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# HuddleCamHD

## SimpliTrack2

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Auto Tracking Camera

### Installation & Operation Manual



## Table of Contents

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|   |         |
|---|---------|
| <b>Precautions</b> .....                            | Page 3  |
| <a href="#">Safety Tips</a> .....                   | Page 3  |
| <b>What's in the Box</b> .....                      | Page 3  |
| <b>Physical Descriptions</b> .....                  | Page 4  |
| <a href="#">Front View of Camera</a> .....          | Page 4  |
| <a href="#">Rear View of Camera</a> .....           | Page 5  |
| <b>Basic Connection Instructions</b> .....          | Page 6  |
| <a href="#">Network setup</a> .....                 | Page 6  |
| <a href="#">SDI Connections</a> .....               | Page 6  |
| <a href="#">USB Connection</a> .....                | Page 6  |
| <a href="#">DVI Connection</a> .....                | Page 6  |
| <b>Interface Descriptions</b> .....                 | Page 7  |
| <b>Tracking Software</b> .....                      | Page 7  |
| <a href="#">Device Management Interface</a> .....   | Page 7  |
| <a href="#">Video Configuration Interface</a> ..... | Page 8  |
| <a href="#">Connect Camera</a> .....                | Page 9  |
| <a href="#">Network Configuration</a> .....         | Page 10 |
| <a href="#">Remote Configuration</a> .....          | Page 10 |
| <a href="#">Remove Camera</a> .....                 | Page 13 |
| <a href="#">Configure Video Settings</a> .....      | Page 14 |
| <a href="#">Configure Tracking Settings</a> .....   | Page 15 |
| <b>On Screen Display (OSD)</b> .....                | Page 16 |
| <a href="#">Video</a> .....                         | Page 16 |
| <a href="#">Exposure</a> .....                      | Page 16 |
| <a href="#">White Balance</a> .....                 | Page 17 |
| <a href="#">Pan Tilt Zoom</a> .....                 | Page 17 |
| <a href="#">Systems</a> .....                       | Page 16 |
| <a href="#">Status</a> .....                        | Page 16 |
| <a href="#">Restore Defaults</a> .....              | Page 16 |
| <b>Using the IR Remote</b> .....                    | Page 17 |
| <a href="#">IR Remote Shortcuts</a> .....           | Page 18 |
| <b>VISCA Commands</b> .....                         | Page 22 |
| <a href="#">ACK / Completion</a> .....              | Page 22 |
| <a href="#">Error Messages</a> .....                | Page 22 |
| <a href="#">Commands</a> .....                      | Page 23 |
| <a href="#">Inquiry Commands</a> .....              | Page 26 |
| <b>Tips &amp; Tricks</b> .....                      | Page 28 |
| <b>Care of the Unit</b> .....                       | Page 29 |
| <b>Troubleshooting</b> .....                        | Page 30 |



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## Precautions

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### Safety Tips

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- Please read this manual carefully before using the camera.
- Avoid damage from stress, violent vibration or liquid intrusion during transportation, storage, or installation.
- Take care of the camera during installation to prevent damage to the camera case, ports, lens, or PTZ mechanism.
- Do not apply excessive voltage, use only the specified voltage. Otherwise, you may experience an electrical shock.
- Keep the camera away from strong electromagnetic sources.
- Do not aim the camera at bright light sources (e.g. bright lights, the sun, etc.) for extended periods of time.
- Do not clean the camera with any active chemicals or corrosive detergents.
- Do not disassemble the camera or any of the camera's components. If problems arise, please contact your authorized dealer.
- After long term operation, moving components can wear down. Contact your authorized dealer for repair.

## What's in the Box

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### Supplied Hardware

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- 20X SimplTrack2 Camera
- Power Supply
- IR Remote
- RS-232 control cable
- This User Manual
- 3m / 9.8' USB 3.0 A-B Cable
- Software installation disk

## Physical Descriptions

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### Front View of Camera

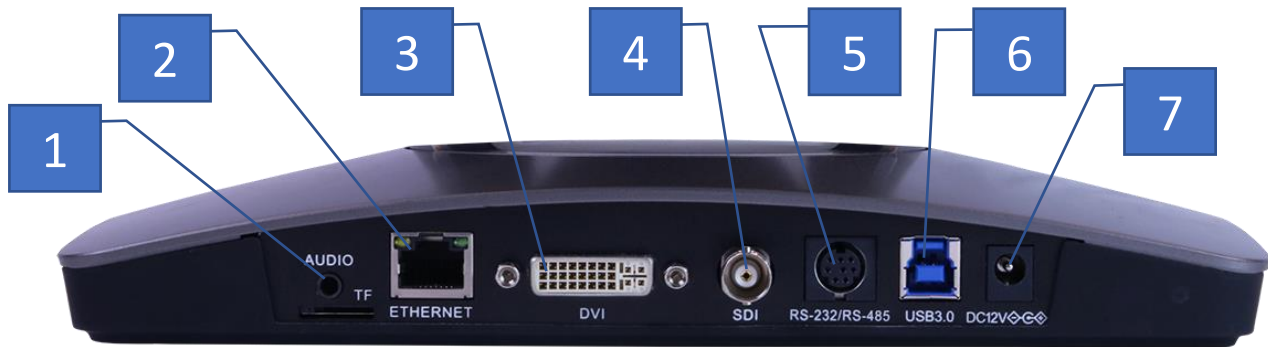
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- 1. Tracking Camera Lens**
  - a. 20X Optical Zoom
  - b. Field of View: 3° (tele) to 59° (wide)
- 2. Reference Camera Lens**
  - a. 86° (Horizontal) x 52° (Vertical)

## Rear View of Camera

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1. **3.5mm Audio Input** (Embeds over RTSP or RTMP)
2. **RJ45 - Ethernet Port** (Allows for setup & RTSP/RTMP video feed)
3. **DVI-D Video Output** (Includes DVI to HDMI converter for HDMI output)
4. **SDI Video Output** (Outputs up to 1080p60)
5. **8-Pin Mini Din VISCA Input** (Supports RS-232 & RS-485)
6. **USB 3.0 video Output** (Outputs up to 1080p60)
7. **DC12V 2.5A Power Connector**



## Basic Connection Instructions

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### To Configure the Camera

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1. Connect a live network connection, from a network with a DHCP server, to the camera.
2. Connect the included Power Supply to the camera.
3. Wait for camera to come to Home Position.
4. Install the SimpliTrack software on your Windows PC on the same network as the camera
5. Open the SimpliTrack software to connect to your camera

*Note: To pull the **main RTSP** stream please use the following URL*  
*rtsp://<camera ip>:<rtsp port>/main.h264*  
*(example: rtsp://192.168.111.85:5000/main.h264)*

*Note: To pull the **sub RTSP** stream please use the following URL*  
*rtsp://<camera ip>:<rtsp port>/sub.h264*  
*(example: rtsp://192.168.111.85:5000/sub.h264)*

*Note: To pull the **3rd or 4th RTSP** stream please use the following URL*  
*rtsp://<camera ip>:<rtsp port>/<3 or 4>.h264*  
*(example: rtsp://192.168.111.85:5000/<3 or 4>.h264)*

### SDI Connections

---

1. Connect an SDI cable to the SDI output on the camera.
2. Connect the SDI cable to your equipment with an available SDI input.
  - a. Adjust output resolution via the Software Interface
  - b. Adjust output frame rate via the Software Interface

### USB Connections

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1. Connect a USB 3.0 cable to the USB output on the camera.
2. Connect the USB output of the camera to an available USB 3.0 port on your PC

### DVI Connections

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1. Connect a DVI cable to the DVI output of the camera.
  - a. You can also connect the DVI to HDMI converter to the DVI output and run HDMI from the camera.
2. Connect the DVI/HDMI cable to your equipment

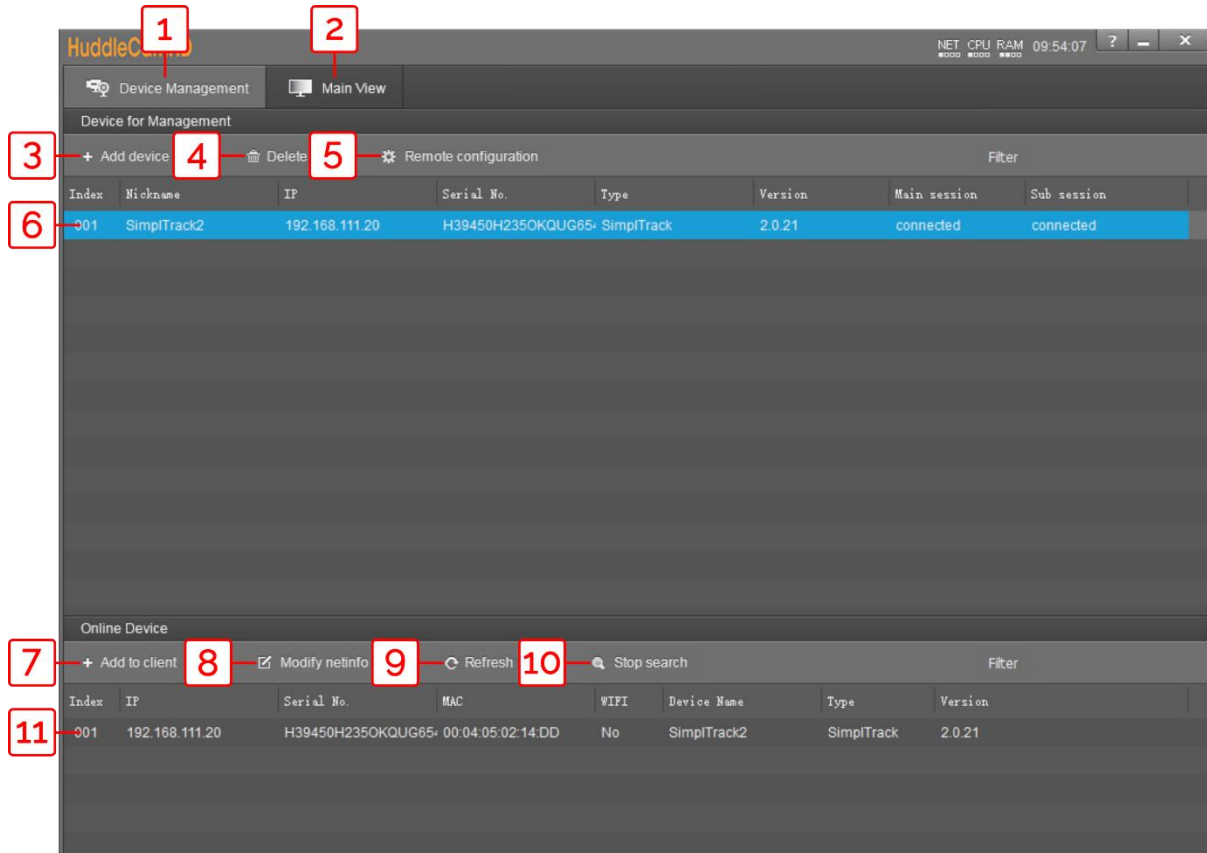
**NOTE:** The camera will auto power cycle upon connection to video software. It will auto scale the best resolution

Failure to follow these sequences may result in no connection.

## Interface Descriptions

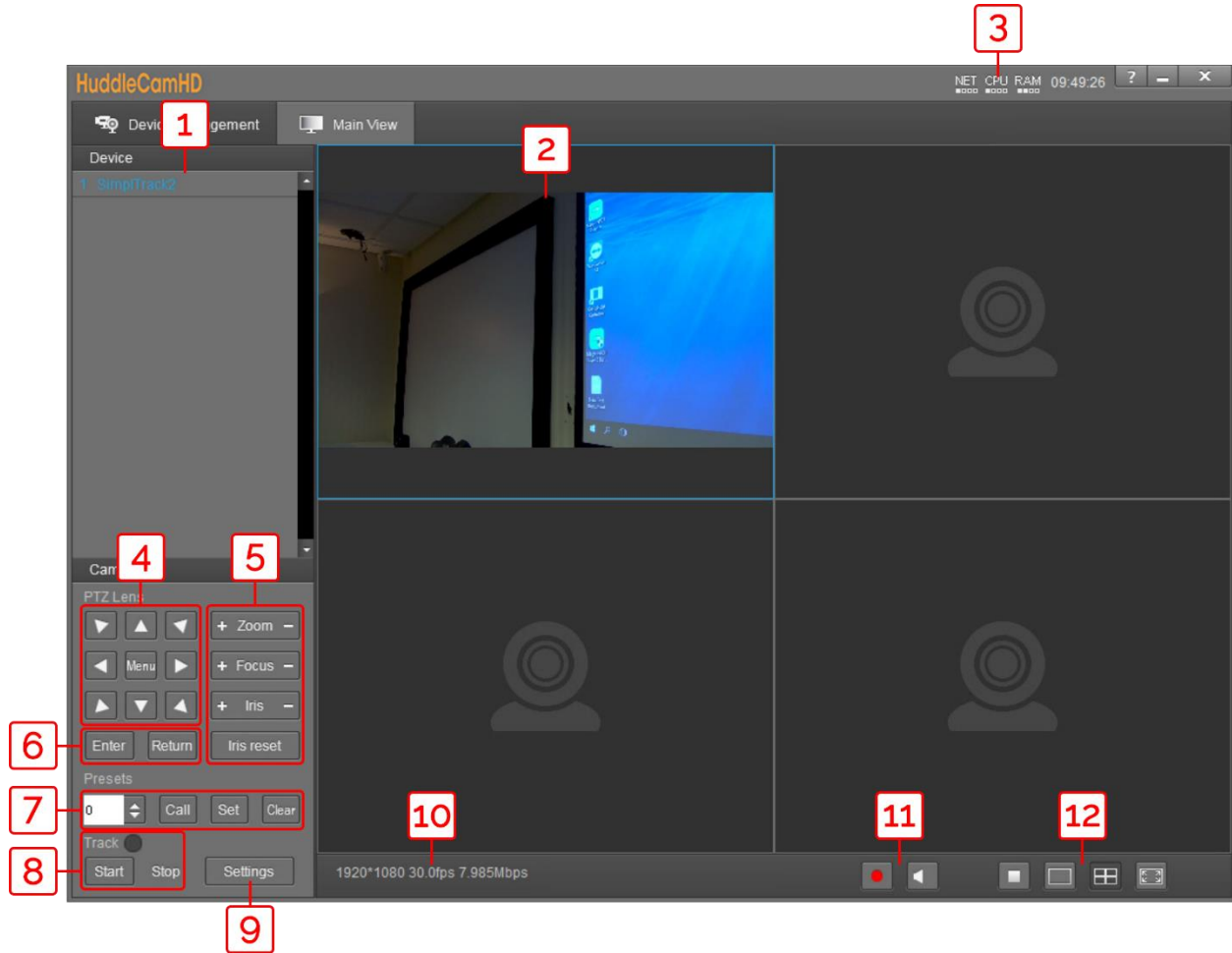
### Tracking Software

#### Device Management Interface



- |   |  |    |   |
|---|--|----|---|
| 1 | Device Management interface  | 7  | Add selected camera from Online Device section    |
| 2 | Video configuration interface  | 8  | Modify network settings of selected Online Device |
| 3 | Manually add device using IP address, Port number, Username & Password | 9  | Refresh Online Device list                        |
| 4 | Delete selected device from Device Management list                     | 10 | Start/Stop searching for Online Devices           |
| 5 | Configure network settings of camera                                   | 11 | *Unselected* device from Online Device section    |
| 6 | *Selected* device within Device Management                             |    |   |

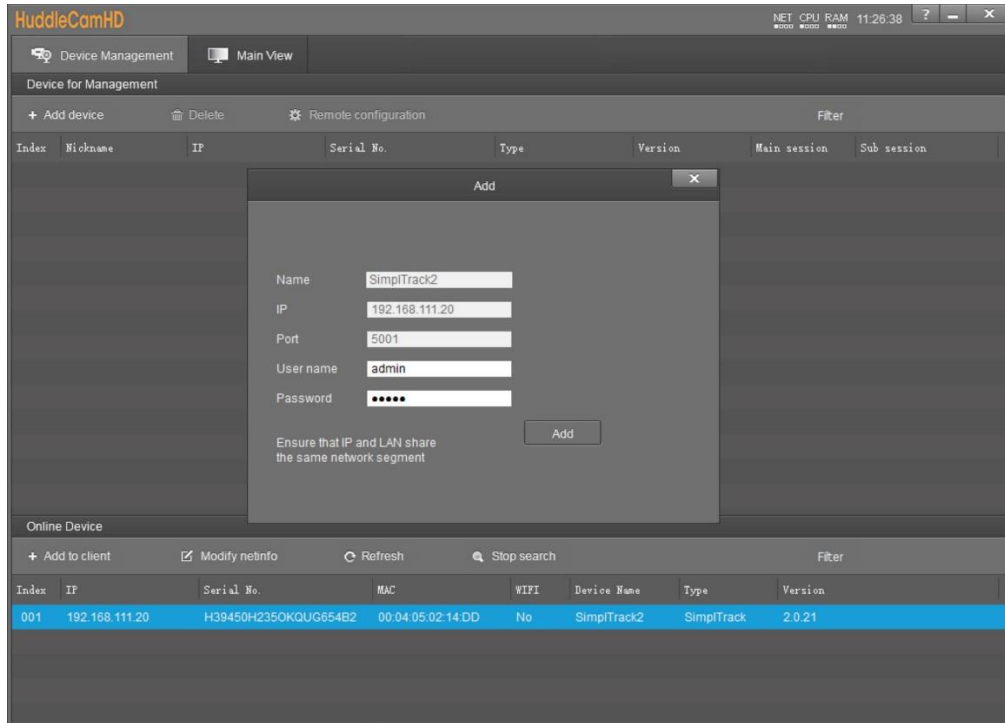
## Video Configuration Interface



- |   |   |
|---|---|
| <b>1</b> Cameras connected to Device Management | <b>7</b> Preset control                             |
| <b>2</b> Camera video feed                      | <b>8</b> Enable/Disable tracking                    |
| <b>3</b> PC performance & time                  | <b>9</b> Open tracking settings                     |
| <b>4</b> Pan, Tilt, & OSD Menu control          | <b>10</b> Connected camera resolution & frame rate  |
| <b>5</b> Lens control                           | <b>11</b> Enable/Disable recording                  |
| <b>6</b> OSD Menu enter/return                  | <b>12</b> Stop video, full screen, and gallery view |



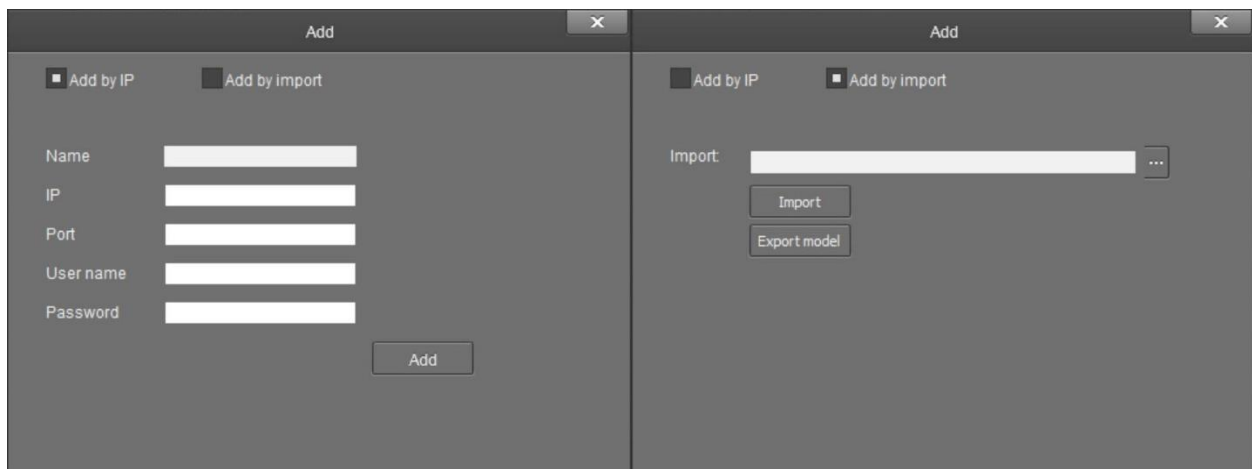
## Connect Camera



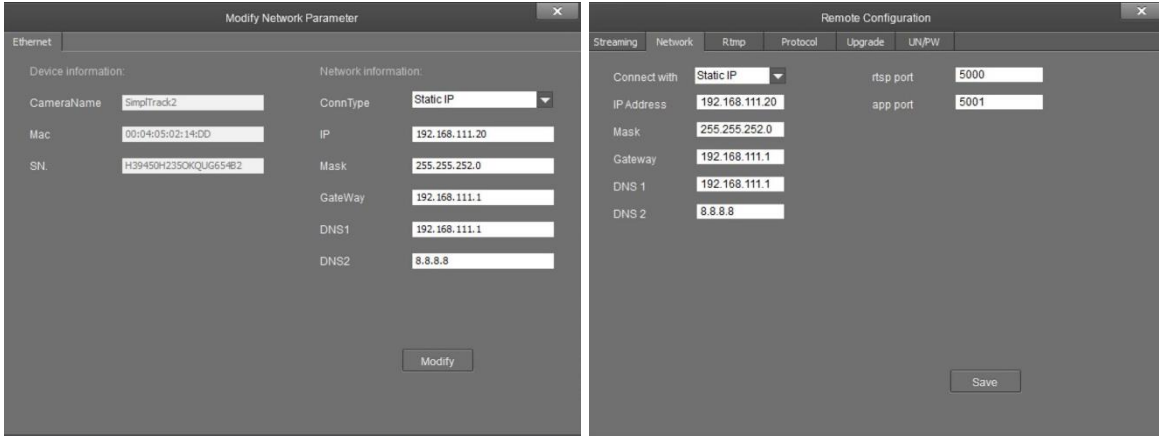
To add a camera to the **Device Management** list, you can go about this by searching in the **Online Device** section, or by using the **+ Add Device** button in the Device Management section.

When utilizing the Online Device section, you can simply click **Search**, and the Tracking Software will automatically search your network for any HuddleView & SimpliTrack2 cameras. Select the camera and click **+ Add to Client** to add it to the Device Management list.

When utilizing the **+ Add Device** button within the Device Management section, you can connect your camera through its **IP address, Port number, Username & Password**; or you can **Import** a \*.csv file.



## Network Configuration

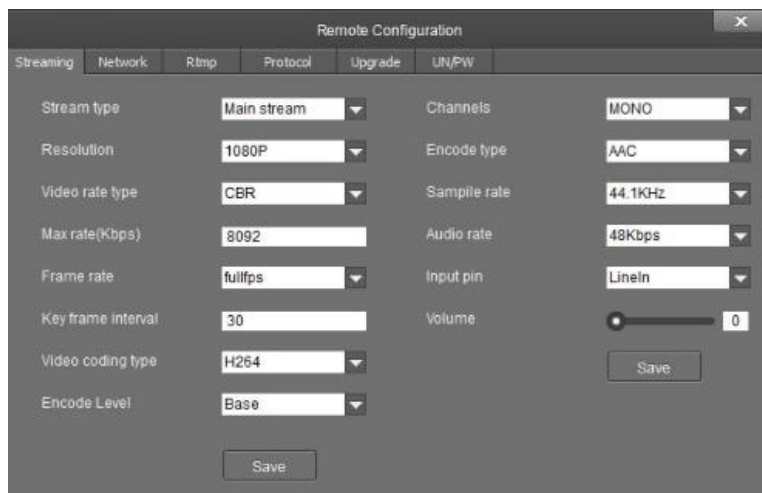


To configure the network settings, select the from the Online Device list and click **Modify Netinfo**. You can also adjust the network settings of a connected camera by selecting it from the Device Management list and clicking **Remote Configuration**, then traversing to the **Network** section.

## Remote Configuration

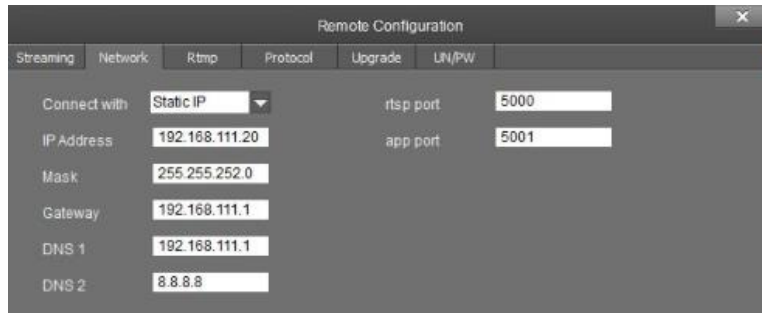
Remote Configuration includes: **Streaming, Network, RTMP, Protocol, Upgrade, & Username/Password**

The **Streaming** category allows you to configure the Main Stream (PTZ camera), Sub Stream (reference camera), Stream 3 & Stream 4.



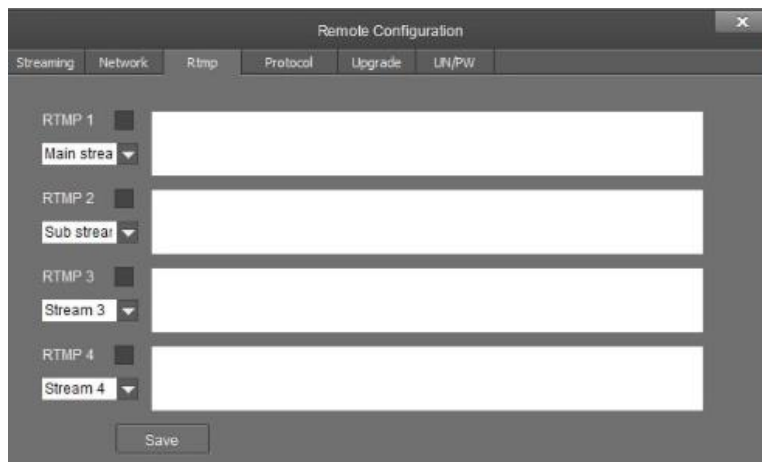
## Remote Configuration (Continued)

The **Network** category allows you to assign a dynamic or static IP address for the camera, in addition to settings the port numbers for RTSP & control.



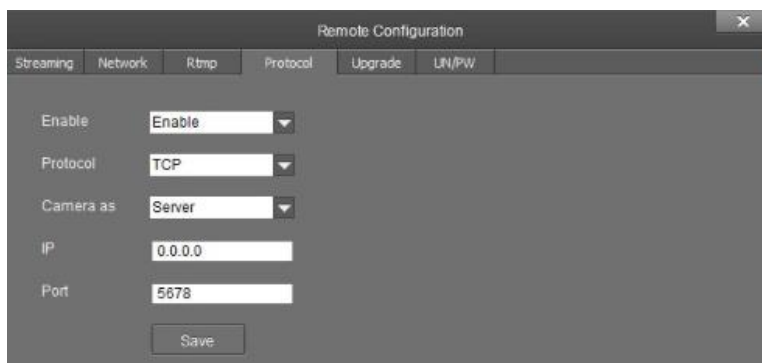
The screenshot shows the 'Remote Configuration' window with the 'Network' tab selected. The 'Connect with' dropdown is set to 'Static IP'. The 'IP Address' field contains '192.168.111.20', 'Mask' is '255.255.252.0', 'Gateway' is '192.168.111.1', 'DNS 1' is '192.168.111.1', and 'DNS 2' is '8.8.8.8'. On the right side, 'rtsp port' is '5000' and 'app port' is '5001'.

The **RTMP** category allows you to define a RTMP server.



The screenshot shows the 'Remote Configuration' window with the 'Rtmp' tab selected. It features four RTMP server configuration rows. Each row has a checkbox, a dropdown menu, and a text input field. The first row is 'RTMP 1' with 'Main strea' selected. The second row is 'RTMP 2' with 'Sub strear' selected. The third row is 'RTMP 3' with 'Stream 3' selected. The fourth row is 'RTMP 4' with 'Stream 4' selected. A 'Save' button is located at the bottom.

The **Protocol** category allows you to set the control parameters of the camera.

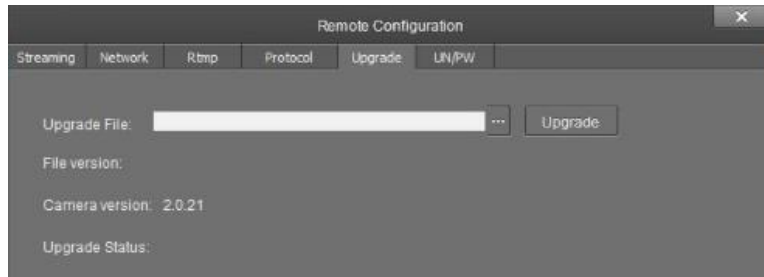


The screenshot shows the 'Remote Configuration' window with the 'Protocol' tab selected. The 'Enable' dropdown is set to 'Enable'. The 'Protocol' dropdown is set to 'TCP'. The 'Camera as' dropdown is set to 'Server'. The 'IP' field contains '0.0.0.0' and the 'Port' field contains '5678'. A 'Save' button is located at the bottom.

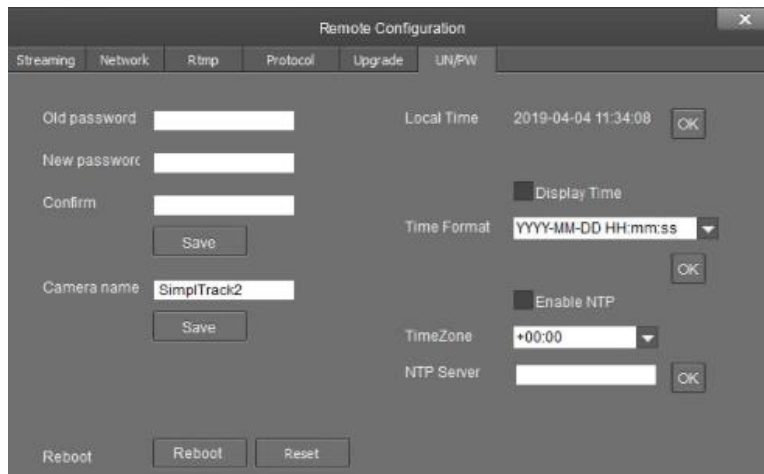
## Remote Configuration (Continued)

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The **Upgrade** category allows you to upgrade the firmware of the camera.

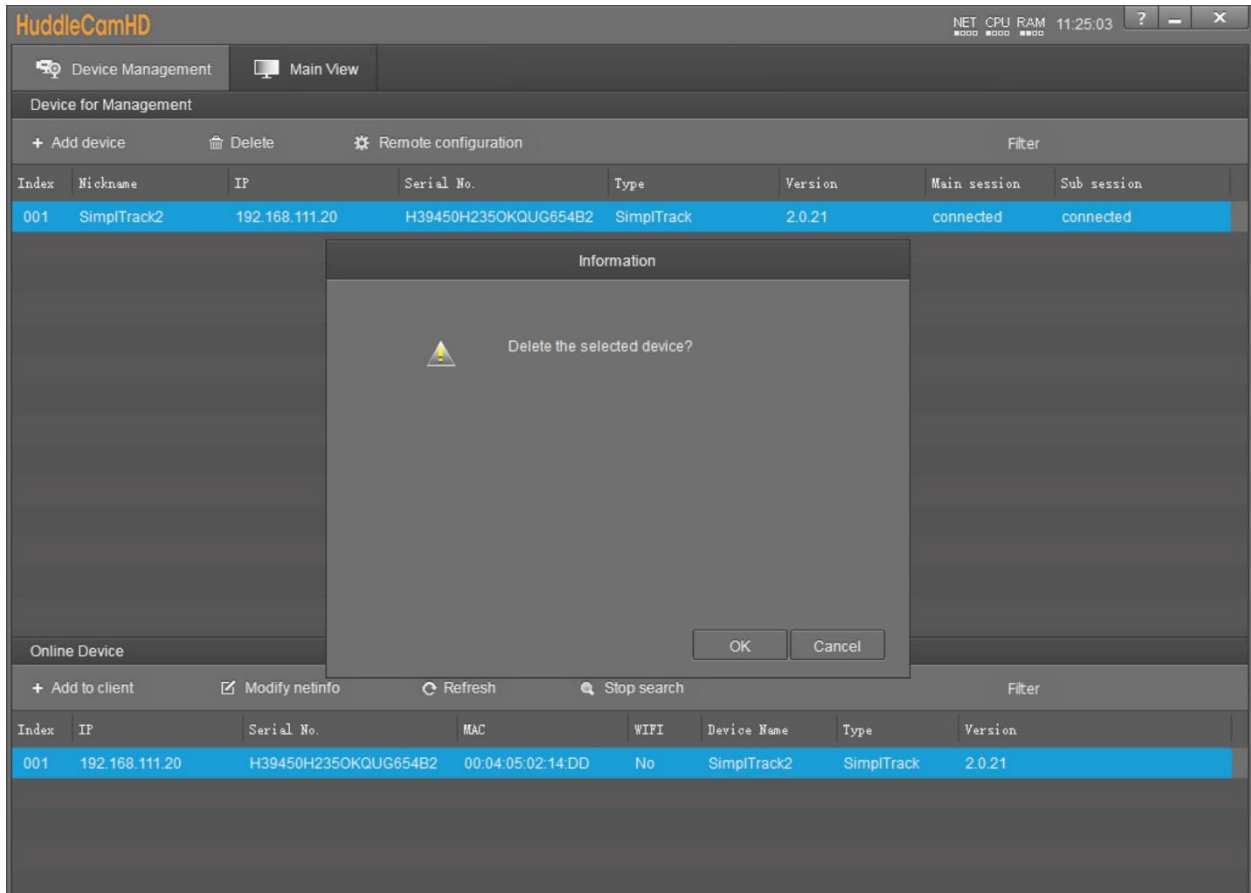


The **Username/Password** category allows you to change the device name, password, and adjust the time format



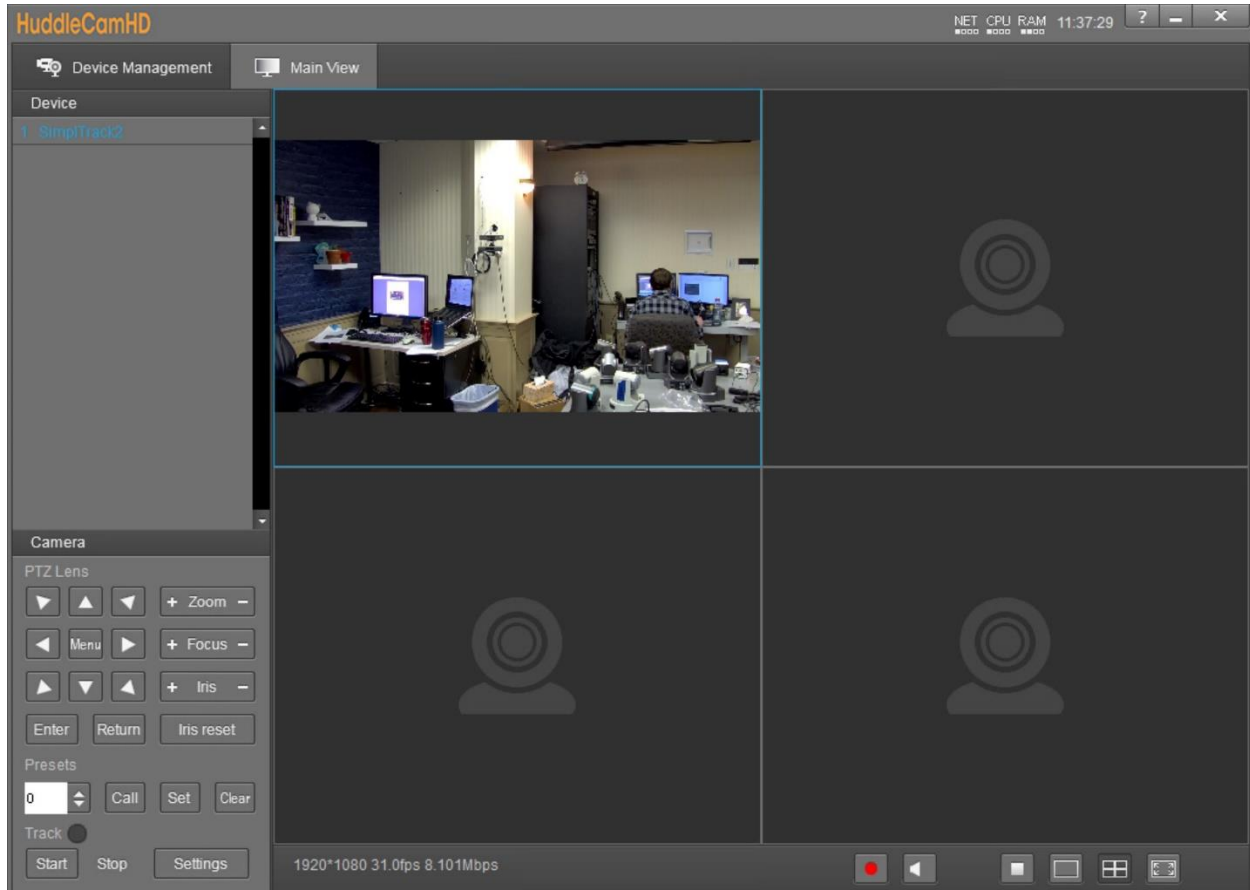
## Remove Camera

To remove a camera from the Device Management list, first select it, then click the **Delete** button above the list. You will be prompted with a confirmation window to remove the camera. Click **OK** to remove the device or **Cancel** to keep the current settings.



The screenshot shows the HuddleCamHD software interface. At the top, there are tabs for "Device Management" and "Main View". Below the tabs, there are buttons for "+ Add device", "Delete", "Remote configuration", and "Filter". A table lists devices with columns: Index, Nickname, IP, Serial No., Type, Version, Main session, and Sub session. The first row is selected, showing Index 001, Nickname SimplTrack2, IP 192.168.111.20, Serial No. H39450H235OKQUG654B2, Type SimplTrack, Version 2.0.21, Main session connected, and Sub session connected. A dialog box titled "Information" is open in the center, displaying a warning icon and the text "Delete the selected device?". At the bottom of the dialog are "OK" and "Cancel" buttons. Below the dialog, there are buttons for "+ Add to client", "Modify netinfo", "Refresh", "Stop search", and "Filter". A second table lists online devices with columns: Index, IP, Serial No., MAC, WIFI, Device Name, Type, and Version. The first row is selected, showing Index 001, IP 192.168.111.20, Serial No. H39450H235OKQUG654B2, MAC 00:04:05:02:14:DD, WIFI No, Device Name SimplTrack2, Type SimplTrack, and Version 2.0.21.

## Configure Video Settings

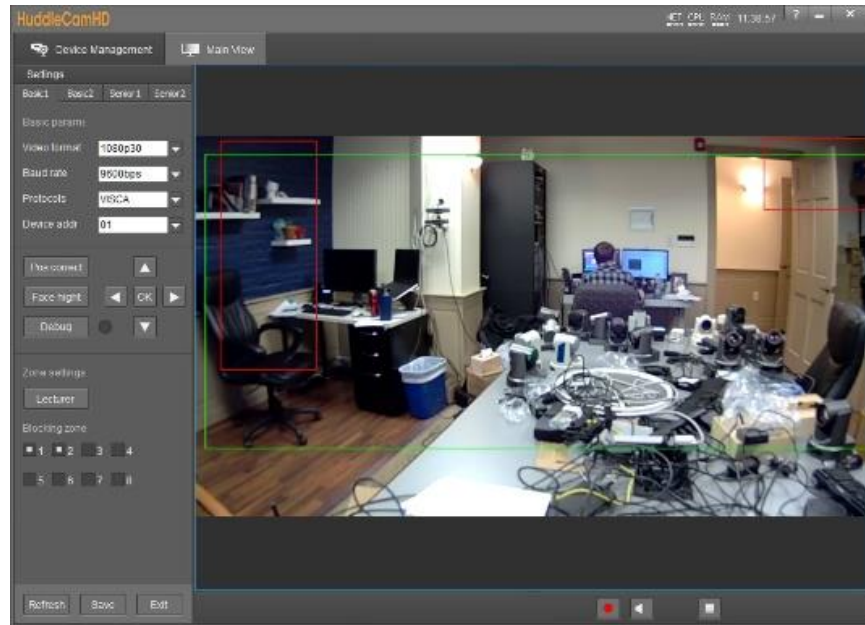


In the **Video Interface** you can view and control up to four cameras simultaneously. You have full control over **Pan, Tilt, Zoom, Focus, Iris, OSD Menu, Presets & Tracking Settings**.

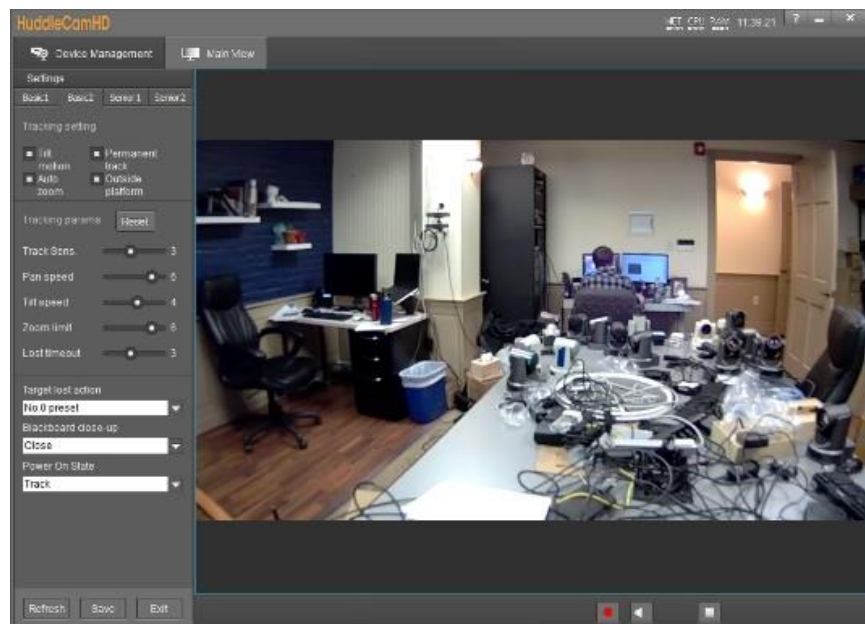
You must first select one of the cameras from the video feed in order to adjust the settings.

## Configure Tracking Settings

To adjust the **Tracking Parameters** of the selected camera, you must click the **Settings** button in the tracking control area. Once opened, you can add and remove tracking & blocking zones, change video resolution & frame rate, baud rate, control protocol, device address, and correct the position of camera.



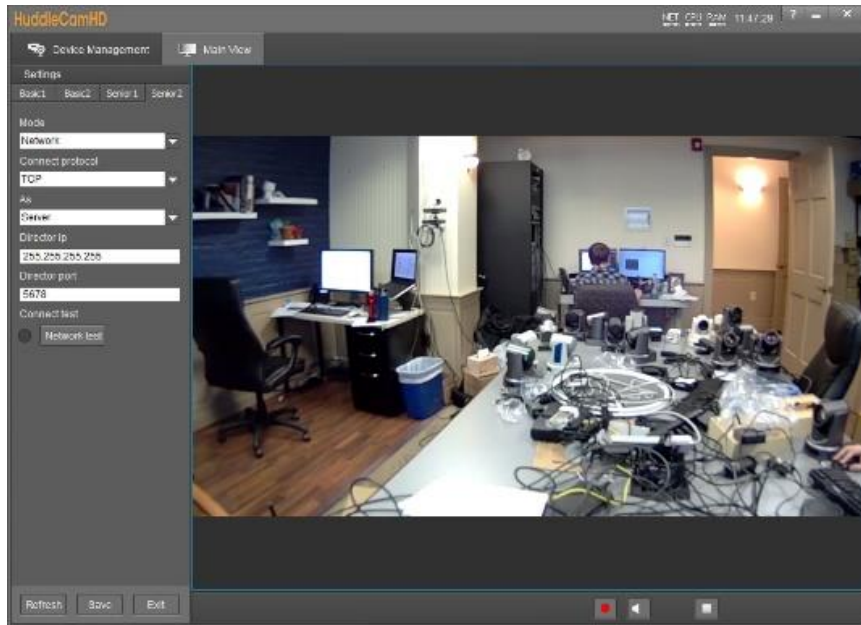
Within **Basic2** settings, you can enable or disable tilt, permanent track, auto zoom, & outside platform. In addition, you can adjust the tracking sensitivity, pan speed, tilt speed, zoom limit, and what happens when the camera loses its target.



## Configure Tracking Settings (Continued)

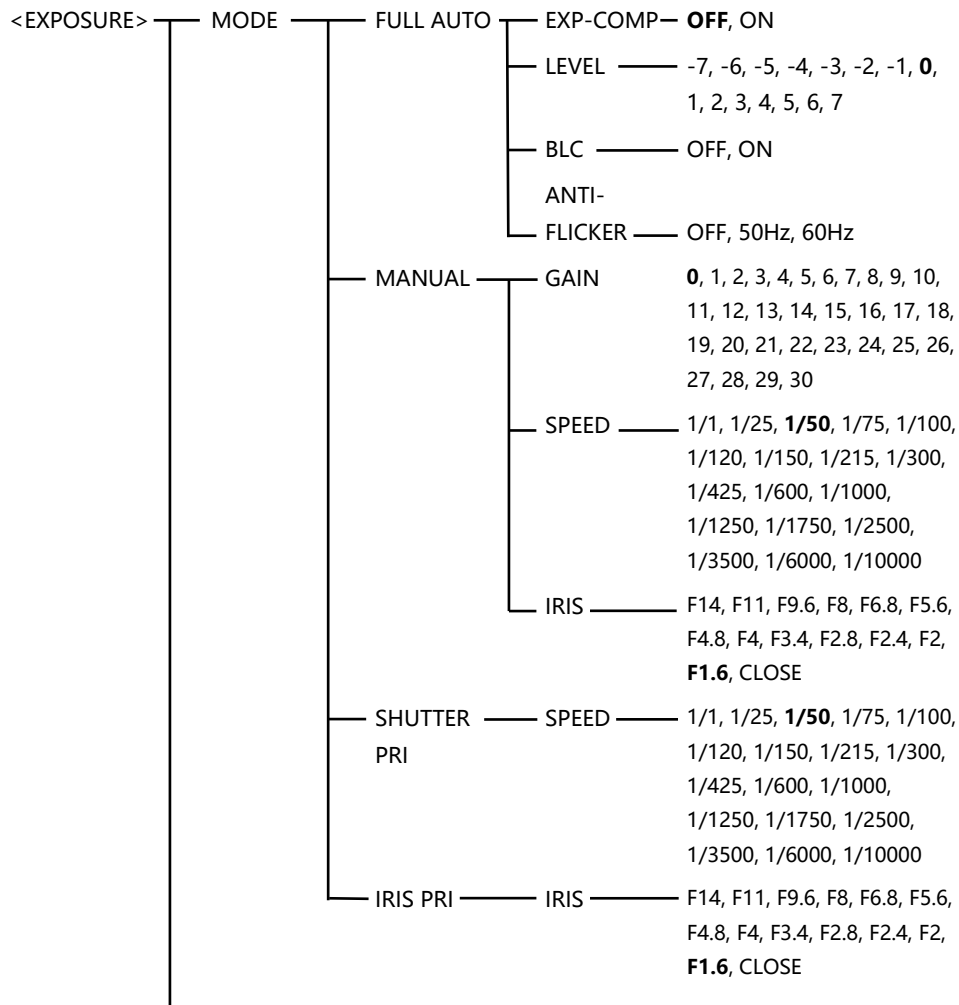
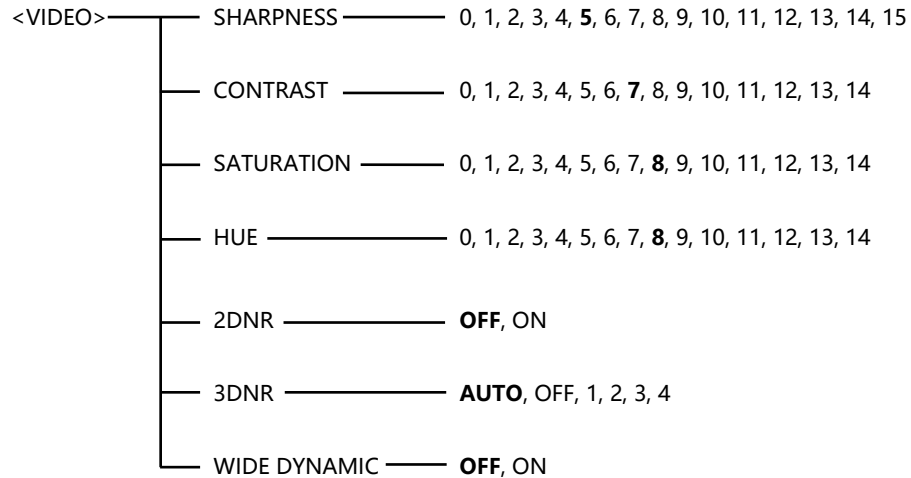
The **Senior 1** settings tab is disabled and will be enabled with future updates.

**Senior 2** allows for network control via **TCP** or **UDP** and allows the camera to act as a server or client for receiving commands.





## On Screen Display (OSD)



BRIGHT 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,  
 PRI BRIGHT 11, 12, 13, 14, 15, 16, 17, 18,  
 19, 20, 21, 22, 23, 24, 25, 26,  
 27

## On Screen Display (Continued)

<WHITE BALANCE> — MODE — **AUTO**

- ATW
- ONE PUSH
- INDOOR
- OUTDOOR
- SODIUM LAMP
- FLUO LAMP
- MANUAL — R.GAIN — 0~255
  - B.GAIN — 0~255
- MANUAL2 — GAIN — 0~9999

<PAN TILT ZOOM> — PAN/TILT SPEED — 1, 2, 3, 4, 5, 6, 7, 8

- PAN/TILT LIMIT — ON, **OFF**
  - UP — -30° ~ +90°
  - DOWN — -30° ~ +90°
  - LEFT — -170° ~ +170°
  - RIGHT — -170° ~ +170°
- D-ZOOM LIMIT — X1, X2, X3, X4, X5, X6, X7,  
X8, X9, X10, X11, X12
- PTZ TRIG AF — ON, OFF
- POWER UP ACTION — PRESET 1, PRESET 2,  
PRESET 3, PRESET 4,  
PRESET 5, PRESET 6,  
PRESET 7, PRESET 8,  
PRESET 9, **HOME**



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## On Screen Display *(Continued)*

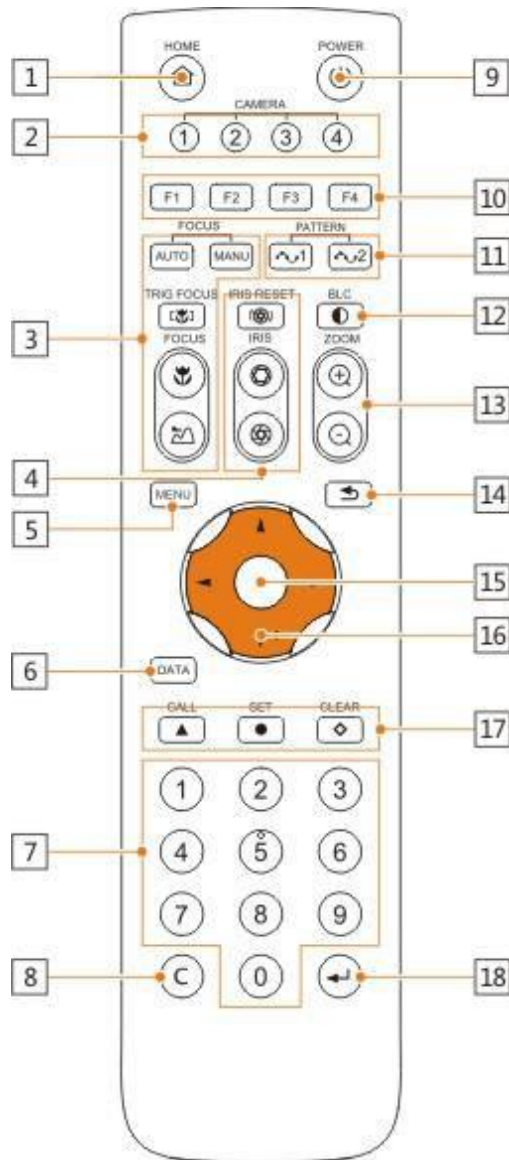
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|          |               |                                 |
|----------|---------------|---------------------------------|
| <SYSTEM> | ADDRESS       | 1, 2, 3, 4, 5, 6, 7             |
|          | PROTOCOL      | <b>VISCA</b> , PELCO-D          |
|          |               | 1080p/60/50/30/25, 1080i/60/50, |
|          | FORMAT        | 720p/60/50                      |
|          | RATIO SPEED   | <b>OFF</b> , ON                 |
|          | PRESET FREEZE | <b>OFF</b> , ON                 |
|          | RS485         | HALF-DUPLEX 1/2                 |
|          | DISPLAY INFO  | <b>OFF</b> , ON                 |

|                          |              |         |
|--------------------------|--------------|---------|
| <STATUS>                 | ADDRESS      | 1       |
| (Shows current settings) | PROTOCOL     | VISCA   |
|                          | BAUDRATE     | 9600    |
|                          | FORMAT       | 1080P60 |
|                          | MOUNT        | STAND   |
|                          | FIRMWARE VER | V1.1.1  |

<RESTORE DEFAULTS>

## Using the IR Remote



- 1. HOME Button**  
Press the HOME Button to send the camera to the initial position where pan and tilt is 0.
- 2. Camera Selection Button**  
Use to switch between IR channels for multiple camera control. For example, 4 is address 4.
- 3. Focus**  
Use "AUTO" or "MANU" to select auto or manual focus. Trig Focus enables auto focus whenever the camera is zoomed. Near/Far allows for focus adjustment while in manual focus.
- 4. Iris**  
Press Iris Reset to set iris back to default value or use Open/Close to open and close the Iris.
- 5. Menu**  
Use to open/close the OSD Menu.
- 6. Data Button**  
Use the Data Button to enable/disable display of pan/tilt angle, zoom time, and other prompt messages.
- 7. Number Keys**  
Used for inputting numbers such as preset number.
- 8. Cancel Button**  
Cancel number input.
- 9. Power Button**  
User to power on/off the camera.
- 10. Shortcut Buttons (F1, F2, F3, F4)**  
Use these buttons for shortcut commands. (Shown below)
- 11. Pattern Buttons**  
Use to activate Pattern Scan 1 and Pattern Scan 2

- 12. BLC Button**  
Use to enable/disable Backlight Compensation.
- 13. Zoom buttons**  
Use to zoom in or zoom out.
- 14. Back Button**  
Use the Back Button to go back to the previous menu
- 15. OK Button**  
In OSD Menu: select the corresponding option  
Out of OSD Menu: adjust pan/tilt control speed



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#### 16. Direction/Menu Operation

**In OSD Menu:** traverse OSD Menu

**Out of OSD Menu:** pan & tilt camera

#### 17. Preset Settings

Use the Number Keys to input a preset number, then press call, store, clear to perform the corresponding command.

#### 18. Enter

After inputting numbers, press this button to confirm.

### IR Remote Shortcuts

---

- [F1] > [1] > [ENTER] - Change camera to Device Address 1
- [F1] > [2] > [ENTER] - Change camera to Device Address 2
- [F1] > [3] > [ENTER] - Change camera to Device Address 3
- [F1] > [4] > [ENTER] - Change camera to Device Address 4
- [F1] > [5] > [ENTER] - Start Tracking
- [F1] > [6] > [ENTER] - End Tracking

## VISCA Commands

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### ACK/Completion Messages

---

|            | Command Messages           | Comments                                     |
|------------|----------------------------|--|
| ACK        | z0 4y FF<br>(y:Socket No.) | Returned when the command is accepted.       |
| Completion | z0 5y FF<br>(y:Socket No.) | Returned when the command has been executed. |

### Error Messages

---

|                        | Command Messages   | 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<br>(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<br>(y:Socket No.)  | Returned when no command is executed in a socket specified by the cancel command, or when an invalid socket number is specified.                                 |
| Command Not Executable | z0 6y 41 FF<br>(y:Execution command<br>Socket No. Inquiry command:0) | Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.  |

z = Device address + 8



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## Commands

| Command Set      | Command           | Command Packet                            | Comments                                      |           |
|------------------|-------------------|---|---|-----------|
| AddressSet       | Broadcast         | 88 30 01 FF                               | Address setting                               |           |
| IF_Clear         | Broadcast         | 88 01 00 01 FF                            | I/F Clear                                     |           |
| CommandCancel    |                   | 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) to 7 (High)<br>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) to 7 (High)<br>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                         |   | AF 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<br>0t 0u 0v 0w FF | pqrs: Zoom Position<br>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                           |           |
| CAM_RGain        | Reset             | 8x 01 04 03 00 FF                         | Manual Control of R Gain<br>pq: 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                |   |           |
| CAM_BGain        | Reset             | 8x 01 04 04 00 FF                         | Manual Control of B Gain<br>pq: 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                |   |           |



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### Commands (Continued)

| Command Set       | Command          | Command Packet             | Comments  |
|-------------------|------------------|----------------------------|---|
| 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   |
| 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)<br>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       |   |
| SYS_Menu          | Off              | 8x 01 06 06 03 FF          | Turns off the menu screen.  |





152 Robbins Rd, Downingtown, PA, 19335, USA - HuddleCamHD.com | 1 800 - 486-5276

Commands (Continued)

| Command Set          | Command             | Command Packet                                  | Comments  |
|----------------------|---------------------|---|---|
| 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<br>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<br>display   |
|                      | Off                 | 8x 01 7E 01 18 03 FF                            |   |
| Pan-tiltDrive        | Up                  | 8x 01 06 01 VV WW 03 01 FF                      | VV: Pan speed 0 x01 (low<br>speed) to 0 x18 (high speed)<br>WW: Tilt Speed 0 x 01 (low<br>speed) to 0 x14 (high speed)<br>YYYY: Pan Position<br>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<br>0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF |   |
|                      | RelativePosition    | 8x 01 06 03 VV WW<br>0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF |   |
|                      | Home                | 8x 01 06 04 FF                                  |   |
| Reset                | 8x 01 06 05 FF      |   |   |
| Pan-tiltLimitSet     | LimitSet            | 8x 01 06 07 00 0W<br>0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF | W: 1 UpRight 0: DownLeft<br>YYYY: Pan Limit Position<br>ZZZZ: Tilt Position   |
| CAM_AutoFrameTrigger | One Push Auto Frame | 8x 01 0E 24 6C 0p 0p FF                         | P: seconds  |



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## 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_FocusModeInq         | 8x 09 04 38 FF | y0 50 02 FF          | Auto Focus                      |
|                          |                | y0 50 03 FF          | Manual Focus                    |
| CAM_FocusPosInq          | 8x 09 04 48 FF | y0 50 0p 0q 0r 0s FF | pqrs: Focus Position            |
| CAM_WBModeInq            | 8x 09 04 35 FF | y0 50 00 FF          | Auto                            |
|                          |                | y0 50 01 FF          | In Door                         |
|                          |                | y0 50 02 FF          | Out Door                        |
|                          |                | y0 50 03 FF          | One Push WB                     |
|                          |                | y0 50 05 FF          | Manual                          |
| CAM_RGainInq             | 8x 09 04 43 FF | y0 50 00 00 0p 0q FF | pq: R Gain                      |
| CAM_BGainInq             | 8x 09 04 44 FF | y0 50 00 00 0p 0q FF | pq: B Gain                      |
| CAM_AEModeInq            | 8x 09 04 39 FF | y0 50 00 FF          | Full Auto                       |
|                          |                | y0 50 03 FF          | Manual                          |
|                          |                | y0 50 0A FF          | Shutter Priority                |
|                          |                | y0 50 0B FF          | Iris Priority                   |
|                          |                | y0 50 0D FF          | Bright                          |
| CAM_ShutterPosInq        | 8x 09 04 4A FF | y0 50 00 00 0p 0q FF | 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_ExpCompModeInq       | 8x 09 04 3E FF | y0 50 02 FF          | On                              |
|                          |                | y0 50 03 FF          | Off                             |
| CAM_ExpCompPosInq        | 8x 09 04 4E FF | y0 50 00 00 0p 0q FF | pq: ExpComp Position            |
| CAM_BacklightModeInq     | 8x 09 04 33 FF | y0 50 02 FF          | On                              |
|                          |                | y0 50 03 FF          | Off                             |
| CAM_ApertureInq          | 8x 09 04 42 FF | y0 50 00 00 0p 0q FF | pq: Aperture Gain               |
| CAM_PictureEffectModeInq | 8x 09 04 63 FF | y0 50 00 FF          | Off                             |
|                          |                | y0 50 02 FF          | Neg.Art                         |
|                          |                | y0 50 04 FF          | B&W                             |
| CAM_MemoryInq            | 8x 09 04 3F FF | y0 50 0p FF          | p: Memory number last operated. |
| SYS_MenuModeInq          | 8x 09 06 06 FF | y0 50 02 FF          | On                              |
|                          |                | y0 50 03 FF          | Off                             |
| CAM_IDInq                | 8x 09 04 22 FF | y0 50 0p 0q 0r 0s FF | pqrs: Camera ID                 |



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### Inquiry Commands *(Continued)*

| Inquiry Command     | Command Packet          | Inquiry Packet  | Comments  |
|---------------------|-------------------------|---|---|
| CAM_VersionInq      | 8x 09 00 02 FF          | y0 50 00 01<br>mn pq rs tu vw FF  | mnpq: Model Code (0504)<br>rstu: ROM version<br>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<br>zz = Tilt Max Speed   |
| Pan-tiltPosInq      | 8x 09 06 12 FF          | y0 50 0w 0w 0w 0w<br>0z 0z 0z 0z FF   | wwww = Pan Position<br>zzzz = Tilt Position   |
| Pan-tiltModeInq     | 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,<br>Y, Z][#][human][date powered<br>on][date command was sent] | Inquires tracking status, current PTZ<br>position, faces in sight, & when the<br>command was sent |



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## Tips and Tricks

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**The “Stage”:** Imagine your subject moving around within the available presentation space and take note of the extremes, left or right and up or down, your presenter may happen to present from. The area you have just noted is what we will call our stage and is what you want to ensure is captured by the reference camera. Within this stage we normally want to set the priority tracking area to slightly above the presenter’s head for the top boundary and just above the audience’s heads for the bottom boundary.

**Shot Composition:** For a nice tight shot around the subject, the camera must be within 55’ of the subject. Beyond that, composition will be sacrificed for distance.

**Motion:** The faster the subject moves, the larger the shot composition should be. Depending on the subject, and desired impact, this is something that can require a bit of trial and error to find that perfect composition to high motion ratio.

**Keep it Simple:** When diving into the Advanced Parameters section of the software, think about what you’re trying to capture. Only enable the features you need to properly track within your “stage.” As an example, if you have a presenter at the front of the room only moving left or right do not enable Auto-Zoom or Auto-Tilt, as you’re just inviting undesired tracking results.

**Plan Ahead:** Before any event, large or small, test your entire setup as far in as possible. Waiting until the last minute is never a good idea.

## Care of the Unit

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Remove dust or dirt on the surface of the lens with a blower (*commercially available*).

## Troubleshooting

| Problem  | Possible Cause   | Solution  |
|--|--|---|
| No movement or image after power on                                    | Power supply failure   | Check power supply  |
|  | Power adapter damaged  | Replace power adapter   |
|  | Power cable connection is loose                                  | Check & reconnect   |
| No self-testing after powered on, or with motor noise                  | Not enough power   | Check & reconnect power cable connection  |
|  | Mechanical failure   | Send for authorized repair  |
| After power on, self-test successfully, but not controllable           | Wrong address / protocol / baud rate                             | Check & set again   |
|  | Wrong connection or open circuit of RS-485/RS422 or RS-232 cable | Check & reconnect   |
| Video loss when pans / tilts / zooms                                   | Not enough power   | Check & reconnect power cable   |
|  | Video cable not properly connected                               | Replace with a tested cable   |
| Auto tracking has locked on the wrong subject / object with no motion  | Lack of adequate lighting on the subject                         | Increase proper lighting on subject / stage. If the problem persists attempt to move the camera closer to the stage.  |
|  | Too complex of a scene with slightly improper lighting           |   |
| The tracking camera seems to be off from the reference camera settings | The camera has been moved  | Manually move camera back into place or rebuild tracking zones  |
|  | A manual tracking / reference camera recalibration is required   | Enter the Advanced Parameters settings and click the <b>Pos Correct</b> button. Once the tracking camera stops moving, align the crosshairs of the tracking camera to match the crosshairs of the reference camera.                       |
| The camera is tracking slightly below or above the subject             | A manual height recalibration is required                        | Enter the Advanced Parameters settings and click the <b>Debug</b> 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. |
| Having trouble finding / connecting to camera on the network           | No DHCP Server available   | Connect to camera and set a static IP in the Configuration interface  |
|  | Multiple Network Connections                                     | Disable any secondary and or tertiary network connections on your Windows PC  |



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## Notes

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