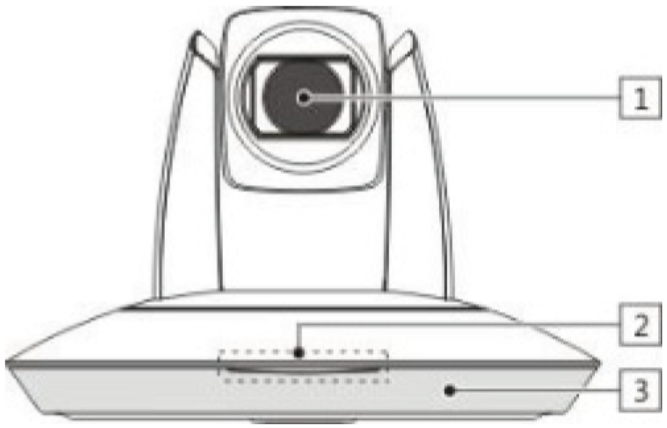
NDI|HX for High Quality Network Video

NDI|HX supports efficient and flexible IP configuration with other networked NDI-enabled devices. NDI|HX allows for easy installation and scalability with a single network pull. NDI|HX allows for easy installation and scalability with a single network pull. NDI|HX is an exclusive feature for the IV-CAMPTZ-12-N-W-1B and IV-CAMPTZ-12-N-SLVR-1B cameras.

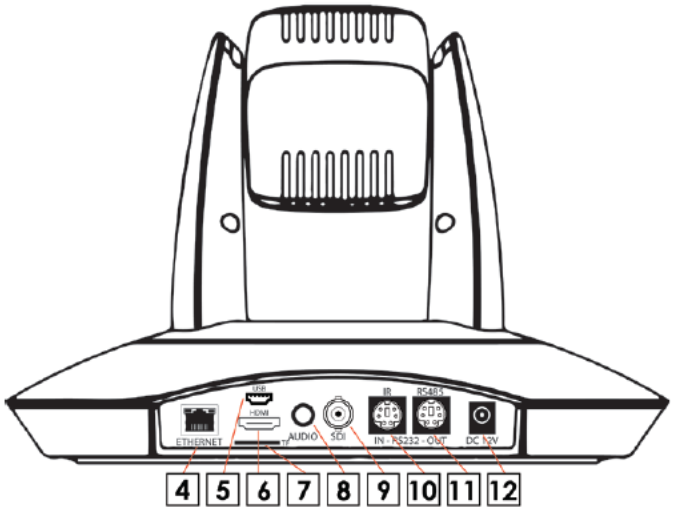
Physical Description

The PTZ camera provides the following connectors and indicators.

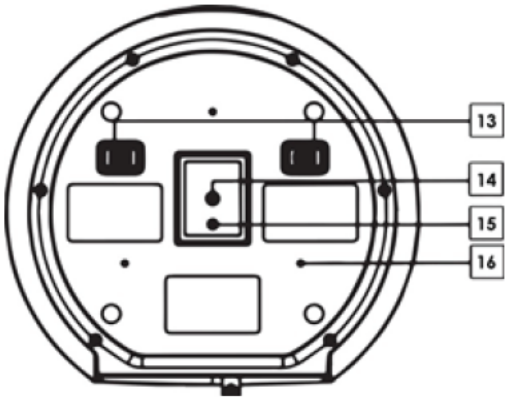
Front View



Rear View



Bottom View



No.	Description
1	PTZ Camera
2	Power Indicator
3	Remote Control Indicator
4	1 Gbps RJ-45 Ethernet port
5	USB Port for future use
6	HDMI Output supports uncompressed video output up to 1080p60
7	TF (MicroSD) Card Slot **CAUTION:** For the NDI|HX models, do not remove the MicroSD card.
8	Analog Audio In/Out used to feeds audio signal into the network stream
9	3G-SDI Output supports uncompressed video output at up to 1080p60
10	RS-232 / IR Extender Input
11	RS-485 Input / RS-232 Output Output can be used for daisychaining RS-232 devices.
12	12VDC power input, <30 W, PoE+
13	DIP Switches are for future use and are not currently supported.
14	Mounting Hole
15	Locating Hole
16	Mounting Holes for Ceiling Mount

1 Beyond Camera Manager Software

The 1 Beyond Camera Manager software is the central hub for configuring, monitoring, and controlling 1 Beyond IP cameras.

The 1 Beyond Camera Manager software provides the following features:

- Discover 1 Beyond cameras on the network
- Upgrade camera firmware
- Modify camera network settings
- Modify camera RTMP (Real-Time Messaging Protocol) settings
- Set authentication credentials for the camera
- Modify general settings, such as the camera name
- Set a secondary connection to the camera from a control device (such as a touch screen)
- View up to four camera video streams (close-up or panorama) simultaneously
- Use the PTZ Lens controls to adjust the camera's pan, tilt, zoom, focus, and iris levels
- Create, recall, and delete camera presets
- Use the OSD (on-screen display) menu to adjust advanced settings

CAUTION: The 1 Beyond Camera Manager software enables changing of critical camera settings that impact the camera's functionality and effectiveness. Ensure that all procedures in this document are followed carefully for optimal camera performance.

Specifications

Product specifications for the PTZ series cameras.

Optics and Processing

Image Sensor	1/2.8 in. Sony Exmor CMOS, 2.14MP
Focal Lens & Iris	f=3.9-46.8 mm, F1.6 - F2.8
Field of View	72.5° - 6.3°
Focus System	Auto, Manual, PTZ Trigger
Minimum Illumination	0.5 Lux (30FPS)
Shutter Speed	1/1 - 1/10,000 sec
Gain	Auto, Manual
White Balance	Auto, Indoor, Outdoor, One Push, Manual
Exposure	Auto, Manual, Shutter Priority, Iris Priority
Number of Presets	Up to 256
Serial Control	RS-485, RS-232 (VISCA, PELCO-D)
IP Control Protocol	HTTP, RTP, TCP, UDP, ONVIF

Pan, Tilt, Zoom

Tilt/Pan Angle	Tilt: 30° - 90°, Pan: 170° - 170°
Tilt/Pan Speed	Tilt: 0.1° - 90° /s, Pan: 0.1° - 120° /s
Zoom	12x Optical, 12x Digital

Connectivity

Ethernet	RJ-45, 100Mb

Video

Video Outputs[1]	3G-SDI, HDMI, NDI|HX over Ethernet[2]
Signal Formats (HD)	1080p60/50/30/25, 1080i60/50, 720p60/50/30/25
IP Video Compression	H.264 (Dual stream)
Streaming	RTSP, RTMP
Streaming Resolution	Up to 1080p30, User-selectable framesize/framerate/bitrate

Audio

IP Audio Compression	AAC
Audio Input	1x Line In

Power

Power	12VDC, <30 W, PoE+
PoE+ Rating	25.5 W

NOTE: To comply with the European Directive (CE), shielded CAT5e cable must be used as a minimum for PoE power.

Environmental

Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 95% RH (non-condensing)

Construction

Mounting	1/4 in. threaded mount hole, compatible with Wall Mount and J-Mount ceiling bracket
S/N	≥50dB

Dimensions

Dimensions	8.9 in. x 8.1 in. x 6.3 in. (226 mm × 206 mm × 160 mm)

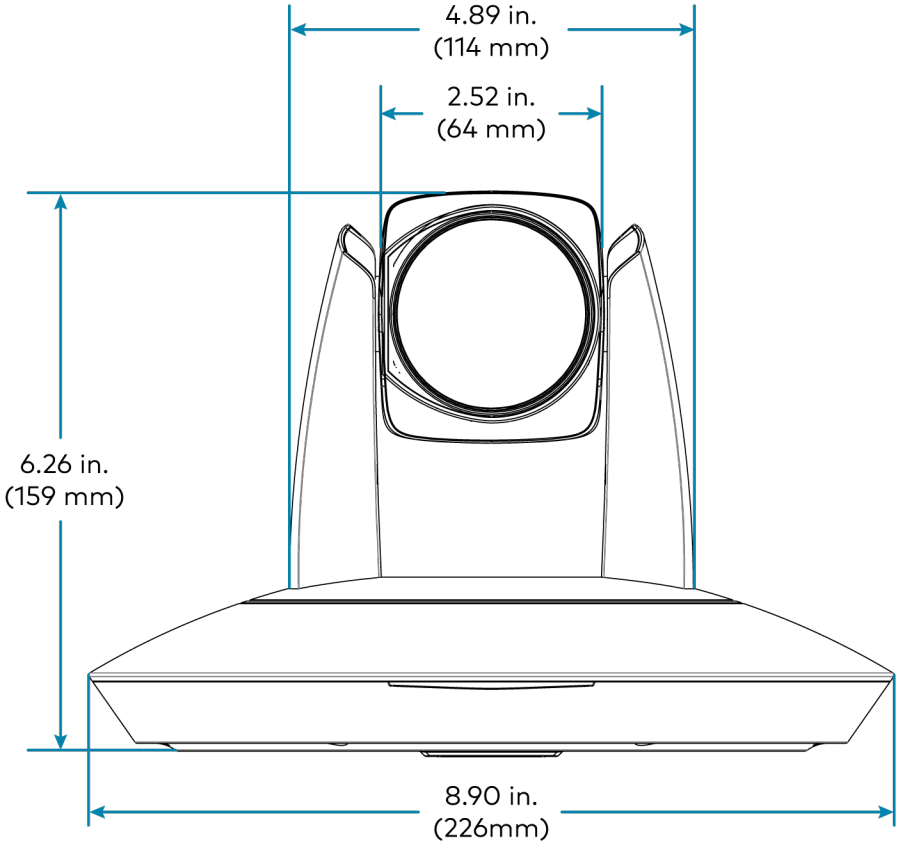
Weight

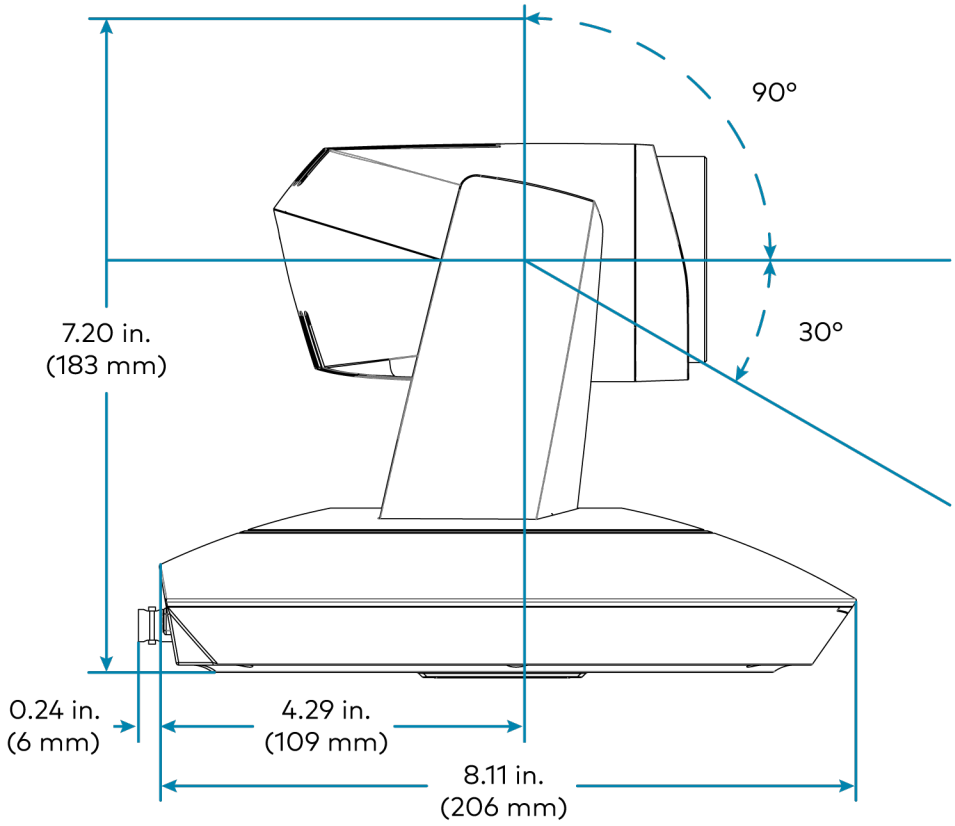
3.74 lb (1.7 kg)

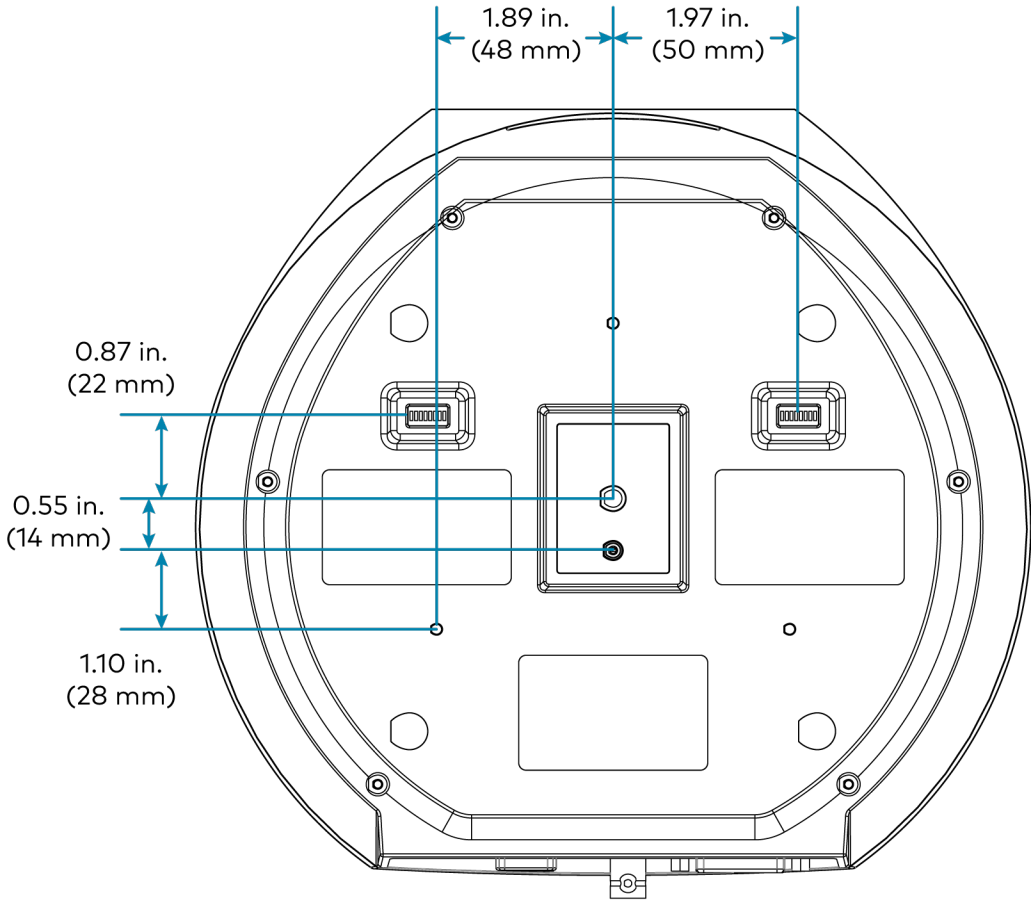
NOTES:

1. The PTZ camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.
2. NDI|HX is only supported on the IV-CAMPTZ-12-N-W-1B and IV-CAMPTZ-12-N-SLVR-1B.

Dimension Drawings




90°
30°
7.20 in.
(183 mm)
0.24 in.
(6 mm)
4.29 in.
(109 mm)
8.11 in.
(206 mm)


1.89 in.
(48 mm)
1.97 in.
(50 mm)
0.87 in.
(22 mm)
0.55 in.
(14 mm)
1.10 in.
(28 mm)

Installation

Use the following procedures to install the PTZ camera.

NOTES: Observe the following points:

- Check the source power before powering on the camera. The PTZ can be powered via a 30 W PoE+ switch or with 12VDC. Under or overpowering the camera will cause damage and poor performance that may not be immediately visible. If using PoE+ switch, be sure the port is properly configured for 30 W. If using DC power and connecting to a network switch, be sure the port is not set for PoE.
- Do not power the camera with PoE+ and a power supply at the same time. Doing so may cause it to malfunction.
- Do not operate the camera beyond the specified temperature and humidity limits. Operating range of the camera is between 32°F - 104°F (0°C -40°C). Ambient humidity should be less than 95%RH.
- Do not remove any screws from the camera. There are no user-serviceable parts inside. Contact Crestron True Blue Support if the camera is damaged or malfunctioning.
- Do not aim the camera lens at the sun or extremely bright lights. Doing so can damage the image sensor.
- Do not move the camera head manually. Doing so can damage the camera and inner gear systems. Do not carry the camera by the head; always handle the camera by the base.
- Do not directly expose the camera to rain, water, or high moisture.
- This camera is for indoor use only.

In the Box

Qty.	Description
1	1 Beyond PTZ Camera
	Additional Items
1	Power Supply
1	IR remote control
1	Serial Control Breakout
1	IVA-WMT-SHELF-1B

Mounting

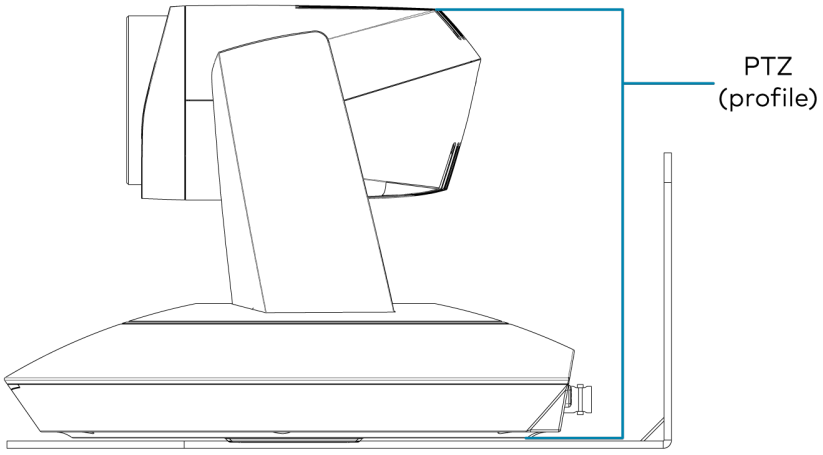
Ensure there is enough space for both the camera and connecting cables before mounting the camera.

Mount to a Table

Place the camera on a flat and level surface. If the camera needs to be placed on an inclined surface, verify that the incline is no greater than 15° to ensure proper pan and tilt accuracy and to prevent the camera from falling.

Mount to a Shelf

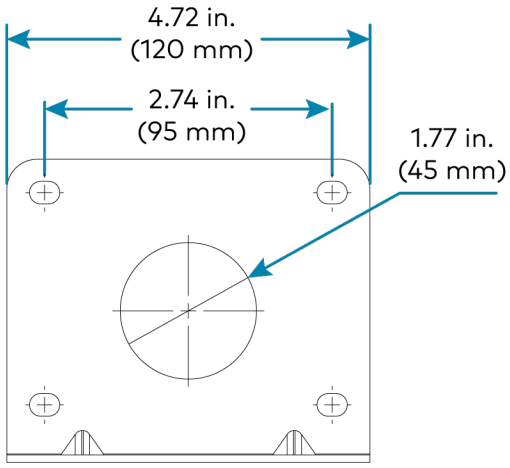
Install the camera using the included shelf mount to ensure optimum stability.



For the best possible performance, center the camera horizontally towards the meeting participants.

To mount the camera:

1. Following to diameter and position of the four installation holes on the bracket, drill four holes on the wall.
2. Use the included screws to attach the bracket to the wall.



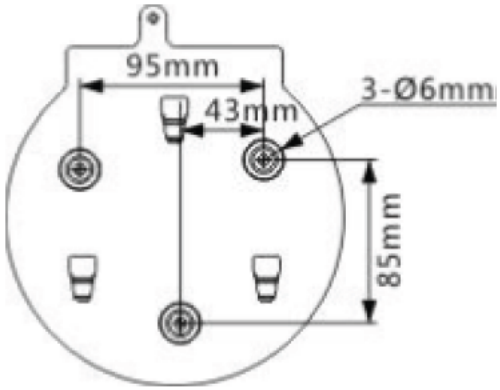
3. Use a tripod-style screws to affix the camera to the bracket.

Mount to a Ceiling Plate

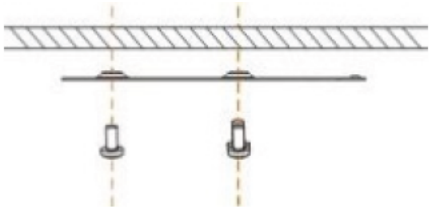
Use the 1 Beyond Ceiling Plate (sold separately) to suspend the camera from the ceiling to achieve optimum distance from the presentation area.

To mount the camera:

1. Using the following diagram, position the 3 installation holes on the plate and drill 3 holes in the ceiling.



2. Attach the ceiling plate onto the ceiling using 3 screws (not included). Choose the length of the screws in accordance with building specifications.



3. Use the included screws to fix the camera on the mounting plate.

4. Slide the camera onto the ceiling plate until it reaches the limit.

5. Fix the two plates together using the M3x8 screws (not included).

1 Beyond Camera Manager System Requirements

Ensure the host computer running the 1 Beyond Camera Manager software meets the following system requirements.

- Windows® 10 OS or later
- Dual-core processor
- 4GB (or greater) memory
- 1GB (or greater) storage
- Ethernet or Wi-Fi™ Network connection to the local network

1 Beyond Camera Manager Initial Setup

Use the following procedures to set up the 1 Beyond Camera Manager software on a computer.

Install the Software

To install the 1 Beyond Camera Manager software:

> **NOTE:** Ensure the software is installed onto a computer that meets or exceeds the specifications described in 1 Beyond Camera Manager System Requirements on page 15.

1. Download the 1 Beyond Camera Manager installation package from www.crestron.com/Support/Resource-Library or from the 1 Beyond camera product pages on Crestron.com
2. Open the installer executable file and follow all prompts to install the software.

Wiring

Network Connection

The camera must be connected to the network for initial configuration. A consistent network connection is necessary if this camera is associated with an Automate VX camera switcher system.

Video Output

To connect the camera to a conferencing codec or capture device, an HDMI or SDI connection is required. SDI is recommended for longer cable runs of over 50 ft (15 m). USB converters are available for both HDMI and SDI if the camera is to be connected to a computer or codec via USB. For Automate VX camera switcher system, use an SDI connection to the system.

PoE+ Power

This camera allows control, monitoring and power input using a single Ethernet cable thanks to PoE+ compatibility. To power the camera from a network switch, make sure that it is a PoE+ certified switch that can supply 30 W of power for each camera to be connected. Alternatively, a PoE+ injector can be used to inject power between the switch and camera. Consult Crestron True Blue Support for supported models.

NOTES:

- To comply with the European Directive (CE), shielded CAT5e cable must be used as a minimum for PoE power.
- Disable LLDP, EEE, or Green Ethernet settings on the network switch to ensure the camera receives proper power allocation.

DC Power

Power the camera using 12VDC or PoE+, but not simultaneously. The camera cannot operate properly with less than 12VDC power. Since voltage drops over distance, the supplied 12V power adapter is not sufficient if the power source is greater than 10 ft (3 m) from the camera.

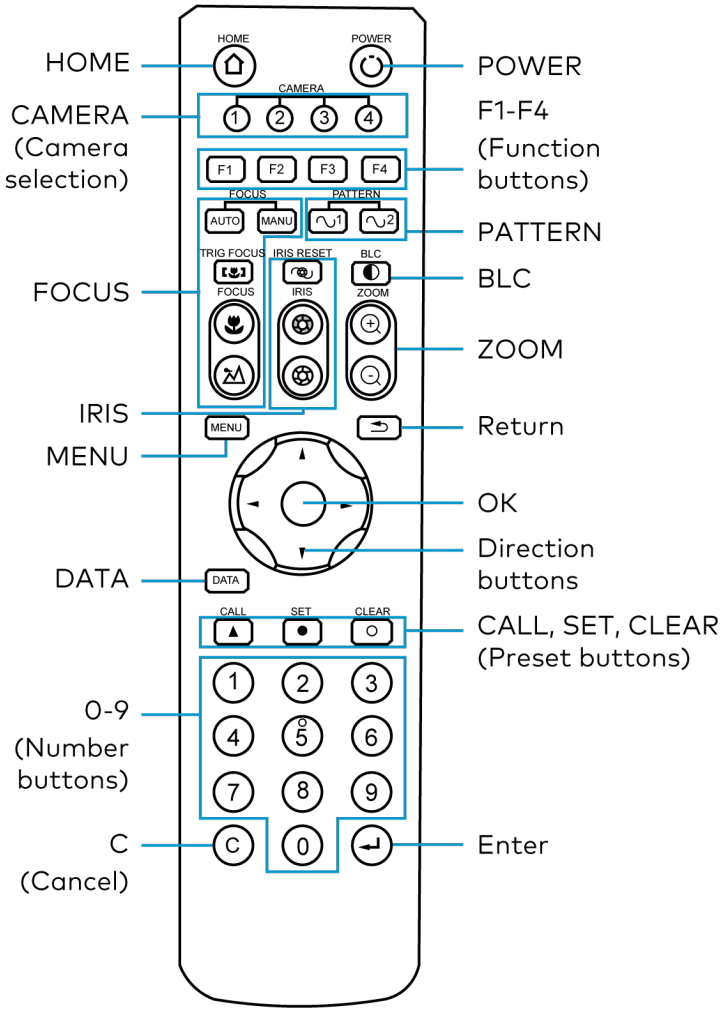
WARNING: Providing too little or too much power can damage the camera. For PoE+, make sure the network port is configured for 30 W. For DC power, be sure to supply 12V to the camera.

Configuration

This section provides the following information:

IR Remote Control

Use the IR remote to control the camera.

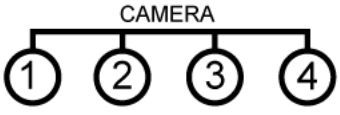


Home

Press ⌂ to move the camera back to the home position where pan, tilt, and zoom are at 0.

Camera Selection

Select one of four PTZ cameras to control. The selected camera number lights when pressing any button.



Focus

- Press AUTO to switch to Auto Focus.
- Press MANU to switch to Manual Focus.
- Press to focus close.
- Press to focus far.
- Press to engage Auto Focus. Triggers Auto Focus until a preset is called. Auto Focus can also be triggered by activating Zoom.

Iris

- Press to reset the iris to default.
- Press to open the iris (brighten).
- Press to close the iris (darken).

Menu

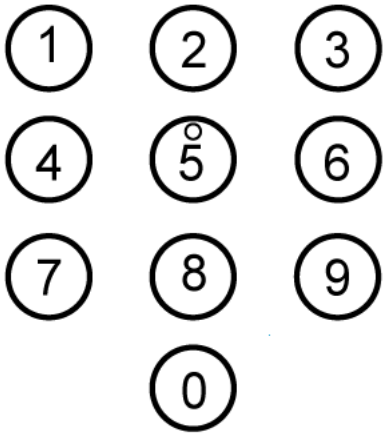
Press MENU to enter/exit OSD menu

Data

Press DATA to enable/disable display of pan, tilt, or zoom values.

0-9 (Number Buttons)

Input numbers for calling /storing presets.



C (Cancel)

Press Ⓒ to cancel a number input or to return to the previous OSD menu

Power

Press ⏻ to put the camera into or out of standby mode.

F1-F4 (Function Buttons)

- **F1**, **F2**, **F3** and **F4** reserved for future use.

Pattern

Activates pattern 1 and/or 2.

- Pattern-1 pans the camera 45° left & right.
- Pattern-2 pans the camera 90° left & right.
  (Scanning uses the current zoom and tilt position.)

BLC

Press to activate/deactivate Backlight Compensation, which helps to properly expose subjects in front of a bright projection screen or window.

Zoom

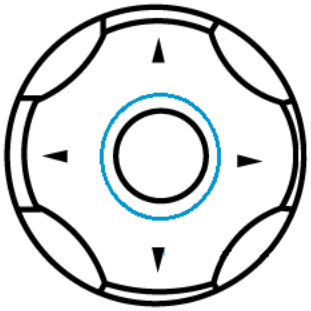
- Press ⊕ to zoom in.
- Press ⊖ to zoom out.

Return

Press to return to the previous page of the OSD menu.

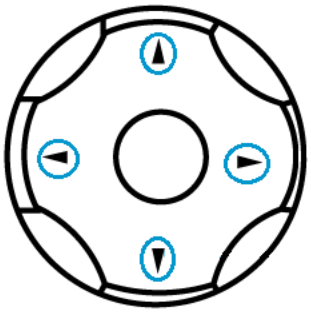
Ok

Press to confirm the menu selection.



Direction Buttons

Press to control pan or tilt operation or navigate the OSD menu.



Call, Set, Clear (Preset Buttons)

Press CALL, SET, or CLEAR following a number input to call, store, or erase a preset.

Examples:

- 95 + CALL calls preset 95.
- 75 + SET stores the current camera position as preset 75.
- 15 + CLEAR will delete preset 15.

Enter

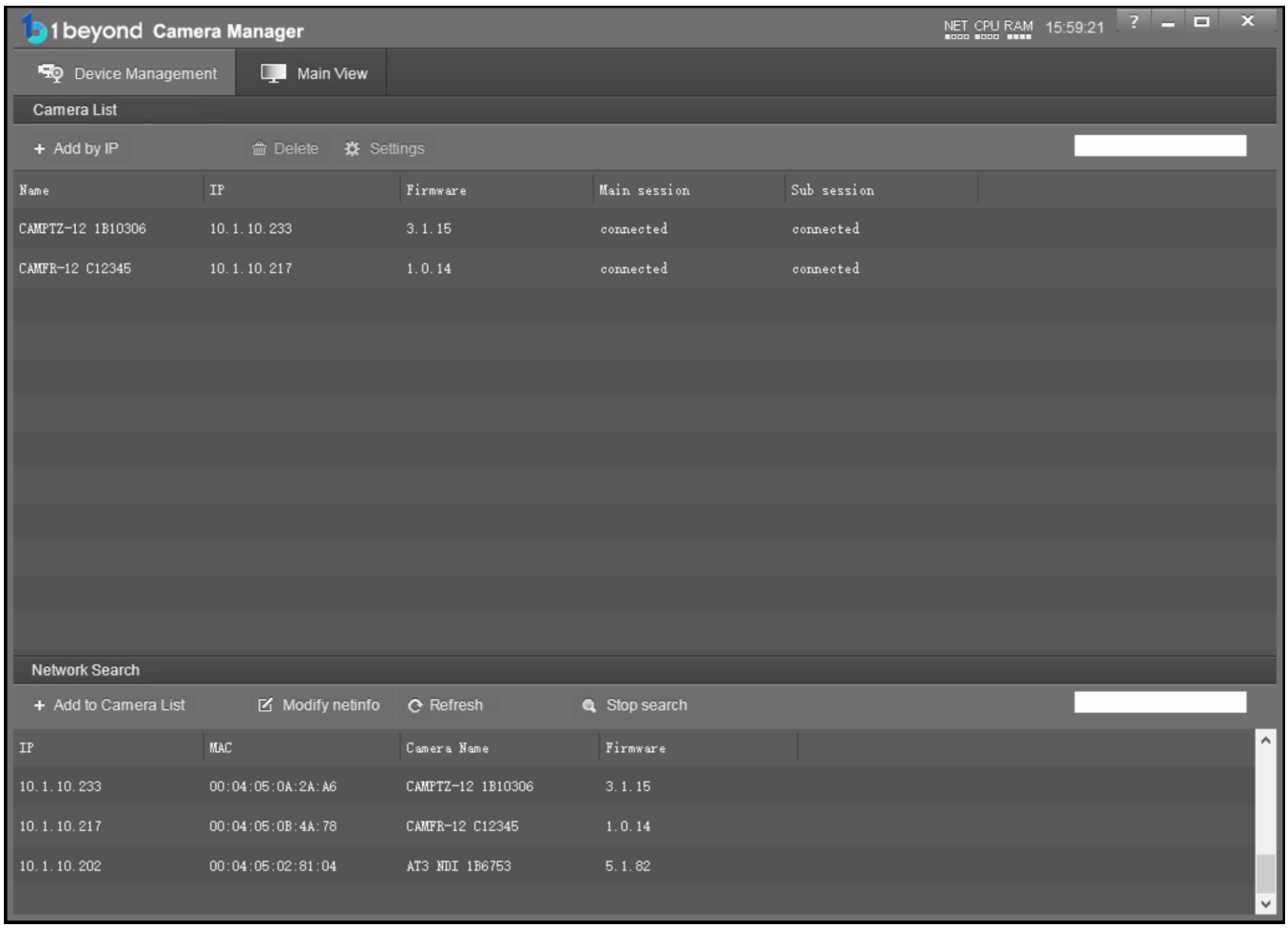
Press ↵ to confirm the menu selection.

Configuration via the 1 Beyond Camera Manager

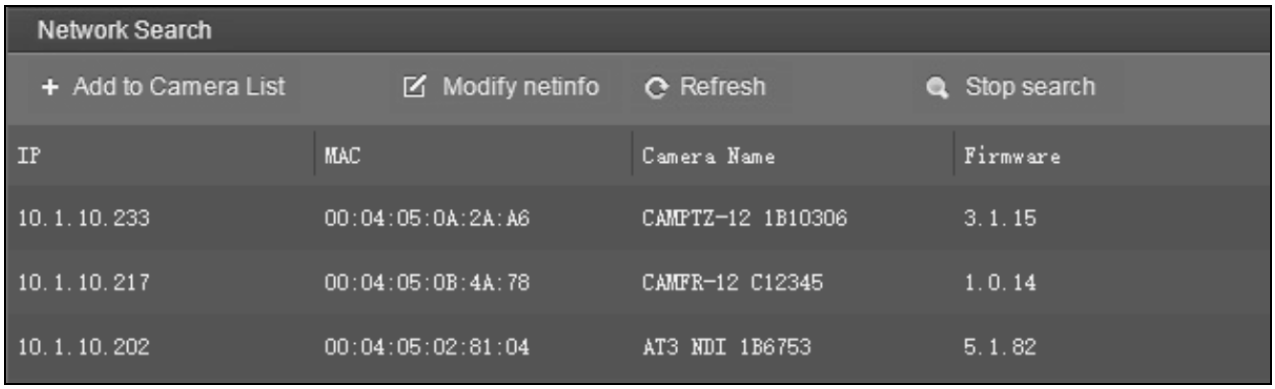
The 1 Beyond Camera Manager software is the central hub for configuring, monitoring, and controlling 1 Beyond IP cameras. It allows monitoring of up to four video streams simultaneously and lets you configure the latest 1 Beyond cameras.

Add to Camera List

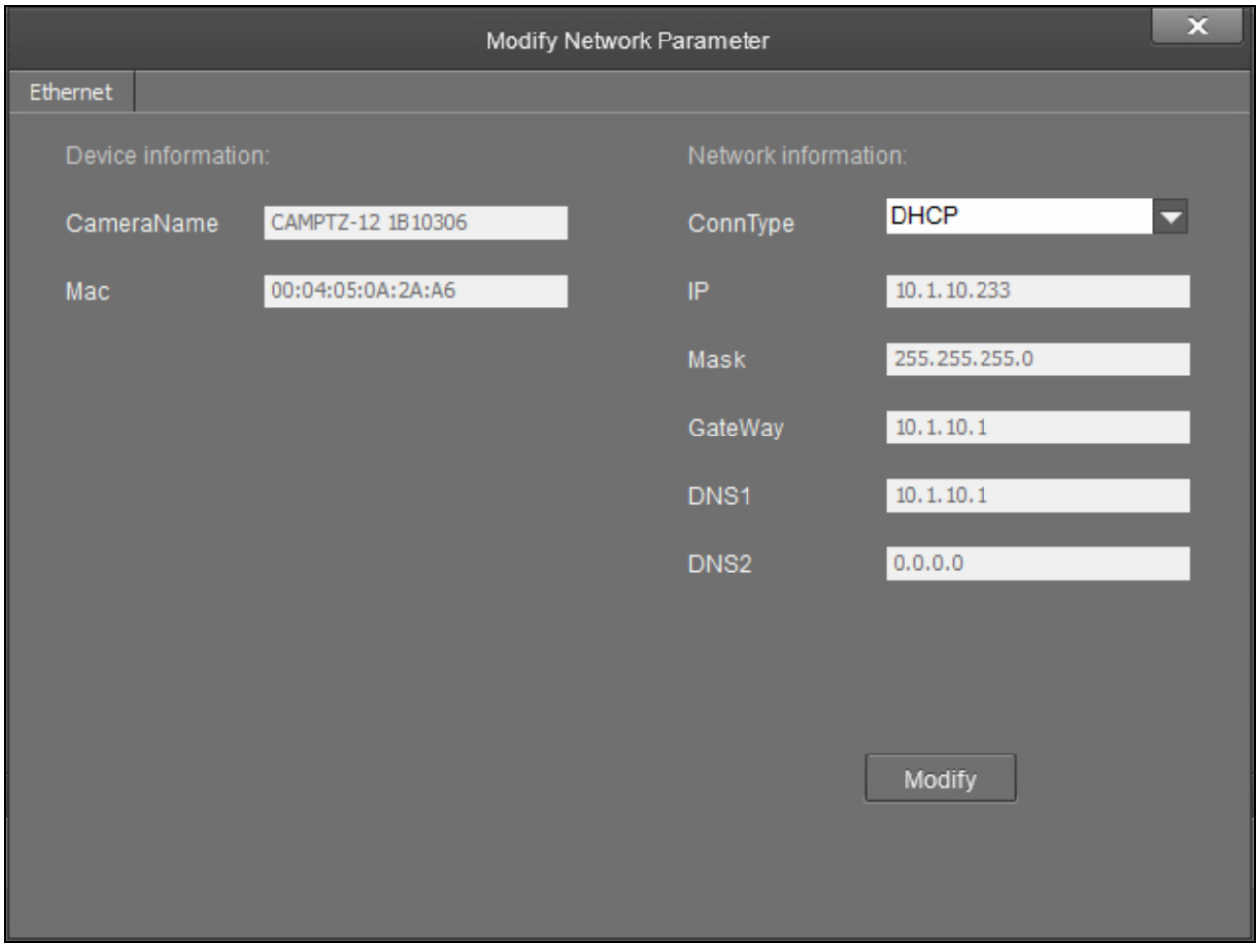
Once 1 Beyond Camera Manager software is installed on the host computer and the camera is connected to the network or directly via Ethernet, launch the software to start configuring the camera. Use the **Device Management** tab of the software to add the camera to the Camera List.



1. Click **Start Search** to start scanning the network for 1 Beyond cameras. The camera appears with its IP address, MAC Address, camera name (for example, CAMPTZ-12 and serial number), and firmware version displayed.



2. To change the camera's network settings to match your network's information, click **Modify netinfo**, which will bring up the network settings panel.



3. Under **Network information**, confirm that the **ConnType** (Connection Type) is correct for how the camera is connected. Set it to either Static IP or DHCP.

   By default, the camera ships with the static IP address *192.168.18.77* and a subnet mask of *255.255.255.0*

   > **NOTES**:
   > - If an Ethernet cable is connected directly to a computer running 1 Beyond Camera Manager software, the computer's network port will need to be set to an address on the same subnet (for example, 192.168.18.78) in order to communicate with the camera.
   > - If the camera is connected to a network switch, the camera's IP address needs to be changed to DHCP or to a static address within the same subnet as the computer running the software.
   > - If the camera is set to **DHCP** for **ConnType**, it will receive its IP address dynamically from a network router. This option does not work when the camera is connected directly to the host computer for configuration.
   > - If the installation requires a different static address (for example, the IP address of the camera needs to match the subnet of the computer), enter the IP, Mask and Gateway info and then click **Modify**.

4. After modifying the IP address, click **Refresh** to update the camera list.
5. Select the camera and click **Add to Camera List**. The **Add** panel appears where the camera's network settings can be verified. By default, 1 Beyond cameras do not require any administrator credentials to be controlled. Once added, the camera will appear in your camera list.

View the Connection Status

When the 1 Beyond Camera manager software connects to a camera, the camera shows as connected in the **Main session** and **Sub session** columns. These columns indicate the camera's main and substream connection status for IP (RTSP) video.

> **NOTE:** When the chosen camera is set to match your IP address, its status will read connected for both columns.

The following connection status messages will be displayed:

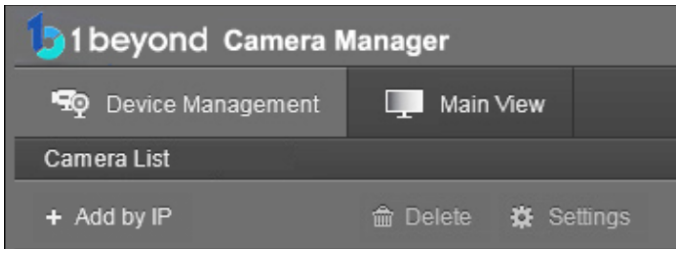
- **Connected**: The 1 Beyond Camera Manager software has received RTSP video streams from the camera and has connected to the camera.
- **Connection Failed**: The 1 Beyond Camera Manager software discovered the camera on the network, but video streams cannot be received. The camera is likely connected to a different subnet from the host computer.
- **Disconnected**: The camera is not currently accessible on the network.

> **NOTE:** When a camera is first connected to the network, it can take up to 30 seconds after powering the camera on for it to be discovered by the 1 Beyond Camera Manager software. This is because the camera performs a diagnostic routine prior to activating the video encoder.

Configure Camera Settings

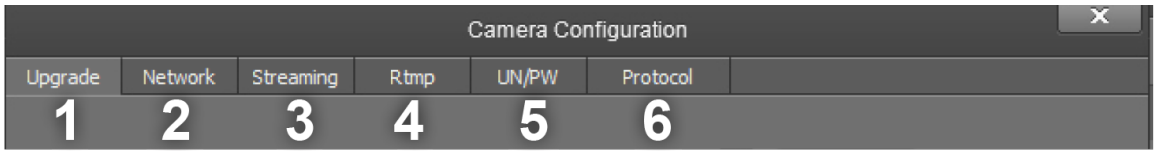
Once a camera has been added to the 1 Beyond Camera Manager software as described in Device Management, select **Settings** to configure general settings for the camera.

Camera Manager - Settings Button



Selecting **Settings** opens the **Camera Configuration** dialog box, which provides access to many of the camera's system settings.

Camera Configuration Dialog Box



The numbers in the preceding image correlate with the following functions.

1. **Upgrade**: Select this tab to upgrade the firmware on the camera.
2. **Network**: Select this tab to change the camera's network settings (similar to the **Modify Netinfo** function in the **Device Management** tab).
3. **Streaming**: Select this tab to customize the camera's IP video streams. The bit rate and encoding level of each stream can be adjusted manually.
4. **RTMP**: Select this tab to enter up to 4 URLs or IP addresses that can receive video streams from the camera.
5. **UN/PW**: Select this tab to change the camera name, to set authentication credentials for the camera, and to change the system time.
6. **Protocol**: Select this tab to configure the camera to be operated from a control device (such as a Crestron® touch screen).

Upgrade Tab

Select the **Upgrade** tab to perform a firmware update for the camera.

Upgrade Tab

To upgrade firmware, use the ellipses button (**...**) next to the **Upgrade File** field to navigate to and select the appropriate firmware file for the camera. After the file has been selected, select **Upgrade** to initiate the firmware upgrade. The camera will restart automatically after the process is complete.

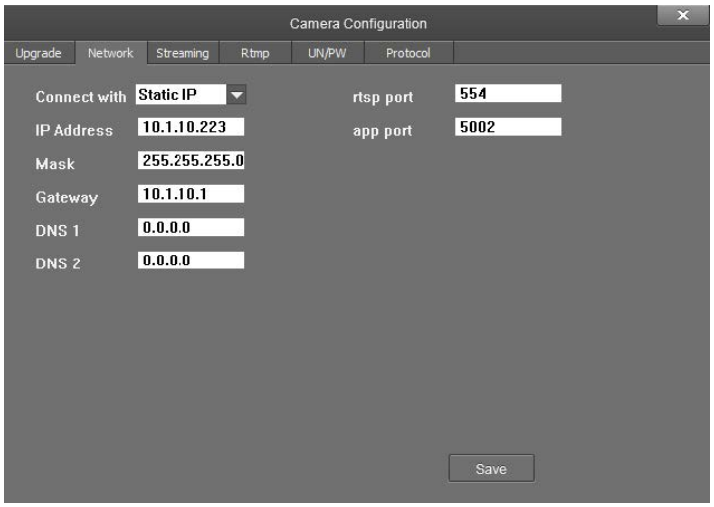
CAUTION: Note the following when performing a firmware upgrade:

- Before attempting to upgrade camera firmware, verify that you have received the appropriate firmware file for your camera model. Firmware files are specific to individual 1 Beyond camera models.
- Only use Crestron firmware files. Attempting to upgrade the device using third-party files may prevent the camera from functioning correctly.
- Do not disconnect the camera or attempt to control it while upgrading firmware. This may cause the firmware file to become corrupted and prevent the camera from functioning correctly.
- Only perform a firmware upgrade if recommended by Crestron True Blue Support during a support call.

Network Tab

Select the **Network** tab to modify the camera's network settings and to configure the port for the camera's IP video streams.

Network Tab



The following settings can be modified:

- **Connect with**: Use the drop-down menu to select whether the camera connects to the network over a static IP or dynamically over DHCP.
- **IP Address**: If **Connect with** is set to **Static IP**, enter a static IP address for the camera.
- **Mask**: If **Connect with** is set to **Static IP**, enter a static subnet mask address for the camera.
- **Gateway**: If **Connect with** is set to **Static IP**, enter a static address for the default gateway router.
- **DNS 1**: If **Connect with** is set to **Static IP**, enter a static primary DNS (Domain Name Server) lookup address.
- **DNS 2**: If **Connect with** is set to **Static IP**, enter a static secondary DNS (Domain Name Server) lookup address.
- **rtsp port**: Enter the port that will be used for the camera's RTSP video-over-IP streams. The default port for most cameras is 554 or 5000.
- **app port**: Enter the port that will be used for communication between the 1 Beyond Camera Manager software and the camera.

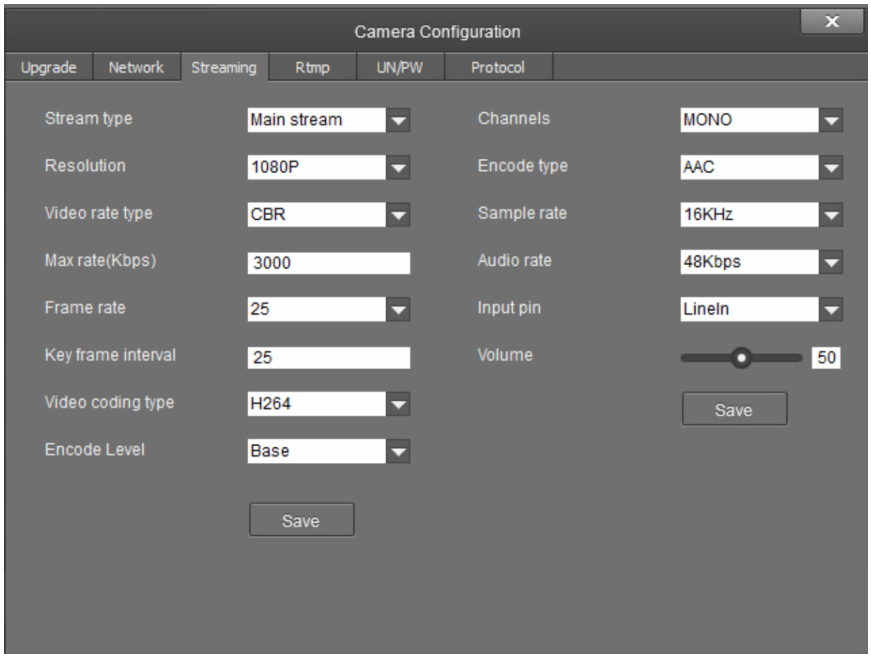
> **NOTE:** The **app port** value should not be changed unless instructed to do so by Crestron True Blue Support.

Select **Save** to save any changes made to these settings.

Streaming Tab

Select the **Streaming** tab to modify the camera's streaming settings.

Streaming Tab



The **Streaming** tab is used to adjust the properties of the native IP video streams that are encoded and transmitted by the camera. 1 Beyond intelligent camera output up to four simultaneous RTSP streams, while all other supported 1 Beyond cameras output two simultaneous streams. Each video stream can be configured individually.

The following settings can be modified:

- **Stream type**: Use the drop-down menu to select the stream that will be configured. The following stream selections are available:
  - Main Steam
  - Sub Stream
  - Stream 3
  - Stream 4
- **Resolution**: Use the drop-down menu to select the desired stream resolution independent of the camera's operating resolution. The following stream resolutions are available:
  - QVGA
  - D1
  - HD720
  - 1080p
- **Video rate type**: Use the drop-down menu to select whether the video will be encoded with constant (**CBR**) or variable (**VBR**) bit rate. Selecting variable bit rate causes reduced stream bit rate during static shots with little movement. The bit rate increases as motion increases.

- **Max rate[Kbps]**: Enter the maximum bit rate of the video stream. The maximum supported value varies by camera model.

  > **NOTE:** For NDI-enabled 1 Beyond cameras, the **Max rate[Kbps]** setting controls the maximum bitrate of the camera's NDI stream.

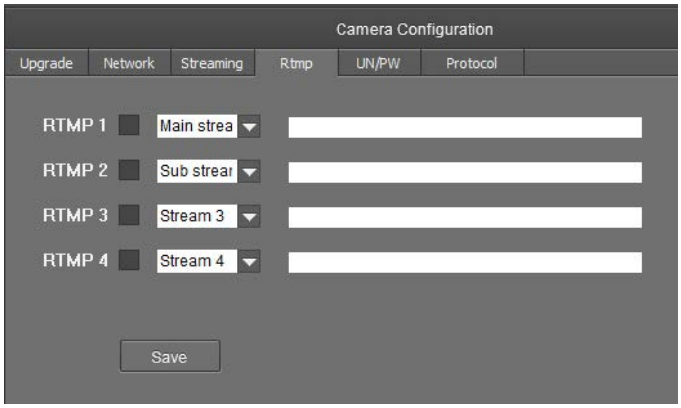
- **Frame rate**: Use the drop-down menu to select the stream's frame rate. This value should always equal the camera's native frame rate. The following frame rates are available:
  - fullfps
  - 1
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
- **Key frame interval**: Enter the desired frame rate for the video stream. This value does not have to equal the camera's native frame rate.
- **Video coding type**: Use the drop-down menu to select whether the video stream will use **H.264** or **H.265** encoding.
- **Encode Level**: Use the drop-down menu to select whether the video stream will use a **low**, **base**, or **high** encoding type.
- **Channels**: Use the drop-down menu to select **Mono** or **Stereo** as the audio channel type for the camera's analog audio input.
- **Encode type**: Use the drop-down menu to select the encoding type for the camera's analog audio input.
- **Sample rate**: Use the drop-down menu to select **16khz** or **48khz** as the sampling rate for the camera's analog audio input.
- **Audio rate**: Use the drop-down menu to select the audio rate for the camera's analog audio input. The following audio rates are available:
  - 48Kbps
  - 64Kbps
  - 96Kbps
  - 128Kbps
- **Input pin**: Use the drop-down menu to select **MicIn** or **LineIn** as the input type for the camera's analog audio input.
- **Volume**: Use the slider to set the default volume level for the camera's analog audio input.

Select **Save** under the video or audio settings to save any changes made.

RTMP Tab

Select the **RTMP** tab to modify the camera's RTMP (Real-Time Messaging Protocol) settings.

RTMP Tab



The **RTMP** tab is used to configure 1 Beyond cameras to broadcast video streams to RTMP destinations such as servers or web services. Up to four RTMP streams can be configured.

> **NOTE:** This feature will work only with RTMP destinations that do not require a stream key for authentication.

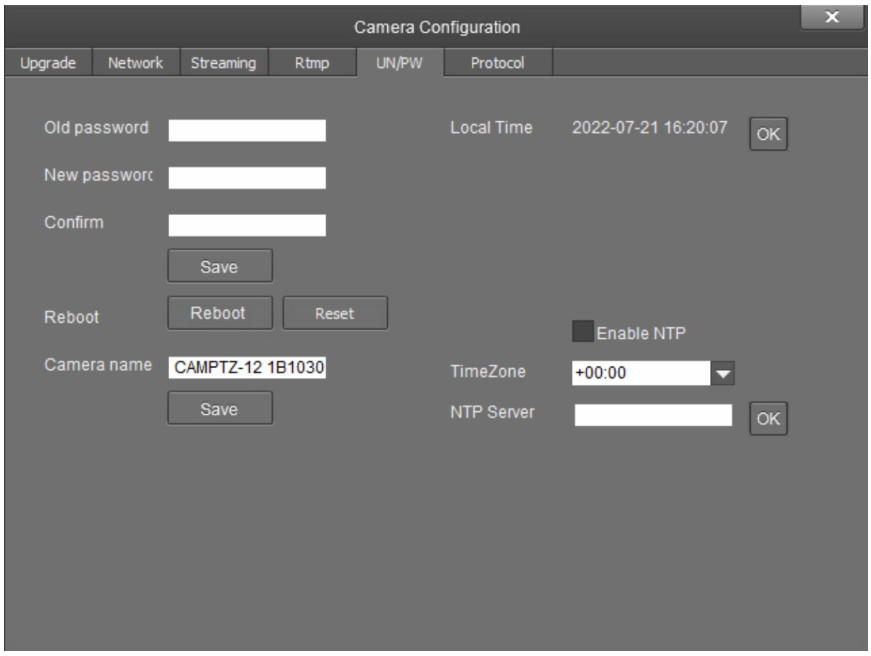
To configure the camera's video stream to RTMP destinations:

1. Select the check box next to a stream to activate it.
2. Set the stream type using the drop-down menu. The following stream types are available:
    - Main Stream
    - Sub Stream
    - Stream 3
    - Stream 4
3. Enter the host name or IP address of the RTMP destination in the text field.
4. Select **Save** to save any changes made.

UN/PW Tab

Select the **UN/PW** tab to modify the camera name, authentication credentials, and other administrative settings.

UN/PW Tab



The following settings can be modified:

- Password settings
  - **Old password**: If applicable, enter the existing admin password set for the camera.
  - **New password**: Enter a new admin password for the camera.
  - **Confirm**: Enter the admin password specified in the **New password** field.
  - Select **Save** to change the password.

  CAUTION: Do not lose the admin password, as it cannot be reset if it is forgotten.

- **Reboot**
  - Select **Reboot** to restart the camera.
  - Select **Reset** to restore the camera to its factory default settings.

    CAUTION: Resetting a camera associated with an Automate™ VX camera switcher system will clear all camera presets.

- **Camera Name**: Enter a new camera name for identification and management purposes. By default, the camera name includes the device's serial number.
- **Local Time**: View the local time on the host computer. Select **OK** to refresh the time.
- **NTP Settings**

- Select the **Enable NTP** check box to synchronize the camera's internal clock to an external NTP (Network Time Protocol) server.

  > **NOTE:** Using an external NTP server requires a constant network connection for the camera.

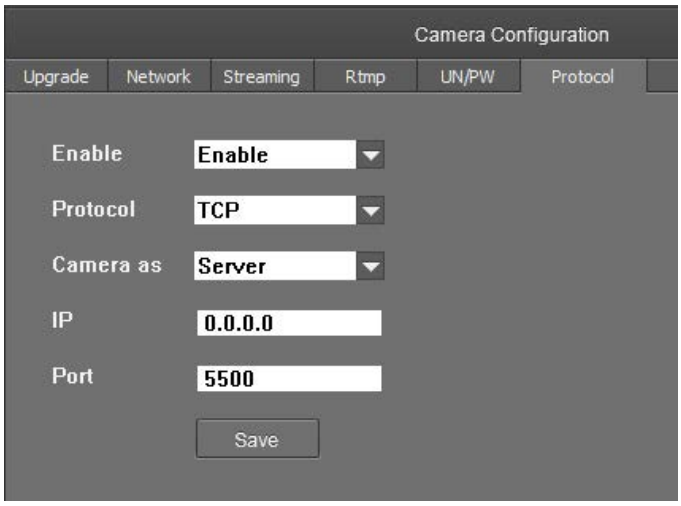
- **TimeZone**: Use the drop-down menu to set the time zone for the camera.
- **NTP Server**: Enter the URL or IP address of the external NTP server, then select **OK**.

Select **Save** to save any changes made to these settings.

Protocol Tab

Select the **Protocol** tab to set a secondary connection to the camera from a control device (such as a Crestron touch screen).

Protocol Tab



The following settings can be modified:

- **Enable**: Use the drop-down menu to enable or disable a secondary connection.

  > **NOTE:** For 1 Beyond Intelligent cameras, a secondary connection is disabled by default, as it is not required in most circumstances since port 5500 supports VISCA control over TCP.

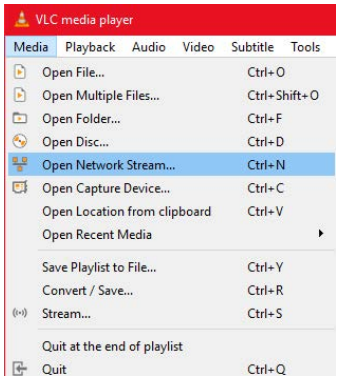
- **Protocol**: Use the drop-down menu to select **TCP** or **UDP** as the communication protocol for the secondary connection.
- **Camera as**: Use the drop-down menu to select **Client** or **Server** as the role for the camera for the secondary connection.
- **IP**: Enter the IP address for the secondary connection device. The default value of "0.0.0.0" should be retained for most setups.
- **Port**: Enter the port number for the secondary connection. The default value of "5500" should be retained for most setups.

Select **Save** to save any changes made to these settings.

Monitor RTSP Streams

The RTSP IP video streams that are being broadcast by the camera can also be previewed and monitored in third-party apps like VLC Media Player® software. The following example demonstrates how to access the streams in the VLC® player.

1. Launch VLC player and click **Media** > **Open Network Stream**.



2. Select **Open Media** > **Network** (tab) and enter the RTSP URL using the following syntax:

rtsp://xx.xx.xx.xx:554/4.h264

Substitute "sub" for the secondary stream from the wide-angle camera or "3" / "4" for subsequent streams.

To learn how to adjust the bit rate and resolution settings for the camera's RTSP streams, refer to the 1 Beyond Camera Manager manual.

> **NOTE:** The VLC player induces noticeable latency when monitoring RTSP streams.

On-Screen (OSD) Menu

All 1 Beyond cameras feature an integrated on-screen menu which can be accessed by pressing **Menu** in the PTZ controller section of 1 Beyond Camera Manager. The menu is then displayed overlaid on the camera's video feed.

Here you can adjust various settings to tailor the camera's performance to the setup.

Navigate the menu using the directional buttons in the software. In the software, press **Enter** to confirm a menu selection, and use the left and right directional buttons to adjust the selected parameter.

To return to a previous menu page, press **Return**.

Pressing the **Menu** button on any control device while anywhere in the menus will close the menu.

CAUTION: Always stop tracking before entering the OSD menu as it may cause random changes in system settings that can severely impact image quality.

NOTE: Restoring the settings to factory default will not reset Address, Protocol, Baud Rate, Video Format and Mount settings.

CAUTION: Resetting a camera associated with an Automate VX camera switcher system will clear all camera presets.

OSD Menu Tree

VIDEO	SHARPNESS	0 - 15	Increase / decrease video sharpening.
	BRIGHTNESS	0 - 14	Adjust video brightness.
	CONTRAST	0 - 14	Adjust video contrast
	GAMMA MODE	0 - 4	Adjust video gamma correction.
	2DNR LEVEL	OFF, 1 - 5	2D Noise Reduction level.
	3DNR LEVEL	OFF, 1 - 5	3D Noise Reduction level.
	WIDE DYNAMIC	ON/OFF	Enable/Disable wide dynamic range.
EXPOSURE	MODE	FULL AUTO	Automatically adjust exposure.
		MANUAL	Manually adjust exposure.
		SHUTTER PRI	Shutter priority mode.
		IRIS PRI	Iris priority mode.
		BRIGHT PRI	Brightness priority mode.
	EXP COMP	ON/OFF	Exposure compensation on / off.
	LEVEL	-7 - +7	Adjust level of exposure compensation.
	BLC	ON/OFF	Turn Back Light Compensation on / off.
	ANTI FLICKER	OFF / 50Hz / 60 Hz	Reduces flicker induced by 25p / 30p frame rates.

COLOR	WB MODE	AUTO	Fully automatic white balance.
		ATW	Auto-Tracing white balance mode.
		ONE PUSH	Trigger one-time WB adjustment.
		INDOOR	Best for warm lighting.
		OUTDOOR	Best for natural sunlight.
		MANUAL	Fully manual white balance adjustment.
		SODIUM LAMP	Best for sodium gas light.
		FLUO LAMP	Best for fluorescent light sources.
	R./G./B. GAIN	-7 - +7	Adjust color channel balance.
	SATURATION	0 - 14	Increase / decrease color saturation.
	HUE	0 - 14	Adjust hue for color tint compensation.
PAN TILT ZOOM	PAN / TILT SPEED	0 - 8	Adjust the speed of camera movement.
	PTZ TRIG AF	x1 - x12	Auto-focus after moving camera.
	RATIO SPEED	ON/OFF	Pan/Tilt speed relative to zoom ratio.
	RATIO SPEED	ON	Pan/Tilt speed relative to zoom ratio.
	POWER UP ACTION	HOME, PRESET 0-9	Preset the camera calls when powering on.
SYSTEM	ADDRESS	1 - 7	Choose cam address for serial comm.
	PROTOCOL	VISCA	Choose protocol for serial communication.
		PELCO-D	
		PELCO-P	
	BAUDRATE	2400 - 34800	Set baud rate for serial port.
	IR ADDRESS	1 - 4	Set cam address for IR remote control.
	VIDEO FORMAT	720p50 - 1080p60	Change video resolution & frame rate.
	MOUNT MODE	STAND, CEILING	Chose how camera is mounted. Tracking does not work with ceiling mount.
	RS485 PORT	HALF-DUPLEX 1 / 2	Change Duplex setting for RS485 port.
STATUS	SHOWS SYSTEM SETTINGS		
RESTORE DEFAULTS	YES / NO		

Video Settings

DNR – Digital Noise Reduction

The image sensor in this camera offers integrated 2-step noise reduction that helps combat noise that may appear when the camera has to compensate for dim lighting.

2DNR is the first level of noise reduction. When on, up to five levels can be set. High levels of 2DNR should only be used in low-color settings.

3DNR offers dynamic noise reduction ideal for conferencing, streaming, and more. When on, up to five levels can be set. Setting the level too high may lead to "ghosting" when the camera is picking up fast movement or is being moved.

WIDE DYNAMIC

WDR (Wide Dynamic Range) is a technology that extends the camera's dynamic range to compensate for high contrast image content. This can improve visibility in settings with bright lights and dark shadows as it makes details in the dark parts of the image more easily discernible.

Fig 1: The entire dymanic range of a scene.

Fig 2: The dynamic range (shown in red) captured with WDR OFF. The area to the left is underexposed, and the area to the right is overexposed.

Exposure Settings

The **EXPOSURE** menu is used to adjust image brightness and the properties of the camera's automatic exposure adjustment features.

In **FULL AUTO**, the camera automatically adjusts gain (ISO), iris (aperture), shutter speed, and exposure compensation to maintain image brightness. Exposure settings can also be tailored to the needs of your venue using a variety of different parameter priority or manual modes.

SHUTTER PRI: Gain and shutter values are adjusted automatically while the shutter speed can be set manually.

IRIS PRI: Gain and iris values are adjusted automatically while Iris value can be set manually (in F-stops from 1.6 to 14).

BRIGHT PRI: Manually adjust the video brightness.

SMART: Set the smart Auto Exposure area (AREA 1~AREA4). When the camera reaches any of these areas, the camera automatically recalls a manual exposure setting. When the camera moves out of the area, the AE mode will default to AUTO.

EXP-COMP: Once EXP-COMP is set to ON, you will be able to set a level between -7 and +7 to darken or brighten the image.

BLC: Back Light Compensation can be activated if the background of the frame is a bright light source (for example, windows or a projection screen behind a presenter) to maintain proper exposure for foreground subjects.

ANTI FLICKER: Fluorescent light sources and computer displays can induce image flickering when outputting at frame rates of 25 or 30 fps. If you are outputting at either of these frame rates, set the **ANTI FLICKER** setting to twice that value (for example, 60 Hz for a 30 fps video signal).

White Balance

WHITE BALANCE adjusts the color levels of the camera image to reproduce what the human eye sees in any given lighting.

AUTO is recommended if the lighting conditions in your venue are influenced by weather changes or if you frequently use projections or colored lighting. Other settings are detailed in the **OSD Menu Tree** table above.

ONE PUSH is the most reliable way to achieve accurate static white balance. To perform a **ONE PUSH** white balance configuration:

1. Hold a pure white piece of paper in front or the camera lens at a distance where it is properly lit.
2. Select **ONE PUSH**, and press **OK**.
3. Continue holding the piece of paper for 10 seconds until the process is complete.

Pan/Tilt/Zoom

PAN/TILT SPEED lets you adjust the speed of camera movement when controlled manually. The speed is fastest when in 1x zoom compared to longer focal lengths. For any given Pan/Tilt Speed setting, pressing the **OK** button on the remote control toggles between a faster and slower Pan/Tilt speed.

- High speed: 15° ~ 50° / sec
  (max. zoom ~ min. zoom)
- Low speed: 4° ~ 11° / sec
  (max. zoom ~ min. zoom)

PAN/TILT LIMIT: Use this setting to define a custom boundary for the camera's pan / tilt range adjustable in 1° increments (default setting: **OFF**).

- UP: -30° ~ +90°
- DOWN: -30° ~ +90°
- LEFT: -170° ~ +170°
- RIGHT: -170° ~ +170°

D-ZOOM LIMIT: This sets the amount of digital zoom which extends the camera's optical zoom once it reaches its maximum.

> **NOTE:** Digital zoom may decrease image quality.
>
> Example: **D-ZOOM LIMIT** of **X3** allows a total zoom range of up to 60x.

PTZ TRIG AF: When enabled, autofocus is triggered whenever the camera tilts, pans, or zooms. We recommended leaving this setting enabled.

RATIO SPEED dynamically adjusts the speed of pan/tilt motion proportional to the amount of zoom. This ensures the pan and tilt speed will be identical at any focal length.

POWER UP ACTION determines which of the first nine presets the camera defaults to when powered on.

PRESET FREEZE: When enabled, the camera will stay on a freeze frame while switching to another preset. Once the pan/tilt/zoom motion is completed, it will start broadcasting again. Enable this setting if there are areas in the room you do not want to show while the camera is moving.

Reserved Presets

To ensure backwards compatibility with various different control systems, some proprietary camera functions are mapped to fixed preset numbers and can be triggered by calling the associated preset.

These presets cannot be overwritten.

Preset Number	Function
93	Cruise through presets 0 to 29 in. 10 second intervals
95	Open OSD Menu
96	Clear ALL User Presets
99	Reboot Camera
100	1920 x 1080p50
101	1920 x 1080p25
102	1920 x 1080i50
103	1280 x 720p50
105	1920 x 1080p60
106	1920 x 1080p30
107	1920 x 1080i60
108	1280 x 720p60

VISCA Commands

1 Beyond PTZ cameras can be controlled using the VISCA protocol through either a serial (RS-232 / RS-485) or IP connection. By default, the port for IP control is set to 5500. For serial communication, make sure the baud rate of the controller is set to 9600 bps. Below is a comprehensive list of VISCA commands that can be used to control the cameras.

To start or stop tracking on the 1 Beyond AutoFramer camera, call the following commands:

Privacy

The PTZ cameras can be tilted backwards for privacy when the camera is not in use. To tilt the PTZ cameras backwards, call the following commands:

ACK / Completion Messages

	Command Message	Comments
ACK	z0 4y FF (y:Socket No.)	Returned when the command is accepted.
Completion	z0 5y FF (y:Socket No.)	Returned when the command has been executed.

Error Messages

	Command Message	Comments
Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted.
Command Buffer Full	z0 60 03 FF	Indicates that two sockets are already being used (executing two commands) and the command could not be accepted when received.
Command Canceled	z0 6y 04 FF (y:Socket No.)	Returned when a command which is being executed in a socket specified by the cancel command is canceled. The completion message for the command is not returned.
No Socket	z0 6y 05 FF (y:Socket No.)	Returned when no command is executed in a socket specified by the cancel command, or when an invalid socket number is specified.
Command Not Executable	z0 6y 41 FF (y:Execution command Socket No. Inquiry command:0)	Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.

z = Device address + 8

Commands

Command Set	Command	Command Packet	Comments
AddressSet	Broadcast	88 30 01 FF	Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
Command Cancel		8x 2p FF	p: Socket No. (=1or2)
CAM_Power	On	8x 01 04 00 02 FF	Power On/Off
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Standard)	8x 01 04 07 02 FF	
	Wide(Standard)	8x 01 04 07 03 FF	
	Tele(Variable)	8x 01 04 07 2p FF	p: 0(Low)to 7 (High)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	p,q,r,s: Zoom Position
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far(Standard)	8x 01 04 08 02 FF	
	Near(Standard)	8x 01 04 08 03 FF	
	Far(Variable)	8x 01 04 08 2p FF	p: 0(Low)to 7 (High)
	Near(Variable)	8x 01 04 08 3p FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	p,q,r,s: Focus Position
	Auto Focus	8x 01 04 38 02 FF	AF On/Off
	Manul Focus	8x 01 04 38 03 FF	
	Auto/Manul	8x 01 04 38 10 FF	
	One Push Trigger	8x 01 04 18 01 FF	One Push AF Trigger
CAM_ ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	p,q,r,s: Zoom Position t,u,v,w: Focus Position
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Indoor	8x 01 04 35 01 FF	Indoor Mode
	Outdoor	8x 01 04 35 02 FF	Outdoor Mode
	One Push WB	8x 01 04 35 03 FF	One Push WB Mode
	Manual	8x 01 04 35 05 FF	Manual Control Mode
	One Push Trigger	8x 01 04 10 05 FF	One Push WB Trigger

Command Set	Command	Command Packet	Comments
CAM_RGain	Rest	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	p,q: R Gain
CAM_BGain	Rest	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	p,q: B Gain
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	8x 01 04 39 0D FF	Bright Mode (Manual control)
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03 FF	
	Direct	8x 01 04 4A 00 00 0p 0q FF	p,q: Shutter Position
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	p,q: Iris Position
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	p,q: Gain Position
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	p,q: Bright Position

Command Set	Command	Command Packet	Comments
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation On/Off
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	p,q: ExpComp Position
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture Control
	Up	8x 01 04 02 02 FF	
	Down	8x 01 04 02 03 FF	
	Direct	8x 01 04 42 00 00 0p 0q FF	p,q: Aperture Gain
CAM_ PictureEffect	Off	8x 01 04 63 00 FF	Picture Effect Setting
	Neg.Art	8x 01 04 63 02 FF	
	B&W	8x 01 04 63 04 FF	
CAM_Memory	Reset	8x 01 04 3F 00 pp FF	pp: Memory Number (=0 to 255) Corresponds to 0 to 255 on the Remote.
	Set	8x 01 04 3F 01 pp FF	
	Recall	8x 01 04 3F 02 pp FF	
Freeze	Freeze On	81 01 04 62 02 FF	Freeze On Immediately
	Freeze Off	81 01 04 62 03 FF	Freeze Off Immediately
	Preset Freeze On	81 01 04 62 22 FF	Freeze On When Running Preset
	Preset Freeze Off	81 01 04 62 23 FF	Freeze Off When Running Preset
SYS_Menu	Off	8x 01 06 06 03 FF	Turns off the menu screen.
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	p,q,r,s: Camera ID (=0000 to FFFF)
IR_Receive	On	8x 01 06 08 02 FF	IR receiver On/Off
	Off	8x 01 06 08 03 FF	
Information Display	On	8x 01 7E 01 18 02 FF	Operation status display On/Off
	Off	8x 01 7E 01 18 03 FF	

Command Set	Command	Command Packet	Comments
Pan-tiltDrive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0 x01 (low speed) to 0 x18 (high speed)
	Down	8x 01 06 01 VV WW 03 02 FF	
	Left	8x 01 06 01 VV WW 01 03 FF	
	Right	8x 01 06 01 VV WW 02 03 FF	WW: Tilt Speed 0 x 01 (low speed) to 0 x14 (high speed)
	UpLeft	8x 01 06 01 VV WW 01 01 FF	
	UpRight	8x 01 06 01 VV WW 02 01 FF	
	DownLeft	8x 01 06 01 VV WW 01 02 FF	YYYY: Pan Position
	DownRight	8x 01 06 01 VV WW 02 02 FF	
	Stop	8x 01 06 01 VV WW 03 03 FF	ZZZZ: Tilt Position
	AbsolutePosition	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	RelativePosition	8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
Pan-tiltLimitSet	LimitSet	8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	W: 1 UpRight 0: DownLeft YYYY: Pan Limit Position ZZZZ: Tilt Position

Inquiry Commands

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off (Standby)
		y0 50 04 FF	Internal power circuit error
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	p,q,r,s: Zoom Position
CAM_FocusModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	p,q,r,s: Focus Position

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	In Door
		y0 50 02 FF	Out Door
		y0 50 03 FF	One Push WB
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	p,q: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	p,q: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	p,q: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	p,q: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	p,q: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	p,q: Bright Position
CAM_ExpCompModeInq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	p,q: ExpComp Position
CAM_BacklightModeInq	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	p,q: Aperture Gain
CAM_PictureEffectModeInq	8x 09 04 63 FF	y0 50 00 FF	Off
		y0 50 02 FF	Neg.Art
		y0 50 04 FF	B&W
CAM_MemoryInq	8x 09 04 3F FF	y0 50 0p FF	p: Memory number last operated.

Inquiry Command	Command Packet	Inquiry Packet	Comments
SYS_MenuModeInq	8x 09 06 06 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	p,q,r,s: Camera ID
CAM_VersionInq	8x 09 00 02 FF	y0 50 00 01 mn pq rs tu vw FF	m,n,p,q: Model Code (0504) r,s,t,u: ROM version v,w: Socket Number (=02)
Information Display	8x 09 7E 01 18 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
VideoSystemInq	8x 09 06 23 FF	y0 50 00 FF	1920 x1080i/60 60 Hz system
		y0 50 01 FF	1920 x1080p/30 60 Hz system
		y0 50 02 FF	1280 x720p/60 60 Hz system
		y0 50 03 FF	1280 x720p/30 60 Hz system
		y0 50 07 FF	1920 x1080p/60 60 Hz system
		y0 50 08 FF	1920 x1080i/50 50 Hz system
		y0 50 09 FF	1920 x1080p/25 50 Hz system
		y0 50 0A FF	1280 x720p/50 50 Hz system
		y0 50 0B FF	1280 x 720p/25 50 Hz system
		y0 50 0F FF	1920 x1080p/50 50 Hz system
IR_Receive	8x 09 06 08 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
Pan-tiltMaxSpeedI	8x 09 06 11 FF	y0 50 ww zz FF	ww = Pan Max Speed zz = Tilt Max Speed
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww = Pan Position zzzz = Tilt Position
Pan-tiltModeInq	8x 09 06 10 FF	y0 50 pq rs FF	p,q,r,s: Pan/Tilt Status

Zoom Ratio / Position (CAM_Zoom)

(CAM_Zoom Direct – p,q,r,s Zoom Position)

Optical Zoom Ratio	Optical Zoom Ratio
1x	0000
2x	1851
3x	22BE
4x	28F6
5x	2D45
6x	3086
7x	3320
8x	3549
9x	371E
10x	38B3
11x	3A12
12x	3B42
13x	3C47
14x	3D25
15x	3DDF
16x	3E7B
17x	3EFB
18x	3F64
19x	3FBA
20x	4000

Exposure Comp (CAM_ExpComp)

(CAM_ExpComp Direct – p,q ExpComp Position)

0E	+7	0000
0D	+6	1851
0C	+5	22BE
0B	+4	28F6
0A	+3	2D45
09	+2	3086
08	+1	3320
07	0	3549
06	-1	371E
05	-2	38B3
04	-3	3A12
03	-4	3B42
02	-5	3C47
02	-6	3D25
00	-7	4000

Troubleshooting

The following table provides troubleshooting information. If further assistance is required, contact Crestron True Blue Support.

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTIONS
No movement or video signal when powered on	Power supply failure	Check power supply output using a multimeter.
	Power adapter damaged	Replace faulty power adapter.
	Power not connected	Plug the provided 12V power supply into a wall outlet and connect the other end to the input on the camera.
No movement when powered on or mechanical noises during movement	Insufficient power is being supplied to the camera	Check and reconnect power supply.
	Mechanical failure	Contact Crestron True Blue Support.
Camera not showing in 1 Beyond Camera Manager	Incorrect IP settings	Check to confirm the camera's IP is set to match the IP settings of your connected computer. Default IP: 192.168.18.77.
Camera shows "Connection Failed" in the camera list	Incorrect IP settings	Confirm the camera's IP is set to match the IP settings of the connected computer.
	Network usage is high	Close all other programs on the computer. Then, restart the 1 Beyond Camera Manager software.
		Confirm that the Ethernet and power cables are properly connected.
Video feed not showing in 1 Beyond Camera Manager	Subnet setting of camera does not match your computer's.	Set the IP, gateway, and subnet mask of your camera to match your network scheme.
	RTSP Stream configured incorrectly	Enter the camera configuration menu from the Main View of 1 Beyond Camera Manager and adjust the resolution and bit rate of the PTZ stream.
Not controllable via serial controller	Wrong address/protocol/ baud rate settings.	Check the dip switch settings or open the OSD menu and view the STATUS page to verify if your settings match that on your control device.
	Wrong connection or a faulty RS-485/422/232 cable.	Check cable and reconnect.

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTIONS
Video loss during pan/tilt/zoom	Camera is powered insufficiently	Check output voltage of power supply and reconnect.
	Video cable is not connected properly	Replace with a working video cable or double check the stability of your existing connection.
Camera is not controllable when powered on	IR remote batery is low	Replace with new batteries.
	Wrong address/protocol/baud rate settings or a faulty serial cable.	Open OSD to verify your settings are correct or check serial wiring.
Camera has yellow or blue tint	Auto white balance setting may not be ideal for the lighting environment	Set static or one-push white balance

Resources

The following resources are provided for the PTZ camera.

> **NOTE:** You may need to provide your Crestron.com web account credentials when prompted to access some of the following resources.

Crestron Support and Training

- Crestron True Blue Support
- Crestron Resource Library
- Crestron Online Help (OLH)
    - support.crestron.com/app/answers/detail/a_id/1001561
- Crestron Training Institute (CTI) Portal

Product Certificates

To search for product certificates, refer to support.crestron.com/app/certificates.

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Product Manual — Doc. 9320B
07/10/23
Specifications subject to
change without notice.