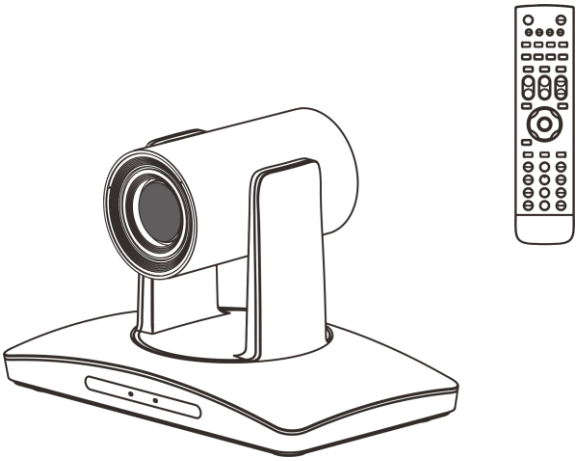
# IP HD PTZ Color Video Camera

**User Manual** V1.0



# SAFETY NOTICE-IMPORTANT!!!

The following important notes must be followed carefully to run the camera and respective accessories in total safety. The camera and relative accessories are called video system in this section.

- Before installing the camera, please read this manual carefully. Please follow installation instructions indicated in this manual during installation. Please keep this manual for future use.
- The installation should be performed by qualified service personnel or system installers in accordance with all local rules.
- Before powering on the camera, please check the power voltage carefully. Make sure that you are using the correct power source.
- Please put the power cable, video cable and control cable in safe place.
- Do not operate the camera beyond the specified temperature and humidity. Working temperature range of the camera is between 0℃ and +40℃. The ambient humidity range is less than 90％.
- During transporting, avoid violent shake or force to the camera.
- To prevent electric shock, do not remove screws or housing of the camera. There are no self-serviceable parts inside. Refer to qualified service personnel for servicing.
- Video cable and RS485 cable should be kept far away from other cables. Shielded and independent wiring is necessary for video and control cables.
- Never aim the lens of the camera at the sun or other extremely bright objects. Otherwise, it may cause damage.
- When cleaning the camera, please use soft cloth. If the camera is very dirty, wipe it off gently with a soft cloth moistened with a weak solution of water and a neutral kitchen detergent. Wring all liquid from the cloth before wiping the camera, then wipe off all remaining dirt with a soft, dry cloth. Use lens cleaning paper to clean the lens.

- Do not move the camera head manually. In doing so would result in malfunction of the camera. Do not hold the camera head when carrying the video camera.
- This camera is for indoor use only. It is not designed for outdoor use.
- Make sure the camera is not directly exposed to rain and water.
- Make sure the camera is far away from area where radiation, X-rays, strong electric waves, or magnetism is generated.

# CONTENTS

# ABOUT THE PRODUCT

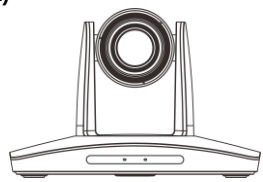
## Features

- 1/2.8 inch CMOS sensor, 2.14 megapixel;
- H.265, H.264 video compression;
- 3G-SDI, DVI output;
- Support 1080p60 video output;
- 20x optical zoom, 12x optical zoom, 10x optical zoom;
- 20X: Max FOV: 59.5°;
  12X: Max FOV: 72.5°;
  10X: Max FOV: 60.4°;
- Dual stream, supporting multi-levels configuration of video quality;
- 1 channel audio input and 1 channel output;
- Max. 64G TF card for local storage;
- Precise driving system with high reliability and precision;
- Support multi protocols & control interfaces and Daisy chain;
- OSD menu;
- With IR remote controller;
- Smart AE technology to effectively avoid the interference of complicated lights from projectors ,monitors etc;
- Desktop/Ceiling/ Wall mount optional.

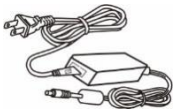
## List Of Parts & Accessories

When you open the box, check all accessories according to the packing list.

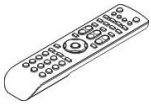
**Camera (1)**



**Power Adapter (1)**

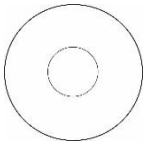


**Remote Controller (1)**



**RS-232 Control Cable (1)**

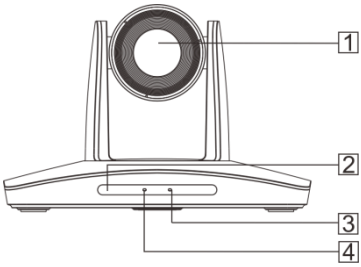
**Software Disc (1)**



# Main Parts & Interfaces

## Camera

**Front View**



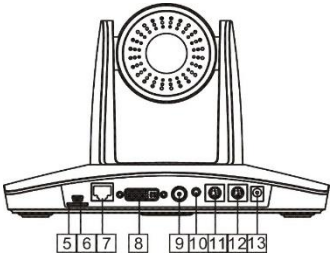

1 Camera Module

2 Remote Controller Indicator

3 Power Indicator

4 Communication Indicator

**Rear View**




5 TF Card Slot

6 USB

7 RJ45 (Network)

8 DVI Video Output

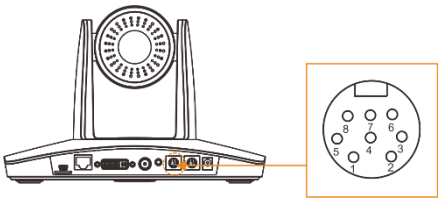
9 3G-SDI

10 Audio

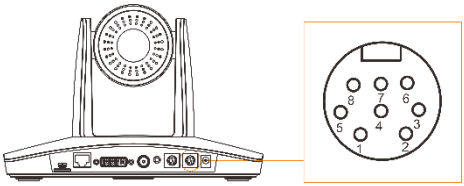
11 RS-232IN/IR

12 RS-232OUT/RS-485

13 Power ( DC12V )




| RS-232IN/IR Pin Definition | |
|---|---|
| Number | Definition |
| 1 | / |
| 2 | / |
| 3 | TXD |
| 4 | GND |
| 5 | RXD |
| 6 | GND |
| 7 | IR |
| 8 | / |

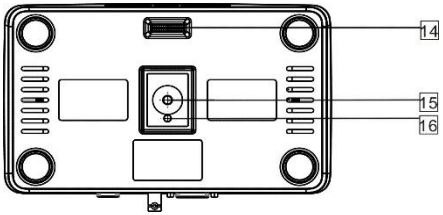



**16 Locating Hole**

To define installation direction of camera.

| RS-232OUT/RS-485 Pin Definition | |
|---|---|
| Number | Definition |
| 1 | / |
| 2 | / |
| 3 | TXD |
| 4 | GND |
| 5 | RXD |
| 6 | GND |
| 7 | 485+ |
| 8 | 485- |

**Bottom View**




**14 DIP Switch**

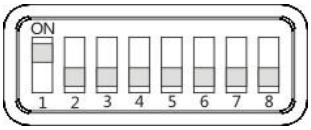
Set camera address, protocol, baud rate, video format and mounting type.

**15 Mounting Hole**

1/4”inch screw thread for fixing camera.

## DIP Switches Settings

Before installing and operating the camera, set the camera address, baud rate and video output format etc through DIP switches. The camera has two 8-digit DIP switches: SW1 and SW2 as below:




**Note**

SW1 is used to set address, and mounting type, SW2 is used to set protocol, baud rate and video output format.

| Default Settings | |
|---|---|
| Address | 1 |
| Baud Rate | 9600bps |
| Protocol | VISCA |
| Video Format | 1080P25 |
| Mounting Type | Desktop Installation |

### SW1 settings

No 1~6 are used to set camera address, the DIPs adopt binary system. No. 8 is used to set mounting type. Refer to page 34-35 for details.

### SW2 settings

No. 1 and 2 of SW2 is used to set protocol; no. 3 and 4 is used to set baud rate; No. 5, 6, 7, 8 is used to set video output format. Refer to below chart for details:

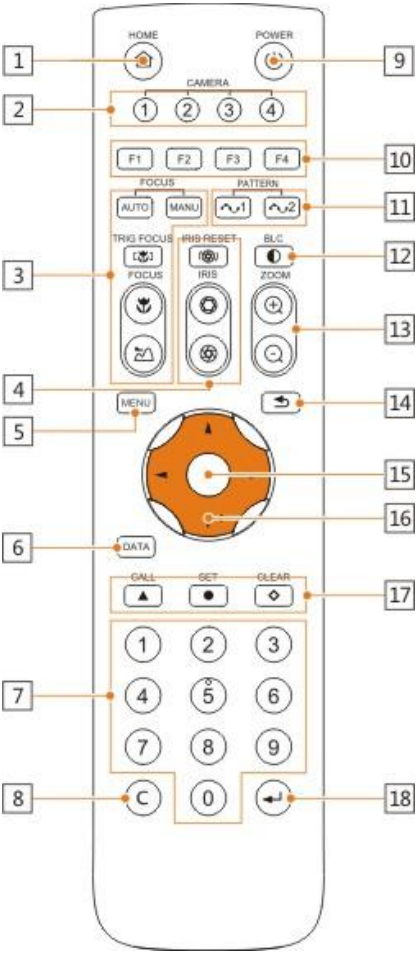
| SW2 | | | | | |
|---|---|---|---|---|---|
| DIP No. | 1 | 2 | | | |
| Protocol | OFF | OFF | VISCA | | |
| | ON | OFF | PELCO- D | | |
| | OFF | ON | PELCO- P | | |
| | ON | ON | Reserved | | |
| DIP No. | 3 | 4 | | | |
| Baud Rate(bps) | OFF | OFF | 2400 | | |
| | ON | OFF | 4800 | | |
| | OFF | ON | 9600 | | |
| | ON | ON | 38400 | | |
| DIP No. | 5 | 6 | 7 | 8 | |
| Video Format | OFF | OFF | OFF | OFF | 1080P60 |
| | ON | OFF | OFF | OFF | 1080P50 |
| | OFF | ON | OFF | OFF | 1080I60 |
| | ON | ON | OFF | OFF | 1080I50 |
| | OFF | OFF | ON | OFF | 720P60 |
| | ON | OFF | ON | OFF | 720P50 |
| | OFF | ON | ON | OFF | 1080P30 |
| | ON | ON | ON | OFF | 1080P25 |

When No.5~8 is all ON, camera address, protocol, baud rate, video format and mounting type can be programmed by OSD menu. Please refer to page18 for detais of changing video formats through special presets.

**Note**

PTZ reboot is necessary for the new setting to take effect.

## Remote Controller




**1 HOME**

Press HOME button, camera moves to initial position.

**2 Camera Selection Button**

Used to switch among 4 cameras, press 1-4 number buttons to control cameras with 1-4 addresses respectively. For example, press button 1 to control the camera with address 1.

**3 Focus**

Press “AUTO” button to switch to Auto Focus, press “MANU” button to switch to Manual Focus mode.

“”button to Focus Near

“”button to Focus Far

“”button to Auto Focus once every time it is pressed, then switch back to Manual Focus mode.

**4 Iris**

Press“”button to reset iris (image brightness) value to default. “”button to Iris Open (brighter image)

“”button to Iris Close (darker image).

**5 Menu**

Press MENU button to enter / exit menu.

**6 Data**

Reserved.

**7 Number Keys**

Used to input numbers, for example, preset number.

**8 Cancel**

To cancel numbers input

**9 Power**

After the camera has been connected to power source, in none-menu status, press this button to turn on / off the camera.

**10 Reserved buttons ( F1, F2, F3, F4 )**

These buttons are reserved for future use.

**11 Pattern**

Reserved

**12 BLC**

Used to open / close back light compensation.

**13 Zoom**

Used to adjust zooming times.

"⊕"button to zoom in

"⊖"button to zoom out.

**14 Back**

Press"⮌ "button to go back to previous menu.

**15 OK**

In None-menu status: press this button to switch among pan / tilt control speeds.

In Menu status: get into relative menu option after it has been selected.

**16 Direction / Menu Operation**

In None-menu status, press these four buttons to pan left/right and tilt up/down.

In Menu status:▲ or ▼ button to select among menu options, ◄ or ► to change option / value.

**17 Preset Setting**

"▲" button to call a preset.

Input number key(s), and then press this button to call a preset.

"●"button to set a preset.

Move the camera to a specific position, adjust focus value and etc, and then press this button to set a preset.

"◇"button to clear a preset.

Input number key(s), and then press this button to clear a preset.

**18 Enter**

After inputting numbers, press this button to confirm.

# INSTALLATION

The camera has 3 installation types: desktop, ceiling, wall mount installations.

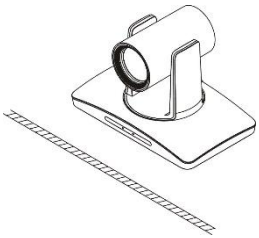
Note

Before installing, make sure there is enough space to install the camera and its parts.

Make sure the installed place is strong and safe enough to hold the camera and relative parts, it is suggested that the installed place can withstand 4 times the weight of the camera and its relative parts.

## Desktop Mount Installation

**1.** Put the camera on a flat surface. In case the camera has to be placed on an inclined surface, make sure the cline angle is less than 15 degrees to ensure proper pan /tilt operation.

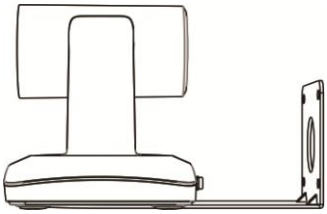


Note

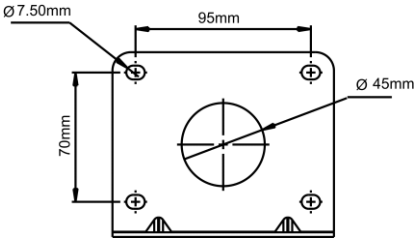
- Take effective measures to avoid camera from dropping.
- Do not grab the camera head when carrying.
- Do not rotate the camera head with hand. It may cause malfunction to the camera.

## Wall Mount Installation

(Wall Bracket Supplied separately)

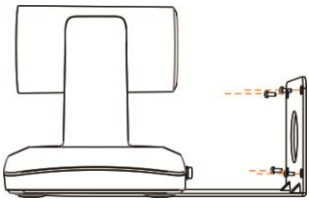


**1.** According to diameter and position of the 4 installation holes (As shown below) on the bracket, drill 4 holes on the wall and fix the bracket onto the wall by using 4 screws which should be prepared by you.



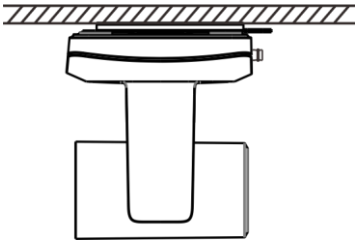

**2.** Before fixing the camera, set the DIP switches of the camera correctly.

**3.** Use inch screws to fix the camera on the bracket, fix the limit screw according to actual requirement, and make sure the camera is tightly fixed onto the bracket before your hands leave the camera.

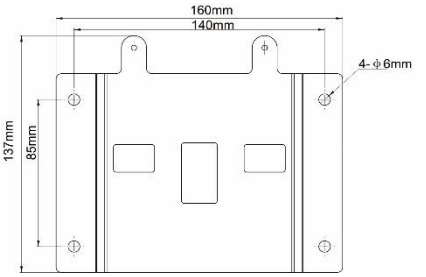


## Ceiling Mount Installation

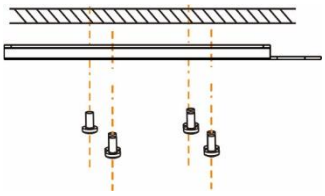
### Ceiling Plates Supplied Separately



1. According to diameter and position of the 4 installation hole (as shown below), drill 4 holes on the ceiling or cement roof correspondingly.

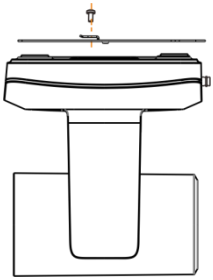



2. Fix the mounting plate onto the ceiling or cement roof with 4 screws which should be prepared by you.

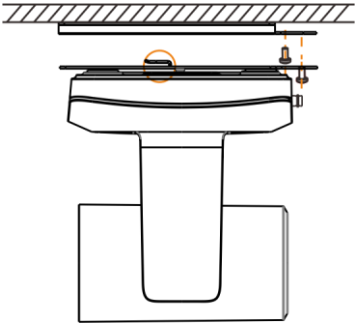


3. Before fixing the camera, set the DIP switches of the camera correctly.

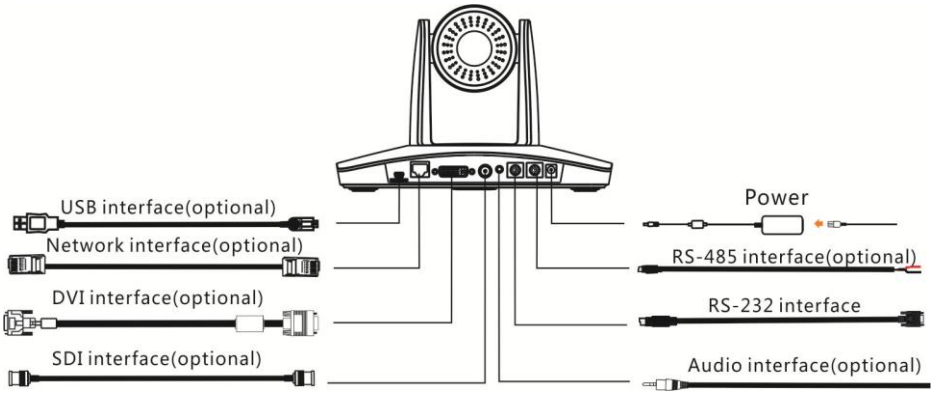
4. Use 1 screws to fix the camera on the ceiling mount plate.



5. Push forward camera's bottom slide according to the mounting plate's bottom slide until they reach their limit. Fix the ceiling mount plate and camera's bottom plate with M3×8 screws.



# CONNECTIONS

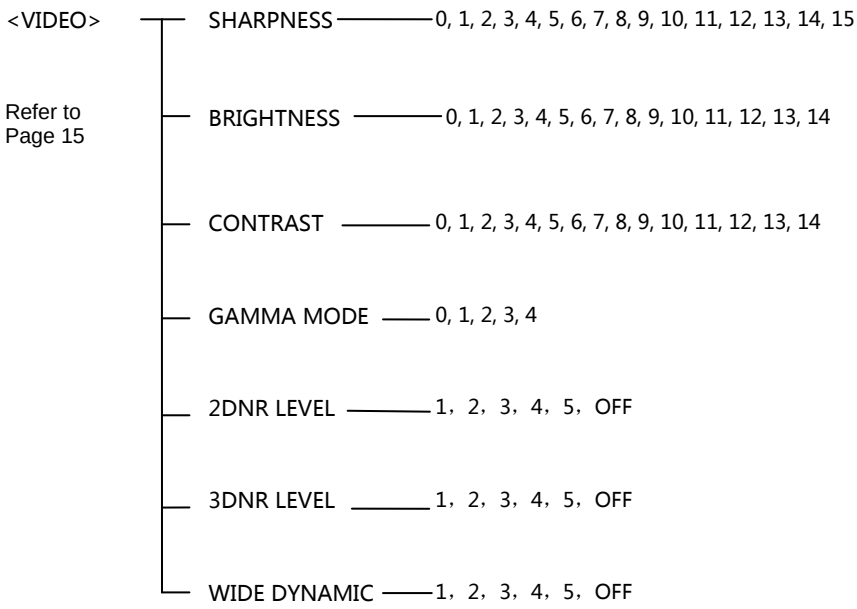


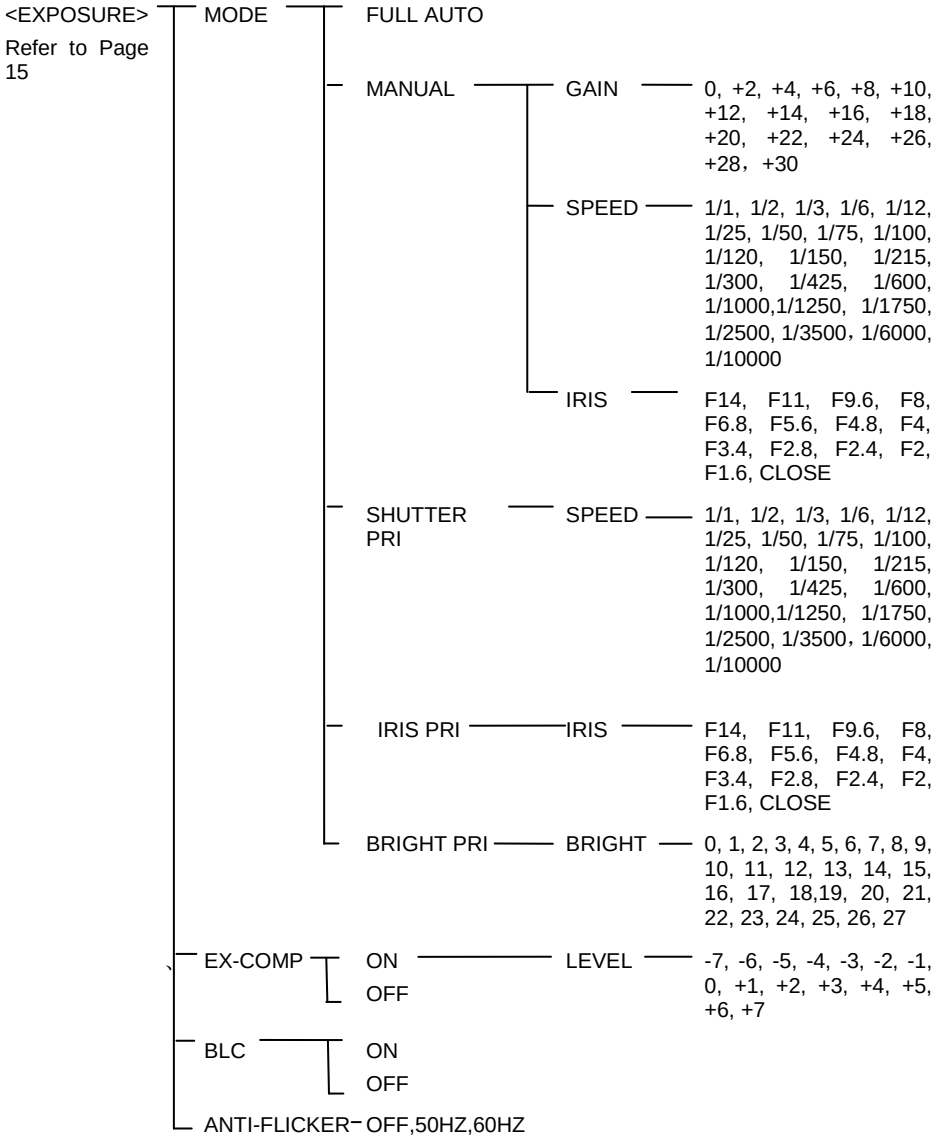

Note

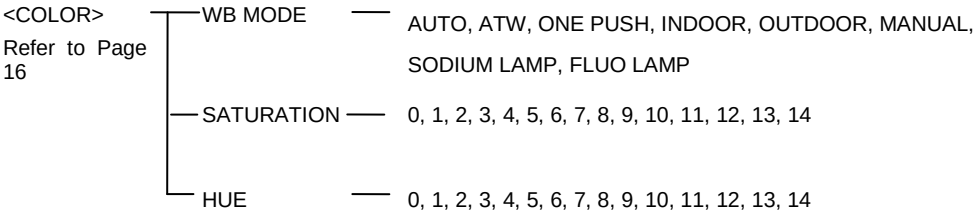
If preset 0 has been saved, after powered on, camera moves to preset 0 automatically; if preset 0 has not been saved, after powered on, camera moves to Home position, where both pan and tilt angle is zero and zooming time is 1x.

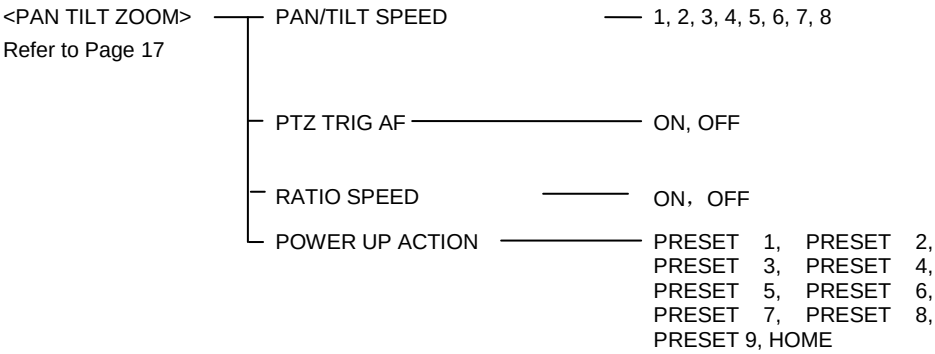
# MENU SETTINGS

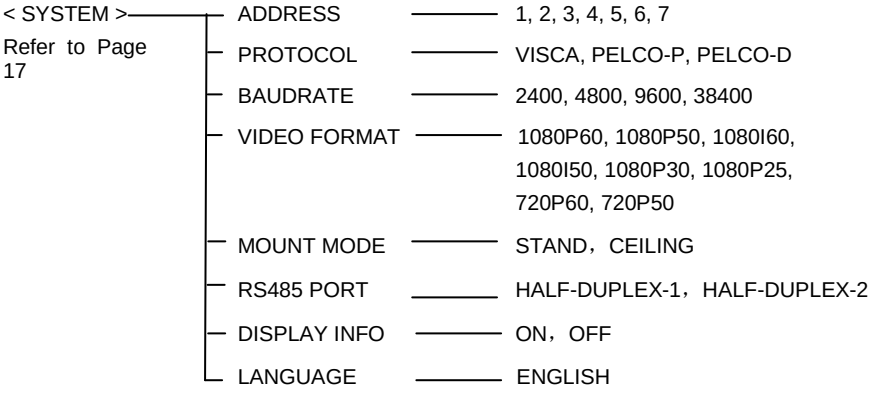
## Menu Configuration

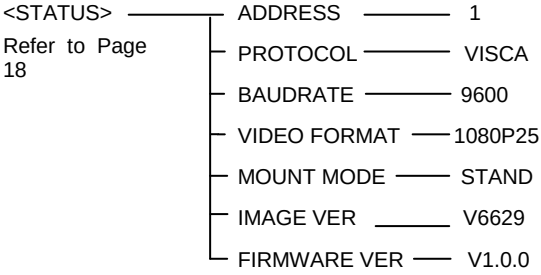



<EXPOSURE>
Refer to Page 15
MODE
FULL AUTO
MANUAL
GAIN
0, +2, +4, +6, +8, +10, +12, +14, +16, +18, +20, +22, +24, +26, +28，+30
SPEED
1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000,1/1250, 1/1750, 1/2500, 1/3500，1/6000, 1/10000
IRIS
F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE
SHUTTER PRI
SPEED
1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000,1/1250, 1/1750, 1/2500, 1/3500，1/6000, 1/10000
IRIS PRI
IRIS
F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE
BRIGHT PRI
BRIGHT
0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,19, 20, 21, 22, 23, 24, 25, 26, 27
EX-COMP
ON
OFF
LEVEL
-7, -6, -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5, +6, +7
BLC
ON
OFF
ANTI-FLICKER
OFF,50HZ,60HZ


<COLOR>
Refer to Page 16
WB MODE
AUTO, ATW, ONE PUSH, INDOOR, OUTDOOR, MANUAL,
SODIUM LAMP, FLUO LAMP
SATURATION
0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
HUE
0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14


<PAN TILT ZOOM>
Refer to Page 17
PAN/TILT SPEED
1, 2, 3, 4, 5, 6, 7, 8
PTZ TRIG AF
ON, OFF
RATIO SPEED
ON，OFF
POWER UP ACTION
PRESET 1, PRESET 2,
PRESET 3, PRESET 4,
PRESET 5, PRESET 6,
PRESET 7, PRESET 8,
PRESET 9, HOME


< SYSTEM >
Refer to Page 17
ADDRESS
1, 2, 3, 4, 5, 6, 7
PROTOCOL
VISCA, PELCO-P, PELCO-D
BAUDRATE
2400, 4800, 9600, 38400
VIDEO FORMAT
1080P60, 1080P50, 1080I60,
1080I50, 1080P30, 1080P25,
720P60, 720P50
MOUNT MODE
STAND，CEILING
RS485 PORT
HALF-DUPLEX-1，HALF-DUPLEX-2
DISPLAY INFO
ON，OFF
LANGUAGE
ENGLISH

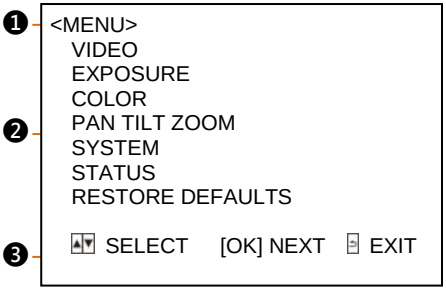



<RESTORE DEFAULTS> Refer to Page18

# Menu Explanation

## Main Menu

Press MENU button to enter / exit menu.




**❶ Menu Hint**

It displays currently selected menu option.

**❷ Menu Options**

It displays options under current menu hint.

Press ▲ or ▼ button to select among menu options, once font of options turned from white color to yellow color, it indicates the menu has been elected, press OK button to get into this menu.

**❸ Prompt Message**

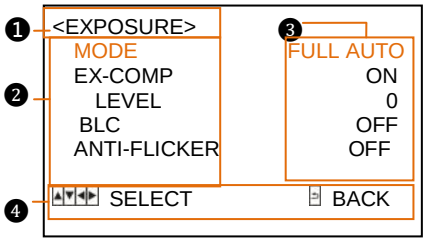
"▲▼ SELECT" indicates it is possible to press ▲ or ▼ button to select menu options.

"[OK]NEXT" indicates it is possible to press OK button to enter next level menu.

"[OK] EXIT" indicates it is possible to press OK button to exit menu.

## Submenus

From main menu, navigate to select <EXPOSURE> menu, press OK to enter.

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Press ▲ or ▼ button to select among menu options, once font of options turned from white color to yellow color, it indicates the menu has been elected, press OK button to get into this menu.

**❸ Manual Exposure**

Press◄ or ► button to change value.

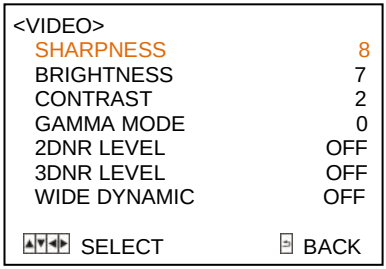
**❹ Prompt Message**

"▲▼◄► SELECT" indicates it is possible to press▲ or ▼ to select menu options, press ◄ or ► to change value

"BACK" indicates it is possible to press ⮌ to return to previous menu.

## Video

VIDEO menu is used to change video value.




**Available Options:**

**SHARPNESS:** 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

**BRIGHTNESS:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

**CONTRAST:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

**GAMMA MODE:** 0, 1, 2, 3, 4.

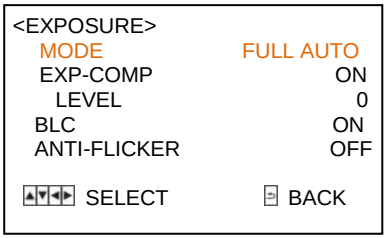
**2DNR LEVEL:** 1, 2, 3, 4, 5, OFF

**3DNR LEVEL:** 1，2，3，4，5, OFF.

**WIDE DYNAMIC:** 1, 2, 3, 4, 5, OFF.

## Exposure

EXPOSURE menu is used to adjust exposure value.




**MODE:**

**FULL AUTO:** Gain, Shutter Speed and Iris value are adjusted automatically accordingly to working environment.

**MANUAL:** manually adjust Gain, Shutter Speed and Iris

**GAIN:** 0, +2, +4, +6, +8, +10, +12, +14, +16, +18, +20, +22, +24, +26, +28, +29, +30.

**SPEED:** 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000s

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

**SHUTTER PRI:** Gain and Iris value are adjusted automatically according to working environment; shutter speed value is adjustable manually.

**SPEED:** 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300,

1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000s.

**IRIS PRI:** Gain and shutter speed value are adjusted automatically according to working environment; Iris value is adjustable manually.

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

**BRIGHT PRI:** Manually adjust the video brightness.

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

**EXP-COMP:** Once EXP-COMP is set as On, below level options become available -7, -6, -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5, +6, +7

+7 is the maximum compensation value for bright, -7 is the maximum compensation value for dark.

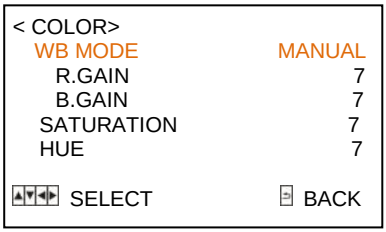
**BLC:** ON, OFF

Backlight compensation (BLC) is video gain done automatically to correct the exposure of subjects that are in front of a bright light source.

**ANTI-FLICKER (OFF, 50Hz, 60Hz):** To avoid video flicker at power systems of different frequency.

## COLOR

COLOR menu is used to adjust color related values. Available options:




**WB MODE:** AUTO, ATW (auto tracking), ONE PUSH, INDOOR, OUTDOOR, MANUAL, SODIUM LAMP, FLUO LAMP

**"ONE PUSH":** In "ONE PUSH TRIGGER" mode, aim the camera at a pure white object (say a white paper), then press OK button.

**"AUTO" mode:** R.GAIN, G.GAIN and B.Gain can be chosen from -7~+7.

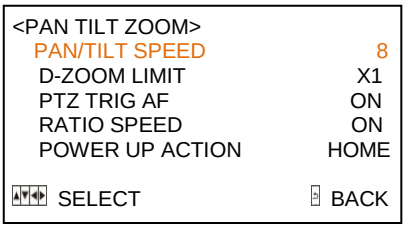
**"MANUAL" mode:** R.GAIN and B. GAIN value can be chosen from 0~255.

**SATURATION:** 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

**HUE:** 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

## Pan/Tilt/Zoom

PAN/TILT/ZOOM is used to change pan/tilt/zoom value, available options:




**PAN/TILT SPEED:** 1, 2, 3, 4, 5, 6, 7, 8 the bigger the number is, the faster the speed is.

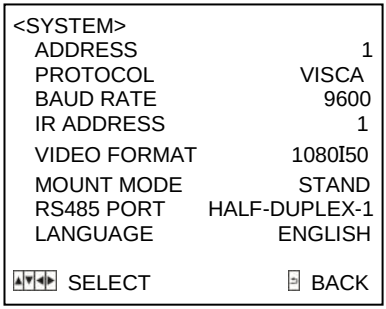
**D-ZOOM LIMIT**: X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12.

**PTZ TRIG AF:** Turn ON / OFF the auto focus when the camera pans / tilts / zooms.

**RATIO SPEED (ON, OFF):** Set the relation of PT speed as per zoom time. When it's on, PTZ speed will be faster when zoom time is bigger.

**POWER UP ACTION:** PRESET 1, PRESET 2, PRESET 3, PRESET 4, PRESET 5, PRESET 6, PRESET 7, PRESET 8, PRESET 9, HOME.

## System




**ADDRESS:** 1, 2, 3, 4, 5, 6, 7.

**PROTOCOL:** VISCA, PELCO-D, PELCO-P;

**BAUD RATE:** 2400, 4800, 9600, 38400;

**IR ADDRESS:** 1,2,3,4, set camera address to be controlled by remote controller.

**VIDEO FORMAT:** 1080P60, 1080P50, 1080P30, 1080P25, 1080I60, 1080I50, 720P60, 720P50;

**MOUNT MODE:** STAND, CEILING;

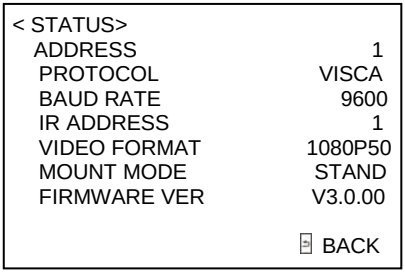
**RS485 PORT:**

HALF-DUPLEX-1: the camera will not return ACK/FINISH/FAULT msg.

HALF-DUPLEX-2: the camera will return ACK/FINISH/FAULT msg.

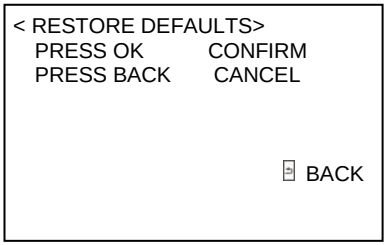
**LANGUAGE:** ENGLISH

## STATUS




Display information (address, protocol, baud rate, IR address, video format, mount mode, image version and firmware version) of the current camera.

## Restore Defaults




RESTORE DEFAULTS option is used to reset all menus to default value.

Press OK to confirm or press ⮌ to cancel and return to previous menu.

## List of Special Preset Commands

| Preset No. | Function |
|---|---|
| 93 | Cruise, camera switches among saved 0~29 presets repeatedly and sequentially in fixed interval. |
| 95 | Get into menu |
| 96 | Delete all presets |
| 99 | Reboot the PTZ |
| 100 | Video format: 1920X1080P50 |
| 101 | Video format: 1920X1080P25 |
| 102 | Video format: 1920X1080I50 |
| 103 | Video format: 1280X720P50 |
| 105 | Video format: 1920X1080P60 |
| 106 | Video format: 1920X1080P30 |
| 107 | Video format: 1920X1080I60 |
| 108 | Video format: 1280X720P60 |

# Network Setting

## Network Connection

Use RJ45 Ethernet cable to connect the PTZ into the network

### LAN

No special setting is needed for LAN environment. The PTZ is Plug-N-Play. Please refer to the following connection and set the camera IP as DHCP or static.


Note: The camera supports both video and audio outputs. Please make sure it's used within law and regulation for privacy and other protection.

## Software Quick Guide

The camera can be previewed and controlled through below methods:

- Application software IPCamConf: to search, control and adjust network settings, original password of the software is null.
- VLC: to preview daylight camera image from main stream and thermal camera image from substream.
- IE: to preview daylight camera image from main stream and thermal camera image from substream, in addition, it can be used to control camera and adjust network settings; default ID: admin, Password: null.
- SDK: provided separately for further development.
- ONVIF: the camera supports ONVIF 2.1 version, default ID: admin, Password: 123456.

**RTSP operation:**

1) Make sure your PC and the camera are in the same LAN;
2) Main stream link: rtsp://IP:port number/main.h264;
3) Substream link: rtsp://IP:port number/sub.h264;
4) IP address and port number of the camera can be acquired from IPCamConf application software.

**Internet Explorer operation**

1) Make sure your PC and the camera are in the same LAN;
2) Operation system of your PC should be Win 7 or plus, Windows XP is not supported;
3) From your Internet Explorer, input camera's IP address and port number 88 (the port number is fixed at 88), please refer to below example:

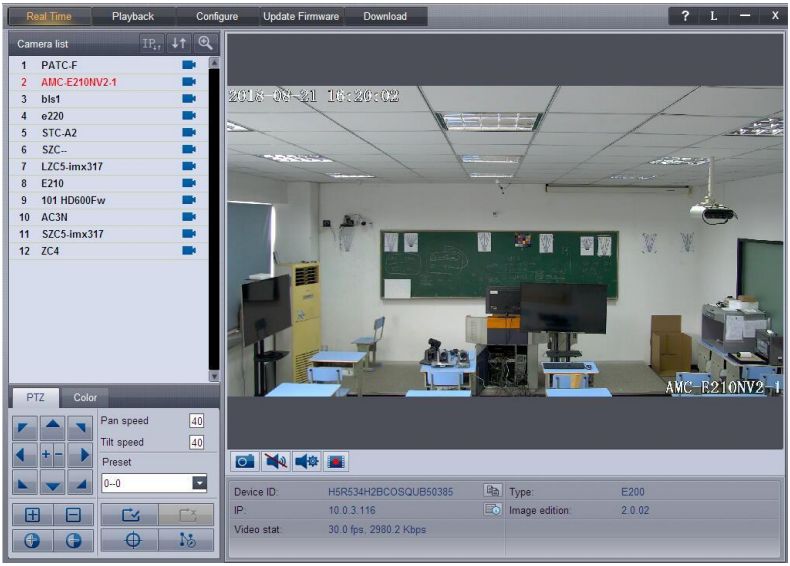
   http://192.168.18.229:88;

4) Install plugs and controls to get it working.

# Software Operation

## Main Interface

Start IPCamConf and the main interface shows as follows:




Pic 1-1

There are 5 modules in the main interface: System menu, Camera list, PTZ, View and Camera info.

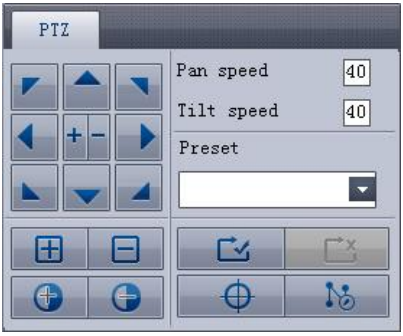
● System menu: entrance of 5 functions.


Pic 1-2

● Camera list: list all the cameras found;

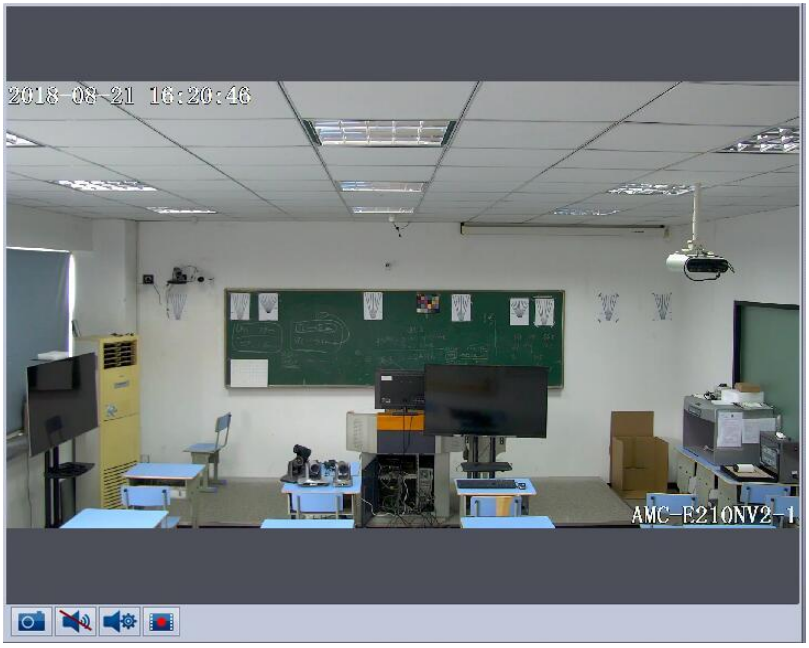

Pic 1-3

● PTZ: PTZ set and control of the current camera when available;



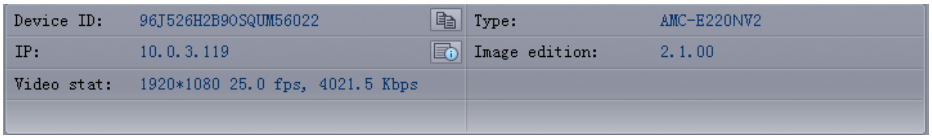

Pic 1-4

● View: view the video, snapshot, audio and SD recorded video clip of the current camera;




Pic 1-5

● Camera info: display ID, IP and firmware version of the current camera;




Pic 1-6

## Local Preview and Setting

### Video view

IPCamConf will automatically search the cameras in LAN and display them in Camera list.

In Camera list, double click a camera and the video from the camera will be displayed in the view interface. Right click to select main or sub stream to view.

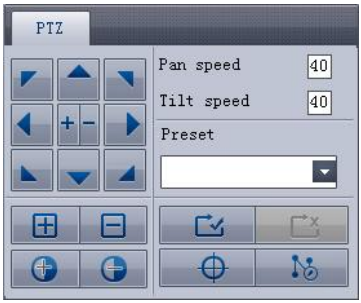
Before each camera name. An icon is used to display the camera status.

: There is a red blinking “S” when the SD card built in the camera is recording the video.

: There is a red static “S” when there is an SD card in the camera but it’s not recording any video.

: The is no “S” and the icon is static when the camera has no built-in SD card.

### PTZ




Pic 1-7

Left area: PTZ control including pan, tilt, zoom, focus, IRIS. A hint will show when the mouse is over the button;

Right-Up area: adjust the pan and tilt speed;

Right-Bottom area: select and manage presets, set, start and stop cruise;

Note: PTZ function is only available to a PTZ camera.

**1 ) Preset setting and management**

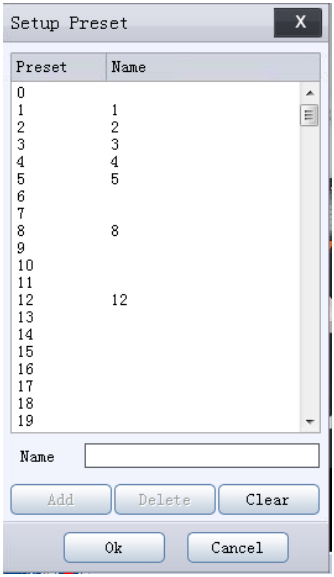
A preset is used to define a location of the camera with certain degrees of pan and tilt, zoom parameters. To define a preset:

● Adjust the pan, tilt and zoom of the camera to the position;

● Click SETUP PRESET;

● Select a preset number and setup a name, save the preset.

● To run the camera to a preset, just select the preset number in the preset list in PTZ interface.




Pic 1-8

## Camera info

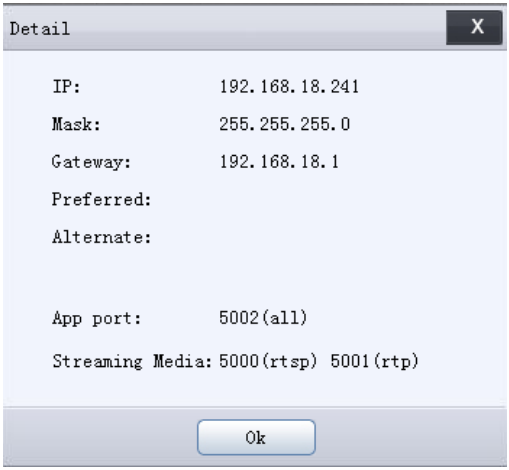
| | | | |
|---|---|---|---|
| Device ID: | 96J526H2B9OSQUM56022 | Type: | AMC-E220NV2 |
| IP: | 10.0.3.119 | Image edition: | 2.1.00 |
| Video stat: | 1920*1080 25.0 fps, 4021.5 Kbps | | |

Pic 1-9

● Device ID：camera's ID. Click  to copy the ID.

● Type: The camera type number.

● IP：camera IP address. Click to show more network information of the camera such as IP, mask, gateway etc.

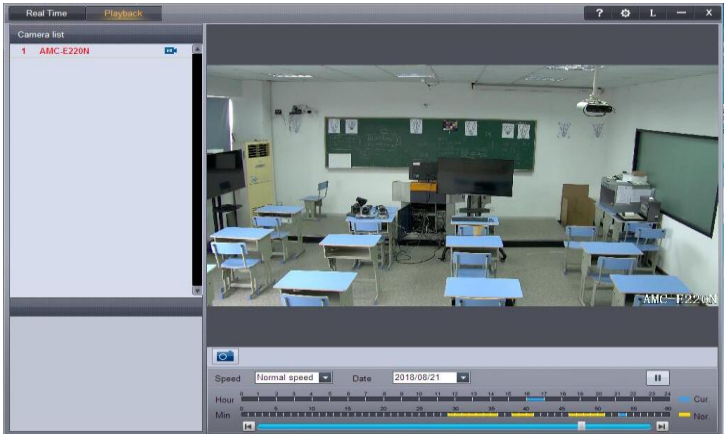



Pic 1-10

● Image Version: camera firmware version.

## Playback

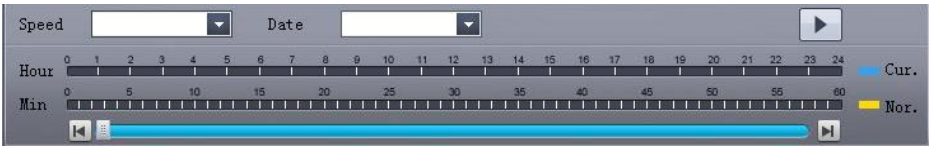
Click playback to start playback. Click Real time to exit.




Pic 1-11

● Playback:

Select a camera for playback. Hour, minute and speed can be programmed. Snapshot can be captured and saved.

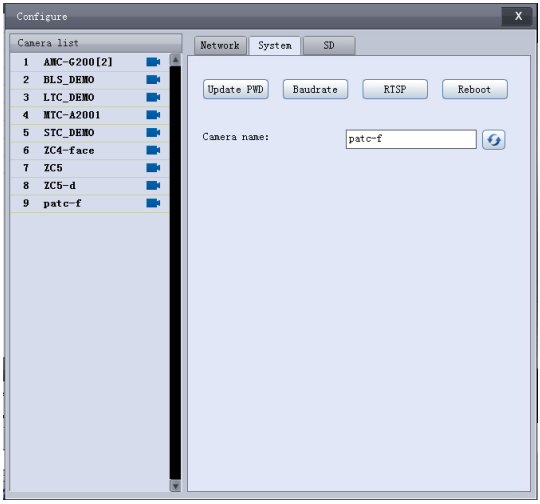



Pic 1-12

## System

Click CONFIGURE and click SYSTEM:

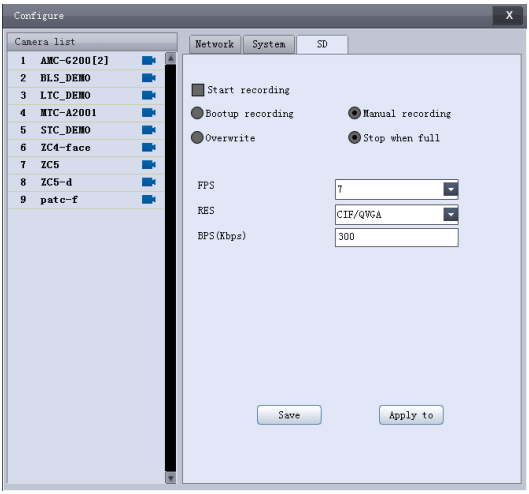
- Password: set password to prevent unauthorized view of the camera video and audio;
- PTZ: when the camera is equipped with external PTZ unit, camera address and baud rate shall be programmed;
- Reboot: reboot the camera;
- Camera name: edit the camera name.




Pic 1-13

## SD

Click CONFIGURE and click SD to set SD card recording.




Pic1-14

1 ) Start recording: the camera will start recording with the SD card. Other parameters shall be programmed for recording to take effective.

● Bootup recording: the camera will start recording when it's power up and online. Start recording shall be enabled.

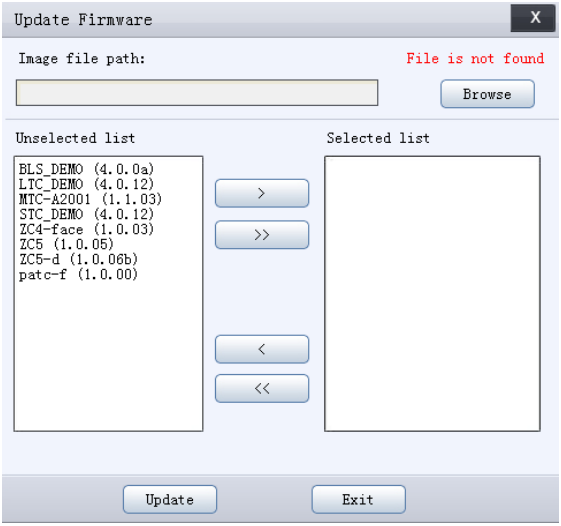
● Overwrite: the new recorded file will overwrite the oldest one when SD is full;

● Stop when full: stop recording when SD card is full;

2 ) Recording quality: adjust FPS, RES and BPS as per the bandwidth and requirement.

## Update Firmware

Click Browse to choose a firmware file to update. The file can be obtained from the manufacturer or your seller.



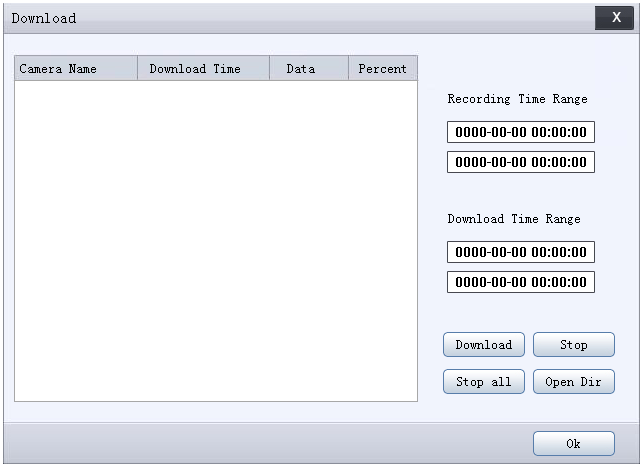

Pic 1-15

- Unselected list: the cameras in the list do not need update;
- Selected list: the cameras in the list need update.
- Choose cameras to update: Select camera in unselected list and click > to add the cameras for update.
- Remove cameras from update: Select camera in unselected list and click < to remove the cameras from the list of update.
- Click update to start firmware update. Please make sure the camera cannot be powered off during the whole process.

## Download

Click [Download] to download recorded videos in the SD card.

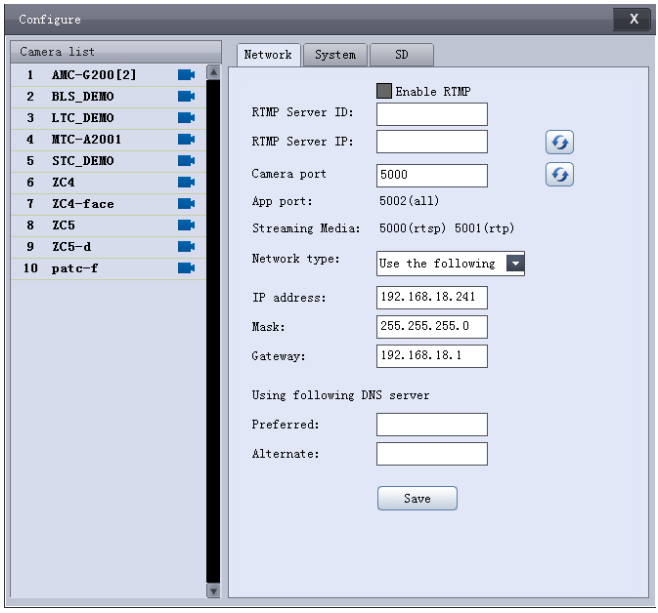
Select a camera and click download. Click STOP to cancel downloading. Click OPEN DIR to view the downloaded file directory.




Pic 1-16

## Configure

Click [CONFIGURE] and click Network.




Pic 1-17

● RTMP: supported;

● Ports: the port to exchange data with the selected camera. It can be predefined (from 3479~7000) or randomly selected.For RTSP communication, the port should be set at 5000;

● Network type: the type of camera IP to be assigned. It can be static (Use the following) or DHCP, based on the actual usage. In case of static IP, the info of IP address, gateway and DNS server (preferred and alternate) shall be provided.

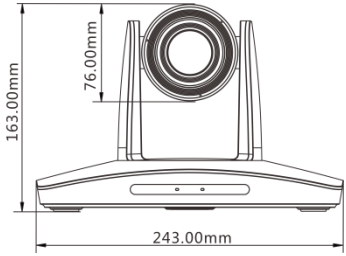
# ANNEX 1 TECHNICAL SPECIFICATIONS

| Items | Value | | |
|---|---|---|---|
| Image Sensor | 1/2.8" CMOS, 2.14 megapixel | | |
| Focal Lens | f=4.7~94.0mm | f=3.9mm-46.8mm | f=4.7mm-47mm |
| Iris | F1.6 – F3.5 | F1.6-F3.8 | F1.6-F3.0 |
| Optical Zoom | 20x | 12x | 10x |
| Digital Zoom | 12x | | |
| Horizontal Viewing Angle | 59.5° -2.9° | 72.5° -6.3° | 60.4° -6.43° |
| Focus System | Auto, Manual, PTZ Trigger, One Push Trigger | | |
| Exposure Control | Auto, Manual, Shutter Priority, Iris Priority, Smart | | |
| Min. Illumination | 0.5lux(color), 0.1lux(B/W) | | |
| Shutter Speed | 1/1 to 1/10,000s | | |
| Gain | Auto /Manual | | |
| White Balance | Auto, Indoor, Outdoor, One Push, Manual, Auto Tracking, Sodium Lamp, Fluo Lamp | | |
| Wide Dynamic | Yes | | |
| Back Light Compensation | Yes | | |
| Digital Noise Reduction | 2D/3D | | |
| S/N | ≥50dB | | |
| **Function** | | | |
| Pan Angle | -170°~+170° | | |
| Tilt Angle | -30°~+90° | | |
| Pan Speed | 0.1°~120°/S | | |
| Tilt Speed | 0.1°~80°/S | | |
| Preset Number | 256 | | |
| OSD | Yes | | |
| Image Flip | Yes | | |
| **SDI Output** | | | |
| Video Format | 1080P60, 1080I60, 1080P30, 720P60<br>1080P50, 1080I50, 1080P25, 720P50 | | |
| **NETWORK** | | | |
| Resolution | Max Support 1920*1080@60fps | | |
| Image Compression | H.265, H.264 | | |
| Audio Compression | AAC | | |
| Protocols | ONVIF, RTSP, RTMP, HTTP, TCP, UDP | | |
| Simultaneous Scanner | ≤10 channels | | |
| Dual Stream | Support | | |
| **Interface** | | | |
| Video Output | 1 channel 3G-SDI, 1 channel DVI-D | | |
| Audio | 1 channel LINE IN, 1 channel line out | | |
| Network Interface | RJ45 (10M/100M) interface, Optional POE (Power over Ethernet) | | |
| Local Storage | TF card, max 64G | | |
| Control Interface | 1 channel RS-485, 1 channel RS-232 IN, 1 channel RS-323 OUT | | |

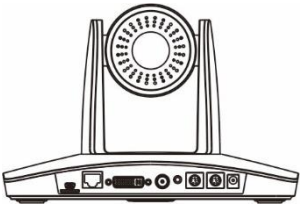
| | |
|---|---|
| IR Throughout Output | 1 channel IR throughout output |
| **General** | |
| Protocols | VISCA (support daisy chain) / PELCO-P / PELCO-D |
| Address | 0~63 |
| Power | DC12V |
| Power Consumption | <20W |
| Operating Temperature | 0°C~+40°C |
| Storage Temperature | -20°C~+60°C |
| Dimensions （W×H×D） | 243mm×145mm×163mm |
| Weight | 1.2KG |
| Body color | grey |

# ANNEX 2 SIZE AND DIMENSION

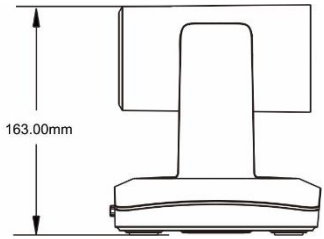
**Front**



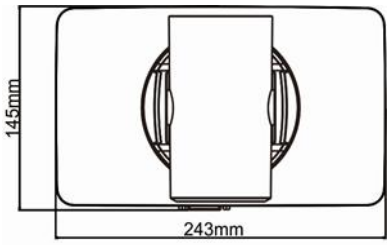

**Rear**



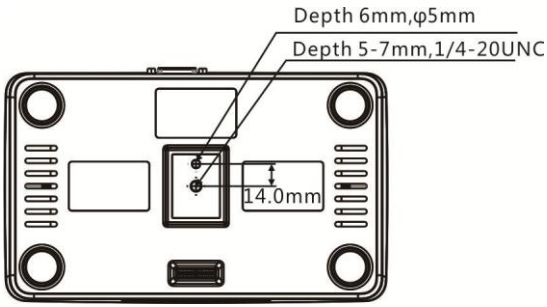
**Side**




**Top**




**Bottom**



# ANNEX 3 SW1 DEFINITION

| DIP No. / Address | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 0 | OFF | OFF | OFF | OFF | OFF | OFF |
| 1 | ON | OFF | OFF | OFF | OFF | OFF |
| 2 | OFF | ON | OFF | OFF | OFF | OFF |
| 3 | ON | ON | OFF | OFF | OFF | OFF |
| 4 | OFF | OFF | ON | OFF | OFF | OFF |
| 5 | ON | OFF | ON | OFF | OFF | OFF |
| 6 | OFF | ON | ON | OFF | OFF | OFF |
| 7 | ON | ON | ON | OFF | OFF | OFF |
| 8 | OFF | OFF | OFF | ON | OFF | OFF |
| 9 | ON | OFF | OFF | ON | OFF | OFF |
| 10 | OFF | ON | OFF | ON | OFF | OFF |
| 11 | ON | ON | OFF | ON | OFF | OFF |
| 12 | OFF | OFF | ON | ON | OFF | OFF |
| 13 | ON | OFF | ON | ON | OFF | OFF |
| 14 | OFF | ON | ON | ON | OFF | OFF |
| 15 | ON | ON | ON | ON | OFF | OFF |
| 16 | OFF | OFF | OFF | OFF | ON | OFF |
| 17 | ON | OFF | OFF | OFF | ON | OFF |
| 18 | OFF | ON | OFF | OFF | ON | OFF |
| 19 | ON | ON | OFF | OFF | ON | OFF |
| 20 | OFF | OFF | ON | OFF | ON | OFF |
| 21 | ON | OFF | ON | OFF | ON | OFF |
| 22 | OFF | ON | ON | OFF | ON | OFF |
| 23 | ON | ON | ON | OFF | ON | OFF |
| 24 | OFF | OFF | OFF | ON | ON | OFF |
| 25 | ON | OFF | OFF | ON | ON | OFF |
| 26 | OFF | ON | OFF | ON | ON | OFF |
| 27 | ON | ON | OFF | ON | ON | OFF |
| 28 | OFF | OFF | ON | ON | ON | OFF |
| 29 | ON | OFF | ON | ON | ON | OFF |
| 30 | OFF | ON | ON | ON | ON | OFF |
| 31 | ON | ON | ON | ON | ON | OFF |
| 32 | OFF | OFF | OFF | OFF | OFF | ON |
| 33 | ON | OFF | OFF | OFF | OFF | ON |
| 34 | OFF | ON | OFF | OFF | OFF | ON |
| 35 | ON | ON | OFF | OFF | OFF | ON |
| 36 | OFF | OFF | ON | OFF | OFF | ON |
| 37 | ON | OFF | ON | OFF | OFF | ON |
| 38 | OFF | ON | ON | OFF | OFF | ON |
| 39 | ON | ON | ON | OFF | OFF | ON |

| | | | | | | |
|---|---|---|---|---|---|---|
| 40 | OFF | OFF | OFF | ON | OFF | ON |
| 41 | ON | OFF | OFF | ON | OFF | ON |
| 42 | OFF | ON | OFF | ON | OFF | ON |
| 43 | ON | ON | OFF | ON | OFF | ON |
| 44 | OFF | OFF | ON | ON | OFF | ON |
| 45 | ON | OFF | ON | ON | OFF | ON |
| 46 | OFF | ON | ON | ON | OFF | ON |
| 47 | ON | ON | ON | ON | OFF | ON |
| 48 | OFF | OFF | OFF | OFF | ON | ON |
| 49 | ON | OFF | OFF | OFF | ON | ON |
| 50 | OFF | ON | OFF | OFF | ON | ON |
| 51 | ON | ON | OFF | OFF | ON | ON |
| 52 | OFF | OFF | ON | OFF | ON | ON |
| 53 | ON | OFF | ON | OFF | ON | ON |
| 54 | OFF | ON | ON | OFF | ON | ON |
| 55 | ON | ON | ON | OFF | ON | ON |
| 56 | OFF | OFF | OFF | ON | ON | ON |
| 57 | ON | OFF | OFF | ON | ON | ON |
| 58 | OFF | ON | OFF | ON | ON | ON |
| 59 | ON | ON | OFF | ON | ON | ON |
| 60 | OFF | OFF | ON | ON | ON | ON |
| 61 | ON | OFF | ON | ON | ON | ON |
| 62 | OFF | ON | ON | ON | ON | ON |
| 63 | ON | ON | ON | ON | ON | ON |

| DIP No. | 7 | |
|---|---|---|
| Reserved | Reserved | Reserved |
| DIP No. | 8 | |
| Mounting Type | ON | Ceiling |
| | OFF | Stand |

# TROUBLESHOOTING

| Problem | Possible Cause | Solution |
|---|---|---|
| No action or image after powered on | Power supply failure | Check power supply |
| | Power adapter damaged | Replace power adapter |
| | Power cable connection got loosen | Check & reconnect |
| No self-testing after powered on, or with motor noise | Power cable is too long | Use a shorter cable |
| | Power adapter damaged | Replace power adapter |
| | Mechanical failure | Repair |
| Not controllable from remote controller | Low battery of remote controller | Change battery for remote controller |
| | Exceed remote control distance | Control within distance of 8M |
| After power on, self-test successfully, but not controllable | Wrong address / protocol / baud rate | Check & set again |
| | Wrong connection or open circuit of RS-485/RS422 or RS-232 cable | Check & reconnect |
| Video loss when pans / tilts / zooms | Power cable is too long | Use a shorter cable |
| | Power adapter damaged | Replace power adapter |
| | Video cable not properly connected | Replace with a good video cable |
| Video captured after connected to digital video interface of a capture device is not good as the video captured after connected directly analog video interface of the capture device | Different video capture devices have different video capturing performance, image quality maybe worse after it has been converted from analog to digital | Consult video capture device supplier for more information |

**The user manual is only for a reference, if there are any changes or differences, please ask for the latest version from your supplier**

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