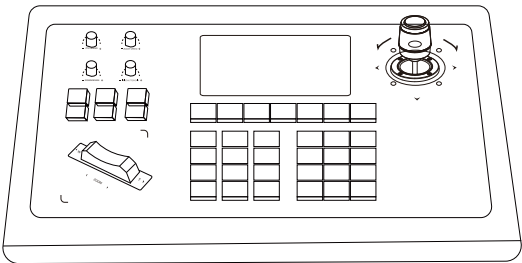# Conference Control Keyboard

User Manual

Version V1.1

1. Product Overview

1.1 Product Description

This video conference ptz joystick is made of sheet metal and scratch-resistant Pc matte film, and the aluminum die-casting surface design with a power-bottomed bottom shell. The appearance is simple and beautiful. It adopts the industrial-grade Lcd panel. Excellent display and the characters are delicate and clear. It supports VISCA, NDI, ONVIF protocols, and VISCA is fully compatible and extensible. Built in web server makes the configuration interface simple and clear, and easy to operate. It only takes few steps to achieve perfect control of the video conferencing camera.

1.2 Product Features

(1) Support two control modes: network mode and analog mode, and have the independent IP address in network mode.
(2) Support VISCA, VISCA over IP, NDI, Onvif, PELCO-P, PELCO-D protocols, and VISCA is fully compatible.
(3) Support software control of conference cameras.
(4) Adopt high-quality variable speed 4D joystick control. Rotate the joystick and control the conference camera omnidirectional movements.
(5) Adopt addable seesaw to adjust the camera focus.
(6) Support IE browser to add camera configuration parameters.
(7) Support up to 256 cameras shortcut control buttons for quick and easy operation.
(8) Support standard POE power supply.

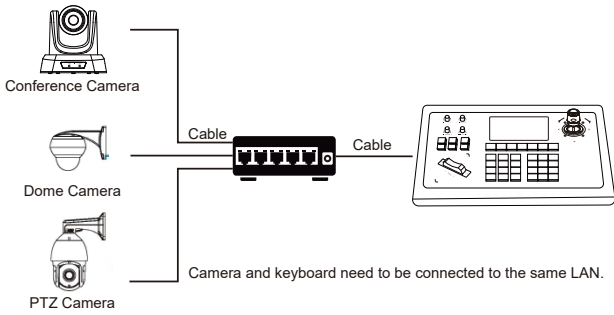## 2. Product Interface Description
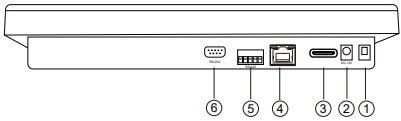
Number	Name	Function
1	Power	Power switch
2	DC12V	Power interface: standard5.5/2.1 power interface DC12V2A±10%
3	USB	Using for joystick upgrading
4	Ethernet	Ethernet /NDI/ RJ-45 (PoE) Network Connection Support 802.3af PoE power
5	RS485 / RS422	Support VISCA/PELCO-D/PELCO-P with full compatibility
6	RS232	Support VISCA/PELCO-D/PELCO-P

## 2.1 Product Connection Diagram

2.1.1 Network Connection

Network Mode: Connection diagram of controlling PTZ camera via VISCA, NDI, ONVIF

Conference Camera
Dome Camera
PTZ Camera

Camera and keyboard need to be connected to the same LAN.

Connect the camera and joystick controller in the same LAN and ensure their IP address in the same network segment, such as 192.168.1.123 and 192.168.1.111 belong to the same network segment, while 192.168.1.123 and 192.168.0.125 do not belong to the same network segment, so you need to modify the joystick controller or the ptz camera IP address. The joystick controller gets its IP address dynamically.

2.1.2 RS485 Connection

Analog Mode: Connection diagram of controlling PTZ camera Via RS485

Can connect max.256 speed dome

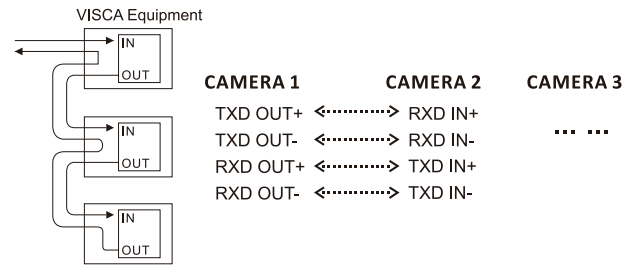RS-485 Daisy-Chain connection   RS-485 Home-Run connection
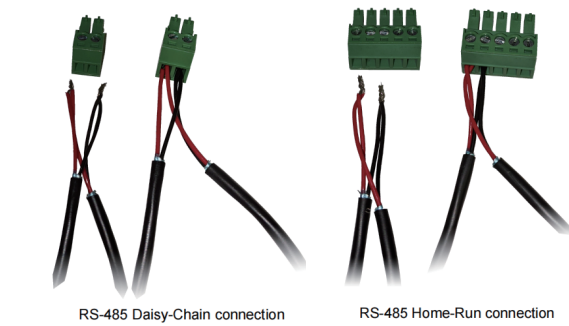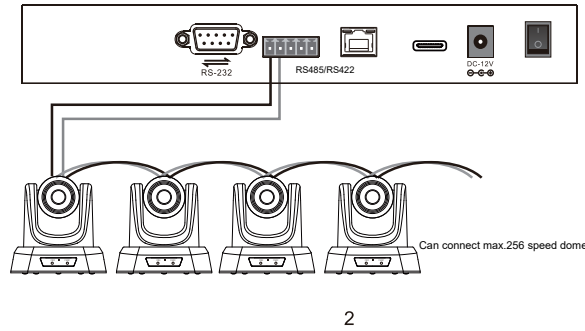
RS485 Control Output: RS485+ of PTZ camera connects to Ta of RS422 on the joystick controller and RS485 - of PTZ camera connects to Tb of RS422 on the Joystick controller.

2.1.3 RS232 Connection

The first pin RXD of joystick controller (10pin terminal) connects to the Input interface TXD of camera, the second pin TXD of joystick controller connects to RXD of camera, the third pin of joystick controller connects to GND of camera (also can use the standard RS232 interface (DBO) of joystick controller to connect the camera.)
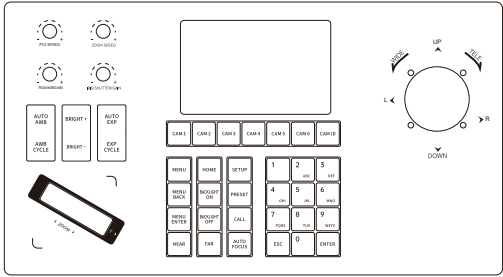
2.1.4 Connection Between Cameras

Use the RS485 bus cascade connection method. The output of camera #1 connects to the input of camera #2 and the output of camera #2 connects to the input of camera #3 and so on as shown in the diagram below:

VISCA Equipment

CAMERA 1   CAMERA 2   CAMERA 3

TXD OUT+ ⟨·········⟩ RXD IN+
TXD OUT- ⟨·········⟩ RXD IN-
RXD OUT+ ⟨·········⟩ TXD IN+
RXD OUT- ⟨·········⟩ TXD IN-

··· ···

3. Button Function Description

3.1 Button Descriptions

[PT Speed]: Twist the Speed Control knob in to cycle to increase or decrease the PT Speed. PT Speed Range: 1-8.
[Zoom Speed]: Twist the Speed Control knob in to cycle to increase or decrease the Zoom Speed. Zoom Speed Range: 1-8.
[Iris+Shutter+Gain]: Turn the knob to the right + or to the left -, and press the knob to switch the Shutter and Gain functions.
[RGAIN/BGAIN]: Red-Blue Gain: Turn the knob to the right+ or to the left -. Press the knob to switch the gain type.
[AWB CYCLE]: White Balance Mode Cycle: Single click to switch between white balance modes. Mode Options: Indoor White Balance/ Outdoor White Balance/ One-push White Balance/ Manual White Balance/ Auto White Balance.
[AUTO AWB]: Auto White Balance: Single click to enter auto exposure mode.
[EXP CYCLE]: Exposure Mode Cycle: Single click to switch between exposure modes. Mode options: Brightness Priority/ Shutter Priority/ Aperture Priority/ Manual Exposure/ Auto Exposure.

[AUTO EXP]: Auto Exposure: Single click to enter auto exposure mode.
[BRIGHT+]: Brightness Increase: Click to increase the brightness setting of the image.
[BRIGHT-]: Brightness Decrease: Click to decrease the brightness setting of the image.
[MENU]: Camera Menu: Press this button to access the camera menu settings for the PTZ camera.
[MENU BACK]: Camera Menu Back: After setting parameters in the camera menu,

click this button to return to the previous level or step-by-step return to the main menu.
[MENU ENTER]: Camera Menu Confirm: Click to enter each menu item and confirm settings.
[NEAR]: Near Focus: Pressing the [NEAR] button makes objects closer to the camera and appear clearer. Long pressing will continuously adjust the focus to near.
[FAR]: Far Focus: Pressing the [FAR] button makes objects farther from the camera and appear clearer. Long pressing will continuously adjust the focus to far.
[AUTO FOCUS]: Auto Focus: Click to enable auto focus for the camera.
[BACKLIGHT ON]: Backlight On: Single click to automatically adjust the exposure of the camera, allowing the subject to be displayed clearly even in backlight conditions.
[BACKLIGHT OFF]: Backlight Off: Single click to restore the camera to its initial exposure state.
[SETUP]: Menu Setup: Click to enter keyboard parameter settings and add devices.
[RPESET]: Set Preset: Click to set a preset position. Enter the number and press [Enter] button to save the preset.
[CALL]: Call Preset: Click to call a preset position. Enter the number and press [Enter] button to call the preset.

Joystick controller setting	Description	
1. Add Network Devices	Camera	Input serial number of the camera: 1-256; After adding all camera information, press [Enter] button to save.
	Protocol	Optional: Visca(UDP), Visca(TCP), Sony Visca, Onvif, NDI
	IP address	Camera IP address
	Port	Input camera port number
	User name& password	Input the correct username and password corresponding to each camera
2. Add Analog Device	Camera	Input serial number of the camera: 1-256; After adding all camera information, press [Enter] button to save.
	Protocol	Select the protocol corresponding to the camera.
	Address code	Select the address code corresponding to the camera.
	Baud rate	Select the baud rate corresponding to the camera.
3. Device List		Added camera list: you can use the joystick to switch up and down, and press the button on the top of joystick or press [Enter] button to confirm the control.

4. Network Properties: Dynamic/Static/DHCP	Dynamic	Switch via joystick left and right, and press [Enter] button to confirm.
	Static	Need to fill in IP, gateway, sub-net mask; same network segment with the camera is required.
	DHCP	Dynamic allocation based on switch settings.
5. Language: EN/CN		Switch via joystick left and right, and press [Enter] button to confirm.
6. Beeps: On/Off		Switch via joystick left and right, and press [Enter] button to confirm.
7. Reset		Double-click [Enter] button to enter reset; Press [Esc] button to cancel
8. System Information		View software, hardware, web versions of the keyboard, gateway, and sub-net masks.

[HOME]: This button function is to get back to the original position of the camera.
[1-9]: Numeric key presets: Long press for preset setting while short press for preset calling.
For Example: Set Preset #1: First move the camera to the position where you want to set the preset, long press the number [1], "PRESET 1" will appear at the front of the screen, then move the camera to another position, short press the number [1] to call and it will turn to preset#1 position which you set.
[ESC]: Escape
[ENTER]: Confirmation

CAM 1	CAM 2	CAM 3	CAM 4	CAM 5	CAM 6	CAM ID

Click the button to enter the corresponding camera.
Mark: 1.Click the address code to switch the camera quickly.
         2.Each CAM enjoys network mode and analog mode.

3.2 Knob Description

Operating	Output Control	Operating	Output Control	Operating	Output Control
	Upward		Downward		Left
	Right		Zoom +		Zoom –

Press the button on top of the Knob to confirm.
1) ZOOM SPEED/PT SPEED Zoom speed/ Control speed: Turn the knob to the right+ and the left-. Press the knob to switch the speed type.
2) IRIS: Turn the knob to the right+ and the left-; Press the knob: no function.
3) RGAIN/BGAIN: Red-blue gain: Turn the knob to the right+ and the left-. Press the knob to switch the gain type.
4) NAR/FAR Focus: Turn the knob to the right+ and the left-. Press the knob: no function.
5) Knob clockwise/ Knob counter clockwise: Zoom+/Zoom-.
6) Addable seesaw: T: zoom +; W: zoom -.
7) Knob top button: Confirmation button: long press to switch between network and Analog modes.

4. Installation &Setup

4.1 Add Network Device

Use the joystick controller to add a analog device as follows:
1) Click the [SETUP]button to enter the following menu:

Device List

select	channel	ip/address	port/baudrate	protocol
☐	1.	1	2400	VISCA
☑	2.	192.168.0.40	52381	VISCA
☐	3.	192.168.0.40	52381	VISCA
☐	4.	192.168.5.170	80	ONVIF
☐	5.	192.168.5.170	80	ONVIF
☐	6.	192.168.5.170	80	ONVIF
☐	7.	192.168.5.170	80	ONVIF

2)Manually add the analog devices,select the channel and protocol corresponding to the camera, select the address and baud rate, Add the username and password of the camera, press [Enter] button to confirm addition.

Manually add

channel	20		
protocol	pelcop		
IP		address	1
port		baudrate	9600
username		password	
rtsp username		rtsp passwd	
rtsp url	/stream1		

3) Press [ESC], Press the [CAM 1], The screen shows:

ID:1   ADDR:1

4.2 Add Network device
Use the joystick controller to add LAN devices as follows:
1)Click the [SETUP] button to enter the main menu

Device List

select	channel	ip/address	port/baudrate	protocol
☐	1.	1	2400	VISCA
☑	2.	192.168.0.40	52381	VISCA
☐	3.	192.168.0.40	52381	VISCA
☐	4.	192.168.5.170	80	ONVIF
☐	5.	192.168.5.170	80	ONVIF
☐	6.	192.168.5.170	80	ONVIF
☐	7.	192.168.5.170	80	ONVIF

2)Manually add the device
Note: Make sure the IP address of the camera and keyboard controller in the same segment.
For Example: Camera IP address: 192.168.0.22, Joystick controller address: 192.168.0. 180
Input the Channel, protocol, the camera IP address and port, and the username and password of the camera, press [SAVE] to add the devices successfully.

Manually add

channel	19		
protocol	onvif ∨		
IP	192.168.0.22	address	1
port	8080	baudrate	2400 ∨
username	admin	password	admin
rtsp username	admin	rtsp passwd	admin
rtsp url	/stream1		

3)Device List--Modify
Enter Device List and select the device which you want to add through joystick 'UP' and 'DOWN', press the [EDIT]button to modify the camera information.

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Device List

select	channel	ip/address	port/baudrate	protocol
☐	1.	1	2400	VISCA
☐	2.	192.168.0.40	52381	VISCA
☐	3.	192.168.0.40	52381	VISCA
☐	4.	192.168.5.170	80	ONVIF
☐	5.	192.168.5.170	80	ONVIF
☐	6.	192.168.5.170	80	ONVIF
☐	7.	192.168.5.170	80	ONVIF

Device >Modify

protocol	visca(tcp) ∨		
ip	192.168.0.40		
port	52381	address	2
username	admin	baudtare	2400 ∨
rtsp username	admin	password	admin
rtsp url	/streaml	rtsp passwd	admin

4.3 Search Device
When several camera in the same segment of the IP controller, you can use Search Device to add cameras.
Select the right camera you want to add, and press [ADD], input the camera username and Password, the channel you want to add, confirm.
NOTE: Default Protocol is ONVIF, if any other protocols need, use Manually added.

Device List

select	number	address	port	devicename
☐	1.	192.168.0.26	80	ipcamera
☐	2.	192.168.0.40	8080	PTZCamera
☐	3.	192.168.0.43	2000	birddog-7F334
☐	4.	192.168.0.78	8080	PTZCamera
☐	5.	192.168.0.121	8080	PTZCamera

Search Device

username	admin ∨
password	admin
channel	2

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5. Inquiry &Control

1)Press [SETUP] to enter device list, you can see the devices details you added

Device List

select	channel	ip/address	port/baudrate	protocol
☐	1.	1	2400	VISCA
☑	2.	192.168.0.40	52381	VISCA
☐	3.	192.168.0.40	52381	VISCA
☐	4.	192.168.5.170	80	ONVIF
☐	5.	192.168.5.170	80	ONVIF
☐	6.	192.168.5.170	80	ONVIF
☐	7.	192.168.5.170	80	ONVIF

2)Press the button on the top of the joystick from camera 1-6 and [ENTER] to select the camera you want to control.
3)When the Screen shows the connection is successfully, which means the joystick controller had been connected to this IP device. At this time, you can control the PTZ, ZOOM, Preset Setting, etc.
4)System Set & Network Set

System set

language	English ∨
sound	OFF
System	factory reset
	restart upgrade
version	
	☑ visca echo code opened

Network

type	STATIC ∨
ip	192.168.0.37
mask	255.255.255.0
gateway	192.168.0.1
DNS	114.114.114.114
	☑

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6. Network Configuration

6. 1 Home connection & Login
Well connect the joystick controller power cable and connect the network cable. After the joystick controller startup is completed, it will display its IP address: 192. 168. x. xxx on screen. Enter this IP address to the browser to access the page configuration. The initial username: admin; password: blank.
1). Connect the joystick controller and computer to the same LAN, enter the joystick controller IP address to the browser. The page display as follows:

Login

👤 admin ✕

🔒

Login

2). Default username: admin; password: blank.
3). Enter device web interface, the page display as follows:

Device Management ⚙ Settings

Channel	IO Channel	IP	Port	Protocol(network)	Baudrate	Address	Protocol(analog)	Operate
1	1	192.168.0.112	1259	SONY VISCA(UDP)	9600	1	VISCA	✏
2	1	192.168.0.112	1259	VISCA(UDP)	9600	1	PELCO-D	✏
3	3	192.168.0.112	5678	VISCA(TCP)	9600	1	PELCO-P	✏
4	1	192.168.0.112	80	ONVIF	9600	4	PELCO-P	✏
5	1	192.168.0.14	52381	VISCA(UDP)	4800	3	PELCO-D	✏
6	1	192.168.0.42	81	ONVIF	19200	3	PELCO-P	✏
7	1	192.168.5.170	80	ONVIF	9600	25	PELCO-D	✏

🔍 Search Device
🖉 Add Manually

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ADD ✕

Camera:	8~256
Network:	
Protocol	VISCA(UDP) >
IP	
Port	
Analog:	
Protocol	VISCA >
Baudrate	1200
Address	1~7

Save

4). After entering the device home page, you can view the details of the device parameters, which can be changed.
5). Click ✎ to add and modify the device parameters in the LAN.
Input the device number corresponding IP address, port number and user name and click save.
Note: When entering the joystick controller web interface to add a device successfully, which will be displayed on the LCD screen of the joystick controller. After adding the device on the web interface successfully, click the joystick controller corresponding number to control the camera.

6. 2 WEB Interface setup
Network settings can modify the device's IP acquisition method and port parameters, as shown below:

Network

Network Type	STATIC
IP Address	192.168.0.11
Netmask	255.255.255.0
Gateway	192.168.0.1
DNS1	8.8.8.8
DNS2	114.114.114.114
MAC	3A:2D:75:FB:9B:2E

Save

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Dynamic Address(DHCP)(Default acquisition method):The joystick controller will request an IP address from the router automatically. After the request is successful, it will be displayed on the joystick controller's display. The display format is: " Local IP: 192 .168 .x . xxx " .
Static Address(STATIC): When the user wants to set the network segment by himself modify the network type to a static address and fill in the information of the network segment that requires to be modified.

6. 3 System upgrade

Upgrade

Browse Upgrade

Upgrade function is used as the maintenance and update joystick function. After entering the upgrade page, select the correct upgrade file and click "start". The device will automatically restart after the upgrade is completed.
Note: Do not perform any operations against the device during its upgrade process, and do not power off or disconnect the network!

6. 4 System Reset

Reset

Reset

When clicking the device to reset, the joystick controller will remove all data, and the network will automatically default to a static IP. Recommended caution operation.

6. 5 Restart & Version

Restart

Restart

Version

Hardware	V1.0.1-190823
Software	V5.3.2-20230905
Web	V3.0.6-20230905

Save

After the device is used for a long time, you need to restart it for maintenance. Click Restart to restart the camera.

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7. Troubleshooting

LCD Display shows "Control Failure"
This can occur when the controller doesn't receive a response from the camera.
1) Please check that the network jacks you are using are active.
2) Please check that the network cable you are using is not failing.
3) Please check that the camera is supplying an Acknowledgement and Completion response.
The joystick isn't controlling any cameras at all
This can occur when the camera(s) and/or joystick aren't properly set up.
1) Check that the network jacks you are using are active.
2) Check that the network or serial cables you are using are not failing.
3) Check that the camera control address matches the joystick control address.
4) Check that you are in the correct control mode. Hold the Joystick Controller button for 3+ seconds to toggle between serial and Network control.
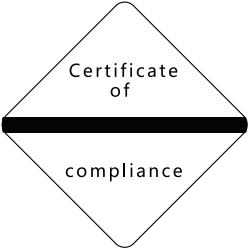**Multiple cameras are being controlled at once**
This can occur when multiple cameras are set to the same joystick control address. Check the camera's control addresses and ensure that each camera has a unique address.
a. Open the joystick OSD menu and select option 3. Device List: Inquire. Check that none of the connected cameras have the same control address.
b. Log into the Web UI and select Devices. Check that none of the connected cameras have the same control address.
Note：
(1) Add device for manual addition
(2) Enter the correct port number and device connection protocol in Add Device.

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Certificate of compliance

Q.A.
QC PASSED