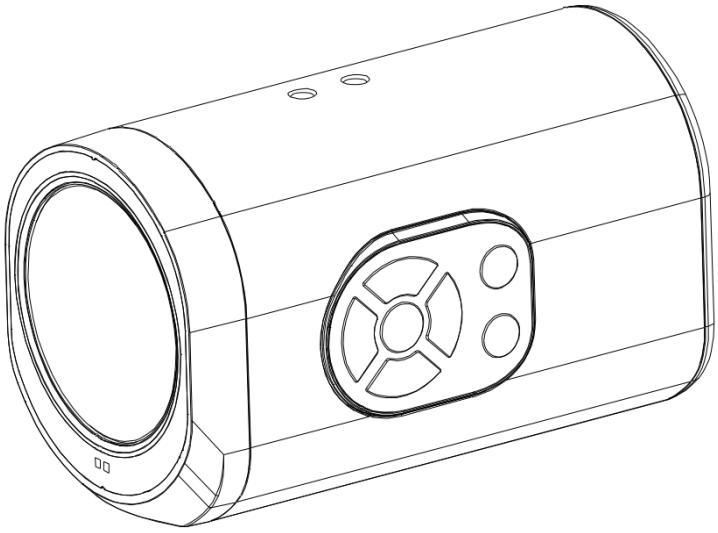
Ultra HD Integration Camera

4K Ultra HD Integration Camera

User Manual

（V1.0）



Preface

This manual is to ensure that the user can use the product properly and avoid danger while operating. Before using this product, please read the user manual carefully and keep it properly for future reference.

Overview:

This manual is about 4K Ultra HD integration camera operation.

Graphic Symbols

Description of graphic symbols used in this manual:

Symbols	Description
	This symbol indicates that the words are clarification or supplement to this article.
	This symbol indicates that negligence of the instructions may lead to mishandling that may cause injury or property damage.
	This symbol indicates a risk that may result in damage to this machine or documents. Follow the instructions to avoid property damage.

Attention

This manual introduces functions, installations and operations for this product in details. Please read this manual carefully before installation and use.

Precautions:

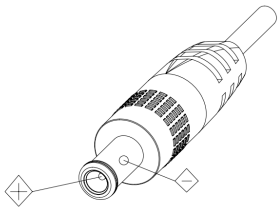
This product can only be used in the specified conditions in order to avoid any damage to the camera:

1) Do not expose the product to rain or moisture.
2) To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
3) Do not use the product beyond the specified temperature, humidity or power supply specifications.
4) Please use a soft dry cloth to clean the camera. If the camera is very dirty, clean it with diluted neutral detergent; do not use any type of solvents, which may damage the surface.

Electrical Safety:

1）Installation and use of this product must strictly comply with local electrical safety standards.

2）The product uses 12V DC power supply, and the polarity of the power plug is as shown on the right.



Transportation

Avoid any stress, vibration, or moisture during transportation, storage, installation and operation.

Installation:

1）This product should be placed on a stable desktop or other horizontal surface. Do not install the product obliquely, otherwise it may display inclined image;

2）The shell of this product is made of metal material. Contact with any liquid, gas or solid substance that may cause corrosion of the shell is strictly prohibited;

3）Do not power on before completely installation.

Do Not Dismantle Camera

We are not responsible for any unauthorized modification or dismantling.

Magnetic Interference

Electromagnetic fields at specific frequencies may affect the video image. This product is Class A. It may cause radio interference in household application. Appropriate measure is required.

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1. Quick Start

1.1 Interface

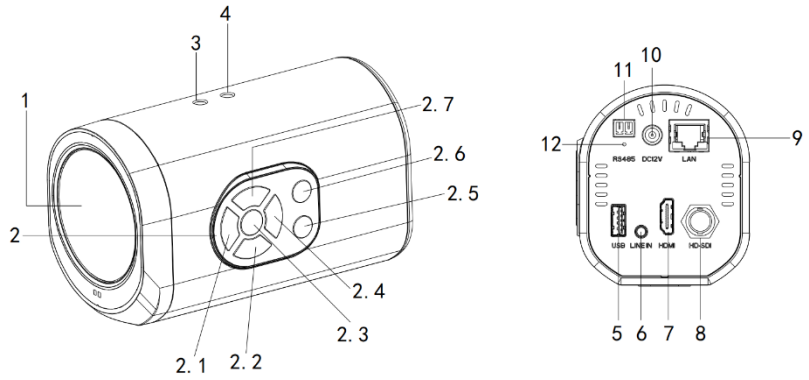


Figure1-1 Interface

Interface explanation:

1,Lens	2.6,AF Key	8,HD-SDI Jack
2,Button	2.7,ZOO+/ Key :Up	9,LAN Jack
2.1,BRI+/ Key :Left	3,Fixation Hole	10,DC12 Power Socket
2.2,ZOO-/ Key :Down	4,Fixation screw holes	11,RS485 Jack
2.3,Menu key/Confirm key	5,USB3.0	12,Indicator
2.4,BRI-/ Key: Right	6,LINE Jack	
2.5,FREEZE	7,HDMI Jack	

1.2 Power-on Self-Test

1）Power-on: Connect device to power socket with DC12V power adapter，as shown in label 11 in Figure 1-1. After the power supply is connected, the power indicator shown in number 9 in Figure 1-1 lights up.

2）Self-test: after power-on, the power indicator lights up, and the movement shrinks to the deepest position before stretching, the self-test is finished.

Note: If the guard position is set, the lens will automatically be set to the guard position after the self-check is completed.

1.3 Video Output

This series of products offers various video output options, including network, HDMI, 3G-SDI, and USB 3.0.

1.3.1 Network Output

a, Network connection: Shown as diagram 1-1 #9;

b, Log in: You can reach the Web Interface by typing in the camera's IP address(default 192.168.5.163) into a web browser. To log in, type in "admin" into the username and password fields. From the Web Interface, you can adjust many of your camera's settings via this IP interface, like PTZ control, and configuration setting.

1.3.2 HDMI Output

a、HDMI connection: Shown as diagram 1-1 #7;

b、Device WEB video output format select HDMI output;

c、Connect camera to the display device via HDMI cable. the device self-test is completed, the display can display the camera output image;

1.3.3 3G-SDI Output

a、SDI video connection: Shown as diagram 1-1 #8;

b、Select SDI as the WEB video output format;

c、Connect camera to the display device via 3G-SDI cable, the device self-test is completed, the display can display the camera output image;

1.3.4 USB3.0 Output

a, USB 3.0 Video Cable Connection: As shown in Figure 1-1, labeled as 7;;

b, Select the USB 3.0 output format in the device's web interface;

c, Connect the device and monitor using the USB 3.0 video cable correctly. After the device completes self-check, the monitor will display the camera output image.

1.4 Bracket

Caution

- Bracket can only be wall mounted or upside down mounted on template and concrete wall, but can not be installed on plasterboard.

1.4.1 Steps of Wall Mount

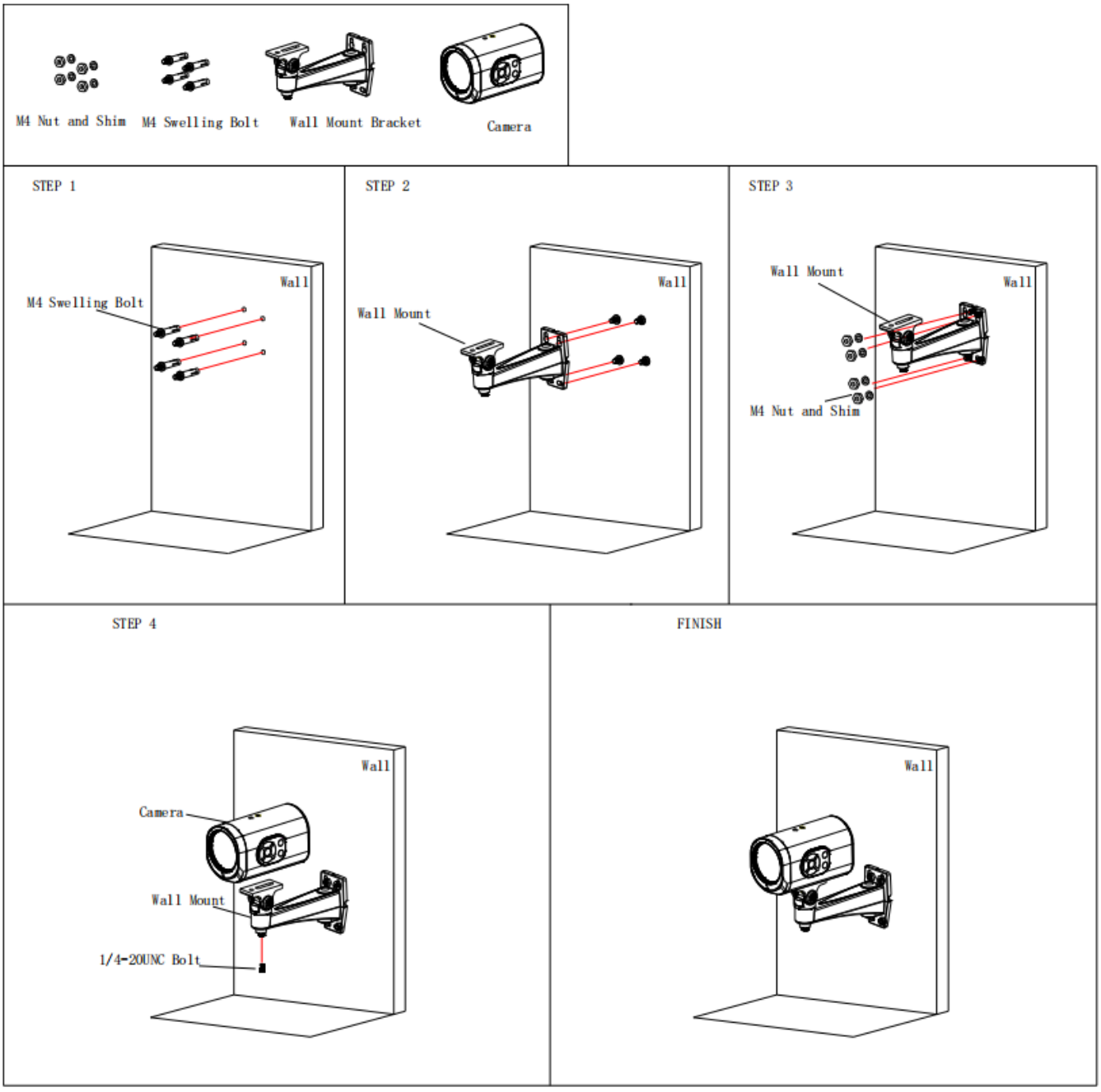


Figure1-2 Steps of Wall Mount

1.4.2 Steps of ceiling mount

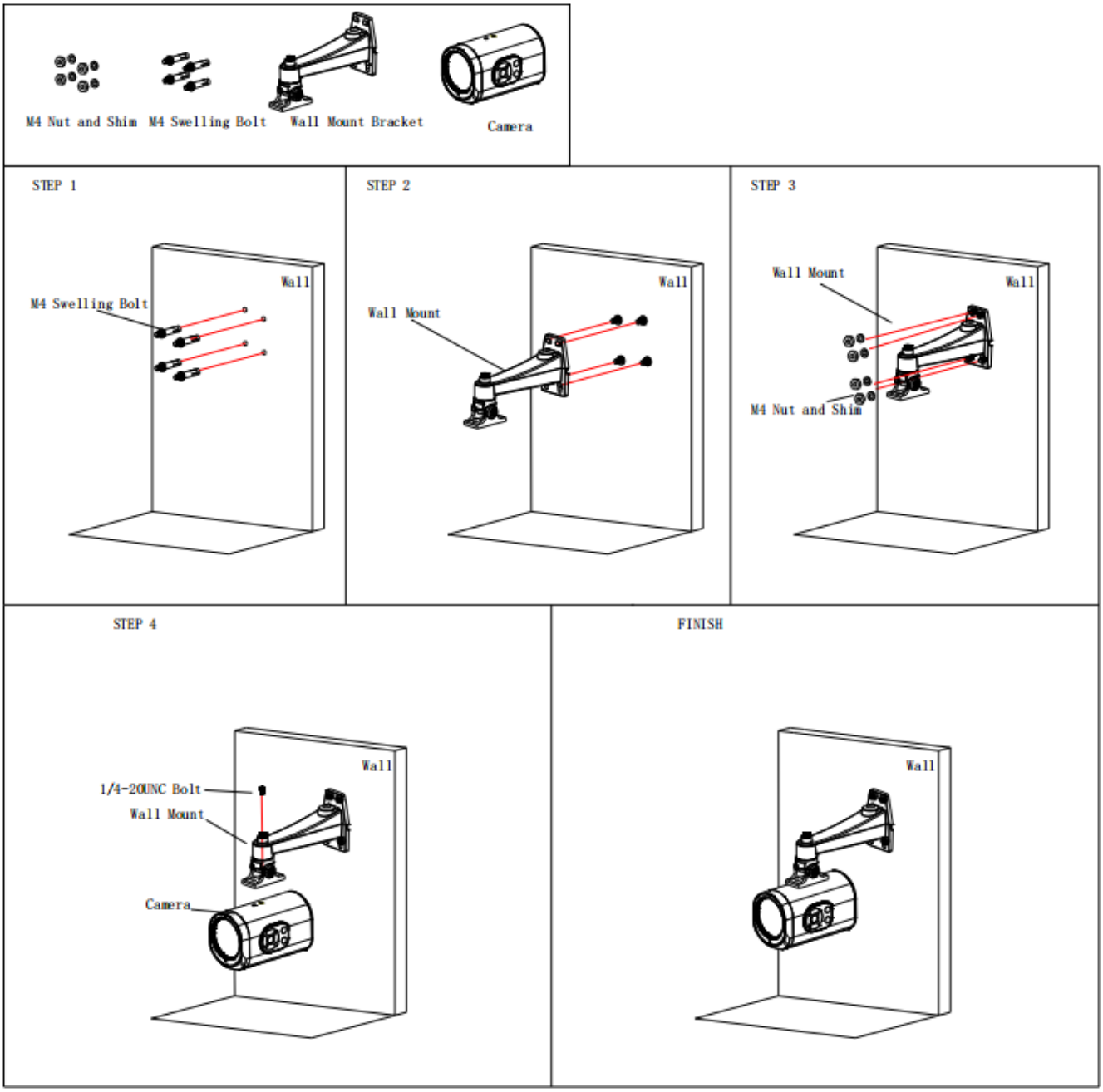


Figure1-3 Step of ceiling mount

2. Product Overview

2.1 Product Introduction

2.1.1 Product Model

ED1202B
12X lens

2.1.2 Dimension

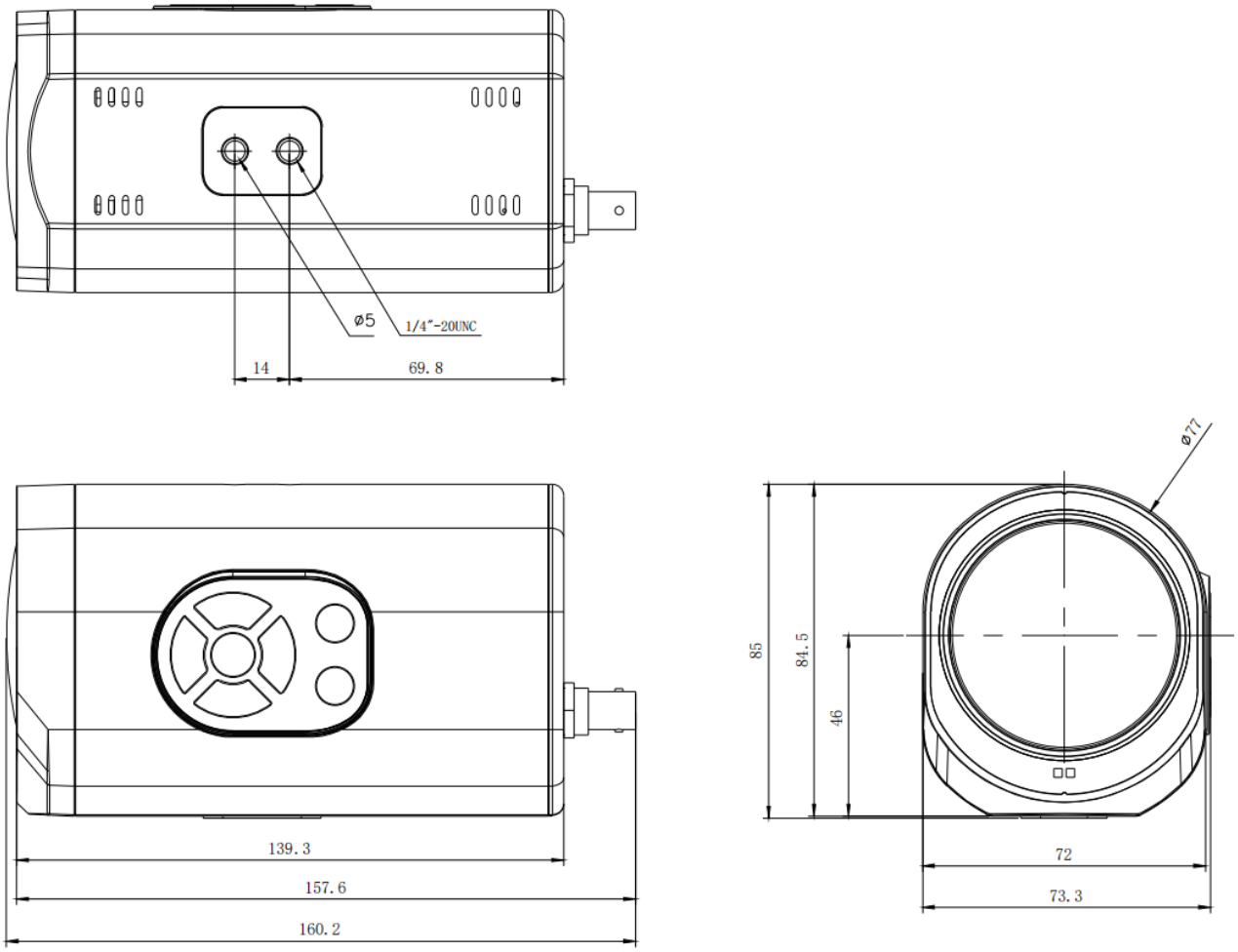


Figure2-1 Dimension

2.1.3 Accessory

When you unpack your package, check that all the supplied accessories are included:

Table2-1 Supplied Accessory

configure	Accessories
Standard	Power adapter
	User manual

2.2 Product Feature

The high-definition integrated camera features a cylindrical one-piece streamlined design, incorporating a 4K ultra-high-definition camera, TOF technology, and a 12x optical zoom lens. It can automatically focus on the subject, achieving rapid and precise focus. Utilizing advanced ISP processing technology and algorithms, it delivers lifelike images with uniform brightness, strong color depth, high clarity, and accurate color reproduction, presenting the best viewing experience. It also comes with a built-in control panel for convenient access to frequently used functions.

- **4K UHD Image:** It employs 1/2.8 inch high quality CMOS sensor. Resolution is up to 3840×2160 with frame rate up to 30 fps.， Present clear and lifelike HD videos that vividly show the characters' expressions and movements.
- **Optical Zoom Lens:**12 x
- **Leading Auto Focus Technology:** Leading autofocus algorithm allow the camera to focus swiftly, accurately, and stably.
- **Laser rangefinder:** assisted focusing for faster and more stable focusing.
- **Low Noise High SNR:** Low noise CMOS effectively ensure the camera’s ultra-high SNR. 2D&3D noise reduction technology further reduce the noise without image comprising.
- **Button Operations:** Supports a multifunctional control button panel, which can conveniently control of commonly used functions such as zoom, focus, brightness adjustment, freeze, menu, and more.
- **Multi Video Outputs:** Support HDMI, USB3.0, 3G-SDI, LAN, support audio and video output; The LAN interface supports POE power supply.
- **Audio Input Jacket:** support AAC ,MP3,G.711Aaudio coding， AAC ,MP3 coding Support 16000,32000,44100,48000 sampling frequency.
- **Multiple Network Protocols:** protocols ONVIF,GB/T28181,RTSP,RTMP,VISCA OVER IP,IP VISCA,RTMPS,SRT protocols, also support RTMP push mode, easily link to streaming media servers (Wowza, FMS); support RTP multicast mode.

2.3 Technical Specification

Table2-2 Camera lens parameter

Parameter/Model	12X
Camera Lens	
Image Sensor	1/2.8 inch high quality 4K HD CMOS sensor
Effective Pixel	8.28M,16:9
Video Signal	**HDMI:** 3840*2160P30/25;1080P60/50/30/25/59.94/29.97;720P60/50/59.94fps; **3G-SDI:** 1080P60/50/30/25/59.94/29.97;720P60/50/59.94fps; USB: H.264/MJPG : 3840*2160P30;1920*1080P30;1280*720P30; NV12/YUY2:1920*1080P30;1280*720P30; **LAN:** H264:3840*2160P30/25;1080P60/50/30/25/59.94/29.97;720P60/50/59.94fps; Note: HDMI and USB cannot output 4K at 30fps simultaneously.
Optical Zoom	12X f = 3.5～42 mm
Viewing Angle	9°（T）~ 90°（W）（ D） 8°（T）~ 80°（W）（ H） 4.8°（T）~ 48°（W）（ V）
Iris	F1.8 – F3.3
Minimum Illumination	0.5Lux(F1.8, AGC ON)
DNR	2D & 3D
White Balance	Auto/Manual/One-push / Specifying Color Temperature
Focus	Auto/Manual/One-push，Support for TOF Laser Ranging Module for Assisted Focus

Shutter Aperture	1/25-1/20000,Auto/Manual
BLC	On/off
Dynamic Range	Off/dynamic level adjustment
Video Adjustment	Brightness, Chroma, Saturation, Contrast, Sharpness, Black and White Mode
SNR	≥50dB
Button Panel Functions	Zoom In, Zoom Out, Brightness Increase, Brightness Decrease, Freeze, Mode, Menu

Table2-3 Interface Parameter

Interface Parameter	
Video Output Interface	HDMI,USB3.0,3G-SDI,LAN
Audio Input Interface	Line IN
Image Stream	Dual Stream Output
Control Jacks	RS485, 2-PING Phoenix Connector, Supports VISC Protocol
Video Compression Format	H.264
LAN Interface	100M network port（10/100BASE-TX）Supports POE Power Supply, Supports Audio and Video Output
Network Protocol	RTSP,RTMP,ONVIF,GB/T28181;Support network VISCA control protocol; Support remote upgrade, remote restart, remote reset
Power Supply	5.0 Card Slot (DC12V)
Power Adapter	Input: AC110V-AC220V Output: DC12V/2A

Input Voltage	DC12V±10%

Table2-4 Other Parameter

Other Parameter	
Storage Temperature	-10℃～+60℃
Storage Humidity	20%～95%
Working Temperature	-10℃～+50℃
Working Humidity	20%～80%
Dimension	157.7（L）mm×73.3mm（W）×85mm（H）
Weight (Approx.)	690g (Camera Body Only)
Environment	Indoors

Table2-5 Accessory Parameter

附件	
Supplied Accessory	Power Adapter, User Manual
Optional Accessory	Mounting Bracket

2.4 Keyboard introduction

- **ZOOM+**

“ZOO+”,“up key" keys are reused;
When not in the menu interface, press "ZOO+" to enlarge the narrow Angle function;
In the menu interface, when the cursor is positioned on a sub-menu item, we can press the "Up" button to move the cursor upwards and select the desired menu.

- **ZOOM-**

“ZOO-”,“Down Key" keys are reused;

When not in the menu interface, press "ZOO-" to enlarge the wide Angle function;

In the menu interface, when the cursor is on a submenu, we can press the "down" key to move the cursor downward and select the desired menu.

- **BRI+**

“BRI+”, “Left Key" Button Multiplexing;
When not in the menu interface, pressing the "BRI+" button increases brightness;
When in the menu interface, when the cursor is on a submenu, we can press the "Left Key" to move left and make a selection.

- **BRI-**

“BRI-”,“Right Key" Button Multiplexing;
When not in the menu interface, pressing the "BRI-" button decreases brightness;
When in the menu interface, when the cursor is on a submenu, we can press the "Right Key" to move right and make a selection.

- **MENU**

The "Menu" and "Confirm" buttons are multiplexed;
Pressing the "Menu" button accesses the menu interface. In the menu interface, after moving the cursor, press the "Menu" button to confirm or enter the next-level menu.

- **AF**

Pressing the "AF" button switches between auto focus and one-touch focus modes.

- **Freeze Frame**

Pressing the "Freeze Frame" button freezes the current video frame. Pressing the button again unlocks the frozen frame.

2.5 Interface

2.5.1 External interface

The external interfaces of this product include: HDMI interface, USB3.0,SDI interface, audio input interface, network interface, RS485 interface, and DC12V power interface. The schematic diagram of the external interfaces is shown in Figure 2-2:

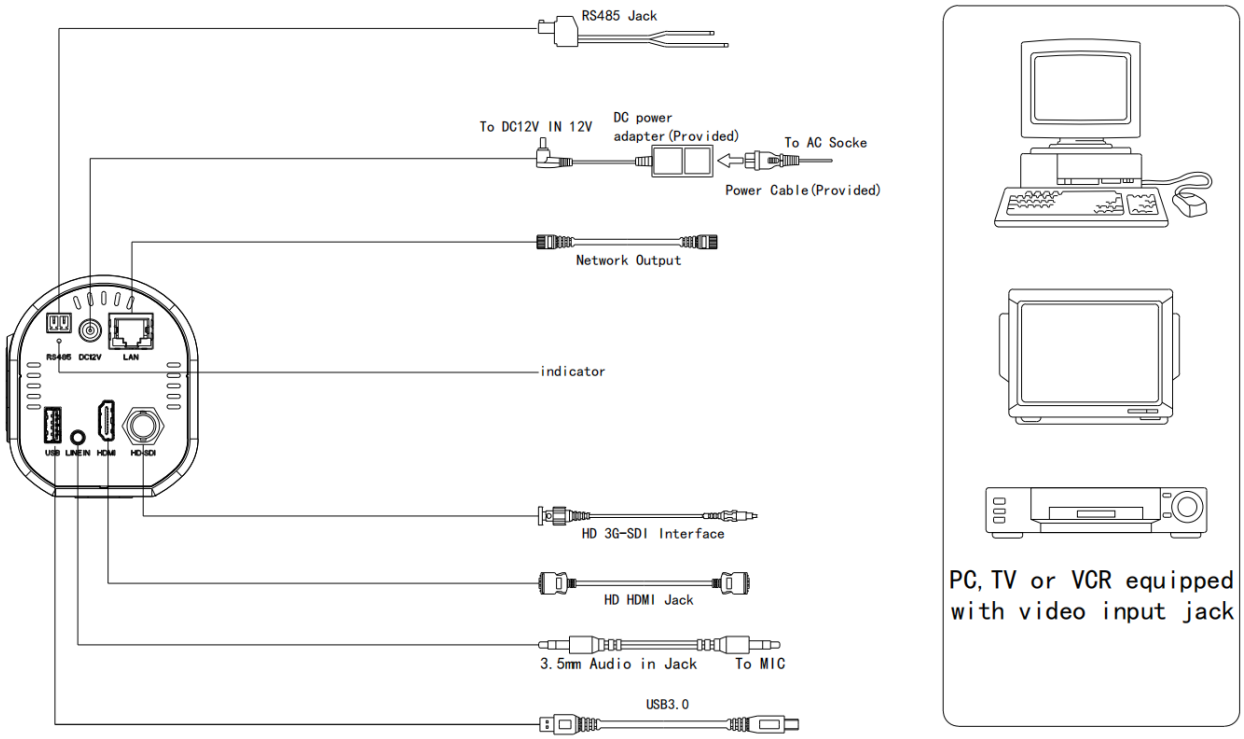


Figure 2-2 External interface diagram

3. How To Use

3.1 Output Image

3.1.1 Power-on Self-test

Connecting the DC12V power supply cable will initiate a self-check process upon powering on the camera. The camera lens will retract and zoom, and after the self-check is complete, if the 0th preset position has been enabled and set, the camera will automatically rotate to that position after completing the self-check process.。

3.1.2 Video Output

Connect the video output cable: Users can refer to the product output interface introduction in Figure 1-1.

1）Network output: connect this product and your computer through network cable, then open the browser, enter the camera IP address (factory default 192.168.5.163) in the address bar, then to the login page and input a user name and password (factory default are “admin”) ,Finally enter the preview page, and the image comes out.

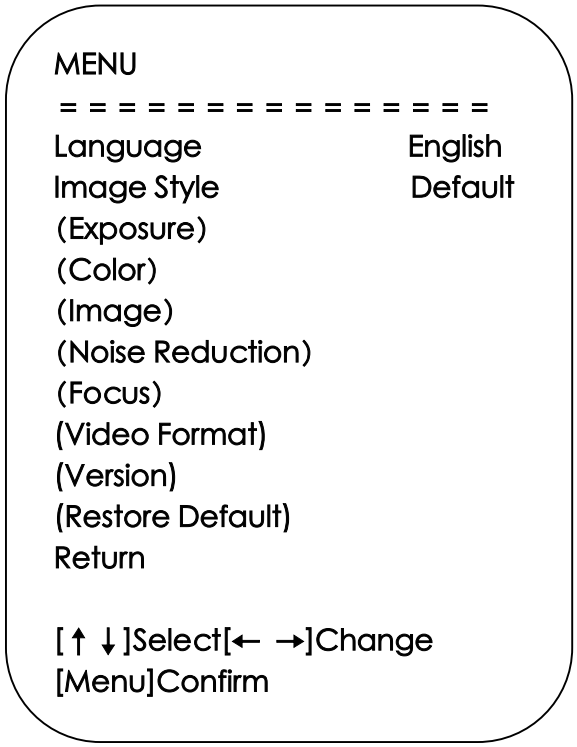
2）HDMI Output:Connect the monitor with the corresponding video output interface.

3）SDI Output:Connect the monitor with the corresponding video output interface.

3.2 Menu Setting

3.2.1 Main Menu

In normal working mode, press 【MENU】key to display the menu, using scroll arrow to point at or highlight the selected items.



Language: Chinese/English

Image Styles: Default, Beauty Mode, Soft, Vivid, Clear.

Exposure: Enter into submenu of **Exposure**

Color: Enter into submenu of **Color**

Image: Enter into submenu of **Image**

Noise Reduction: Enter into submenu of **Noise Reduction**

Focus: Enter into submenu of **Focus**

Video Format: Enter into submenu of **Video Format**

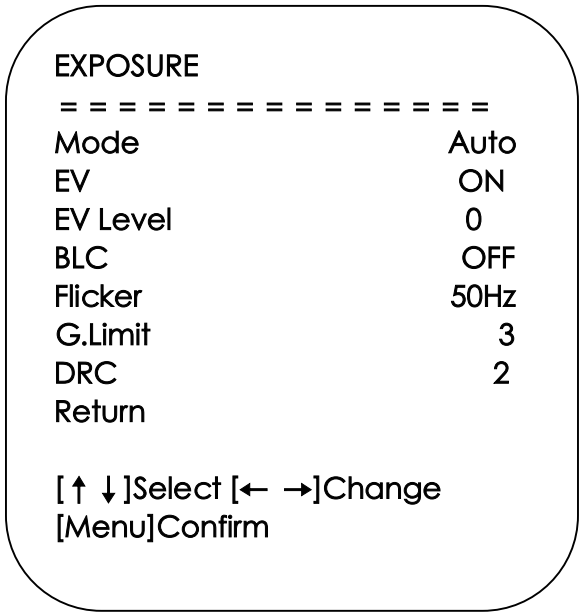
Version: Enter into submenu of **Version**

Restore Default: Enter into submenu of **Restore Default**

Return: Press [Menu] to return

3.2.2 Exposure

Move the pointer to the (EXPOSURE) in the Main Menu, click the【Menu】and enter the (EXPOSURE SET) as follow



Mode: Auto, Manual, Shutter priority, Iris priority and Brightness priority

EV : On/Off (only available in auto mode)

EV Level:-7~7（only available in auto mode when EV is ON）

BLC:ON/OFF for options (only available in auto mode)

Anti-Flicker :OFF/50Hz/60Hz for options (only available in Auto/Iris priority/Brightness priority modes)

G.Limit: 0~15(only available in Auto/ Iris priority /Brightness priority mode)

DRC: OFF 1~8

Shutter Speed:
1/25,1/30,1/50,1/60,1/90,1/100,1/120,1/180,1/250,1/350,1/500,1/1000,1/2000,1/3000, 1/4000,1/6000,1/10000,1/20000（only available in Manual and Shutter priority mode)

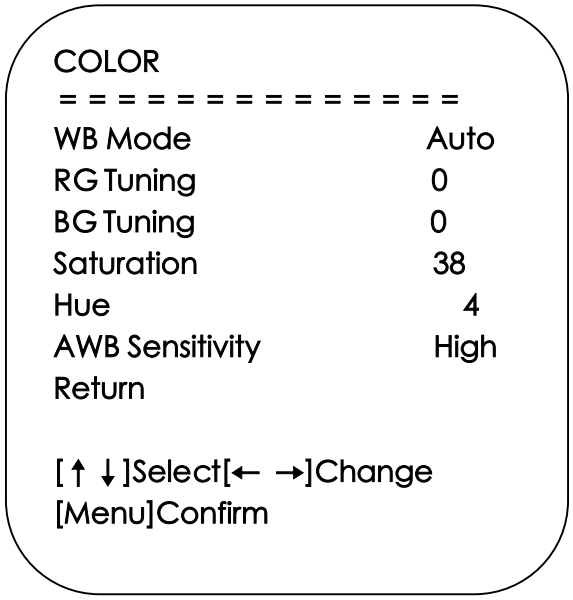
IRIS : OFF,F11.0,F9.6,F8.0,F6.8,F5.6,F4.8,F4.0,F3.4,F2.8,F2.4,F2.0,F1.8(only available in Manual and Iris priority mode)

Brightness: 0~20（only available in Brightness priority mode)

Gain: 0~15（only available in Manual and Shutter priority mode）

3.2.3 Color

Move the pointer to the (COLOR) in the Main Menu, click the【Menu】and enter the (COLOR SET) as follow



WB Mode: Auto, Manual, One Push, Specify color temperature

Red Tuning:-10~10（only available in Auto mode）

Blue Tuning: -10~10（only available in Auto mode）

Red Gain: 0~100（only available in Manual mode)

Blue Gain: 0~100（only available in Manual mode)

Saturation:0~127

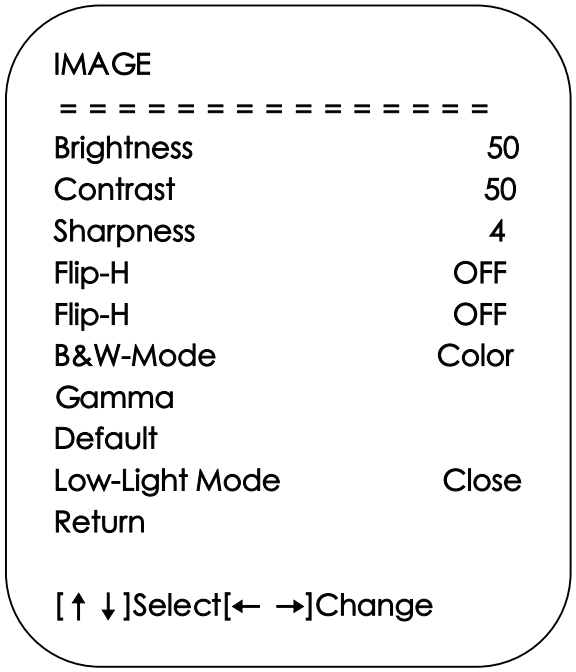
Hue: 0~8

AWB Sensitivity: high/middle/low(only available in Auto mode

Hue: 2400K-7100K(Valid only at specified color temperature)

3.2.4 IMAGE

Move the pointer to the (IMAGE) in the Menu, click the【Menu】and enter the (IMAGE) as follow



Brightness: 0~100

Contrast: 0~100

Sharpness: 0~15

Flip-H:ON/OFF

Flip-V:ON/OFF

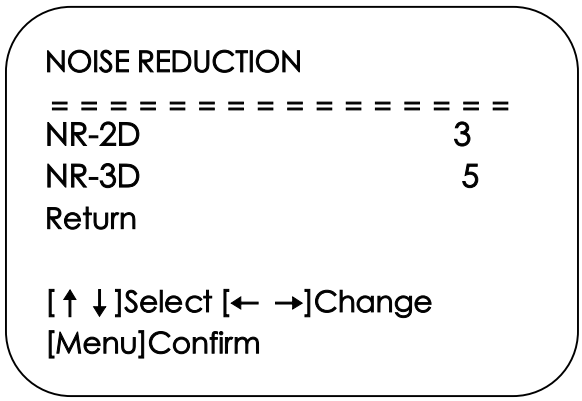
B&W Mode: color, black/white

Gamma: default，0.45,0.50,0.55,0.63

Low Light Mode: ON/OFF

3.2.5 Noise Reduction

Move the pointer to the (NOISE REDUCTION) in the Menu, click the【Menu】and enter the (NOISE REDUCTION) as follow

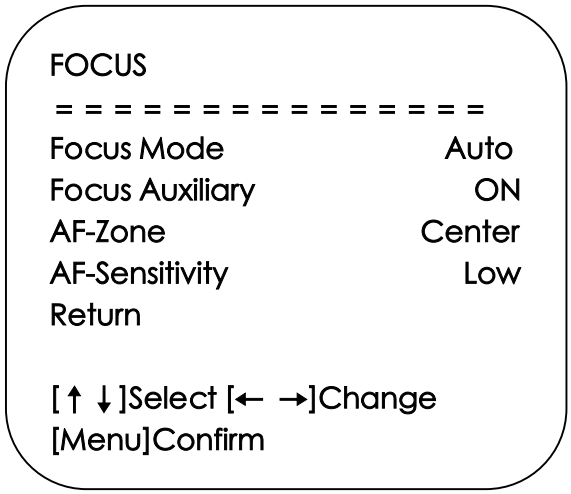


2D Noise Reduction:Auto, close,1~8

3D Noise Reduction:Auto, close,1~8

3.2.6 Focus

Move the pointer to the (FOCUS) in the Menu, click the【Menu】and enter the (FOCUS) as follow.



Focus Mode: Auto, manual, One-touch Focus

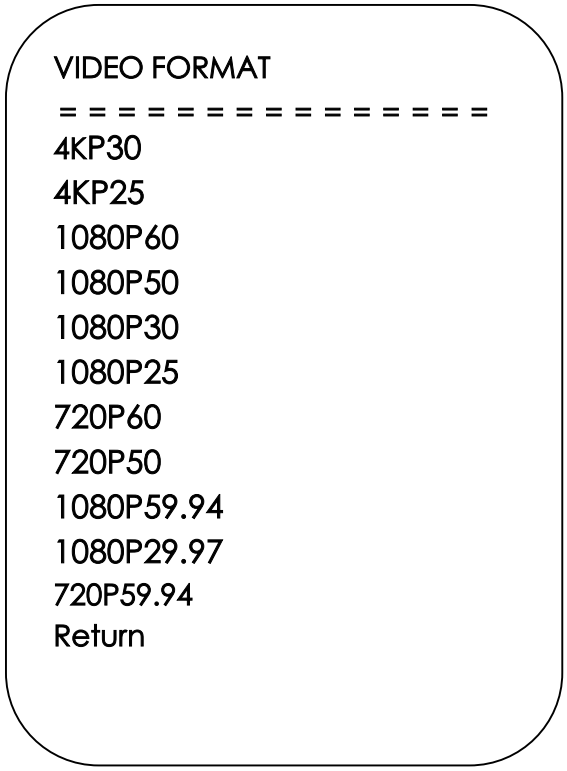
Focus Auxiliary: ON/OFF

AF-Zone: Top/Middle/Bottom/All

AF-Sensitivity: High, middle, low

3.2.7 Video Format

Move the pointer to the (Video Format) in the Menu, click the【Menu】and enter the (Video Format) as follow

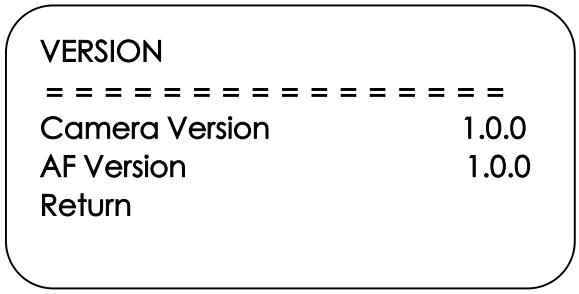


Caution

- Exit menu after modifying parameter to save it.

3.2.8 Version

Move the pointer to the (VERSION) in the Main Menu, click the【Menu】and enter the (VERSION) as follow.

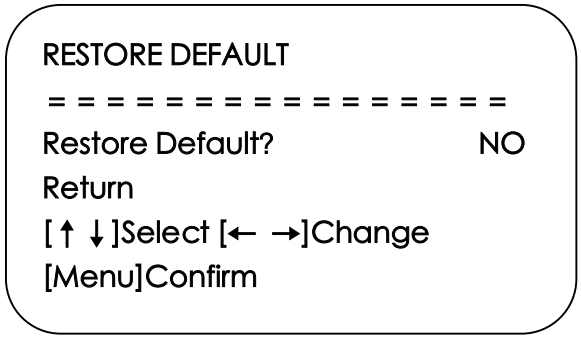


Camera Version: Display camera version information

AF Version: Display AF Version information

3.2.9 Restore Default

Move the pointer to the (VERSION) in the Main Menu, click the【Menu】and enter the (VERSION) as follow.



Restore default: Yes/no ;(after restoring default, the language, color, and video format won't be restored)

4. Network Connection

4.1 Connection Method

Direct Connection: Direct connections via “cross-over” network cable
Connection to LAN: Connections to LAN via patch cable to LAN wall jack or LAN switch.

⚠ Caution

- Please do not put the power and network cable in places where can be easily touched to prevent video quality lowered by unstable signal transmission due to poor contact of cables.

The computer must have the network segment where the camera IP address belongs to. The device will not be accessible if without the segment. I.E. The camera default IP address is 192.168.5.163, then segment 5 must be added in the computer.。

Specific steps are as below: First, open the Local Area Connection Properties window on your computer's network settings. Double-click or select "Internet Protocol Version 4 (TCP/IPv4)" and enter the Internet Protocol Version 4 (TCP/IPv4) Properties window. Select "Advanced" and click on it to access the Advanced TCP/IP settings. Add the IP address and subnet mask in the IP address field. Once you have finished adding them, click "OK" to complete the IP network segment addition. Users can add the corresponding network segment based on their modified device IP address.

⚠ Caution

The IP address to be added cannot be same with that of other computers or devices. The existence of this IP address needs to be verified before adding.

To verify if the network segment has been successfully added, follow these steps: Open "Start" on your computer, select "Run," type "cmd," and click "OK" to open the Command Prompt window. In the Command Prompt window, type "ping 192.168.5.26" and press Enter. The information displayed should be similar to Figure 4-1, indicating that the network segment has been successfully added.

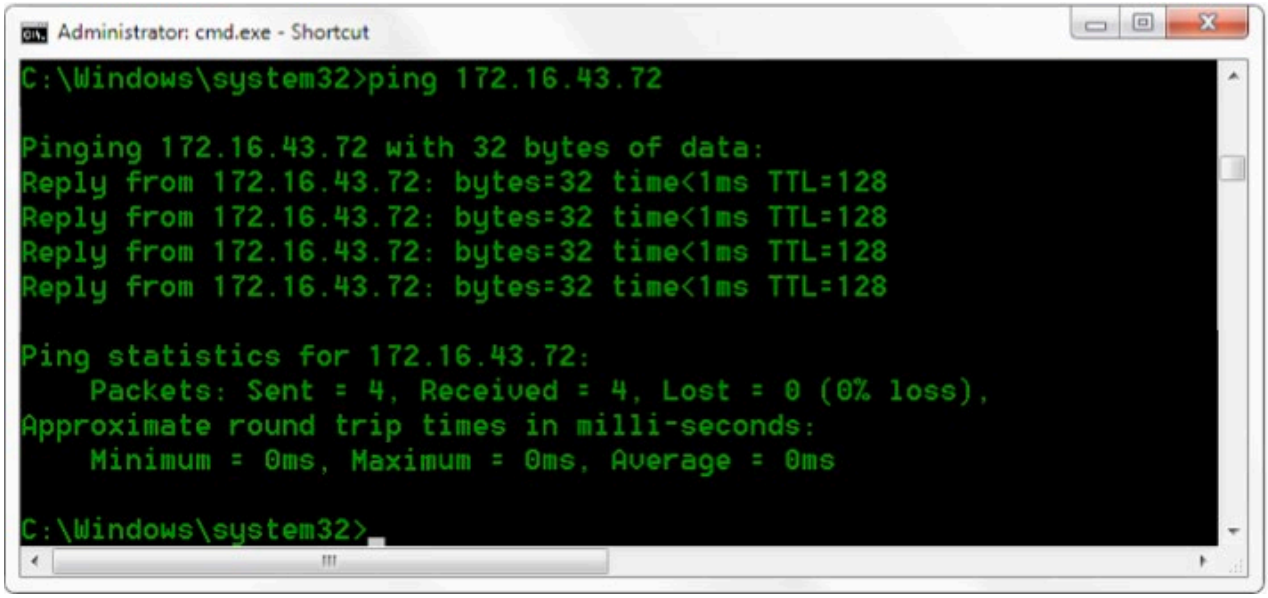


Figure4-1 Network segment successfully added

After the product's power-on self-test is completed, you can also verify the network connection by following the steps mentioned above. If using the default IP, open the Command Prompt window on your computer and type "ping 192.168.5.163" and press Enter. The information displayed should be similar to Figure 4-2, indicating that the network connection is normal.

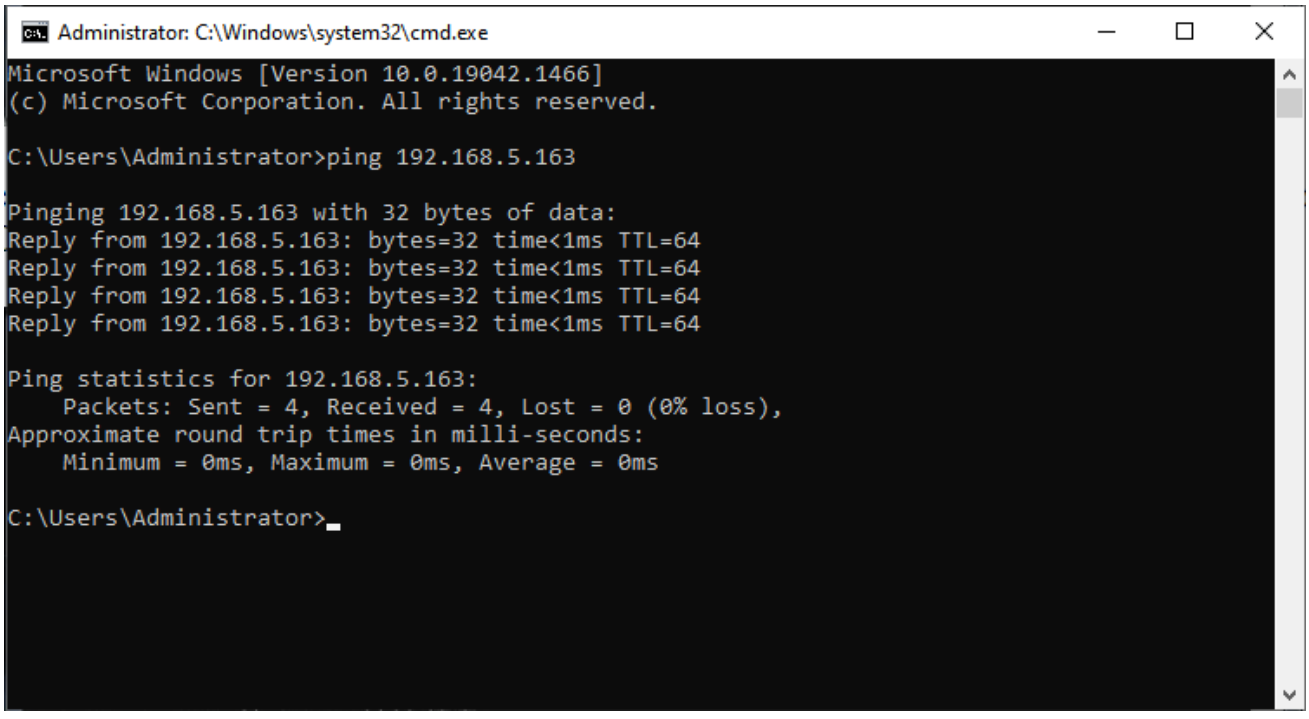


Figure4-2 Network Connection Screenshot

4.2 IE Login

4.2.1 Web Login

1）Web Login

After assigning an IP address to the camera, you can reach the Web Interface by typing in the camera's IP address into a web browser. You can log in this interface as administrator or user. If as administrator, type in "admin" into the username and password fields. If as user, type in "user1" or "user2" into the username and password fields. From the Web Interface, you can control the camera using the arrows on the left side. You can also adjust many of your camera's settings via this IP interface.

Language Selection: On the right top of the interface display "中文|English", click "English".

2） Control Download and Installation

When accessing the network conference device for the first time using the IE browser, you will see a message prompt saying "Plugin not installed, please download and install it!" Click on this prompt to download and install MRWebXinstall.exe. Follow the information prompts to install the plugin.

After installing the plugin, enter the username and password, click on "Login" (the initial default username and password are "admin"), and you will enter the Web client management interface.

4.2.2 Preview

After successful login into the management interface, it enters the video preview interface. In the preview screen, users can control PTZ, zoom, focus, video capture, sound, Code stream, full screen and set the preset position, run, delete and other operations.

1）Login as administrator

User name and default password: admin

You can control PTZ, zoom, focus, sound, Code stream, full screen and set run, and delete the preset position, as well as preview configure, and logout.

2）Login as user

User name and default password: "user1" or "user2

You can control PTZ, zoom, focus, sound, Code stream, full screen and set run, and delete the preset position, as well as preview and logout.

⚠ Caution

- Regular user login does not have configuration privileges.

4.2.3 Configuration

Click Configuration to enter into the device parameters setting page.

There are the following options: Local configuration, audio configuration, video configuration, network configuration, internet access configuration, system configuration, detailed description see the following Table4-1.

Table4-1 Explanation of Camera Configuration

Menu	Explanation
Audio Configuration	Including audio compressing format, sampling frequency, sampling precision, compressing code rate settings etc.
Video Configuration	Includes settings for video encoding, stream publishing, multicast/unicast, video parameters, character overlay, character size, and video output.
Network Configuration	Including basic parameters, Ethernet, DNS,GB28181,SRT,RTSP etc.
System Configuration	Settings include device properties, system time, user management, firmware upgrade, factory reset, and device reboot.

4.2.4 Audio Configuration

Switch: Choose to enable the audio or not.

Compressing Format: Set audio compressing format and manually reboot the device after change (default AAC)

Sampling Frequency: Set sampling frequency and manually reboot the device after change（default 48000，16000,32000,44100 optional）

Sampling Precision: Set sampling precision（default 16bits）

Compressing Code Rate: Set audio compressing code rate default 64kbps，32,48,96,128 optional）

Channel Type: Set the channel type (mono by default, stereo optional)

Input Volume: Set the input volume level.（default 2,1-10 optional）

Click “SAVE”, it will display “Successfully saved. Restart the device to take effect”.

4.2.5 Video Configuration

1）Video Encoding

Code Stream: Different video output mode setting, use different streams. (Main stream, secondary stream)

Compression Format: Set the video compression format, save to take it effect (primary / secondary stream default:H.264，H.265 optional)）

Profile: Profile Mode Setting (Default HP，BP,MP Optional)

Video Size: Set video image resolution, save to take it effect (main stream default 3840*2160，1920*1080,1280*720,960*540,640*360 optional; default secondary stream1920*1080，1280*720,640*360,320*180 optional）

Stream Rate Control: Set rate control mode, save to take it effect (Primary / secondary stream default variable bit rate, fixed rate is for option)

Image Quality: Set the image quality, image quality can be changed only when rate control is variable bit rate,(main stream defaulted is better, secondary stream default is not good, there are best, better, good, bad, worse, worst for options）

Rate（Kb/s）: Set the video bit rate (main stream default 8192Kb/s，64-40960Kb/s optional; secondary stream default 4096Kb/s，64-40960Kb/s optional）

Frame rate（F/S）:Set the video frame rate (primary / secondary stream default 25F/S，primary stream 5-30F/S optional, secondary stream 5-30 F/S optional）

Key frame interval: Set the key frame interval (primary / secondary stream default 75F,primary / stream 1-150F optional. secondary stream 1-150F optional).

Minimum QP of key frame interval: Set minimum QP of key frame interval(Default 20, 10-51 optional)

Stream Name: When streaming via rtsp or rtmp, user can modify stream name. Main Stream(live/av0), sub stream(live/av1)

Click the "Save" button to display the "Parameter saved successfully" message, then settings take effect.

2）Stream Release

Switch: To turn on/off the main / secondary stream.

Protocol: primary / secondary stream applies RTMP protocol，RTSP, SRT

Host Port: server port number（default 1935，0-65535 optional）

Host Address: server IP addresses（default 192.168.5.11）

Stream Name: choose a different stream name（live/av0,live/av1 default）

User: Set the user name

Password: Set the password

SRT Password: Set the SRT password

SRT Password length: default 0,16,24,32 default

Click on the "Save" button to display the "Save successful" message, then settings take effect.

3）RTP Broadcasting

Main/Sub Stream: On/off

Protocol: Optional multicast protocol（default RTP，TS，UDP，TCP default）

Address: default 224.1.2.3

Port: The main stream defaults to 4000, the secondary stream defaults to 4002, and the main/secondary stream is optional from 0 to 65535.

Visit: Address comes up after setting. Eg;
rtp://224.1.2.3:4000;udp://@224.1.2.3:4000;tcp://@224.1.2.3:4002

4）Video Parameters

A）Focus: Focus mode, focus area and focus sensitivity can be set

Focus Mode: set the focus mode（Default automatic, manual optional, one-push）

Focus Area: set the focus area（Default is middle, upper and lower all）

Focus Sensitivity: Set the focus sensitivity (default is low, high, medium optional)

B）Exposure: Exposure mode, exposure compensation, exposure compensation value,backlight compensation, anti-flicker, gain limit, dynamic range, shutter, aperture, brightness, gain can be set.

Exposure Mode: Set the exposure mode (Default automatic, manual, shutter priority, aperture priority, brightness priority optional)

Exposure Compensation: Exposure compensation setting is active when it is auto status (default is off)

Exposure Compensation Value: Set the exposure compensation value, valid when Exposure Compensation is on (default 0,-7 to 7 optional)

BLC: Set back light compensation, valid when it is auto status (default is off)

Anti-flicker: Set the anti-flicker mode, which is only effective in auto exposure mode, aperture priority, and brightness priority (default 50Hz, options include off and 60Hz)

Gain Limit: Set the gain limits, valid in auto focus, iris priority, and brightness priority.

（default 3，0~15 optional）

Gain: Set gain, only valid in manual exposure mode and shutter priority (default 1, 0~15 optional)

Dynamic Range: Set the dynamic range (default 2, 1-8 optional)

Shutter Speed: Set shutter speed value, valid in manual focus and shutter priority. (default 1/30，
1/25,1/30,1/50,1/60,1/90,1/100,1/120,1/180,1/250,1/350,1/500,1/1000,1/2000,1/3000,1/4000,1/6000,1/10000,1/20000 optional）

Aperture Value: Set the aperture value, only valid in manual exposure mode and aperture priority mode（default F1.8，
Close,F11,F9.6,F8.0,F6.8,F5.6,F4.8,F4.0,F3.4,F2.8,F2.4,F2.0,F1.8 optional)

Brightness: Set the brightness value, valid in brightness priority mode（default 11，0~20 optional）

C）Color: White balance, red fine tuning, blue fine tuning, saturation, hue, white balance sensitivity can be set.

White Balance Mode: Set the white balance mode (Default automatic, manual, one-push white balance, Specified color temperature)Note: Right click the “Correction” button when selected the One-push white balance mode.

Red Fine Tuning: Set red fine tuning, valid in auto white balance mode（Default 0，-10~10 optional）

Blue Fine Tuning: Set Blue fine tuning, valid in auto white balance mode（Default 0，-10~10 optional）

Saturation: Default 38，0-127 optional

Chroma: Default 4，0~8 optional

White Balance Sensitivity: Default high, low, high, medium optional

D）Image: You Can set brightness, contrast, sharpness, gamma curve, dynamic contrast, black and white mode, horizontal flip, vertical flip, electronic zoom, lens distortion correction

Brightness: Set the brightness (default 50，0~100 optional）

Contrast: Set the contrast（default 50，0~100 optional）

Sharpness: Set the sharpness value（default 4，0~15 optional）

Gamma: Gamma value setting（default，0.45,0.50,0.55,0.63 optional）

BW Mode: Set black and white mode（default color, black/white optional）

Flip Horizontal: Set Flip Horizontal（default off, on optional）

Flip Vertical: Set vertical flip（default off, on optional）

Digital Zoom: Set digital zoom（default off, on optional）

Ultra-Low Light: Set the ultra-low light mode.（default on, off optional）

E）Noise Reduction: 2D noise reduction, 3D noise reduction and dynamic dead pixel correction available.

2D Noise Reduction: Set 2D noise reduction level (default 3，1~8,off optional）

3D Noise Reduction: Set 3D noise reduction level (default 5，1~8,off optional）

F）Style: Select image (Default, standard, brightness, clarity, and soft can be set)

⚠ Caution

- Refresh the page after changing above parameters in a, b, c, d, e, f to take effect.

5）Character Overlapping

Display Time & Date: Yes/No

Display Title: Yes/No

Time, Font and Color: Default white, black, yellow, red and blue optional)

Title Font Color: Default white, black, yellow, red, and blue optional)

Move Character: Set the location where the time and title to display. Click " up, down, left, right" button to move the characters' location.

Title: Set title on device property (default CAMERA1)

Time: Set time on system time (default 1970/01/01 05:36:00)

Click "Save" button, "parameters are successfully saves" window pop-up, which means the setting take effect.

6）Character Size

Automatically Adjust According to the Resolution: Yes/No

Main Stream Character Size: Set the character size of the display, the device will automatically restart after changed (default 48, 28-200 optional)

Secondary Stream Character Size: Set the character size of the display, the device will automatically restart after changed (default 48, 28-200 optional)

Click "Save" button, "parameters are successfully saves" window pop-up, which means the setting take effect.

7）Video Output

Switch: On/Off (√ means On)

Output Format: Set the HDM output format and SDI output format

HDMI output format: default 3840*2160P30，
3840*2160P30/25;1080P60/50/30/25/59.94/29.97;720P60/50/59.94fps optional;

SDI output format: default 1080P60，
1080P60/50/30/25/59.94/29.97;720P60/50/59.94fps optional;

Click “Save” button, “parameters are successfully saves” window pop-up, which means the setting take effect.

4.2.6 Network Configuration

1）Network Port

Data Port: set the data port, the device will restart automatically after changed (default 3000,0-65535 optional).

Web Port: Set Web port, the device will restart automatically after changed (default is 80, 0-65535 is optional).

Onvif Port: Set Onvif port, the device will restart automatically after changed (default 2000, 0-65535 optional).

Soap Port: Set Soap port (default 1936, 0-65535 optional).

RTMP Port: Set RTMP port (default 1935, 0-65535 optional).

RTSP Port: Set RTSP port, the device will restart automatically after changed (default 554, 0-65535 optional).

Visca Port: Set Visca port, the device will restart automatically after changed (default 3001,0-65535 optional).

Https Port: Set http port, the device will restart automatically after changed (default 443, 0-65535 optional).

Click on the "Save" button, it will be valid when display "Save successful".

RTSP access: RTSP: / / equipment IP address: 554/live/av0 (av0 main stream; av1 second stream)

RTMP access: RTMP: / / equipment IP address: 1935 / live/av0 (av0 main stream; av1 second stream)

2）Ethernet Parameter

DHCP: Enable or disable obtain IP automatically can be set. After saved, reboot the device to takes effect (default: OFF)

IP Address: Set the IP address, after saved, reboot the device to takes effect (default 192.168.5.163)

⚠ Caution

- This IP address is the same with the one used to login Web page.

Subnet Mask: Set the subnet mask (default 255.255.255.0）

Default Gateway: Set the default gateway (default 0.0.0.0）

Physical Address: Set the physical address (the parameter is read-only)

Click the "Save" button, it will be valid when display "Save successful". (Note: To prevent IP conflicts when modify).

3）DNS parameters

Preferred DNS Server: Set the preferred DNS server. (Default 0.0.0.0).

Alternate DNS Server: Set alternate DNS server. (Default 0.0.0.0).

Click the "Save" button, it will be valid when display "Save successful"

4）GB28181

Switch: Set whether to activate GB28181.

Time Synchronization: Enable/Disable time synchronization

Stream Type: Set stream type (default main stream, secondary stream optional)

Signing Time (in seconds): 3600 range 5-65535

Heartbeat Time (seconds):60 range 1-65535

Register ID:34020000001320000001

Register User Name: IPC

Register Password:12345678

Equipment Ownership: Users can add their own

Administrative Regions: Users can add their own

Alarm Zone: Users can add their own

Equipment Installation Address: Users can add their own

Local SIP Port: 5060 Range 0-65535

Server ID:34020000002000000001

Click on the "Save" button, it will be valid when display "Save successful".

5）SRT

SRT Port: Set the SRT port (default 9000, 0-65535 optional)

SRT Password: Set SRT password

SRT Password Length: Set the SRT password length (default 0, 16, 24, 32 optional)

Click the "Save" button, and the prompt message "Parameters saved successfully! It will take effect after restarting!

6）RTSP

Enable RTMP: Enable/Disable RTMP

RTSP Authentication: Set RTSP authentication. By default, it is disabled, but you can choose to enable it.

Click the "Save" button to display the message "Save successful! Modifying RTSP authentication parameters requires a device restart to take effect!" After setting this, please restart the camera for the changes to take effect.

4.2.7 System Configuration

1）Button menu

Switch: Short press activates the OSD menu button on the side of the camera body; (default is short press, with options for long press and off).

Click the "Save" button, the parameter is saved successfully, a message is prompted, and the setting takes effect

2）Device Properties

Device Name: Set the device name (Default Camera-1, user can add their own).

Device ID: Set the device ID (default 1, read-only).

System Language: Set the system language (default Simplified Chinese, English optional).Need to re-login after modify and save the setting.

Click on the "Save" button, it will be valid when display "Save successful".

3）System Time

Date Format: Set the date format (YYYY-MM-DD default year - month - day, MM-DD-YYYY namely Month - Day - Year, DD-MM-YYYY date - month - year Optional).

Date Separator: set the date separator (default '/','.','-' Optional).

Time Zone: Set the time zone (default UTC+08:00, other time zones optional).

Time Type: Set the time types (default 24 hours, optional 12 hours).

Enable NTP: Enable/disable NTP

Update Interval: Set the NTP server automatic updated time interval. Valid after setting NTP server synchronization (default one day, 2-10 days Optional).

NTP Server Address or Domain Name: Set NTP server address or domain name (default time.nits.gov). Valid after setting NTP server synchronization.

NTP Server Port: Sets the NTP server port (default 123).Valid after setting NTP server synchronization.

Click on the "Save" button, it will be valid when display "Save successful".

4）User Management

Select Users: Set the user type (the default administrator, User 1, User 2 optional)

User Name: Set the user name (Select User Administrator default admin; select a common user1 default user1; to select a common user 2 default user2; user can modify their own)

Password: Set a password (Select User Administrator default admin; select a common user1 default user1; to select a common user 2 default user2; user can modify their own)

Password Confirmation: Confirm the input passwords are the same or not.

Click the "Save" button, and the prompt message "Parameters saved successfully! It will take effect after restarting!

Username and password are case-sensitive. Please make sure to enter them correctly.

⚠ Caution

If you log in to the web page with a regular user's username and password, you will not have configuration permissions. You will only be able to perform preview, playback, and logout operations.

5）Version Update

The version information displayed on the page is read-only version and cannot be modified by the user. It is the same as the version information in the menu. The version information of different device models is different.

Update File: Click "Browse..." in the pop-up window and select the upgrade file; click the "Upgrade" button, the upgrade dialog box will pop up. After successfully update, device will automatically reboot. (Note: Make sure that the device power and network can work during update, if not, the upgrade will fail)

⚠ Caution

- After the version upgrade is completed, you need to restore the factory default values
- a, restore the factory default through web configuration;
- b, restore the factory default value through the menu;

Choose one of the above two methods, in which the IP account and password of “method a” are also restored to the default.

6）Restore Factory Setting

Click "Restore Factory Defaults" button and choose “yes” or “no” on pop-up window, then the device will restart automatically and restore factory setting.

7）Reboot

Click "Reboot" button and choose “yes” or “no” on the pop-up window, then the device will restart automatically.

4.2.8 Logout

Click "Logout"; and select "Yes" or "No" on pop-up window. If choose “Yes”, you will exit the current page and return to the user login interface again.

5. Serial Port Communication Control

In normal working state, you can control the camera through RS485 (VISCA IN) cable.

The parameter of RS485 is as below:

Baud rate:2400/4800/9600/115200/second;

Start bit: 1 bit; Data bits: 8 bits; Stop bit: 1 bit; Parity bit: None.

Zoom the lens to the furthest position, then bring it back to the nearest position for self-check. If the camera is enabled and has a saved preset position numbered 0, after the camera initialization is complete, it will be set to preset position 0. From this point onwards, users can control the camera using serial commands.

5.1 VISCA Protocol List

5.1.1 Camera return command

Table5-1 Camera Return Command (Success).

Ack/Completion Message		
	Command Packet	**Comment**
ACK	z0 41 FF	Returned when the command is accepted.
Completion	z0 51 FF	Returned when the command has been executed.

Note: z = Camera address + 8

Table 5-2 Camera Return Commands (Error).

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

5.1.2 Camera Control Command

Table 5-3 Camera Control Commands

Command	**Function**	**Receive Command**	**Comment**	**Command Response Example**
CAM_Power	On	81 01 04 00 02 FF	Power ON/OFF	90 41 FF 90 51 FF
	Off	81 01 04 00 03 FF		90 41 FF
				90 51 FF 90 38 FF
CAM_Zoom	Stop	81 01 04 07 00 FF		90 41 FF 90 51 FF
	Tele(Standard)	81 01 04 07 02 FF		90 41 FF 90 51 FF
	Wide(Standard)	81 01 04 07 03 FF		90 41 FF 90 51 FF
	Tele(Variable)	81 01 04 07 2p FF	p = 0(low) - 7(high)	90 41 FF 90 51 FF
	Wide(Variable)	81 01 04 07 3p FF		90 41 FF 90 51 FF
	Direct	81 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position	90 41 FF 90 51 FF
CAM_Focus	Stop	81 01 04 08 00 FF		90 41 FF 90 51 FF
	Far(Standard)	81 01 04 08 02 FF		90 41 FF 90 51 FF
	Near(Standard)	81 01 04 08 03 FF		90 41 FF 90 51 FF
	Far(Variable)	81 01 04 08 2p FF	p = 0(low) - 7(high)	90 41 FF 90 51 FF
	Near(Variable)	81 01 04 08 3p FF		90 41 FF 90 51 FF
	Direct	81 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position	90 41 FF 90 51 FF
	Auto Focus	81 01 04 38 02 FF	AF model	90 41 FF 90 51 FF
	Manual Focus	81 01 04 38 03 FF		90 41 FF 90 51 FF
	One Push	81 01 04 38 04 FF		90 41 FF 90 51 FF
	One Push Triger	81 01 04 18 01 FF	One Push Triger	90 41 FF 90 51 FF

CAM _Zoom Focus	Direct	81 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position，tuvw: Focus Position	90 41 FF 90 51 FF
CAM_AFSensitivity	High	81 01 04 58 01 FF	Focus sensitivity Setting	90 41 FF 90 51 FF
	Normal	81 01 04 58 02 FF		90 41 FF 90 51 FF
	Low	81 01 04 58 03 FF		90 41 FF 90 51 FF
CAM_AFZone	Top	81 01 04 AA 00 FF	Focus Region Setting	90 41 FF 90 51 FF
	Center	81 01 04 AA 01 FF		90 41 FF 90 51 FF
	Bottom	81 01 04 AA 02 FF		90 41 FF 90 51 FF
	ALL	81 01 04 AA 03 FF		90 41 FF 90 51 FF
CAM_WB	Auto	81 01 04 35 00 FF		90 41 FF 90 51 FF
	One Push mode	81 01 04 35 03 FF		90 41 FF 90 51 FF
	One Push Trigger	81 01 04 10 05 FF	One Push WB Trigger(Enabled during One Push WB mode)	90 41 FF 90 51 FF
	Manual	81 01 04 35 05 FF		90 41 FF 90 51 FF
CAM_AWBSensitivity	Low	81 01 04 A9 00 FF	WB Sensitivity Setting	90 41 FF 90 51 FF
	Normal	81 01 04 A9 01 FF		90 41 FF 90 51 FF
	High	81 01 04 A9 02 FF		90 41 FF 90 51 FF
CAM _RGain	Reset	81 01 04 03 00 FF	Manual Control of R Gain	90 41 FF 90 51 FF
	Up	81 01 04 03 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 03 03 FF		90 41 FF 90 51 FF
	Direct	81 01 04 43 00 00 0p 0q FF	R Gain pq:0-FF= -128-127	90 41 FF 90 51 FF
CAM_ Bgain	Reset	81 01 04 04 00 FF	Manual Control of B Gain	90 41 FF 90 51 FF
	Up	81 01 04 04 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 04 03 FF		90 41 FF 90 51 FF
	Direct	81 01 04 44 00 00 0p 0q FF	B Gain pq:0-FF= -128-127	90 41 FF 90 51 FF
CAM_AE	Full Auto	81 01 04 39 00 FF	Automatic Exposure mode	90 41 FF 90 51 FF
	Manual	81 01 04 39 03 FF	Manual Control mode	90 41 FF 90 51 FF
	Shutter priority	81 01 04 39 0A FF	Shutter Priority Automatic Exposure mode	90 41 FF 90 51 FF
	Iris priority	81 01 04 39 0B FF	Iris Priority Automatic Exposure mode	90 41 FF 90 51 FF
	Bright	81 01 04 39 0D FF	Bright mode	90 41 FF 90 51 FF
CAM_Shutter	Reset	81 01 04 0A 00 FF	Shutter Setting	90 41 FF 90 51 FF
	Up	81 01 04 0A 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 0A 03 FF		90 41 FF 90 51 FF

	Direct	81 01 04 4A 00 00 0p 0q FF	pq: Shutter Position	90 41 FF 90 51 FF
CAM_Iris	Reset	81 01 04 0B 00 FF	Iris Setting	90 41 FF 90 51 FF
	Up	81 01 04 0B 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 0B 03 FF		90 41 FF 90 51 FF
	Direct	81 01 04 4B 00 00 0p 0q FF	pq: Iris Position 00:close, 0x01-0x11=F26-F1.8	90 41 FF 90 51 FF
CAM_Gain Limit	Reset	81 01 04 0C 00 FF	Gain Limit Setting	90 41 FF 90 51 FF
	Up	81 01 04 0C 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 0C 03 FF		90 41 FF 90 51 FF
	Gain Limit	81 01 04 2C 0p FF	p: Gain Positon	90 41 FF 90 51 FF
CAM_Bright	Reset	81 01 04 0D 00 FF	Bright Setting	90 41 FF 90 51 FF
	Up	81 01 04 0D 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 0D 03 FF		90 41 FF 90 51 FF
CAM_ExpComp	On	81 01 04 3E 02 FF	Exposure Compensation ON/OFF	90 41 FF 90 51 FF
	Off	81 01 04 3E 03 FF		90 41 FF 90 51 FF
	Reset	81 01 04 0E 00 FF	Exposure Compensation Amount Setting	90 41 FF 90 51 FF
	Up	81 01 04 0E 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 0E 03 FF		90 41 FF 90 51 FF
	Direct	81 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position	90 41 FF 90 51 FF
CAM_Back Light	On	81 01 04 33 02 FF	Back Light	90 41 FF 90 51 FF
	Off	81 01 04 33 03 FF	Compensation	90 41 FF 90 51 FF
CAM_NR_2D	2D	81 01 04 53 0p FF	P=0-15 0:OFF	90 41 FF 90 51 FF
CAM_NR_3D	3D	81 01 04 54 0p FF	P=0-15 0:OFF	90 41 FF 90 51 FF
CAM_Gamma	Gamma	81 01 04 5B 0p FF	p = 0 – 4 0:Default 1:0.45 2:0.50 3:0.55 4:0.63	90 41 FF 90 51 FF
CAM_Low-Light Mode	ON	81 01 04 2D 01 FF	Low-Light Mode Setting	90 41 FF 90 51 FF
	OFF	81 01 04 2D 00 FF		90 41 FF 90 51 FF
CAM_Flicker	OFF	81 01 04 23 00 FF	OFF	90 41 FF 90 51 FF
	50HZ	81 01 04 23 01 FF	50HZ	90 41 FF 90 51 FF
	60HZ	81 01 04 23 02 FF	60HZ	90 41 FF 90 51 FF
CAM_Aperture	Reset	81 01 04 02 00 FF	Aperture Control	90 41 FF 90 51 FF
	Up	81 01 04 02 02 FF		90 41 FF 90 51 FF
	Down	81 01 04 02 03 FF		90 41 FF 90 51 FF
	Direct	81 01 04 42 00 00 0p 0q FF	pq: Aperture Gain	90 41 FF 90 51 FF
	B&W-Mode	81 01 04 63 04 FF		90 41 FF 90 51 FF

CAM_Picture Effect	OFF	81 01 04 63 00 FF	PictureEffect Setting	90 41 FF 90 51 FF
CAM_Memory	Reset	81 01 04 3F 00 pq FF	pq: Memory Number(=0 to 254)	90 41 FF 90 51 FF
	Set	81 01 04 3F 01 pq FF	Corresponds to 0 to 9 on the Remote Commander	90 41 FF 90 51 FF
	Recall	81 01 04 3F 02 pq FF		90 41 FF 90 51 FF
CAM_ColorSaturation	Direct	81 01 04 49 00 00 0P 0Q FF	PQ: 0x00-0x63:0-99	90 41 FF 90 51 FF
CAM_Setting Reset	Reset	81 01 04 A0 10 FF	Reset Factory Setting	90 41 FF 90 51 FF
CAM_Brightness	Direct	81 01 04 A1 00 00 0p 0q FF	pq: Brightness Position	90 41 FF 90 51 FF
CAM_FlipCAM_Contrast	Direct	81 01 04 A2 00 00 0p 0q FF	Single Command For Video Flippq: Contrast Position	90 41 FF 90 51 FF
CAM_Picture Flip	Flip-H	81 01 04 61 02 FF		90 41 FF 90 51 FF
	Flip-H	81 01 04 61 03 FF		90 41 FF 90 51 FF
	Flip-V	81 01 04 66 02 FF		90 41 FF 90 51 FF
	Flip-HV	81 01 04 66 03 FF		90 41 FF 90 51 FF
Pan_tiltDrive CAM_Video System	Set camera video system	81 01 06 35 00 0p FF	0p: 4KP30 : 0x2F 4KP25 : 0x30 1080P60 : 0x0A 1080P50 : 0x09 1080P30 : 0x04 1080P59 : 0x14 1080P29 : 0x16 1080P25 : 0x03 720P60 : 0x06 720P50 : 0x05 720P59 : 0x17	90 41 FF 90 51 FF

5.1.3 Camera Inquiry Command

Table 5-4 Camera Query Command

Function	Camera Query Command	Command Response Example	Parameter Description

CAM_PowerInq	81 09 04 00 FF	90 50 02 FF	On
		90 50 03 FF	Off(Standby)
CAM_ZoomPosInq	81 09 04 47 FF	90 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_FocusAFModeInq	81 09 04 38 FF	90 50 02 FF	Auto Focus
		90 50 03 FF	Manual Focus
		90 50 04 FF	One Push mode
CAM_FocusPosInq	81 09 04 48 FF	90 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_AFSensitivityInq	81 09 04 58 FF	90 50 01 FF	High
		90 50 02 FF	Normal
		90 50 03 FF	Low
CAM_AFZoneInq	81 09 04 AA FF	90 50 00 FF	Top
		90 50 01 FF	Center
		90 50 02 FF	Bottom
		90 50 03 FF	All
CAM_WBModeInq	81 09 04 35 FF	90 50 0p FF	p:CAM_WBMode
CAM_AWBSensitivityInq	81 09 04 A9 FF	90 50 00 FF	Low
		90 50 01 FF	Normal
		90 50 02 FF	High
CAM_RGainInq	81 09 04 43 FF	90 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	81 09 04 44 FF	90 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	81 09 04 39 FF	90 50 00 FF	Full Auto
		90 50 03 FF	Manual
		90 50 0A FF	Shutter priority
		90 50 0B FF	Iris priority
		90 50 0D FF	Bright
CAM_ShutterPosInq	81 09 04 4A FF	90 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	81 09 04 4B FF	90 50 00 00 0p 0q FF	pq: Iris Position
CAM_Gain LimitInq	81 09 04 2C FF	90 50 0p FF	p: Gain Positon
CAM_ BrightPosiInq	81 09 04 4D FF	90 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompModeInq	81 09 04 3E FF	90 50 02 FF	On
		90 50 03 FF	Off
CAM_ExpCompPosInq	81 09 04 4E FF	90 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_BacklightModeInq	81 09 04 33 FF	90 50 02 FF	On
		90 50 03 FF	Off
CAM_WDRStrengthInq	81 09 04 51 FF	90 50 0p FF	p: WDR Strength
CAM_NRLevel(2D) Inq	81 09 04 53 FF	90 50 0p FF	P: 2DNRLevel
CAM_NRLevel(3D) Inq	81 09 04 54 FF	90 50 0p FF	P:3D NRLevel
CAM_FlickerModeInq	81 09 04 55 FF	90 50 0p FF	p: Flicker Settings (0: OFF, 1: 50Hz, 2:60Hz)

CAM_ApertureInq	81 09 04 42 FF	90 50 00 00 0p 0q FF	pq: Aperture Gain
CAM_PictureEffectModeInq	81 09 04 63 FF	90 50 00 FF	Off
		90 50 04 FF	B&W
CAM_MemoryInq	81 09 04 3F FF	90 50 0p FF	p: Memory number last operated.
SYS_MenuModeInq	81 09 06 06 FF	90 50 02 FF	On
		90 50 03 FF	Off
CAM_LR_ReverseInq	81 09 04 61 FF	90 50 02 FF	On
		90 50 03 FF	Off
CAM_PictureFlipInq	81 09 04 66 FF	90 50 02 FF	On
		90 50 03 FF	Off
CAM_ColorSaturationInq	81 09 04 49 FF	90 50 00 00 00 0p FF	p: Color Gain setting (0x0,0x63):(0,99)
CAM_IDInq	81 09 04 22 FF	90 50 0p FF	p: CAM ID
IR_ReceiveInq	81 09 06 08 FF	90 50 02 FF	On
		90 50 03 FF	Off
CAM_BrightnessInq	81 09 04 A1 FF	90 50 00 00 0p 0q FF	pq: Brightness Position
CAM_ContrastInq	81 09 04 A2 FF	90 50 00 00 0p 0q FF	pq: Contrast Position
CAM_GammaInq	81 09 04 5B FF	90 50 0p FF	p: Gamma setting
CAM_Low-LightModeInq	81 09 04 2D FF	90 50 00 FF	OFF
		90 50 01 FF	ON
CAM_VersionInq	81 09 00 02 FF	90 50 ab cd mn pq rs tu vw FF	ab cd : vender ID (0220) mn pq : model ID ST (0510), U2(0512),U3(0513) rs tu : ARM Version vw : reserve
VideoSystemInq	81 09 06 23 FF	90 50 0p FF	4KP30 : 0x19 4KP25 : 0x1A 1080P60 : 0x00 1080P50 : 0x01 1080P30 : 0x06 1080P25 : 0x07 720P60 : 0x04 720P50 : 0x05

6. Maintenance and Troubleshooting

6.1 Camera Maintenance

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

6.2 Troubleshooting

1) No Image
   a、Check whether the power cord is connected, voltage is OK, POWER lamp is lit;
   b、Check whether the camera can “self-test” after startup (camera will do a brief pan-tilt tour and return to the home position, or if preset 0 is set, the camera will return to the preset 0 position);
   c、Check whether the video interface of the camera and monitor is loose;
   d、Check whether the video output cable is damaged;
   e、Check whether the monitor supports the video format output by the camera.
2) Abnormal display of image
   a、Check whether the camera power is properly connected, if the voltage is normal, and the status of the power indicator light;
   b、Check whether the camera and monitor video interface are loose;
   c、Check whether the video output cable is damaged.
3) Lens zoom image shaking
   a、Check whether the camera installation position is secure.;
   b、Check whether there are any mechanical vibration sources around the camera。
4) Serial port cannot be controlled
   a、Check whether the serial port device protocol, baud rate, and address match the camera;
   b、Check whether the control line is properly connected;

c、Check whether the camera is in normal working mode。

5) Web page can not be logged in

a、Check whether the camera is producing a normal image;

b、Check whether the network cable is properly connected (network port indicator blinking);

c、Check whether the computer has added the same network segment as the camera's IP address;

d、Open "Start" on the computer, select "Run," type "cmd," and click "OK" to open the computer's DOS command window. Enter "ping 192.168.5.163" and press Enter. If you receive a response as shown in Figure 6-1, it indicates that the network connection is normal.

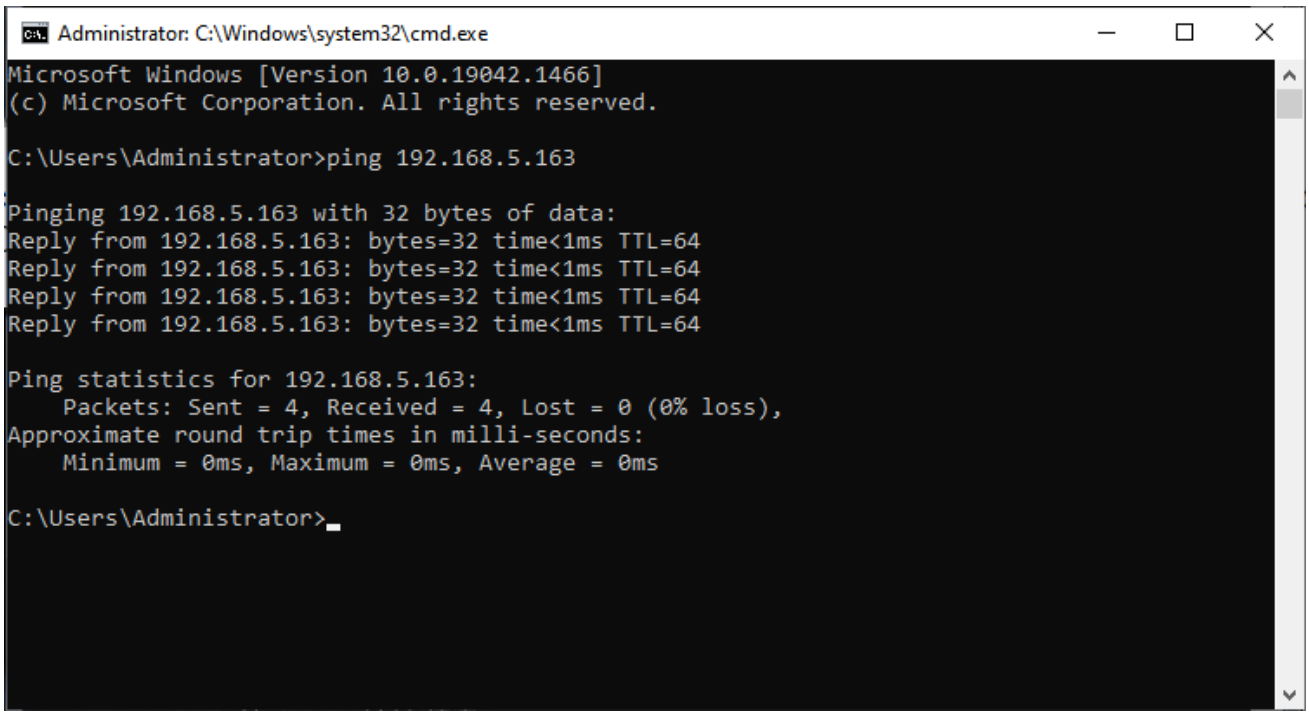


Figure 6-1 Network Connection Screenshot