

# MD330U Series PTZ Camera

## User Manual



# Read This First

## Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

## WARNING

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## WARNING

この装置は、クラスB機器です。この装置は、住宅環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

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## WARNING

To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

## WARNING

Do not modify this equipment without authorization of the manufacturer.

## CAUTION

Risk of explosion if battery is replaced by an incorrect type.  
Dispose of used batteries in a safe and proper manner.

## CAUTION

Possibly hazardous optical radiation emitted from this product. Do not stare at operation lamp. May be harmful to the eyes.

Ce produit peut émettre des rayonnements lumineux dangereux.  
Ne regarder pas directement dans la lumière. Peut être dangereux pour les yeux.



## REMOTE CONTROL BATTERY SAFETY INFORMATION

- Store batteries in a cool and dry place.
- Do not throw away used batteries in the trash. Properly dispose of used batteries through specially approved disposal methods.
- Remove the batteries if they are not in use for long periods of time. Battery leakage and corrosion can damage the remote control. Dispose of batteries safely and through approved disposal methods.
- Do not use old batteries with new batteries.
- Do not mix and use different types of batteries: alkaline, standard (carbon-zinc) or rechargeable (nickel-cadmium).
- Do not dispose of batteries in a fire.
- Do not attempt to short-circuit the battery terminals.

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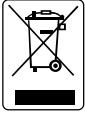
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## Symbols on the product

The symbols on this product, including the accessories, represent the following.



The WEEE symbol.

This symbol indicates that this product must not be disposed of with your other household waste. Instead, you need to dispose of the waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. For more information about where to drop off your waste equipment for recycling, please contact your household waste disposal service or the shop where you purchased the product.



The CE compliance logo.

This logo indicates that the product conforms to the relevant guidelines/standards for the European Union harmonization legislation.



The FCC compliance logo.

This logo indicates that the product conforms to Federal Communications Commission compliance standards.



The UKCA (UK Conformity Assessed) symbol.

This symbol indicates that a product placed on the Great Britain market meets the UKCA Marking requirements.



The RCM compliance logo.

This logo indicates that the product conforms with Australian RCM guidelines.



This logo is intended to alert the users to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This logo is intended to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



The China RoHS symbol.

The figure of this symbol represents the number of years during which no hazardous substances would leak or mutate under normal conditions of use.



The ISO 7010-M002 symbol.

Refer to instruction manual/booklet.



The alternating current symbol.

This symbol indicates that the power input/output for the product is alternating current.



The direct current symbol.

This symbol indicates that the power input/output for the product is direct current.

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For FAQs, technical support, software and user manual download, please visit:

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# Precautions for Use

AVer does not accept any responsibility for accident or damage during installation if users do not follow the procedures described in this manual.

## Indications for Use

The AVer MD330U Series is a high definition medical grade PTZ camera designed for physicians. It's a non-contact unit that can be operated by physicians without physical contact with patients. The units can be used to document and update patients' injuries by taking snapshot images or record video clips. The unit is suitable for use in hospital examination rooms and similar medical environments.

## To installation and operation personnel

The required information including the unit's hardware parts, operations and important notice has been written and illustrated in this manual. Except for the information in this manual, no special skills, training and knowledge are required for the operators. Read the installation instructions and content of the manual thoroughly and perform the operation correctly and safely. Please read the "Read This First!" of this manual as it contains important information. Please also refer to the <Troubleshooting> chapter when you encounter common problems while using this unit. For more technical support, please contact AVer's technical support (refer to [More Help](#)).

### ■ Warning on installation locations

This unit is for indoor use only. Do not install nor use the unit in the following locations to avoid malfunction and/or problems in operation.

- In outdoor locations where the unit will be exposed to direct sunlight.
- In locations where the unit would be directly exposed to rain or water.
- Extremely cold or hot locations (Operating temperatures: 0°C to +35°C; Humidity: 20% to 80%).
- On walls where the unit would be installed sideways.
- At sea, in coastal areas or in locations where corrosive gases are emitted.
- Locations subject to strong vibrations (this unit is not designed to be used in vehicles).

### ■ To ensure the unit perform stably over a prolonged period

- Do not use this unit in a location with high temperature and humidity levels, which may cause its parts to deteriorate and shorten its service life.
- Do not subject the unit to sudden changes in temperature. Keep a cooling unit or heating unit away from this unit.
- Do not leave the unit with the camera facing the sun.

### ■ Always use the supplied power adapter and power cord to connect the unit to the power outlet

- Before installation, always disconnect the power supply of this unit.
- Install this unit near the main power outlet. Ensure the power plug can be plugged into and unplugged from the power outlet easily.
- The length of the power cord is less than 3-meter.

- Do not place the camera where the cord can be stepped on as this may result in fraying or damage to the lead or the plug.

#### ■ Power off the unit

- This unit does not have a power switch. Disconnect the power plug from the power outlet before proceeding with maintenance, cleaning or any emergency situations.

#### ■ Cleaning

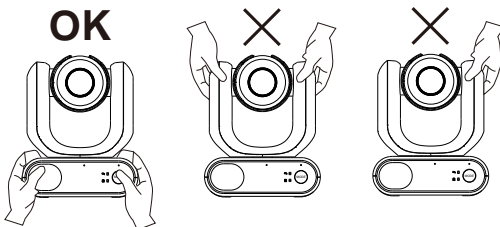
- Clean the cabinet when it becomes dirty.
- Before cleaning the unit, be sure to disconnect the power plug from the power outlet.
- Avoid all contact with benzene, paint thinners and other volatile substances, and avoid using these substances. Otherwise, the casing may become discolored.
- Stubborn stains may be removed with a soft cloth such as a cleaning cloth lightly dampened with mild detergent solution.
- Do not use solvents such as benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloth for cleaning the surface, as they will damage the surface.
- Do not use unnecessary force to rub the surface with a stained cloth. The surface may be scratched.

#### ■ Maintenance

- Designate the responsibility for keeping areas clean to staff members and clean regularly.
- This unit does not have a power switch. Disconnect the power plug from the power outlet before proceeding with maintenance.
- Regular maintenance keeps your unit productive and safe. Check all machine parts carefully, including the removable camera head, camera body and remote control.
- When the surfaces of the machine parts become dirty, follow the instructions described in the Cleaning sector to clean the unit.

#### ■ When installing, transporting or disposing of the unit

- Be absolutely sure to hold it by its pedestal area at the bottom with both hands. Do not grab the camera head, nor the camera head holder.



#### ■ Dispose of the unit

- When the unit is no longer going to be used, ensure to turn off the unit and dispose of it properly.
- When you dispose of the unit or accessories, you must obey the laws in the relative area or country and the regulations in the relative hospital regarding environmental pollution.

# Contents

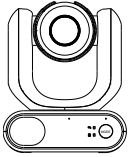
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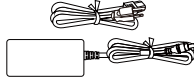
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# Package

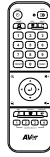
## Package Contents



Camera Unit



Power Adapter &  
Power Cord \*



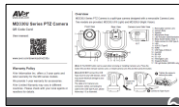
Remote Control



USB 3.0 Type-B to  
Type-A Cable  
(1.5M)



1/4"-20 L=7.5mm  
Screw (x2) \*\*



QR Code Card

\*The power cord will vary depending on the standard power outlet of the country where it is sold.

\*\* The screws can be used for mounting the unit to a flat surface. Please refer to the <Standalone Installation> chapter for more details.

## Optional Accessories

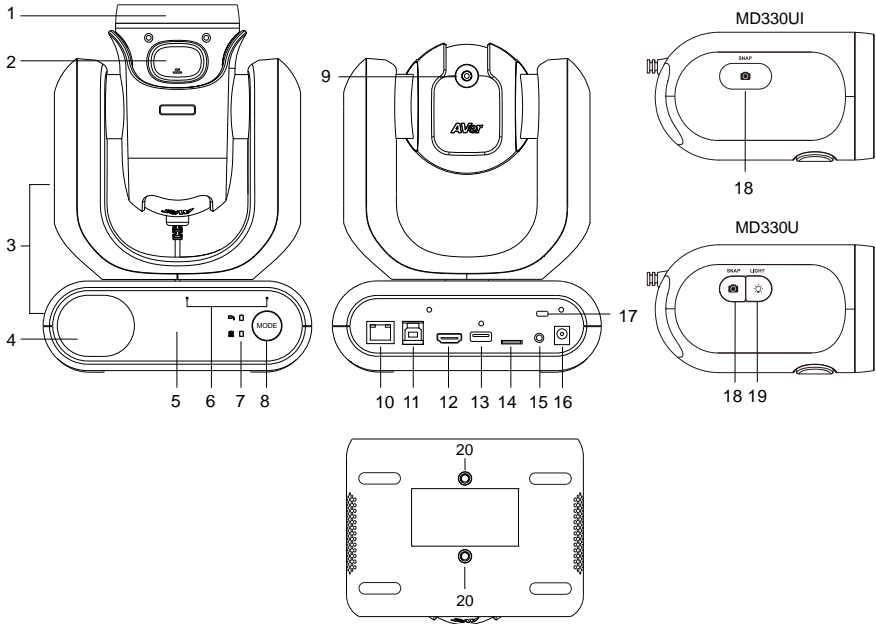


RS-232 Adapter  
(3.5mm to D-Sub 9-pin)

# Product Introduction

The MD330U Series PTZ Camera is a medical grade split-type camera designed with a removable Camera Head. Two models are provided: MD330U (Fill Light) and MD330UI (Night Vision). The MD330U features a Snapshot button and a Fill Light button on the left side of the Camera Head, while MD330UI only features a Snapshot button for users to capture snapshot images.

## Overview












- |                          |                                |                          |
|--------------------------|--------------------------------|--------------------------|
| 1. Removable Camera Head | 8. Mode Switch Button (Note 2) | 16. DC 12V               |
| 2. Latch Button          | 9. Cable connect to USB Type-A | 17. Kensington Lock      |
| 3. Camera Body           | 10. LAN                        | 18. Snapshot Button      |
| 4. Speaker               | 11. USB 3.0 Type-B             | 19. Fill Light Button    |
| 5. IR Sensor             | 12. HDMI                       | 20. Screw Holes (Note 3) |
| 6. Microphone Array      | 13. USB Type-A (Note 1)        | - Screw size: 1/4"-20    |
| 7. LED Indicators        | 14. microSD (32GB/SDXC)        | L=7.5mm (included        |
| - Split/Standalone       | 15. RS-232                     | in the package)          |

### [Notes]

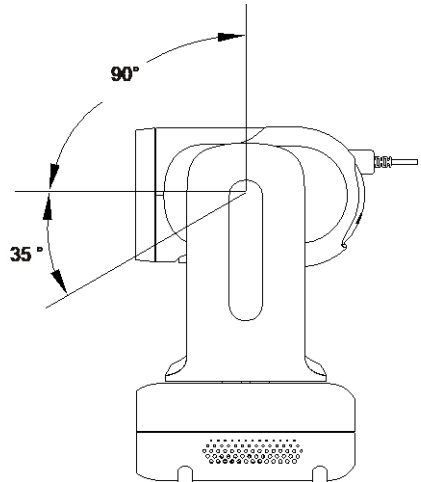
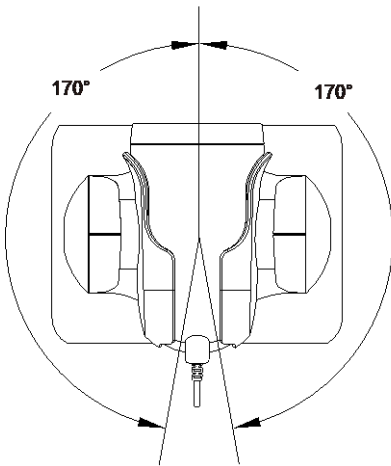
- DO NOT** connect the USB Type-A port to any USB devices on the market. The USB Type-A port can only be used for connecting to the Camera Head. Connecting the USB Type-A port to your USB devices may cause electrical damage to your USB devices.
- The Mode button can be used when removing or installing Camera Head. Please refer to the <Mode Switch> chapter for more details.
- You can use the supplied screws to mount the camera unit to a flat surface.

# LED Indicators

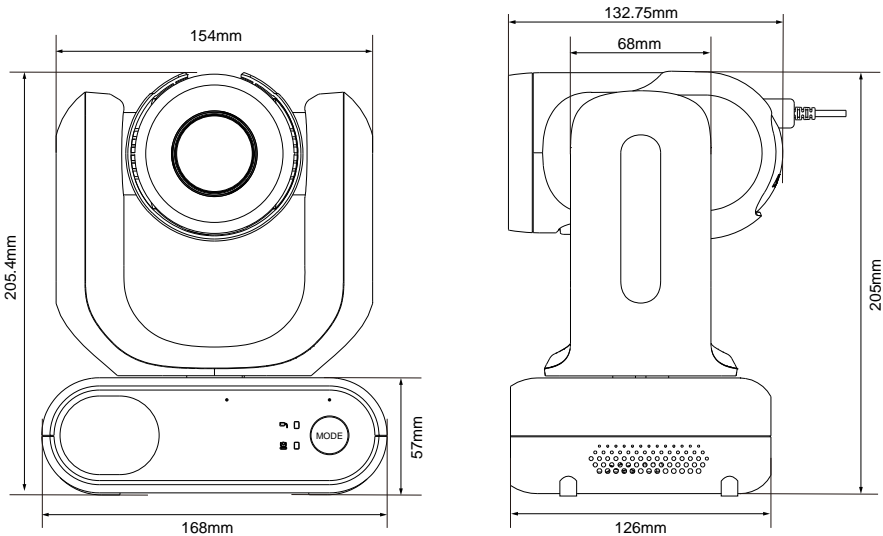
The table below describes the two LED indicators on the front panel of the Camera Body: Split mode LED  and Standalone mode LED .

LED Status	Descriptions
Flash Orange  + 	Camera initial process.
Solid Orange 	Standby mode.
Solid Blue 	Normal operation in Standalone mode.
Flash Orange 	Privacy mode. Microphone mute.
Solid Blue 	Normal operation in Split mode.
Flash Purple 	FW updating.

# Pan and Tilt Angle



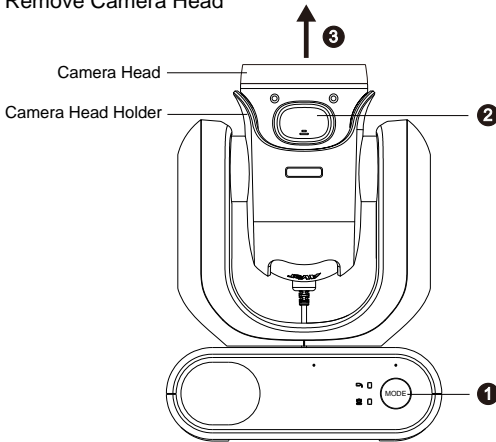
# Dimensions



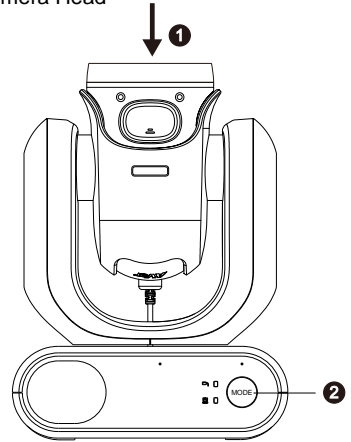
## Mode Switch

The **Mode** button can be used when you want to remove the Camera Head to take a snapshot or place back the Camera Head.



### Remove Camera Head



### Install Camera Head



### To remove the Camera Head:

1. Press the **Mode** button to switch the LED indicator from the Standalone mode  to the Split mode . The Camera Head will automatically turn up.
2. Press the Latch button.
3. Take out the Camera Head from the Camera Head Holder.

### To take snapshot images after removing the camera head:



1. Ensure the microSD card has been inserted to the card slot.
2. Select a desired focus distance for the camera. Please refer to **Focus Near Limit** in the <Camera Control> chapter.
3. Hold the Camera Head in hand firmly and stably while taking snapshot images.
4. To adjust camera focus when aiming to a target, short press the Snapshot button on the Camera Head. Long press the Snapshot button for more than 1 second to take a snapshot.

### To turn on the Fill Light after removing the camera head (for MD330U):

The Fill Light supports 3-step dimming. To turn on the Fill Light while taking snapshot images:

1. Press the Fill Light button on the Camera Head to turn it on, and then you can press the button repeatedly to switch to the desired light intensity, which will increase from low, medium to high.
  2. When switching to the high mode, press the Fill Light button again will turn the light off.
- Fill Light button modes: On > Low > Medium > High > Off.

**To install back the Camera Head:**

1. Put the Camera Head back to the Camera Head Holder until you hear a click sound, which represents the Camera Head is installed into place.
2. Press the **Mode** button to switch the LED indicator from the Split mode  to the Standalone mode .

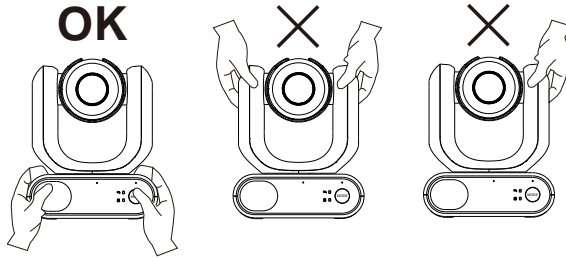
# Installation

## Standalone Installation

You can place the camera on a desktop or use the supplied screws to mount the camera to a flat surface.

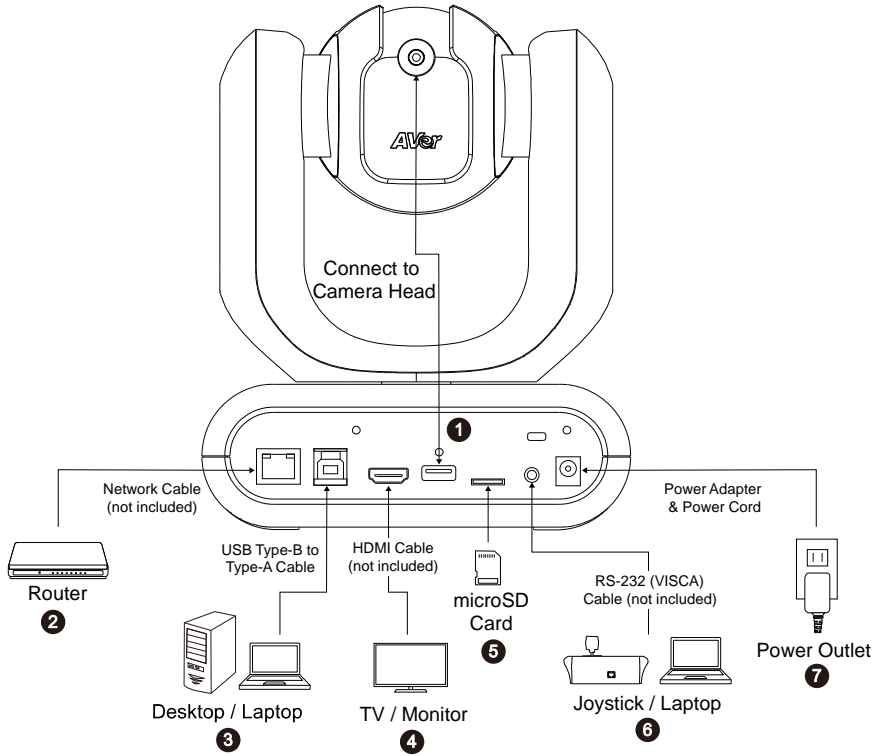
- Place the camera unit flat on the desktop. Ensure the location is stable so that the unit will not be susceptible to shaking and/or falling.
- Take care not to pull the connected cables, which may cause the unit to fall.

**[Note]** When moving the camera for installation, be sure to hold it by its pedestal area at the bottom with both hands. Do not grab the camera head, nor the camera head holder.



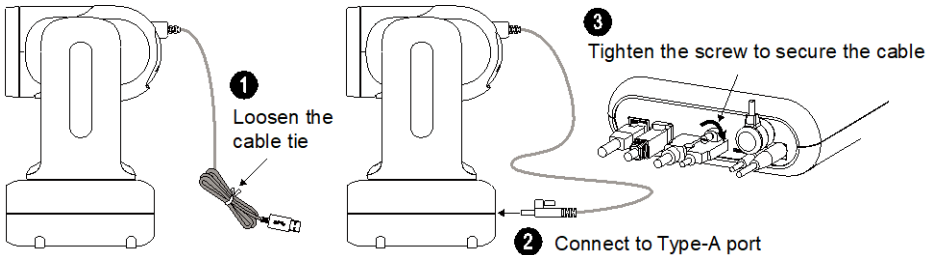


## Device Connection



- 1. Camera Head Connection:** The USB Type-A port can only be used for connecting to the Camera Head. **DO NOT** connect the USB Type-A port to any USB devices, which may cause electrical damage to your USB devices.

**[Note]** The cable is for Camera Head connection, before connecting the cable to the USB Type-A port, please loosen the cable tie first and then connect it to the USB Type-A port. Finally, tighten the screw to secure the cable.



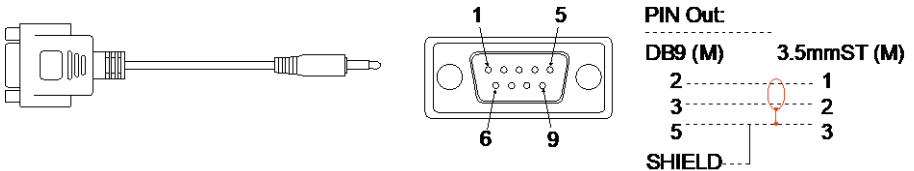
- 2. LAN Connection:** Connect the camera to an IP router through the LAN port. (Note 1)

3. **USB Connection:** Connect the camera to a desktop or laptop for video transmission when using other video conference software such as Skype or Teams. (Note 1)
4. **Video Output Connection:** Connect the camera to a TV or monitor to display video output. (Note 1 and Note 4)
5. **Storage Connection:** Insert a microSD card into the card slot. You can save the captured images or recordings to the microSD card. (Note 1 and Note 2)
6. **RS-232 Connection:** Connect the camera to a Joystick or laptop to control the camera. (Note 1 and Note 3)
7. **Power Connection:** Connect the camera to the power outlet using the supplied Power Adapter & Power Cord. Before power-on the unit, ensure the Camera Head cable has been connected to the USB Type-A port (refer to Step 1).

**[Note]**

1. Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.) Furthermore all configurations shall comply with the requirements of the system in standard IEC 60601-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system in standard IEC 60601-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60XXX certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.
2. Please insert a microSD card to the card slot before using the Snapshot or Recording functions. To access the microSD card, please refer to **Mass Storage** in the <System> chapter for more details. For the recommended microSD cards, please refer to the <Suggested SD Cards> chapter.
3. For RS-232 connection, you can optionally purchase the RS-232 Adapter (3.5mm to D-Sub 9-pin). The PIN definition is shown as below.

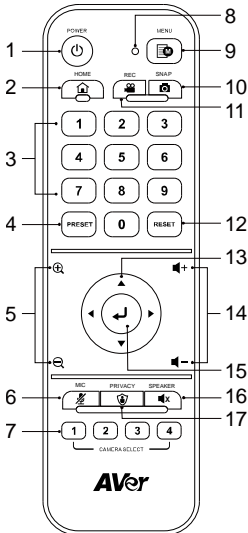
**RS-232 Adapter (3.5mm to D-Sub 9-pin)**



4. The camera and the connected TV or monitor must have grounding design. Please use the supplied Power Adapter & Power Cord in the package for the camera. Ensure the power supply cable of the TV or monitor supports the grounding plug.

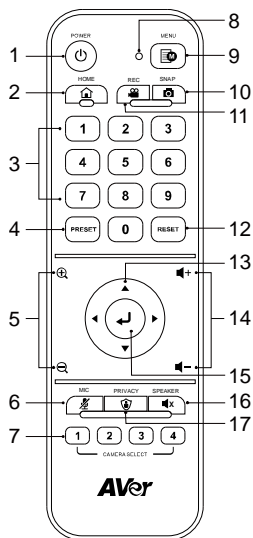
# Remote Control

The remote control requires two “AAA” batteries. Make sure batteries are installed properly before use.



Model: LY033

Name	Function
1. Power	Short press to turn on/off the Standby mode.
2. Home	Move the camera to the Home position.
3. Number Buttons	<ul style="list-style-type: none"> <li>■ Press buttons 0~9 to move the camera to the pre-configure preset positions.</li> <li>■ Use the buttons to set up preset positions 0~9.</li> </ul>
4. Preset	<p>Use the Preset, Number and Direction Buttons to set up preset positions.</p> <ol style="list-style-type: none"> <li>Use the Direction Buttons to navigate a position. Optionally use the “Zoom +” or “Zoom -” buttons to zoom in/out the image.</li> <li>Press and hold Preset, then press the Number Buttons (0~9) to save this preset position.</li> </ol>
5. Zoom +/-	Press to zoom in or zoom out the images.
6. MIC	Press to mute the microphone. Press again to unmute.
7. Camera Select	CAM1 to CAM4 buttons. Select a camera to operate. To set up camera ID, refer to <b>Camera Selector</b> in the <OSD Menu Tree> chapter.
8. Remote Control LED	When pressing the buttons on the remote control, the LED will light red.
9. Menu	Press to enter or exit the OSD menu.
10.Snap	Press to take a snapshot image. The images will be stored in the microSD card.
11.Rec	Press to start recording to the micro SD card. Press the button again to stop recording.
12.Reset	Use the Reset and Number Buttons to cancel a pre-configured preset position. Press and hold Reset, then press the Number Buttons (0~9).
13.Direction Buttons	Use the Direction Buttons to navigate the live view.
14.Volume +/-	Press to adjust the volume up or down.



Model: LY033

Name	Function
15.Enter	When camera is on: Press Enter to adjust focus once. When accessing the OSD menu: Press Enter to confirm the selection or make a selection.
16.Speaker	Press to mute the speaker. Press again to unmute.
17.Privacy	Press to enter the Privacy mode. The camera will move to the Privacy position and microphone will be off.

## Hot Key

Press certain buttons on the Remote Control to perform the hot key function.

Button	Action	Function
5	Press five times (55555)	Turn on DHCP.
8	Press eight times (88888888)	Set camera's IP address as default IP (192.168.1.168).
9	Press nine times (999999999)	Password reset mechanism: When the hot key takes effect, the password of entering Web UI will go back to the default "admin".
Menu & Zoom +	Press Menu and then press Zoom +	MD330U: Press repeatedly to switch among Fill Light modes: On > Low > Medium > High > Off. MD330UI: Press to switch between <b>Day</b> mode and <b>Night</b> mode of <b>IR Cut Filter</b> .
Menu & Zoom -	Press Menu and then press Zoom -	MD330UI only: Press to switch between <b>Day</b> mode and <b>Auto</b> mode of <b>IR Cut Filter</b>

# Set Up the Camera

You can configure the camera settings using the OSD menu or the Web interface of the camera.

## OSD Menu

To access the OSD menu, connect the camera to a monitor or TV using the HDMI cable, and then you can use the supplied Remote Control to operate the OSD Menu.

Press the Menu button on the remote control to bring-up the OSD menu and use ▲, ▼, ◀, ▶ to select among pages or options, and press ↵ to confirm settings.



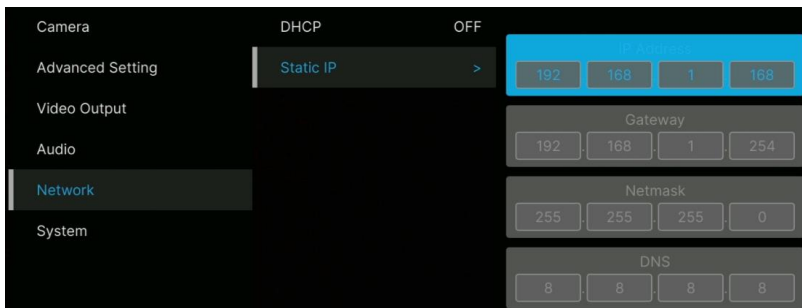
## IP Address Setup

### Static IP

1. Press the Menu button on the remote control to bring-up the OSD menu.
2. Go to **Network > Static IP**.

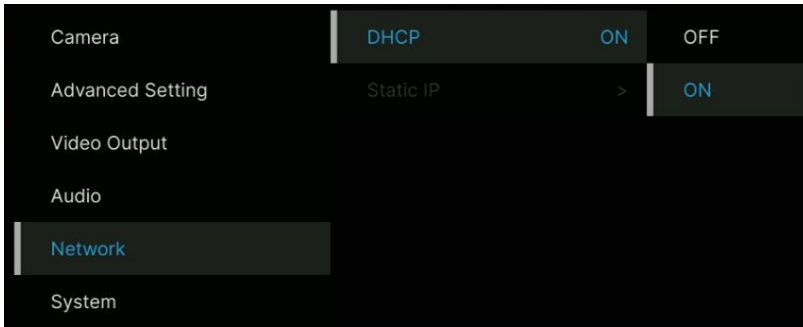
**[Note]** Turn the **DHCP** off before setting up static IP (**Network > DHCP > OFF**).

3. Select the **IP Address**, **Gateway**, **Netmask**, and **DNS** to configure. Press ↵ and use the Number Buttons to enter the value.

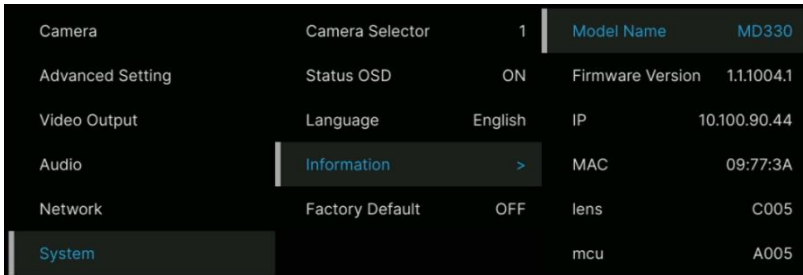


## DHCP

1. Press the Menu button on the remote control to bring-up the OSD menu.
2. Select **Network > DHCP > On**.
3. Press **↵** to confirm setting.



4. After turning the **DHCP** on, you can go to **System > Information** to view the IP address.



## OSD Menu Tree

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer	
Camera	Exposure Mode	Full Auto	Exposure Value / Gain Limit Level / Slow Shutter	
		Shutter Priority	Exposure Value / Shutter Speed / Gain Limit Level	
		Iris Priority	Exposure Value / Iris Level / Gain Limit Level / Slow Shutter	
		Manual	Iris Level / Shutter Speed / Gain Level	
	White Balance	Auto	-	
		ATW	-	
		Indoor	-	
		Outdoor	-	
		One Push	-	
	Pan Tilt Zoom	Manual	R Gain: 0-255 B Gain: 0-255	
		Preset Speed	5-200	
		Preset Accuracy	On / Off	
		Sensor Zoom	On / Off	
		Sensor Zoom Limit	x2	
		Pan Speed	16-24	
	Camera	Tilt Speed	16-24	
		Noise Filter	Off / Low / Middle / High	
		Saturation	0-10	-
		Contrast	0-4	-
		Sharpness	0-3	-
Mirror		On / Off	-	
Flip		On / Off	-	
Advanced Setting		Control	Type	RS-232
	Protocol		VISCA	
	Camera Address		1-7	
	Baud Rate		2400 / 4800 / 9600 / 38400	
	IR Cut Filter* (only for Night Vision model)	Day / Night / Auto	-	

\* To prevent from IR-related radiation hazards, it's recommended to keep a distance greater than 1-meter between the IR LEDs and human eyes when IR LEDs are turned on in Night mode.

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer
Video Output	Frequency	50Hz / 59.94Hz / 60Hz	-
	Resolution	60Hz: 1080p/60, 1080p/30, 720p/60, 720p/30 50Hz: 1080p/50, 1080p/25, 720p/50 59.94Hz: 1080p/59.94, 1080p/29.97, 720p/59.94	-
Audio	Audio Input	Audio Echo Cancel	On / Off
		Noise Suppression	Off / NR / NR+BF / NR Strong / NR DSP
		Audio Beam Forming	30 / 50 / 70 / 90 / 110 / 130
		Audio In Volume	0-10
	Audio Output	Output Type	Speaker / HDMI / Both
		Output Volume	0-10
Network	DHCP	On / Off	-
	Static IP	IP Address / Gateway / Netmask / DNS	-
System	Camera Selector**	1-4	-
	Status OSD***	On / Off	
	Language	English / 繁中 / 日本語	-
	Information	Model Name / Firmware Version / IP / MAC / Lens / MCU	-
	Factory Default	On / Off	-

\*\* Set the camera ID 1-4 for using remote control. Please refer to No.7 in the <Remote Control> chapter.

\*\*\* Displays status info (Save Preset, Call Preset, Cancel Preset and etc.) on the live screen.



## Web Setup

Connect the camera from a remote site through the internet.

### Access the Web Interface of the Camera

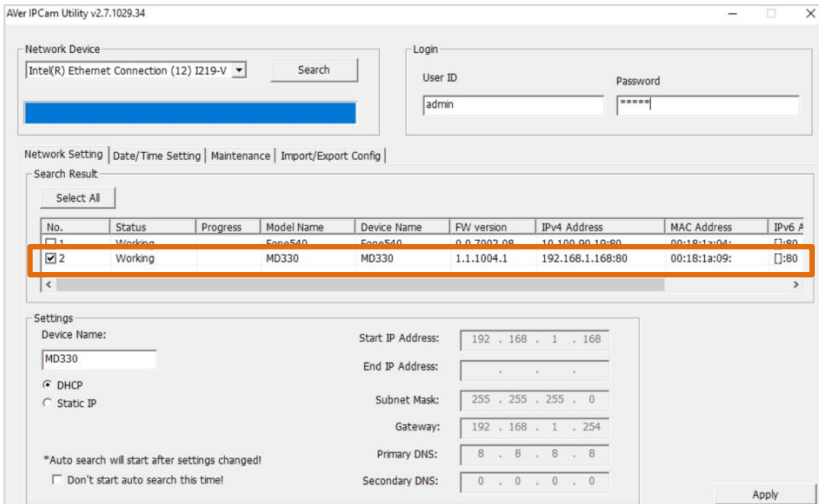
To access the Web interface of the camera, you have to find the IP address of the camera using **AVer IPCam Utility** or **AVer PTZ Management** software.

#### Accessing the Camera via AVer IPCam Utility

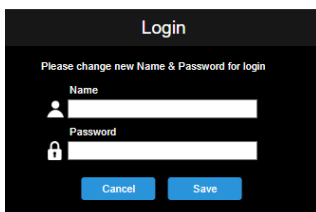
To find the IP address of your cameras using the IPCam Utility installer, follow the steps below.

1. Download the IPCam Utility from <https://www.aver.com/download-center> and run the IPCam Utility.
2. Click **Search**, and all available devices will be listed on the screen.
3. Select a camera from the list, the camera info will be displayed in the Settings field.

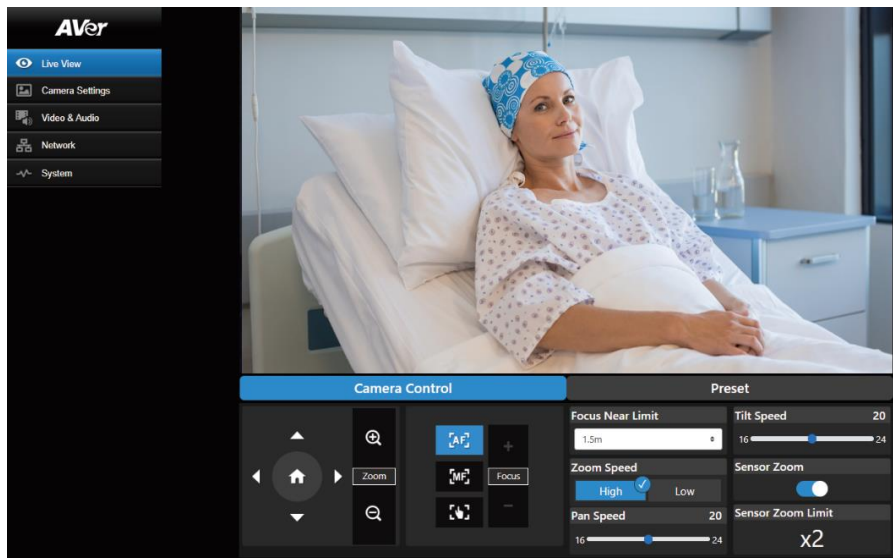
**[Note]** The default network of the camera is Static IP (192.168.1.168) and default ID/Password are **admin/admin**. If you want to configure the network to DHCP, input the ID/Password in the **Login** field, select the “camera model” on the list, select “DHCP” and then click the **Apply** button.



4. To access the Web interface, double-click on the IP address in the IPv4 Address column. For the first-time user, you will be prompted with a Login window to change the ID and password.



5. Login with the new ID/Password, the Web interface of the camera will be displayed (Chrome browser). Please refer to the <Live View> chapter for more details.



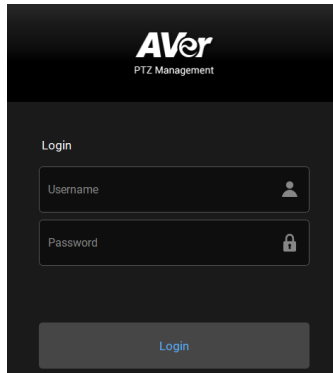
**[Note]** If IPCam utility cannot find the camera, please check following:

1. Please make sure the Ethernet connection of camera is well connected.
2. The camera and PC (IPCam Utility) are in the same LAN segment.

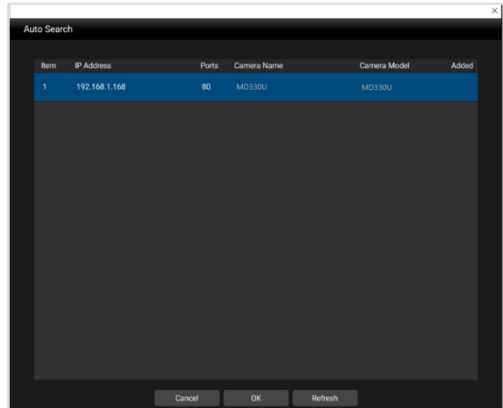
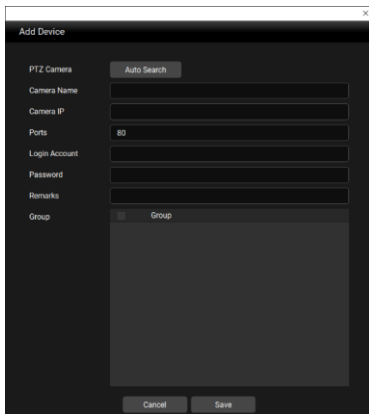
## Accessing the Camera via AVer PTZ Management

To find the IP address of your cameras using the AVer PTZ Management, follow the steps below.

1. Download the AVer PTZ Management software from <https://www.aver.com/download-center>
2. Download the Windows program and install it.
3. After setting up the user ID and password, log in to the software (default User Name/Password: admin/admin).



4. On the Main page of PTZ Management, click **Setup > Add** and then click **Auto Search**. The cameras connected on the same LAN with the computer will be displayed.



5. Click on the camera and input the camera ID and Password to add the camera to the device list (default ID/Password are **admin/admin**). Click the **Go to Web** button to access the Web interface of the camera.

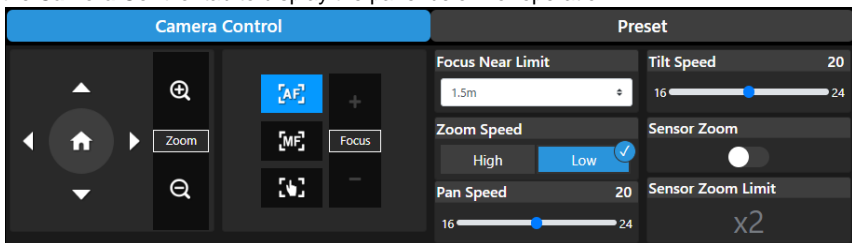
## Live View

You can control the camera and operate the Preset functions using this page.









## Camera Control


Click the **Camera Control** tab to display the panel below for operation.



## Pan-Tilt-Zoom Control

Use , , , and  to navigate the camera view. Adjust the **Pan Speed** and **Tilt Speed** if necessary.

Use  and  to zoom in or zoom out the live image. You can also select **Zoom Speed** (**High/Low**) or enable the **Sensor Zoom**. The **Sensor Zoom Limit** can be configured in the OSD menu **Camera > Pan Tilt Zoom > Sensor Zoom Limit**.

Click  to go back to home (default) position.

## Focus

**Auto Focus** (LAF): Click for the camera to perform the auto focus.

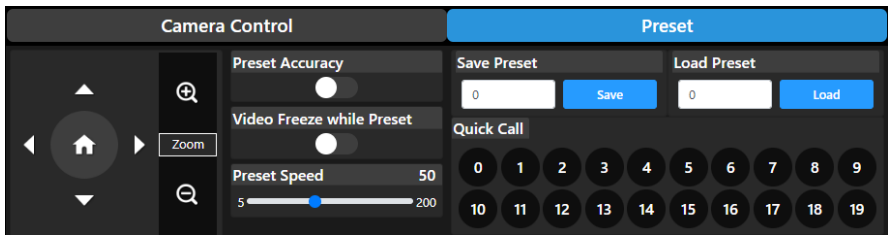
**Manual Focus** (LME): Click to manually adjust the focus. You can use the **Focus +** and **Focus -** buttons to adjust the focus.

**One Push Focus** (OPF): Click to automatically adjust the focus once.

**Focus Near Limit:** Set up the focus distance limit.

## Preset

Click the **Preset** tab to display the panel below. You can configure and operate the preset positions.



To set up preset positions:

1. Select the **Preset** tab in live view page.
2. Use , , and to navigate the camera view. Optionally use and to zoom in or zoom out the images.
3. Input a preset number (0~255) in the **Save Preset** column and click **Save** to save the position.
4. Follow Step 2 and 3 to set up more preset positions.

To perform the go to preset positions:

1. Input a preset number (0~255) in the **Load Preset** column or click a preset number (0~19) in the **Quick Call** section.
2. Click **Load**, the camera will move to the preset position.

When operating the go to preset positions, you can optionally adjust the **Preset Speed** or enable/disable the **Video Freeze while Preset** function.

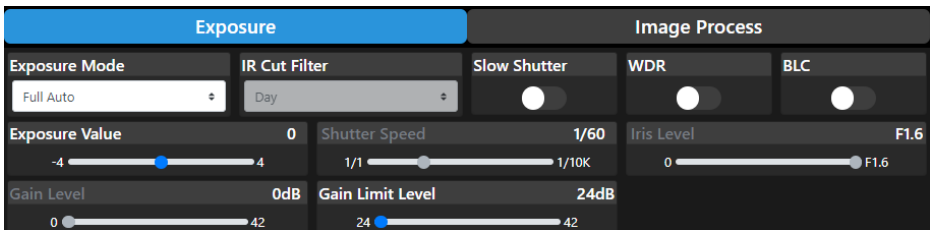
- **Preset Accuracy:** Enable this function to optimize the positioning accuracy of the setup preset positions.
- **Video Freeze with Preset:** When this function is enabled, the camera will not display the view along the path when moving from one position to another. The camera will only display the view of the positions.
- **Preset Speed:** Adjust the preset speed.

## Camera Settings



### Exposure

Click the **Exposure** tab to display the panel below for configuration.



- **Exposure Mode:** Options include **Full Auto**, **Iris Priority**, **Shutter Priority** and **Manual**. Select an exposure mode and optionally adjust the value of **Exposure Value**, **Gain Level**, **Shutter Speed**, **Gain Limit Level**, **Iris Level**, and **BLC**.
- **IR Cut Filter:** This function is only available for the Night Vision model. Select **Day** mode, **Night** mode, or **Auto** mode for the camera to automatically switch on/off the **IR Cut Filter**. The IR LEDs will turn on in **Night** mode.  
**[Note]** To prevent from IR-related radiation hazards, it's recommended to keep a distance greater than 1-meter between the IR LEDs and human eyes when IR LEDs are turned on in **Night** mode.
- **Slow Shutter:** Enable/disable the function.
- **WDR:** Enable/disable the function.

## Image Process

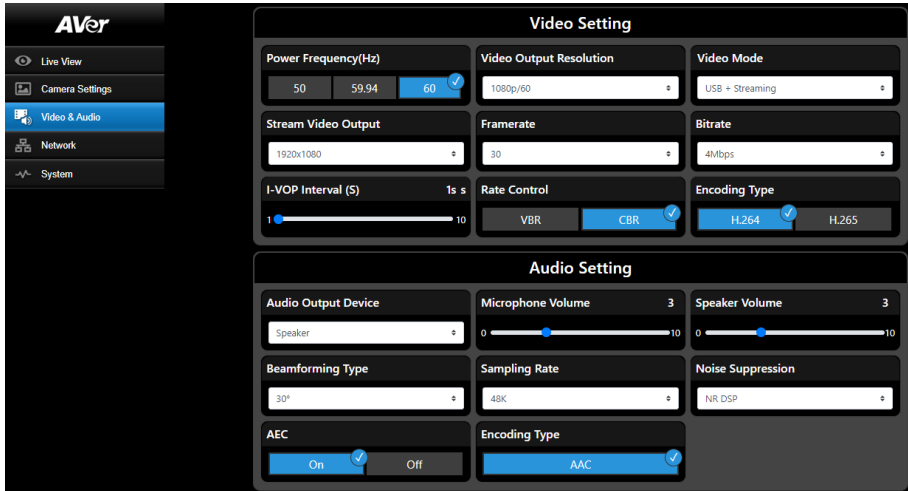
Click the **Image Process** tab to display the panel below for configuration.

The screenshot shows the 'Image Process' configuration panel. It features a 'White Balance' dropdown set to 'AWB', a 'One Push' section with a 'Set' button and a note, and sliders for 'R Gain' (128), 'B Gain' (128), 'Saturation' (5), 'Contrast' (2), and 'Sharpness' (2). There are also toggle switches for 'Mirror' and 'Flip', and a 'Noise Filter' section with radio buttons for 'Off', 'Low' (selected), 'Middle', and 'High'.

- **White Balance:** Options include **AWB**, **ATW**, **Indoor**, **Outdoor**, **One Push** and **Manual**. If **Manual** is selected, adjust the **R Gain** and **B Gain** manually. If **One Push** is selected, click the **Set** button in the **One Push** field when placing a white paper sheet in front of the camera lens.
- **Saturation:** Adjust the value.
- **Contrast:** Adjust the value.
- **Sharpness:** Adjust the value.
- **Mirror:** Enable/disable the function.
- **Flip:** Enable/disable the function.
- **Noise Filter:** Select **Off**, **Low**, **Middle** or **High**.

## Video & Audio

You can configure video and audio settings on this page.



### 【Video Setting】

- **Power Frequency:** Select **50Hz**, **59.94Hz** or **60Hz** based on your region.
- **Video Output Resolution:** Select a resolution to display on your video output device.  
60Hz: 1080p/60, 1080p/30, 720p/60, 720p/30.  
50Hz: 1080p/50, 1080p/25, 720p/50.  
59.94Hz: 1080p/59.94, 1080p/29.97, 720p/59.94.
- **Video Mode:** **Stream Only**, **USB Only**, or **USB + Streaming**.
- **Stream Video Output:** Select a stream resolution on live view. Options include **3840x2160**, **1920x1080**, **1280x720**, **640x480** or **640x360**.
- **Framerate:** Select a framerate for live stream – **1**, **5**, **15**, **20** or **30** for power frequency **59.94Hz** or **60Hz**; **1**, **5**, **15**, **20** or **25** for power frequency **50Hz**.
- **Bitrate:** **512kbps**, **1Mbps**, **2Mbps**, **4Mbps**, **8Mbps**, **16Mbps**, **32Mbps** or **Auto**.
- **I-VOP Interval (S):** Move scroll bar to set the value – **1s** to **10s**.
- **Rate Control:** Select **VBR** or **CBR**.
- **Encoding Type:** Select **H.264** or **H.265**.

### 【Audio Setting】

- **Audio Output Device:** Select an audio source for the audio output. **Speaker**, **HDMI** or **Both**.
- **Microphone Volume:** Adjust the microphone volume.
- **Speaker Volume:** Adjust the speaker volume.
- **Beamforming Type:** Select from **30°**, **50°**, **70°**, **90°**, **110°** or **130°**.
- **Sampling Rate:** Select from **8K**, **16K**, **24K**, **32K**, **44.1K** or **48K**.
- **Noise Suppression:** Select from **Off**, **NR**, **NR+BF**, **NR Strong** or **NR DSP**.
- **AEC:** Select **On** or **Off**.
- **Encoding Type:** Select **AAC**.



## Network

You can configure network settings on this page.

- **Hostname:** The default Hostname is AVer. You can change the hostname to be displayed on other devices, e.g. IP router.
- **DHCP:** You can set up the network to DHCP or Static IP.  
DHCP: Enable the **DHCP** button. The camera will be automatically assigned with the related IP settings. Click **Confirm** to save the settings.  
Static IP: Disable the **DHCP** button and manually input the **IP Address**, **Netmask**, **Gateway** and **DNS**. Click **Confirm** to save the settings.
- **RTMP Settings:** Configure the **RTMP** settings to transfer camera stream to the broadcasting platform, e.g. YouTube. To set up the **RTMP** settings:
  1. Input the **Server URL** and **Stream Key** of the broadcasting platform you use. Please refer to the instruction of the broadcasting platform you use to get the RTMP server URL and stream key.
  2. Click **Start Stream**, the camera stream should be transferred to your broadcasting platform.
  3. To stop broadcasting, click **Stop**.
- **RTSP Settings:** Configure the **RTSP** settings to display camera streams on applications such as VLC, PotPlayer or Quick Time using the RTSP stream. To enable **RTSP**:
  1. Enable the **Security** toggle button.
  2. On your application, input the **RTSP** (ex: rtsp://192.168.1.100/live\_st1) and ID/Password of the camera.  
RTSP URL: rtsp://[IP address of the camera]/live\_st1  
ID/Password: Same with the Web login ID/Password.

## System

You can view the system information, or configure some system settings on this page.

Camera Information	
Model Name	MD330U
IP Address	10.100.90.23
Serial Number	
MAC Address	00:18:1A:09:77:
Firmware Version	1.1.1012.1
Lens Firmware Version	C010
MCU Firmware Version	A013
SD Total(MB)	
SD free(MB)	

**Upgrade firmware**

Choose file  Browse Upgrade

**Reset**

Reset To Factory Default

**Language**

English

**Power Up to Preset**

0 Save

**Setting**

Import Setting Export Setting

**Login**

aver123  
\*\*\*\*\*  
Cancel Change

**Status OSD**

**Power Off to Preset**

0 Save

**USB Function**

UVC  Mass Storage

- **Camera Information:** Displays the system information.
- **Upgrade firmware:** Follow below steps to upgrade the firmware.
  1. Download the newest firmware from <https://www.aver.com/download-center/> .
  2. On the Web page, go to **System > Upgrade firmware**.
  3. Click **Browse** to select the firmware.
  4. Click **Upgrade** to start upgrading the firmware.
  5. Refresh the browser after the upgrade process is complete.
- **Reset:** Click **Reset To Factory Default** to clear all values and reset the camera back to factory default values.
- **Login:** The default login ID and password are **admin/admin**. To change the login ID and password, input the new login ID and password and then click **Change**.
- **Language:** Change the Web UI language.
- **Status OSD:** Enable/disable Preset status to be displayed on the live screen. When operating the Preset (Save Preset, Call Preset, Cancel Preset) functions, the status will be displayed on the live screen.
- **Power Up to Preset:** If this function is enabled, after camera power-up, the camera will move to the input preset position. To set up this function, toggle the button on, input a preset position and then click **Save**. Ensure the preset positions have been pre-configured before enabling this function.

- **Power Off to Preset:** If this function is enabled, when power-off the camera, the camera will move to the input preset position. To set up this function, toggle the button on, input a preset position and then click **Save**. Ensure the preset positions have been pre-configured before enabling this function.
- **Setting:** Click **Import Setting** to import camera configurations. Click **Export Setting** to export camera configurations.
- **USB Function:** Select **UVC** or **Mass Storage**.
  - UVC:** Select **UVC** to transfer the camera stream through USB cable.
  - Mass Storage:** This function is only available when a microSD card (max. 32GB) is inserted to the microSD card slot. You can access the microSD card to view or copy the snapshot images or recordings. To do this:
    - a. Connect the camera to your computer using the supplied USB 3.0 Type-B to Type-A Cable.
    - b. On the Web page, go to **System > USB Function**. Select **Mass Storage**.
    - c. You can access the microSD card now.

# Specification

Camera	
Image Sensor	1/2.8" Exmor CMOS
Effective Picture Elements	8 Megapixels
Output Resolutions	4K/30 (IP/UVC), 1080p/60, 1080p/59.94, 1080p/50, 1080p/30, 1080p/29.97, 1080p/25, 720p/60, 720p/59.94, 720p/50, 720p/30
Minimum Illumination	0.7 lux (IRE50, F1.6, 30fps)
S/N Ration	≥ 50dB
Gain	Auto, Manual
Shutter Speed	1/1 to 1/10,000 sec
Exposure Control	Auto, Manual, Priority AE (Shutter, IRIS), BLC, WDR
White Balance	Auto, Manual
Optical Zoom	30X
Viewing Angles	DFOV: 75.5° (Wide) to 3.1° (Tele) HFOV: 68.0° (Wide) to 2.7° (Tele) VFOV: 41.7° (Wide) to 1.5° (Tele)
Focal Length	f = 4.3 mm (Wide) to 129 mm (Tele)
Aperture (Iris)	F = 1.6 (Wide) to 4.7 (Tele)
Minimum Working Distance	Wide: 0.01 m, Tele: 1.2 m
Pan / Tilt Angles	Pan: ±170°, Tilt: +90° / -35°
Pan / Tilt Speed (Manual)	Pan: 0.1° to 100°/sec, Tilt: 0.1° to 100°/sec
Preset Speed	Pan: 200°/sec, Tilt: 200°/sec
Preset Position	10 (IR), 256 (RS-232 / IP)
Camera Control - Protocols	VISCA (RS-232 / IP), PELCO-D & PELCO-P (RS-232), CGI (IP)
Image Processing	Noise Reduction (2D / 3D), Flip, Mirror
Power Frequencies	50Hz / 59.94Hz / 60Hz
Speaker	
Embedded Speaker	Yes
SPL	77 dB SPL (1W; 1m)
Maximum Output	90 dB SPL at 0.5 meter
Microphone	
Built-in Microphone	2 (Omnidirectional)
AI Noise Reduction	Yes
Pickup Range	5 meters
Sensitivity	-33 dBFS
Frequency Response	20 Hz to 20,000 Hz
Maximum SPL	133 dB SPL at 0.5 meter

Interface	
Video Outputs	HDMI, IP, USB
Audio Outputs	HDMI, IP, USB
microSD Card Slot	Max. 32GB / SDXC
General	
Power Requirement	100-240V AC~ to 12V DC === 3.34A * The included Power Adapter (GSM40A12) is manufactured by MEAN WELL Enterprises Co., Ltd. with Class I classification. ** The power supply is specified as a part of ME EQUIPMENT.
Power Input	12V DC === 3A
Power Consumption	36W
Dimension (W x H x D)	168 x 205 x 126 mm
Net Weight	1.95kg
Application	Indoor
Tally Lamp	N/A
Security	Kensington Slot
Remote Control	Infrared
Operating Conditions	Temperature: 0°C to +35°C; Humidity: 20% to 80% Atmospheric Pressure: 700 ~ 1060hpa
Storage and Transportation Conditions	Temperature: -20°C to +60°C; Humidity: 20% to 95% Atmospheric Pressure: 500 ~ 1060hpa
IP Streaming	
Resolution	4K, 30fps
Network Video Compress Formats	H.264, H.265
Maximum Frame Rate	4K, 30fps
Network interfaces	10 / 100 / 1000 Base-T
Multi-Stream Capability	2 (RTSP / Web Page), 4K 30fps (max.)
Network Protocols	IPv4, TCP, UDP, ARP, ICMP, IGMP, HTTP, DHCP, RTP / RTCP, RTSP, RTMP, VISCA over IP
Recording	
Cyclic Threshold Rule	Video stream: 720p, 1080p, 4K 32Mbps: 1.3GB 16Mbps: 700MB Others: 500MB

<b>USB</b>	
Connector	USB 3.0
Video Format	MJPEG, YUY2
Audio Format	PCM
USB Video Class (UVC)	Video: UVC1.1 Audio: UAC1.0
<b>Software Tools</b>	
IP Search and Configuration Tool	Support Windows® 7 or later

Specifications are subject to change without prior notice.

# Troubleshooting

This section provides useful tips on how to solve common problems while using this unit.

## **There is no picture on the output screen.**

1. Check all the connectors again as shown in this manual.
2. Verify the setting of the display output device.

## **The picture on the output screen is distorted or the image is blurry.**

1. Reset all changed settings, if any, to the original manufacturer default setting. On the remote control, press **Menu > Factory Default > On**.
2. Use the Brightness and Contrast menu functions to reduce the distortion if applicable.
3. If you discover that the image is blurry or out of focus, click the **Auto Focus** button on the Web setup page (**Live View > Camera Control**).

## **The voice from the speaker is staticky or with undesired noise**

1. Keep the camera at least one meter away from other electrical equipment.
2. Reset all camera settings to factory default. On the Remote Control, press Menu > System > Factory Default > On.
3. Adjust the **Speaker Volume** and enable the **Noise Suppression** function. On the Web Setup page of the camera, go to Video & Audio > Audio Setting.
4. Contact the authorized distributor or the point of purchase if the problem resumes.

## **The snapshot images cannot be found from the microSD card after pressing the Snapshot button on the Removable Camera Head or on the Remote Control**

1. For the Snapshot button on the Camera Head, try to press the button for more than 1 second as a short press is for focus function.
2. Double check if the microSD card is inserted properly.
3. Double check the specifications and the volume of microSD card, please refer to the <Suggested microSD Cards> chapter.
4. Contact the authorized distributor or the point of purchase if the problem resumes.
5. You can directly access the microSD card with your computer. To do so,
  - a. Connect the camera to your computer using the supplied USB 3.0 Type-B to Type-A Cable.
  - b. On the Web page, go to **System > USB Function**. Select **Mass Storage**.
  - c. You can access the microSD card through your computer now.

# Appendix

## VISCA RS-232 Command Table

Command Set	Command	Command Packet	Comments
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)
	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 PTC310: 0x0000-0x6f20 PTC330: 0x0110-0x5490
CAM_Focus	Stop	8x 01 04 08 00 FF	Each 'Far/Near' needs a 'stop'
	Far (Standard)	8x 01 04 08 02 FF	
	Near (Standard)	8x 01 04 08 03 FF	
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	One Push	8x 01 04 18 01 FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	ATW	8x 01 04 35 04 FF	
	Indoor	8x 01 04 35 01 FF	
	Outdoor	8x 01 04 35 02 FF	
	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	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Up	8x 01 04 03 02 FF	Manual Control of R Gain
	Down	8x 01 04 03 03 FF	
CAM_Bgain	Up	8x 01 04 04 02 FF	Manual Control of B Gain
	Down	8x 01 04 04 03 FF	
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	8x 01 04 39 0D FF	Bright Mode (Manual control)
CAM_Shutter	Up	8x 01 04 0A 02 FF	Shutter Setting
	Down	8x 01 04 0A 03 FF	



CAM_Iris	Up	8x 01 04 0B 02 FF	Iris Setting
	Down	8x 01 04 0B 03 FF	
CAM_Gain	Up	8x 01 04 0C 02 FF	Gain Setting
	Down	8x 01 04 0C 03 FF	
CAM_Bright	Up	8x 01 04 0D 02 FF	Bright Setting
	Down	8x 01 04 0D 03 FF	
	Up	8x 01 04 0E 02 FF	Exposure Compensation Amount Setting
	Down	8x 01 04 0E 03 FF	
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_Preset	Reset		pp: Preset Number 0x00-0xFF
	Set	8x 01 04 3F 01 pp FF	
	Recall	8x 01 04 3F 02 pp FF	
CAM_Menu	On/Off	8x 01 06 06 10 FF	Display ON/OFF
Pan-tilt Drive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed setting 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed)
	Down	8x 01 06 01 VV WW 03 02 FF	
	Left	8x 01 06 01 VV WW 01 03 FF	
	Right	8x 01 06 01 VV WW 02 03 FF	
	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	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
CAM_WDR	On	8x 01 04 3D 02 FF	Wdr ON/OFF
	Off	8x 01 04 3D 03 FF	
CAM_MenuEnter		8x 01 7E 01 02 00 01 FF	Enter Submenu
Freeze	Freeze On	81 01 04 62 02 FF	Freeze On Immediately
	Freeze Off	81 01 04 62 03 FF	Freeze Off Immediately
	Preset Freeze On	81 01 04 62 22 FF	Freeze On When Running Preset
	Preset Freeze Off	81 01 04 62 23 FF	Freeze Off When Running Preset

Absolute Position	Set	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	VV: Pan speed setting 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed) YYYY: Pan Position 8B20 to 74E0 (CENTER 0000) ZZZZ: Tilt Position 40E0 to E899 (Image Flip: OFF) (CENTER 0000)
RTMP	On	8x 01 04 A2 02 FF	
	Off	8x 01 04 A2 03 FF	
Video mode	IP+Stream	8x 01 04 A3 00 FF	
	USB only	8x 01 04 A3 01 FF	
	Streaming only	8x 01 04 A3 03 FF	
Reboot	On	8x 01 04 A4 FF	

Inquiry Command	Command	Reply Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WBModelInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	In Door
		y0 50 02 FF	Out Door
		y0 50 03 FF	One Push WB
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModelInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_FocusModelInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
zoom_Pos_Inq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
PT_Pos_Inq	8x 09 06 12 FF	y0 50 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	YYYY: Pan Position 8A14 to 762C (CENTER 0000) ZZZZ: Tilt Position 468B to E898 (Image Flip: OFF) (CENTER 0000)
CAM_Preset Inq	8x 09 04 3F FF	y0 50 pp FF	Return the last preset number which has been operated pp:01-FF
CAM_OSD MENU on/off	8x 09 7E 04 76 01 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
Firmware version	8x 09 36 69 04 FF	y0 50 0p 0q 0r 0s 0t 0u 0v 0w FF	fw_ver: p.q.rstu.vw

# VISCA over IP Settings

VISCA over IP

PORT

Internet protocol	IPv4
Transport protocol	UDP
Port address	52381

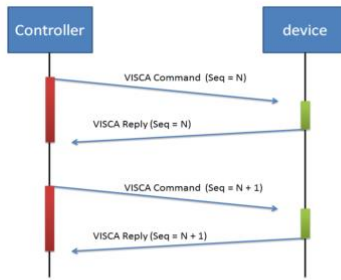
FORMAT

	byte 0	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte8 ~~~~	byte23	
func	Payload type		Payload length		Sequence number				Payload (1 to 16 bytes)		
data	Value1	Value2	1~16 (0x0001~0x0010)		0X00000000 ~ 0XFFFFFFF				VISCA Packet (see page VISCA)		

Payload type

Name	Value1	Value2	Description
VISCA command	0x01	0x00	Stores the VISCA command.
VISCA inquiry	0x01	0x10	Stores the VISCA inquiry.
VISCA reply	0x01	0x11	Stores the reply for the VISCA command or VISCA inquiry

Sequence number



Sequence number = N

## CGI Command

CGI List for Video Transmission					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
Get JPEG	/snapshot				1280x720 jpg
Get RTSP stream	rtsp://ip/live_st1				

CGI List for Audio					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
Auto Echo Cancel	/cgi-bin?Set=	ado_echo_cancel,3,N		0 ~ 1	0 = OFF, 1 = ON
Noise Suppression	/cgi-bin?Set=	ado_noise_suppression,3,N		0 ~ 4	0 = OFF, 1 = NR DSP, 2 = NR, 3 = NR + BF, 4 = NR Strong
Audio Beam Forming	/cgi-bin?Set=	ado_mic_bf_type,3,N		0 ~ 5	0 = 30°, 1 = 50°, 2 = 70°, 3 = 90°, 4 = 110°, 5 = 130°
Audio In Volume	/cgi-bin?Set=	ado_vol,3,N		0 ~ 10	0 ~ 10 volume
Output Type	/cgi-bin?Set=	ado_out_path,3,N		0 ~ 2	0 = Speaker, 1 = HDMI, 2 = Both
Output Volume	/cgi-bin?Set=	ado_spk_gain,3,N		0 ~ 10	0 ~ 10 volume

CGI List for Camera Control					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
up start	/cgi-bin?SetPtzf=	1,0,1&(random)			
up end	/cgi-bin?SetPtzf=	1,0,2&(random)			
down start	/cgi-bin?SetPtzf=	1,1,1&(random)			
down end	/cgi-bin?SetPtzf=	1,1,2&(random)			
left start	/cgi-bin?SetPtzf=	0,1,1&(random)			
left end	/cgi-bin?SetPtzf=	0,1,2&(random)			
right start	/cgi-bin?SetPtzf=	0,0,1&(random)			
right end	/cgi-bin?SetPtzf=	0,0,2&(random)			
zoom_in start	/cgi-bin?SetPtzf=	2,0,1&(random)			
zoom_in end	/cgi-bin?SetPtzf=	2,0,2&(random)			
zoom_out start	/cgi-bin?SetPtzf=	2,1,1&(random)			
zoom_out end	/cgi-bin?SetPtzf=	2,1,2&(random)			
set preset:	/cgi-bin?ActPreset=	1,N&(random)			N : position
load preset:	/cgi-bin?ActPreset=	0,N&(random)			N : position

CGI List for Various Settings					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
exposure value	/cgi-bin?Set=	img_expo_expo,3,N&(random)	value	1 – 9	N : value
saturation	/cgi-bin?Set=	img_saturation,3,N&(random)	value	0 – 10	N : value
contrast	/cgi-bin?Set=	img_contrast,3,N&(random)	value	0 – 4	N : value
Reboot	GET(Basic Authentication)	/cgi-bin?OnePush=!			
Factory Reset	GET(Basic Authentication)	/cgi-bin?OnePush=d			
RTMP Start streaming	/cgi-bin?Set=	vdo_rtmp_enable,3,1			
RTMP Stop streaming	/cgi-bin?Set=	vdo_rtmp_enable,3,0			
Status get (Model name & mac & FW_VER)	/cgi-bin?SetString=	sys_name&net_mac&sys_fw_version&_ =1635216271678		<a href="http://10.100.105.110/cgi-bin?GetString=sys_name&amp;net_mac&amp;sys_fw_version&amp;_ =1635216271678">http://10.100.105.110/cgi-bin?GetString=sys_name&amp;net_mac&amp;sys_fw_version&amp;_ =1635216271678</a>	
Serial No. get		/cgi-bin?GetSerialNumber&_ =1635216271680		<a href="http://10.100.105.110/cgi-bin?GetSerialNumber&amp;_ =1635216271680">http://10.100.105.110/cgi-bin?GetSerialNumber&amp;_ =1635216271680</a>	
uploadwav	/uploadwav/uploadwav?Set=	ado_playback_file,3,N		0 – 9	
oneclick	/cgi-bin?Set=	ptz_oneclick_x,3,N1&ptz_oneclick_y,3,N2&ptz_one_click_spd,3,N3		ptz_one_click_spd 1–24	

## Suggested microSD Cards

The microSD cards listed below have been tested and are suggested to be used.

**Brand:** Kingston, SanDisk, Samsung, Lexar

**Speed Class:** C10/U1/U3/V10/V30

**Capacity:** 16G/32G

**Format:** FAT32 / exFAT