# Joystick Controller

User Manual

To better use the joystick controller,please read the relevant sections of the user manual carefully before using.

Brief Introduction

Features:

◆ Optical 3D joystick gives you a more comfortable roll / pan/ zoom operation.

◆ Can control cameras by network and serial port.

◆ Can quickly adjust the camera for a variety of settings, such as: auto focus adjustments, AE adjustments, a series of auto white balance adjustments, and brightness iris adjustment.

◆ PTZ and lens control speed can be adjusted through the control knobs.

The front board:
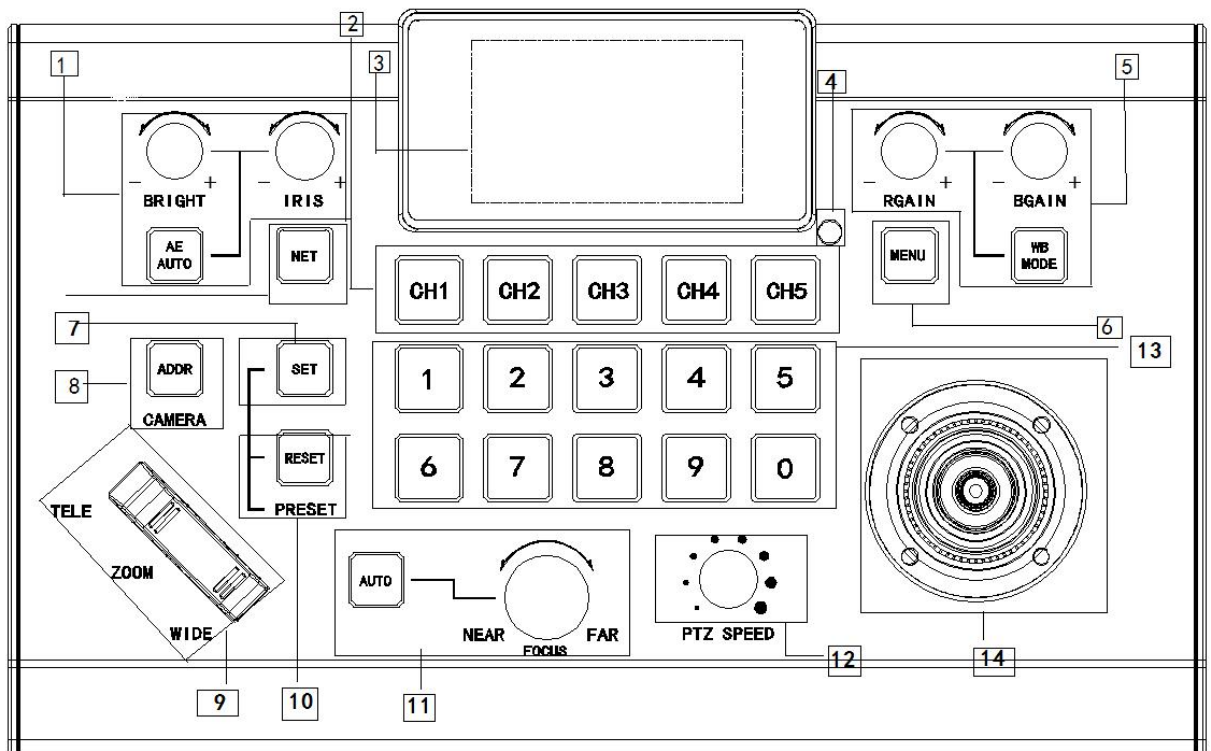

1

1. AE MODE Select
   "AE Auto" Auto exposure
   "-BRIGHT+" Bright adjustment
   "-IRIS+" Iris adjustment
2. "CHANNEL" 1-5 number buttons, selection for camera control channel
3. Keyboard Display
4. Indicator light
5. White Balance Adjustment

"WBC MODE" Auto WBC

"+R GAIN-" Red gain or less

"+B GAIN-" Blue gain or less

6. "MENU" Call keyboard menu/Exit/Long press to call camera menu
7. "SET"+ "Number" Set presets
8. "ADDR" Select camera ID
9. "ZOOM" Focal length adjustment

"TELE" Zoom in

"WIDE" Zoom out

10. "Reset"+ "Number" Delete presets
11. Focus mode selection

"AUTO" Auto focus

"NEAR" manual focus mode close up

"FAR" Manual focus mode far focus

12. "PTZ SPEED" Camera pan/tilt/zoom speed adjustment
13. "POSITION" 1-0, numbers for setting, calling and deleting presets
14. Control joystick

Select the camera you want to control.

Left/Right: Pan

Pitch Up/Down: Tilt

Rotate clockwise/Counterclockwise: Zoom in/Zoom out

When you release the remote, the camera will stop moving

Backside:
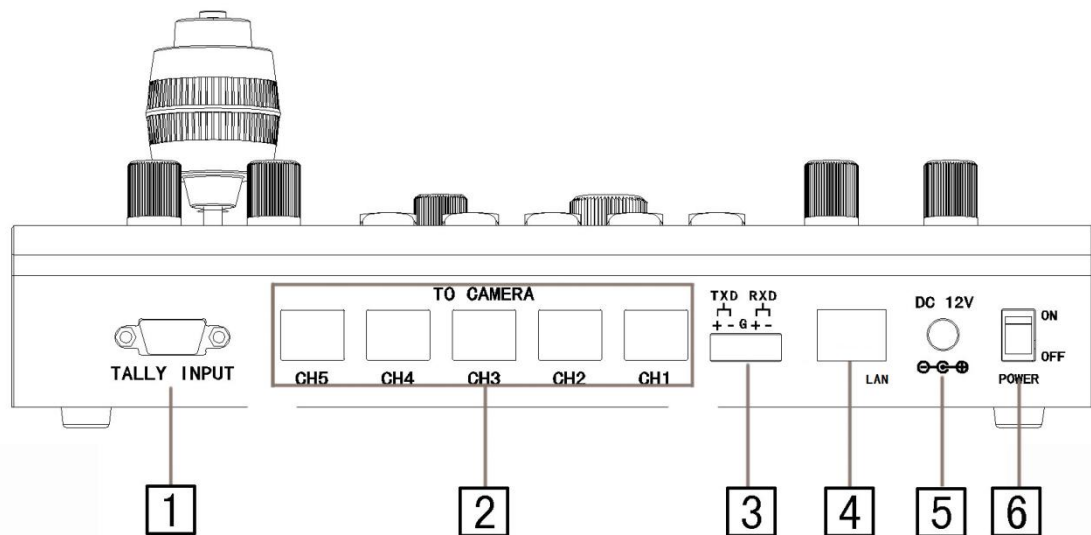
1. TALLY port
2. Camera control channels (CH1-CH5)
3. RS422/485 control(use CH1 control)
4. Ethernet port
5. 12V DC power supply
6. Power switch

Display Introduction

1	Current protocol and device display area
2	Connection status
3	Operation record area
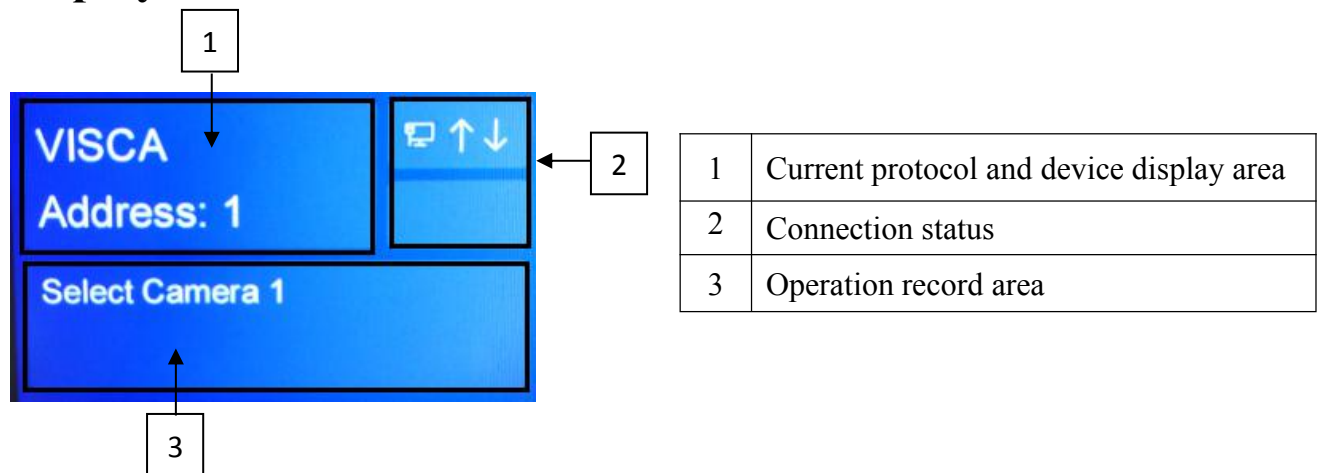
OSD Menu Setting:

Enter the keyboard settings menu:

1) Press the "MENU" knob, light is on.

2) Keyboard factory default password is turned off, can enter the menu directly

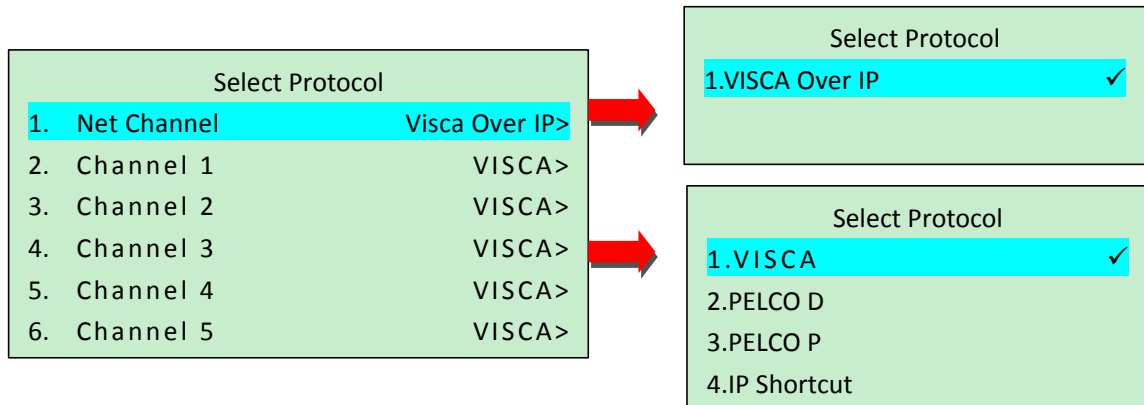Enter the menu, control the joystick up and down to switch the setting items.Control to the right, means confirmation. To the left, return to the previous level. Press "MENU" again to save the parameter and exit menu directly.Keyboard menu settings are as follows:

```
                SETTING
1.Select Protocol                    >
2.Protocol setting                   >
3.IP  Shortcut                       >
4.Ethernet                           >
5.Serial  Port                       >
6.Rocker                             >
7.Buzzer                          OFF>
8.Sleep  Time              1  Minute>
9.Language                   English>
10.About  Device                     >
11.Reset  Device                     >
```

NO1: Camera protocol selecting

Methods:

Use the joystick to move the cursor to "Select Protocol", move the joystick to the right to enter next menu. Enter different channels to select network control or serial mode control mode. The selected item will be marked with a hook.
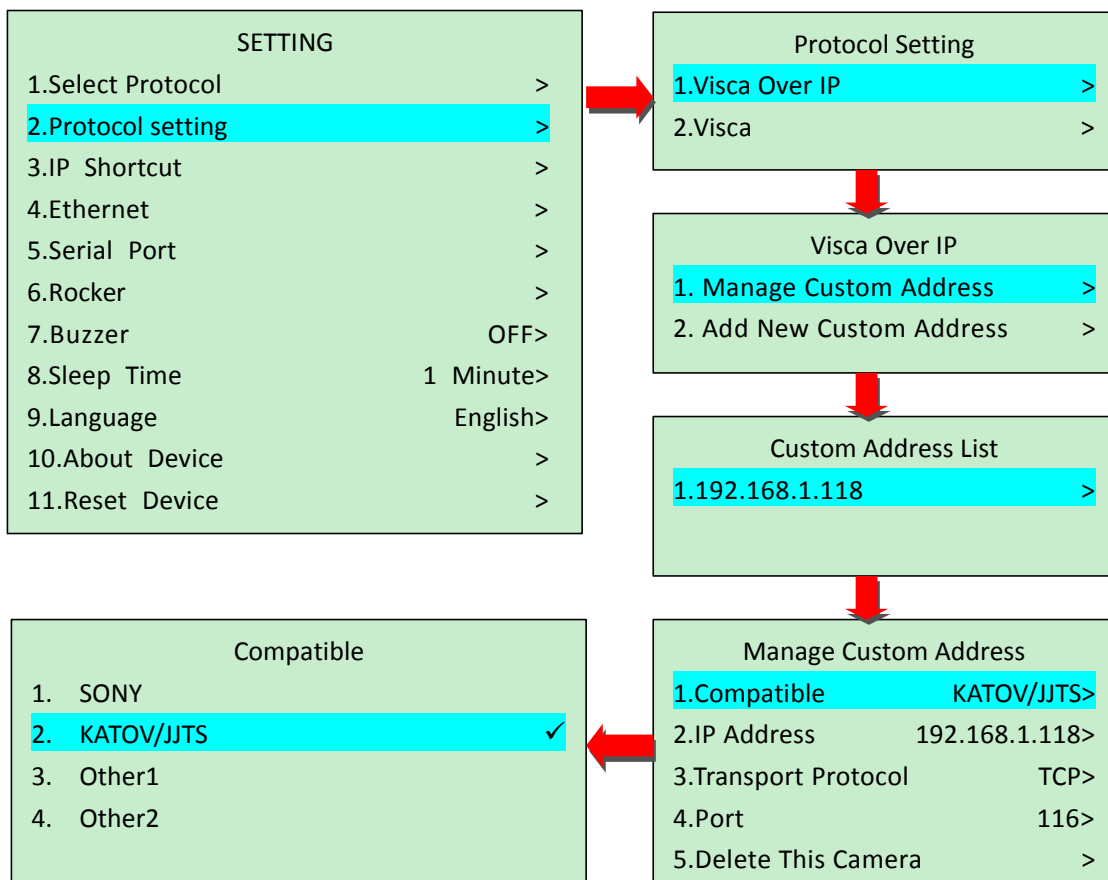
Select Protocol	
1. Net Channel	Visca Over IP>
2. Channel 1	VISCA>
3. Channel 2	VISCA>
4. Channel 3	VISCA>
5. Channel 4	VISCA>
6. Channel 5	VISCA>

Select Protocol	
1.VISCA Over IP	✓

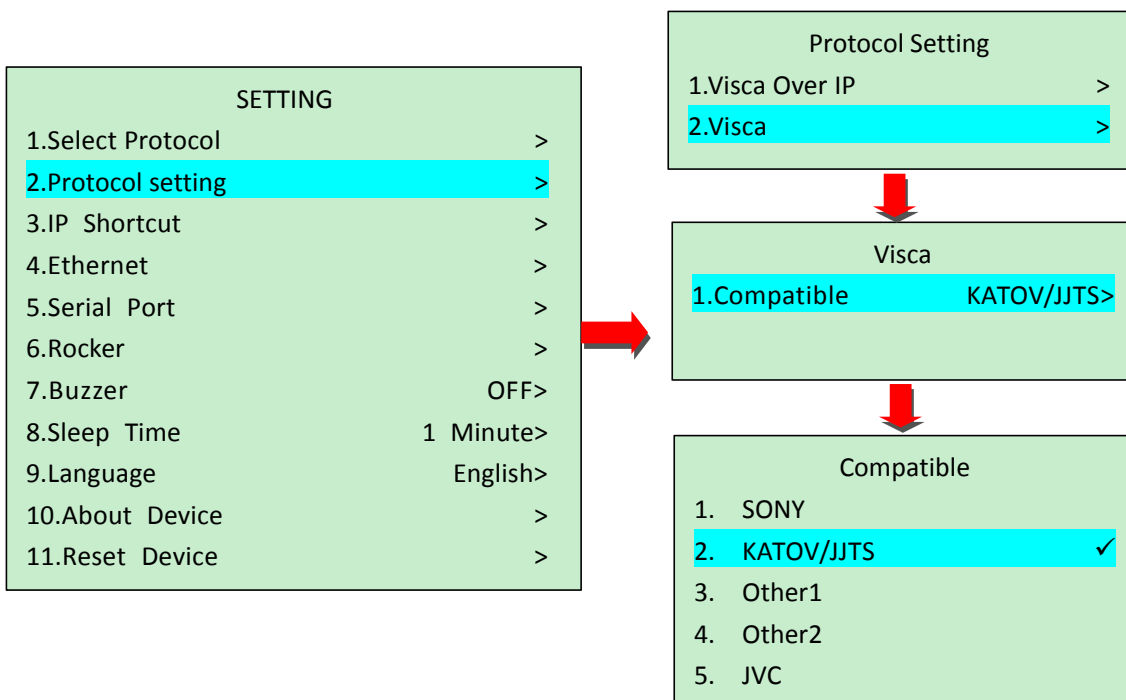| Select Protocol	
1.VISCA	✓
2.PELCO D	
3.PELCO P	
4.IP Shortcut	

NO2: Protocol setting

Methods:

Use the joystick to move the cursor to "Protocol setting", move the joystick to the right to enter next menu. Select the protocol "Visca Over IP", confirm to the right. Enter "Manage Custom Address" to add custom camera address, choose brand/network address/control method/port, or delete custom camera;

The flow chart is as follows:

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Protocol Setting	
1.Visca Over IP	>
2.Visca	>

Visca Over IP	
1. Manage Custom Address	>
2. Add New Custom Address	>

Custom Address List	
1.192.168.1.118	>

Compatible	
1. SONY	
2. KATOV/JJTS	✓
3. Other1	
4. Other2	

Manage Custom Address	
1.Compatible	KATOV/JJTS>
2.IP Address	192.168.1.118>
3.Transport Protocol	TCP>
4.Port	116>
5.Delete This Camera	>

Method:

Use the joystick to move the cursor to "VISCA" protocol and move to the right to enter next menu. The joystick up and down selects the compatible camera manufacturer under the corresponding protocol; the flow chart is as follows:
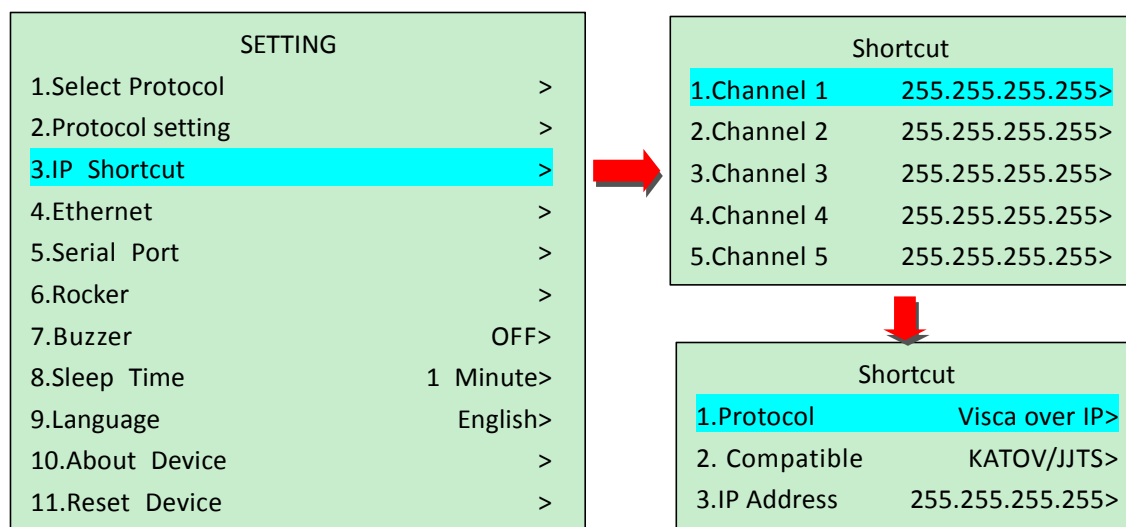
SETTING	
1.Select Protocol	>
2.Protocol setting	**>**
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Protocol Setting	
1.Visca Over IP	>
2.Visca	**>**

Visca	
1.Compatible	**KATOV/JJTS>**

Compatible	
1. SONY	
2. KATOV/JJTS	**✓**
3. Other1	
4. Other2	
5. JVC	

NO3: Switch network control mode

The operation method is as follows:

Methods:

Use the joystick to move the cursor up and down to "IP Shortcut", and move the joystick to the right to enter next menu. The joystick up and down selects the corresponding channel to switch the network control mode, access the camera and network address; then enter the edit page to the right.
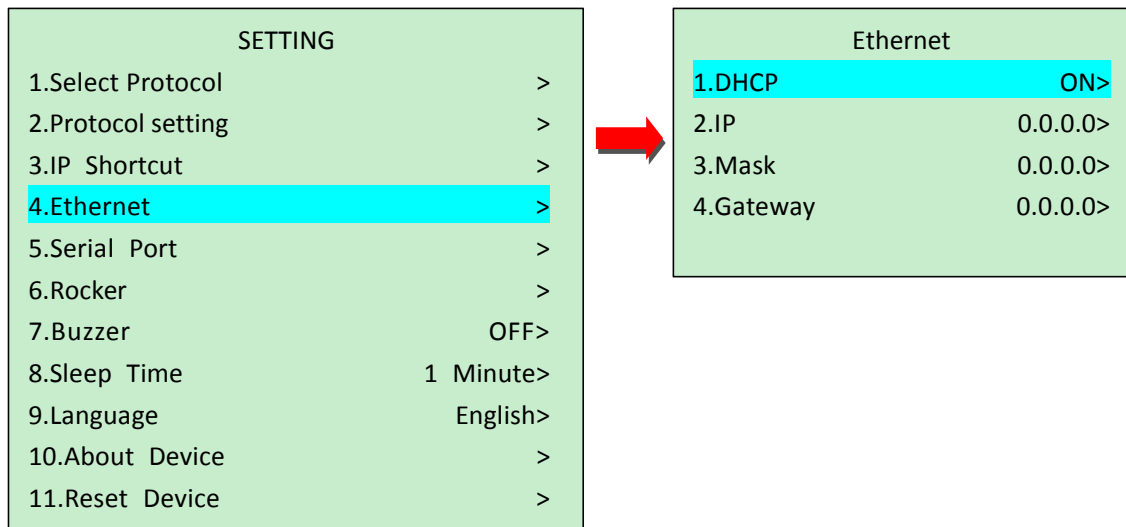
The flow chart is as follows:

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	**>**
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Shortcut	
1.Channel 1	**255.255.255.255>**
2.Channel 2	255.255.255.255>
3.Channel 3	255.255.255.255>
4.Channel 4	255.255.255.255>
5.Channel 5	255.255.255.255>

Shortcut	
1.Protocol	**Visca over IP>**
2. Compatible	KATOV/JJTS>
3.IP Address	255.255.255.255>

NO4: Keyboard network mode setting

Methods:

Use joystick to move the cursor up and down to "Ethernet", move the joystick to the right to enter next menu. The joystick up and down selects "DHCP ON"(Obtain IP address automatically) and "DHCP OFF"(Fill the IP address manually).
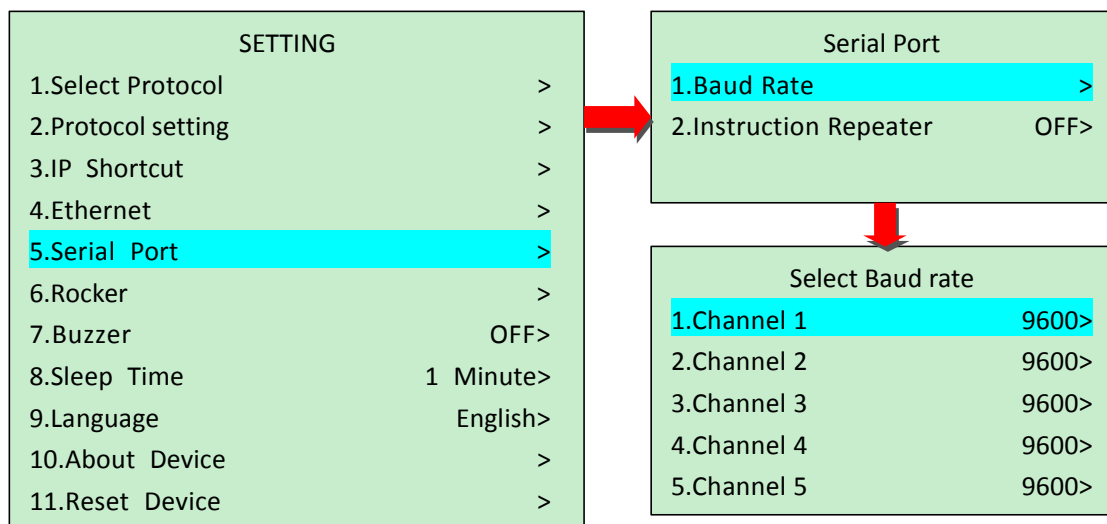The flow chart is as follows:

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

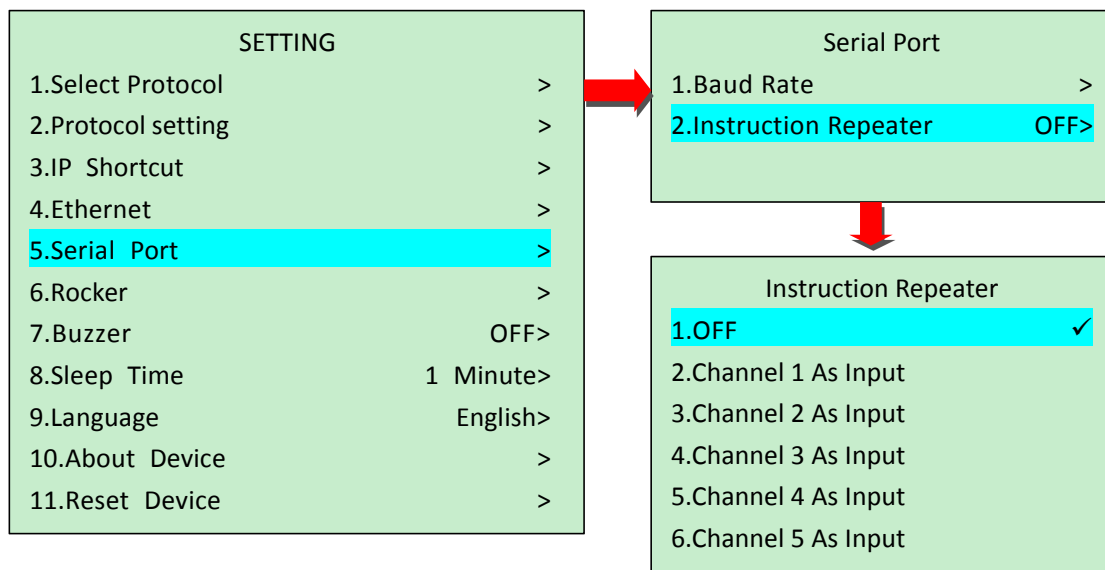| Ethernet	
1.DHCP	ON>
2.IP	0.0.0.0>
3.Mask	0.0.0.0>
4.Gateway	0.0.0.0>

NO5: Serial port setting

Methods:

Use the joystick to move the cursor to "Serial port" item, move the joystick to the right to next menu. Selects whether to enable instruction repeater function and set the mode, and then enters the editing interface again to the right. The flow chart is as follows:

The following picture: indicates the selected baud rate is 9600(2400-115200). Move the joystick to the right and save the parameter.

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Serial Port	
1.Baud Rate	>
2.Instruction Repeater	OFF>

Select Baud rate	
1.Channel 1	9600>
2.Channel 2	9600>
3.Channel 3	9600>
4.Channel 4	9600>
5.Channel 5	9600>

Note: If need to turn on the instruction repeater function, you need to choose it "ON", enter the Instruction Repeater menu to open, and choose which way to control.
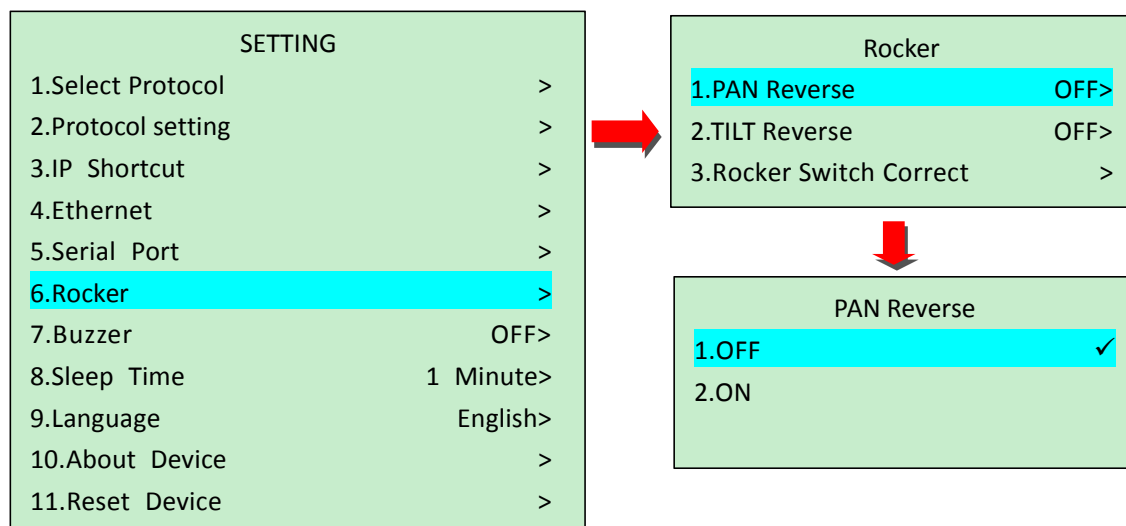
SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Serial Port	
1.Baud Rate	>
2.Instruction Repeater	OFF>

Instruction Repeater	
1.OFF	✓
2.Channel 1 As Input	
3.Channel 2 As Input	
4.Channel 3 As Input	
5.Channel 4 As Input	
6.Channel 5 As Input	

NO6: Pan and Tilt Reverse

Methods:

Use the joystick to move the cursor to "Serial port" item, move the joystick to the right to next menu, then choose whether to turn on "PAN Reverse" or "TILT Reverse". Choose "OFF" or "ON" after selecting.

"Rocker Switch Correct" is for resetting the Zoom Rocker, which prevents the error of Zoom Rocker hardware.

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Rocker	
1.PAN Reverse	OFF>
2.TILT Reverse	OFF>
3.Rocker Switch Correct	>

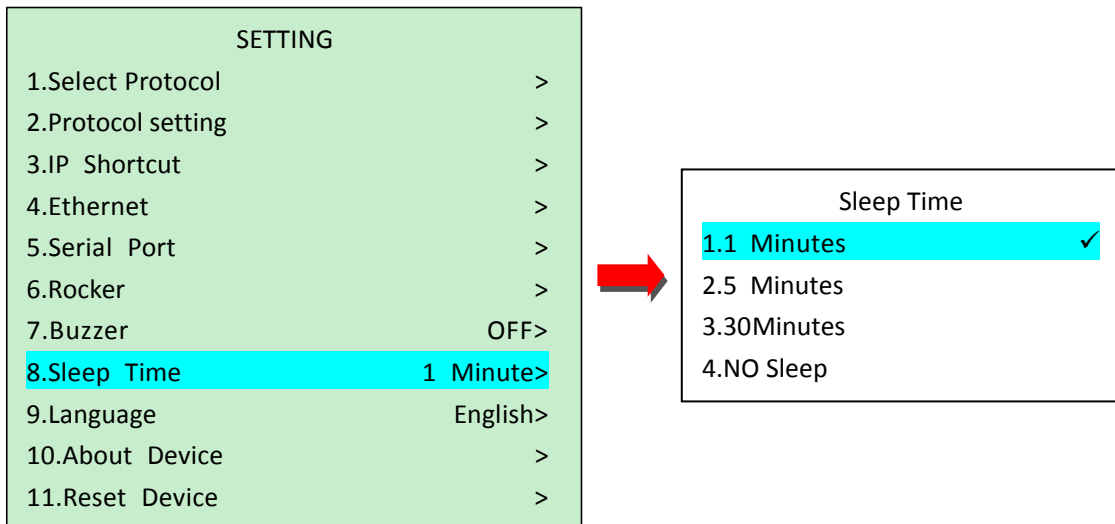| PAN Reverse	
1.OFF	✓
2.ON	

NO7: Buzzer

Methods:

Use the joystick to move the cursor to "Buzzer" item, move the joystick to the right, and select the button buzzer switch (OFF/ ON). The picture below shows the button beep switch is off.

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Buzzer	
1.OFF	✓
2.ON	
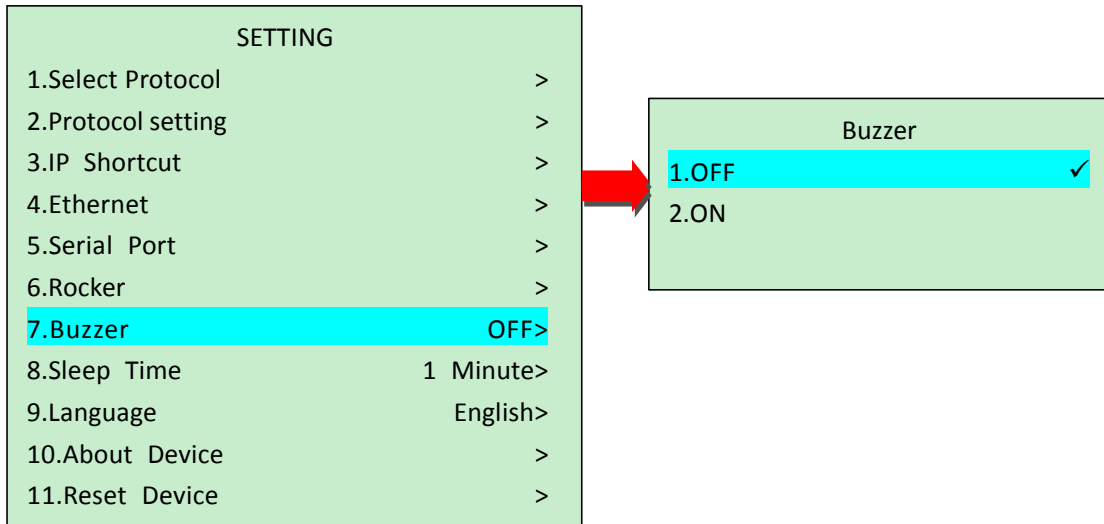
NO8: Time setting of LCD screen

Methods:

Use the joystick to move the cursor to "Sleep Time" item, move to the right to enter next menu. Then choose the sleep time or "NO Sleep", The flow chart is as follows:

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Sleep Time	
1.1 Minutes	✓
2.5 Minutes	
3.30Minutes	
4.NO Sleep	

NO9: Language

Methods:

Use the joystick to move the cursor to "Language", move to the right to choose language. The flow chart is as follows:

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

Language	
1.English	✓
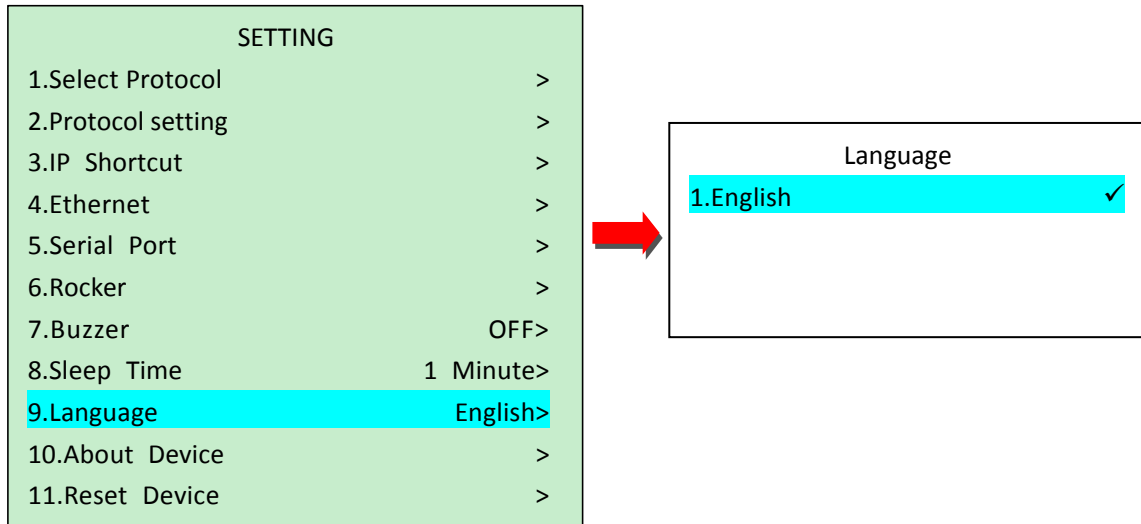
NO10: About Version

Methods:

Use the joystick to move the cursor to "About Device", move the joystick to the right to enter next menu, then check the version and release time.
The flow chart is as follows:

SETTING	
1.Select Protocol	>
2.Protocol setting	>
3.IP Shortcut	>
4.Ethernet	>
5.Serial Port	>
6.Rocker	>
7.Buzzer	OFF>
8.Sleep Time	1 Minute>
9.Language	English>
10.About Device	>
11.Reset Device	>

About Device
1.MAC: 11:22:33:55:66:88
2.Software Version: v1.1.6
3.Compile Date: Jan 23 2019
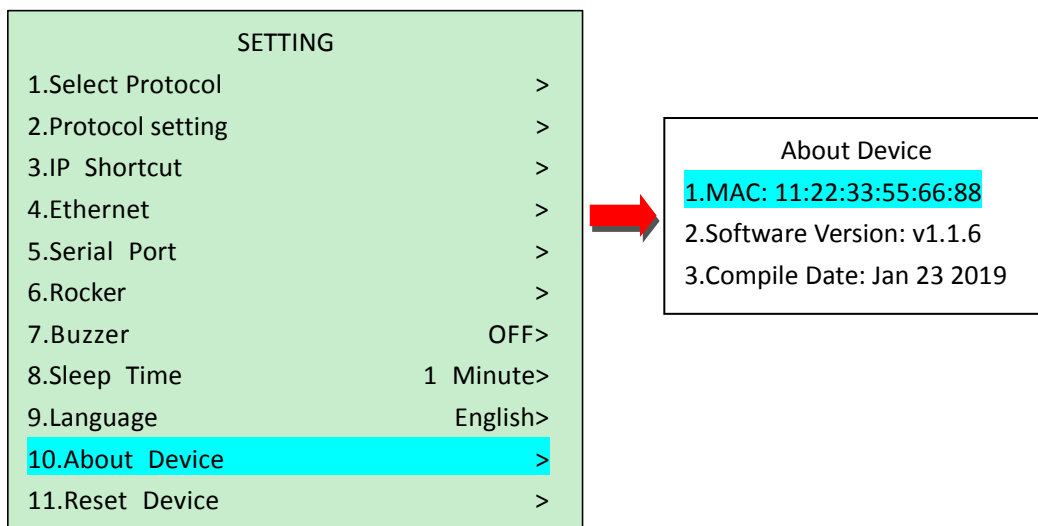
NO11: Reset Device

Methods:

Use the joystick to move the cursor to "Reset Device", move the joystick to the right to enter next menu. Choose whether to reset factory setting.

Installation Before Using

1. The equipment comes with a 12V DC power supply, one RS232 line, one network cable. Plug in the power as required, turn on the power switch, and the LCD screen is displayed:
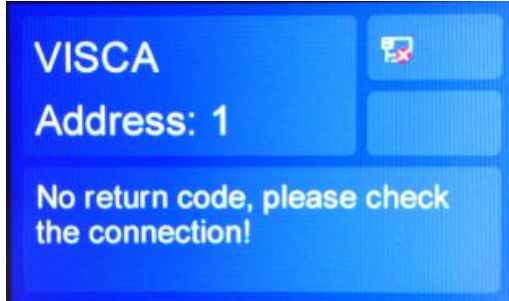
2. Camera connect

If the camera distance is within 100 meters, the NET connection can be adopted.

Schematic Diagram	Functions
 LAN	1.TX+ 2.TX- 3.RX+ 4.TERM 5.TERM 6.RX- 7.TERM 8.TERM

If the camera is close to the keyboard (less than 20 meters), can adopt RS232 connection. The equipment provides a 1-meter-RS232 cable.

Schematic Diagram	Functions
 CH1-CH5	1.RS485 A+ 2.RS485 B- 3.RS232-TX 4.GND 5.GND 6.RS232-RX 7.GND 8.GND

If the length of the standard cable is not long enough, it can be cut and added to a three-core cable of appropriate length. (Note do not make it wrong and the welding method is adopted to ensure good contact).

Then plug the cable into the COM port of the keyboard and the other end into RS232 IN of the camera.

The DB9 port pin definition diagram and wire line sequence diagram are as follows:

RJ45   RS232 8 Pin

Keyboard controller   conference camera
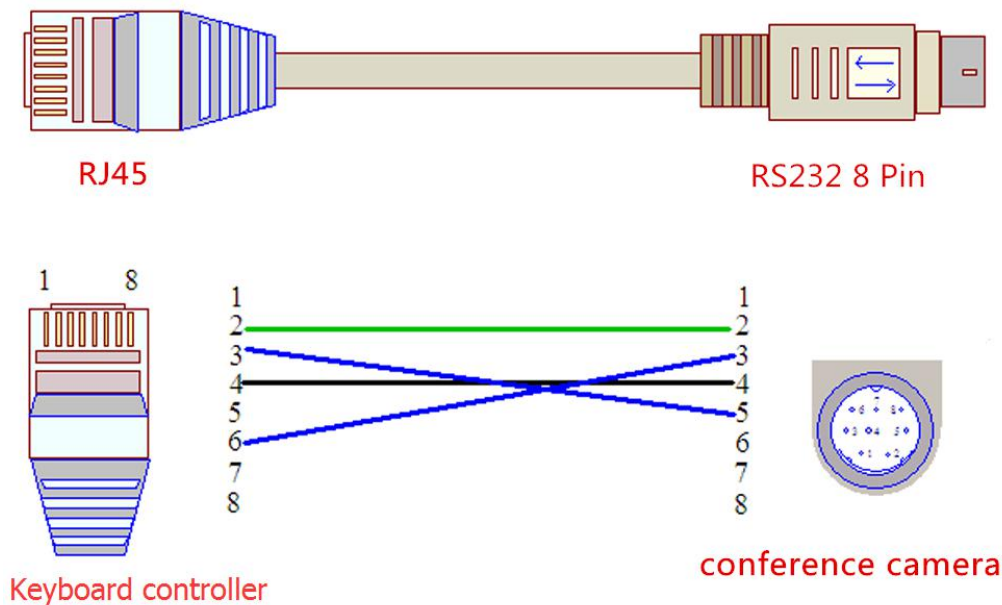
If the camera is far from the keyboard (more than 20 meters), can adopt RS422/485 connection.

The following picture shows the RS422 wiring of the SONY EVI-D70 camera and KT-HC22K1:

SONY EVI-D70			KC22K1	
1	TXD	IN+	TXD	OUT+
2	TXD	IN−	TXD	OUT−
3	RXD	IN+	GND	
4	RXD	IN−	RXD	OUT+
5	GND		RXD	OUT−
6	TXD	OUT+		
7	TXD	OUT−		
8	RXD	OUT+		
9	RXD	OUT−		
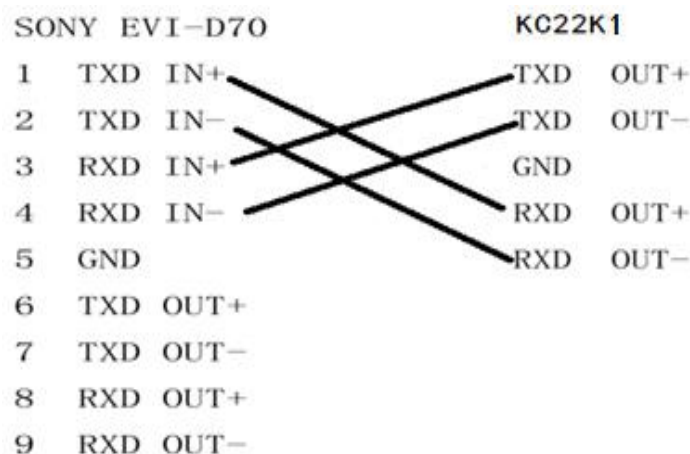
The following picture shows the RS485 wiring diagram of KT-HD61C camera and KT-HC22K1:

KA-HD61C			KC22K1	
1	TXD	IN+	TXD	OUT+
2	TXD	IN−	TXD	OUT−
3	RXD	IN+	GND	
4	RXD	IN−	RXD	OUT+
5	GND		RXD	OUT−
6	TXD	OUT+		
7	TXD	OUT−		
8	RXD	OUT+		
9	RXD	OUT−		
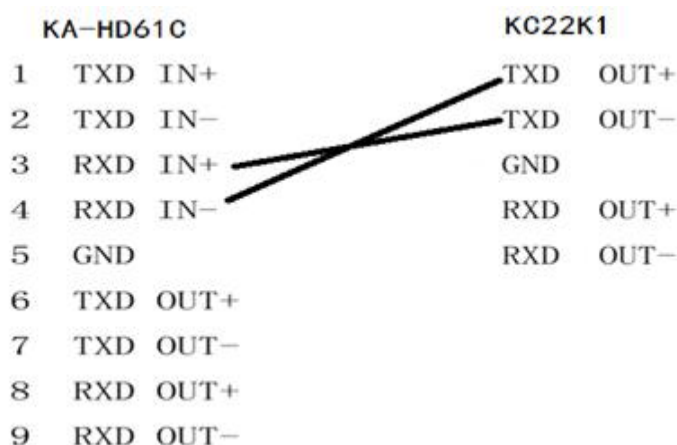
Keyboard Instructions

1. Power on

Plug in the power supply and turn on the power switch. If the keyboard isn't connected to the camera, the keyboard display as followed:
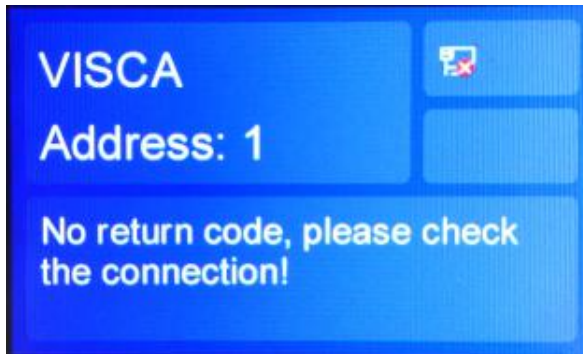

If the camera is connected and the keyboard is powered on for the first time, the default control channel is CH1, and the default control camera is 1. The display shows:
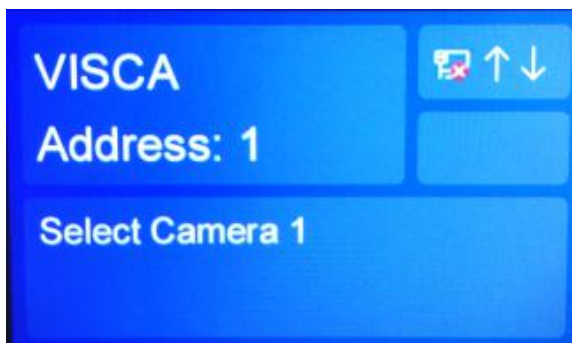
The keyboard will save the signal channel selection after power-off restart.
Take the LAN interface as an example. When the NET channel is selected, the last operation will be automatically restored after the power-off restart.

The keyboard display is as follows:
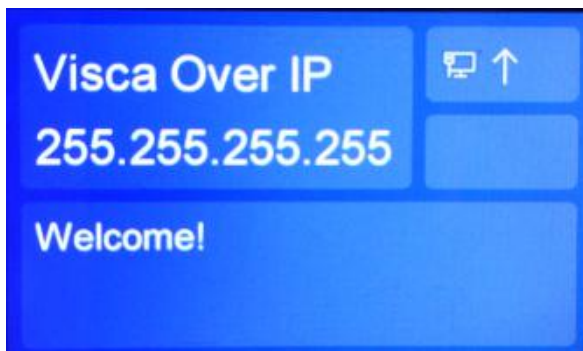
2. Camera select

Single control mode (One camera controlled by per channel)

Choose the channel from "CH1-CH5"buttons. For example, press the "CH3" button, then the "CH3" button will remain red, indicating the camera with address "1" of "CH3" channel is controlled. All operations are performed on this camera.

Press "CH1" to select the control channel as CH1, press the "ADDR" button (the ADDR button will remain red when selecting camera), start camera selection. Select the digital area (1-0) and input "2", then select to control the camera with address 2, showing controlling camera 2 in channel 1.

After exiting the camera selection, all operations are performed on this camera.
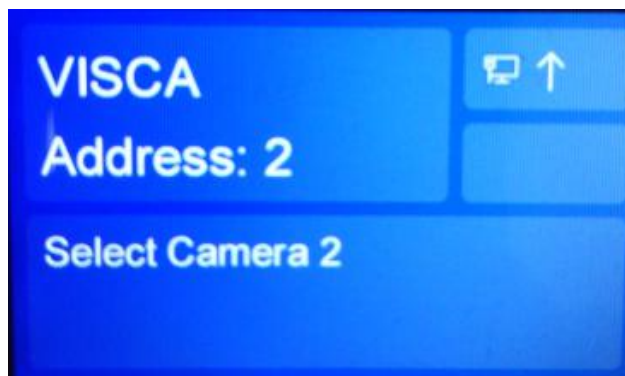
3. Control the joystick operation

The control joystick located in the lower right corner is a control component that quickly rotates the camera and its lens, has three-dimensional control functions of turning left and right, up and down. Camera turns to the left when joystick rotates to left, camera rotates upward when joystick is up, the pan/tilt speed is adjusted by the "PTZ SPEED" knob.

When rotating the joystick, can control the camera lens Lens expansion. The speed of viewing far and close-up can be controlled by "PTZ SPEED".

4. Preset setting

The preset position is an operation of pointing the camera lens at a specific location in advance. After setting the preset position, when operator calls the preset number, the camera will turn to object location quickly.
The operation is as follows:

First operate the joystick to align the lens to the position, press the "SET" button (will remain red when setting preset positions).
Press number 1 of the number area(1-0) , then complete the preset number 1 setting.
The keyboard display is as follows:

Operate the joystick to a second point, and enter different numbers in sequence. Note that the operator needs to remember the preset positions and numbers.
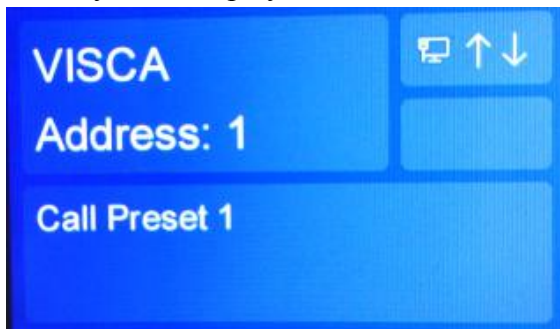
10 preset positions can be set for each camera through this keyboard. The preset number of each camera is from No. 1 to No. 0.

5. Call preset

When the three buttons "ADDR", "SET" and "RESET" are all off, the number area (1-0) is in calling preset mode.
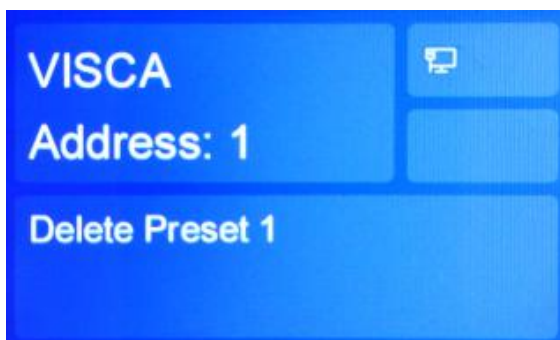
Select number 1, then call the preset 1.
The keyboard display is as follows:

6. Delete preset

Press the "Reset" button (will remain red when deleting preset positions).
Select number 1, then delete the preset 1.
The keyboard display is as follows:

7. Exposure mode selection

Press "AE AUTO" button to trigger auto exposure mode;
Rotate the "BRIGHT" knob that triggers the brightness priority, which can adjust the brightness of the camera, "+" to increase the brightness, "-" to reduce the brightness;
Rotate the "IRIS" knob that triggers the aperture priority, which can adjust the aperture of the camera, "+", and "-" to reduce the aperture.

8. White balance mode selection

Press the "WBC MODE" button to cycle the white balance modes ("Auto White Balance", "Indoor", "Outdoor", "One push", "ATW", "Manual White Balance");
Rotate the "RGAIN" knob that triggers the manual white balance mode, which can adjust the depth of red, "+" the red becomes darker, and the "-" becomes lighter;
Rotate the "BGAIN" knob that triggers the manual white balance mode, which can adjust the depth of blue, "+" the blue becomes darker, and the "-" becomes lighter.

9. The camera menu call

Press "MENU" button for about 2 seconds to call the camera menu.
Use the joystick to switch the item up and down, press the button on the   joystick to confirm. Press the "MENU"for 2 second again to exit and save the modified item.

10. Camera pan-tilt speed adjustment

Rotate the "PTZ SPEED" knob to adjust the joystick to control camera pan, tilt, and zoom speed.
According to the point on the keyboard logo, small point direction of slow speed, the speed of the speed of large dots.

11. "Zoom" button to use

Press "ZOOM" button "TELE" to control the lens focal length.
Press the "ZOOM" button "WIDE" to control the short focal length of the lens.

12. Manual, automatic focusing

Rotate the "FOCUS" button to trigger the manual focus mode, and turn to the "NEAR" side to control the camera lens focus to close, rotate the "FAR" end to control the camera lens focus;
Press "AUTO" button to trigger auto focus