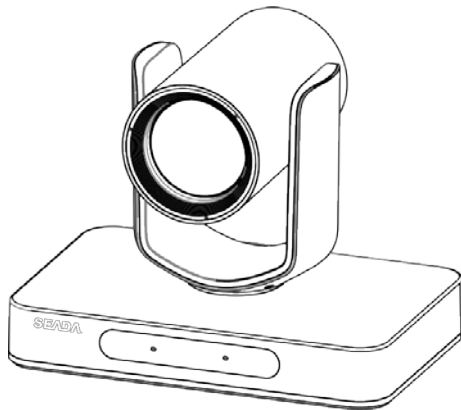# SEADA

Showing the World

SDC024-B12(N)
4K PTZ Video Camera

User Manual V1.0

COPYRIGHT INFORMATION

SYMBOLS INSTRUCTION

Symbol	Instructions
📖 Explanation	To represent the supplement and explanation of the text.
📖 Note	To remind the user of some important operations or to prevent the potential injury and property damage.
⚠ Warning	To indicate a potential risk that, if not avoided, may result in injury accidents, equipment damage or business interruption.
⚠ Dangerous	To indicate a high potential risk that, if not avoided, may result in a significant risk of death or injury.

SAFETY NOTES

■ During the installation of this camera, please read this manual carefully and operate strictly.

■ In accordance with the installation instructions. Keep this manual for future reference.

■ Before powering on the camera, please check the power carefully. Make sure that you are using the right power source.

■ Place the power cable in a place that is not easily accessible. Do not stack any objects on

the power cable, protect the cable, especially the connection must be fully and securely contacted.

■ Do not run the camera beyond the specified temperature and humidity. The working temperature range is between 0℃ ~ +40℃. The working humidity range is between 10%RH~90%RH.

■ For safety, foreign matter is prevented from entering the device, do not splash the corrosive liquid onto the camera.

■ When transporting, avoid violent shake or strong force to the camera.

■ Do not disassemble the camera without authorization. If the camera is damaged, please contact professional maintenance personnel for repair.

■ Avoid pointing the camera at objects with strong light, such as the sun etc.

■ When cleaning the camera, please use soft cloth. If the camera is very dirty, wipe it off gently by a soft cloth moistened with a weak solution of water or a neutral kitchen detergent. Wring out all liquid from the cloth before wiping the camera, then wipe away all remaining dirt with a soft, dry cloth. Use lens cleaning paper to clean the lens.

CONTENTS

ABOUT THE PRODUCT

Features

- 1/2.8 inch CMOS sensor, 8.46 megapixel;
- 12x optical zoom, up to 72.5°wide angle;
- Up to 4K30 video output;
- USB3.0 support UVC, UAC.
- RS-232 IN/OUT, support daisy chain;
- Network support H.264/H.265 video coding;
- Dual Stream;
- Support SDI.

List Of Parts & Accessories

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

Camera (1)
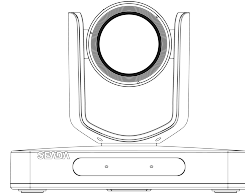
Power Adapter (1)
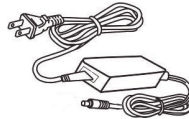
Remote Control (Optional)
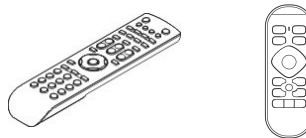
USB (1)
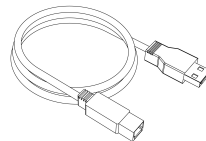
RS-232 Control Cable (1)
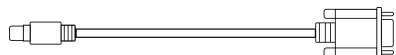
Main Parts & Interfaces

Camera

Front View
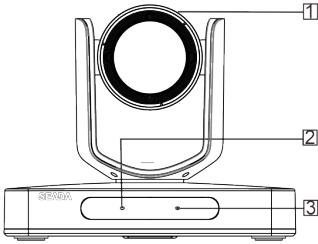
1 Camera Module

2 Power Indicator

3 Communication Indicator

Rear View
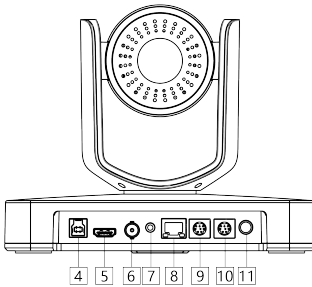
4 USB3.0

5 HDMI

6 3G-SDI

7 LINE IN

8 Network

9 RS232-IN

10 RS232-OUT/RS485

11 Power（DC12V）

Bottom View
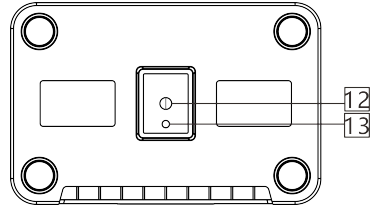
12 Mounting Hole

1/4 inch screw thread for fixing camera.

13 Locating Hole

To define installation direction of camera.

Big Remote Controller
（Optional）
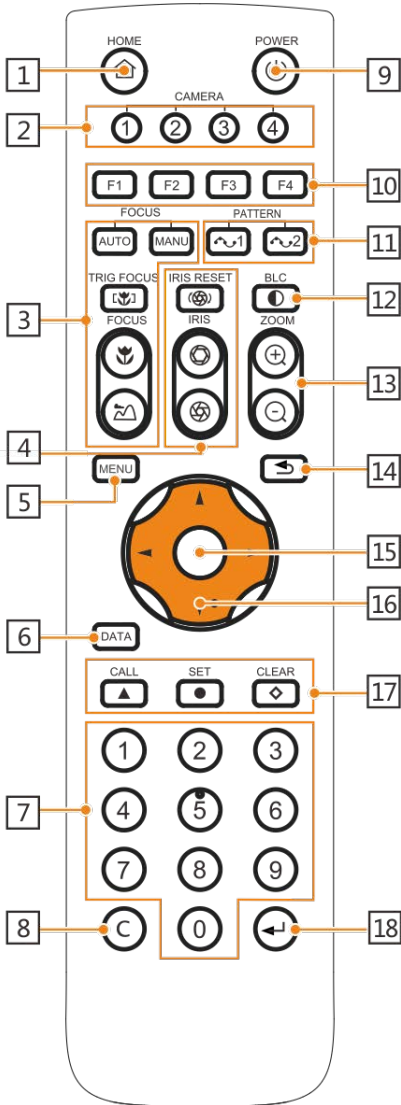
1 HOME

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

Switch preset prompt, turned on by default.

3

7 Number Keys

Long press remote control numeric key (0-9) to set a preset, short press to call a preset.

8 Cancel

Reserved.

9 Power

After the camera has been connected to power source, press this button to turn on / off the camera.

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

Reserved.

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,

"●"button, Reserved,

"◇"button to clear a preset.

Press this button, and then input number key(s) to clear a preset.

18 Enter

Reserved.

4

Remote Controller
（Optional）
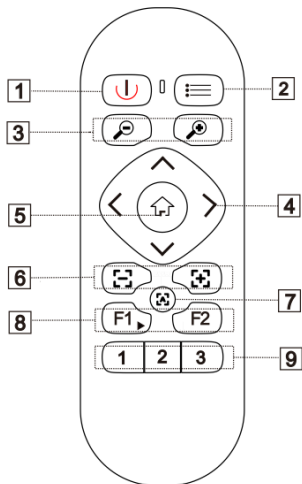
No.	Name	Description
1	**Power**	Power on/off the camera.
2	**Menu**	Open/Close OSD menu.
3	**Zoom**	⊕– zoom in ⊖– zoom out.
4	**Direction / Menu Operation**	In Menu status: press ∧ or ∨ button to select among menu options, press ◄ or ► button to change option / value. In None-menu status, press the direction buttons to control the Pan and Tilt movement of the camera.
5	**HOME**	In Menu status: save menu operation. In None-menu status：Press HOME button, the camera moves to the initial position.
6	**Focus**	⊟– button to Focus Near ⊞– button to Focus Far.
7	**Auto Focus**	A–Auto focus, camera turns to auto focus mode.
8	**F1/F2**	F1：After long press for 5 seconds, then press number key to set IR address; F2: Reserved.
9	**Number Keys**	Long press to set preset, short press to call the preset.

INSTALLATION

📖 **Note**

Ceiling or wall mounting brackets can only be mounted on template and concrete wall. For safety reason, plasterboard is not recommended.

1. Wall Mount

2. Wall Mount

STEP 1

Ceiling

Screw Stopper

STEP 2

Upper Cover Plate

Ceiling

PA3X30 Self Tapping Screw

STEP 3

1/4-20UNC Bolt

Lower Cover Plate

Camera

STEP 4

Ceiling

Upper Cover Plate

Lower Cover Plate

Camera

STEP 5

Ceiling

PM3X6 Bolt

Camera
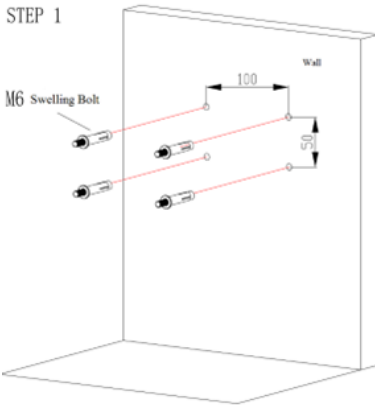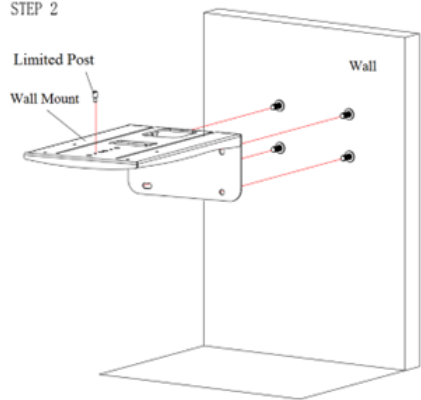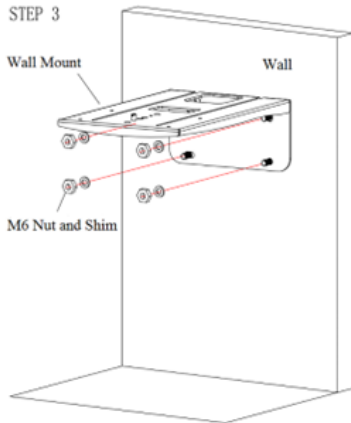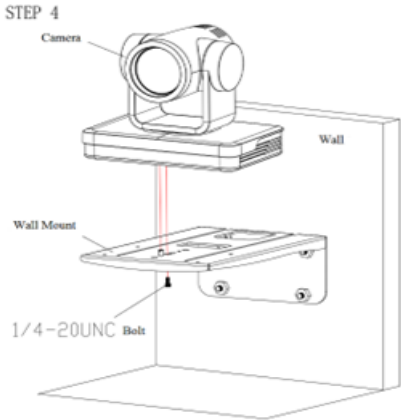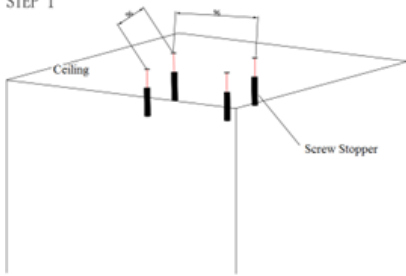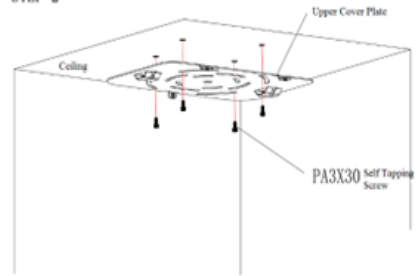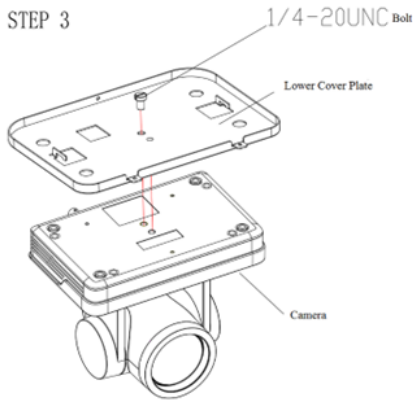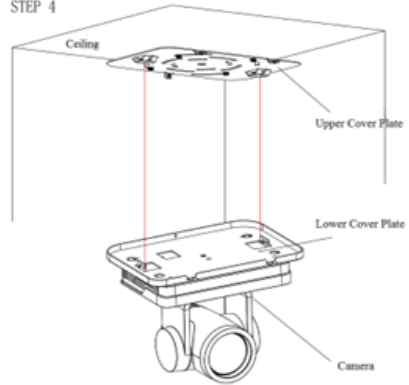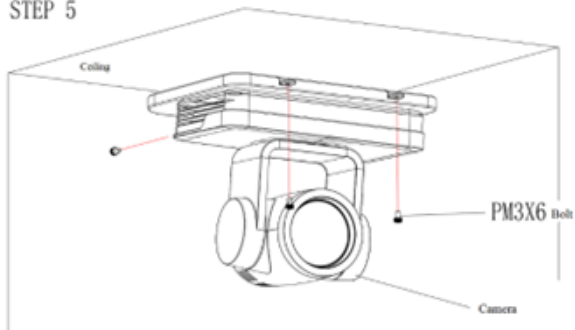
MENU SETTINGS

Menu Configuration

```
<IMAGE> ── SHARPNESS    ──── 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

        ── BRIGHTNESS   ──── 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

        ── CONTRAST     ──── 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

        ── 2DNR         ──── 0, 1, 2, 3, 4, 5, 6, 7

        ── 3DNR         ──── 0, 1, 2, 3, 4, 5, 6, 7

        ── DRC          ──── 0, 1, 2, 3, 4, 5

        ── MIRROR       ──── ON, OFF

        ── FLIP         ──── ON, OFF
```

```
<EXPOSURE>——— AUTO ———— ANTI FLICKER —  OFF,50HZ,60HZ

                          — BLC  ————  ON,OFF

                          └—EXP-COMP —┬— ON  — -7,-6,-5,-4,-3,-2,-1,
                                       │          0,+1,+2,+3,+4,+5,+6,
                                       │          +7
                                       └— OFF

            — MANUAL —┬—GAIN  ———— 0,1,2,3,4,5,6,7,8,9,10,11,
                       │             12,13,14
                       ├—SPEED ——1/60,1/90,1/100,1/125,1/180,
                       │          1/250,1/350, 1/500,1/725,1/1000,
                       │          1/1500,1/2000,1/3000,1/4000,1/6000,1/10000
                       └—LEVEL ———— F14,F11,F9.6,F8,F6.8,F5.6,F4.8,
                                     F4,F3.4,F2.8,F2.4,F2,F1.6,CLOSE

            —SHUTTER —— SPEED ———— 1/60,1/90,1/100,1/125,1/180,1/250,
                                     1/350,1/500, 1/725,1/1000,1/1500,
                                     1/2000,1/3000,1/4000,1/6000,1/10000
            └—IRIS  ———— LEVEL ———— F14,F11,F9.6,F8,F6.8,F5.6,F4.8,
                                     F4,F3.4,F2.8,F2.4,F2,F1.6,CLOSE
```

> **📖 Notes**
>
> The reference shutter speed parameters from the exposure is based on the 30/60fps for the camera.

```
<COLORTONE> ──┬── WB ──┬── AUTO ──┬── R.GAIN ──── -7~+7
              │        │          │
              │        │          ├── G.GAIN ──── -7~+7
              │        │          │
              │        │          ├── B.GAIN ──── -7~+7
              │        │          │
              │        │          └── WB-SENSI ── LOW,
              │        │                          MIDDLE,
              │        │                          HIGH
              │        │
              │        ├── ATW
              │        │
              │        ├── MANUAL ──┬── R.GAIN ──── 0~16
              │        │            │
              │        │            └── B.GAIN ──── 0~16
              │        │
              │        ├── OPWB ──── OPT
              │        │
              │        └── STATIC ──── COLOR TEMP ── 2800~6500
              │
              ├── SATURA ──── 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

<CAMERA> ──┬── RUM SCENE ──── INDOOR
           │
           ├── DIGITAL ZOOM ──── OFF/ON
           │
           └── ZOOM TIMES ──── ×1,×2,×3,×4,×5,×6,×7,×8
                                ×9,×10,×11,×12,×13,×14,×15,×16
```
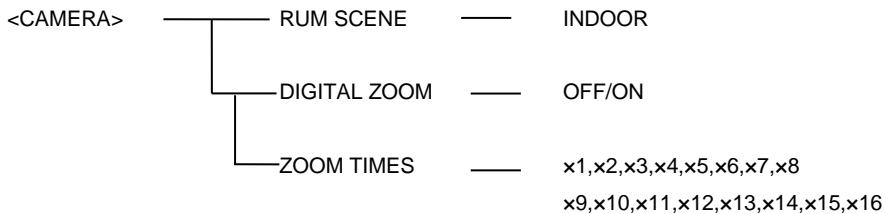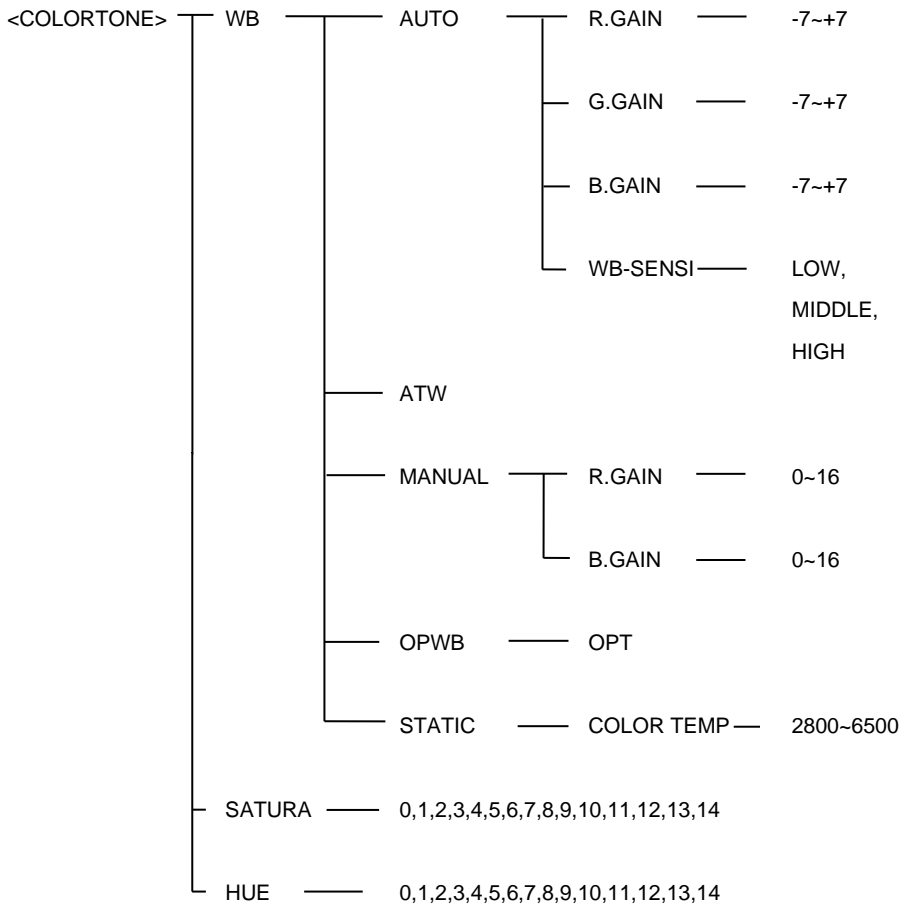
```
<PTZ> ─────────────┐├──── P/T SPEED ── 1,2,3,4,5,6,7
                   ├──── PTZ TRIG AF   ──── ON,OFF
                   └──── POWER UP ── HOME,PRESET0, PRESET1,PRESET2,
                                     PRESET3, PRESET4,PRESET5,PRESET6,
                                     PRESET7,PRESET8,PRESET9

< SYSTEM >──────┬──── PROTOCOL ADDR ─────────── 1,2,3,4,5,6,7

                ├── IR ADDR          ─────────── 1,2,3,4

                ├── MOUNT MODE       ─────────── STAND, CEILING

                ├── PROTOCOL         ─────────── VISCA,PELCO-P,PELCO-D

                ├── BAUDRATE         ─────────── 2400,4800,9600,38400

                ├── VIDEO FORMAT     ─────────── 4KP30,4KP25
                                                 1080P60, 1080P50, 1080P30, 1080P25
                                                 720P60, 720P50, 720P30, 720P25
                ├── LANGUAGE         ─────────── ENGLISH

                ├── DEFAULTS         ─────────── CONFIRM

                └── NETWORK ──────────── MODE ────── STATICIP
                                                     DHCP

                                 ├──── IP ADDRESS───── 192.168.1.180

                                 ├──── NET MASK ────── 255.255.255.0

                                 ├──── GATEWAY ────── 192.168.1.1

                                 ├──── DNS1 ──────── 0.0.0.0

                                 └──── DNS2 ──────── 0.0.0.0
```

```
<DEVICE INFO> ─────────── VIDEO FORMAT
                ├──── FIRM VERSION
                ├──── ISP VERSION
                └──── AF VERSION
```
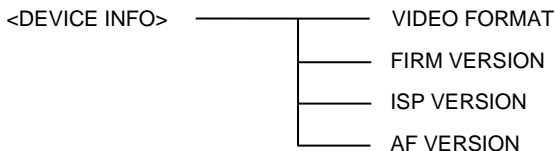
Menu Explanation

1.Press MENU button to enter / exit menu.

2. Press ▲ or ▼ button to select among menu options, when the font is enlarged, it indicates the menu has been selected, press ENTER button to enter and operate the menu.

3. Press ◄ or ► to change the menu options.

| Type	Options	Functional description
IMAGE	SHARPNESS	Used to adjust the sharpness of image and acutance of image edge. The sharpness is increased and the contrast of details in the image plane is higher, making it look clearer. If the sharpness value is too high, it may cause the image distortion.
	BRIGHTNESS	Used to adjust the brightness of the image.
	CONTRAST	Refers to the ratio between the lightest and darkest areas of the image. The image with the higher ratio providing richer color and crisper lineation. The lower ratio makes the image gray.
	2DNR	When the camera shows color image, it is advised to disable the digital noise reduction function; otherwise, the image acutance will be affected.
	3DNR	By comparing several adjacent frames of images, the noise wave is automatically filtered out, so that the image noise is significantly reduced, the image is more thorough, the picture is more pure and delicate. The higher the level of noise reduction is, the more delicate the picture quality will be, the smaller the shaking feeling is. The lower the level of noise

		reduction is, the more blurred the picture quality will be, the greater the feeling of jitter is.
	DRC	It refers to the adaptability of the camera to strong light, specifically to the range of brightness (contrast) and color temperature (contrast).
	MIRROR	The camera image flips 180° horizontally.
	FLIP	The camera image flips 180° vertically.
EXPOSURE	AUTO	Gain, Shutter Speed and Iris value are adjusted automatically accordingly to working environment.
	MANUAL	Manually adjust Gain, Shutter Speed and Iris.
	SHUTTER	Gain and Iris value are adjusted automatically according to working environment; shutter speed value is adjustable manually.
	IRIS	Gain and shutter speed value are adjusted automatically according to working environment; Iris value is adjustable manually.
COLORTONE	WB	Switch the white balance mode.
	SATURA	Refer to the purity and brightness of the image color. The higher the saturation is, the brighter the color effect is. Vice versa, the lower the saturation is, the more the effect tends to be black and white.
	HUE	Used to adjust the overall tendency of the color of an image, causing the color to rotate.
CAMERA	RUN SCENE	Used to set the scene suitable for the best camera shooting effect.
	DIGITAL ZOOM	When it is on, after camera reaches its maximum optical zoom, camera starts digital zoom. The camera will keep receiving zoom in command.
PTZ	P/T SPEED	Set the camera control speed level. The higher the level is, the faster the speed will be.
	PTZ TRIG AF	Focus automatically when the camera PTZ is controlled.
	POWER UP	Initial position of the camera after power-on.

|			
SYSTEM	PROTOCOL ADDR	Set the control protocol address of the camera.	
	IR ADDR	Set the IR remote address of the camera.	
	MOUNT MODE	Support Stand or Ceiling mounted.	
	PROTOCOL	Set the current control protocol of the camera.	
	VIDEO FORMAT	View and set the video format of the camera.	
	LANGUAGE	View and set the language of the camera.	
	DEFAULTS	Used to restore all menu parameter settings to factory default settings.	
	NETWORK	View and set the current network of the camera.	
DEVICE INFO	VIDEO FORMAT	View the video format of the current camera.	
	FIRM VERSION	Displays the firmware version of the current camera.	
	ISP VERSION	Displays the isp version of the current camera.	
	AF VERSION	Displays the af version of the current camera.	

Network Connection

Connect camera to network through an Ethernet cable, power on the camera.

LAN Connection
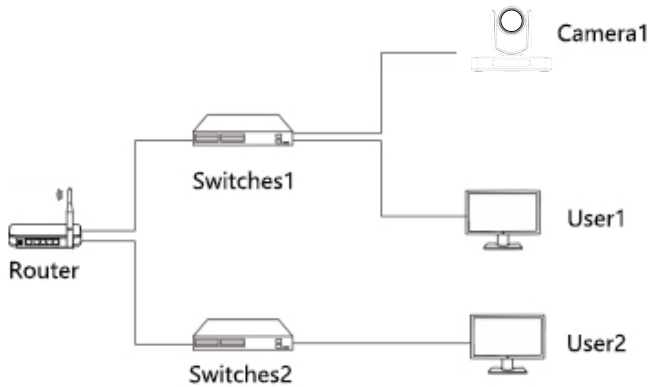
As shown in the above diagram, user1 and user 2 are in the same router, which means in the same LAN. Connecting the camera to the same LAN where the PC is, and referring to the below CameraCMS software instructions, then all the cameras can be found and connected by searching for the online device list.

WAN Connection
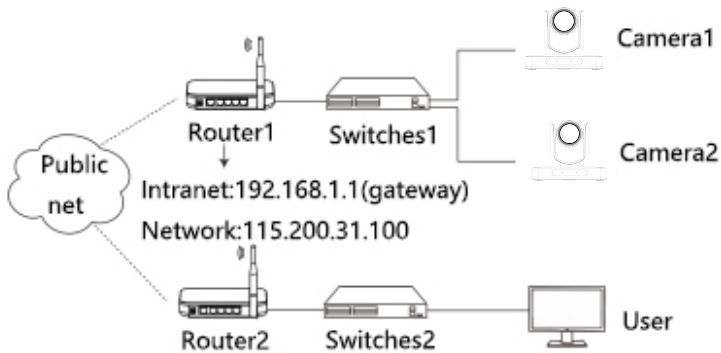
As shown in the above diagram, user and the camera are in different routers, which means in a WAN. In this case, the CameraCMS software cannot automatically search for the camera as it does on a LAN. However, if the following three conditions are satisfied, the CameraCMS software can still search for the camera through the following network configurations:

Condition1: Set camera's IP address as static IP address

Set camera's IP address in LAN: Connect user PC to the LAN (Router 1) where the camera is connected according to LAN connection instructions, use application software CameraCMS to search and find the camera, then add it to manage; then set camera's IP address in the same network segment as the router 1. Camera's gateway is usually set at Router 1's LAN IP address, for example, 192.168.1.1, then camera's IP address can be set as for example 192.168.1.179 or 192.168.1.180 as long as they are in the same network segment.

Condition2: Router of the LAN where camera is connected supports Port Mapping

Router Port Mapping: User's PC logs into router configuration menu, gets into "Port Mapping" (router management authorization may be required); refer to below picture, do not tick "do not apply this rule", in the first frame of "External port", fill in any number from 1~65535, such as 10200 (try to select port greater than 10000 to avoid port conflict); fill in the IP of camera 1 in the internal IP, such as 192.168.1.179, and fill in the internal port 3478 of the camera in the first box of the

internal port (all cameras are fixed to this value). "Protocol" and "image line" can be selected by default. Descriptions such as "port mapping of camera 1" can be filled in the description.

Port mapping

|	
List of rules	
Not applied	☐ **Do not apply this rule** If you disable this rule, the following configuration will only be saved but will not applied.
External port	You can input an external port or an external port segment to be mapped to an open port or port segment of an internal host. If you leave it blank, the external port or port segment is identical to the internal port or port segment. The range is between 1 and 65535.
Internal IP	The IP address of the internal host that provides external service. For example:*192.168.0.50*
Internal port	The open port or port segment of the internal host that provides external services. The range is between 1 and 65535.
Protocol	TCP ▼ The protocol used for port mapping can be TCP, UDP or both.
Mapping line	Any ▼ The line used for port mapping can be single WAN or multi WAN.
Note	You can write a short note to describe this mapping rule. For example:*The WEB server for Marketing Department.*

[Save] [Back]

Condition3: Router of the LAN where camera is connected has fixed public IP address

Access from external network: For example, if the external IP address of router 1 is 115.200.31.100, the WAN user under router 2 can access camera 1 through IP address 115.200.31.100 and port 10200 through steps 1 and 2 above. That is to say , in WAN, camera 1 is mapped to (IP 115.200.31.100 + port 10200). Camera 2 can use another external port such as 10320, so camera 2 is mapped to (IP 115.200.31.100 + port 10320) . In the "Managed Device" of the client software CameraCMS, click the button "+Add", enter the IP address 115.200.31.100 and port 10200 and other information, then the camera 1 can be accessed and controlled.
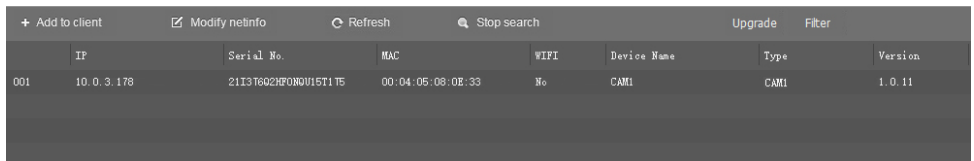
Client Software Instruction

Search and list the camera

Install and open the Camera CMS software on the PC, enter the interface of Device Management .
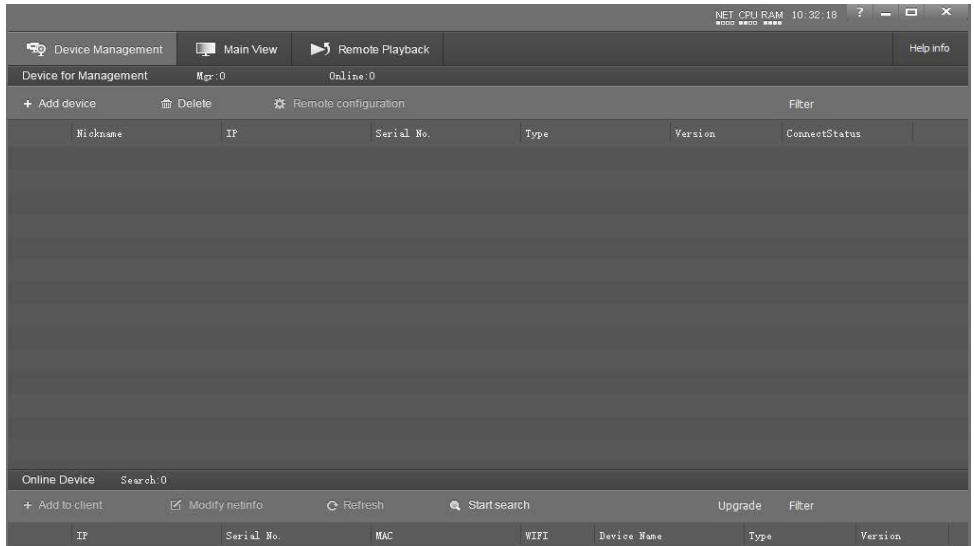
If the camera and PC are in the same LAN, click Start Search , then searching starts and all online devices will be listed, as the picture shown below:

To upgrade multiple cameras in batch, first select multiple devices in the list and Select the upgrade file in the camera program file path, click Upgrade .

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To modify the device IP address, input the IP address, mask, gateway in the Modify Network column.

To control and preview a camera, first choose the device, modify its IP address as the IP address

of the same LAN, then click Add to Client as the picture shown below.

Add the camera in the WAN according to the WAN Connection instructions.

Configuration

Choose the camera in the device list, click Remote Configuration in the column to upgrade or Configure the camera.

Streaming

■ Stream type: set the parameters of main stream and sub stream. Different devices support different streams;

■ Resolution: set among 4K,1080P(1920*1080), HD720P(1280*720), 640*360, choose resolutions based on actual requirements and capability of device. The higher the resolution is, the better network requirements will be needed;

■ Video rate type: Support CBR or VBR;

■ Frame rate: represent the number of frames per second of the video;

■ Key frame Interval: configure the number of frames between the two key frames. The larger the key frame interval is, the smaller the fluctuation of the byte will be, but the image quality is relatively

20

poor. Vice versa, the larger the fluctuation of the byte will be, the higher the image quality will be. Default values are recommended;

■ Video coding type: choose H.264 or H.265;

■ Encode Level: choose from Base Profile, Main Profile, and High Profile;

■ Channels: support STEREO;

■ Encode type: only support AAC, set sampling rate and Audio rate at the same time;

■ Sampile rate: 48KHz;

■ Audio rate: choose from 48Kbps, 64Kbps, 96Kbps, 128Kbps;

■ Input pin: choose the type of audio input;

■ Volume: pull the volume bar to set the volume, the volume ranges from 0 to 100.

Network

■ Connect with: please choose from Static IP or dynamic IP address;

■ IP Address: input the IP address not used for the camera;

■ Mask: same as those used by other PC's on the network;

■ Gateway: input gateway IP address;

■ DNS 1: server-prior, same as other PC's on the LAN;

■ DNS 2: It will be used in case DNS1 server is not working;

■ Port: streaming port (RTSP) and application port (SDK connection) can be configured. The range of stream ports is 3479~7999 and 554, default is 554. The range of application ports is 3479~7999, default is 5000;

■ Click the Save button after setting is completed;

RTMP

In RTMP1 and RTMP2, main stream and sub stream can be chosen to stream.

Support common RTMP servers, such as red5, nginx, crtmpserver, fms, wowza.

Protocol

■ Enable / Disable: enable / disable transparent transmission;

■ Protocol: choose TCP or UDP protocols;

■ Camera as: choose Client or Server;

■ IP: when the camera is set as client, the IP address of the transmitted camera is needed. When

the camera is set as server, the IP address can be left as black;

Port: choose from 1~65535 as transparent transmission port.

Upgrade
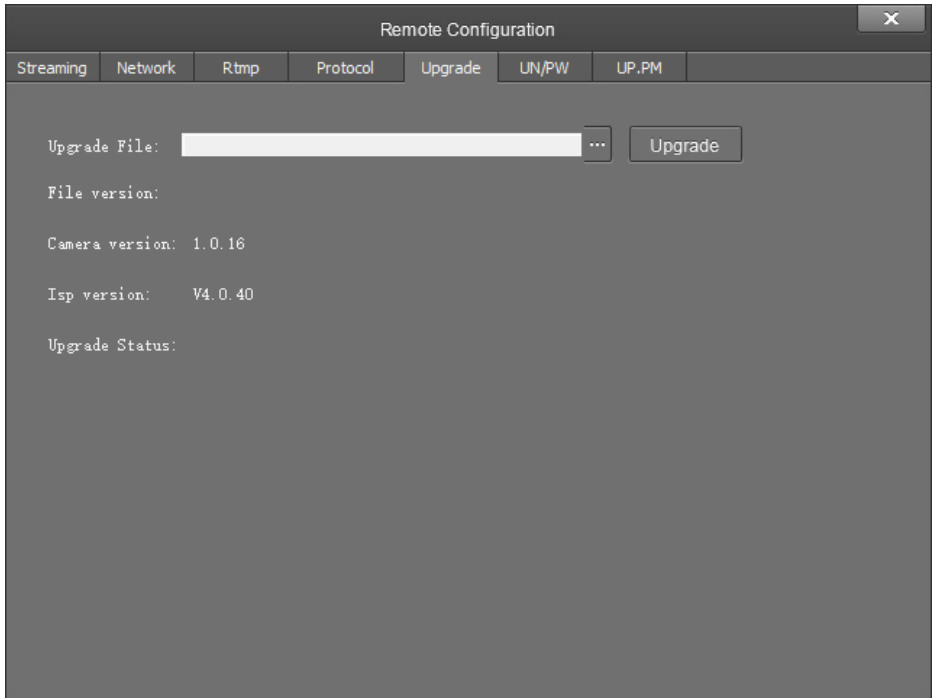
■ Click Upgrade menu to enter the main interface, as the picture shown above;

■ Click ⋯ to search and load the updating firmware, then click Upgrade to start upgrading. Do not power off the camera during upgrading. After upgrading is completed, camera will reboot.

UN/PW

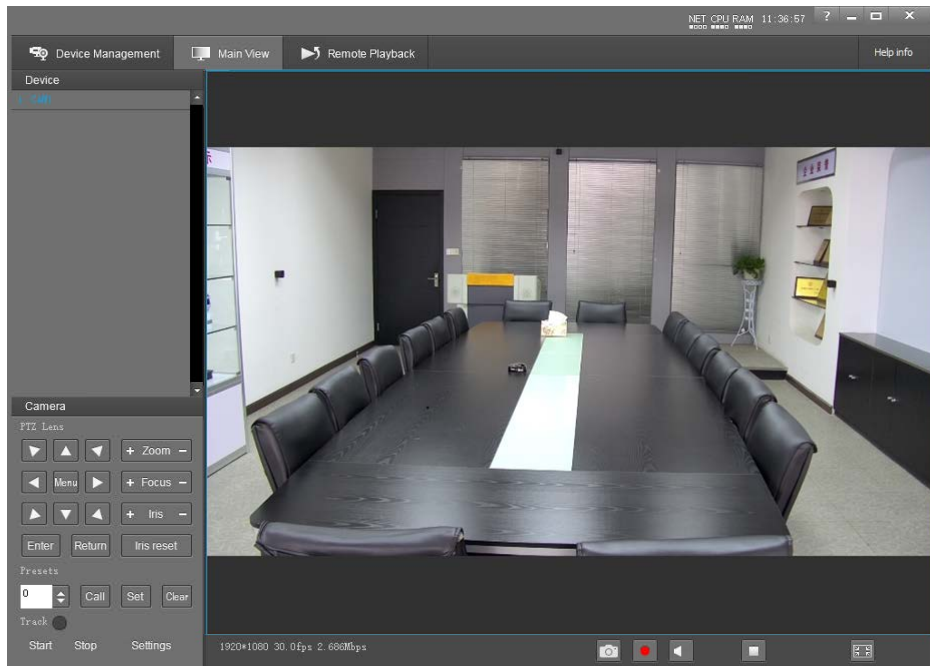■ Password setting: when a password is required, the camera can be accessed only after a correct password is input;

■ Maintenance: Reboot or Recovery;

■ Device name: set the camera name, click Save;

■ Time setting:

a. Synchronize local time;

b. Show time or not on the CMS video and set the time format;

c. NTP Server setting.

Select the camera to be synchronized of the same model which are currently managed and unselected, and then click any option or multiple options among the video, audio and track. After clicking the Update , the current camera to be synchronized will be synchronized with the Source camera parameters.

■ Import, Export: only operate on the source camera, the camera parameters can be exported to the file, or the parameters be imported into the camera from the file;

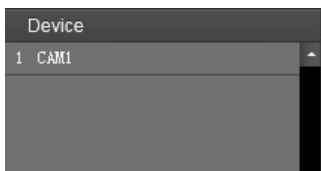■ Update: only operate on the camera to be synchronized.

Preview

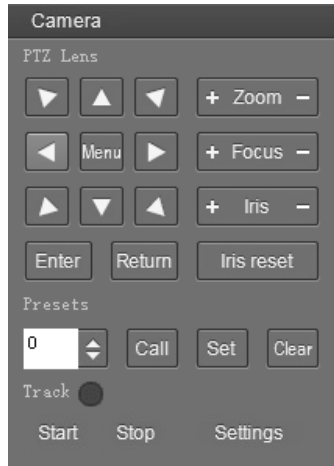Click Main View to get into camera control and preview part as below.

This interface includes three main parts: Device List, Device Control, Video Preview.

● Device: It displays all online cameras added to Device Management .

● Device Control: get control of the selected camera (camera name in blue).

Camera

PTZ Lens

▼	▲	◀	+ Zoom −
◀	Menu	▶	+ Focus −
◢	▼	◣	+ Iris −

| Enter | Return | Iris reset |

Presets

| 0 | ⬍ | Call | Set | Clear |

Track ⬤

Start   Stop   Settings

● Video Preview: double click the camera in the list, main camera stream will be displayed in the preview window; or right click the selected camera from the left column to get its main or sub stream video. Video preview mode can be single video or four video's, when in four video's mode, select one of the four video's then choose the bottom right icon to enlarge this selected video to a big single window.

TECHNICAL SPECIFICATIONS

Items	
Image Sensor	1/2.8" CMOS, 8.46 megapixel
Focal Lens	f=4.7mm~94mm
Iris	F1.6~F2.8
Field Of View	72.5°~6.3°
Optical Zoom	12x
Digital Zoom	16x
Focus System	Auto, Manual, PTZ Trigger, One Push Trigger
Exposure Control	Auto, Manual, Shutter Priority, Iris Priority
Min. Illumination	10Lux
Shutter Speed	1/50s ~1/10,000s
Gain	Auto, Manual
White Balance	Auto, One Push, Manual, ATW, Static Color Temperature
Wide Dynamic	Yes
Back Light Compensation	Yes
S/N	≥50dB
Menu	Yes
PTZ	
Pan Angle	-170°~+170°
Tilt Angle	-30°~+90°
Pan Speed	0.1°/S~120°/S
Tilt Speed	0.1°/S~90°/S
Preset Number	256
Image Flip	Support
HDMI	
Video Format	4K30/25,1080P60/P50/P30/P25, 720P60/P50
3G-SDI	
Video Format	1080P60/50/30/25, 720P60/50
NETWORK	
Network Interface	1×10M/100M RJ45
Image Compression	H.265, H.264
Audio Compression	AAC
Protocols	ONVIF、RTSP、RTMPS、RTMP、SRT 、TCP、UDP
Video Output Format	Max 4K30
Dual stream	Support Multiple Dual streams
USB	
	1×USB 3.0 Support UVC1.1 Video Format support YUY2/NV12, Video resolution: 1080P30/P25,720P30/P25,480P30/P25,360P30/P25; Support H.264/H.265/MJPEG,

|	
	Video resolution: 4K30/25, 1080P60/P50/P30/P25,720P60/P50/P30/P25, 360P30/P25; UAC Audio Format PCM.
Protocols	VISCA / PELCO-P / PELCO-D
Audio Input	1×LINE IN 3.5mm
Control Interface	1 channel RS-232 IN, 1 channel RS-232OUT/RS485
Power	DC12V
Power Consumption	<15W
Operating Temperature	0°C~+40°C
Operating Humidity	10%RH ~ 90 %RH
Storage Temperature	-20°C~+40°C
Storage Humidity	10%RH ~ 95 %RH
Dimensions （W×H×D）	211mm×137mm×170mm
Weight	≤1.2kg
Color	Gray

NOTE: Technical Specifications Change without prior notice.

SIZE AND DIMENSION

Front

170mm
211mm

Top

137mm

Rear

Side

Bottom

Depth 5-7mm,1/4-20UNC
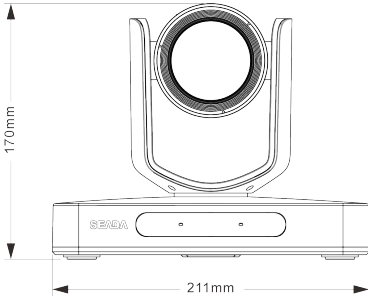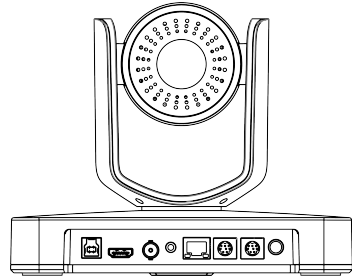
Depth 6mm,Φ5mm

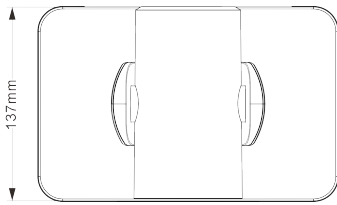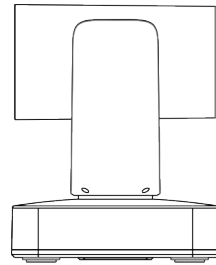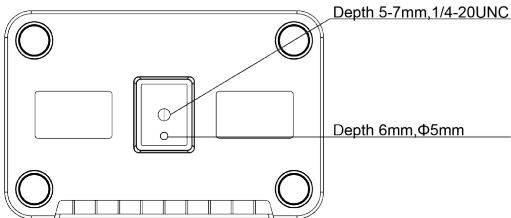**The user manual is only for a reference, if there are any changes or differences, please ask for the latest version from your supplier**