



**HuddleCamHD™**

For Meetings that Matter

# HuddleCamHD SimplTrack3 User Manual

MODEL No.

HC20X-SIMPLTRACK3





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## Preface

Before installation and usage, please read the manual thoroughly. If you have any questions or issues with this process, please contact our [Support Team](#).

## Precautions

- Do not subject the camera to rain or moisture.
- Do not remove the cover. Removal of the cover will void the camera's warranty and may cause an electric shock. For any abnormal operation, please contact [support@huddlecamed.com](mailto:support@huddlecamed.com).
- Never operate outside of the specified operating temperature range or humidity.
- The power supply included in the box is the only power supply to be used with this camera. If this power supply needs to be replaced, please contact our support team.
- Please use a soft cloth to clean the unit. If the unit is very dirty, clean it with diluted neutral detergent; do not use solvents which may damage the surface.

## Warning

- Electrical safety  
Installation must be in accordance with national and local electric safety standards.
- Polarity of Power Supply  
The power supply output for this product is 12V DC with a maximum current supply of 2A. The polarity of the power supply plug is critical and is as follows:



- Handling
  - Avoid subjecting the camera to stress, vibration, or moisture during transportation, storage, installation, and operation.
  - Do not lift or move the camera by grasping the camera head. To avoid mechanical damage, do not turn the camera head by hand.
  - Do not expose the camera to any corrosive solid, liquid, or gas.
  - Please make sure that there are no obstacles in the pan or tilt ranges of the camera lens.
  - After installation is complete and secure, power on the camera.
  - Do not dismantle the camera - HuddleCamHD is not responsible for any unauthorized modification or dismantling.



- This is an FCC class-A product. In a domestic environment, this camera may cause radio interference. In the event of radio interference, the user may be required to adequately mitigate it.
- **Remote Control Battery Safety Information:**
- Store batteries in a cool and dry place.
- Do not throw away used batteries in the trash. Properly dispose of used batteries through specially approved disposal methods.
- Remove the batteries if they are not in use for long periods. Battery leakage and corrosion can damage the remote control.
- Do not use old batteries with new batteries.
- Do not mix and use different types of batteries: alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium).
- Do not dispose of batteries in a fire. Do not attempt to short-circuit the battery terminals.

## Packing List

Please make sure the items below are included in your camera box:

- **Camera**
- **AC Power Supply**
- **USB B-A Cable**
- **RS-232C Cable**
- **Quick Start Guide**
- **IR Remote**
- **2 AA Batteries**

## Warranty

HuddleCamHD includes a limited parts & labor warranty for all HuddleCamHD manufactured cameras. The warranty is valid only if HuddleCamHD receives proper notice of such defects during the warranty period. HuddleCamHD, at its option, will repair or replace products that prove to be defective. HuddleCamHD manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices.

[Here is the link](#) to the HuddleCamHD Hardware Warranty Documentation. This product has a 3-year warranty.



## FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. Operation is subject to the following two conditions: This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Copyright Notice

The entire contents of this manual / guide, whose copyright belongs to HuddleCamHD, may not be cloned, copied, or translated in any way without the explicit permission of the company. The product specifications referred to in this document are for reference only and as such are subject to updating at any time without prior notice.

# Features

- **Dual Sensor Automatic Tracking**

This camera uses a reference camera lens and an optical zoom lens to enable auto-tracking in various scenarios such as education, conferences, and live broadcasts, even if the presenter walks into the audience area.

- **Photobooth Functionality**

Save videos and photos securely to a connected SD card or directly to a desktop.

- **20X Optical Zoom**

High-resolution 1080p telephoto lens for full HD auto-tracking.

- **HDMI 2.0**

HDMI 2.0 can directly output 1080p uncompressed digital video.

- **Low Light**

CMOS image sensor with ultra-high SNR can reduce image noise in low light.

- **Multiple Interfaces**

Supports Simultaneous USB 3.0, HDMI 2.0 / 3G-SDI / IP streaming (SRT / RTSP / RTMP)

- **Multiple Control Options**

Controllable via IR remote, network connection, RS-232, and the USB port.

- **Audio Embedding**

Line-level audio can be embedded over HDMI & IP

- **Software Interface**

Proprietary software designed for high-level customization and control.

- **Motion & Facial Framing**

This camera can recognize a presenter and put them in the ideal frame for auto-tracking.

- **Total Stage Awareness**

Can send a wide-angle video feed from the reference lens and a close-up tracking shot from the main lens simultaneously.

# Technical Specifications

<b>Model</b>	<b>HC20X-SIMPLTRACK3</b>
<b>Type</b>	<b>HuddleCamHD SimplTrack 3</b>
<b>Description</b>	PTZ camera with video auto tracking & HDMI, SDI, USB, NDI   HX & IP video outputs
Resolution & Frame Rate	<b>HDMI, SDI</b> 1080p60 / 50  <b>USB 3.0</b> 1080p60, 1080p30, 720p30, 360p30
Sensor	Sony 1/2.8 inch, CMOS, Effective pixels: 2.14M
Scanning Mode	Progressive
Tracking Lens	20X Optical Zoom f = 4.7mm ~ 94mm,
Iris	F1.6 - F3.5
Reference Camera	8X Digital Zoom, 1/2.8" Exmore sensor 2.14 Mega Pixel, 2.4mm
Video Based Auto-Tracking	Supported
Maximum Tracking Distance	55 feet   16.8 meters
Minimum Illumination	0.5 Lux @ (F1.8, AGC ON)
Shutter	1/1 ~ 1/10,000s
White Balance	Auto, Outdoor, One Push, Manual, Auto-Tracking
Backlight Compensation	Not Supported

Horizontal Field of View	3° ~ 59.5°
Vertical Field of View	2° ~ 36°
Reference Horizontal Field of View	86°
Reference Vertical Field of View	52°
Horizontal Rotation Range	±170°
Vertical Rotation Range	-30° ~ +90°
Pan Speed Range	0.1°/s ~ 120°/s
Tilt Speed Range	0.1°/s ~ 90°/s
Image Flip	Not Supported
Image Mirror	Supported
Image Freeze	Not Supported
POE	Supported
<b>USB Specifications</b>	
Operating System	Windows 7 / 8.1 / 10 / 11 / Mac OS X+, Linux, Android (Tracking Software is Windows Only)
Color System/Compression	H.264 & MJPEG & YUY2
Video Format	<ul style="list-style-type: none"> <li>▪ H.264: Max resolution: 1920x1080@30</li> <li>▪ MJPEG: Max resolution: 1920x1080@30</li> <li>▪ YUY2: Max resolution: 1920x1080@30</li> </ul>
USB Audio	Supported
UVC Version	UVC 1.1 ~ 1.5
UVC Control	Supported

*Note: YUY2 is disabled by default. Call preset #150 to enable YUY2. Call preset #150 two times in succession to disabled YUY2.*



IP Video Specifications	
Video Compression	H.264, H.265
Video Stream	<b>Optical Lens:</b> First Stream, Second Stream <b>Digital Reference Camera:</b> Third Stream
First Stream Resolutions	1920x1080, 1280x720, 640x360  Note: Resolutions and frame rates can be adjusted within the HuddleCamHD Tracking Control Software.
Second Stream Resolutions	1280x720, 640x360,
Third Stream Resolutions	1920x1080, 1280x720, 640x360
Video Bitrate	First Stream: 32kbps ~ 16383kbps Second Stream: 32kbps ~ 16383kbps
Bit Rate Type	Constant Bit Rate (CBR), Variable Bit Rate (VBR)
Frame Rate	50Hz: 1 ~ 50 fps 60Hz: 1 ~ 60 fps
Audio Compression	AAC
Audio Bit Rate	96kbps, 128kbps, 256kbps
Supported Protocols	TCP/IP, UDP, HTTP, RTSP, RTMP/RTMPS, ONVIF, NDI, SRT, Multicast, etc.
Input & Output Interface	
HD Output	<ul style="list-style-type: none"> <li>▪ 1x RJ45: 10/100/1000M Adaptive Ethernet Port</li> <li>▪ 1x HDMI: Version 2.0</li> <li>▪ 1x USB 3.0: Type B</li> <li>▪ 1x 3G-SDI: BNC type, 800mVP-p, 75Ω, Along to SMPTE 424M standard</li> </ul>
Audio Interface	<ul style="list-style-type: none"> <li>▪ 1x 3.5mm Line level Input</li> </ul>

Communication Interface	<ul style="list-style-type: none"> <li>1x 8-pin Mini DIN RS232 Input, Max distance: 98.5ft / 30m, Protocol: VISCA / Pelco-D / Pelco-P</li> <li>1x 2-pin Phoenix port RS485 Input / Output, Max distance: 3,937ft / 1200m, Protocol: VISCA / Pelco-D / Pelco-P</li> </ul>
IR	4x IR Addresses, Max distance 30ft / 9m
Power Jack	JEITA Type (DC IN 12V 2.5A)

Physical Specifications	
Input Voltage	DC 12V / PoE(802.3af)
Current Consumption	Max 1.0A
Power Consumption	Max 12W
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Humidity Range	10% - 80%
Size In. (W x D x H)	W 9.6" x D 6.1" x H 6.4" (W 243mm x D 157mm H 163mm)
Camera Weight	5.7 lbs   2.59 kg



Covered by one or more claims of the HEVC patents listed at [patentlist.accessadvance.com](http://patentlist.accessadvance.com).



## Dimensions

6.4in H



9.6in W

6.1in D

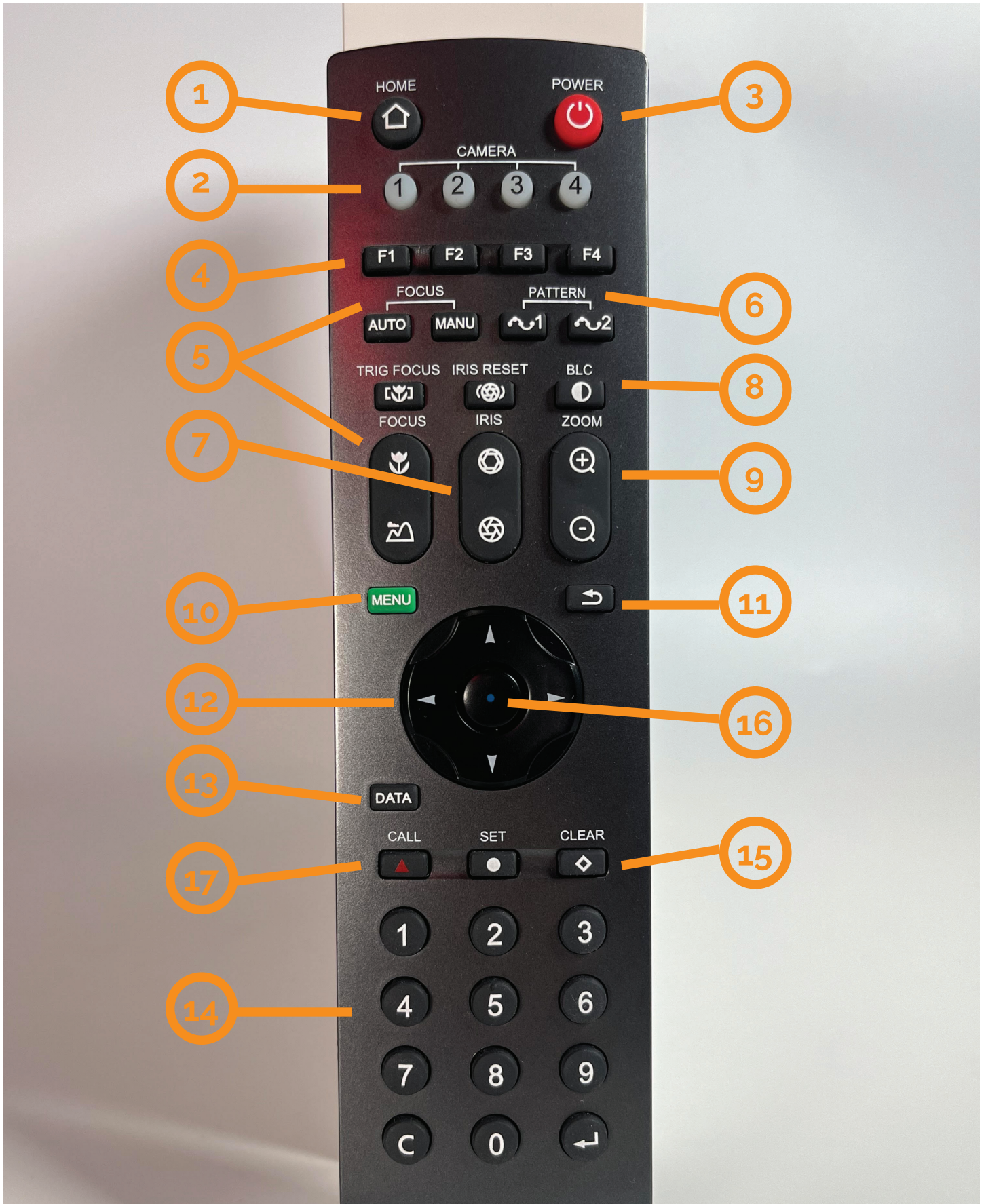
# Connection Guide

1. To start your camera, please connect the power adapter to the DC-12V power connector port on the back of the camera, ensuring all connections are correct and secure.
2. The power indicator on the front panel of the camera will illuminate.
3. Once powered on, the camera will initialize. During this phase, it will rotate to the left and right limit positions, then both horizontal and vertical limit positions. After these limit checks, it will stop at the center position. Once the camera has stopped moving, the initialization will be complete.  
(Note: If preset 0 is saved, The camera will stop move to preset 0 after completing the initialization)

1. Micro SD Card Slot	5. 3G-SDI
2. HDMI Out	6. LAN
3. USB 3.0	7. RS-232 In/Out
4. Line In	8. DC-12V 1.5A



# IR Remote Controller Guide



## 1. Home Button

Press to send the camera to the preset Zero position. This is the same position the camera assumes after it's been powered on.

## 2. Camera Selection Buttons

Used to switch between IR channels when using multiple cameras.

## 3. Power Button

Used to turn the camera on and off.

## 4. Shortcut Buttons (F1, F2, F3, F4)

F3: Start Tracking. F4: Stop Tracking

## 5. Focus

Choose between Auto or Manual focus modes.

**5.a) "Trig Focus button"** enables auto focus whenever the camera is zoomed in. Near / Far allows focus adjustment while in manual focus mode.

## 6. Pattern Buttons

Used to activate Scan Pattern 1 and Scan Pattern 2.

## 7. Iris

Use the Open / Close options to open and close the Iris.

**7.a) Reset the Iris to the default value using the "Iris Reset button."**

## 8. BLC Button

Used to Enable or Disable the Backlight Compensation.

## 9. Zoom Buttons

Used zoom in or out.

## 10. Menu

Used to open or close the On Screen Display Menu.

## 11. Back Button

Used to return to a previous menu, while in the OSD Menu.

## 12. Directional Buttons

**In the OSD Menu:** Navigate through the Menus.

**Outside the OSD Menu:** Pan and Tilt the Camera.

## 13. Data Button

Used to enable or disable the display of the Pan/ Tilt Angle, the Zoom magnification, the Time, and other prompt messages.

## 14. Number Keys

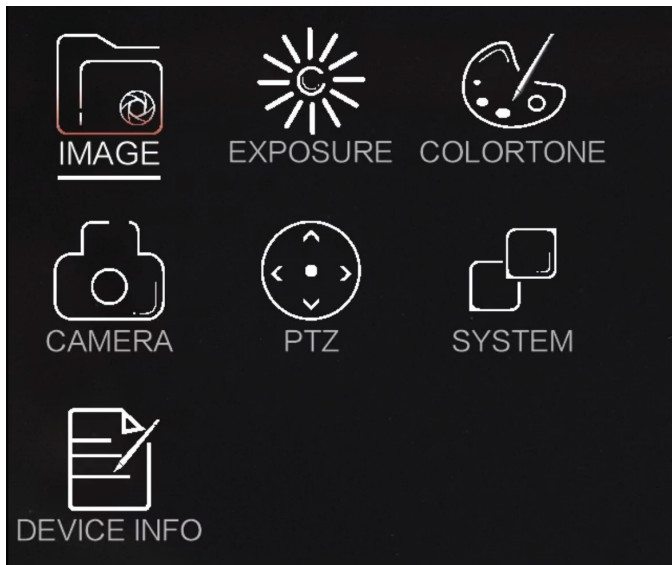
Used to input numbers.

## 15. Clear Button

Used to cancel an action.

# On-Screen Display

## Main Menu



Press the [Menu] button to display the OSD Menu. Use the arrow buttons to navigate the OSD menu, the [Home] button to make selections, and the [Menu] button to go back a sub-menu.

The following images show the sub-menus appearing in their default state upon opening the OSD menu.

## Image

Image	
Sharpness	5
Brightness	5
Contrast	7
Gamma	2
2DNR	3
3DNR	3
DRC	0
Mirror	Off
Flip	Off

**Sharpness:** Affects how crisp the image appears. Can be adjusted from 0 to 11.

**Brightness:** Overall lightness or darkness of the image. Adjustable range from 0 to 14.

**Contrast:** Increase or decrease the intensity of lights and darks. Adjustable range from 0 to 14.

**Gamma Mode:** Affects the luminance of each pixel in relation to the brightness level. Adjustable range from 0 to 4.

**2DNR:** Improve image fidelity based on individual frame analysis. Adjusts 2D Noise Reduction Level ranges from Off to 5.

**3DNR:** Improve image fidelity by measuring differences between subsequent frames. Adjusts 3D Noise Reduction Level ranges from Off to 5.

**DRC:** (Dynamic Range control) Adjustable range from 0 to 5.

**Mirror:** Flips the image horizontally. On or Off.

**Flip:** Flips the image vertically. On or Off.



## Exposure

Exposure	
Exposure	Auto
Anti-Flicker	60Hz
BLC	Off
Exp-Comp	On
Level	0

### Exposure Mode:

#### Auto: Adjustable:

**Anti-Flicker:** Choose Off, 50HZ, or 60HZ to keep certain light sources such as florecent bulbs from flickering in the image.

**BLC:** Ability to enhance the visibility in a scene by turning the backlight. On or Off

**EXP-Comp:** Allows the camera to automatically adjust the exposure depending on the lighting. On or Off

**Level:** The degree to which the exposure is automatically adjusted. -7 to +7

#### Manual: Adjustable:

**Gain:** from 0 to +14

**Speed:** 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, 1/10000.

**Iris:** CLOSE, F1.6, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9.6, F11, F14

### Shutter: Adjustable:

**Speed:** 1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 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, 1/10000

### Iris: Adjustable:

**Iris:** CLOSE, F1.6, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9.6, F11, F14

**Anti-Flicker:** Off, 50HZ, 60HZ

### Bright: Adjustable:

**Bright:** Default at 14  
Adjust from 0 to 27

**Anti-Flicker:** Default at Off  
Off, 50HZ, 60HZ





## Colortone

Colortone	
WB Mode	Auto
R. Gain	0
G. Gain	0
B. Gain	0
WB-SENSI	MIDDLE
Saturation	7
Hue	7

### Colortone Mode:

#### Auto: Adjustable:

**R. Gain:** Add or reduce the intensity of red color in the image. -7 to +7

**G. Gain:** Add or reduce the intensity of green color in the image. -7 to +7

**B. Gain:** Add or reduce the intensity of blue color in the image. -7 to +7

**WB-SENSI:** Set the white balance sensitivity to Middle, High, or Low.

**Saturation:** Adjust the vibrancy of the colors in the image. 0 to 14

**Hue:** Adjust the tint of the colors in the image. 0 to 14

#### Manual: Adjustable:

**R. Gain:** Add or reduce the intensity of red color in the image. 0 to 16

**B. Gain:** Add or reduce the intensity of blue color in the image. 0 to 16

**Saturation:** Adjust the vibrancy of the colors in the image. 0 to 14

**Hue:** Adjust the tint of the colors in the image. 0 to 14

#### Indoor: Adjustable:

**Saturation:** Adjust the vibrancy of the colors in the image. 0 to 14

**Hue:** Adjust the tint of the colors in the image. 0 to 14

#### Outdoor: Adjustable:

**Saturation:** Adjust the vibrancy of the colors in the image. 0 to 14

**Hue:** Adjust the tint of the colors in the image. 0 to 14

#### OPWB: Adjustable:

**One Push Trigger:** Press OK to White Balance the camera.

**Saturation:** Adjust the vibrancy of the colors in the image. 0 to 14

**Hue:** Adjust the tint of the colors in the image. 0 to 14

#### Static: Adjustable:

**Color Temp.:** Affects the warmth or coolness of the image. Defaulted at 4500K. Adjust from 2800 to 6500 by increments of 100

**Saturation:** Adjust the vibrancy of the colors in the image. 0 to 14

**Hue:** Adjust the tint of the colors in the image. 0 to 14

## Camera

Camera	
Run Scene	Indoor
Digital Zoom	Off
Zoom Times	X1

#### Camera: Adjustable:

**Run Scene:** This mode is set to Indoor and is not adjustable.

**Digital Zoom:** Enables the digital magnification of the image. On or Off.

**Zoom Times:** Only available when digital zoom is turned on. Digitally multiply the zoom magnification of the camera. X1, X2, X3, X4, X5, X6, X7, X8



## Pan Tilt Zoom

### Pan Tilt Zoom

P/T Speed	5
PTZ TRIG AF	ON
POWER UP	HOME

**Pan/Tilt Speed:** Determine how quickly the camera Pans and Tilts. Adjustable range from 1- 7

**PTZ TRIG AF:** On, Off

**Power Up Action:** Determine the position the camera will take up when powering on.

Choose from Home, Preset 1, or Preset 2

## System

### System

ADDRESS	1
IR ADDRESS	1
MOUNT MODE	STAND
PROTOCOL	VISCA
BAUDRATE	9600
MULTIPLE MODE	OFF
VIDEO FORMAT	1080P60
LANGUAGE	ENGLISH
DISPLAY INFO	OFF
TRACK TYPE	Tracking
DEFAULTS	CONFIRM

**Address:** Adjust the address assigned to the camera. 1 -7 for the control protocol.

**IR Address:** Set the IR address for the camera's IR remote: 1 - 4

**Mount Mode:** Stand or Ceiling (**Inverted**)

**Protocol:** Choose the control protocol used.

Visca, Pelco-D, Pelco-P

**Baudrate:** 2400, 4800, 9600, 38400

**Multiple Mode:** On or Off

**Video Format:** Choose the video Format.

1080P50 or 1080P60

**Language:** English, Chinese

**Display Info:** On, Off

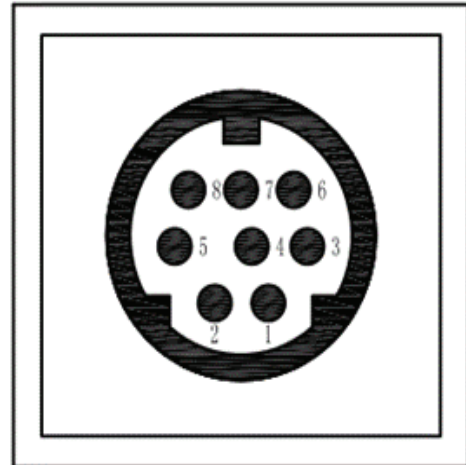
**TrackType:** Set the camera to auto-track or auto-frame by choosing from Tracking or Framing.

**Defaults:** Select Confirm and hit confirm, to reset the camera OSD settings back to the default values.

# Serial Communication Guide

## RS-232 Interface

No.	Function
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	IR OUT
8	NC



For Initial Connection

For Daisy Chain Control

Camera	Windows DB-9
1. DTR	1. CD
2. DSR	2. RXD
3. TXD	3. TXD
4. GND	4. DTR
5. RXD	5. GND
6. Unused	6. DSR
7. Unused	7. Unused
8. Unused	8. Unused
9. Unused	9. Unused

Camera	Mini DIN
1. DTR	1. DTR
2. DSR	2. DSR
3. TXD	3. TXD
4. GND	4. GND
5. RXD	5. RXD
6. Unused	6. Unused
7. Unused	7. Unused
8. Unused	8. Unused

## RS232 Communication Control

This camera can be controlled vis RS-232. The parameters for RS-232C are as follows:

Baud Rate:	2400, 4800, 9600 or 38400 bps
Start Bit:	1 bit
Data Bit:	8 bits
Stop Bit:	1 bit
Parity Bit:	None

# Network Connection Guide

## Operating Environment

- Operating System: Windows 7 / 8.1 / 10 / 11, Mac OS X, Linux, Android
- Network Protocol: TCP/IP
- Client PC: P4 / 128M RAM / 40G HDD / supported scaled graphics card, support for DirectX 8.0+.

## Equipment Installation

1. To connect your camera to your network, run a CAT 5 or CAT 6 cable from the camera directly into a network switch.
2. Turn on power.



Picture 1.2 Connections to LAN via patch cable to LAN wall jack or LAN Switch

Note: To pull the main RTSP stream please use the following URL: `rtsp://<camera IP>:554>/main.h264` (example: `rtsp://192.168.111.85:554/main.h264`)

Note: To pull the sub RTSP stream please use the following URL: `rtsp://<camera IP>:554>/sub.h264` (example: `rtsp://192.168.111.85:554/sub.h264`)

Note: To pull the 3rd stream please use the following URL: `rtsp://<camera IP>:554>/sub.h264` (example: `rtsp://192.168.111.85:554/3.h264`)

## Discovering your Network Info

To discover your IP address range/scheme, Subnet Mask, Gateway, & First DNS, follow the instructions below for Windows or Mac OS. You may need to talk with your IT department to obtain this information.

### Windows

1. Open the Start menu and type “CMD” into the search bar.
2. Once the Command Prompt is open, type in “ipconfig” and press the Enter key.
3. Scroll down to the section titled “Ethernet adapter Ethernet” or “Ethernet adapter Wireless Network Connection”.
4. Locate the “IPv4 Address” in that section. This is your computers local IP address.
5. In the example above, the PC’s local address is “192.168.15.117”, making the network range “192.168.15”.



```
C:\> Command Prompt
Microsoft Windows [Version 10.0.19042.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\[PC]>ipconfig

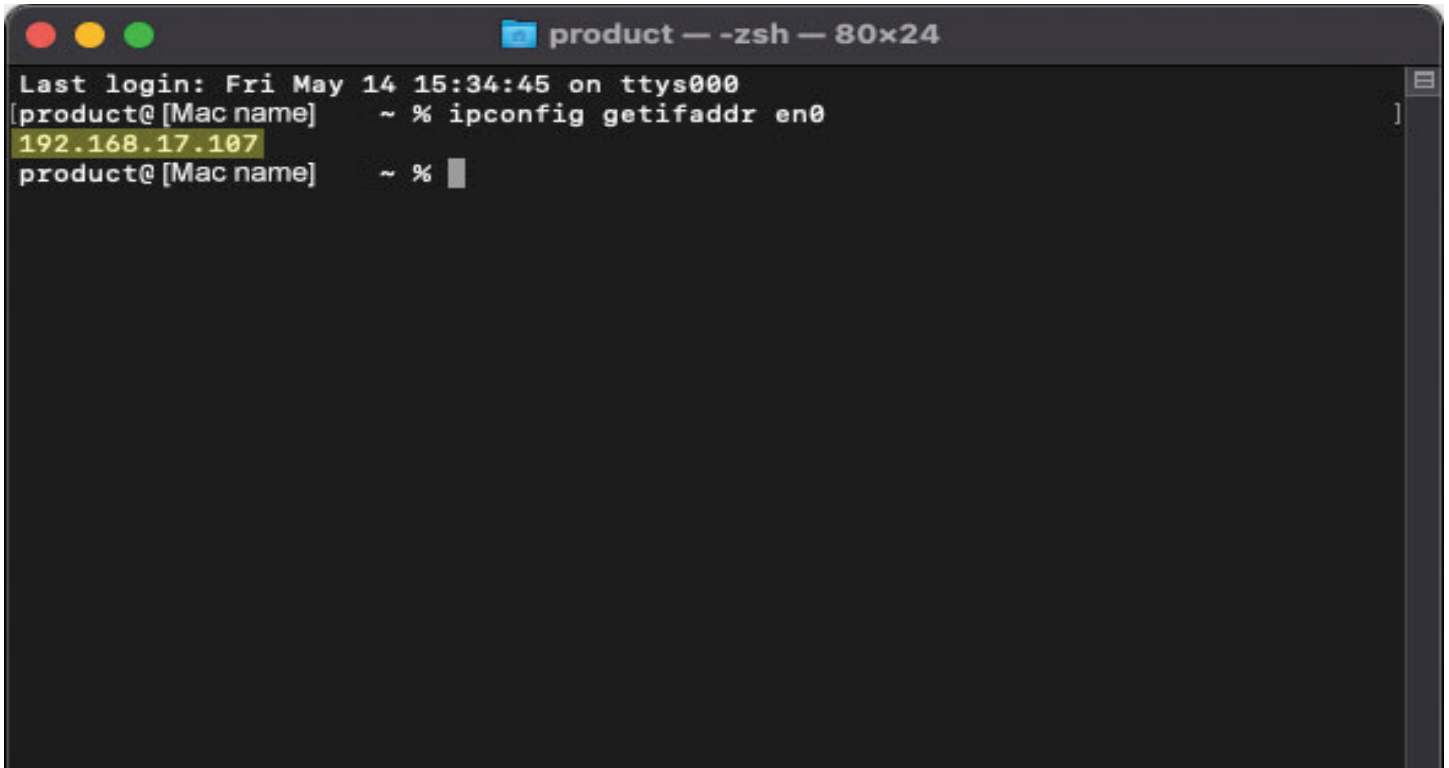
Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : localdomain
    Link-local IPv6 Address . . . . . : fe80::a4a0:e4a6:6b03:f206%8
    IPv4 Address. . . . . : 192.168.15.117
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.15.1
```

## Mac

1. Open a new Finder window and go to the Applications folder.
2. Open the Utilities folder and select the Terminal program.
3. Once the Terminal program is open, type in “ipconfig getifaddr en0” and press the Enter key.

A screenshot of a macOS Terminal window. The title bar shows "product — -zsh — 80x24". The terminal text reads: "Last login: Fri May 14 15:34:45 on ttys000", "[product@[Mac name] ~ % ipconfig getifaddr en0]", "192.168.17.107", and "product@[Mac name] ~ %". The IP address "192.168.17.107" is highlighted in yellow.

```
product — -zsh — 80x24
Last login: Fri May 14 15:34:45 on ttys000
[product@[Mac name] ~ % ipconfig getifaddr en0
192.168.17.107
product@[Mac name] ~ %
```

4. In the example above, the Mac’s local address is 192.168.17.107”, making the network range “192.168.17”.

# HCHD Tracking Control Software & Setup

## Downloading the Software

1. Follow this link to "[www.huddlecamed.com/support-utilities](http://www.huddlecamed.com/support-utilities)"
2. Scroll down the page and click the "**download**" button underneath Tracking Control Software.



### Tracking Control Software

For SimplTrack2 and HuddleView camera models

DOWNLOAD

# Device Management Panel

The Device Management Panel is used to connect HuddleCamHD tracking cameras to the Tracking Control Software and is also used for Remote Configuration. This is the first window you will see upon opening the software.

## Connecting Your SimplTrack 3 to the Tracking Software

1. Ensure the camera is powered on (This can be done using the included power supply or via POE.), then connect to a Local Area Network (LAN).
2. Open the HuddleCamHD Tracking Software and you will be brought to the Device Management panel.
3. Click “**Start Search**” in the bottom section of the software to search for cameras on the same subnet mask as your PC. Select your camera and click “**Add to client**”.
  - o **Note:** The camera utilizes DHCP by default. If your PC is also utilizing DHCP this search should find your camera.

The screenshot shows the HuddleCamHD software interface. At the top, there's a title bar with 'HuddleCamHD' and system information like 'NET CPU RAM 13:27:26'. Below that are navigation tabs: 'Device Management' (selected), 'Main View', and 'Remote Playback'. The main area is titled 'Device for Management' and contains a table with columns: Index, Nickname, IP, Type, Version, Main session, and Sub session. The table lists three devices, with the second and third rows highlighted in blue. Below this is an 'Online Device' section with a table containing columns: Index, IP, Serial No., MAC, WIFI, Device Name, Type, and Version. The first row in this table is also highlighted in blue.

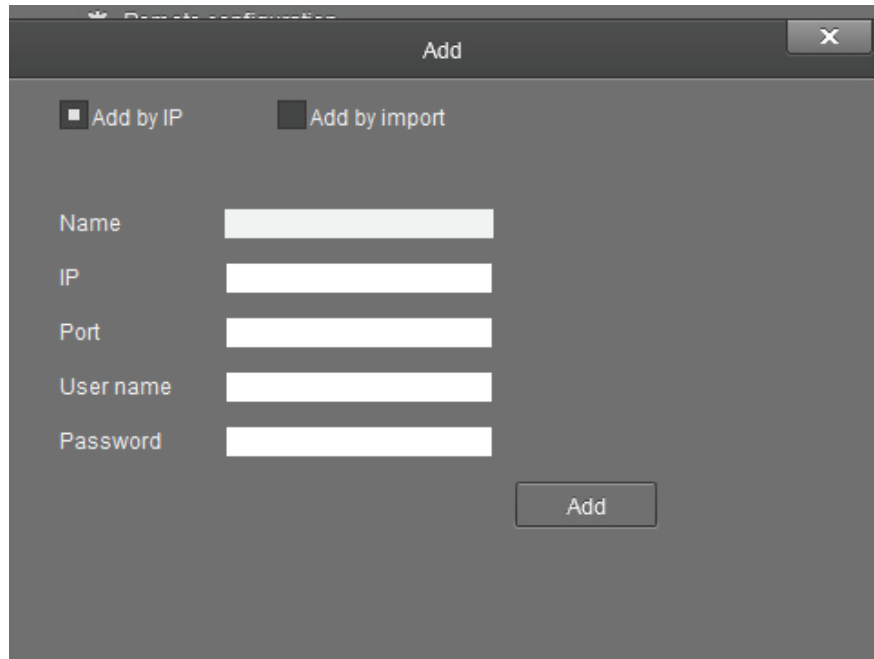
Index	Nickname	IP	Type	Version	Main session	Sub session
001	SimplTrack2	192.168.21.64	SimplTrack	2.1.34	Connection failed	Connection failed
002	ST2-LAB MAIN	192.168.21.176	SimplTrack	2.1.34	connected	connected
003	ST2-LAB MAIN	192.168.21.176	SimplTrack	2.1.34	connected	connected

Index	IP	Serial No.	MAC	WIFI	Device Name	Type	Version
001	192.168.21.176	0000001	DC:ED:84:C0:00:19	No	ST2-LAB MAIN	SimplTrack	2.1.34



- Alternatively, you can click “+ **Add Device**” in the top left corner to manually add a camera to the software using the camera’s IP address & Port (Default: 5000), or import using a \*.csv. **Note:** Although not needed by default, the login credentials are Username: “admin”, Password: “admin”



- You should see the window shown above. The Add window displays your camera’s name, IP address, and port. There will also be a blank username and password section, which will only require these if you’ve previously implemented them. You do not need to change any of this information, just click “**Add**”.
- Your camera should now be included in the device list. In this list, you can see the Nick-name of your camera, its IP address, Camera Type, the Firmware Version, and the connection status to the Main session, and Sub session.
- If you have multiple devices already connected, hover your mouse over the camera in the device list and click once. This will highlight the camera you wish to use in blue.
- Before moving to the Main View**, it’s important to check the camera’s settings to ensure they match up with your live streaming, recording, or conferencing system. To do this, click the Remote Configuration button above the device list while your camera is selected.

# Remote Configuration Window

There are seven tabs within the Remote Configuration Window: **Streaming**, **Network**, **Rtmp**, **Protocol**, **Upgrade**, **UN/PW**, **Record**, and **NDI**.

The screenshot shows the 'Remote Configuration' window with the 'Streaming' tab selected. The window contains the following settings:

Parameter	Value	Parameter	Value
Stream type	Main stream	Channels	STEREO
Resolution	1080P	Encode type	AAC
Video rate type	CBR	Sample rate	48KHz
Max rate(Kbps)	4000	Audio rate	48Kbps
Frame rate	30	Input pin	Lineln
Key frame interval	30	Volume	50
Video coding type	H264		
Encode Level	High		

There are two 'Save' buttons: one at the bottom left and one at the bottom right.

# Streaming Tab

The streaming tab handles both the camera's video stream settings and its audio stream settings. In the image above, you can see the video stream settings in the left column of the window and the audio stream settings in the right column of the window.

## Video

**Streaming Type:** This camera is sending out three individual streams simultaneously: **Main Stream, Sub Stream, & Stream 3**. When making changes to the streaming settings, it is important to note which stream is currently selected in this drop-down tab. When you select a stream type, the changes you make in the video stream tabs below it will only be applied to the selected stream type.

- o **Example Image Above:** If you adjust the resolution settings, and click "Save", the resolution changes will only be applied to the Main Stream.

**Resolution:** Main Stream: 1080P, HD720, 640x360  
Sub Stream: HD720, 640x360  
3rd Stream: 1080P, HD720, 640x360

**Video Rate Type:** All Streams: CBR, VBR

**Max Rate (Kbps):** 1 ~ 16383 Kbps

**Frame Rate:** All Streams: Fullfps, 1~60fps

**Key Frame Interval:** This feature is designed to allow the user to determine how often the entire image is transmitted. We recommend leaving this setting at 60 for the Main Stream, 30 for the Sub Stream, & 30 for Stream 3.

**Video Coding Type:** All Streams: H264, H265

**Encoding Level:** All Streams: High, Main, Base. We recommend setting the Main Stream to High, the Sub Stream to Base, Stream 3 to Base.

## Audio

**Channels:** options: Stereo

**Encode Type:** AAC

**Sample Rate:** options: 48KHz

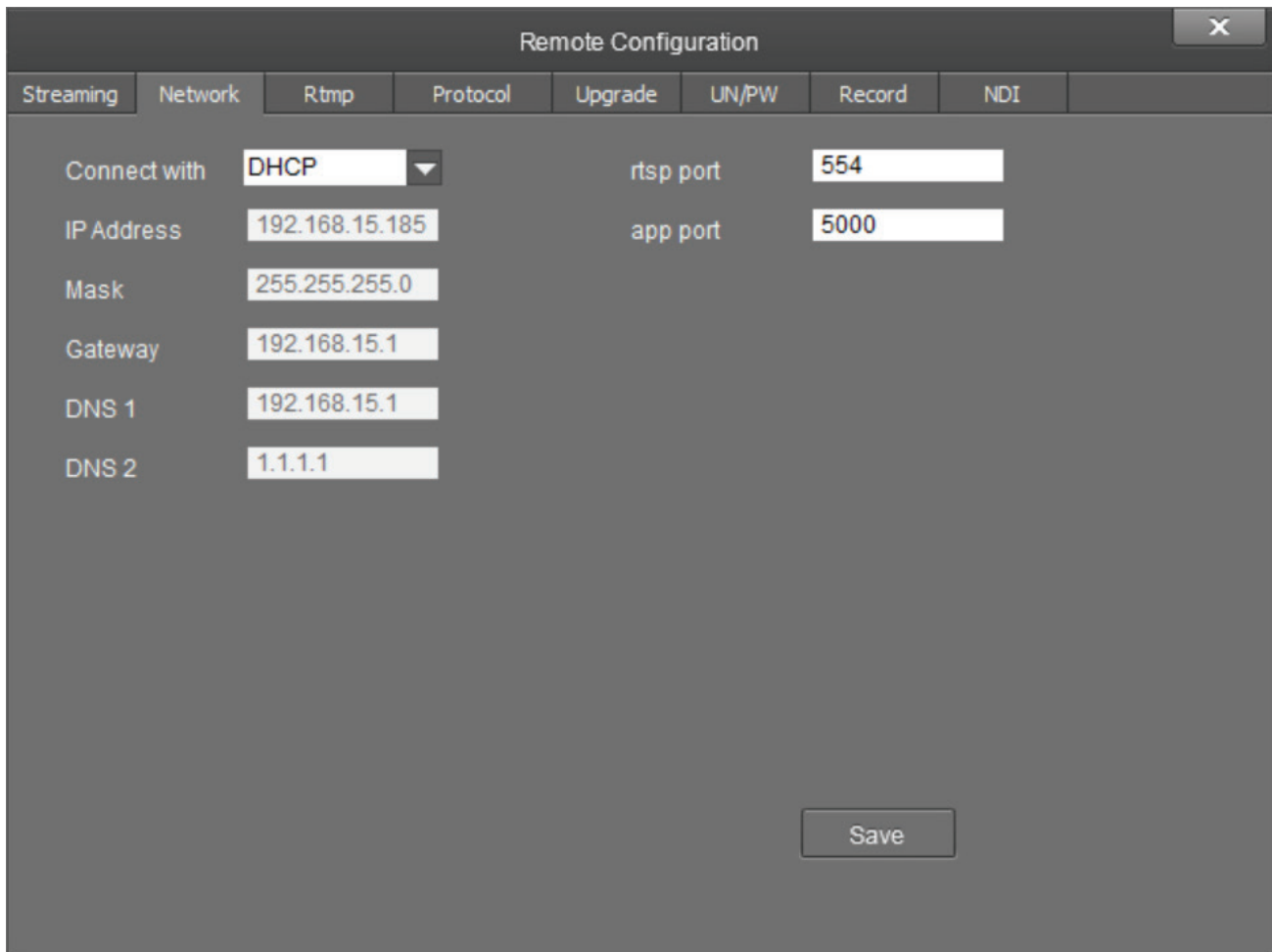
**Audio Rate:** options: 48Kbps, 64Kbps, 96Kbps, 128Kbps

**Input Pin:** options: Lineln

**Volume:** Adjustable levels from 0 to 100.

# Network Tab

Here, you can see the camera's IP address, Mask, Gateway, DNS 1, DNS 2, rtsp port, and app port. The camera is connected by default using DHCP settings, but you can switch it to Static IP using the drop down tab and then manually input the information.



The screenshot shows a 'Remote Configuration' window with a 'Network' tab selected. The 'Connect with' dropdown is set to 'DHCP'. The following fields are visible:

Field	Value
Connect with	DHCP
IP Address	192.168.15.185
Mask	255.255.255.0
Gateway	192.168.15.1
DNS 1	192.168.15.1
DNS 2	1.1.1.1
rtsp port	554
app port	5000

A 'Save' button is located at the bottom right of the configuration area.

While In DHCP mode, the adjustments can only be made to the RTSP port and the app port.

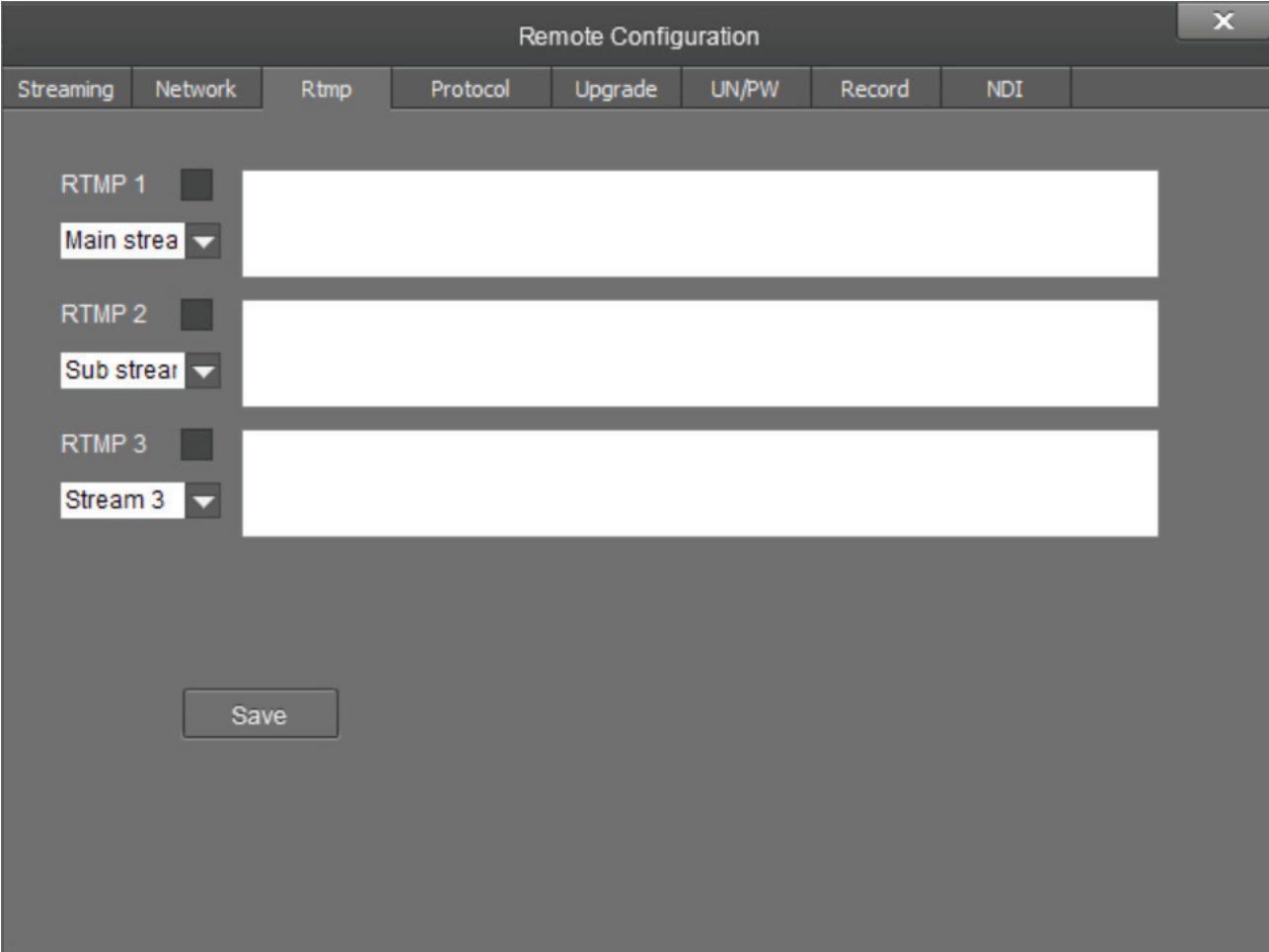
While in DHCP mode, the IP address, Mask, Gateway, DNS 1, & DNS 2 will be automatically assigned. Default IP address: 192.168.1.180 while in Static or no connection to a DHCP server.

# Rtmp Tab

This tab allows you to send any of the camera's three video streams directly to a live streaming service using one of four available RTMP channels.

For example, if we want to send the camera's Main Stream (Main Video feed) to a live streaming service using RTMP 1, the steps are as follows.

1. Check the box next to RTMP 1 to enable its RTMP stream.
2. Make sure Main stream is visible in the drop-down tab beneath RTMP 1.
3. Copy and paste the stream URL of your live live streaming service into the box beside RTMP 1 and ensure it ends in a forward slash.
4. Copy and paste your stream key directly after the URL you pasted into the box.
5. Click save.
6. Now you should see the camera's Main Stream live on YouTube.



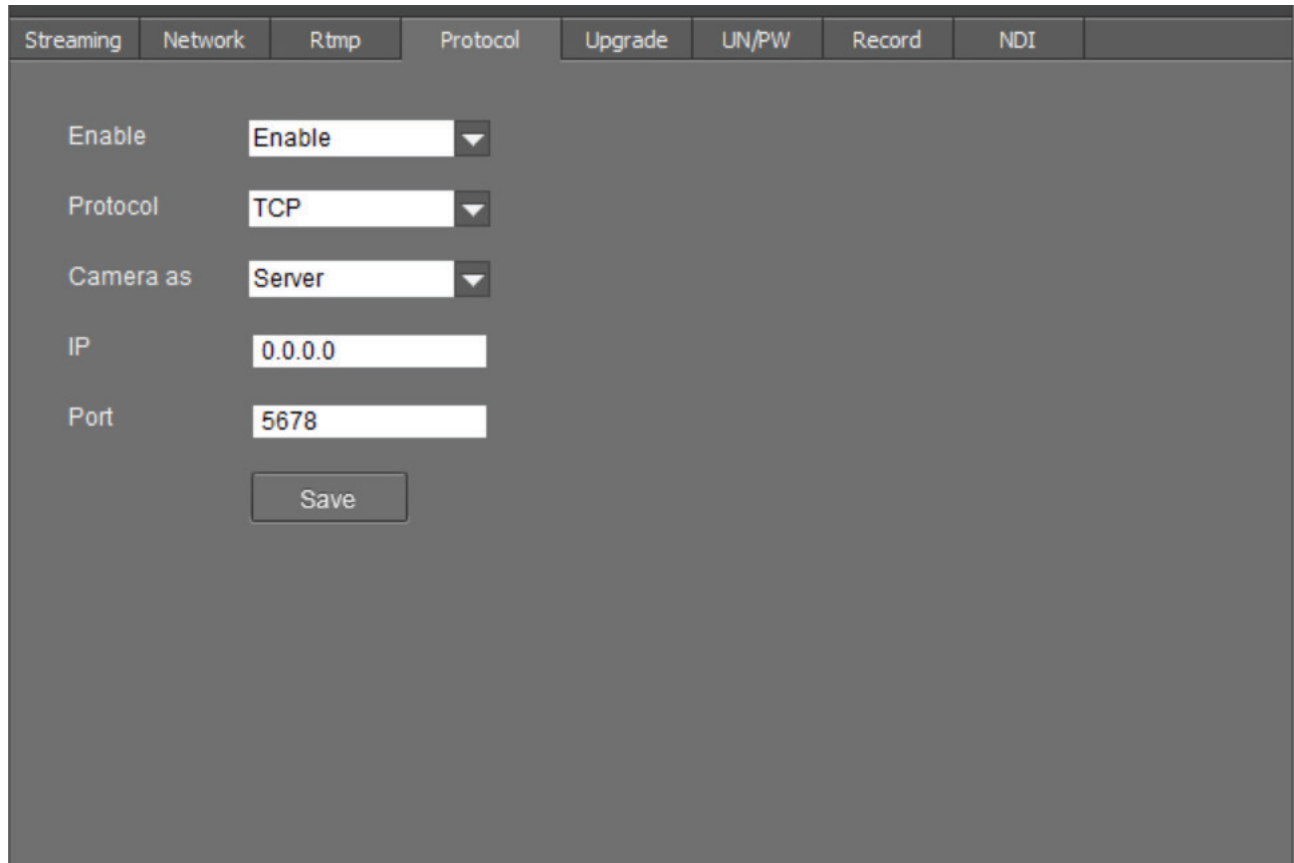
The screenshot shows a window titled "Remote Configuration" with a close button (X) in the top right corner. The window has several tabs: "Streaming", "Network", "Rtmp", "Protocol", "Upgrade", "UN/PW", "Record", and "NDI". The "Rtmp" tab is selected. Below the tabs, there are three rows for RTMP configuration:

- RTMP 1**: A checkbox is checked. A dropdown menu is set to "Main strea". A large text input field is empty.
- RTMP 2**: A checkbox is unchecked. A dropdown menu is set to "Sub strear". A large text input field is empty.
- RTMP 3**: A checkbox is unchecked. A dropdown menu is set to "Stream 3". A large text input field is empty.

At the bottom of the window, there is a "Save" button.

# Protocol Tab

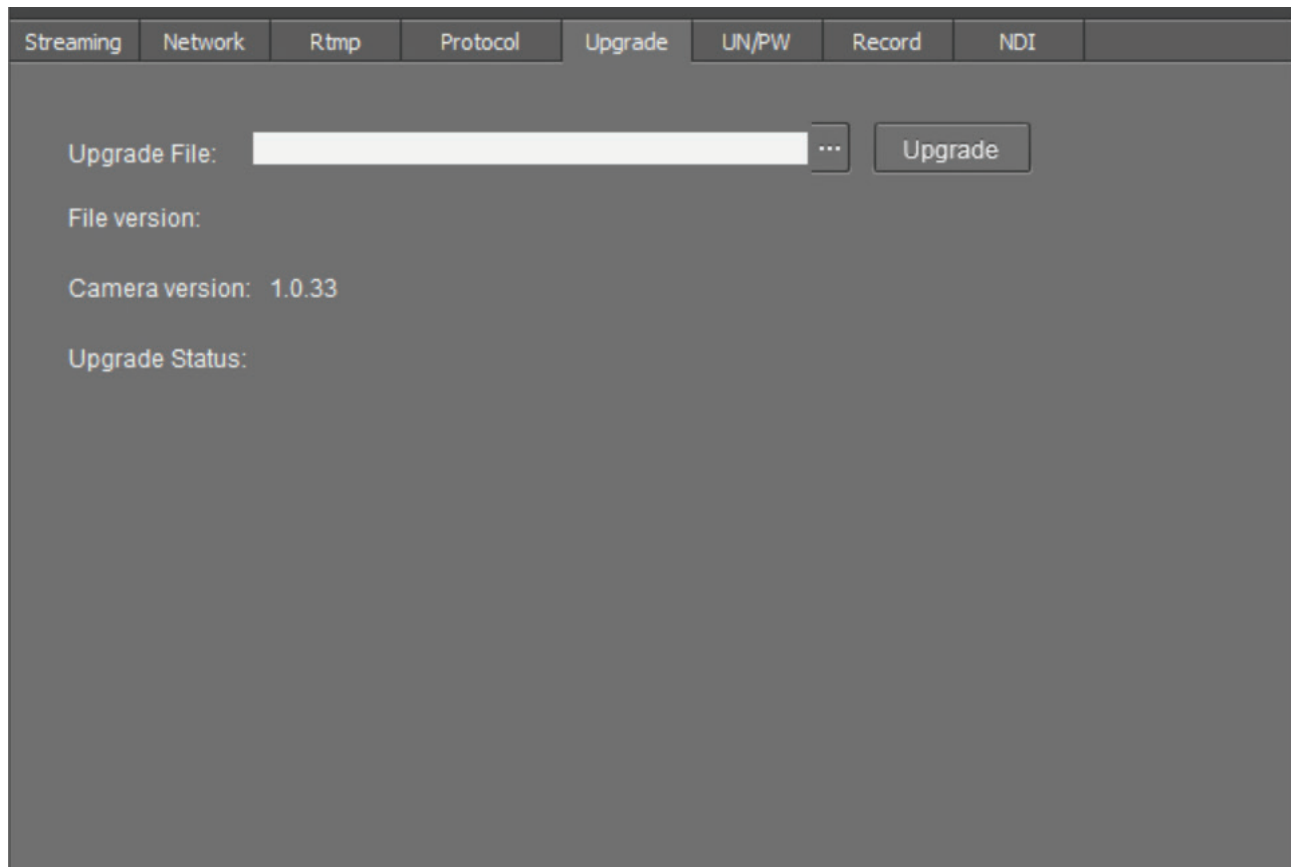
This tab allows for the enabling of TCP or UDP control methods. It also allows you to switch from a client device to a server device. TCP and UDP control methods are disabled by default. If you intended to control the camera using an IP or serial joystick, either TCP or UDP will need to be enabled depending on the protocol used by the device.



The screenshot shows a web interface with a dark grey background and a light grey header. The header contains several tabs: Streaming, Network, Rtmp, Protocol (which is active), Upgrade, UN/PW, Record, and NDI. Below the header, there are five configuration fields, each with a label on the left and a white input field on the right. The fields are: 'Enable' with a dropdown menu showing 'Enable'; 'Protocol' with a dropdown menu showing 'TCP'; 'Camera as' with a dropdown menu showing 'Server'; 'IP' with a text input field containing '0.0.0.0'; and 'Port' with a text input field containing '5678'. Below these fields is a rectangular 'Save' button.

# Upgrade Tab

This tab is used for upgrading the camera's firmware, and here you can also see the current version of the firmware the camera is using.



## Upgrading Your Camera's Firmware

1. To check your firmware, visit <https://huddlecamhd.com/firmware-updates/>.
2. On the left-hand side of the page, you will see a list of all HuddleCamHD camera models. Select HC20X-SIMPLTRACK3. This will bring you to a page where there will be a download link to the latest firmware file.
3. Once the file has been downloaded, open it. There will be an application file, two text documents, and a \*.img file.
4. If the number on the \*.img file and the camera version number shown in your software match, you have the latest firmware. If not, click the three dot button in the software next to the upgrade button. Then select the \*.img file in the pop-up window.
5. With the \*.img file loaded, click upgrade.
6. Your camera will reboot and once the restart is completed, it will have the latest firmware.

# UN/PW Tab

This tab is for managing the security of your camera. If you would like to change your camera's name, you can do so here. You can also set a password for the camera. The old password is defaulted to "admin".

You can set the time format and choose whether or not it is displayed on screen.

This Tab also allows you to reset and reboot your camera.

The screenshot shows the 'UN/PW' configuration tab in a camera's web interface. The interface has a dark grey background with white text and input fields. At the top, there is a navigation bar with tabs: Streaming, Network, Rtmp, Protocol, Upgrade, UN/PW (selected), Record, and NDI. Below the navigation bar, the configuration options are arranged in two columns. On the left side, there are three password input fields labeled 'Old password', 'New password', and 'Confirm', each followed by a 'Save' button. Below these is a 'Camera name' input field containing 'SimplTrack3' and a 'Save' button. At the bottom left, there are two buttons labeled 'Reboot' and 'Reset'. On the right side, there is a 'Local Time' field showing '2023-10-10 12:35:35' with an 'OK' button. Below that is a 'Display Time' checkbox which is checked. The 'Time Format' is set to 'YYYY-MM-DD HH:mm:ss' with a dropdown arrow and an 'OK' button. Below that is an 'Enable NTP' checkbox which is checked. The 'TimeZone' is set to '+00:00' with a dropdown arrow. At the bottom right, there is an 'NTP Server' input field with an 'OK' button.

- **Changing your password:**

1. Enter your Old password. If you've never used a password for this camera, the old password will be "admin" by default.
2. Enter your new password in the box below.
3. Enter your new password again in the confirm box.
4. Click Save.

- **Enable NTP:** Checking this box will enable compatibility with Network Time Protocol.

- **Display Time:** Check this box to display time over main video feed.



# Record Tab

This tab allows you to toggle the camera's recording to a connected SD card on or off. This tab will only be visible while there is an SD card slotted into the camera. When connecting the SD card, it is recommended to restart your camera.

The Status light will flash when recording is in progress.

At the bottom of the tab, you can view the capacity of your connected SD card, the amount of space used, and the remaining space you have available for recording.



## Recording Video Directly to your Desktop:

To record video to your desktop, there is no need to visit the record tab. Simply click the red record icon in the bottom right-hand corner of the main view screen. When you are done, click the stop button to the right of the record button.

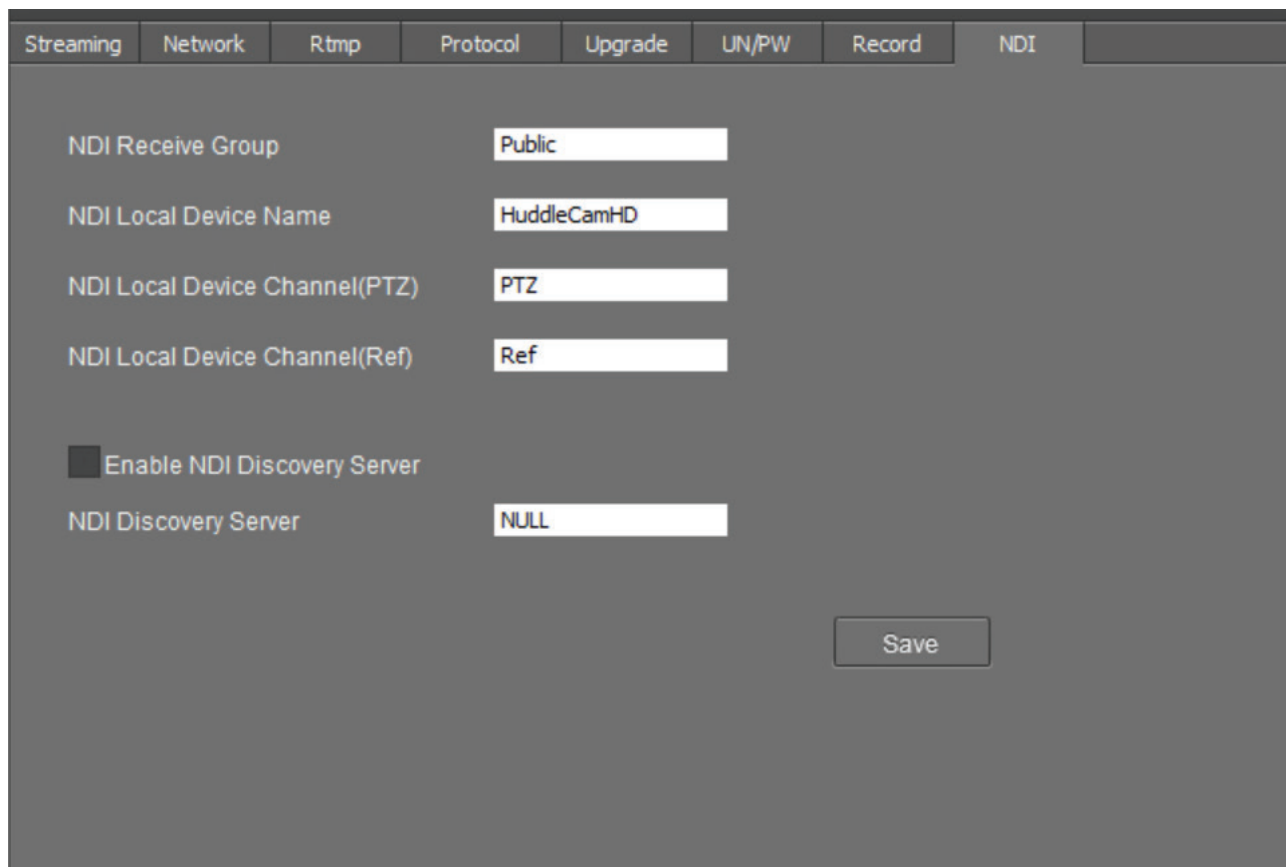
The video file can be found in your file explorer under the following folders:  
Local Disk (C): > Program Files (x86) > HuddleCamHD > save\_video

# NDITab

This tab allows you to configure the camera's NDI parameters.

The local device name as recognized by other NDI devices.

If your device is not being seen by other NDI devices, you can enable NDI Discovery Server by checking the box and clicking save.



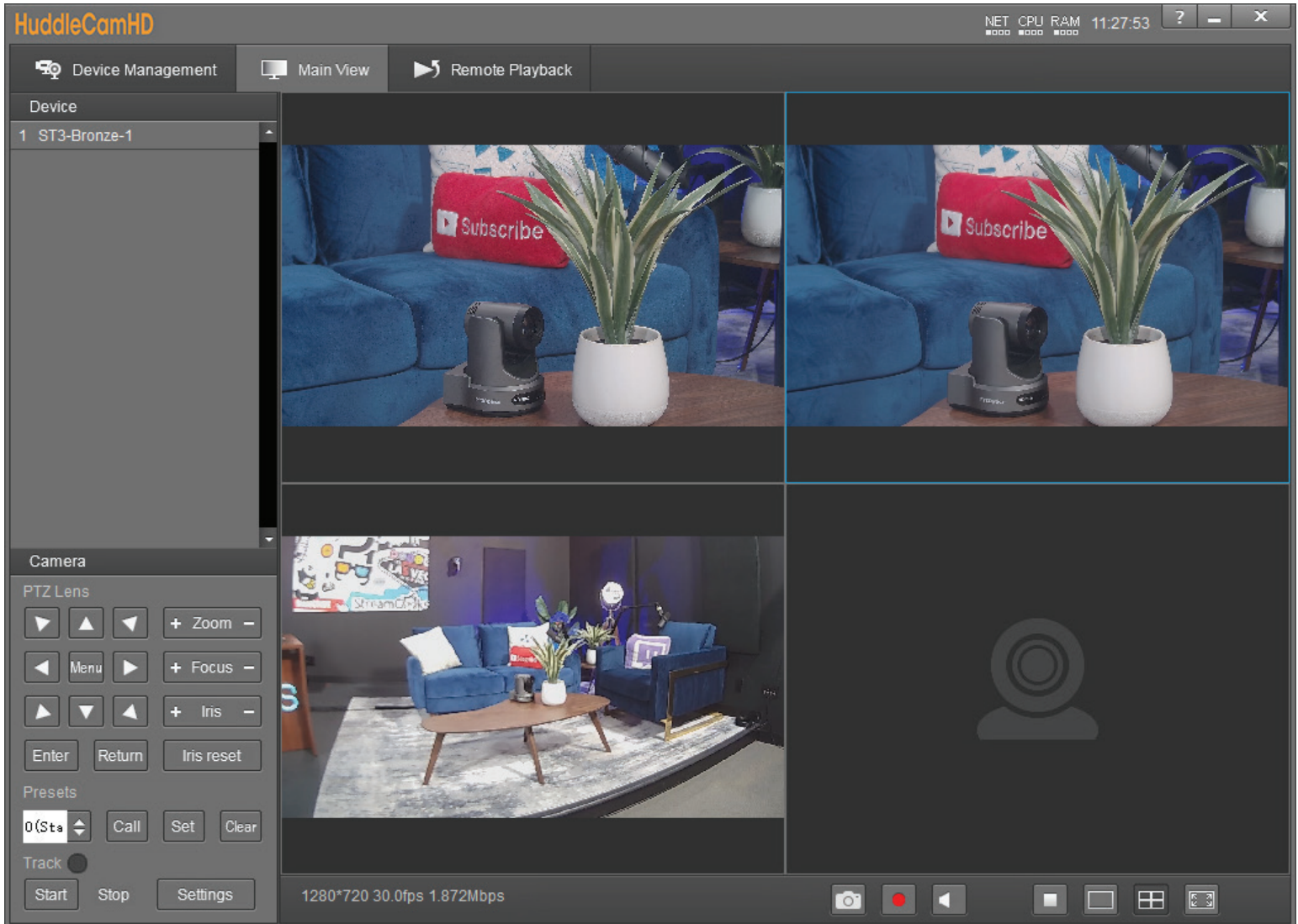
The screenshot shows a software interface with a dark grey background and a light grey header bar. The header bar contains several tabs: Streaming, Network, Rtmp, Protocol, Upgrade, UN/PW, Record, and NDI. The NDI tab is selected. Below the header, there are several configuration fields:

- NDI Receive Group: Public
- NDI Local Device Name: HuddleCamHD
- NDI Local Device Channel(PTZ): PTZ
- NDI Local Device Channel(Ref): Ref
- Enable NDI Discovery Server:
- NDI Discovery Server: NULL

A Save button is located at the bottom right of the configuration area.

# Main View Panel & Auto-Tracking Setup

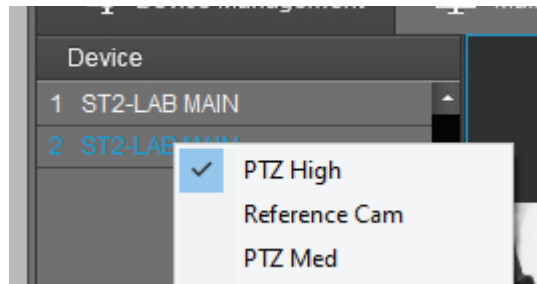
This panel gives you access to the **Camera's Video Feed**, **PTZ Control**, **OSD Menu**, **Preset Control**, **Settings**, **Recording**, & more.



Clicking on the main view panel will bring up a window comprised of three sections.

1. The **Device section**, located in the top left of the window, shows you every camera that is currently connected to the HuddleCamHD Tracking Control Software.
  - **Double-click a Device:** Selects the device and brings its main RTSP video feed into the viewing window. You can select multiple devices for simultaneous viewing while in multiview.
  - **Right-click a Device:** While in Main View with a cell selected, you can right-click the camera in the Device section. This will allow you to select which of the three video streams you would like to see in the selected cell. With four available cells, you can view all of the camera's video streams simultaneously.
    - The SimplTrack 3's three video streams are as follows:
 

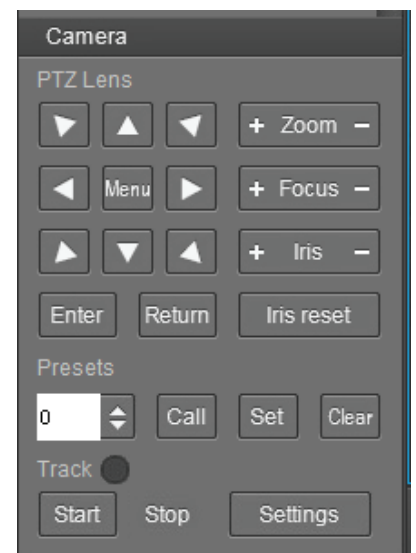
○ <b>PTZ High:</b>	<b>Main RTSP feed</b>
○ <b>Reference Cam:</b>	<b>Sub RTSP feed</b>
○ <b>PTZ Med:</b>	<b>RTSP Stream 3 feed</b>



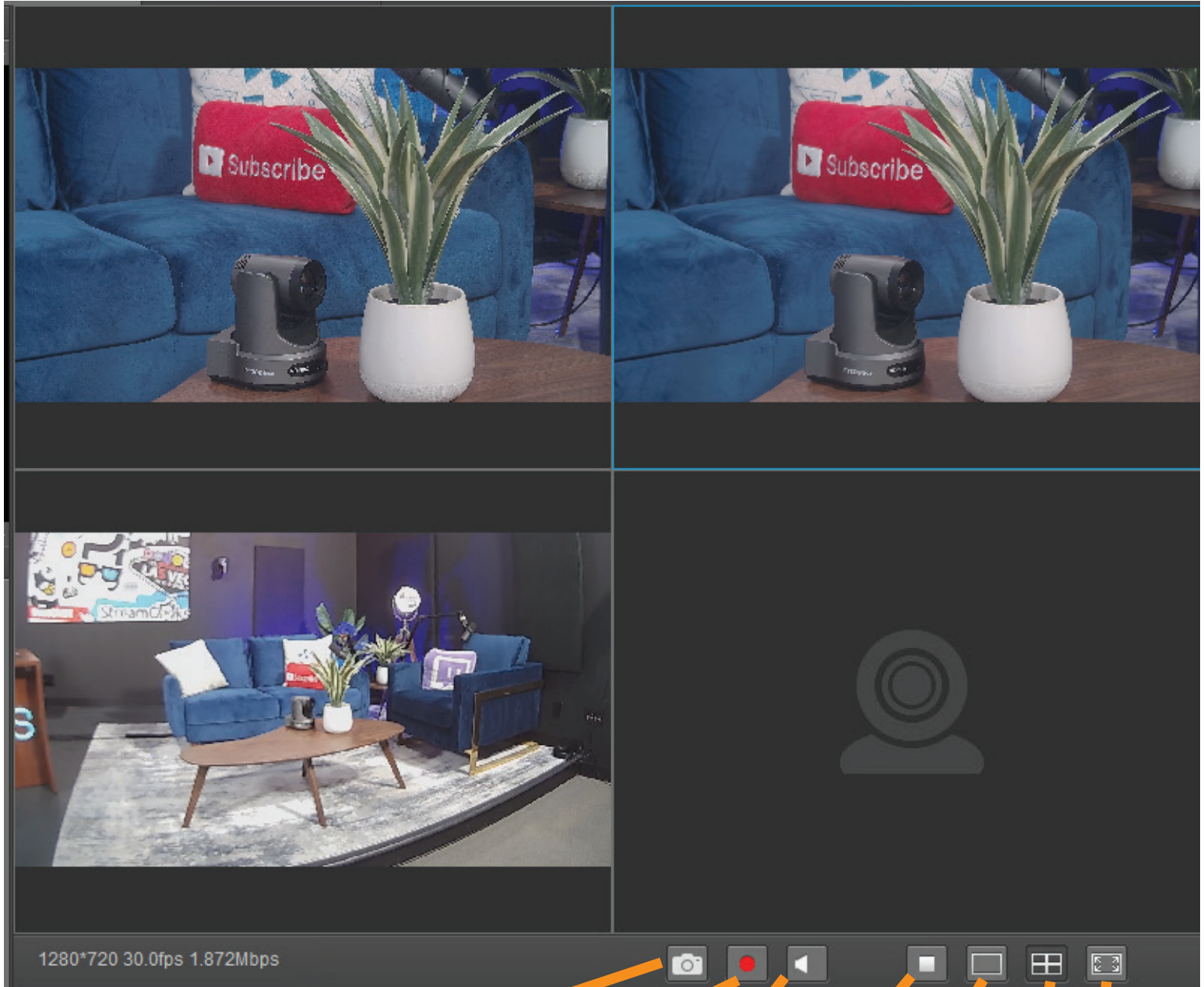
2. The **Camera Control section**, located in the bottom left, allows for manual P/T/Z control of the camera, as well as the ability to adjust the **Focus, Zoom, Iris**, access the **OSD** via the menu button, **Set** and **Call Presets, Start** and **Stop Tracking**, and access to the **Settings Menu**.

### Setting, Calling, and Clearing a Preset:

1. Pan, tilt, and zoom the camera into the desired location.
2. Use the up and down arrow buttons or type a number into the preset box. For this example use preset #4.
3. Click "Set".
4. Move the camera to a different location.
5. Input preset #4 into the preset box, then click "Call". The camera will move back to the preset #4 location.
6. If you want to change preset #4, you can input it into the preset box and click, "Clear". You can now create a new preset camera position using #4.



- The **Live Video Feed section** is on the right half of the window. Along the bottom of the window, there are options to take a screenshot, record, mute, or unmute the audio coming from a connected device, stop the video feed, enter a single window view, enter a quad view, and lastly enter a full-screen view.



Screen Shot

Record

Mute/Unmute

Stop

Single View

Multi View

Full Screen

# Camera Tracking Settings

Clicking the Settings button will bring up the camera tracking settings and there are four tabs used to fine-tune the SimplTrack 3 tracking settings. The tabs are **Basic 1**, **Basic 2**, **Senior 1 (Not Active in auto-tracking mode)**, and **Senior 2**.

After connecting your camera to the software and checking to see that it's been configured properly, you will need to go into the camera tracking settings to set up auto-tracking.

## Basic 1 Tab

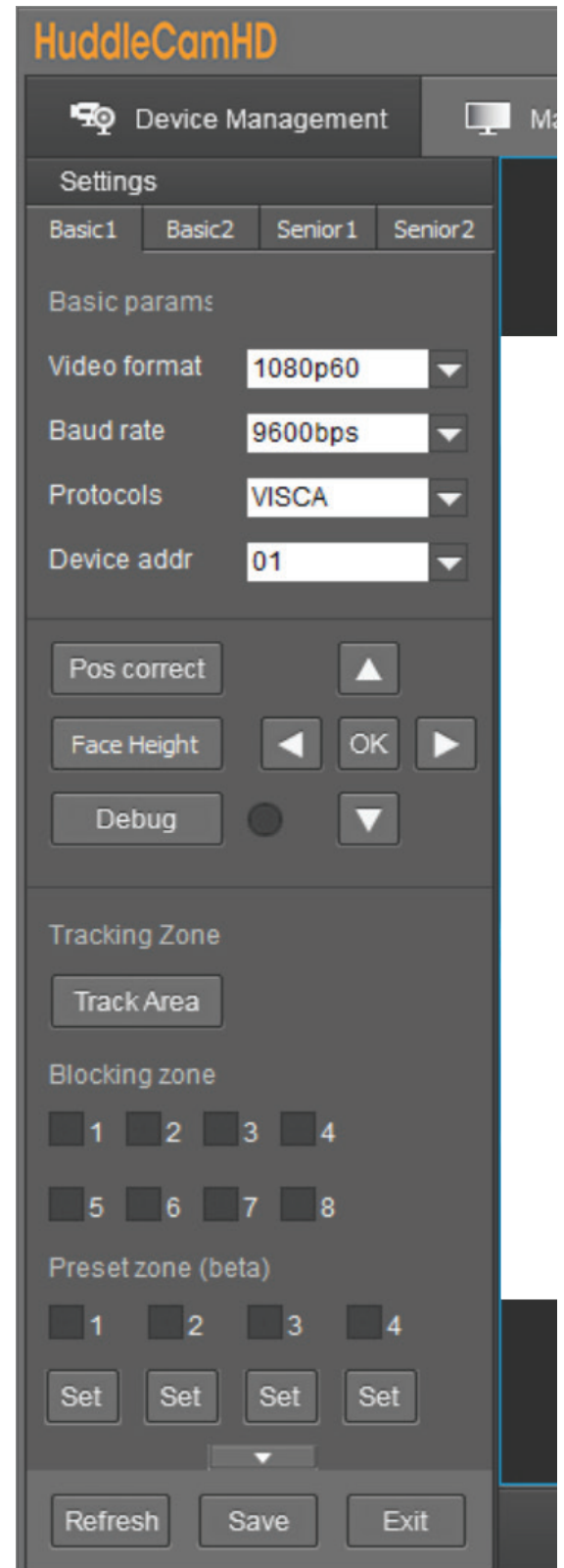
In the basic parameters section, you can select the **Video format** for the tracking lens of the camera, the **Baud rate**, the **Protocol**, and the **Device address**.

Below the basic parameters section are the **Position Correct**, **Face Height**, and **Debug** buttons.

**Position Correct:** We have built this feature into the software to realign the primary optical zoom lens with the tracking sensor. Clicking the Position Correct button will bring up the sensor lens view alongside the main lens view with a crosshair in each respectively. Use the arrow keys to move the crosshairs into matching positions, then press okay. Press the Return button to close position correct.

**Face Height:** Clicking the Face Height button provides up and down arrow keys and an adjustable range from 0 to 200 to fine-tune the image frame while tracking based on the height of the presenter's face. Click the Face height button, adjust the height up or down using the arrow keys, press okay, and then press return.

**Debug:** This feature is Off by default. Turning this feature on will place a box around anything the camera thinks is a tracking subject, showing precisely what the camera is tracking. This way, you can correct tracking errors by adjusting the Lecturer zone or adding a Blocking zone over an object the camera mistakenly determines it needs to track.

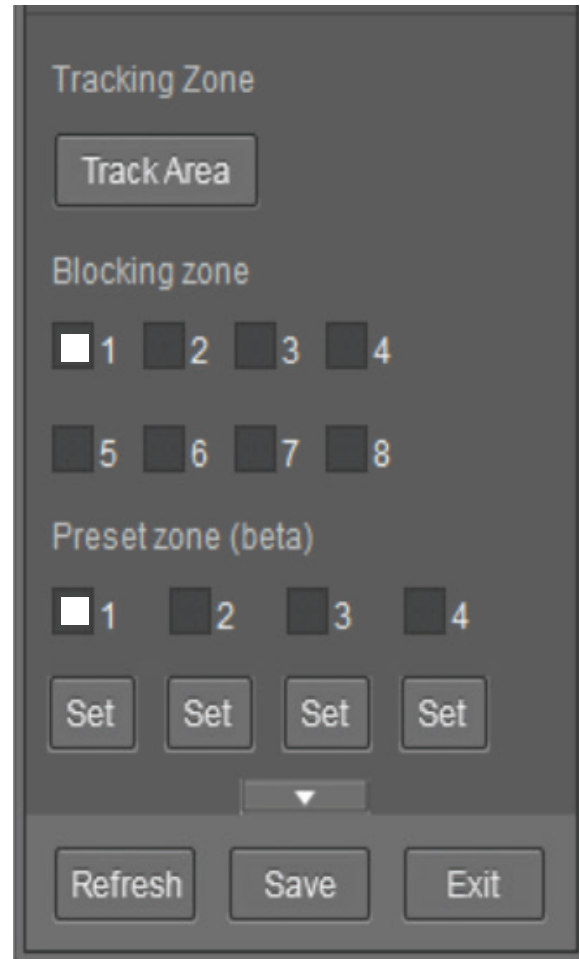


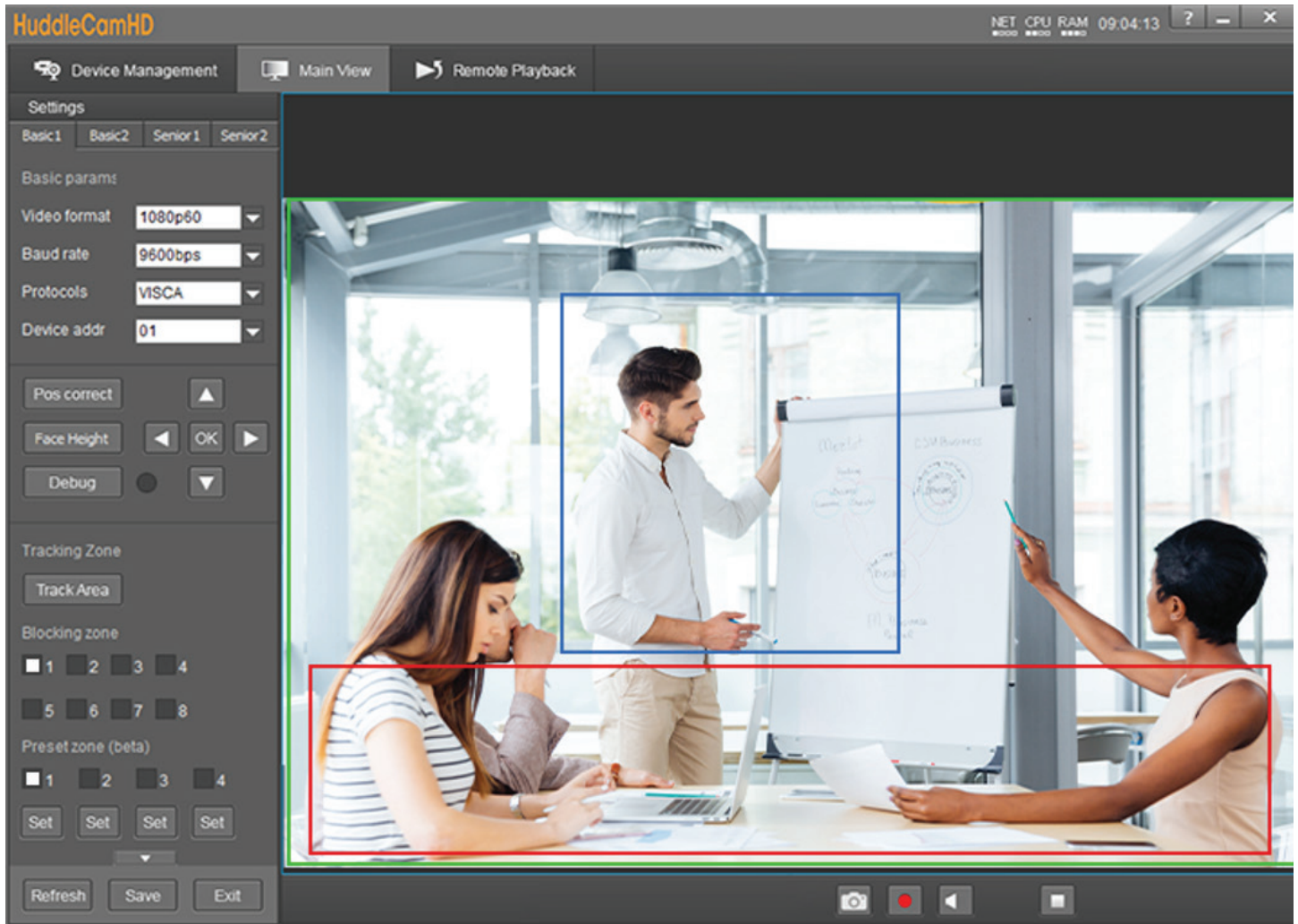
# Tracking Zone & Blocking Zones

These zones determine the area in which the camera tracks, what obstacles the camera needs to avoid, and areas in which you want the camera to hold or maintain a shot.

**Track Area:** We recommend users set this zone before setting up any other zones. This is the broad area the user will permit the camera to track. The camera will only tracking outside this area if the outside platform feature is turned on. Clicking the Track Area button will move your mouse cursor into the display window. Click and drag the box to highlight the area you want the camera to track within. Press save to save this area.

**Blocking Zones:** These zones are used to stop the camera from tracking in specific areas and to stop the camera from tracking confusing objects. To define these areas, check the box next to the numbered blocking zone, then click and drag your cursor in the display window to highlight an area you want the camera to ignore.



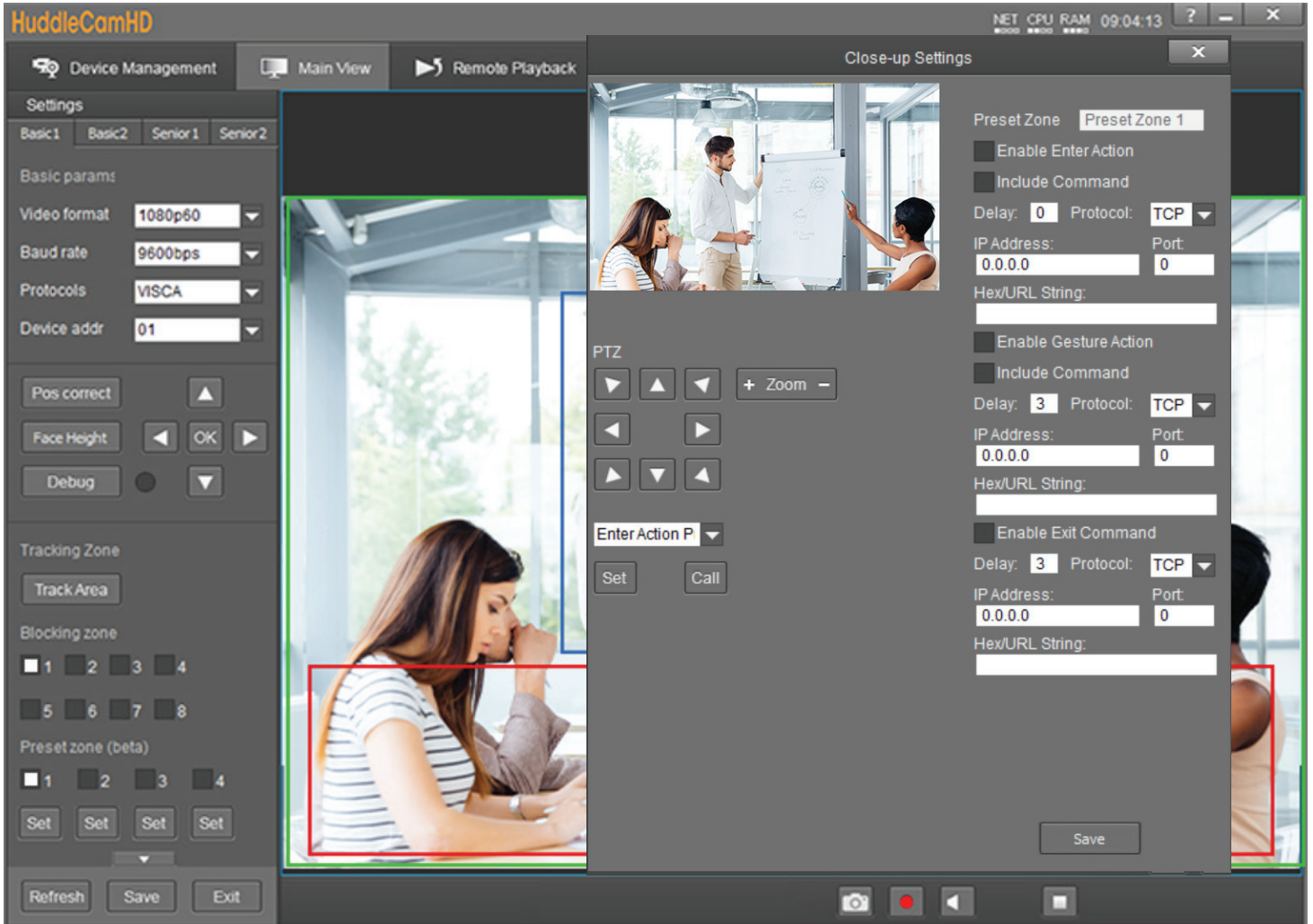


In the use case above, the SimplTrack 3 has been placed in a studio to capture a demonstration that has two main presentation areas.

- **Track Area:** This zone is represented by the green bounding box and has been drawn to allow auto-tracking only inside its boundaries.
- **Blocking Zones:** These are placed in areas where we do not want the camera to track and are represented by red bounding boxes. In the Basic 2 section, we will discuss the outside platform feature, which will allow a presenter who was initially locked onto while inside the track area to be tracked while moving outside it. However, the camera cannot begin tracking a presenter starting inside a blocking zone.
- **Preset Zones:** In the above image, there is a blue box inside the Track Area indicating a Preset Zone. When the presenter enters this blue Preset Zone, the camera will go to a predefined position, fixing the frame on the presenter and the area until the presenter leaves the Preset Zone.



# Preset Zones



**Preset Zones:** When a presenter enters this area, the camera will call a preset and remain there until the presenter leaves the area. To set a preset zone, click the set button underneath the corresponding zone. Once clicked, a pop up window will show the video feed, PTZ controls for positioning, and a few cells for action triggers.

From here you can use the ptz controls to move the camera to the preset position you would like it to move to whenever the presenter enters the preset zone, then click set and save.

**(Note:** We recommend using blocking zones to box out certain reflective surfaces, objects that may resemble a human, and high-traffic areas where tracking is unwanted. Zones should not overlap other zones. For best results, make sure each zone border has a gap between each other zone border.)

Please see the use case example of the Track Area, Blocking Zones, and Preset Zones on page 39.

## Call Action Triggers For Preset Zones

These are used to implement Hex commands/ URL Strings. These commands are typically used by advanced users interested in programming triggered actions between devices. For most users, these features can be ignored.

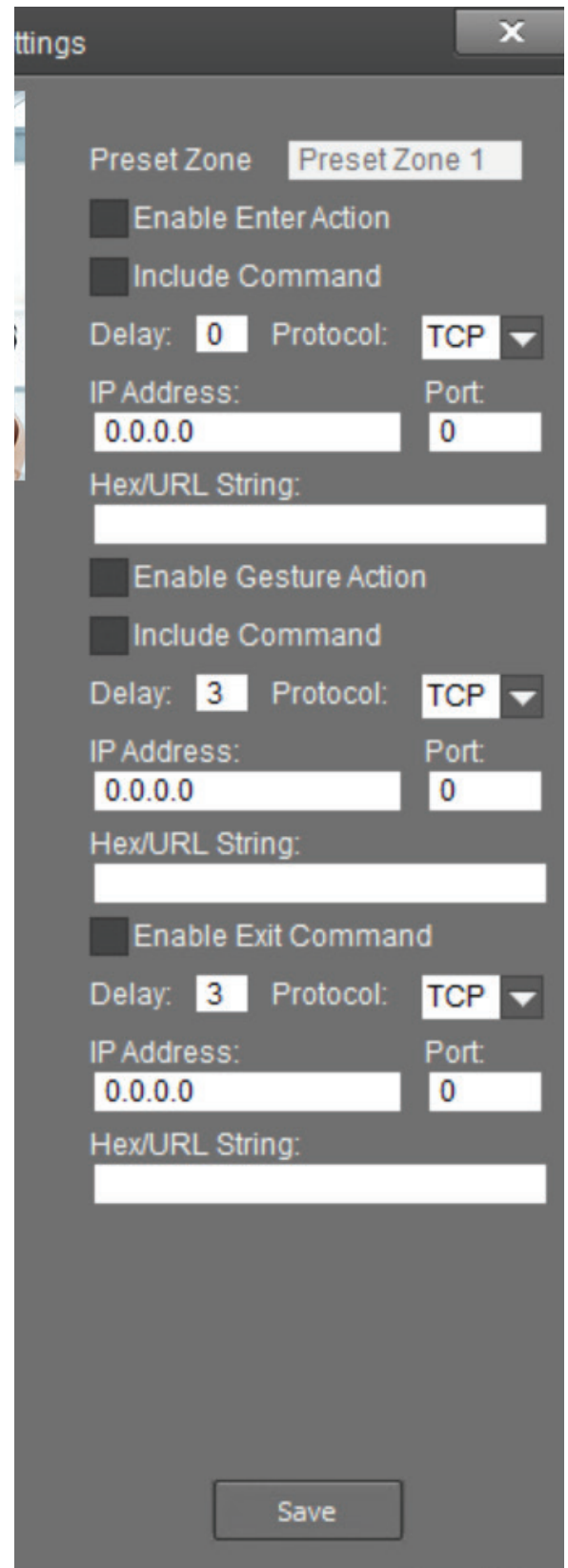
### Example:

1. Enable a hex command or URL string by first checking the box to the corresponding preset zone.
2. Determine the time delay by entering a value from 0 to 99. This will tell the software how long to wait after the camera has entered the selected preset before it will trigger the hex command or URL string.
3. Determine the Protocol. In the drop-down tab next to protocol, choose from TCP, HTTP, or UDP.
4. Enter the device's IP address you want to send the Hex command or URL string to.
5. Enter the port number.
6. Enter a hex command or URL string of the command you wish to send.
7. Click Save and Exit.
8. Resume use of the camera. Now whenever the camera moves into the selected preset zone, it will trigger the HEX command or URL string to be sent to the desired device.

What does all this mean?

Using this feature, you can program your camera so that every time it enters the preset zone you selected, it will tell another device that uses the same protocol to do something.

Let's say the SimplTrack 3 is part of a multi-camera setup in a theater, and the other device is a camera. When the SimplTrack 3 moves into the preset zone, the other camera is triggered to move and look at a specific area on the stage.



The screenshot shows the 'Settings' window for HuddleCamHD, specifically the 'Call Action Triggers' section. It is titled 'Preset Zone 1'. There are three identical sections for different actions: 'Enter Action', 'Gesture Action', and 'Exit Command'. Each section has a checkbox to enable it, a checkbox to 'Include Command', a 'Delay' field (set to 0, 3, and 3 respectively), a 'Protocol' dropdown menu (all set to 'TCP'), 'IP Address' and 'Port' fields (all set to '0.0.0.0' and '0' respectively), and a 'Hex/URL String' text input field. A 'Save' button is located at the bottom right of the window.

## Basic 2 Tab

**Tilt Motion:** Check this box to allow the camera to tilt while tracking. Uncheck to disable.

**Permanent Track:** Check this box to allow the camera to follow any moving object while tracking. Uncheck to disable.

**Auto Zoom:** Check this box to allow the camera to zoom in or out while tracking. Uncheck to disable.

**Outside Platform:** Check this box to allow the camera to track the subject as they move outside the specific Lecturer zone. Uncheck to disable.

**Reset Button:** Resets all tracking parameters.

**Track Sens.:** Adjust the sensitivity of movement detection. 0 to 7.

(Note: A lower sensitivity requires more movement to trigger camera movement. A higher sensitivity requires less movement to trigger camera movement.)

**Pan Speed:** Adjust the speed at which the camera pans while tracking. 0 to 7.

**Tilt Speed:** Adjust the speed at which the camera tilts while tracking. 0 to 7.

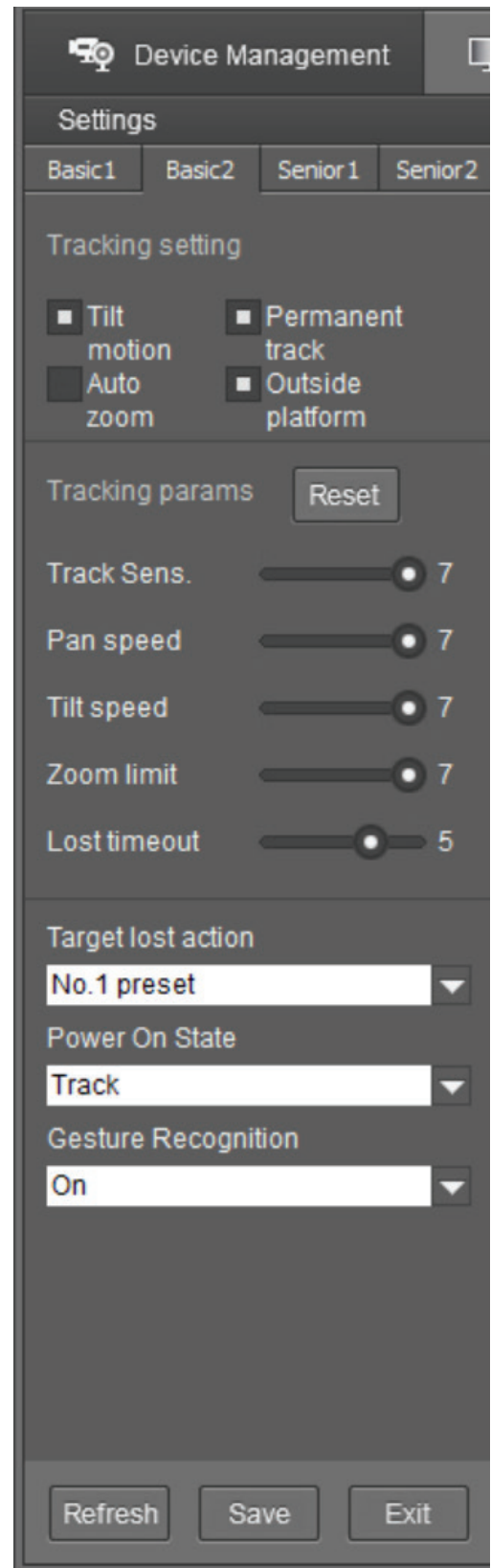
**Zoom Limit:** Adjust how closely the camera zooms while tracking. 0 to 7.

**Lost Timeout:** Affects how quickly the camera returns to preset zero after losing a presenter. 0 to 7 seconds.

**Target Lost Action:** What the camera does when it loses a presenter. Options are to return to preset 0 or preset 1 or stay in position.

**Power on State:** Determine whether the camera auto-tracks when powered on. It can be disabled by switching to Do not track.

**Gesture Recognition:** Turn “On” or “Off” Raising both hands above the elbows to turn the cameras attention to you.



## Senior 2 Tab

**Mode:** Adjust the control method of the camera.

- Options include: Network & Serial Port.

**Connected Protocol:** Protocol connection type.

- Options include: TCP & UDP

**As:** Designate whether the camera is a server or client

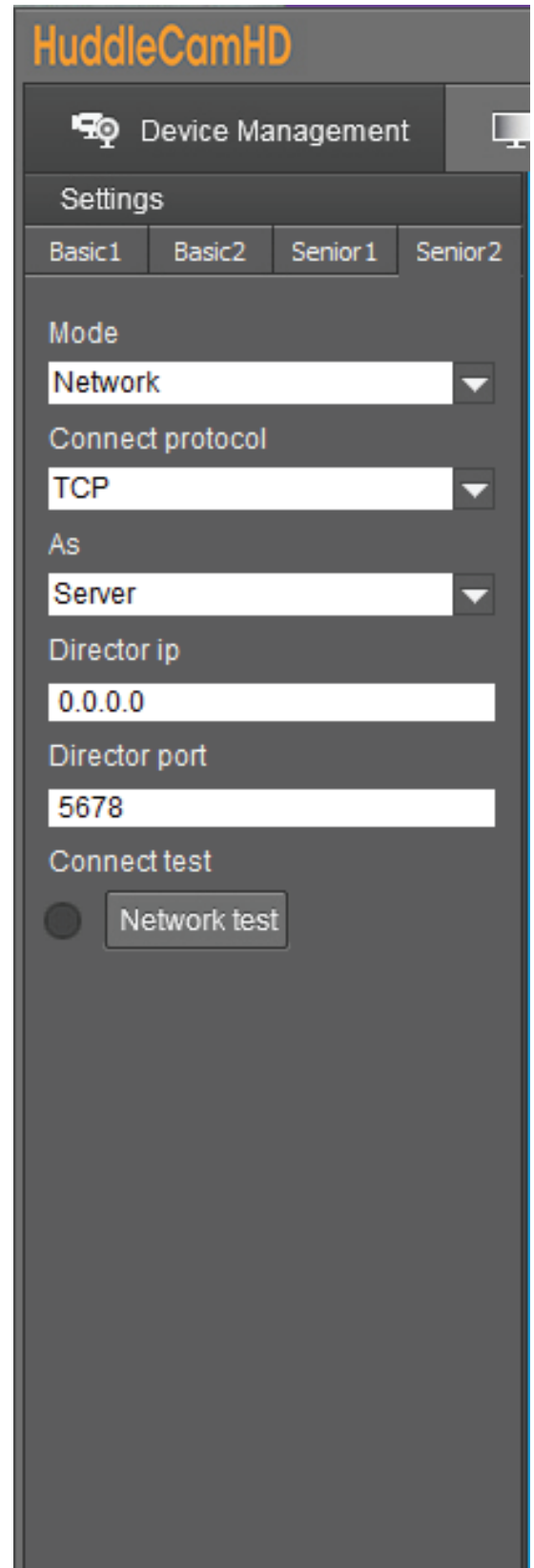
- Options include: Server & Client

**Director IP:** Designate the IP address of the device you wish to control while in Server mode

**Director Port:** Designate the Port of the device you wish to control while in Server mode.

**Connection Test:** Performs a connection test with the device and displays a status light

- Green: The connection is successful, and commands can be sent
- Red: The connection has failed and needs to be adjusted



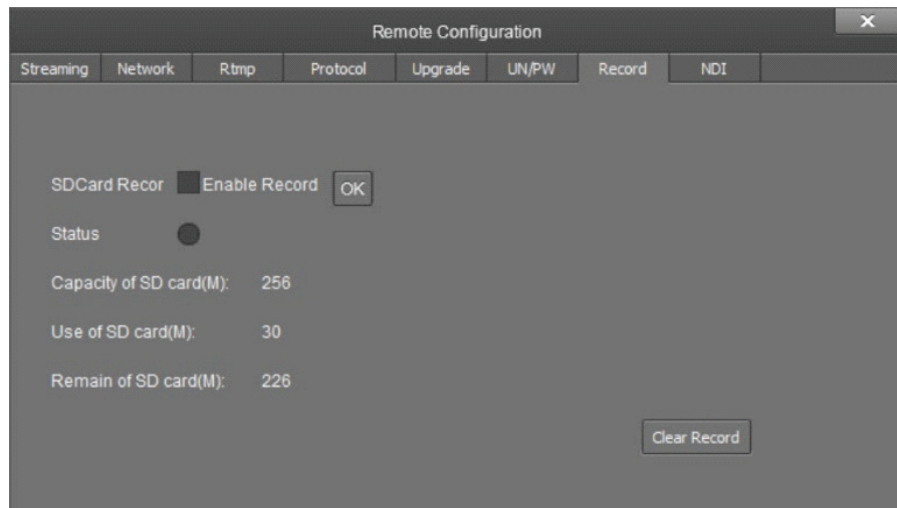
# Remote Playback Panel

## Photobooth Functionality

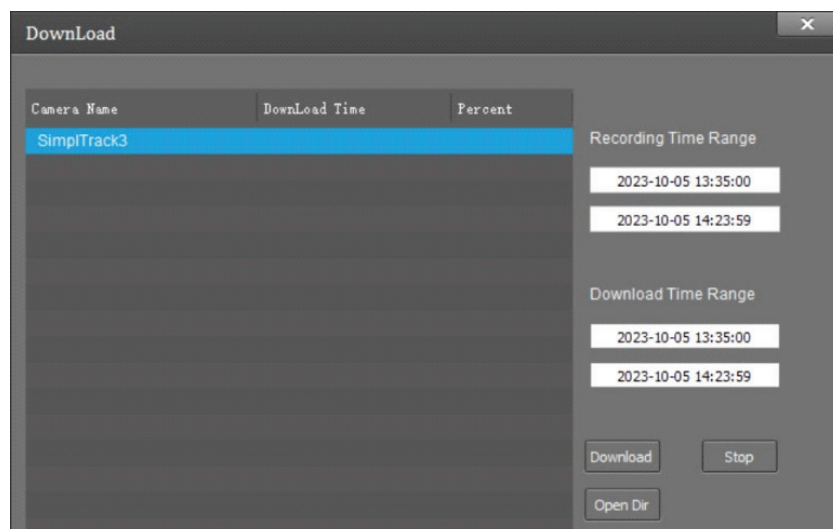
The Photobooth functionality allows you to take photos and record videos to a connected SD card. To do so you will need a Micro SD card plugged into the Micro SD Slot on the back of the camera. For best results, we suggest formatting the Micro SD card to NTFS.

### Recording Video to the Micro SD Card

1. Select your camera from the Device Management page and select "Remote Configuration".
2. Select the "Record" tab to begin setup. This tab is only available if a Micro SD card is connected to the camera.



3. Click the "SDCard Recorder" checkbox, then click the OK button to begin recording.
  - o To disable, simply uncheck the "Record" checkbox then click OK.
4. To download the recorded video, enter the "Remote Playback" page from the top of the software.
5. Select your camera by double-clicking the name from the Device list.
6. Click the down arrow button to reveal the Download window, as shown below.



7. Double-click the camera, then click the Download button to name the video file and browse your PC for a storage location.

### **Recording Video to the Micro SD Card**

1. Select your camera from the Main View page.
2. Click the Record button at the bottom of the software. This will immediately start recording to your computer.
3. Click the Record button again to stop the recording.
4. To download the recorded video, enter the "Remote Playback" page from the top of the software.
5. To locate the video use the File Explorer window and go to:  
C:\Program Files (x86)\HuddleCamHD\HuddleCamHD\save\_video

### **Taking Snapshots from Live Video**

1. Select your camera from the Main View page.
2. Click the snapshot button to take a snapshot of the camera's current view.
3. This will open a window prompting you to name the file and save it to your computer.

### **Taking Snapshots from a Video on Micro SD card**

1. Select your camera from the Remote Playback page.
2. Scrub the video for the timestamp you would like to take a snapshot of.
3. Click the snapshot button to take a snapshot of the camera's current view.
4. This will open a window prompting you to name the file and save it to your computer.

# Auto-Framing Mode

## Switching From Auto-Tracking to Auto-Framing

To switch to Auto-Framing Mode, go into the camera's On-Screen Display using the IR remote or the Camera Management Software. Go to the System icon, scroll down to mode, select Auto-Framing, and click enter. The camera will then reboot. The camera will be in Auto-Framing mode when the reboot sequence is complete.

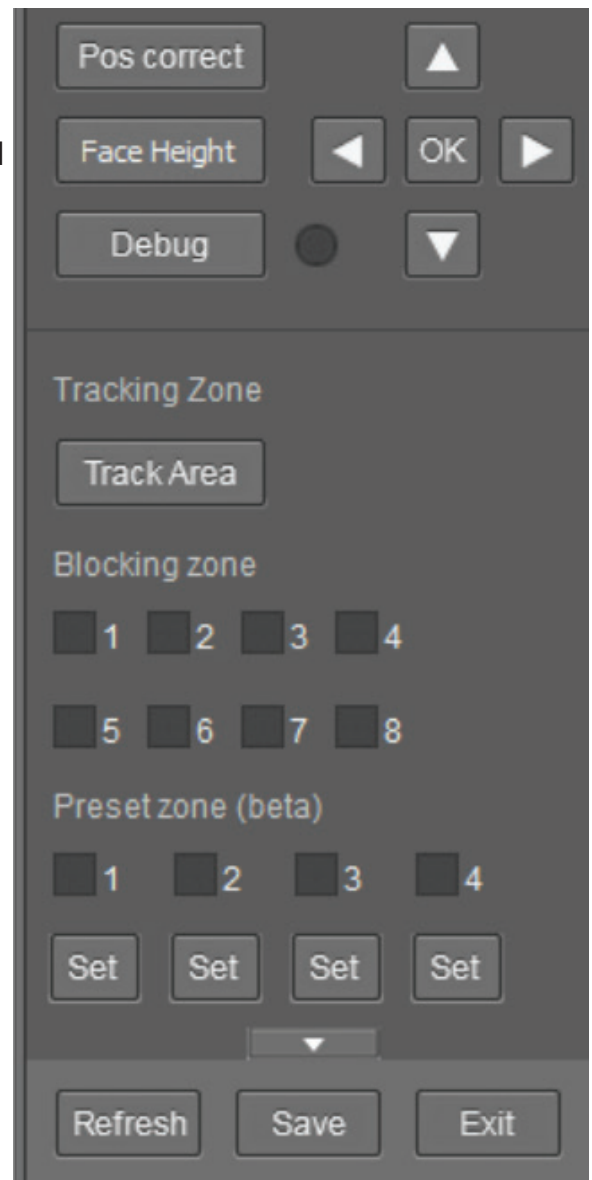
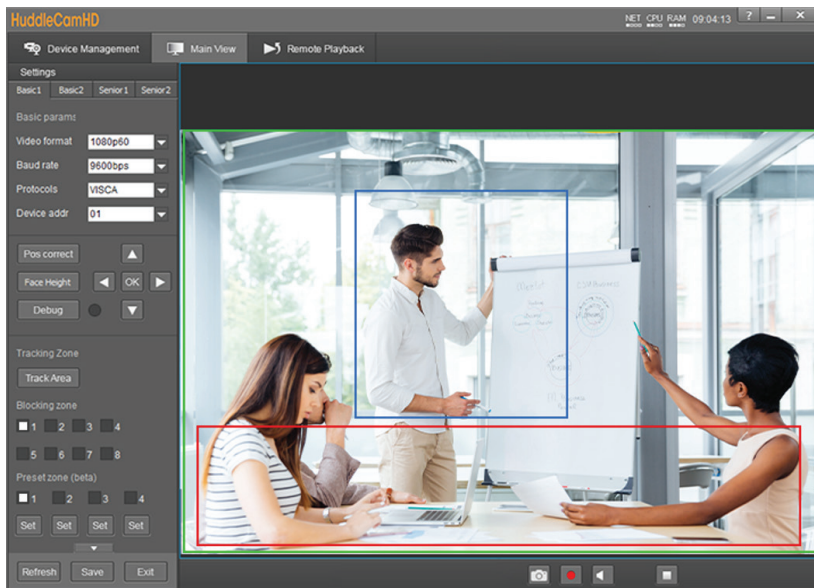
Once the camera is in Auto-Framing Mode, the camera settings can be adjusted using the camera management software.

Most of the software settings and capabilities available from the Camera Management software will appear the same while the camera is in Auto-Framing Mode, with a few exceptions.

To start and stop framing, you can click the start or stop buttons in the window's bottom-left-hand corner.

**Blocking Zones:** These perform the same functions as they do while the camera is in auto-tracking mode. These are used to block out confusing objects or areas where you do not want the camera to frame.

**Control Zones:** Instead of assigning Preset Zones while the camera is in Framing Mode, you can assign what are called Control Zones. You can set up to four control zones from the settings menu in the image here.



## Auto-Framing Setup

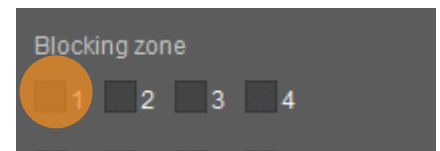
1.) To begin auto-framing, the first thing you will need to do is assign both Preset Zero and Preset One.

**Preset Zero Auto-Framing Mode:** Preset zero is your stage in this mode. The best way to assign your stage is to zoom the camera out in the area you will be auto-framing. Then save this position as preset zero.

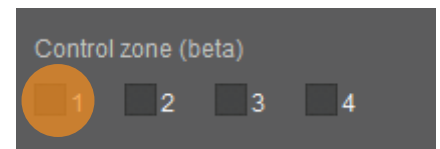
**Preset One Auto-Framing Mode:** Preset one is assigned to your subject in auto-framing mode. To assign your subject, zoom in the desired amount on a single person on stage. While the camera is auto-framing, it will use this shot as a reference point.

2.) Once preset zero and preset one have been assigned, enter the camera settings and create your blocking and control zones.

To create a blocking zone, click on the box next to the numbered blocking zone and then click and drag your mouse in the area you would like to block out.



3.) Next, create your control zones. To create a control zone, click on the box next to the numbered control zone and then drag your mouse to the area you would like to auto-frame.



***Note:** In most use cases, such as classrooms or conference rooms, you only need one control zone.*

4.) Enter the Basic 2 Tab and adjust your framing parameters after creating the zones.

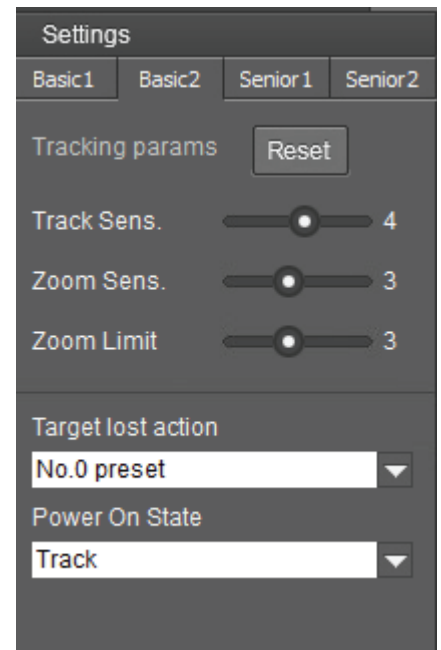
Here, you can adjust the tracking sensitivity. In this case, you will be adjusting the framing sensitivity. This represents the sensitivity to which the camera responds to a participant entering the frame and then can frame them and existing participants.

You can also adjust the camera's zoom sensitivity and the zoom limit.

**Target Lost Action:** This represents what the camera will do when there are no longer participants to frame.

You can set this as preset zero, preset one, or stay.

**Power On State:** This defines what the camera will do immediately after powering on. You can set this to "Track" or "Do not Track."





## Senior 1 Tab

This tab enables the implementation Hex commands/URL Strings. These commands are typically used by advanced users interested in programming triggered actions between devices. For most users, these features can be ignored.

### Example:

1. Enable a hex command or URL string by first checking the box to the corresponding control zone or the box for On Exit.
2. Determine the time delay by entering a value from 0 to 99. This will tell the software how long to wait after the camera has entered the selected control zone before it will trigger the hex command or URL string.
3. Determine the Protocol. In the drop-down tab next to protocol, choose from TCP, HTTP, or UDP.
4. Enter the device's IP address you want to send the Hex command or URL string to.
5. Enter the port number.
6. Enter a hex command or URL string of the command you wish to send.
7. Click Save and Exit.
8. Resume use of the camera. Now whenever the camera moves into the selected preset zone, it will trigger the HEX command or URL string to be sent to the desired device.

## Senior 2 Tab

This tab remains the same as in Auto-Tracking Mode.

**Settings**

Basic1
Basic2
Senior1
Senior2

**Control Zone 1**  
 Delay:  Protocol: TCP  
 IP Address:  Port:   
 Hex/URL String:

**Control Zone 2**  
 Delay:  Protocol: TCP  
 IP Address:  Port:   
 Hex/URL String:

**Control Zone 3**  
 Delay:  Protocol: TCP  
 IP Address:  Port:   
 Hex/URL String:

**Control Zone 4**  
 Delay:  Protocol: TCP  
 IP Address:  Port:   
 Hex/URL String:

Refresh
Save
Exit

# HCHD Serial VISCA & VISCA over IP Command List

ACK / Completion Messages		
Function	Command Packet	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		
Function	Command Packet	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 No. 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 mode.



Commands				
Command Set	Function	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	p = 0 (low) – 7 (high) pqrs: Zoom Position	
	Tele (Standard)	8x 01 04 07 02 FF		
	Wide (Standard)	8x 01 04 07 03 FF		
	Tele (Variable)	8x 01 04 07 2p FF		
	Wide (Variable)	8x 01 04 07 3p FF		
	Direct	8x 01 04 47 0p 0q 0r 0s FF		
CAM_Focus	Stop	8x 01 04 08 00 FF	p = 0 (Low) – 7 (High) pqrs: Focus Position	
	Far (Standard)	8x 01 04 08 02 FF		
	Near (Standard)	8x 01 04 08 03 FF		
	Far (Variable)	8x 01 04 08 2p FF		
	Near (Variable)	8x 01 04 08 3p FF		
	Direct	8x 01 04 48 0p 0q 0r 0s FF		
	Auto Focus	8x 01 04 38 02 FF		Auto Focus On / Off
	Manual Focus	8x 01 04 38 03 FF		
	Auto / Manual	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	pqrs: Zoom Position tuvw: 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	Function	Command Packet	Comments
CAM_RGain	Reset	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	pq: R Gain
CAM_BGain	Reset	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	pq: 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
	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	pq: 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	pq: 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	pq: 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	pq: Bright Position



Command Set	Function	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	pq: 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	pq: 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 Commander.
	Set	8x 01 04 3F 01 pp FF	
	Recall	8x 01 04 3F 02 pp FF	
CAM_Gain 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	pqrs: Camera ID (=0000 to FFFF)
IR_Receive	On	8x 01 06 08 02 FF	IR(remote commander) receive ON/OFF
	Off	8x 01 06 08 03 FF	
Information Display	On	8x 01 7E 01 18 02 FF	ON/OFF of the Operation status display
	Off	8x 01 7E 01 18 03 FF	



Command Set	Function	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) WW: Tilt Speed 0 x 01 (low speed) to 0 x14 (high speed) YYYY: Pan Position ZZZZ: Tilt Position
	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	
	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	
	DownRight	8x 01 06 01 VV WW 02 02 FF	
	Stop	8x 01 06 01 VV WW 03 03 FF	
	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	Reset	8x 01 04 3F 00 pp FF	pp: Memory Number (=0 to 255) Corresponds to 0 to 255 on the Remote Commander.
	Set	8x 01 04 3F 01 pp FF	
	Recall	8x 01 04 3F 02 pp FF	
CAM_AutoFrameTrigger	Off	8x 01 06 06 03 FF	Turns off the menu screen.
CAM_WebInterface	Enable	8x 01 04 3F 02 54 FF	Enable web interface
	Disable	8x 01 04 3F 02 55 FF	Disable web interface

## 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	pqrs: Zoom Position
CAM_FocusModelInq	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	pqrs: Focus Position
CAM_WBModelInq	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	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModelInq	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	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompModelInq	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	pq: ExpComp Position
CAM_BacklightModelInq	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	pq: Aperture Gain



Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PictureEffectModelInq	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.
SYS_MenuModelInq	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	pqrs: Camera ID
CAM_VersionInq	8x 09 00 02 FF	y0 50 00 01 mn pq rs tu vw FF	mnpq: Model Code (0504) rstu: ROM version vw: 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
		y0 50 01 FF	1920 x1080p/30
		y0 50 02 FF	1280 x720p/60
		y0 50 03 FF	1280 x720p/30
		y0 50 07 FF	1920 x1080p/60
		y0 50 08 FF	1920 x1080i/50
		y0 50 09 FF	1920 x1080p/25
		y0 50 0A FF	1280 x720p/50
		y0 50 0B FF	1280 x 720p/25
		y0 50 0F FF	1920 x1080p/50
IR_Receive	8x 09 06 08 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
Pan-tiltMaxSpeedInq	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	www = Pan Position zzzz= Tilt Position
Pan-tiltModelInq	8x 09 06 10 FF	y0 50 pq rs FF	pqrs: Pan/Tilt Status
CAM_AnalyticsInq	8x 01 0E 24 6E 00 00 FF	[tracking status on/ off][current X, Y, Z][#] [human][date powered on][date command was sent]	Inquires tracking status, current PTZ position, faces in sight, & when the command was sent



# Maintenance & Troubleshooting

## Camera Maintenance

1. If the camera will not be used for a long time, power off the camera.
2. Use a soft cloth or lotion-free tissue to clean the camera body.
3. Use a soft, dry, lint-free cloth to clean the lens. If the camera is very dirty, clean it with a diluted neutral detergent. Do not use any type of solvent or harsh detergent, which may damage the surface.

## Unqualified Applications

- Do not shoot extremely bright objects for a long period of time.
- Do not operate close to powerful electromagnetic radiation, such as a TV or radio transmitter.

## Troubleshooting

### • **No image**

1. Check whether the power cord is connected, voltage is OK & power LED is lit
2. Check whether the camera can "self-test" after startup.  
You can also press [\*] > [#] > [Auto Focus] on the IR remote to trigger the camera to perform the startup dance on repeat.
3. Check that the video cable is connected to the destination device correctly.
4. If using USB, check that a supported codec is selected in the software. If YUY2 is required, you will need to manually enable YUY2 on the camera by calling preset 150. Call preset 150 twice to disable YUY2.

### • **Image is shaky or vibrating**

1. Check whether the camera is mounted solidly to a steady horizontal and level surface.
2. Check the building and any supporting furniture for vibration. Ceiling mounts are often affected by building vibration more than wall mounts. Any external vibration that is affecting the camera will be more apparent when zoomed in (tele).

### • **The tracking camera seems to be off from the reference camera settings**

1. Manually move camera back into place or rebuild tracking zones.
2. Enter the Advanced Parameters settings and click the Pos Correct button. Once the tracking camera stops moving, align the crosshair of the tracking camera to match the crosshairs of the reference camera.

### • **The camera is tracking slightly below or above the subject**

1. Enter the Advanced Parameters settings and click the Debug button. Have your subject stand in place within facing the tracking camera. Once a rectangle is around the face, use the Up and Down buttons to adjust tracking height.

## Control

- **IR Remote controller does not control the camera**
  1. Does one of the four “Camera Select” buttons at the top of the remote light up when you press any of the buttons?
    - **If not, change the batteries in the remote.**
  2. Check that the remote and camera are on the same IR channel. The “Camera Select” buttons will light up with the selected IR channel when a button is pressed. You can change the camera’s IR channel by accessing the System Settings of the software.
  3. Try removing other sources of IR interface (sunlight, fluorescent lighting, etc.)
- **Serial communication does not control the camera**
  1. Make sure the camera is on and functioning with the IR remote controller.
  2. Verify that the RS-232 cable is connected correctly and using the proper pinout.
  3. Verify the communication settings of the control software or device (e.g. joystick).
  4. Verify that the communication port on the controlling device is activated (e.g. Com port on PC).
  5. Verify that all communication settings in the OSD Setup Menu correlate to the commands being used (e.g. VISCA address).
- **IP communication does not control the camera**
  1. Verify that the camera and controlling device are on the same LAN with unique IP addresses.
  2. Verify that the controlling device is using the appropriate control port for the protocol.
    - o The default control ports are as follows: TCP: 5678, UDP: 1259
    - o IP Address Default value: 192.168.1.180 while in Static or no connection to a DHCP server.

If you need further assistance, please contact our support team at <https://huddlecamhd.com/support-utilities/>