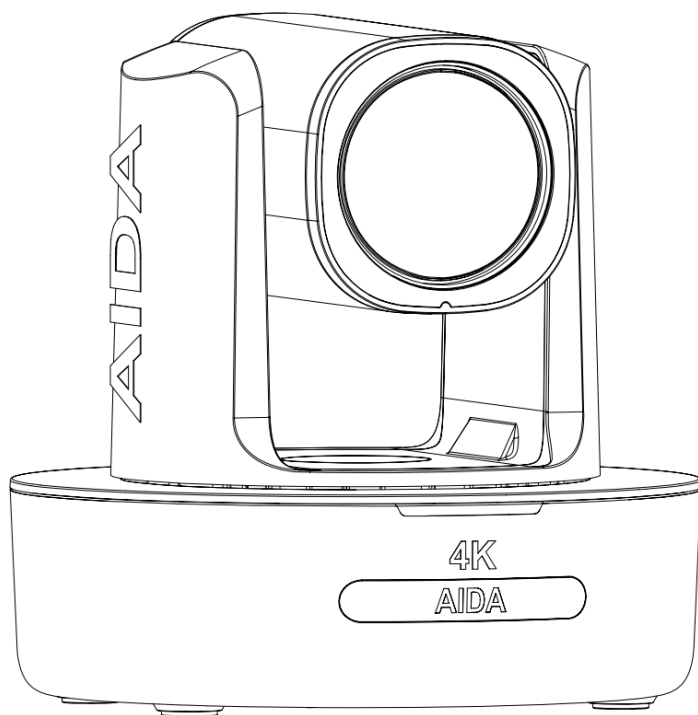


# Ultra-HD Optical Zoom PTZ

PTZ4K-NDI-X12 / PTZ4K-NDI-X30

User Manual



V2.0 (Auto-tracking Update)

# AIDA

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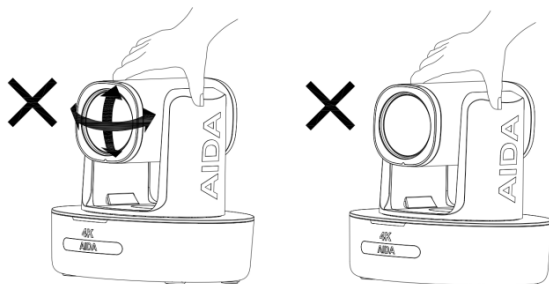
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*The information within this manual is subject to change at any time without prior notice\**

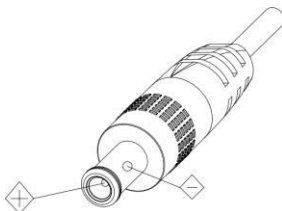
*NDI® is a registered trademark of Newtek Inc.\**

# Safety Guide

1. Before operation, please read all the instructions in the manual carefully. For your convenience, please keep this manual.
2. The camera power input range is 100-240 VAC(50-60hz.) Ensure the power supply input is within this rate before powering it on.
3. Camera power voltage = 12VDC, rated currency=2A. We suggest you use it with the original power supply supplied in the packaging.
4. Please keep the power cable, video cable, and control cable in a dry, safe place out of any obstructions.
5. Operational environment for the camera should be: 0°C-50°C/32°F-122°F, with humidity levels less than 90%. To avoid any damage, do not place or pour anything on inside or on top of the camera.
6. Avoid placing any extra weight, stress, vibration or pressure on the camera during transportation, storage, or operation.
7. Do not remove the camera housing or cover. Any attempt to self-repair or open the camera will void all warranty.
8. Make sure the camera is on a fixed and balanced platform. Avoid any uneven surfaces.
9. Do no direct the camera towards strong / intensive light. Doing so could cause irreversible damage to the camera sensor, thus voiding all warranty on the camera.
10. Use a dry cloth to clean the camera housing, along with a neutral cleaning agent if necessary. To avoid damage on the camera lens, do not use strong or abrasive cleaning agents on the camera.
11. To avoid mechanical trouble, please do not hands to rotate the camera head. Please refrain from touching or moving the camera while its in motion, as it can cause irreversible damage to the motor mechanisms and thus voiding all warranty on the camera.



## Power Supply Polarity Schematics:



### **⚠Warning:**

Video quality can be affected by specific frequencies of electromagnetic fields.

# Packing List

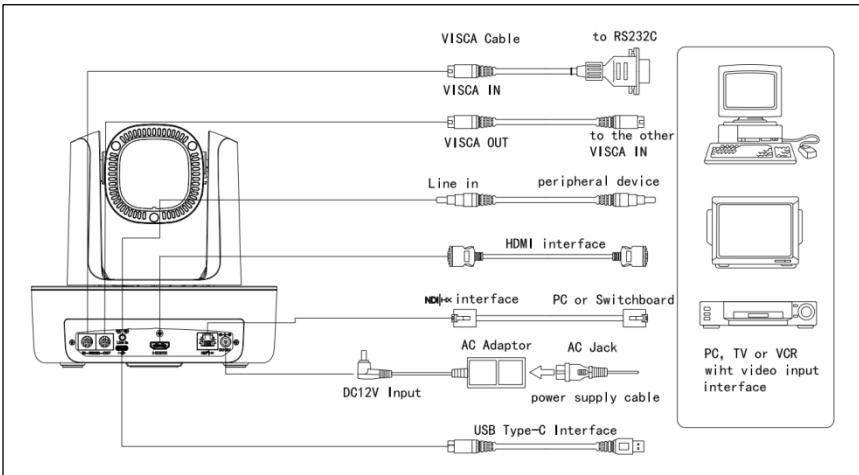
Check for the items below when opening the package!

**1**  
EA

- AIDA PTZ Camera
- Power Adapter
- Power Cable
- RS232 Control Cable
- USB Type-C Cable
- Remote Control
- User Manual
- Double Sided Adhesive
- QC Certification
- Wall Mount

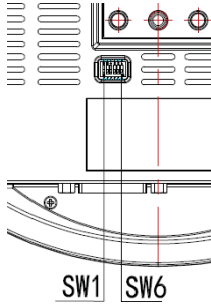
## Quick Start

1. Please ensure all the cabling is correct. (PTZ Outputs may vary per model, please check the back of the camera to see which outputs you have.)



# Quick Start (CONTD)

## For AIDA Support Representatives only:



Dial Switch (ARM)			
	SW-1	SW-2	Mode
1	OFF	OFF	Updating Mode
2	ON	OFF	Debugging Mode
3	OFF	ON	Undefined
4	ON	ON	Working Mode

Dial Switch			
	SW-3	SW-4	Instruction
1	OFF	OFF	Reserve
2	ON	OFF	Reserve
3	OFF	ON	Reserve
4	ON	ON	Reserve

Dial Switch (USB)			
	SW-5	SW-6	Instruction
1	OFF	OFF	Undefined
2	ON	OFF	Working Mode
3	OFF	ON	Undefined
4	ON	ON	Undefined

# Product Highlights

- Contains a Sony Progressive CMOS Sensor providing 3840x2160 crisp UHD resolution at up to 60 frames.
- Optical Wide Angle Lens (12X) or Tele Angle Lens (30X) available.
- UHD video over IP, via H.264 or H.265 encoding.
- Contains traditional outputs such as HDMI, and RJ-45 for RTSP/RTMP/SRT/NDI® | HX streaming.
- Supports 4K USB streaming (Only if IP / NDI streams are disabled.)
- Supports line-in function for unbalanced 3.5mm audio.
- Supports simultaneous outputs via HDMI, and RJ45..
- In-depth fully adjustable camera settings, such as exposure settings, image parameters, and white balance.
- Supports PoE+ (P≤ 25.5W) which allows for single ethernet cable for control and video over a single cable.
- Fast and precise focusing for no-delay video-quality
- Smooth and quiet PTZ movements for sound-sensitive rooms
- Supports up to 10 presets via the remote, or 128 presets via RS232 / web UI.
- Supports Sony Serial Visca and VISCA over IP. Also supports NDI control.
- Supports in and out Serial Daisy Chaining for up to 7 PTZ cameras.
- Menu based parameters such as image flip and mirror for stress-free installations.
- Handheld remote can also be used to switch video formats fast, as well as change camera IP via the menu.
- Free firmware updates to keep the camera up to date with the latest and greatest!
- Supports NDI® HX transmission.

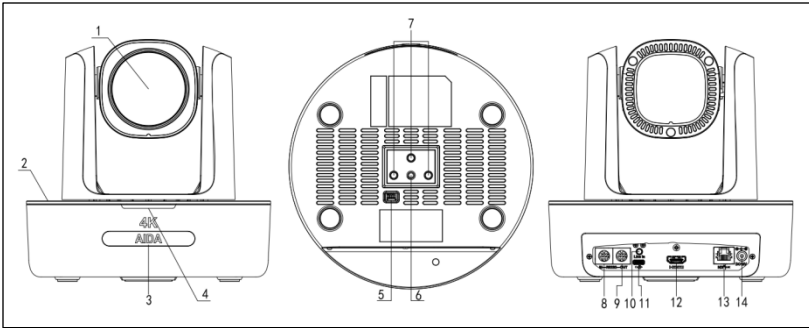
# Camera Specs

Video Formats (Varies per model)	HDMI	3840*2160P60/59.94/50/30/29.97/25 1920*1080P60/59.94/50/30/29.97/25/24/23.98 1920*1080i60/59.94/50 1280*720P60/59.94/50/30/29.97/25
	USB Type-C	MJPEG, H.264: 3840*2160P30; 1920*1080P30; 1280*720P30; 1024*576P30; 800*448P30 NV12: 1920*1080P10; 1280*720P25; 1024*576P30; 800*448P30
	RJ-45 (NDI®   HX)	3840*2160P15~60;1920*1080P15~60; 1280*720P15~60; 1024*576P15~60; 640*360P15~30

## Camera Specs (CONTD)

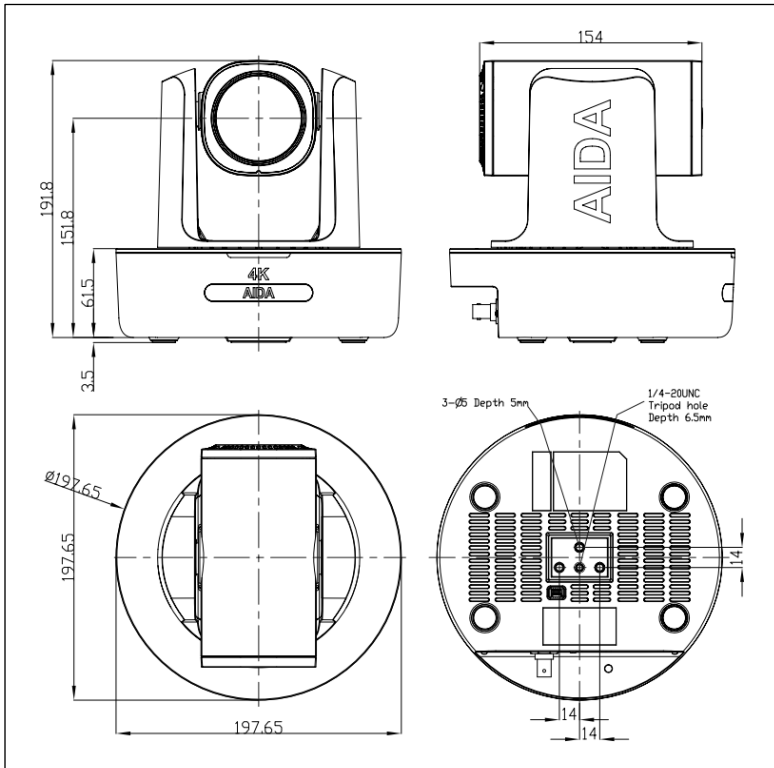
Video Interface	HDMI, RJ-45(NDI® HX), USB Type-C
Sensor	SONY Progressive CMOS Sensor
Zoom	12x/30x Optical Zoom Options
Lens	<p><b>12X Optical Zoom Specs:</b>              80°(wide)~8°(Tele)(Subject at 20ft from camera)              Focal Length and Fstop no.:              f=3.4(near)~40.3mm(far), F1.8(wide)~3.6 (tele)</p> <p><b>30X Optical Zoom Specs:</b>              60°(wide)~2°(Tele)(Subject at 20ft from camera)              Focal Length and Fstop no.:              f=6.91(near)~214.64mm(far), F1.35(wide)~4.6 (tele)</p>
Rotation Angle	Pan: -170°~+170°; Tilt: -30°~+90°
Rotation Speed	Pan: 0°~80°/s; Tilt: 0°~60°/s
Preset	Remote Controller: 10 RS-232: 128
Control Port	RS-232, RJ-45 (NDI® HX)
Network Speed	1000M
Video Encode	H.264/H.265 (default: H.264)
Bit Rate Control	Variable Bit Rate, Constant Bit Rate
Video Bit Rate	1024kbps(min)~61440 kbps(max)
IP Protocol	RTSP, RTMP, ONVIF, VISCA over IP, NDI® HX
Line in	Supporting ACC audio coding
Daisy Chain	Support RS-232 serial daisy chain
Minimum Lux	0.01 Lux
White Balance	Auto/Manual/Indoor/Outdoor/One Push/Color Temperature
Exposure	Auto/Manual/Bright/Shutter/Iris
Focus	Auto/Manual
Iris	Auto/Manual
Anti-Flicker	OFF/50Hz/60Hz
Image Voltage	DC12V/PoE+(P≤25.5W)
Dimension	220mm×190mm×193.5mm/8.66"x7.48"x7.62"
Net Weight	1.9kg/4.2lbs

# Camera Interface



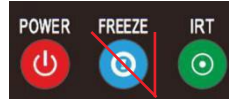
- |                                    |                             |                          |
|------------------------------------|-----------------------------|--------------------------|
| 1.Camera Lens                      | 6.1/4" tripod mounting hole | 11.USB Type-C            |
| 2.Camera Base                      | 7.WM Installation Holes     | 12.HDMI Output           |
| 3.IR receiver panel                | 8.RS-232 Control Input      | 13.RJ-45(NDI®   HX) Port |
| 4.Power/Tally Indicator            | 9.RS-232 Control Output     | 14.DC12V Plug-in port    |
| 5.Dial Switches(AIDA support only) | 10.Line in port             |                          |

# Camera Dimensions (in mm)





# IR Remote Controller



## Power

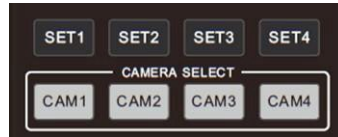
When powered on, pressing the power key will enter the camera into Standby mode. Pressing it again will start up the camera. \*Note: This is not any means of shutting off the camera, it only shuts down the motor mechanics. Video will still display.

## Freeze (No Function)

The freeze button has no functionality.

## IRT (IR Transfer/IR Pass)

Enables IR Transferring onto 4 separate signals. Best used when operating multiple PTZ's in same line of sight.



## SET 1~4 Address Setting:

Hold the SET# button to set the cameras IR address.

## CAM 1~4 Buttons:

Pressing the CAM# button will enable the IR control of the selected IR Address.



## Number Keys (0-9)

Setting Presets: To set a preset, hold down a key (0-9) and wait 3 seconds. Once complete, the preset will be saved to that #.

Recalling Presets: Pressing a key (0-9) will recall the corresponding preset saved to that number.

## Clearing Presets (CLR PRE)

Clearing Presets: To clear a preset, press CLR PRE and the #.

## Learn (LEARN)

Currently has no independent function. Used with other funcs.

# New IR Remote Controller (as of 2024+)



## Focus Adjustments (+/-)

Tapping the + or – will set the camera to manual focus for a set precise focus adjustment.

## Zoom Control (+/-)

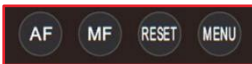
Tapping the + or – will zoom in or out the camera head.

## Camera head Control (Up/Down/Left/Right)

Tapping the directional buttons will adjust the PTZ head accordingly. If menu is open, these can be used to navigate it.

## Resetting the Camera Head (OK)

Pressing the OK button will reset the PTZ head to HOME. IF menu is open, this can be used to enter sub-menus.



## Auto Focus (AF)

When enabled, the camera will automatically focus on the object in the center of the camera.

## Manual Focus (MF)

When enabled, the camera will remain the same unless adjusted by the +/- focus keys.

## Resetting Image Settings (RESET)

Press to reset all image parameters.

## Accessing the Camera's Menu (MENU)

Press Menu to enter the camera settings.

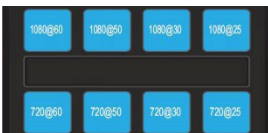


## Limiting Camera Movement (LIMIT L/R/CLR)

You can adjust the pan / tilt threshold by pressing the LIMIT L and LEARN button to set the Left (LIMIT L) or Right (LIMIT R) threshold. You can use LIMIT CLR to reset this.

## (SCAN)

Currently has no function.



## Video Format Keys (Blue buttons at the bottom)

Allows for hot swapping specific resolutions when needed. Simply hold the blue button corresponding to the resolution you want and it will change. (Only works on HDMI/SDI outputs only.)

# New IR Remote Controller (as of 2024+)

## 1. Power / Standby

These buttons power ON and STANDBY the camera. Standby turns off the video output on the camera, but power may still be drawn.

## 2. SET IR Address

Hold down for 3 seconds while point at the camera to set the corresponding Address ID. Good for multiple cameras sharing the same IR address.

## 3. Select CAM Address

Press once to change the remote's IR frequency to the corresponding address.

## 4. PTZ Tour (Future Update)

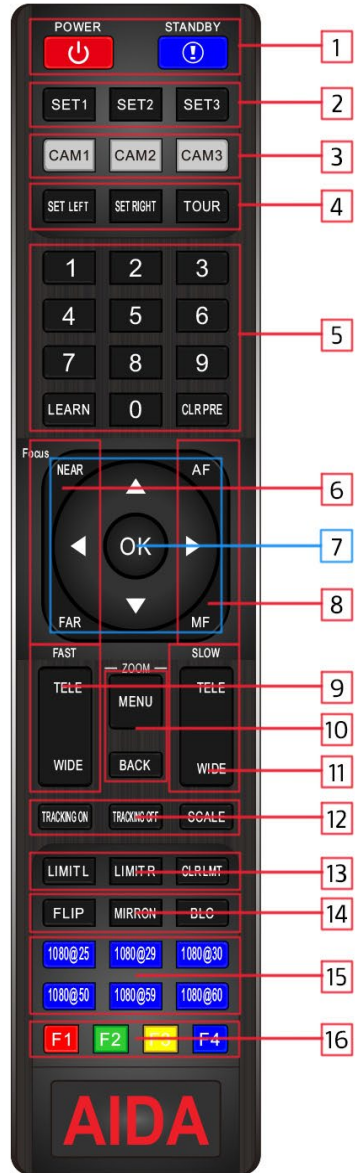
Sets the corresponding LEFT and RIGHT limits of the PTZ for tour mode. In tour mode, the PTZ will go in between set points without stopping.

## 5. Preset Buttons

Each number 0-9 correspond to 1 preset save. Press learn + (0-9) to save the designated preset. Press CLR PRE + (0-9) to clear the designated spot. Some shortcuts are:

Press (0-9) **ONCE** - Goes to preset

**HOLD** for 3 seconds (0-9) - Set preset



## New IR Remote Controller (as of 2024+)

### 6. Focus Near/Far

Press NEAR or FAR to automatically focus the camera's image. Doing so automatically places the camera in MANUAL focus mode, and will remain so until AF is pressed again.

### 7. Pan/Tilt/OSD Movement

PRESS or HOLD corresponding arrow to pan/tilt the PTZ camera accordingly. This will also be the selection keys in the menu, with using them to navigate through the OSD menu.

### 8. AF / MF

AF sets the PTZ in autofocus mode, immediately focusing on the estimated center of the video. MF sets the PTZ to manual focus, making the PTZ not adjust automatically.

### 9. TELE / WIDE Fast

Zoom In/Out with FAST speed using the corresponding buttons.

### 10. Menu / Back

Press Menu to enter the OSD screen of the menu.

◇ NOTE: OSD menu will only be visible via HDMI, SDI and SFP+ outputs.

### 11. TELE / WIDE Slow

Zoom In/Out with SLOW speed using the corresponding buttons.

### 12. A.I. Autotracking Options

Tracking ON effectively turns on the AI autotracking. Any commands with the pan tilt movement on controller will be ignored.

Tracking OFF turns off tracking, restoring pan tilt movement controls on the controller.

SCALE effectively toggles through the scaling options available through the autotracking feature, increasing or decreasing the overall targets size in video.

### 13. Pan Tilt Limit Settings

Limit L - Limits the motor from going past the LEFT of the designated point.

Limit R - Limits the motor from going past the RIGHT of the designated point.

CLR LMT + Limit L or R: Erases the limit set on the PTZ.

◇ NOTE: Limits can be great to avoid unwanted capture of areas outside the target zone.

◇ NOTE: These limits are for manual pan/tilt actions only. Autotracking will continue past these limits, and will require web UI set limits to ensure it doesn't go past.

### 14. PTZ Settings

Flip - Invert the camera's image via Y axis

Mirror - Invert the camera's image via X axis

BLC - Turn ON or OFF backlight comp.

# New IR Remote Controller (as of 2024+)

## 15. Quick Format Buttons

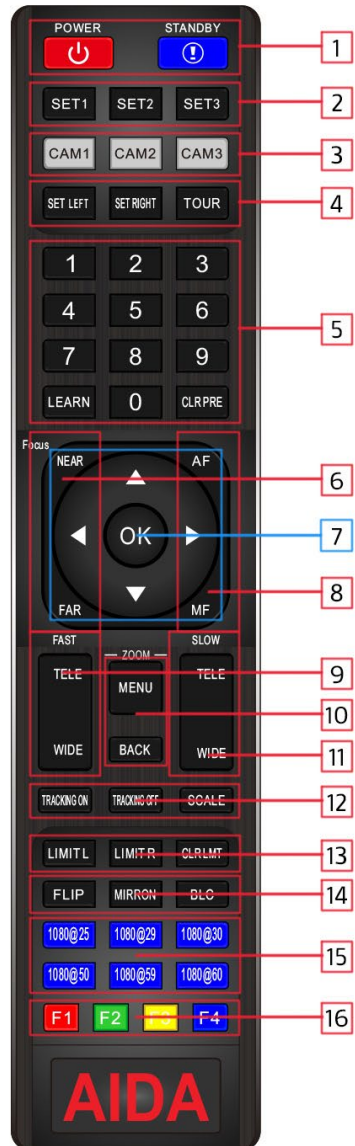
In case video is lost, hold the desired format resolution and frame rate button towards the camera for 5 seconds. The camera will then reset to that designated resolution and framerate.

◇ NOTE: This option is kept for situations where a resolution may not be supported from the ingest. 1080 60fps is widely accepted on most modern day monitors and TV's.

## 16. Function Buttons

These buttons are reserved for AIDA / Authorized dealer's to run tests on the PTZ. These have no other functions.

◇ NOTE: Batteries are not included with the remote. Please add triple A batteries to use the IR remote.



(CONTD)

## OSD MENU

1. To enter the menu, simply use the handheld remote and press the MENU key to enter the menu.
2. To navigate the menu, please use the directional keypad.
3. Press the RIGHT directional keypad to enter a submenu. Press the LEFT directional keypad or MENU button to exit a submenu or main menu.

SYSTEM	PROTOCOL	Optional: VISCA, PLC.P, PLC.D	Default: VISCA
	ADDRESS	VISCA:: 1~7 PLC-P/D: 0~255	Default: 1
	BAUDRATE	Optional: 2400, 4800, 9600, 115200	Default: 9600
	PROTOCOL LOCK	Optional: OFF, ON	Default: OFF
	RS485	Optional: OFF, ON	Default: ON
	VISCA PATH	Optional: OVER ALL, OVER IP, OVER COM	Default: OVER ALL
	LANGUAGE	Optional: CHINESE, ENGLISH, RUSSIAN	Default: ENGLISH

EXPOSURE	EXPOSURE MODE	AUTO、MANUAL、SHUTTER、IRIS、BRIGHT	Default: AUTO
	SHUTTER	Shutter speed: 1/30~1/10000, only valid under MANUAL and SHUTTER mode	Default: AUTO
	IRIS	Iris setting: CLOSE~F1.8, only valid under MANUAL and IRIS mode	Default: AUTO
	GAIN	Gain setting: 0dB~30dB, only valid under MANUAL mode	Default: AUTO
	EXPOSURE BRIGHT	Bright setting: 0~27, only valid under BRIGHT priority mode.	Default: AUTO
	BRIGHT	0~15	Default: 8
	BLC	OFF/ON	Default: OFF

IMAGE	WHITE BALANCE MODE	Optional: ATW, MANUAL, AUTO, INDOOR, OUTDOOR, PUSH, C.T.	Default: ATW
	RED GAIN	Red gain level: 0~255, only valid under manual white balance mode	Default: AUTO
	BLUE GAIN	Blue gain level: 0~255, only valid under manual white balance mode	Default: AUTO
	COLOR TEMPERATURE	Set the color temperature value: 2500~10000 only valid under C.T. mode.	Default: AUTO
	FLICKER	Anti-Flicker setting: 50/60HZ/OFF, to reduce the video flicker	Default: 50HZ
	FOCUS MODE	AUTO, MANUAL	Default: AUTO

(CONTD)

**OSD MENU**(CONTD)

QUALITY	2D NOISE REDUCTION	2D noise reduction: the bigger value is, the less noise on image is, the lower resolution is	Default: OFF
	3D NOISE REDUCTION	3D noise reduction: OFF/AUTO/0~4, the bigger value is, the less motion noise on image is. High value will cause image smear.	Default: AUTO
	SHARPNESS	Sharpness setting: 0~15, the higher value is, edge of the image will be sharpen	Default: 6
	CONTRAST	Set contrast level: 0~15	Default: 8
	SATURATION	Set saturation level: 0~15	Default: 8
	GAMMA	Select gamma level: 0~15	Default: 8

QUALITY	2D NOISE REDUCTION	2D noise reduction: the bigger value is, the less noise on image is, the lower resolution is	Default: OFF
	3D NOISE REDUCTION	3D noise reduction: OFF/AUTO/0~4, the bigger value is, the less motion noise on image is. High value will cause image smear.	Default: AUTO
	SHARPNESS	Sharpness setting: 0~15, the higher value is, edge of the image will be sharpen	Default: 6
	CONTRAST	Set contrast level: 0~15	Default: 8
	SATURATION	Set saturation level: 0~15	Default: 8
	GAMMA	Select gamma level: 0~15	Default: 8

PTZ SETTINGS	SPEED BY ZOOM	Optional: OFF, ON	Default: ON
	FLIP	Flip horizontal	Default: OFF
	MIRROR	Flip vertical	Default: OFF
	PT SPEED	Set Pan Tilt speed: 5~24	Default: 18
	ZOOM SPEED	Set Zoom speed: 1~7	Default: 5
	PRE FRZ FREEZE	Shielding	Default: OFF
	PRESET PT SPEED	Preset head speed:2~24	Default: 15
	PRESET ZOOM SPEED	Preset zoom speed:1~7	Default: 5
	PRESET SAVE AE&AW	Optional: OFF, ON	Default: OFF

VIDEO FORMAT	SIZE	2160P, 1080P, 1080I, 720P
	FRAME RATE	60, 59.94, 50, 30, 29.97, 25, 24, 23.98

(CONTD)

## OSD MENU<sub>(CONTD)</sub>

IP SETTINGS	DHCP	OFF/ON
	IP	192.168.001.188 (Example)
	MASK	255.255.255.000 (Example)
	GATEWAY	192.168.001.001 (Example)
	MAIN SIZE	Current main stream resolution
	BITRATE	Current main stream bit rate
	SUB SIZE	Current sub stream resolution
	BITRATE	Current sub stream bit rate

Tracking	Autotracking Enable	OFF/ON
	AT Location	Left, Center, Right – positions target on frame
	AT Ratio	Ratio corresponds to how tight the shot of the target will be
	ALL RESET	Reset all parameter to default

RESET	SYSTEM RESET	Reset communication parameter to default
	CAMERA RESET	Reset image parameter to default
	PAN TILI RESET	Reset pan/tilt parameter to default
	ALL RESET	Reset all parameter to default

INFO RMATIONS	IR ADDRESS	Camera IR control address
	CLIENT	VISCA
	MODEL NO.	Model number
	ARM VERSION	ARM firmware version
	ISP VERSION	Camera ISP firmware version
	RELEASE DATE	Software release date



# Web Settings

The WebUI is a important tool to help harness the true power of this camera! Get familiar with it, as it's a great way to change settings when needed.

In order to connect to the web UI, you will need a RJ45 (ethernet) connection to the NDI® | HX port of the PTZ into a PC, or router that is then connected to a PC. You can control the settings on the webUI as long as the connecting device (PC, MAC, IPAD, TABLET, PHONE) is on the same network of the camera.

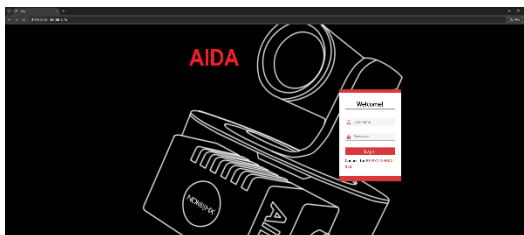
◇ NOTE: Unfortunately, not all devices will get the same features. Do note that some features or options may be disabled depending on your viewing device, so its best to operate from a PC or MAC web browser.

## HOW TO CONNECT:

1 To connect to the web UI, use a web browser such as Microsoft Edge, Google Chrome, or Safari. Once open, type in the IP address of the camera. You should be brought to the login page.

◇ NOTE: The default IP address of the PTZ will be 192.168.1.188. If the camera is not set up with DHCP – it will automatically fallback to that address as well.

◇ NOTE: If the web browser does not open the link, that means your device is not within the same IP range of the camera. This error is caused by the IP addresses on the PTZ and computer/device not being in the same range despite being physically connected. For more help on this issue, please view our tutorial on how to fix [this](#).



# Web Settings

2 Upon being greeted by the login page, please enter the following credentials for first time use:

Username: admin

Password: admin

You can change these credentials later.



The main preview screen after login serves as a live web-rtc preview you can use to view the stream. The top bars are the image parameter settings, while the right houses the pan tilt mechanics and settings.

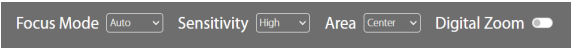
The top bar indicates the camera that is currently connected, as well as the IP address.



By clicking on each tab like this, it will dynamically change the menu displayed underneath the bar. This is one of the best ways to adjust the cameras settings on the fly due to its ease.

# Web Settings

## Focus



- **Focus Mode:** Changes the camera's focus mode here.
- **Sensitivity:** Change how sensitive the camera should try to focus if movement is detected via the PTZ.
- **Area:** Change the area in which the PTZ autofocus algorithm will be based off (relative to the current image)
- **Digital Zoom:** Enable more zoom after 30X optically by digitally cropping the sensor. Quality may be lost, and image may appear shaky depending on zoom.

## Exposure



- **Exposure Mode:** Select between 5 exposure modes
- **Anti-Flicker:** Adjust the anti-flicker settings of the camera. Try to match with the power source of the country in use.
- **Gain:** Adjust the GAIN of the image here.
- **Iris:** Adjust the IRIS of the camera.
- **Shutter:** Adjust the rate of the electronic shutter speed – 1/30~1/10000.
- **Brightness:** Adjust the brightness of the overall image.

## White Balance



- **WB Mode:** Choose between a selection of white balancing settings.
- **One Push:** A calibration setting for One Push mode. Hold a blank white piece of paper in front of the lens (within focus distance) and click this button. Best option for shading multi-cameras.
- **Manual Red:** When set to manual white balance, red gain will adjust red seen on the image.
- **Manual Blue:** When set to manual white balance, blue gain will adjust blue seen on the image.

# Web Settings

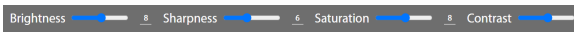
- **Color Temperature:** When set to temperature white balance, adjust the WB on the K scale.

## Image Effects

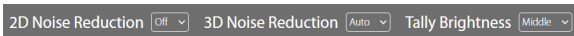


- **Mirror:** Flip the image on the Y Axis.
- **Flip:** Flip the image on the X axis.
- **BLC:** Backlight compensation setting that helps tame brighter lights in the image.
- **D-WDR:** Enables WDR, which helps with brightening darker areas compared to lighter areas on screen.
- **D-WDR Number:** Determines level of WDR. (higher is stronger)
- **GAMMA:** Allow for the overall brightness of the image in respect to the darker areas of the image.

## Image Settings



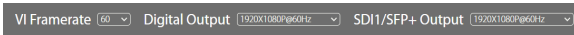
- **Brightness:** Adjust the overall brightness of the image.
- **Sharpness:** Allows for overall sharpness / edge enhance on the image.
- **Saturation:** Change the saturation of the image with this setting
- **Contrast:** Change the contrast of the cameras image.



- **2D Noise Reduction:** Allows for some noise reduction on a frame-by-frame basis, good for still or little motion videos. The higher it is, the less noise in the image but resolution may be affected.
- **3D Noise Reduction:** Allows for noise reduction both frame-by-frame and temporally – it detects the difference between noise and movement, limiting the amount of noise on frame.

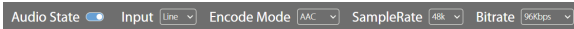
# Web Settings

## Video Settings



- **VI Framerate:** An important setting used to delegate PTZ resources to that specific framerate. This setting should match the framerate of the main output you plan to use.
- **Digital Output:** Resolution of the HDMI and USB resolution can be changed here.

## Audio Settings



- **Audio State:** Enable or disable audio embedment over the PTZ's outputs.
- **Input:** Choose whether the input or output of the audio is line or mic level.
- **Encode Mode:** Choose between different codecs to improve audio embedment over the outputs.
  - o **LCPM** – Mono output
  - o **AAC** – Standard TRS Stereo Output
  - o **OPUS** – Best latency audio, however at high bitrates may sound distorted
- **Bitrate:** Adjust the bitrate to increase or decrease the quality of audio.
- **Volume:** Increase the gain of the audio. Increasing too high may cause a lot of unwarranted noise, so try to keep to a minimum.
- **HDMI Audio:** Allow for audio Embedment over HDMI.
- **NDI® Audio:** Allow for audio embedment over NDI®.

# Web Settings

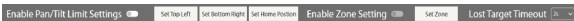
## Auto Tracking



- **Enable Auto Tracking:** Turn on or off the auto tracking feature.
- **Target Position:** Determine the position of the target relative to the camera horizontal position.
- **Target Scaling:** Determine the sizing of the target in correlation to the videos vertical positioning. Whole body is tallest, 1/20 is the smallest.

◇ NOTE: When using target scaling, please keep into account the distance from the target to the target is. If the target is too close to the camera (less than 12ft / 4M) then the camera will not be able to effectively meet the requirements set for scaling. Always leave more room for an easier, stressless installation!

- **Lock Scaling Ratio:** Disable the automatic resizing of the target regardless if the target is moving away from the camera.
- **Tilt Lock:** Disable the vertical movements when the target automatically resizes the target.
- **Switch Target:** Switch between targets by using the left or right buttons respectively



- **Enable Pan/Tilt Limit Settings:** Enable or disable the pan tilt limit settings.
- **Set Top Left:** Set the upper left limit you want the camera to go. The camera in auto tracking will not exceed this limit.
- **Set Bottom Right:** Set the lower right limit you want the camera to go. The camera in auto tracking will not exceed this limit.
- **Set Home Position:** When out of auto tracking mode, set the camera to the exact location you want the camera to reset to if the target is loss when auto tracking.
- **Enable Zone Setting:** Enable or disable the zone setting.

## Web Settings

- **Set Zone:** When out of auto tracking mode, set the camera to the exact location you the camera to be stationary, regardless if the target is found in the center. This is great for purposes like chalkboards, podiums, etc, where the target moves around a lot, but the camera shouldn't move until they leave this area. (zone)
- **Loss Target Timeout:** In a scenario where the target is lost, choose the amount of seconds it takes before the camera resets back to the set home position location.

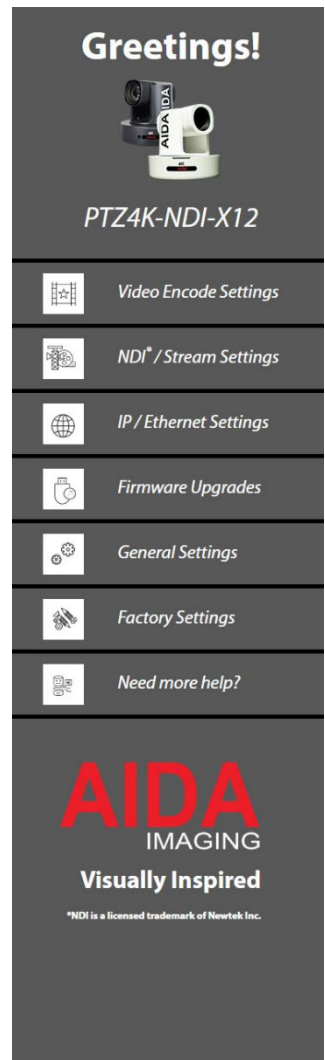
### Settings

By clicking the settings tab on the right of the screen, you will be presented with a list of options.

At the top is a greetings message with your camera model and picture of the camera.

Through the menu you will have a list of the stream settings, FW upgrades, and account settings of the camera.

Lastly, you will have a “need more help” button which will lead to our support page.



# Web Settings

## Video Encode Settings

Stream	Main	Sub
Enable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Encode Mode	H.264	H.264
Profile	MP	MP
RTSP Address	rtsp://192.168.1.188:554/stream/main	rtsp://192.168.1.188:554/stream/sub
Resolution	1920X1080P@60Hz	640X360P@30Hz
Bitrate(kbps) (512-32768)	8192	1024
Bitrate Control	CBR	CBR
I Frame Interval (1-120)	60	30

Here you have access to the Main and Sub streams of the camera. Sub stream is unable to be turned off due to NDI® requirements, once you turn off all NDI® related streams in the camera, then the option to turn sub field will become available.

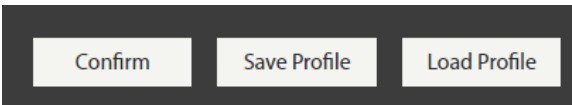
◇ NOTE: Video encode is the main properties of the NDI®, RTSP, RTMP, SRT, and all other functional streams out the RJ45 port. They all share the same properties and cannot be individualized unfortunately.

- **Enable:** Enables the Main or sub stream
- **Encode Mode:** Choose between H.264 or H.265 encoding. H.264 has slightly better quality than H.265, while H.265 has slightly better latency than H.264. (under ideal conditions)
- **Profile:** Under profile are the MP and HP options. Main profile is the most universal encode profile that will 99% work well with other softwares / hardware. High Profile is a higher quality profile, however it isn't as universal as MP.
- **RTSP address:** You can copy and paste the RTSP address of the camera from here.
- **Resolution:** Change the cameras streaming resolution here. Note that changing some settings may cause certain resolutions to disappear, like when NDI HX3 is enabled.



## Web Settings

- **Bitrate:** Choose the bitrate in kbps output from the RJ45 port. The higher the bitrate, the better quality the stream. Ensure your switch / router has enough headroom if you enable max bitrate with multiple items on the network.
- **Bitrate Control:** CBR and VBR options are available. CBR is constant bitrate, and the most stable. VBR is variable bitrate, which will automatically raise or lower the bitrate, but not quite as stable as CBR.
- **I Frame Interval:** This determines how many increments before an I-frame is taken. If the increments are high, then less bandwidth is consumed resulting in lower picture quality. Lower increments increases quality, but it costs higher bandwidth and potential quality drop during movements on video.



Once you have chosen your desired settings, please press confirm to save those settings.

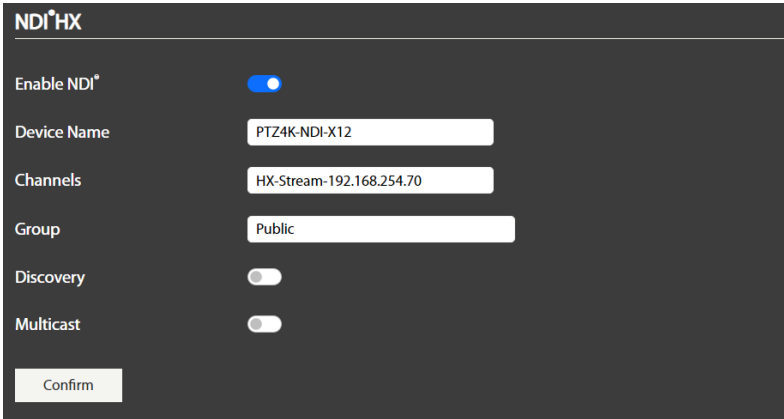
Alternatively, you can click save profile to save the settings in a config.txt file that you can then upload to other AIDA cameras with the same config settings, that way you can simplify setup easily!

Load profile will then accept the saved .txt file from the previous step.

# Web Settings

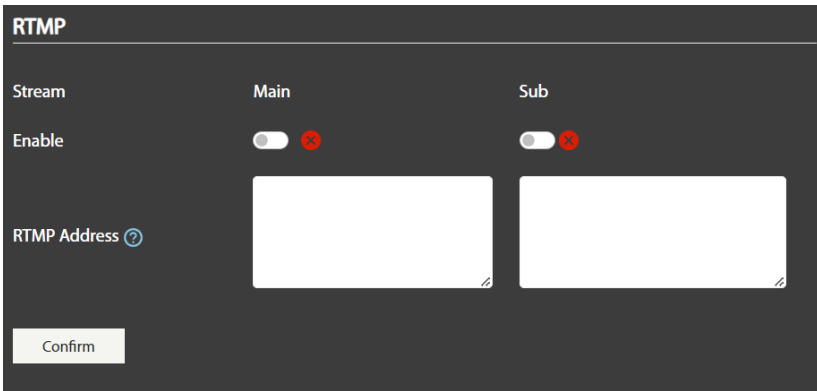
## Video Encode Settings

Under Video Encoding Settings, you will see options related to NDI®, RTMP, and SRT.



- **Enable NDI®:** This is a generalized setting for NDI HX and NDI HX3 streaming. Enable or disable it here.
- **Device Name:** Change the device name that pops up when accessing the NDI stream.
- **Channels:** Change the channel name that pops up when accessing the NDI stream.
- **Group:** Change the group name that the camera should belong in.  
◇ NOTE: Changing this setting without knowledge of NDI® groups may cause your stream to not appear on your device! Just change it back to Public if you are unsure. You have been warned!
- **Discovery:** Enable and enter the discovery server if you are planning on using NDI network discovery.
- **Multicast:** Enable the NDI® multicast function here.

# Web Settings



RTMP also has a main and sub field. They are off by default.

- Enable: Enables the Main or sub RTMP stream
- RTMP Address: Input the RTMP address you are trying to stream to. These can directly stream to live streaming platforms like Youtube, Facebook, and others.

## Streaming RTMP examples

- 1、 `rtmp://192.168.6.188:1935/app/rtmpstream0`
- 2、 `rtmp://a.rtmp.youtube.com/live2/f1e5-4a42-81e7-dwqv`
- 3、 `rtmps://live-api-s.facebook.com:443/rtmp/159001718833947?s_bl=1&s_sml=3&s_sw=0&s_vt=api-s&a=AbwTqU3PuEvtzAdn`

Once your settings are complete, you will see a X or ✓ depending on if the camera is successfully sending a RTMP stream. Once you are done, click submit to start the stream.

◇ NOTE: RTMP streams continue to run until turned off, or connection to the host site is gone. If you do not plan on streaming anymore, make sure you turn off the stream.

◇ NOTE: If you are unable to connect directly to certain streaming sites, ensure that DHCP or the proper port forwarding is enabled for the camera to reach the internet. If the camera is unable to connect **to** the internet, RTMP streaming service will not work. Here is a guide on [how to set that up:](#)

# Web Settings

**SRT**

Mode: Listener

Enable:

Port: 1600

Latency(ms): 120

Encryption:

Key Length: 16(AES-128)

Passphrase:

Main Stream: srt://192.168.1.188:1600?streamid=f=0

Sub Stream: srt://192.168.1.188:1600?streamid=f=1

Confirm

Under SRT, you are able to send a stream via listener, caller, or rendezvous. To learn more about them, please visit the official Haivision [documentation here](#).

- **Mode:** choose the camera's SRT mode by selecting caller, listener, or rendezvous.

## Listener Mode:

- **Enable:** Enable the SRT function to stream. This will remain on until turned off.
- **Port:** Enter the desired port you want to send or receive SRT from.
- **Latency:** Adjust the desired latency of the stream. Setting it too low may decrease stream quality.
- **Encryption:** If you want to add a passkey to access the stream, you can enable that here. If this is not on, SRT will still stream, but it will be public to others on the network if they have the camera data.
- **Key Length:** Choose the length of the passkey and available lettering.
- **Passphrase:** Enter the password here.
- **Main / Sub stream:** Copy this stream code and paste it into the software accepting the SRT stream in caller mode.

# Web Settings

**SRT**

Mode:

Stream	Main	Sub
Enable	<input type="checkbox"/>	<input type="checkbox"/>
IP/Domain	<input type="text"/>	<input type="text"/>
Port	<input type="text"/>	<input type="text"/>
Latency(ms)	<input type="text"/>	<input type="text"/>
Encryption	<input type="checkbox"/>	<input type="checkbox"/>
Key Length	<input type="text" value="32(AES-256)"/>	<input type="text" value="32(AES-256)"/>
Passphrase	<input type="text"/>	<input type="text"/>
Stream ID	<input type="text"/>	<input type="text"/>


## Caller/Rendezvous Mode:

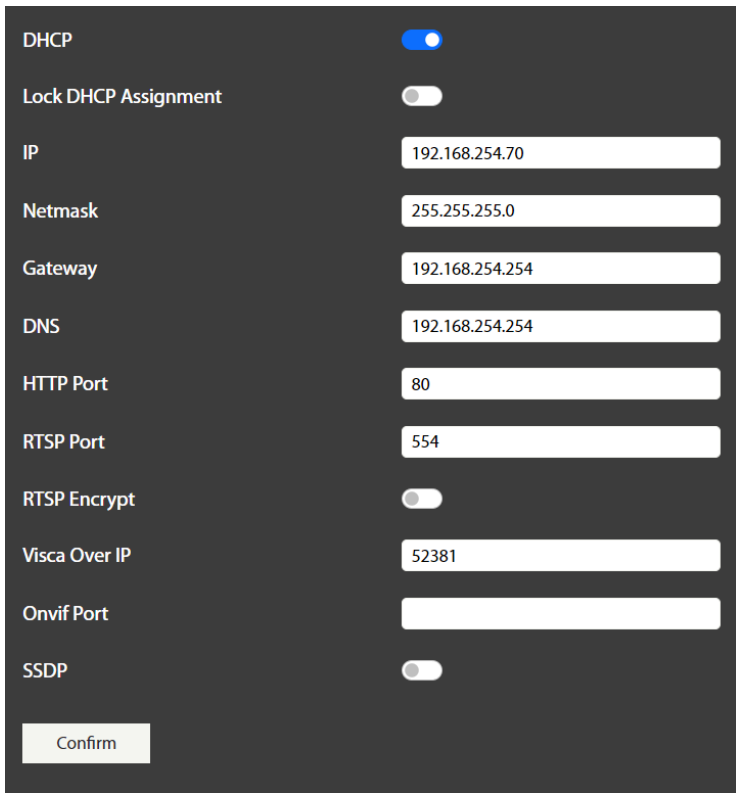
- **Enable:** Enable the SRT function to stream. This will remain on until turned off.
- **IP/Domain:** enter the domain or IP of the device you want to send the stream to.
- **Port:** Enter the desired port you want to send or receive SRT from.
- **Latency:** Adjust the desired latency of the stream. Setting it too low may decrease stream quality.
- **Encryption:** If you want to add a passkey to access the stream, you can enable that here. If this is not on, SRT will still stream, but it will be public to others on the network if they have the camera data.
- **Key Length:** Choose the length of the passkey and available lettering.
- **Passphrase:** Enter the password here.
- **Stream ID:** The unique indicator when entering the stream into your listener software. Equivalent to the r=0 found in listener mode.

# Web Settings

## IP Settings

In this tab, you will find all the IP settings of the camera.

 Do not attempt to change any options you are unsure of. Changing any options can temporarily make access to your PTZ harder or not possible. Only change settings that you know about, or ask our support team for more info.



DHCP	<input checked="" type="checkbox"/>
Lock DHCP Assignment	<input type="checkbox"/>
IP	<input type="text" value="192.168.254.70"/>
Netmask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="192.168.254.254"/>
DNS	<input type="text" value="192.168.254.254"/>
HTTP Port	<input type="text" value="80"/>
RTSP Port	<input type="text" value="554"/>
RTSP Encrypt	<input type="checkbox"/>
Visca Over IP	<input type="text" value="52381"/>
Onvif Port	<input type="text"/>
SSDP	<input type="checkbox"/>

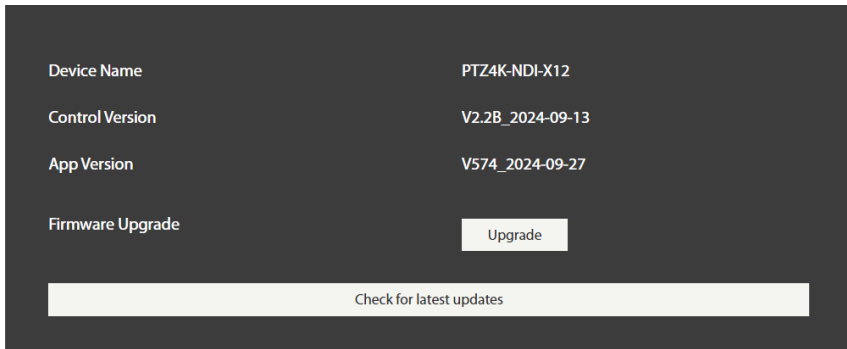
- **DHCP:** Enable or disable the cameras DHCP protocol.
- **System IP:** This is the main system IP, and the IP you will use to connect to the web UI.
- **Netmask:** You can adjust the netmask settings here.
- **Gateway:** You can adjust the gateway settings here.
- **DNS:** You can adjust the DNS settings here.

## Web Settings

- **HTTP Port:** You can adjust the HTTP port here (leave this at 80 for your standard webUI connection support.)
- **RTSP Port:** Change the RTSP port number here.
- **RTSP Encrypt:** Enable RTSP encryption by toggling this option on.
- **VISCA over IP:** Change the VISCA over IP port number here. 52381 is a standard in the industry, and we recommend not changing it.
- **ONVIF Port:** Change the ONVIF port number here.
- **SSDP:** Enable or disable simple service discovery protocol here.

## Firmware Upgrades

This tab allows you to check the control / app version of the PTZ. Note that the most important things to look for are the numbers, not dates! Some FW will release later than others, but have a earlier completion date.



For firmware upgrades, the download from our site will accompany instructions on how to install the firmware. You can click the “check for latest updates” button at the bottom to automatically lead you to our website where you can see if a new update is available for your camera.

## Firmware Upgrades

General settings allows you to change your account name, and NTP information of the camera.

# Web Settings

The screenshot displays a dark-themed web settings interface. It is divided into two main sections: 'Account' and 'Time Setting', each with a horizontal line separator below its title. The 'Account' section contains three input fields: 'Account', 'Password', and 'Confirm Password', all of which are currently empty. Below these fields is a 'Confirm' button. The 'Time Setting' section contains five settings: 'Time Zone' is a dropdown menu set to 'UTC'; 'NTP Enable' is a toggle switch that is turned on; 'NTP Update Interval' is a dropdown menu set to '24h'; 'NTP Server Address' is an input field containing 'time.nist.gov'; and 'NTP Port' is an input field containing '123'. A 'Confirm' button is located at the bottom of this section.

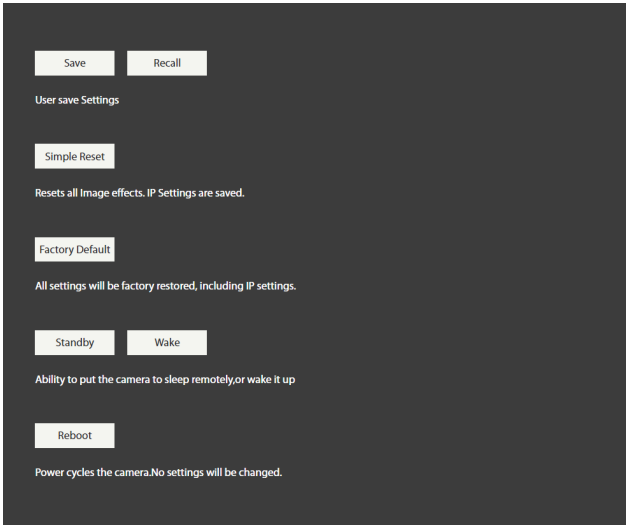
- **Account:** Change the account name in this field
- **Password:** Change the password of the account in this field
- **Confirm Password:** Enter the password one more time to ensure it is correct.
- **Confirm:** Press once you are ready to confirm your account details.
- **Time Zone:** Change the UTC options for the NTP server.
- **NTP Enable:** Enable the camera to search and update via a NTP server.
- **NTP Update Interval:** Change how often the camera updates.
- **NTP Server Address:** Change the IP address that the NTP server updates from.
- **NTP Port:** Change the NTP port number here.



# Web Settings

## Factory Settings

This tab allows you to recall or save settings, factory reset, and reboot the camera.



- **Save Recall User Settings:** Saving user settings allows you to save the camera state onto a config file, and upload via the recall tab. Perfect for multi-camera installations.
- **Simple Reset:** Use this button to reset all image effects. IP settings will not be changed.
- **Factory Default:** Return the camera to its factory state.  
◇ NOTE: Factory resets can help deal with bugs and memory leaks. If you are having issues connecting or settings not saving, try giving the camera a factory reset.
- **Standby / Wakeup:** Put the camera to sleep, or wake it with these options. (power may still be consumed when on standby.)
- **Reboot:** Power-cycle the PTZ with this option.

# VISCA Over IP

## VISCA over IP:

Our PTZ's use VISCA over IP to reliably send and receive information from any standard VISCA over IP controller!

Information of Communications port:

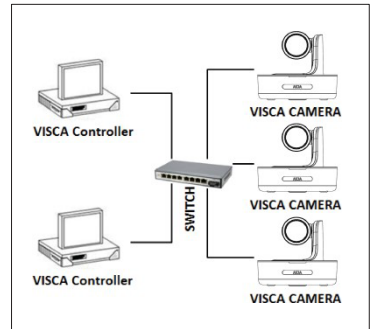
Control Port: RJ-45 LAN connection

IP Protocol: IPv4

Transmission Protocol: UDP

IP Address: \*depends on your camera's IP

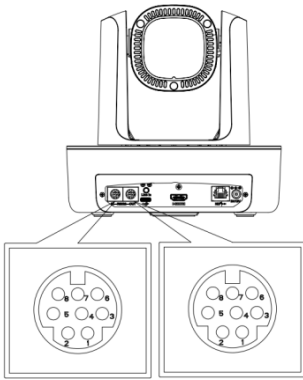
Port Address: 52381



## What is VISCA over IP?

Simply put, VISCA over IP is the magic behind the communications between controller and PTZ cameras! These VISCA commands are sent via UDP protocol. Since UDP transmission isn't stable, a couple of steps must occur before a movement is executed. First, the controller will send out a VISCA command to our camera. Our camera will then receive and send back the same command to the controller. Once the commands are confirmed – the movement will be executed. At the end, a message back to the controller will confirm the action was actually done. Each VISCA command controls its own settings, as there could be no overlaps of existing commands. Luckily, this happens instantaneously so there is no lag when using VISCA over IP!

# VISCA (RS-232) Port



1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	A
7	IR OUT
8	B

## VISCA IN & Mini DIN Connection

Camera VISCA IN		Mini DIN	
1	DTR	1	DSR
2	DSR	2	DTR
3	TXD	5	RXD
4	GND	4	GND
5	RXD	3	TXD
6	A(+)	6	NC
7	IR OUT	7	NC
8	B(-)	8	NC

## VISCA IN & DB9 Connection

Camera VISCA IN		Windows DB9	
1	DTR	6	DSR
2	DSR	4	DTR
3	TXD	2	RXD
4	GND	5	GND
5	RXD	3	TXD
6	A(+)		
7	IR OUT		
8	B(-)		

## Serial Port Configuration

Parameter	Value	Parameter	Value
Baud Rate	2400/4800/9600/115200	Stop Bit	1 Bit
Start Bit	1 Bit	Check Bit	None
Date Bit	8 Bit		

# VISCA Protocol

For whole updated list, please reach out to our support team!

## Part 1: Camera Return Command

ACK/Completion Message		
	Command Packet	Note
ACK	z0 41 FF	Returned when the command is accepted
Completion	z0 51 FF	Returned when the command has been executed

z= camera address +8

Error Messages		
	Command Packet	Note
Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted
Command Not Executable	z0 61 41 FF	Returned when the command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.

## Part 2: Camera Control Command

AddressSet	Broadcast	88 30 01 FF	Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CommandCancel		8x 21 FF	
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)
	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	pqrs: Zoom Position (0 (wide)~0x4000(tele))
	Direct with speed	8x 0A 04 47 0t 0p 0q 0r 0s FF	t: spd 0~7 pqrs: Zoom Position (0(wide)~0x4000(tele))
	Separate Mode	81 01 04 36 01 FF	Separate with optical zoom control

# VISCA Protocol (CONTD)

CAM_DZoom	Stop	81 01 04 06 00 FF	Enable in separate mode
	Tele(Variable)	81 01 04 06 2p FF	Enable in separate mode
	Wide(Variable)	81 01 04 06 3p FF	Enable in separate mode
	Direct	81 01 04 46 0p 0q 0r 0s FF	Enable in separate mode
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far(Standard)	8x 01 04 08 02 FF	
	Near(Standard)	8x 01 04 08 03 FF	
	Far(Variable)	81 01 04 08 2p FF	p=0 (Low) to 7 (High)
	Near (Variable)	81 01 04 08 3p FF	p=0 (Low) to 7 (High)
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position
	Auto Focus	81 01 04 38 02 FF	
	Manual Focus	81 01 04 38 03 FF	
One Push AF	8x 01 04 18 01 FF		
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position (0(wide)~0x4000(tele)) tuvw: Focus Position
CAM_WB	Auto	8x 01 04 35 00 FF	
	Indoor	8x 01 04 35 01 FF	
	Outdoor	8x 01 04 35 02 FF	
	One Push	8x 01 04 35 03 FF	
	ATW	8x 01 04 35 04 FF	
	Manual	8x 01 04 35 05 FF	
	Sodium lamp	8x 01 04 35 08 FF	
	Flourescent	8x 01 04 35 09 FF	
	One Push Trigger	8x 01 04 10 05 FF	
CAM_RGain	Reset	8x 01 04 03 00 FF	
	Up	8x 01 04 03 02 FF	Manual Control of RGain
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: RGain (0~0xFF)
CAM_BGain	Reset	8x 01 04 04 00 FF	
	Up	8x 01 04 04 02 FF	Manual Control of BGain
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: BGain (0-0xFF)

# VISCA Protocol (CONTD)

CAM_AE	Full Auto	81 01 04 39 00 FF	Automatic Exposure mode
	Manual	81 01 04 39 03 FF	Manual Control mode
	Shutter Priority	81 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	81 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	81 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 (0~0x15)
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting (0~0x0D)
	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 (0~0x0D)
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting (0~0x0E)
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 0C 00 00 0p 0q FF	pq: Gain Position (0~0x0E)
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 (0~0x1B)
CAM_ImageBright	Direct	8x 01 04 A4 00 00 0p 0q FF	pq: Image Bright Position (0~0x0F) AE_AUTO/AE_SHUTTER/AE_IRIS
CAM_WDR	On	8x 01 04 3D 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3D 03 FF	
	Direct	8x 01 04 D3 pq FF	pq: ExpComp Position (0~0x6)
CAM_Backlight (BLC)	On	8x 01 04 33 02 FF	Backlight On
	Off	8x 01 04 33 03 FF	Backlight Off
CAM_Sharpness	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 (0~0x0F)

# VISCA Protocol (CONTD)

CAM_Memory (preset)	Reset	8x 01 04 3F 00 0p FF	p: Preset Number (=0 to 128) Corresponds to 0-9 on the remote controller
	Set	8x 01 04 3F 01 0p FF	
	Recall	8x 01 04 3F 02 0p FF	
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Image Flip Horizontal On/Off
	Off	8x 01 04 61 03 FF	
CAM_PictureFlip	On	8x 01 04 66 02 FF	Image Flip Horizontal On/Off
	Off	8x 01 04 66 03 FF	
CAM_RS485Ctl	On	8x 01 06 A5 02 FF	
	Off	8x 01 06 A5 03 FF	
CAM_Saturation	Saturation	8x 01 04 A1 00 00 0p 0q FF	qq: Saturation Level 0x00~0xff
CAM_Contrast	Contrast	8x 01 04 A2 00 00 0p 0q FF	qq: Contrast Level 0x00~0xff
CAM_SpeedByZoom	On	8x 01 06 A0 02 FF	
	Off	8x 01 06 A0 03 FF	
CAM_PTSpeed	PT Speed	8x 01 04 C1 00 00 0p 0q FF	qq: PT Speed 0x05~0x18
CAM_ZoomSpeed	Zoom Speed	8x 01 04 D1 00 00 0p 0q FF	qq: Zoom Speed 0x01~0x07
CAM_ZoomDisplay	On	8x 01 06 C2 02 FF	
	Off	8x 01 06 C2 03 FF	
CAM_Freeze	Freeze	8x 01 04 75 0p FF	p: Freeze switch 3=OFF, 2=ON
CAM_Preset Freeze Set	Preset Freeze Set	8x 01 04 76 0p FF	p: Preset Freeze switch 3=OFF, 2=ON
CAM_Preset PT Speed Set	Preset PT Speed Set	8x 01 7E 01 0B 00 qq FF	qq:Preset PT Speed 02~24 default:15
CAM_Preset Zoom Speed Set	Preset Zoom Speed Set	81 01 7E 01 2B 00 qq FF	qq:Preset Zoom Speed 01~07 default:5
CAM_Preset Speed Adj	Preset Speed Adj	8x 01 7E 01 1B 0p FF	p: Adjustment of direction 3=down, 2=up
CAM_IRaddress	IR address	8x 01 06 D8 0p FF	p: IR address1~4
CAM_Gamma	Gamma set	81 01 04 5B 0p FF	p: Gamma No. (0~4)
CAM_ColorGain	Direct	8x 01 04 49 00 00 0p 0q FF	(0~0x0E)
CAM_2DNR	Direct	8x 01 04 A5 0p FF	(0~0x1)
CAM_3DNR	Direct	8x 01 04 53 0p FF	(0~0x05)
FLICK	50Hz	81 01 04 23 01 FF	
	60Hz	81 01 04 23 02 FF	
	OFF	81 01 04 23 00 FF	

# VISCA Protocol (CONTD)

VideoSystem Set (AIDA)		8x 01 06 35 00 pp FF	pp: 1080P60 1080P50 1080i60 1080i50 1080P30 1080P25 720P60 720P50 720P30 720P25 1080P5994 1080i5994 1080P2997 720P5994 720P2997 1080P24 1080P2398 4K@30 4K@25 Video Format: 0x00 0x01 0x02 0x03 0x04 0x05 0x06 0x07 0x08 0x09 0x0F 0x10 0x13 0x14 0x11 0x12 0x15 0x16
VideoSystem Set (Sony)		81 01 04 24 72 0p 0q FF	pp: 1080P60 1080P50 1080i60 1080i50 1080P30 1080P25 720P60 720P50 720P30 720P25 1080P5994 1080i5994 1080P2997 720P5994 720P2997 1080P24 1080P2398 4K@30 4K@25 Video Format: 0x2e 0x2f 0x01 0x04 0x06 0x08 0x09 0x0c 0x0e 0x11 0x13 0x02 0x07 0x0a 0x0f 0x2a 0x2b 0x1D 0x1E
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000 to FFFF)
DHCP control	DHCP off	8x 01 04 AE 00 FF	DHCP off
	DHCP on	8x 01 04 AE 01 FF	DHCP on
Main Stream	Resolution	8x 01 04 C2 00 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrs: Column(x size) mnxxy: Line (y size) only support: 1920x1080/1280x720
	Rate	8x 01 04 C2 01 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrsmnxy: bitrate (1024~16384)
Sub Stream	Resolution	8x 01 04 C3 00 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrs: Column(x size) mnxxy: Line (y size) only support: 1280x720/1024x576/640x360
	Rate	8x 01 04 C3 01 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrsmnxy: bitrate (1024~16384)
Tally Control	Off	8x 01 7E 01 0A 00 0p FF	p: 0: OFF(LED off) 1: (LED green on) 2: (LED red on) 4: (LED blue on)
IP address control	IP Set	8x 01 04 AB 0p 0q 0r 0s 0m 0n 0x 0y FF	Set ip to :pq.rs.mn.xy
	Mask	8x 01 04 AC 0p 0q 0r 0s 0m 0n 0x 0y FF	Set mask to :pq.rs.mn.xy
	Gateway set	8x 01 04 AD 0p 0q 0r 0s 0m 0n 0x 0y FF	Set gateway to :pq.rs.mn.xy
Color adjust	Color Adjust OFF	8x 01 04 B6 00 FF	Color adjust off
	Color Adjust ON	8x 01 04 B6 01 FF	Color adjust on
	Brightness Balance OFF	8x 01 04 B7 00 FF	Keep Brightness
	Brightness Balance ON	8x 01 04 B7 01 FF	Don't Keep Brightness



# VISCA Protocol (CONTD)

Color adjust	Flare red	8x 01 04 B8 dat FF	Flare mode red value (Default=32)
	Flare green	8x 01 04 B9 dat FF	Flare mode green value (Default=32)
	Flare blue	8x 01 04 BA dat FF	Flare mode blue value (Default=32)
SYS_Menu	Menu On	8x 01 06 06 02 FF	Turn on menu
	Menu Off	8x 01 06 06 03 FF	Turn off menu
	Menu Back	8x 01 06 06 10 FF	Menu step back
	Menu Ok	8x 01 7E 01 02 00 01 FF	Menu ok
IR_Receive	On	8x 01 06 08 02 FF	IR(remote commander)receive ON/OFF
	Off	8x 01 06 08 03 FF	
	On/Off	8x 01 06 08 10 FF	
Cam_Tally	RGB	8x 01 7E 01 0A 00 0p FF	P=0: OFF P=1: RED P=2: GREEN P=3: RED&GREEN P=4: BLUE P=5: RED&BLUE P=6: GREEN&BLUE P=7: RED&GREEN&BLUE
Pan_TiltDrive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0x01 (low speed) to 0x18 (high speed)  WW: Tilt speed 0x01 (low speed) to 0x14 (high speed)  YYYY: Pan Position(TBD)  ZZZZ: Tilt Position(TBD)
	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	
	Absolute Position	8x 01 06 02 VV WW 0Y 0Y 0Y 0Z 0Z 0Z FF	
	Relative Position	8x 01 06 03 VV WW 0Y 0Y 0Y 0Z 0Z 0Z FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
Pan_Tilt_LimitSet	Set	8x 01 06 07 00 0W 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	PW: 1: UpRight 0:DownLeft YYYY: Pan Limit Position(TBD) ZZZZ: Tilt Limit Position(TBD)
	Clear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F FF	

# VISCA Protocol (CONTD)

## Part 3: Inquiry Command

Command Type	Command	Return	Note
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off (Standby)
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_Focus ModelInq	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	Indoor Mode
		y0 50 02 FF	Outdoor Mode
		y0 50 03 FF	OnePush Mode
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Grain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Grain
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_Shutter PosInq	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_ImageBright PosInq	8x 09 04 A4 FF	y0 50 00 00 0p 0q FF	pq: ImageBright Position
CAM_SaturationInq	8x 09 04 A1 FF	y0 50 00 00 0p 0q FF	pq: Saturation level 0x00~0x0f
CAM_DefogInq	8x 09 04 A3 FF	y0 50 0p FF	p: Defog level 0x00~0x0f
CAM_ContrastInq	8x 09 04 A2 FF	y0 50 00 00 0p 0q FF	pq: Contrast level 0x00~0x0f
CAM_WDRModelInq	8x 09 04 3D FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WDRPosInq	8x 09 04 2D FF	8x 01 04 02 03 FF	pq: WDR LEVEL Position 1~6

# VISCA Protocol (CONTD)

Command Type	Command	Return	Note	
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	p: Aperture Gain	
CAM_FlickerInq	8x 09 04 AA FF	y0 50 0p FF	p: Flick mode 0:off 1:50Hz 2:60Hz	
CAM_2DNRInq	8x 09 04 A5 FF	y0 50 0p FF	p: 2DNR: 0=OFF 1= AUTO 2	
CAM_3DNRInq	8x 09 04 53 FF	y0 50 0p FF	p: 3DNR: 0=OFF 1= AUTO 2~5=Manual Level	
CAM_GammaInq	8x 09 04 58 FF	y0 50 0p FF	p: Gamma Position	
CAM_MemoryInq	8x 09 04 3F FF	y0 50 pp FF	pp: Memory number last operated	
SYS_MenuModelInq	8x 09 06 06 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
CAM_LR_Reverse Inq	8x 09 04 61 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
CAM_PictureFlipInq	8x 09 04 66 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_DHCPInq	8x 09 04 AE FF	y0 50 pp FF		
CAM_IPInq	8x 09 04 AB FF	y0 50 0p 0p 0q 0q 0r 0r 0s 0s FF		
CAM_MASKInq	8x 09 04 AC FF	y0 50 0p 0p 0q 0q 0r 0r 0s 0s FF		
CAM_GATEWAYInq	8x 09 04 AD FF	y0 50 0p 0p 0q 0q 0r 0r 0s 0s FF		
CAM_FlareModelInq	8x 09 04 B6 FF	y0 50 pp FF		
CAM_FlareBright ModelInq	8x 09 04 B7 FF	y0 50 pp FF		
CAM_FlareRed	8x 09 04 B8 FF	y0 50 pp FF		
CAM_FlareGreen	8x 09 04 B9 FF	y0 50 pp FF		
CAM_FlareBlue	8x 09 04 BA FF	y0 50 pp FF		
CAM_VersionInq	8x 09 00 02 FF	y0 50 ab cd mn pq rs tu vw FF		
VideoSystemInq (AIDA)	8x 09 06 23 FF	y0 50 pp FF		pp: Video position
VideoSystemInq (Sony)	8x 09 04 24 72 FF	y0 50 0p 0p FF		pp: Video position
IR_Transfer	8x 09 06 1A FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
TallyInq	8x 09 7E 01 0A FF	y0 50 0p FF	p: tally state	
IR_Receive	8x 09 06 08 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
IR_ReceiveReturn		y0 07 7D 01 04 00 FF	Power ON/OFF	

# VISCA Protocol (CONTD)

Command Type	Command	Return	Note
IR_ReceiveReturn		y0 07 7D 01 04 00 FF	Zoom tele/wide
		y0 07 7D 01 04 07 FF	AF On/Off
		y0 07 7D 01 04 33 FF	CAM_Backlight
		y0 07 7D 01 04 3F FF	CAM_Memory
		y0 07 7D 01 06 01 FF	Pan_tiltDrive
Pan-tiltMaxSpeed Inq	8x 09 06 11 FF	y0 50 ww zz FF	ww: PanMaxSpeed zz: Tilt Max Speed
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0z 0z 0z 0z FF	www: PanPosition zzzz: Tilt Position
Mainstream ResolutionInq	8x 09 04 C2 00 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrs : Column(x size) mnxxy: Line (y size) only supports: 1920x1080/1280x720/1024x576
MainstreamRate Inq	8x 09 04 C2 01 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrsmnxxy: bitrate (1024~16384)
Substream ResolutionInq	8x 09 04 C3 00 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrs : Column(x size) mnxxy: Line (y size) only supports: 1280x720/1024x576/640x360
SubstreamRateInq	8x 09 04 C3 01 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrsmnxxy: bitrate (1024~5120)

Note: [x] refers to camera address; [y] = [x +8]

## VISCA Pan Tilt Absolute Position Value

Pan Angle	VISCA Value	Tilt Angle	VISCA Value
-170	0xF670	-30	0xFE50
-135	0xF868	0	0x0000
-90	0xFAF0	30	0x0180
-45	0xFD78	60	0x0360
0	0x0000	90	0x510
45	0x0288		
90	0x0510		
135	0x0798		
170	0x0990		

## VISCA Pan Tilt Speed Value

Pan Degree/Second			
0	03	03	03
1	1	1	1
2	15	15	15
3	22	22	22
4	24	24	36
5	26	26	47
6	28	28	6
7	30	30	8
8	32	32	10
9	34	34	12
10	38	38	15
11	45	45	18
12	6	6	23

Pan Degree/Second			
13	9	13	30
14	15	14	39
15	19	15	48
16	25	16	59
17	32	17	69
18	38	18	80
19	45		
20	58		
21	75		
22	88		
23	105		
24	120		

## UVC Control

AIDA PTZ's also support UVC interface.

PU_BRIGHTNESS_CONTROL	81 01 04 4d 00 00 0p 0q FF
PU_CONTRAST_CONTROL	81 01 04 A2 00 00 0p 0q FF
PU_SATURATION_CONTROL	81 01 04 A1 00 00 0p 0q FF
PU_SHARPNESS_CONTROL	8x 01 04 42 00 00 0p 0q FF
PU_GAMMA_CONTROL	8x 01 04 5B 0p FF
PU_WHITE_BALANCE_TEMPERATURE_CONTROL	8x 01 04 35 0X FF
PU_BLACKLIGHT_COMPENSATION_CONTROL	81 01 04 33 02/03 FF
PU_POWER_LINE_FREQUENCY_CONTROL	8x 01 04 AA 00/01/02 FF
CT_ZOOM_ABSOLUTE_CONTROL	8x 01 04 47 0p 0q 0r 0s FF
CT_PANTILT_ABSOLUTE_CONTROL	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z FF
CT_PANTILT_RELATIVE_CONTROL	8x 01 06 01 pp qq rr ss FF
CT_ZOOM_RELATIVE_CONTROL	8x 01 04 07 pp FF

# Warranty

## Our Promise:

AIDA Imaging warrants all its cameras and accessories to be free from defects under normal use for a period of two years after purchase date. IF proof of purchase cannot be provided during a warranty claim, AIDA Imaging reserves the right to not honor the warranty set above. Therefore, labor and parts may be charged to the consumer. For more info on our warranty, please refer to our website at:

[aidaimaging.com/warranty](http://aidaimaging.com/warranty)

## Support:

If you would like additional support or explanation on anything related to our product, please feel free to our website at [aidaimaging.com](http://aidaimaging.com) for more info!

We have Youtube tutorials located at [youtube.com/aidaimaging](http://youtube.com/aidaimaging).

## Reach out to us!:

Our contact information can be seen below:

Telephone: 909.333.7421

Email Address: [support@aidaimaging.com](mailto:support@aidaimaging.com)

We are also reachable during our normal operating business hours:

Open Yearly, Mon-Fri from 8AM to 5PM PST, excluding major holidays and events.

Also, feel free to subscribe to our newsletter which keeps you up to date on the latest and greatest firmwares we can release for your PTZ!









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