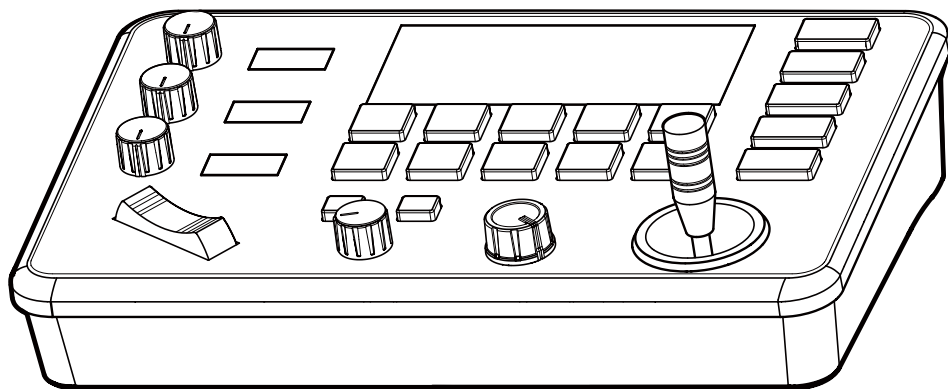


Mini Pro PTZ Controller

User Manual



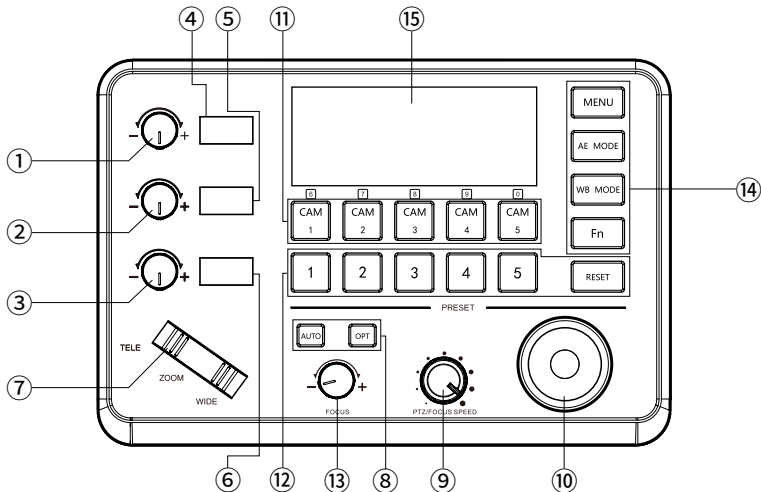
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Parameters & Specs

Communication & Control Interface	
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
Camera Control or Operation	
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
Infinitely variable knobs	4
Joystick	2-Axis
Zoom Mode	Tele-Wide Bridge Keys
Buttons	17 Silicon Button
Presets Short keys	5 Presets 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
Control Signal Format	
Baud Rate	2400bps, 4800bps, 9600bps, 19200bps, 38400bps
Date Bits	8 Bit
Stop Bit	1 Bit
Parity bit	NONE
Internet Protocol	UDP / VISCA OVER IP
Power Supply and Consumption	
Rated Voltage	DC 12V / Power Over Ethernet(Optional)
Rated Current	0.3A max
Max Power Consumption	3.6W
Physical & Others	
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)
Works Environments	Indoor
Dimensions (L× W × H)	244 × 164 × 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 which was to adjustment the Camera Exposure Parameter or Red Gain Value, Turn Right Rotation was to changed the valued Increased, Turn Left Rotation was changed the Valued Decreased.

② This Rotation Knob which was to adjustment the Camera Exposure Parameter or Blue Gain Value, Turn Right Rotation was to changed the valued Increased, Turn Left Rotation was changed the Valued Decreased.

③ This Rotation Knob which was to adjustment the Camera Exposure Parameter, Turn Right Rotation was to changed the valued Increased, Turn Left Rotation was changed the Valued Decreased.

④ LED Display, Real-time display of items and parameter values of adjusted by " knob ① ".

⑤ LED Display, Real-time display of items and parameter values of adjusted by " knob ② ".

⑥ LED Display, Real-time display of items and parameter values of adjusted by " knob ③ ".

⑦ Zoom Bridge Key

It is used to control the camera to Zoom In/Out, for example, press the TELE end of the bridge key, the camera will Zoom in the TELE direction object, When you Press with more Large Pressure, then the Zoom Speed changed more Faster.

⑧ Focus Function Zoon

When the Backlight of [AUTO]Button is Light up, it means that the current focusing mode is the automatic; When the Backlight of [AUTO] Button is Light Off, it means that Current Focus Mode is changed to Manual. User can Press this button to switch the mode.

Description of Button & Knob Function

[OPT key] is used to trigger the single focus of the camera. At the same time, the camera enters the one-shot auto focus 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 display at Led Display. The Gear Value is more small then the pan/tilt rotation speed or the zoom speed of the camera controlled by the keyboard will be more Slowly.

⑩ 2-Axis Joystick

The joystick supports control camera to Up/Down, Left and Right movement.

When the camera or keyboard menu is opened, the joystick is used to control the menu cursor Up/Down, Left/Right movement 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 need. When you select any camera channel, the backlight of the corresponding camera channel will be light up in green, and all the parameters and settings of the keyboard will be changed 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. Support mixed use of multiple protocols through different channel.

⑫ Presets Function Zone

● [Number Keys]

SETTING PRESETS :

Long Press and hold the number key for 2 seconds (such as [Number key 1], when the screen displays "Set Preset 1" means that preset 1 has been saved)

CALL PRESETS :

Short press the preset number to be call Presets, (for example, [Number key 1], when you press the [Number key 1] the screen displays "Show Preset 1", it means that preset 1 has been call).

● [RESET Key]

TO BE CLEAR THE PRESET SETTING

Press[RESET key]+[Number key]to clear the preset position setting.

After pressing the [RESET key], the green backlight starts to flash, Then press the preset number that needs to be cleared, (for example, [RESET]+ [Number key 1], at this time, the green Backlight of button of the [RESET key] stops flashing, and at the same time, "Reset Preset 1" is displayed on the screen, which means that preset 1 has been cleared.

Description of Button & Knob Function

⑬ FOCUS Knob

This Knobs is using to adjustment camera's focal length, Rotation right direction is adjustment focus length near, Rotation Left direction is adjustment focus length Far; (When User using this function, the keyboard's Focus mode will be changed to Manual, It wasn't available on AUTO Mode).

⑭ Function Key Zone

● [Menu Key]

This key is to Turn ON/OFF Camera Menu, Long Press with 3secs will turn on Keyboard system Menu.

● [AE MODE Key]

This key is used to change the automatic exposure mode of the camera. Each time is pressed, the camera changes to different exposure mode. Under in difference of exposure mode, the corresponding functions of Knob 1, Knob 2 and Knob 3 are different. It is shown in real time on the display at 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 changed the White Balance of the camera. Each Time is pressed, the camera will be changed to different WB Mode.Under in difference of WB mode, the corresponding functions of Knob 1, Knob 2 are different.

The specific functions of the knobs are shown 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: short press this key to send the command to enter the Sub-menu of the camera, long press this key for 3 seconds to back Home Position of Camera.

⑮ LED DISPLAY

It is used to display the current status information & Setting information of the keyboard in real time (including IP address, Port number, serial port address, communication protocol, Baud Rate and other information) and keyboard menu, the brightness of the display can be set through the keyboard menu.

Description of Button & Knob Function

When the selected camera brand does not match the camera used, the parameter values displayed on the screen correspond to the knob ① /Knob ② / knob ③ may not match the actual parameters of the camera.

If the camera what you using not on the list of Camera Brand, Please contact with our sales or Reseller.

In additional, the list of Commands and AE Values setting will be need 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
	Bright	8x 01 04 39 0D FF	Bright Mode(Manual control)
CAM_Shutter	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
CAM_Bright	AE Gain Limit	8x 01 04 2C 0p FF	p: Gain Position (4 to F)
	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	pq: ExpComp Position

Description of Button & Knob Function

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
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

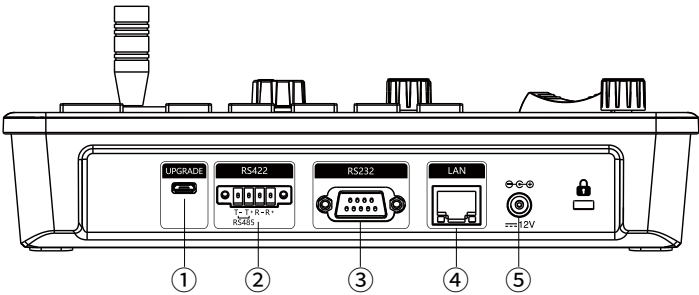
Exposure Comp		Display	Compensation values
	0E	7	+10.5dB
	0D	6	+9dB
	0C	5	+7.5dB
	0B	4	+6dB
	0A	3	+4.5dB
	9	2	+3dB
	8	1	+1.5dB
	7	0	0dB
	6	-1	-1.5dB
	5	-2	-3dB
	4	-3	-4.5dB
	3	-4	-6dB
	2	-5	-7.5dB
	1	-6	-9dB
	0	-7	-10.5dB

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

Gain	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

Iris	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

Interface Function and Connection Diagram

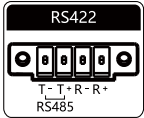


① Upgrade Interface

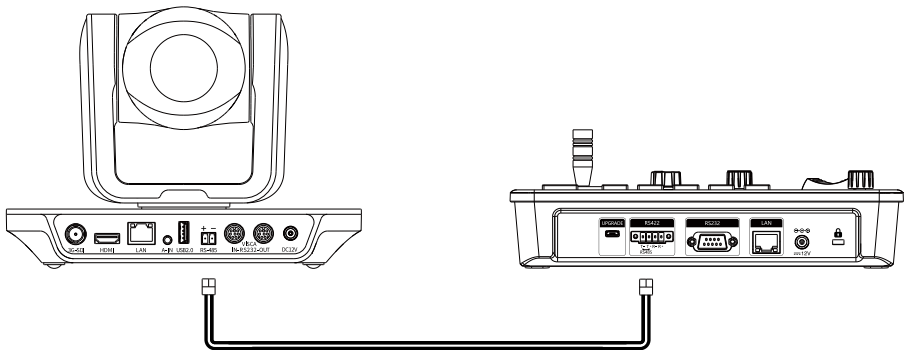


The interface is for upgrade of Hardware of keyboard by Laptop. Using Micro USB Cable direct connection with PC, And Upgrade by our upgrade tools software.

② RS422/RS485 Interface

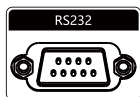


This Interface is using to Connection with Camera by RS422 or RS485,detail connection diagram as follows pictures:

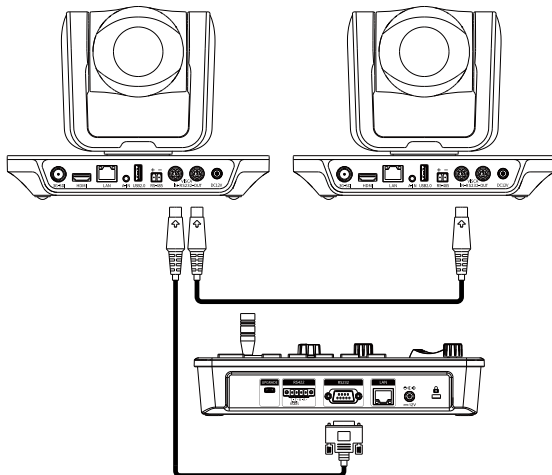


Interface Function and Connection Diagram

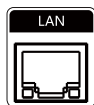
③ RS232 Interface



This Interface is using to connection with Camera through RS232, detail connection diagram as follows Pictures:

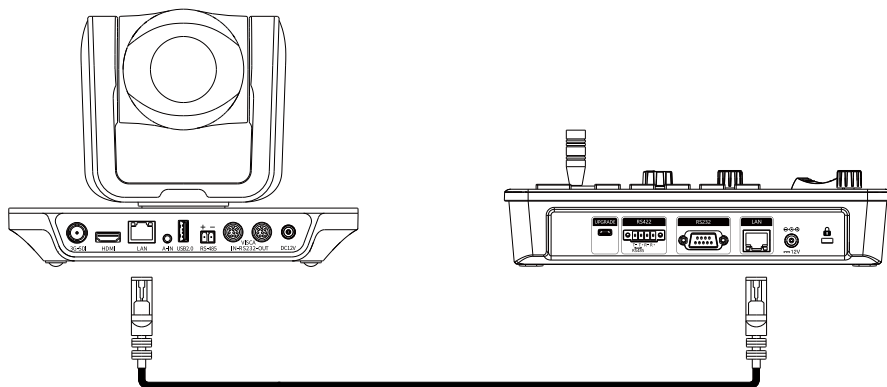


④ LAN Interface



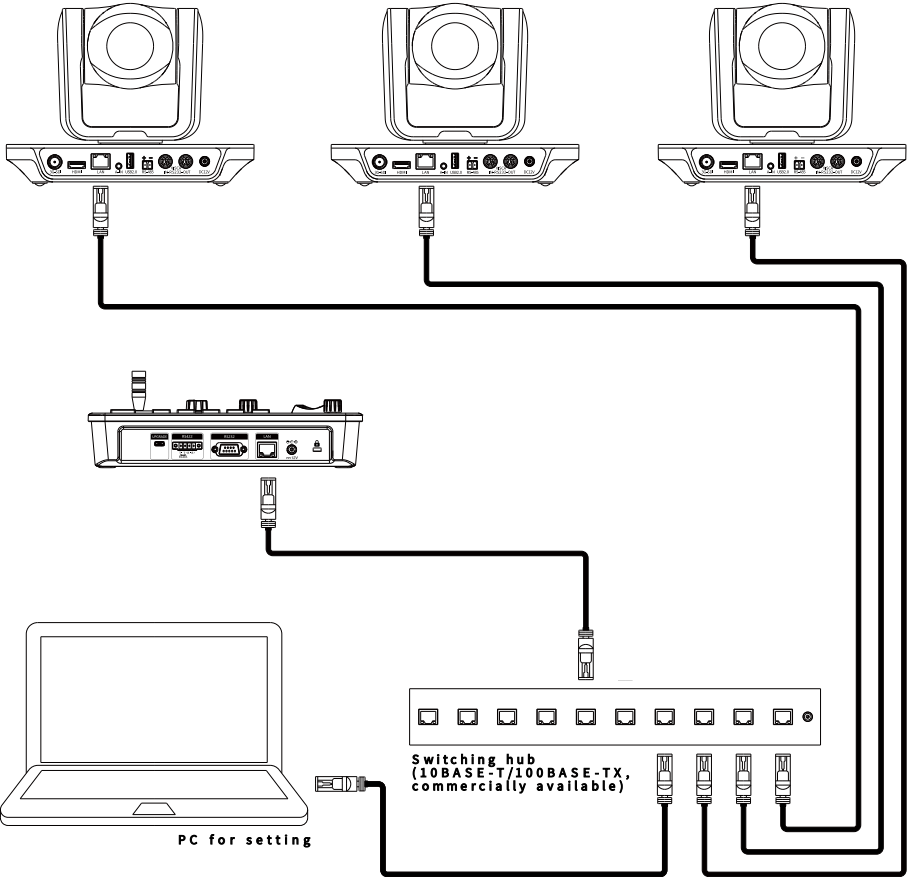
The LAN Interface is using for connection with Network switch or others. Network PTZ Camera, detail connection diagram as follows:

- Connect with Single Unit Network PTZ Camera connection diagram as follows:



Interface Function and Connection Diagram

- Connect with multiple cameras by LAN interface detail connection diagram as follows:
(When connecting multiple cameras, you need to set the IP of each camera separately with a computer).



⑤ DC Power Supply Interface



This interface is the Power supply interface, you can direct connection it with Power adapter; please don't using non-original Power adapter.

System Menu Operation Instructions

System Menu Operation & Explanation

- 1.Long Press [MENU] with 3secs will turn on Keyboard system Menu;
- 2.The joystick swings up and down: control the system menu cursor to move up and down / change the parameters of the current menu item;
- 3.The Joystick swings Right: enter the current menu item / save and exit the current menu item;
- 4.The Joystick swings Left: Exist current Menu item/ No Saved and Exit current Menu item;
- 5.Press [MENU]to exist System Menu;
- 6.Press the number keys[0]~[9]: input numerical value (only valid for menu items that need to input numerical value). example IP Address or Port number setting.
- 7.When the current value is number input, the green backlight of [CAM1]~[CAM5] is Light on, and at this time [CAM1]~[CAM5] Corresponds to the numbers 6~0 on the silk screen above the buttons.

SYSTEM MENU

- 1.Long Press [MENU] with 3 secs will turn on Keyboard system Menu.
- 2.The joystick swings up and down to control the menu cursor to move up and down.

- | |
|---|
| <ol style="list-style-type: none">1. System Setting2. COMM Setting3. Ethernet Setting4. Password Setting |
|---|

SYSTEM SETTING

The joystick swings up and down the Cursor to [System Setting], then Movement right to enter System Setting menu.

● [Language]

The Joystick swings up/down to [Language], then Movement right to enter setting. The Joystick swing up/down can changed the current Parameters setting, Swing the joystick to the right to save the current parameters and exit the language settingstate. The following menus operate setting is same.

- | | |
|--|--|
| <ol style="list-style-type: none">1. Language :2. LED Display Brigtness:3. Automatically Standby:4. Itself IP:5. Itself Port:6. Factory default Setting7. About Keyboard | <ol style="list-style-type: none">EnglishNormalOff192.168.001.08852381 |
|--|--|

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

● [LED Display Brigtness]

Change the brightness of the LED display: Low, Normal, High.

● [Automatically Standby]

Set the keyboard to automatically enter standby mode without any operation within a limited time.

Select-able: Off, 1 minute, 2 minutes, 5 minutes, 10 minutes, 20 minutes, 30 minutes, 60 minutes.

● [Itself IP]

To setting Keyboard itself IP Address / Port Number, default IP is 192.168.1.88, default Port 52381.

● [Factory default Setting]

To change the Keyboard restore to Factory default setting.

System Menu Operation Instructions

● [About Keyboard]

To review the relevant information of the keyboard, including: keyboard model, Firmware version, factory S/N and other information.

COMM SETTING

To move the cursor to[Comm Setting], then Movement right to enter Comm Setting:

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

● [Channel]

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

● [Address]

To set the serial communication address of the corresponding channel.

If the current communication protocol is VISCA, the communication address can be selected from 1~7. If the current communication protocol is PELCO-D/P, The communication address can be selected from 1~255.

● [Baud Rate]

To set the serial communication Baud Rate of the corresponding channel.

Available in: 2400, 4800, 9600, 19200, 38400bps.

● [Protocol]

To set the Serial communication Protocol of the corresponding channel (Including Serial Communication Protocol and Internet Communication Protocol).

Available in: VISCA, PELCO P/D, UDP.

● [Camera Brand]

Due to the differences in the AE/WB parameter values corresponding to different brands of cameras, the actual function of the knob is subject to the content displayed on the corresponding display.

Before use, please set the camera brand of the corresponding channel, you can choose: PUAS, SONY, VHD, Minrray, Bolin...

ETHERNET SETTING

To move the cursor to [Ethernet Setting], then Movement right to enter Ethernet Setting:

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

● [Channel]

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

● [Cam IP]

To set the Cam IP of the corresponding channel, which can be directly input through the number keys. When the number of input digits reaches 3, the cursor will automatically Jump to the next entry.

● [Port]

To set the UDP Port of the corresponding channel, it depend for the UDP Port number of camera at current channel.

System Menu Operation Instructions

PASSWORD SETTING

To move the cursor to [Password Setting], then Movement right to enter Password :

- | | |
|--------------------|---------|
| 1. Using Password: | Enabled |
| 2. Modify Password | |

● [Using Password]

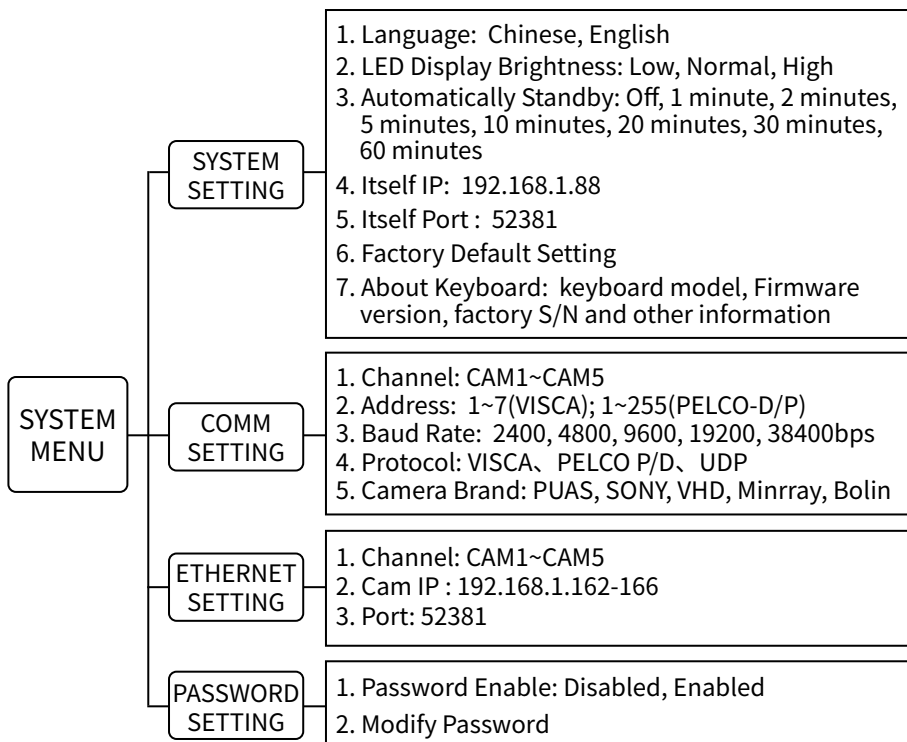
How to Using the Password Function: To changed the Password setting is Enable; When the password function is Enable, a password is required to enter the menu. The default password is: 8888

● [Modify Password]

The user can change the password by himself. If the password is not changed, the password is the default password.

Warning: Please use this function with caution. If the product cannot be used normally due to the password set by the customer, the manufacturer does not assume any responsibility.

SYSTEM MENU GUIDE



Products Dimensions

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

