USER INSTRUCTION
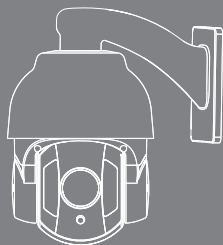
Auto Tracking Mini IR Speed Dome Camera

Special Declaration

Before connecting and using this device, please read this manual carefully and properly preserved for reference in the future.

This manual may contain some inaccurate place in technology, or some printing error. The contents of this manual will update from time to time, but without notice if there is any upgrades; Update contents will be added in new version manual. We will improve or update the product or program of this manual at any time.

Careful Transport

During transport, custody and install process should prevent weight, severe vibration and soak damage to product.

Do Not Disassemble Zoom Camera

In order to well match night vision, we sell IR speed dome camera with zoom camera, please not disassemble zoom camera if there is no technical person.

Power Supply, Video Cable and Control Cable

For power supply cable, video cable and control cable, please adopt shielded cable and independent wiring, can not mix with other cables.

Electric Safety

Should obey all kinds of electric standard when using speed dome camera, make sure signal cable keep enough distance(at least 50m)with high voltage equipment or cables. If it is possible, please take lightning and surge measurement.

Clean

When clean camera housing, please use dry soft cloth to wipe, If it is too dirty, please use neutral cleaner to wipe lightly. Do not use strong or grind cleaner to prevent its housing from scratching.

Strictly Sealed

Prevent liquid or other things get into speed dome housing, else it will cause permanent damage.

Please do not use camera beyond limited temperature and humidity

Speed dome camera working temperature : -25℃ to 50℃, humidity less than 90%.

Please do not install camera near air conditioner's outlet

Under following situation, lens will be fogged because of condensation:

*Use under the environment where the temperature rise and down frequently which caused by the air conditioner power on and off frequently.

*Use in environment which can make glass fog.

*Use in environment full with smoke or dust.

Please do not make camera toward to strong light source, such as the sun

Toward camera to strong light source for a long time will damage the color filter on CCD, then it will make image lose color.

Caution

CONTENTS

1.1 Product Feature

Strong Intelligent Function
- PELCO-D/P, Hikvision, Dahua and other control protocol auto diagnosis.
- 2400.4800,9600 baud rate auto diagnosis.
- Support graphics drawing menu display.
- Support auto tracking function.

Strong Horizontal and vertical rotation control Function
- Max 200° /s high speed rotate function.
- Vector driver technology, ensure P/T function finished in the shortest route, making video image preview more comfortable.
- Precision stepping motor subdivision technology, speed dome's lowest rotate speed reach 0.6 degree per second.   Under high zoom situation, can move image more accurately and stablely.

Preset, Track Scanning, Area scanning and more
- Can set up to 220 pcs preset, each preset contain lens zoom and angle position and so on.
- Can record and display up to 4 group track scanning route, each group max can contain 100 movements.
- After set defined area left and right boundary, speed dome camera can move with defined speed in this area.
- Call defined special preset, can come true continuous pan scan.

OSD English Menu
- Built in English/chinese menu, through menu to display and change speed dome parameter.
- Pan/Tilt angle, zoom ,preset all can be display on screen.

PTZ Control
- Adopt RS485 communication protocol.
- Pan 0-360 degree continue rotate, tilt 0-90 degree with auto flip, no monitor blind spot.
- 0.6°-200° in pan speed,0.8°-75°in tilt speed,the speed can be adjusted automatically according to the lens zoom.

Product Feature

1.2 Function instruction

Address Code Setup

Any operation commands has its own target speed dome camera address code, baud rate and control protocol, single camera only response the operation commands corresponded the same address code, baud rate and control protocol. This IR high speed dome camera 's baud rate, control protocol will be identified automatically by system.

Focus length/Rotate speed auto match technology

When manual adjust, as to long focus length situation, due to the high speed of speed dome camera, even touch joystick lightly will also make image move quickly. Based on human design, IR high speed dome camera can adjust its speed in pan and tilt automatically according to focus length far or near, making manual follow target more simple and easy.

Auto Flip

When operator controls the lens toward the bottom and still press the joystick, at this time lens will auto flip 180 degree then up flip 90 degree, can monitor the back side image directly, which can achieve 180 degree whole continue monitoring.

Set and Call Preset

Preset is a certain position of speed dome camera which includes ptz's pan angle, tilt angle and camera lens focus and other position parameter, when need speed dome camera go to the certain position, call the certain preset directly which saved in the memory. Operator can save and call preset through control keyboard, IR controller and other control equipment faster and easier. This speed dome camera support 220pcs presets.

Lens Control

(1) Focal Length Control

User can adjust focal length far and near through control keyboard or matrix to get needed image or subtle view.

(2) Focus Control

When system is in auto focus mode, camera lens will auto focus at the middle of view image to keep clear image when zoom changed; under special situation user can manual focus to achieve needed image vision. Under manual focus mode, if need to back to auto focus mode, only need to move joystick or send a special control command or call any preset.

Iris Control

User can adjust the camera's iris through control keyboard and manual adjust to get needed image brightness.

Night vision Function(Color/Black-white change)

Camera has built-in night vision function, under auto color/black-white mode will change CCD illumination according to the change of environment brightness. For example: in daytime because of enough brightness, using common illumination can guarantee color image. But in the night it will change into low illumination to show clear view with black-white mode.

Auto patrol

Put some presets as a group in a certain sequence, it will run this patrol continuously when speed dome camera is in idle mode.

Mode Scan

Mode scan is through menu to save speed dome tracking route, it will run this mode scan continuously when speed dome camera is in idle mode

parameters

1.3 Speed dome camera parameter

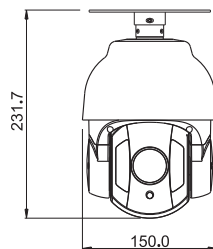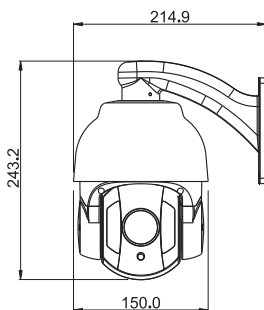| Electric			
Rated Voltage	DC12V/2A	Power	Max 20W
Decoder	Built in	IR distance	40-60m
Set			
Communication protocol	PELCO-D/P HIK/DAHUA	ID	1-255
Baud rate(RS485)	2400/4800/9600bps/auto identify		
Operate			
Pan rotate	360 endless	Tilt rotate	90 degree, auto flip
		Preset	220
Speed	Pan 0.6°-200°/s Tilt 0.8°/s-75°/s	Monitor mode Preset.	patrol,pan scan and pattern scan
Environment			
Operate environment	Outdoor: -20℃~60℃ Indoor: -10℃~50℃	environment humidity	0-95% without condensation
IP Grade	IP66		
Physical			
Installation mode	Wall/ceiling mount		

1.4 Structure Dimension

K Type Speed Dome Dimension
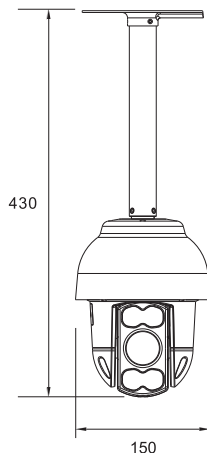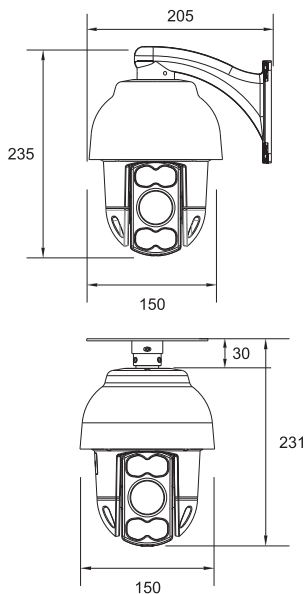
Unit:mm

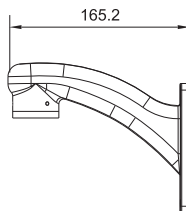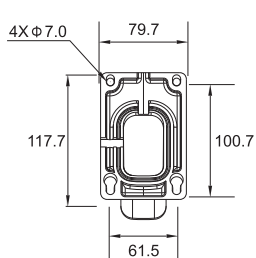R Type Speed Dome Dimension

Unit:mm

Dimension

Bracket Dimension
Wall Mount Bracket

4X Φ7.0   79.7

117.7   100.7

61.5

165.2

Unit:mm

Ceiling Bracket

⌀120.0

3X⌀4.0   ⌀135.0

20
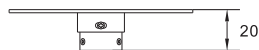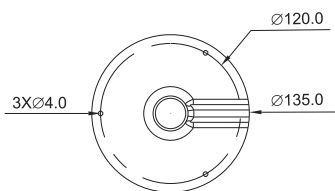
Unit:mm

Lifting bracket

⌀120.0

3X⌀4.0   ⌀135.0

229.0
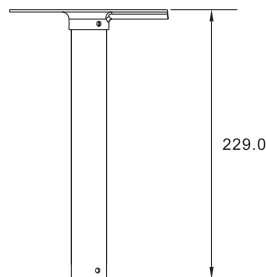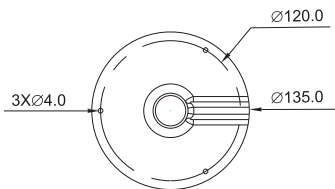
Unit:mm

Chapter 2 Installation

2.1 Install Instruction

Prepare before installation
In order to prevent troubles, installation should be done by professional staff base on corresponding rules.

Confirm all spare-parts are complete,   ensure application of this speed dome camera and installation mode is suitable to requirement.

Wall/ceiling mount speed dome composite with bracket,   zoom camera,   transparent cover and other parts.

All tests have been done before leaving factory,user can directly install and use it.

2.2 Installation Method
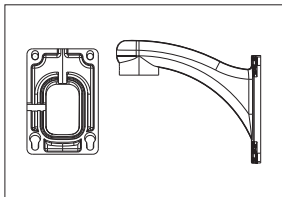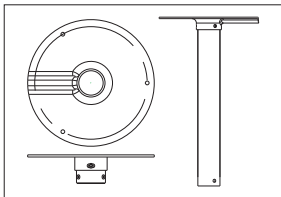
Wall Mount Bracket   Ceiling Mount Bracket

Step 1-Draw positioning holes
　　Take out bracket from package box, mark the holes' position based on bracket bottom installation holes.
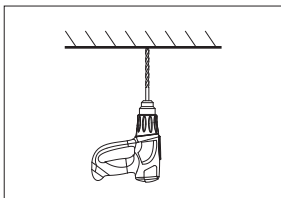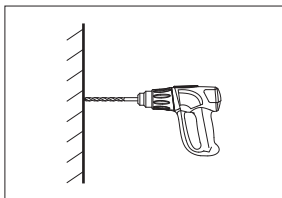
Step 2-Drill holes and put expansion screws in
　　Drill expansion screw's installation holes at pre-marked position, then put expansion screws in.(**Note: Please bring expansion screws own.**)

K.

Back up plate of
dial switch

R.

Back up plate of
dial switch
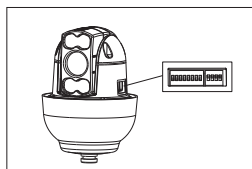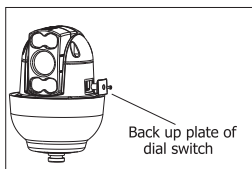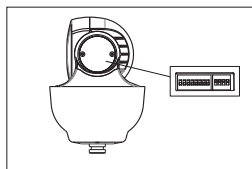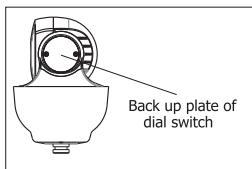
Step 3- Open DIP switch blanks, set DIP address(please refer to the third part of this chapter). Install DIP blanks after setting address.
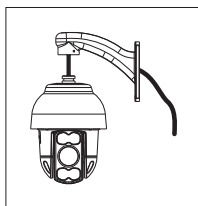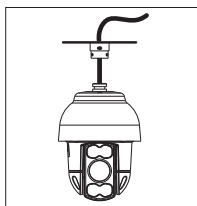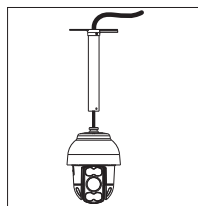
Wall Mount Bracket   Ceiling Mount Bracket   Lifting Mount Bracket

Step 4- Lead cable through the bracket and fix the speed dome camera. Lead cable through the bracket, fix the 4 installation holes of speed dome camera bracket to the 4pcs expansion screws of wall/ceiling,tighten these 4pcs nuts. Then sealed the cable via glass glue.
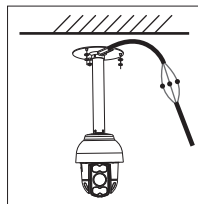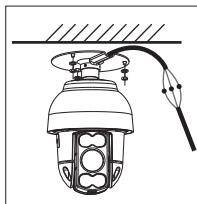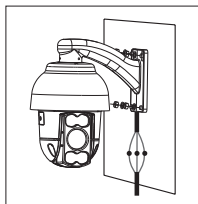
Step 5- Cable connection
Please refer to the sixth section of this chapter-Connection method.

Chapter 2 Installation

2.3 Baud Rate Setup

Baud rate and corresponding DIP status as bellow:

| Baud Rate | 2400bps | 4800bps | 9600bps | Automatic identify |
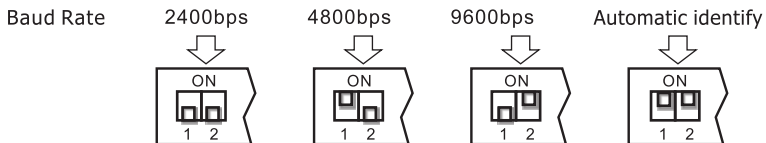
RS485 control bus need all device which connect to it shall be in parallel mode, and each end of the system shall be connected to a 120Ω resistor. Our speed dome has a 120Ω resistor in it, you need only set it up through dip switch SW2, put the 4th switch on, then the resistor is connected, details as below:
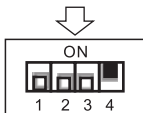
resistor is connected   resistor isn't connected
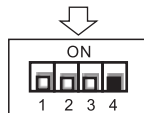
2.4 ID Setup

ID setup (address code setup obey binary rules) address code shall be set through 8 DIP switch (SW1). Keyboard control speed dome through communication bus, one keyboard can control max. 255pcs speed dome camera, each speed dome camera has its own address code, user can set address code through 8 DIP switch, details as bellow:
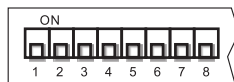
Address	SW1 Switch Setup							
	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF

6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

2.5 Power supply and control cable connection

Power supply connection

Note: Please check rated voltage and power supply carefully, rated voltage and current as bellow:

rated voltage	rated voltage range	current
DC12V	±10%	2A

Control line connection
Connect RS485 line to keyboard controller or DVR, if there are more than one need to be controlled by keyboard or DVR, please connect it in parallel.
Note: (1) Protocol and baud rate of keyboard and DVR can be set by customer, just make sure it is same with that of speed dome.
(2) The ID of different speed dome which is in same system shall be set as different.

2.6 Connection Method

Connection method as bellow diagram, connect video cable, control cable, power supply cable in turn. Connection method of keyboard can refer to keyboard manual (connection cable order based on keyboard model, here only provide one possible example), detail please refer to bellow diagram:
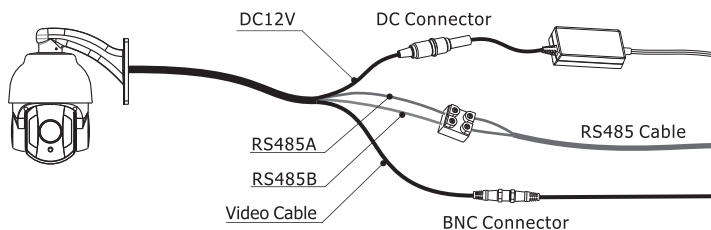
DC12V connection details:

Port mark	Port instruction	Cable color/type	Connection instruction
Power line	DC12V input port	DC connector	Connect to DC12V power supply
RS485A	RS485+	white	Connect to RS485+
RS485B	RS485-	green	Connect to RS485-
Video line	Video output port	BNC connector	Connect to monitor or other device

2.7 Typical Application Wiring Diagram

Power Supply Cable (DC 12V/2A Port)

Connect to DC 12V Power Supply

Monitor Cable (BNC Port)

Communication Cable (RS485 Cable)

Connect to keyboard controller or computer
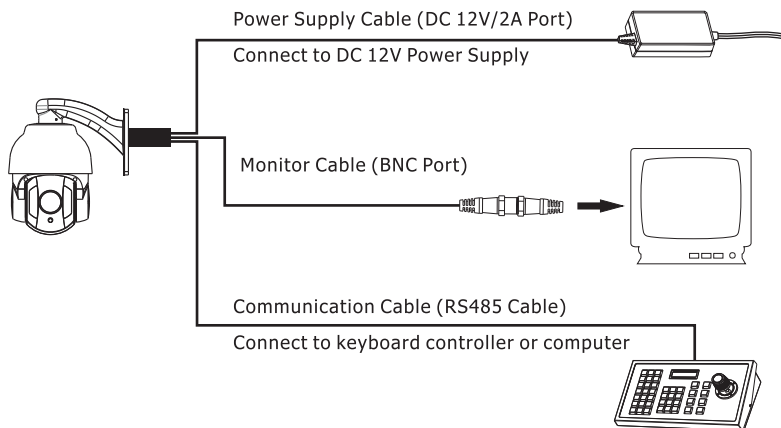
Because different system platform's specific operation method is not totally same, generally subject to manufacturer's manual, different situation has special requirements and operation method. Please contact distributor to obtain necessary information. Hereby only introduce control method when it connect to universal keyboard controller.

3.1 Power-on Self-test

After power-on speed dome camera, it will action in pan and tilt direction automatically. Through self-test to confirm speed dome camera working normally.
Control speed dome camera up, down, left and right rotate:
After select one camera, can manual control speed dome camera's up, down, left and right movements through keyboard joystick. Rocking of joystick control camera action, when twist the joystick to right, camera will also move to right, similarity, when twist the joystick to left then camera will also move to left. When twist joystick in tilt direction, camera also will make corresponding action in tilt direction. When twist joystick in diagonal direction, can make camera make pan and tilt direction action at the same time, and the movement direction same as joystick.

3.2 Preset Setting

Operation steps as below:
    (1)Select camera (please refer to keyboard controller manual for details)
    (2)Operate joystick or zoom+/- button to adjust camera image;
    (3)Press (PRESET) + (N) (input specified preset number) + (ENTER), save current position parameters as a preset.

3.3 Call a Preset

Operation steps as below:
    (1)Select camera;
    (2)Press(SHOT) + (N)(input specified preset number) + (ENTER), camera move to corresponding preset position at once, zoom+/- will also adjust according to the parameter of preset automatically.

Operation

3.4 Function Realization By Preset

Adopting the method of double-layer presets, achieve all the functions of the camera by preset call, Specific correspond <<Preset Function Table of General Function>> and <<Preset Function of Specific Function>>.

Call mode: call mode is on in general preset of call, specific function is achieved by the mode of preset call; for example: [92] + [SHOT] + [1] + [SHOT], which is to call patrol 1;

Setting mode: setting mode is on in general preset of setting, specific function is achieved by the mode of preset call; for example: [92] + [PRESET] + [1] + [SHOT], which is to set patrol 1.

Preset Function Table of General Function

General Function	Preset
IR	90
Zoom module	91
Patrol scan	92
Pattern scan	93
PTZ control	94
Menu	95
System Setting	96
Reservation	97
High speed auto scan	98
Low speed auto scan	99

Preset Function Of Specific Function

General Function	Preset No.	Call Mode	Setting Mode
IR Function	1	Auto ON/OFF	
	2	Forced ON	
	3	Force OFF	
	11	High Sensitivity	
	12	Middle Sensitivity	
	13	Low Sensitivity	
Zoom Module Setting	1	IRCUT - ON	
	2	IRCUT - OFF	
	3	IRCUT - AUTO ON	
	4	IRCUT - AUTO OFF	
	50	Zoom Camera Automatic Diagnosis	
	51	SONY	
	52	HITACHI	
	53	SAMSUNG	
	54	HIK	
	55	MYTECH	
	56	LG	
	57	LG-XDI	
	58	CNB	
	59	CNB 36 x Optical Zoom	
	60	GV	
	61	SWELL	
	62	BQL	
	63	WIT	
	80	Enter module menu	
Patrol Scan	1	Call patrol 1	Patrol 1 setting start
	2	Call patrol 2	Patrol 2 setting start
	3	Call patrol 3	Patrol 3 setting start
	4	Call patrol 4	Patrol 4 setting start

Operation

Operation

	5	Call patrol 5	Patrol 5 setting start
	6	Call patrol 6	Patrol 6 setting start
	7	Call patrol 7	Patrol 7 setting start
Patrol Scan	8	Call patrol 8	Patrol 8 setting start
	9	Patrol setting end	
	10	Patrol time setting(5-240sec.)	
	11	Patrol speed setting(1-63)	
	1	Call pattern 1	Pattern 1 setting start
	2	Call pattern 2	Pattern 2 setting start
Pattern Scan	3	Call pattern 3	Pattern 3 setting start
	4	Call pattern 4	Pattern 4 setting start
	5	Pattern setting end	
	1-8	Park preset 1-8	
	9-16	Park patrol 1-8	
	17-20	Park pattern 1-4	
	21	Park auto scan	
	22	Park AB lines scan	
	30	Park time 0(off)	
	31	Park time 10s	
	32	Park time 30s	
PTZ Control	33	Park time 60s	
	41	A line-scan setting	
	42	B line-scan setting	
	43	High speed line-scan start	
	44	Middle speed line-scan start	
	45	Low speed line-scan start	
	46	Inner arc line-scan	
	47	Outer arc line-scan	
	50	Open the automatic tracking	
	51	Turn off automatic tracking	
System Setting	Continuous call 10,12,14	Restore factory settings	

4.1 Menu Setup Topology

topology

Camera
Screen Tips   Off
Auto Color turn to black   On
Auto Focus   On
Focus speed   Fast
Digital Zoom   On
Zoom Rate   Fast
Exit

Motion Control
Auto flip   On
Telephoto Speed   On
Park action time (S)   No
Park Executive   No
Running Executive   No
Manual Speed   High
Lines scan settings
Line scan methods within the arc
Scan speed   Medium
Limit Stop   Off
Limit Settings
The North Settings
Exit

System information
Communication protocol   PELCOD
Communication Baud Rate   2400
Hard address   1
Soft address   1
Soft address enable   OFF
CCD Type   HIK
Speed dome inner temperaturev 30℃
Software version   0F140317
Exit

Preset
Number   1
Label   default
Edit
Remove
Exit

Patrol   Track
Number   1
Edit
Preview
Remove
Exit

Display Setting
Information tips(S)   3
PTZ display (S)   3
Alarm display (s)   3
Exit

Mode Scan
Number   1
Edit
Preview
Remove
Exit

Main Menu

System Information   >
Infor

Display setting   >
Display

System setting   >
PTZ

Infrared light setting   >
IR LED

Restart camera
Restart

Restore factory setting
Reset

Exit

IRIS+ ↵   IRIS– ↩

System Setting
Camera   >
Movement control   >
Preset   >
Patrol track   >
Modes Scan   >
Alarm   >
Auto Tracking   >
Clear   >
Exit

Alarm
Channel   1
Enable   close
Input   Normally closed
Output   Normally closed
Output time(s)   60
Alarm linkage   No
Exit

Auto tracking
Open tracking   >
Scene setting   >
Adaptive zoom   >
Sensitivity   >
Return time   >
Exit

Infrared light Setting
IR light control mode   Auto
Open IR light Filter   220
Close IR light Filter   170
IR lightness mode   power-save
Present Filter   50
Exit

Remove
Presets
Patrol track
Mode Scan
Exit

This Chapter will introduce the OSD menu operation in detail. PTZ self-test when power up, it will display the following information on the monitor.

```
Control Protocols:          Auto
Serial Port info:            Auto
PTZ hard address :            1
PTZ soft address:            1
PTZ soft address enable   Off
CCD Type:                   HIK
```

Due to the PTZ operation is not complete the same based on different surveillance system, for the detail operation, please contact with distributors. Below is the general introduction of the basic operation of the keyboard control to the OSD menu.

Enter OSD main menu

SHOT 95 , enter OSD main menu. 【OPEN】（IRIS open) is confirm button, 【CLOSE】（IRIS close) Exit the menu.

Enter other Menu

Up/down move the joystick to make the cursor point to a certain menu, press【OPEN】button, enter menu.

Function Select

Up/down move the joystick to make the cursor point to a certain function, press【OPEN】button, select the function.

Parameters Select

Up/down move the joystick, select the parameter, press【OPEN】button, save the parameters.

Save setting

Press【OPEN】button, save the parameters, it is valid under the presentation.

Un-save Setting

Back to the last menu: press【Close】button, back to the last menu, it is valid under the tips.

Exit Menu

Up/down move the joystick to make the cursor point to the "Exit" option, then press【OPEN】button, Exit the OSD Menu.

4.2 Main Menu

After the PTZ powered up and work normally, SHOT 95, enter main menu, the monitor displayed as below diagram 4.1.

Display

| Display | PTZ | IR LED |
| Infor | Restart | Reset |

IRIS+ ⏎   IRIS- ⮐

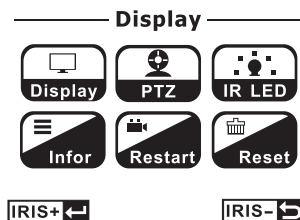diagram 4.2 Main Menu

The explanation of each option in Main Menu

<System information > : Display system information menu

<Display setting> :   Screen information display the time

<Infrared light setting>: set the setting of PTZ

<Restart camera> :   Re-start the zoom module

<Restore factory setting>: All the parameters revert to Windows default

< Exit> : exit the OSD menu

4.3 System Information Menu

To check the basic information of the PTZ.

```
              System information
    Communication protocol :  PELCO D
    Communication Baud rate:    2400
    Hard address                     1
    Soft address                     1
    Soft address enable            OFF
    Speed dome inner temperature 30℃
    Software version        0F140328
    Language                   English
    Exit
```

diagram4.3 System information menu

The explanation of each option in System Information

<Communication protocol>: Display the serial port of communication protocols of the PTZ.
<Communication Baud Rate>: Display the communicate speed of the PTZ.
<Hard address>: Display the hardware tip address : 1-255
<Soft address>: Display the soft address: 1-255
<Soft address enable>: Display if the soft address of the ptz can use
<Speed dome inner temperature: Display the inner temperature of the PTZ
<Software version>: Display the software Version that used.
<Language>: display the current language,English & Chinese selectable
<Exit>: Exit the menu
Remark: Each options in the System information menu can not be modified.

4.4 Display Setting Menu

```
               Display Setting
      Information tips(S)          3
      PTZ display (S)              3
      Alarm display (S)           3
      Exit
```

diagram4.4 Display setting menu

The explanation of each option in Display setting menu
. Information Tips (S) : The screen will display the time when operate the PTZ
.PTZ display (S): will display the time when operate the PTZ.

4.5 System Setting Menu

```
               System Setting
          Camera                    >
          Movement control          >
          Preset                    >
          Patrol track              >
          Modes Scan                 >
          Alarm                     >
          Clear                     >
          Exit
```

setting

4.5.1 Camera

< Camera>: to set the parameters of the zoom module, select enter.

```
                  Camera
       Screen Tips               Off
       Auto Color turn to black   On
       Auto Focus                 On
       Focus speed               Fast
       Digital Zoom               On
       Zoom Rate                 Fast
       Exit
```

diagram4.5.1 Camera

The explanation of each option in Camera Menu.
<Screen Tips >: Whether open the inner tips of the Zoom module.
<Auto Color turn to black > : Whether open the auto color turn to black function.
<Auto Focus > : Whether open the Auto Focus function
<Focus speed >: Set the Focus speed of the zoom module
<Digital Zoom > : Whether open the Digital Zoom function of the zoom module.
<Zoom Rate > :   Set the Zoom rate of the Zoom module.

4.5.2 Motion Control

<Motion Control> : To set the Motion parameter of the PTZ, and enter.

setting

```
                    Motion Control
        Auto flip                        On
        Telephoto Speed                  On
        Park action time (S)             No
        Park Executive                   No
        Running Executive                No
        Manual Speed                   High
        Lines scan settings
        Line scan methods    within the arc
        Scan speed                  Medium
        Limit Stop                       Off
        Limit Settings
        The North Settings
        Exit
```

diagram 4.5.2 Motion Control

The explanation of each option in Motion control Menu

<Auto flip> : The PTZ Auto flip 180 degree when the PTZ down to lowest point.

<Telephoto Speed > : PTZ decrease the speed automatically according to the
                     digital zoom.

<Park action time (S) > : To set the Park action time

<Park Executive > : To set the Park action

<Running Executive >: Set the menu when powered on, it will auto execute before
                      the PTZ receive the commend after powered on.

<Manual Speed>: To set the speed of the PTZ.

<Lines scan settings>: To set the line scan between A and B position

<lines scan methods>: Select line scan methods

<lines scan speed> : To set the line scan speed

<Limit Stop > : Whether open limit stop function

<Limit Settings >: To set the up down left and right limit point

<the North Settings> : To set the North setting.

4.5.3 preset
<Preset> : execute the operation of the Preset, enter.

```
                   Preset
        Number                1
        Label            default
        Edit
        Remove
        Exit
```
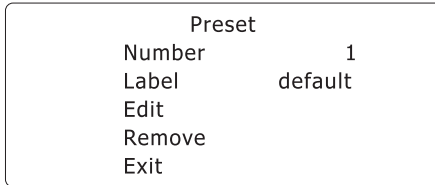
diagram 4.5.3 preset

The explanation of each option in Preset Menu
<Number> : Select the No. Of the preset, 1-220 is valid
<Label> : This option is default, can not be modified.
<Edit>: Set the position of the selected Preset.
<Remove>: Remove the selected Preset

4.5.4 Patrol Track
<Patrol Track> : Execute the operation of Patrol track, enter

```
                Patrol Track
        Number                1
        Edit
        Preview
        Remove
        Exit
```
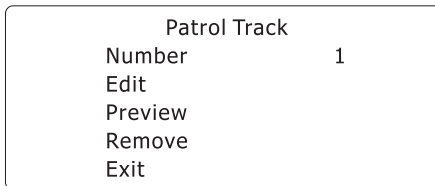
diagram 4.5.4 Patrol Track

The explanation of each option in Patrol track menu.
<Number> : Select the No. Of the Patrol , 1-8 is valid.
<Edit>: Set the information of the Patrol track
<Preview>: Preview the Patrol track
<Remove>: Remove the selected Patrol track

4.5.5 Mode Scan
<Mode Scan> : Execute the operation of the Mode Scan, enter.

```
                Mode Scan
        Number                1
        Edit
        Preview
        Remove
        Exit
```
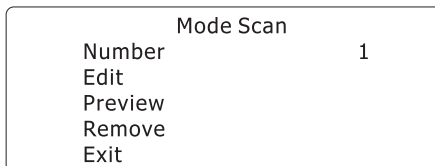
diagram 4.5.5 Mode Scan

The explanation of each option in Mode Scan menu.

<Number>: Select the No. Of the Mode Scan, 1-4 is valid
<Edit> : Edit and record the path of the selected Mode Scan
<Preview> : Preview the selected Mode Scan
<Remove>: Remove the selected Mode Scan

4.5.6 privacy mask

<Privacy Mask> : Execute the operation of the Privacy mask, enter.

```
                    Privacy Mask
          Number                      1
          Edit
          Remove
          Exit
```
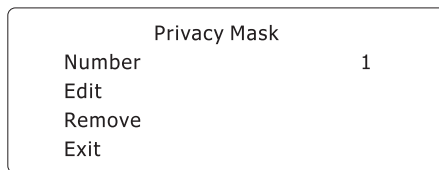diagram 4.5.6 privacy mask

The explanation of each option in Mode Scan menu.
<Number>: Select the No. Of privacy mask zone
<Edit> : Edit and record the path of the selected privacy mask zone
<Remove>: Remove the selected privacy mask zone

About the setting of privacy mask
Privacy mask function need the zoom module's support, only Sony and Samsung zoom module support privacy mask function,Sony zoom module support 24 privacy mask zone, Samsung zoom module support 8 privacy mask zone.

Find the privacy mask item from system setting menu, get into privacy mask item through pressing Iris+ or move joystick toward right., select the privacy mask zone number and move to 'edit' item, press 'Iris+' to edit it.

Two steps to edit the privacy mask zone, move the speed dome toward the target which need to be masked, there is a red area at the center of the screen, press 'Iris+' to second step, it will promt to adjust the mask area, you can through moving joystick up/down/left/right to adjust the red area size, till it cover the target area which need to be masked, press 'Iris+' to save, the red area will change its color to gray, setting is finished.

During setting,press 'Iris-' will quit edit mode, and present mask area will be removed. The sub-item 'remove' can delete the mask zone which is selected.

4.5.7 Auto Tracking

<Auto tracking>: Perform auto tracking related operations,choose to enter.

```
            Auto tracking
            Open tracking          >
            Scene setting          >
            Adaptive zoom          >
            Sensitivity            >
            Return time            >
            Exit
```
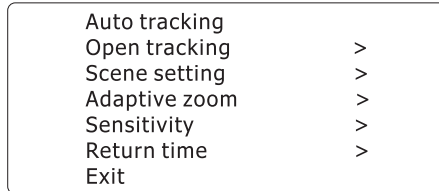diagram 4.5.8 Alarm

The explanation of each option in Auto Tracking menu.
<Open tracking>: Auto tracking switcher.
<scene setting>:   Set the monitor scene, select the sensitive area. If set the sensitive area, the moving objects in the non-sensitive area will not trigger tracking; if not set the sensitive area, then all the moving objects in the view will trigger tracking
<Adaptive zoom>:Set the speed dome camera whether automatically adjust the zoom during tracking, in order to monitor the moving objects better.
< Sensitivity>: Set the speed dome camera moving angle when tracking, the value larger speed dome camera moving angle much larger
< Return Time>: Set the time when speed dome camera again back to the monitoring point when it track the target to lost.

4.5.8 Remove

<Remove> : Remove the Preset, patrol track, mode scan information.

```
                    Remove
            Presets
            Patrol track
            Mode Scan
            Exit
```
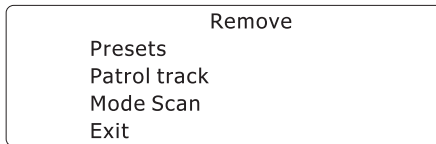diagram 4.5.9 Remove

The explanation of each option in Remove menu.

.<Preset> : Remove all the Presets
.<Patrol track> : Remove all the Patrol Track
.<Mode Scan> : Remove all the Mode Scan

Chapter 4 Menu Setup

4.6. Infrared light Setting

Infrared Light Setting Menu

```
            Infrared light Setting
   IR light control mode          Auto
   Open IR light Filter            220
   Close IR light Filter           170
   IR lightness mode      power-save
   Present Filter                   50
   Exit
```
diagram 4.6 Infrared light Setting

The explanation of each option in Infrared light Setting menu.

<IR light control mode>: Set the control mode of the IR light, auto, No/Off mode.
<Open IR light Filter > : Set the Filter of open the IR light.
<Close IR light Filter >: Set the Filter of close the IR light
<IR lightness mode > : Set the IR lightness mode, power-save strategy, evenly
                        increase, manual control mode
<Present Filter > : The present filter, 0-255 is valid

4.7. Re-start Camera

Selected this option can decide whether need to restart the Zoom module.

4.8. Recover Factory Setting

Selected this option can decide whether need to recover the PTZ menu parameters, please re-start the PTZ after the recovery.

5.1 FAQs

Faults Phenomenon	Check part	Probable Cause	Solution
There is no action and no image after powered up	Check power adapter and power PCB	Power adapter	Change power supply
		Power circuit exist has problem	Replace
There is image, but do not self-test when powered on	Motor has abnormal sound	Mechanical problem	Overhaul if it get stuck in something
	PTZ Swings	Very incline	Set it straight
	Power supply	Power is not enough	Change a new power supply that meet the requirements
	motherboard	Something wrong with motherboard	replace
There is no image, but can do self-test after powered on	Connection line between power panel and connection panel	Do not insert properly	Insert again and push protective cover
	Video line, BNC Connector	Do not install contact properly	Make sure all connection is proper
There is image, and can do self-test, but can not control after powered on	RS485 communicate line	Something wrong with the circuit	Make sure all connection is proper
	N/A	Irregular operation leads to out of control	Power off and restart
		Something is wrong with the motherboard	replace
	Check Focus mode	Speed dome camera is in state of manual focusing	Operate speed dome camera or call any one preset to make it back to auto. focusing
Video image is Foggy	Transparent cover	Transparent cover is dirty	Clean transparent cover

5.2 Clean the Transparent Cover

In order to make the image clear, the cover need to be cleared timely.

When clear, please be careful for avoiding to touch the transparent cover directly, the acid sweat of the human finger may rust the surface of the cover. The scratch of the flint to the transparent cover will lead to foggy image, affect the image quality.
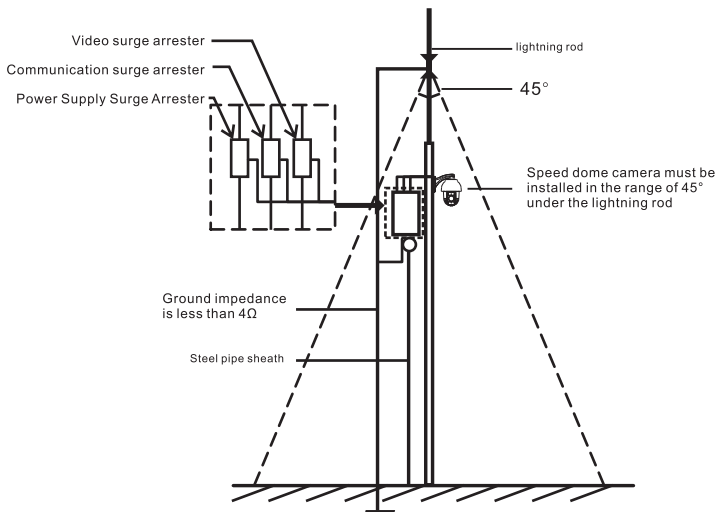
Please use soft enough dry cloth or other replacement to wipe the inner and surface.

If seriously dirty, can use neutral cleanser, any high grade furniture cleanser can used to clean the transparent cover.

5.3 Lightning and Surge protection

Outdoor speed dome camera must consider thunder-proof and surge immunity. On the premise of guaranteeing electrical safety,we can take following lightning protection measures:

- Atleast keep 50m distance between signal transmission line and high voltage equipment or high voltage cable.

- Outdoor wiring under the eaves.

- For open field, adopt seal steel pipe buried wiring way, and adopt one-point earthing with the steel pipe. Do not adopt aerial wiring.

- It need to add extra high-frequency thunder-proof device and lightning rod in strong thunderstorms area or high inductive voltage region(such as high voltage substation).

- Thunder-proof and grounding design of Exterior installation and circuit must be in accordance with building lightning proof requirements; It must meet national standard and industry standard.

- System must be equipotential grounding. Grounding device must meet anti-jamming and electric safety dual requirements. The connection with strong electrified wire netting can't be short connection or mixed connection. When system is in the condition of single-phase grounding, ground impedance is less than 4Ω, ground wire cross-section area must be more than 25 mm^2

Video surge arrester
Communication surge arrester
Power Supply Surge Arrester

lightning rod

45°

Speed dome camera must be installed in the range of 45° under the lightning rod

Ground impedance is less than 4Ω

Steel pipe sheath

5.4 RS485 Bus Wiring

1. RS485 bus basic characteristic
   RS485 industry bus is characteristic impedance 120Ω half-duplex communication bus according to RS485 industry bus standard.

2. RS485 bus transmission distance
   When use 0.511mm (24AWG) screen twisted pair cable as communication cable. Depending on different baud rate, the longest transmitting distance theoretical value is shown as below:

   The longest transmitting distance of baud rate
   2400Bps 1800m
   4800Bps 1200m
   9600Bps 800m

3. Connection mode and terminal resistance
   RS485 industry bus standard require adopt snake-like wiring(chrysanthemum chain), The ends must connect with 120Ω terminal resistance(such as figure 6), ease connection can adopt figure 7, but distance of section "D" can't exceed 7m.
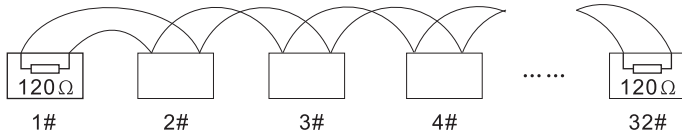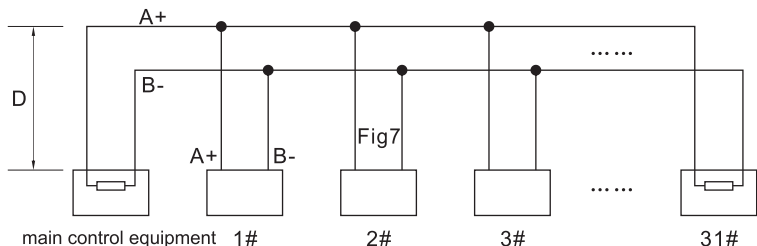
Fig6

Fig7

Appendix