Captivate

CP-PVOT-C1622

4K AI Dual-Lens Optical Camera

API Command List (PRELIMINARY)

Telnet Command-Line Interface

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Table of Contents

Connecting to the CP-PVOT-C1622 4
IP Address 4
Enabling Telnet Client 4
Logging In via Command-Line Interface 5
Using the API 6
Command Types 6
Command Syntax 6
Notation 6
API Commands 7
Tracking Mode 7
htconfig --camera-mode 7
htconfig --camera-offtracking 8
htconfig --camera-autoframing 8
htconfig --camera-autoframingspeed 9
htconfig --camera-speakertracking 9
htconfig --camera-speakertrackingspeed 10
htconfig --camera-presentertracking 10
Pan, Tilt, Zoom and Presets 11
htconfig --camera-zoom 11
htconfig --camera-autocoord 12
htconfig --camera-coord 12
htconfig --reset-camera-ptz 12
htconfig --camera-savecoord 13
htconfig --camera-loadcoord 13
Image Settings 14
htconfig --camera-mirror 14
htconfig --camera-powerfreq 14
htconfig --camera-hd 15
Network and Device Settings 16
htconfig --device-name 16
htconfig --lan-info 17
htconfig --ip-conflict 17
htconfig --standby-indicator 18
System Control 19
htconfig --help 19
htcontrol --help 19
htcontrol --reboot 19
htcontrol --reset-to-default 20
htcontrol --upgrade-firmware 20
htcontrol --device-info 20
htcontrol --camera-info 20
Additional Web UI Settings 21
NDI Output 21
Low Latency Mode 21

AI Light Compensation 21
Telnet Authentication 22
HTTPS 22
Room Name 22
Document Revision History 23

Connecting to the CP-PVOT-C1622

IP Address

To connect to and communicate with the CP-PVOT-C1622, the controlling device must be on the same network. If needed, change the IP address of your PC so that it is in the same IP range and subnet as the CP-PVOT-C1622.

To find the IP address of the CP-PVOT-C1622, do one of the following:

- Press the **RESET** button on the rear panel once. The IP address and tracking mode are shown in the top-left corner of the connected display.
- Press and hold the **Home** button on the IR remote for about 2 seconds.

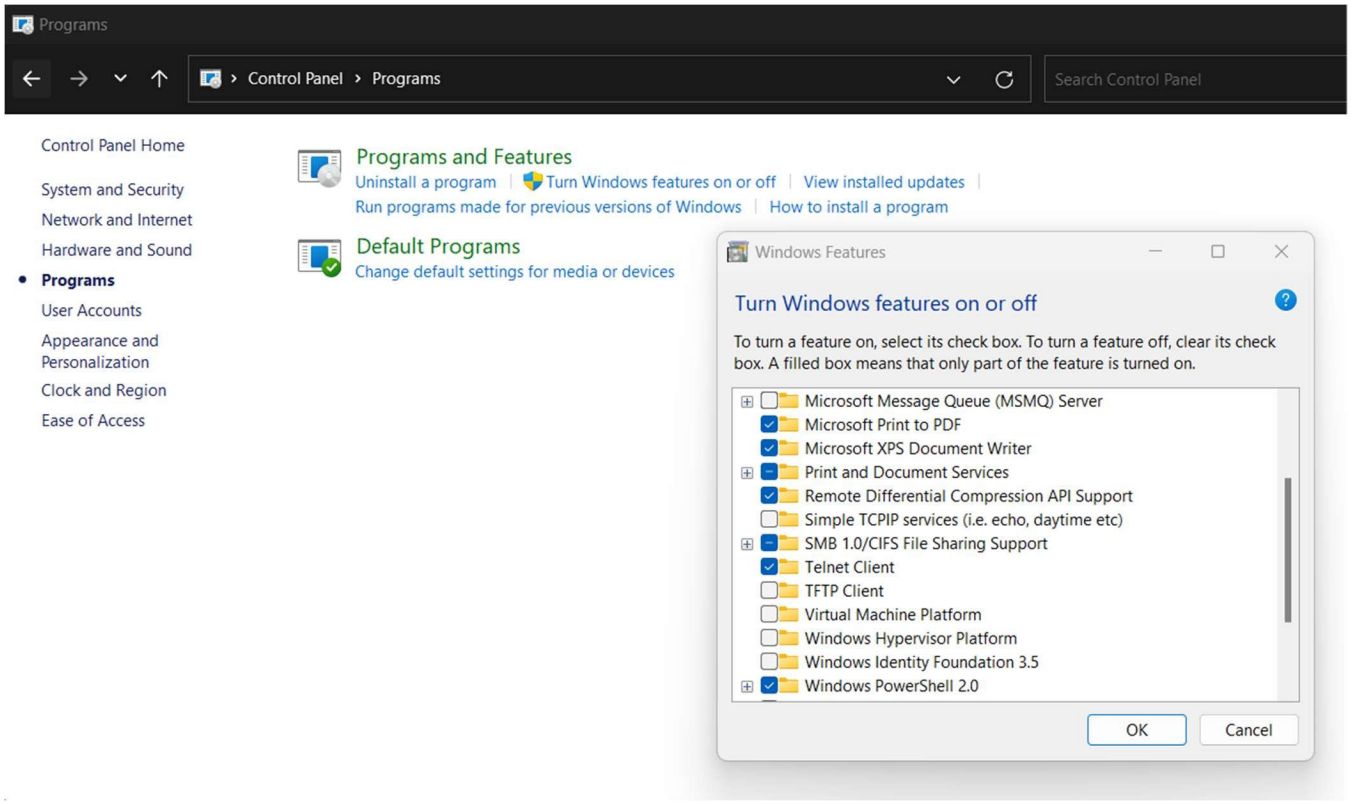
NOTE: Press the RESET button only once. Pressing it five times resets the IP mode and the Web UI password, and holding it for 10 seconds or more restores the factory defaults.

The Telnet API uses TCP port 23.

Enabling Telnet Client

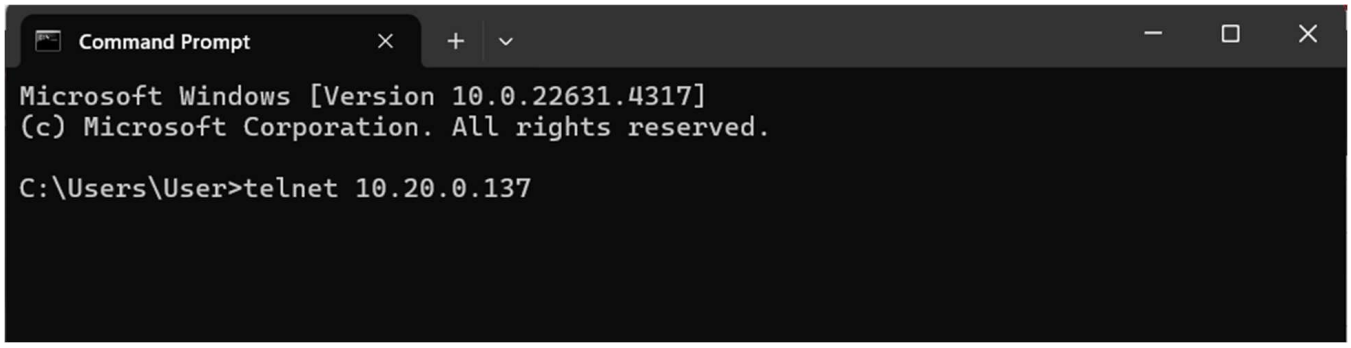
Before you log in to the device from the command-line interface, make sure Telnet Client is turned on. Telnet Client is turned off by default in Windows. To turn it on:

1. Open **Control Panel** and choose **Programs**.
2. In the Programs and Features area, click **Turn Windows features on or off**.
3. In the Windows Features window, select the **Telnet Client** check box, then click **OK**.



Logging In via Command-Line Interface

1. Choose **Start > Run** (or press the Windows key + R).
2. In the Run dialog box, enter **cmd** and then click **OK**.
3. Enter **telnet 10.20.0.137** (if the device's IP address is 10.20.0.137), then press **Enter**.



4. Telnet Authentication is disabled by default, so the session opens directly at the command prompt and the device is ready for API commands. If Telnet Authentication has been enabled in the Web UI (**Settings > Privacy & Security**), enter the password when prompted. The default password is **password**.



[VERIFY] These screenshots are adapted from the earlier camera's document. Replace them with captures from a CP-PVOT-C1622: the login banner text, and the password prompt shown when Telnet Authentication is enabled.

Using the API

Command Types

API commands are grouped into two types:

- **`htconfig`** — manages the configuration settings of the device.
- **`htcontrol`** — controls the device: reboot, factory reset, firmware update and device information.

Command Syntax

A command is the command type, a space, two dashes, and the command name, followed by a space and the argument(s) where needed. For example:

```
htconfig --camera-mode 1
```

Type	(space)	(dash dash)	Command	(space)	Argument
htconfig		--	camera-mode		1

This example sets the tracking mode to Auto Framing.

To display a current setting, use the query form: the command type, a space, a single dash and s, a space, and the command name, with no argument. For example:

```
htconfig -s camera-mode
```

This example displays the current tracking mode.

Where a command takes more than one argument, separate the arguments with spaces. For example:

```
htconfig --camera-coord 10 -5
```

Notation

The syntax lines in this document use the following notation. Do not type the braces or the vertical bar.

Notation	Meaning
{ }	Encloses an argument. Replace it with a value.
a | b	Choose one of the listed values.
a ~ b	Any whole number from a to b.

[VERIFY] The source command list does not document what the device prints back after each command or query. Capture the replies on a CP-PVOT-C1622 and add them to each command block if needed.

API Commands

Commands are grouped by function. Each group opens with a summary table; select a command to jump to its full description.

Tracking Mode

These htconfig commands select the AI tracking mode and set how the camera moves in each mode.

Command	Description
`htconfig --camera-mode`	Sets the camera tracking mode.
`htconfig --camera-offtracking`	Sets the transition effect used in Off mode (manual control).
`htconfig --camera-autoframing`	Sets the transition effect used in Auto Framing mode.
`htconfig --camera-autoframingspeed`	Sets the camera movement speed in Auto Framing mode.
`htconfig --camera-speakertracking`	Sets the transition effect used in Speaker Tracking mode.
`htconfig --camera-speakertrackingspeed`	Sets the camera movement speed in Speaker Tracking mode.
`htconfig --camera-presentertracking`	Sets the transition effect used in Presenter Tracking mode.

`htconfig --camera-mode`

Sets the camera tracking mode.

Set

```
htconfig --camera-mode {0 ~ 4}
```

Argument	Value Range	Description
Mode	`0 ~ 4`	0 = Off (manual control) 1 = Auto Framing 2 = Speaker Tracking 3 = Presenter Tracking 4 = Individuals Gallery

Query

```
htconfig -s camera-mode
```

Displays the current tracking mode.

Example

```
htconfig --camera-mode 2
```

Sets the tracking mode to Speaker Tracking.

> **NOTE:** In Individuals Gallery mode, the camera automatically switches to Auto Framing when it detects more than four people in the frame.

htconfig --camera-offtracking

Sets the transition effect the camera uses when it reframes in Off mode (manual control).

Set

```
htconfig --camera-offtracking {0 | 1} 0 0
```

Argument	Value Range	Description
Effect	0 | 1	0 = Immediate, 1 = Smooth
Reserved	0	Reserved. Always set to 0.
Reserved	0	Reserved. Always set to 0.

Query

```
htconfig -s camera-offtracking
```

Displays the current Off mode (manual control) settings.

Example

```
htconfig --camera-offtracking 1 0 0
```

Sets the Off mode (manual control) transition effect to Smooth.

NOTE: The second and third values are reserved and must be set to 0. The command still requires all three values.

htconfig --camera-autoframing

Sets the transition effect the camera uses when it reframes in Auto Framing mode.

Set

```
htconfig --camera-autoframing {0 | 1} 0 0
```

Argument	Value Range	Description
Effect	0 | 1	0 = Immediate, 1 = Smooth
Reserved	0	Reserved. Always set to 0.
Reserved	0	Reserved. Always set to 0.

Query

```
htconfig -s camera-autoframing
```

Displays the current Auto Framing mode settings.

Example

```
htconfig --camera-autoframing 1 0 0
```

Sets the Auto Framing mode transition effect to Smooth.

NOTE: The second and third values are reserved and must be set to 0. The command still requires all three values.

htconfig --camera-autoframingspeed

Sets how quickly the camera moves to reframe in Auto Framing mode.

Set

```
htconfig --camera-autoframingspeed {0 | 1 | 2}
```

Argument	Value Range	Description
Speed	0 | 1 | 2	0 = Slow, 1 = Normal, 2 = Fast

Query

```
htconfig -s camera-autoframingspeed
```

Displays the camera speed setting for Auto Framing mode.

Example

```
htconfig --camera-autoframingspeed 1
```

Sets the Auto Framing mode speed to Normal.

htconfig --camera-speakertracking

Sets the transition effect the camera uses when it reframes in Speaker Tracking mode.

Set

```
htconfig --camera-speakertracking {0 | 1} 0 0
```

Argument	Value Range	Description
Effect	0 | 1	0 = Immediate, 1 = Smooth
Reserved	0	Reserved. Always set to 0.
Reserved	0	Reserved. Always set to 0.

Query

```
htconfig -s camera-speakertracking
```

Displays the current Speaker Tracking mode settings.

Example

```
htconfig --camera-speakertracking 1 0 0
```

Sets the Speaker Tracking mode transition effect to Smooth.

NOTE: The second and third values are reserved and must be set to 0. The command still requires all three values.

htconfig --camera-speakertrackingspeed

Sets how quickly the camera moves to reframe in Speaker Tracking mode.

Set

```
htconfig --camera-speakertrackingspeed {0 | 1 | 2}
```

Argument	Value Range	Description
Speed	0 | 1 | 2	0 = Slow, 1 = Normal, 2 = Fast

Query

```
htconfig -s camera-speakertrackingspeed
```

Displays the camera speed setting for Speaker Tracking mode.

Example

```
htconfig --camera-speakertrackingspeed 1
```

Sets the Speaker Tracking mode speed to Normal.

htconfig --camera-presentertracking

Sets the transition effect the camera uses when it reframes in Presenter Tracking mode.

Set

```
htconfig --camera-presentertracking {0 | 1} 0 0
```

Argument	Value Range	Description
Effect	0 | 1	0 = Immediate, 1 = Smooth
Reserved	0	Reserved. Always set to 0.
Reserved	0	Reserved. Always set to 0.

Query

```
htconfig -s camera-presentertracking
```

Displays the current Presenter Tracking mode settings.

Example

```
htconfig --camera-presentertracking 1 0 0
```

Sets the Presenter Tracking mode transition effect to Smooth.

NOTE: The second and third values are reserved and must be set to 0. The command still requires all three values.

Pan, Tilt, Zoom and Presets

These htconfig commands control the camera position and zoom and store up to nine presets.

> **NOTE:** In the Web UI and from the IR remote, manual pan, tilt, zoom and preset recall are available only when the tracking mode is Off. Send htconfig --camera-mode 0 before using these commands.

Command	Description
`htconfig --camera-zoom`	Sets the camera zoom level.
`htconfig --camera-autocoord`	Moves the camera one step left, right, up or down.
`htconfig --camera-coord`	Moves the camera to specific pan and tilt coordinates.
`htconfig --reset-camera-ptz`	Returns pan, tilt and zoom to the home position.
`htconfig --camera-savecoord`	Saves the current camera view to a preset.
`htconfig --camera-loadcoord`	Recalls a saved preset.

`htconfig --camera-zoom`

Sets the camera zoom level, from 100 (fully zoomed out) to 600 (fully zoomed in).

Set

```
htconfig --camera-zoom {100 ~ 600}
```

Argument	Value Range	Description
Zoom	`100 ~ 600`	100 = Fully zoomed out 600 = Fully zoomed in

Query

```
htconfig -s camera-zoom
```

Displays the current zoom level.

Example

```
htconfig --camera-zoom 300
```

Sets the zoom level to 300.

> **NOTE:** In manual mode the camera provides 6x mixed zoom: 3x optical zoom plus 2x digital zoom.

htconfig --camera-autocoord

Pans or tilts the camera by one step in the specified direction. This command has no query form.

Syntax

```
htconfig --camera-autocoord {r | l | u | d}
```

Argument	Value Range	Description
Direction	r | l | u | d	r = Right, l = Left, u = Up, d = Down

Example

```
htconfig --camera-autocoord l
```

Pans the camera one step to the left.

htconfig --camera-coord

Moves the camera to the specified pan and tilt coordinates. The home position is 0 0.

> **[VERIFY]** Coordinates are in position steps, not degrees. The camera pans ±75° and tilts ±35°. Confirm the -30 to 30 range on a CP-PVOT-C1622, confirm which sign is left/right and up/down, and say whether the steps map to degrees.

Set

```
htconfig --camera-coord {-30 ~ 30} {-30 ~ 30}
```

Argument	Value Range	Description
Pan	-30 ~ 30	Horizontal position (left / right). 0 = Home.
Tilt	-30 ~ 30	Vertical position (up / down). 0 = Home.

Query

```
htconfig -s camera-coord
```

Displays the current pan and tilt coordinates.

Example

```
htconfig --camera-coord 10 -5
```

Moves the camera to pan position 10, tilt position -5.

htconfig --reset-camera-ptz

Returns the camera pan, tilt and zoom to the home position. This command has no arguments and no query form.

Syntax

```
htconfig --reset-camera-ptz
```

Example

```
htconfig --reset-camera-ptz
```

Returns the camera to the home position.

htconfig --camera-savecoord

Saves the current pan, tilt and zoom position to the specified preset. This command has no query form.

Syntax

```
htconfig --camera-savecoord {1 ~ 9}
```

Argument	Value Range	Description
Preset	1 ~ 9	Preset number

Example

```
htconfig --camera-savecoord 3
```

Saves the current camera view to preset 3.

htconfig --camera-loadcoord

Moves the camera to the view saved in the specified preset. This command has no query form.

Syntax

```
htconfig --camera-loadcoord {1 ~ 9}
```

Argument	Value Range	Description
Preset	1 ~ 9	Preset number

Example

```
htconfig --camera-loadcoord 3
```

Recalls preset 3.

Image Settings

These htconfig commands set image orientation, power-line frequency and HD mode. They apply in every tracking mode.

Command	Description
`htconfig --camera-mirror`	Sets the mirror and inverted (flip) image settings.
`htconfig --camera-powerfreq`	Sets the power-line frequency to prevent flicker.
`htconfig --camera-hd`	Turns HD mode on or off.

`htconfig --camera-mirror`

Sets the mirror and inverted image settings. The first value controls mirroring. The second controls inverted mode (a 180° flip), used when the camera is mounted upside down.

Set

```
htconfig --camera-mirror {0 | 1} {0 | 1}
```

Argument	Value Range	Description
Mirror	`0 | 1`	0 = Off (default), 1 = On
Inverted	`0 | 1`	0 = Off (default), 1 = On

Query

```
htconfig -s camera-mirror
```

Displays the current mirror and inverted settings.

Example

```
htconfig --camera-mirror 0 1
```

Turns mirror off and inverted mode on.

`htconfig --camera-powerfreq`

Sets the camera power-line frequency. Match it to the local mains frequency to prevent flicker from room lighting.

Set

```
htconfig --camera-powerfreq {50 | 60}
```

Argument	Value Range	Description
Frequency	`50 | 60`	50 = 50 Hz (default), 60 = 60 Hz

Query

```
htconfig -s camera-powerfreq
```

Displays the current power-line frequency setting.

Example

```
htconfig --camera-powerfreq 60
```

Sets the power-line frequency to 60 Hz.

`htconfig --camera-hd`

Turns HD mode on or off. HD mode can be turned off for better compatibility.

Set

```
htconfig --camera-hd {0 | 1}
```

Argument	Value Range	Description
HD mode	`0 | 1`	0 = Off, 1 = On (default)

Query

```
htconfig -s camera-hd
```

Displays the current HD mode setting.

Example

```
htconfig --camera-hd 0
```

Turns HD mode off.

NOTE: Changing the HD mode setting restarts the camera to apply it.

Network and Device Settings

These htconfig commands set the device name, LAN settings, IP conflict detection and the standby indicator.

Command	Description
`htconfig --device-name`	Sets the device name.
`htconfig --lan-info`	Sets the IP mode and static network settings.
`htconfig --ip-conflict`	Turns IP conflict detection on or off.
`htconfig --standby-indicator`	Sets the Status LED behavior in idle mode.

`htconfig --device-name`

Sets the device name.

> **[VERIFY]** Confirm how to send a name that contains spaces over Telnet, for example whether it must be in quotation marks.

Set

```
htconfig --device-name {name}
```

Argument	Value Range	Description
name	`1 to 31 characters`	Letters, numbers, spaces, hyphens (-) and underscores (_). Must start and end with a letter or a number.

Query

```
htconfig -s device-name
```

Displays the current device name.

Example

```
htconfig --device-name Boardroom-Cam
```

Sets the device name to Boardroom-Cam.

htconfig --lan-info

Sets the IP mode (DHCP or Static) and, for Static mode, the IP address, subnet mask and gateway.

[VERIFY] Confirm whether the ipaddr, netmask and gateway values must still be sent when ipmode is 0 (DHCP).

Set

```
htconfig --lan-info {ipmode} {ipaddr} {netmask} {gateway}
```

Argument	Value Range	Description
ipmode	0 | 1	0 = DHCP, 1 = Static
ipaddr	x.x.x.x	IP address (Static mode)
netmask	x.x.x.x	Subnet mask (Static mode)
gateway	x.x.x.x	Default gateway (Static mode)

Query

```
htconfig -s lan-info
```

Displays the current LAN settings.

Example

```
htconfig --lan-info 1 192.168.1.100 255.255.255.0 192.168.1.1
```

Sets a static IP address of 192.168.1.100, subnet mask 255.255.255.0 and gateway 192.168.1.1.

NOTE: Allow 2 to 3 minutes for the camera's LAN module to restart and reconnect after a network setting is changed. If you change the IP address, reconnect Telnet at the new address.

htconfig --ip-conflict

Turns IP address conflict detection on or off.

Set

```
htconfig --ip-conflict {0 | 1}
```

Argument	Value Range	Description
Detection	0 | 1	0 = Off, 1 = On (default)

Query

```
htconfig -s ip-conflict
```

Displays the current IP conflict detection setting.

Example

```
htconfig --ip-conflict 1
```

Turns IP conflict detection on.

`htconfig --standby-indicator`

Sets how the front-panel Status LED behaves when the camera is in idle (standby) mode.

Set

```
htconfig --standby-indicator {0 | 2 | 255}
```

Argument	Value Range	Description
Indicator	`0 | 2 | 255`	0 = White breathing (default) 2 = Red 255 = Off

Query

```
htconfig -s standby-indicator
```

Displays the current standby indicator setting.

Example

```
htconfig --standby-indicator 255
```

Turns the Status LED off in idle mode.

System Control

The htcontrol commands reboot, reset and update the device and report device information. Each command type also has a --help command that lists the available commands.

Command	Description
`htconfig --help`	Lists all available htconfig commands.
`htcontrol --help`	Lists all available htcontrol commands.
`htcontrol --reboot`	Reboots the device.
`htcontrol --reset-to-default`	Restores the device to factory defaults.
`htcontrol --upgrade-firmware`	Loads a firmware update file to the device.
`htcontrol --device-info`	Displays device information.
`htcontrol --camera-info`	Displays camera information.

`htconfig --help`

Lists all htconfig commands the device supports.

Syntax

```
htconfig --help
```

Example

```
htconfig --help
```

Lists the htconfig commands.

`htcontrol --help`

Lists all htcontrol commands the device supports.

Syntax

```
htcontrol --help
```

Example

```
htcontrol --help
```

Lists the htcontrol commands.

`htcontrol --reboot`

Reboots the device. The Telnet session closes. Reconnect once the camera has restarted.

Syntax

```
htcontrol --reboot
```

Example

```
htcontrol --reboot
```

Reboots the camera.

htcontrol --reset-to-default

Restores all device settings to their factory defaults.

Syntax

```
htcontrol --reset-to-default
```

Example

```
htcontrol --reset-to-default
```

Restores the factory defaults.

> **NOTE:** A factory reset can change the network settings, so the camera may come back at a different IP address. Press the RESET button once to show the new address on the connected display.

htcontrol --upgrade-firmware

Loads the specified firmware update file to the device.

> **[VERIFY]** The source does not say where the firmware file must be, for example a path on the device after an upload or a network location. Confirm the path format and add a working example.

Syntax

```
htcontrol --upgrade-firmware {UpgradeFilePath}
```

Argument	Value Range	Description
UpgradeFilePath	`File path`	Path to the firmware update file

Example

```
htcontrol --upgrade-firmware [VERIFY]
```

Loads the firmware update file.

> **NOTE:** Do not remove power while the firmware is being updated. The Status LED blinks quickly during the update. The latest firmware is available at www.hallresearch.com.

htcontrol --device-info

Displays information about the device.

Syntax

```
htcontrol --device-info
```

Example

```
htcontrol --device-info
```

Displays the device information.

htcontrol --camera-info

Displays information about the camera module.

Syntax

```
htcontrol --camera-info
```

Example

```
htcontrol --camera-info
```

Displays the camera information.

Additional Web UI Settings

The following settings are available in the CP-PVOT-C1622 Web UI, but the source command list does not include Telnet commands for them. Each block is a placeholder to complete or remove.

Command	Description
NDI Output	Enables NDI output and sets the NDI stream parameters. [VERIFY]
Low Latency Mode	Enables or disables low latency mode. [VERIFY]
AI Light Compensation	Enables or disables AI light compensation. [VERIFY]
Telnet Authentication	Enables or disables the Telnet login password. [VERIFY]
HTTPS	Enables or disables HTTPS for the Web UI. [VERIFY]
Room Name	Sets the room name. [VERIFY]

NDI Output

Enables or disables NDI output over the LAN port and sets the group, device and channel names, encoder, resolution, I-frame interval and bitrate. This setting is available in the Web UI (see Settings > NDI Settings in the CP-PVOT-C1622 Instructions for Use).

> **[VERIFY]** The source command list has no command for this setting. Run htconfig --help on a CP-PVOT-C1622 to find out whether a Telnet command exists. If it does, fill in the command name, values and an example here. If not, delete this block and its row in the summary table.

```
htconfig --[VERIFY]
```

Low Latency Mode

Enables or disables low latency mode. When enabled, the UVC and HDMI OUT resolution is 1080p@60. When disabled, the maximum is 4K@30. This setting is available in the Web UI (see Settings > General Settings in the CP-PVOT-C1622 Instructions for Use).

> **[VERIFY]** The source command list has no command for this setting. Run htconfig --help on a CP-PVOT-C1622 to find out whether a Telnet command exists. If it does, fill in the command name, values and an example here. If not, delete this block and its row in the summary table.

```
htconfig --[VERIFY]
```

AI Light Compensation

Enables or disables AI light compensation, which adjusts brightness and contrast automatically in poor or uneven lighting. This setting is available in the Web UI (see Camera in the CP-PVOT-C1622 Instructions for Use).

> **[VERIFY]** The source command list has no command for this setting. Run htconfig --help on a CP-PVOT-C1622 to find out whether a Telnet command exists. If it does, fill in the command name, values and an example here. If not, delete this block and its row in the summary table.

```
htconfig --[VERIFY]
```

Telnet Authentication

Enables or disables password authentication for Telnet sessions. This setting is available in the Web UI (see Settings > Privacy & Security in the CP-PVOT-C1622 Instructions for Use).

> **[VERIFY]** The source command list has no command for this setting. Run htconfig --help on a CP-PVOT-C1622 to find out whether a Telnet command exists. If it does, fill in the command name, values and an example here. If not, delete this block and its row in the summary table.

```
htconfig --[VERIFY]
```

HTTPS

Enables or disables HTTPS (SSL/TLS encryption) for Web UI communications. This setting is available in the Web UI (see Settings > Privacy & Security in the CP-PVOT-C1622 Instructions for Use).

> **[VERIFY]** The source command list has no command for this setting. Run htconfig --help on a CP-PVOT-C1622 to find out whether a Telnet command exists. If it does, fill in the command name, values and an example here. If not, delete this block and its row in the summary table.

```
htconfig --[VERIFY]
```

Room Name

Sets the room name shown on the Web UI Overview page, alongside the device name. This setting is available in the Web UI (see Settings > General Settings in the CP-PVOT-C1622 Instructions for Use).

> **[VERIFY]** The source command list has no command for this setting. Run htconfig --help on a CP-PVOT-C1622 to find out whether a Telnet command exists. If it does, fill in the command name, values and an example here. If not, delete this block and its row in the summary table.

```
htconfig --[VERIFY]
```

Document Revision History

This table tracks changes to the API Command List document.

Version	Date	Notes
1.0	September 11, 2026	Initial release.