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## Parameters & Specs

<b>Communication &amp; Control Interface</b>	
RS422/RS485 Interface	Phoenix Contact 4 pin 3.81mm Terminal
RS232C Interface	DB9 Male Interface
LAN Interface	RJ45 Female Interface
Power Supply	JEITA type4 Female Interface
Upgrade Online	Micro USB Female Interface

<b>Camera Control or Operation</b>	
Supports up to Control Cameras	5
Communication Protocol	VISCA, PELCO P/D, UDP
Number of LED Displays	4 Units Color LED Display Screen
Number of Camera Channel	5
Ininitely variable knobs	4
Joystick	2-Axis
Zoom Mode	Tele-Wide Bridge Keys
Buttons	17 Silicon Button
Presets Short keys	5 Presets or Max 10 Presets for selection per Each Channel
Focus Mode	Auto/ Manual/ OPT
Pan/Tilt Rotation Speed	7-Level Adjustment
Zoom In/Out Speed	7-Level Adjustment
AE Mode	The mode can be switched arbitrarily, and the value can be adjusted
WB Mode	
Camera Menu	One-keys for call

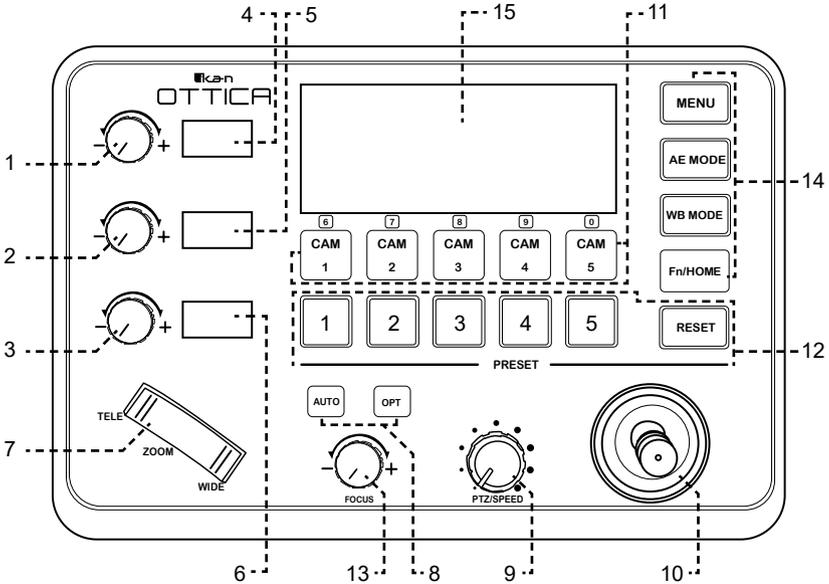
## Parameters & Specs (continued)

<b>Control Signal Format</b>	
Baud Rate	2400bps, 4800bps, 9600bps, 19200bps, 38400bps
Date Bits	8 Bit
Stop Bit	1 Bit
Parity Bit	None
Internet Protocol	UDP / VISCA OVER IP

<b>Power Supply and Consumption</b>	
Rated Voltage	DC 12V / Power Over Ethernet (Optional)
Rated Current	0.3A max
Max Power Consumption	3.6W

<b>Physical &amp; Others</b>	
Password Privacy Protection	Yes
Kingston's Lock Holes	Yes
Works Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ +60°C / -4°F ~ 140°F
Working Environment	Indoors
Dimensions (L x W x H)	244 x 164 x 48mm
G.W	1.1 kg
Accessories	Phoenix Contact 4 pin 3.81mm Terminal / Power Adapter / User Manual

# Description of Button & Knob Function



1. This Rotation Knob is used to adjust the Camera Exposure Parameter or Red Gain Value. Turning the knob to the right increases the value, while turning it to the left decreases the value.

2. This Rotation Knob is used to adjust the Camera Exposure Parameter or Blue Gain Value. Turning the knob to the right increases the value, while turning it to the left decreases the value.

3. This Rotation Knob is used to adjust the Camera Exposure Parameter. Turning the knob to the right increases the value, while turning it to the left decreases the value.

4. LED Display shows real-time items and parameter values adjusted by “knob 1”

5. LED Display shows real-time items and parameter values adjusted by “knob 2”

6. LED Display shows real-time items and parameter values adjusted by “knob 3”

7. Zoom Bridge Key is used to control the camera’s Zoom In/Out function. For example, pressing the TELE end of the bridge key zooms in on the object in the TELE direction. When you apply more pressure, the Zoom Speed increases.

## 8. Focus Function Zoom.

When the Backlight of the [AUTO] button is lit up, it indicates that the current focusing mode is automatic. When the Backlight of the [AUTO] button is turned off, it means that the current focus mode has been changed to manual. Users can press this button to switch between the modes.

[OPT key] is used to trigger the single focus of the camera. At the same time, the camera enters the one-shot autofocus mode.

9. PTZ Speed Adjustment Knob: This knob is used to adjust the speed of Camera Pan, Tilt, and Zoom, with a total of 7 gears. The current gear will be displayed on the LED Display. The lower the gear value, the slower the pan/tilt rotation speed or the zoom speed of the camera controlled by the keyboard.

10. 2-Axis Joystick: The joystick supports controlling the camera's Up/Down, Left, and Right movements. When the camera or keyboard menu is open, the joystick is used to control the menu cursor's Up/Down and Left/Right movements and modify parameters.

11. Channel Button Zone [CAM1] to [CAM5] are shortcut keys for camera channels, which can be freely switched and selected according to your needs. When you select any camera channel, the backlight of the corresponding camera channel will light up in green, and all the parameters and settings of the keyboard will change to the current channel.

Note: The communication parameters (address ID, protocol, baud rate, IP address, port number, etc.) of each channel can be set individually. It supports the mixed use of multiple protocols across different channels.

## 12. Focus Function Zoom.

[NUMBER KEYS]

SETTING PRESETS: Long press and hold the number key for 2 seconds (e.g., [Number key 1]). When the screen displays "Set Preset 1," it means that Preset 1 has been saved.

CALLING PRESETS: Short press the preset number to call the presets (e.g., [Number key 1]). When you press the [Number key 1], the screen displays "Show Preset 1," indicating that Preset 1 has been called.

[RESET] This button is used to clear presets or reset compound keys for presets expansion. When the System Menu selection is set to "5 Presets Mode," you can press [RESET]+[Number keys] to clear the preset settings.

After pressing the [RESET] button, the green backlight will start to flash. Press the preset number to be cleared (e.g., [RESET] + [number key 1]). At this time, the flashing of the green light on the [RESET] key stops, and "Reset Preset 1" is displayed on the screen, indicating that preset 1 has been cleared.

When the menu selection is set to "10 Presets Mode," the [RESET] button is changed to a presets expansion compound key. It is used to set and call preset positions 6-10.

To set Presets 6-10, press [RESET] + [CAM1-CAM5]. The number keys [1-5] and [CAM1-CAM5] will light up in green simultaneously. The camera channel keys [CAM1-CAM5] will be changed to number keys 6-10 for presets. Users can now set presets 6-10.

To set Preset 6, long-press [CAM1]. When "Set Preset 6" is displayed on the screen, it means that Preset 6 has been saved.

To call Presets 6-10, press [RESET]. At this time, the number keys [1-5] and [CAM1-CAM5] will light up in green simultaneously. The camera channel keys [CAM1-CAM5] will be changed to number keys 6-10 for presets. Users can now call presets 6-10.

To call Preset 6, press [CAM1]. When "Show Preset 6" is displayed on the screen, it means that Preset 6 is being called.

Note: In 10 Presets Mode, all presets cannot be cleared using the [RESET] button. They can only be replaced by new presets.

13. FOCUS Knob This knob is used to adjust the camera's focal length. Rotating it to the right adjusts the focus length nearer, while rotating it to the left adjusts the focus length farther. When using this function, the keyboard's focus mode will change to manual. It is not available in AUTO mode.

#### 14. Function Key Zone

[ MENU KEY ] This key is used to turn the Camera Menu ON/OFF. Long-pressing it for 3 seconds will turn on the Keyboard System Menu.

[ AE MODE KEY ] This key is used to change the automatic exposure mode of the camera. Each time it is pressed, the camera switches to a different exposure mode. Depending on the selected exposure mode, the corresponding functions of Knob 1, Knob 2, and Knob 3 vary. The current mode is displayed in real-time on the display located to the right of the knob.

The specific functions of the knobs are shown in Table 1:

Exposure Mode	Knob 1	Knob 2	Knob 3
Auto	NOT USED	NOT USED	Exposure Compensation
Manual	Shutter	Iris	Gain
Shutter Priority	Shutter	NOT USED	Exposure Compensation
Iris Priority	Iris	NOT USED	Exposure Compensation
Brightness Priority	Iris	Gain	Exposure Compensation

Table 1

[ WB MODE KEY ] This key is used to change the White Balance mode of the camera. Each time it is pressed, the camera will switch to a different WB mode. Depending on the selected WB mode, the corresponding functions of Knob 1 and Knob 2 vary.

The specific functions of the knobs are displayed in Table 2.

White Balance Mode	Knob 1	Knob 2
Auto	NOT USED	NOT USED
Manual	Red Gain	Blue Gain

Table 2

[ FN KEYS ] This key is reserved for adding custom functions. The factory default state is as follows: a short press of this key sends the command to enter the camera's sub-menu, while a long press of this key for 3 seconds returns the camera to its home position.

15. LED DISPLAY It is used to display real-time current status information and settings of the keyboard, including IP address, port number, serial port address, communication protocol, baud rate, and other information. The brightness of the display can be adjusted through the keyboard menu.

When the selected camera brand does not match the camera being used, the parameter values displayed on the screen corresponding to knobs 1, 2, and 3 may not match the actual parameters of the camera.

If the camera you are using is not listed in the Camera Brand options, please contact our sales or reseller.

Additionally, the list of commands and AE values settings will be needed from your camera vendor.

Execution Command			
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Indoor	8x 01 04 35 01 FF	Indoor mode
	Outdoor	8x 01 04 35 02 FF	Out door mode
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	ATW	8x 01 04 35 04 FF	Auto Tracing White Balance
	Manual	8x 01 04 35 05 FF	Manual Control Mode
	One Push Trigger1	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Reset	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain
CAM_BGain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter priority Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris priority Exposure mode
CAM_Shutter	Bright	8x 01 04 39 0D FF	Bright Mode(Manual control)
	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03 FF	
Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position	
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position
	AE Gain Limit	8x 01 04 2C 0p FF	p: Gain Position (4 to F)
CAM_Bright	Up	8x 01 04 0D 02 FF	—
	Down	8x 01 04 0D 03 FF	—
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: Bright Position
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exposure Comp Amount Setting
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	

Inquiry Command			
CAM_WBModelInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	In Door
		y0 50 02 FF	Out Door
		y0 50 03 FF	One Push WB
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModelInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompModelInq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position

Shutter Speed	/	59.94/29.97 mode	50/25 mode
	15	1/10000	1/10000
14	1/6000	1/6000	
13	1/4000	1/3500	
12	1/3000	1/2500	
11	1/2000	1/1750	
10	1/1500	1/1250	
0F	1/1000	1/1000	
0E	1/725	1/600	
0D	1/500	1/425	
0C	1/350	1/300	
0B	1/250	1/215	
0A	1/180	1/150	
09	1/125	1/120	
08	1/100	1/100	
07	1/90	1/75	
06	1/60	1/50	
05	1/30	1/25	
04	1/15	1/12	
03	1/8	1/6	
02	1/4	1/3	
01	1/2	1/2	
00	1/1	1/1	

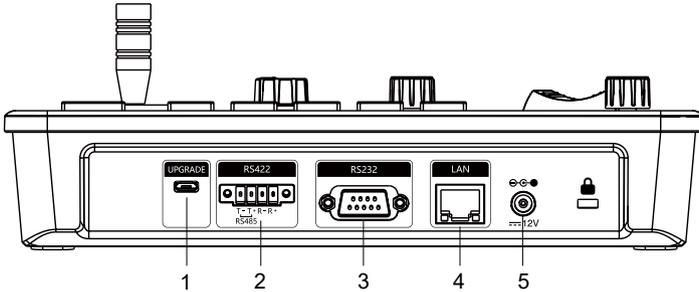
Exposure Comp	Display		Compensation values	
	0E	7		+10.5dB
0D	6		+9dB	
0C	5		+7.5dB	
0B	4		+6dB	
0A	3		+4.5dB	
9	2		+3dB	
8	1		+1.5dB	
7	0		0dB	
6	-1		-1.5dB	
5	-2		-3dB	
4	-3		-4.5dB	
3	-4		-6dB	
2	-5		-7.5dB	
1	-6		-9dB	
0	-7		-10.5dB	

0F	+43dB
0E	+39dB
0D	+36dB
0C	+33dB
0B	+30dB
0A	+27dB
9	+24dB
8	+21dB
7	+18dB
6	+15dB
5	+12dB
4	+9dB
3	+6dB
2	+3dB
1	0dB

11	F1.6
10	F2
0F	F2.4
0E	F2.8
0D	F3.4
0C	F4
0B	F4.8
0A	F5.6
9	F6.8
8	F8
7	F9.6
6	F11
5	F14
0	CLOSE

Bright	IRIS		GAIN	
	1F	F1.6		+43dB
1E	F1.6		+39dB	
1D	F1.6		+36dB	
1C	F1.6		+33dB	
1B	F1.6		+30dB	
1A	F1.6		+27dB	
19	F1.6		+24dB	
18	F1.6		+21dB	
17	F1.6		+18dB	
16	F1.6		+15dB	
15	F1.6		+12dB	
14	F1.6		+9dB	
13	F1.6		+6dB	
12	F1.6		+3dB	
11	F1.6		0dB	
10	F2		0dB	
0F	F2.4		0dB	
0E	F2.8		0dB	
0D	F3.4		0dB	
0C	F4		0dB	
0B	F4.8		0dB	
0A	F5.6		0dB	
9	F6.8		0dB	
8	F8		0dB	
7	F9.6		0dB	
6	F11		0dB	
5	F14		0dB	
0	CLOSE	0		

# Interface Function and Connection Diagrams

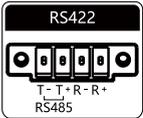


## 1. Upgrade Interface

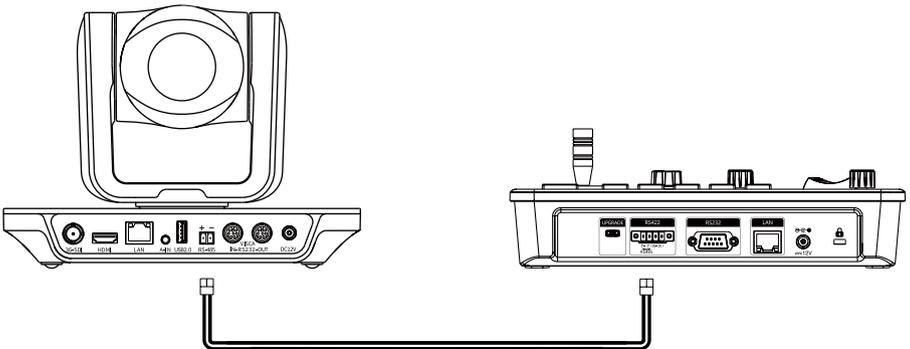


The interface is used for upgrading the hardware of the keyboard using a laptop. It involves a direct connection between the PC and the keyboard using a Micro USB cable. The upgrade is performed using our upgrade tools software.

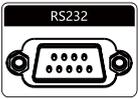
## 2. RS422/RS485 Interface



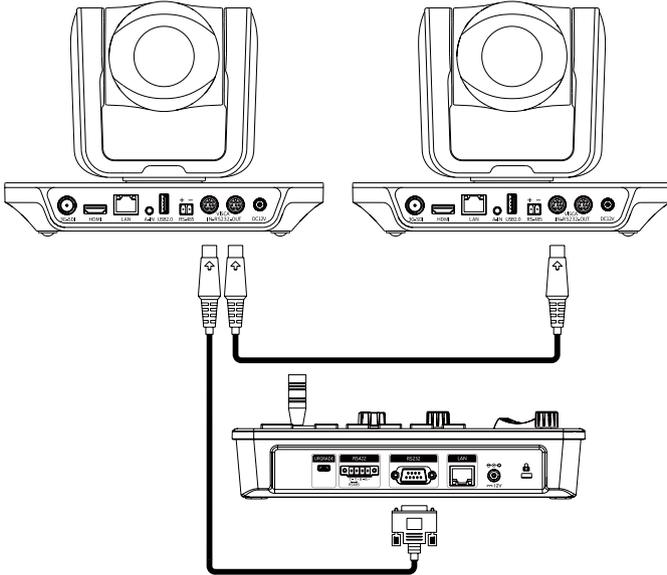
This interface is used for connecting the camera via RS422 or RS485. Please refer to the detailed connection diagram shown in the following pictures:



### 3. RS232 Interface



This interface is used for connecting the camera through RS232. Please refer to the detailed connection diagram shown in the following pictures.

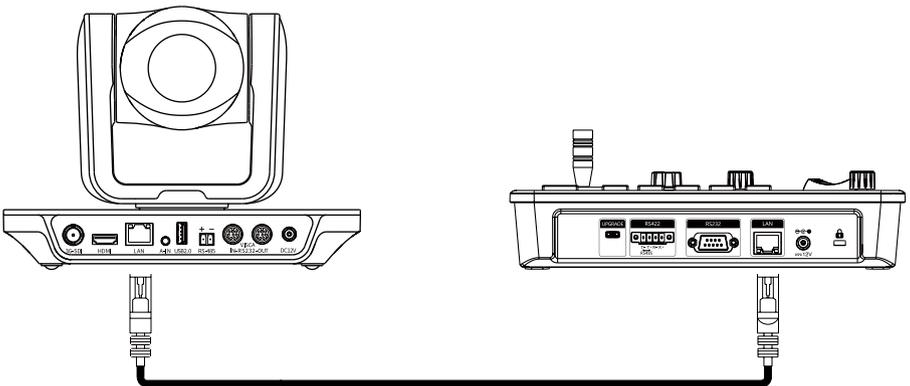


### 4. LAN Interface

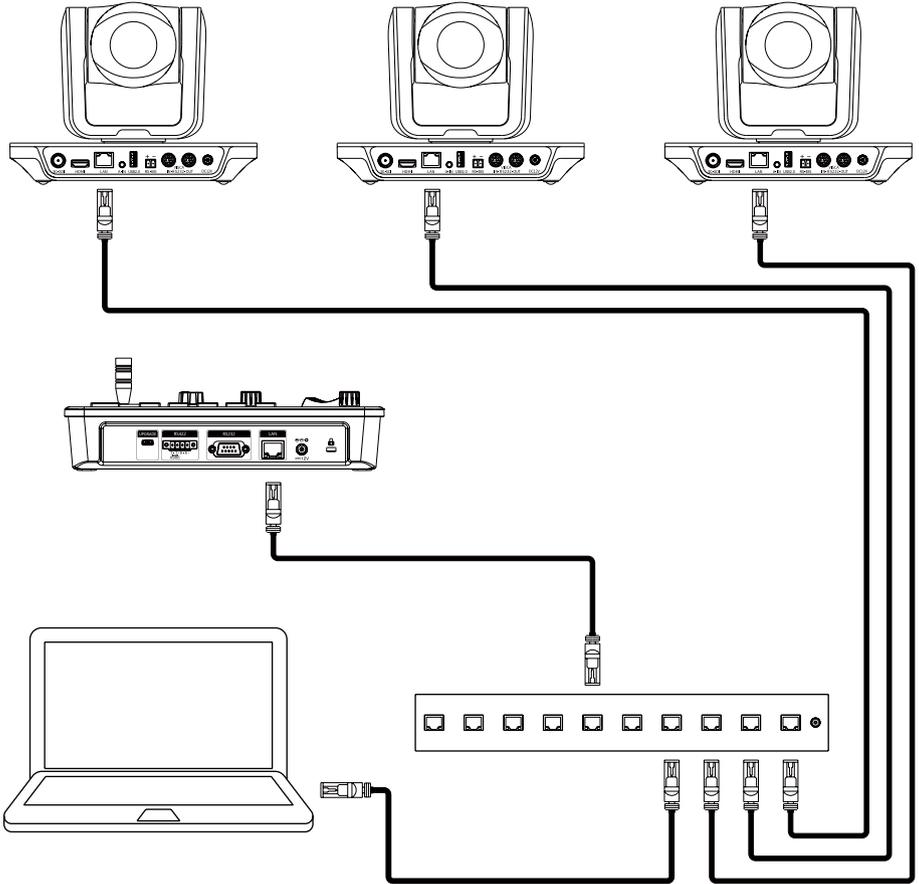


The LAN interface is used for connecting to a network switch or other devices. For network PTZ cameras, please refer to the detailed connection diagram shown below:

Connect with a single unit network PTZ camera using the connection diagram shown below:



Connect multiple cameras using the LAN interface. The detailed connection diagram is shown below. When connecting multiple cameras, you need to set the IP address of each camera separately using a computer.



### 5. DC Power Supply Interface



This interface is the power supply interface. You can directly connect it to the power adapter. Please do not use a non-original power adapter.

# System Menu Operation Instructions

## System Menu Operation & Explanation

1. Long-press [ MENU ] for 3 seconds to turn on the Keyboard system Menu.
2. The joystick moves up and down: controls the system menu cursor to move up and down or change the parameters of the current menu item.
3. The joystick moves right: enters the current menu item or saves and exits the current menu item.
4. The joystick moves left: exits the current menu item without saving changes.
5. Press [MENU] to exit the System Menu.
6. Press the number keys [0] to [9]: to input numerical values (only valid for menu items that require numerical input), for example, setting IP address or port number.
7. When the current value requires number input, the green backlight of [CAM1] to [CAM5] lights up, and at this time, [CAM1] to [CAM5] correspond to the numbers 6 to 0 displayed above the buttons.

## System Menu

1. Long press [MENU] for 3 seconds to turn on the Keyboard system Menu.
2. The joystick moves up and down to control the menu cursor, allowing it to move up and down.

- |   |
|---|
| <ol style="list-style-type: none"><li>1. System Setting</li><li>2. COMM Setting</li><li>3. Ethernet Setting</li><li>4. Password Setting</li></ol> |
|---|

## System Settings

The joystick moves the cursor up and down to select “System Setting”, and then moves it to the right to enter the System Setting menu.

[ LANGUAGE ] The joystick moves up/down to select “Language”, then moves to the right to enter the setting. The joystick movement up/down can change the current parameter settings. Swing the joystick to the right to save the current parameters and exit the language setting state. The same procedure applies to operating other menus for settings.

Optional Languages: Chinese, English; other languages can be customized and developed according to customer needs.

- |   |
|---|
| <ol style="list-style-type: none"><li>1. Language: English</li><li>2. LED Display Brightness: Normal</li><li>3. Automatically Standby: Off</li><li>4. Keyboard IP: 192.168.001.088</li><li>5. Port: 52381</li><li>6. Preset Mode: 5 Preset/10 Preset</li><li>7. Factory Default Setting</li><li>8. About Keyboard</li></ol> |
|---|

[ LED DISPLAY BRIGHTNESS ] Adjust the brightness of the LED display: Low, Normal, High.

[ AUTOMATICALLY STANDBY ] Set the keyboard to enter standby mode automatically after a certain period of inactivity. Selectable options: Off, 1 minute, 2 minutes, 5 minutes, 10 minutes, 20 minutes, 30 minutes, 60 minutes.

[ KEYBOARD IP / PORT ] Set the IP address and port number of the keyboard itself. The default IP address is 192.168.1.88, and the default port is 52381.

[ PRESET MODE ] Move the cursor to [ PRESET MODE ], then move right to enter the Presets Mode. Select either 5 Presets or 10 Presets Mode.

[ FACTORY DEFAULT SETTING ] Use this option to restore the keyboard to its factory default settings.

[ ABOUT KEYBOARD ] To review the relevant information of the keyboard, including the keyboard model, firmware version, factory serial number (S/N), and other details.

## Communication Settings

Move the cursor to [ COMM SETTING ], then move right to enter Communication Settings.

[ CHANNEL ] The available channels CAM1~CAM 5 correspond to the buttons [CAM1] ~ [CAM5].

1. Channel:	CAM1
2. Address:	1
3. Baud Rate:	9600
4. Protocol:	VISCA
5. Camera Brand:	SONY

[ ADDRESS ] Set the serial communication address of the corresponding channel. If the current communication protocol is VISCA, the communication address can be selected from 1 to 7. If the current communication protocol is PELCO-D/P, the communication address can be selected from 1 to 255.

[ BAUD RATE ] Set the serial communication baud rate of the corresponding channel. Available options: 2400, 4800, 9600, 19200, 38400bps.

[ PROTOCOL ] Set the serial communication protocol of the corresponding channel, including both serial communication protocol and internet communication protocol. Available options: VISCA, PELCO P/D, UDP.

[ CAMERA BRAND ] Due to the differences in AE/WB parameter values among different camera brands, the actual function of the knob depends on the content displayed on the corresponding display.

Before using, please set the camera brand for the corresponding channel. You can choose from options such as Ikan, PUAS, SONY, VHD, Minrray, Bolin, and more.

## Ethernet Settings

Move the cursor to [Ethernet Setting], then move right to enter Ethernet Setting.

[ CHANNEL ] The available channels CAM1~5 correspond to the buttons [CAM1]~[CAM5].

[IP Searching] Enter IP Searching Mode to search for the current camera IP addresses and assign camera channels. The screen displays as shown in the picture.

By swinging the joystick up and down, select the camera IP in the list (for example, 192.168.1.162). Move the joystick to the right to select the corresponding camera channel for this IP. Move the joystick up and down to select a different channel (such as CAM 1). Move the joystick to the right to confirm. Now, the camera IP address of the CAM 1 channel will be automatically changed to 192.168.1.162. If it is displayed as “CAM ?”, it means that the IP address or camera channel is not set.

[ PORT ] Set the UDP port of the corresponding channel. It should match the UDP port number of the camera on the current channel.

1. Channel:	CAM1
2. Cam IP:	192.168.1.162
3. Port:	52381

Camera List	
1. 192.168.1.162 >>	CAM 1
2. 192.168.1.163 >>	CAM ?
3. 192.168.1.164 >>	CAM ?

## Password Settings

[ PASSWORD SETTING ] Move the cursor to [Password Setting] and then move right to enter the password.

1. Using Password:	Enabled
2. Modify Password	

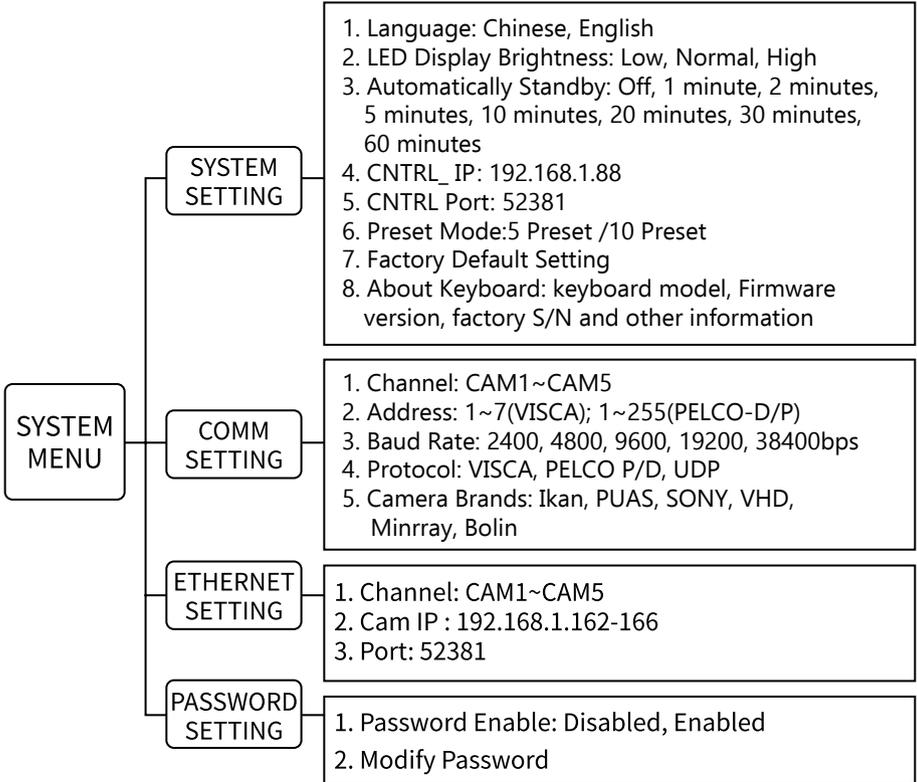
[ USING PASSWORD ] To enable the password function, follow these steps:

1. Change the Password setting to Enable.
2. When the password function is enabled, entering the menu will require a password.
3. The default password is: 8888.

[ MODIFY PASSWORD ] Users have the option to change the password themselves. If the password is not changed, the default password will remain in effect.

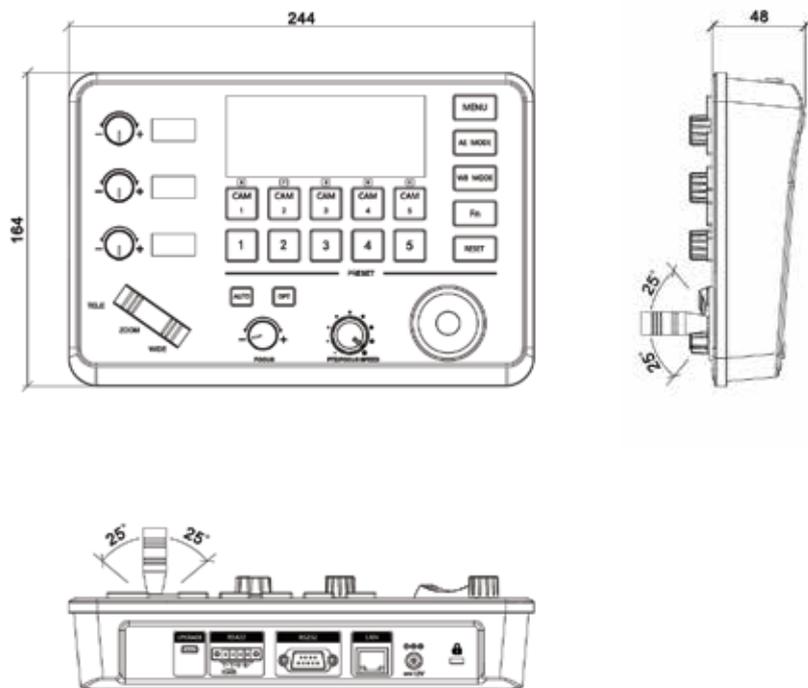
Warning: Please use this function with caution. If the product becomes unusable due to a password set by the customer, the manufacturer does not assume any responsibility.

# System Menu Guide



## Product Dimensions

The size for OTTICA PTZ Controller is as below: (Unit of length: mm)



**Learn More at [www.ikancorp.com](http://www.ikancorp.com)**

## **Support**

Contact email: [support@ikancorp.com](mailto:support@ikancorp.com)

### **CONDITIONS OF WARRANTY SERVICE**

- Free service for one year from the day of purchase if the problem is caused by manufacturing errors.
- The components and maintenance service fee will be charged if the warranty period is expired.

**Free service will not be provided in the Following Situations: (\*Even if the product is still within the warranty period.)**

- Damage caused by abuse or misuse, dismantling, or changes to the product not made by the company.
- Damage caused by natural disaster, abnormal voltage, and environmental factors, etc.

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