

# **ASC-540PTZ36-2IR**



## **INSTALLATION & PROGRAMMING MANUAL**

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# **Chapter 1: INSTALLATION MANUAL**

**1.1 FORWARD**

**1.2 Appearance**

**1.3 Function explanation**

## 1.1 FORWARD

This manual introduces the function, installation and operation of the shock-proof integrated high speed camera in details. Please thoroughly familiarize yourself with the information in this manual prior to installation.

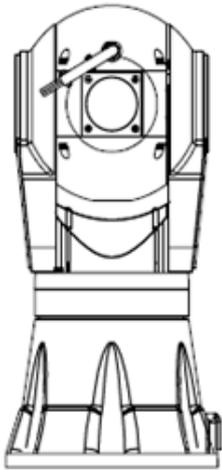
This series integrated camera system is ideal for special occasions, such as airports, frontier defense, customs and highway etc. It has many features: reliable, stable, airproof, acid water proof, , be able to bear high temperature, aging, strong wind and so on. It adapt to the following hard conditions, such as high wind power, gap difference temperature conditions, high electromagnetism and thunder disturb, all day working conditions.

This series system is high speed, changeable system and it can run smoothly and stably.

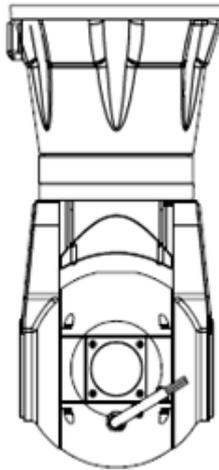
This series camera is integrated with high speed decoder, IOP shield, heater, wiper, sun shade and insulating materials. The optical module with a changeable focus lens which is DSP(Digital Signal Processing) camera.

Protocol P/D is used in this series of cameras. It can support most popular system platforms. This manual will not explain the operation of other system if connecting with other system, please contact with the system manufacture or dealer.

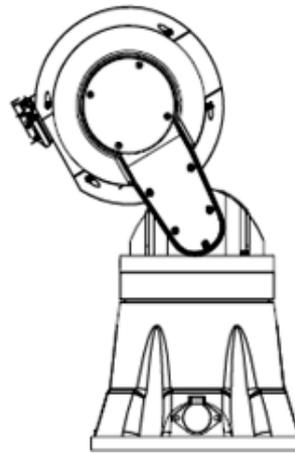
## 1.2 Appearance



pedestal stand mode



in-ceiling mount installation



pedestal with angle of 30°

## 1.3 Feature:

### 1.3.1 Function explanation:

- The ball is made from aluminum alloy (thick: 5mm -15mm). It is firm and airproof flat designed optical window uses toughened glass whose thickness is 5mm, and prevent distorted images with greatest extend and protect the built-in integrated camera.
- 360° continuous pan rotation, 125° tilt rotation (new version)
- Multi installation way: pedestal stand mode and pedestal with angle of 30°, in-ceiling mount installation(camera with an angel of 30° do not apply to in-ceiling installation )
- High reliability and the internal data will not lost after power cutoff

### Pan/Tilt feature:

- Accurate step motor driving, smart operation, sensitive reaction and accurate orientation
- Manual control speed for pan:  $0.1^0 \sim 90^0/\text{sec}$

- Manual control speed for tilt:  $0.1^{\circ} \sim 40^{\circ}/\text{sec}$
- Preset target speed:  $90^{\circ}/\text{sec}$  for pan,  $40^{\circ}/\text{sec}$  for tilt
- Alterable auto scan speed:  $1^{\circ} \sim 40^{\circ}/\text{sec}$  can be set by the in-built menu
- Variable Apple peel scan speed:  $1^{\circ} \sim 40^{\circ}/\text{sec}$  for pan;  $1^{\circ} \sim 20^{\circ}/\text{sec}$  for tilt
- a pair of IR lamps available, more than 100meters of IR distance or laser lamp with distance of 300m(outdoor)
- Tilt rotation for pedestal stand mode:  $-35^{\circ} \sim +90^{\circ}$  ( $0^{\circ}$ for pan)
- Tilt rotation for pedestal with pitching angle of  $30^{\circ}$ :  $-65^{\circ} \sim +90^{\circ}$  ( $0^{\circ}$ for pan)
- Tilt rotation for conversed mount:  $-35^{\circ} \sim +90^{\circ}$  ( $0^{\circ}$ for pan)

#### **Camera Features:**

- Built-in high resolution and variable high zoom camera module
- Black Light Compensation function
- Selectable Color or B&W image function
- Wide Dynamic Video function
- Image Stabilizer function
- Privacy mask function, can support up to 24 privacy zones
- Video Freeze function for high speed presets

#### **Built in Decoder features:**

- Integrated multi decoder controller: PELCO P/D protocol
- RS-485 feed back the orientation the pan& tilt
- Baud rate: 1200/2400/4800/9600b selectable
- Soft address and hard address are selectable
- Built-in function menu, the function of camera and pan/tilt can be set.
- Environment checking function, check the inside temperature real time;
- High reliability and the internal data will not lost after power cutoff
- Powering on self-restoring function: users can assign the camera movement after powering on.
- Change speed proportionally function: Pan/tilt speed and the depth of zoom lens decline proportionally and continuously
- The Pan/tilt orientation displays and camera zoom displays variably. Data feedbacks the PTZ orientation.
- With pan auto scan function, the pitching angle can be set
- Virtual home position can be set
- With apple peel scan function
- 2 pattern function
- 4 presets tour function, dwell time can be set
- 255 preset positions with precision error less than  $\pm 0.1^{\circ}$
- 5 channels fixed time auto activate function, to run the preset movements
- 3 modes to control the wiper function
- Camera orientation display function (N,NE,E,SE,S,SW,W,NW total 8 orientations)
- 2 alarms input, 1 AUX output

#### **OSD Menu Features:**

- Built-in Chinese/English menu, easy to switch menu between 2 languages
- With OSD passport protect function
- Support Chinese/English input, can edit title of the user name, camera position and preset position
- Can set, run, clear presets, preset tours, privacy zone by menu
- Inside temperature and pan tilt orientation information display

#### **Protect Features:**

- Embed in surge and lightning protector
- Meeting IP66 standards, CE,ROHS, FCC standards

### **1.3.2 Function explanation**

#### **Screen menu function (OSD)**

It has screen menu function. All information of camera and pan& tilt can be displayed by menu and to set the function and parameter

#### **Multi-camera control function**

Select different camera only by mending dial switch setting, no any hardware or software needed. It supports SONY, HITACHI cameras and so on.

#### **Proportional pan**

Horizontal and tilt speed change automatically with the zoom changes. When zooming wide, the camera speeds down; then zooming narrow, the camera speeds up to catch better tracing effect.

#### **Auto scan**

Auto scan refers to the function of 360<sup>0</sup> continuous scan the images at certain speed on the horizontal lever when keeping the pitching angle unchanged. The left and right limits can be set for continuous scan at certain speed on the horizontal lever.

#### **AUTO FLIP**

When the camera tilts downward and goes just beyond the vertical position, the dome rotates 180°. When the dome rotates, the camera starts moving upward as you continue to hold the joystick in the down position. Once you let go of the joystick after the dome rotates, joystick control returns to normal operation. The auto flip function is useful for following a person who passes directly beneath the camera.

#### **Preset**

Any position of dome camera PTZ can be conserved. We call it preset (pre-established position). The preset can be transferred and cleaned.

#### **Preset tour**

The dome camera will transfer pre- established preset 1-8 every 10 second. It will leap over to next preset position if position in not among 1-8.

#### **Pattern**

The PTZ orientation move track of the camera can be stored, we call it pattern. The pan& tilt's UP, DOWN, LEFT, RIGHT and the lens' FAR, NEAR can be stored. Also we can call the presetting. This function can be used to record and simulate the operator's operation process.

**Zero test**

The camera will turn to horizontal and tilt zero by preset 34 when the inevitable desynchronizing appears or the operator wants to find zero position during working process. It can reset the orientation and is convenient for operator

**Low pharosage (colors/ black& white swift) function**

The camera automatically changes CCD pharosage according to surrounding light. Color image changes to black& white one in low pharosage; black& white image changes to color one in high pharosage.(related to camera)

**Auto focus**

The camera automatically adjusts lens focus to keep clear image if auto focus mode. Manually operate FAR or NEAR focus adjustment can also adjust focus. The dome camera will recover auto focus adjustment function if operate horizontal, vertical rotation or control lens zoom.

**Auto iris function**

The camera automatically adjusts iris to keep normal brightness in auto iris mode. Manually operate OPEN or CLIOSE iris adjustment button can also adjust iris. The dome camera will recover auto adjustment function if operate horizontal, vertical rotation or control lens zoom.

**Backlight compensation**

The object will become black as the shadow if strong light appears in background. Backlight compensation function can compensate the brightness automatically to dark objects in bright light background and adjust the brightness background to avoid the image full of brightness and get clear image. Too strong backlight can make the object illegibility.

**WDR (Wide Dynamic Range)**

If there is quite dark and quite bright in the image, WDR can make the darkest and brightest balance to keep clear image

**Privacy Zone**

Be sure protected zone be blocked when using the speed dome camera. The covered image moves with the rotation of pan/tilt and varies with zoom, to keep the privacy zone covered.

# **Chapter 2: Notice proceeding of Installation**

**2.1 Safety Notice**

**2.2 Preparation of installation**

**2.3 Notice of installation**

## 2.1 Safety Notice

Aim to guarantee user to use the product correctly and avoid danger or loss of property.

Defence measure is including two parts "Warning" and "Notice" as follows:

Warning: Ignoring warning may cause death or great damage.

Notice: Ignoring notice may cause damage or loss of property.

 Warning remind user to defend potential factor of causing death and great damage	 Noitce remind user to defend potential factor of causing damage or loss of property.
--	--

### **Warning**

- 1, Completely according to the national or regional electric specification when installing and using the product.
- 2, Please using adapters from normal supplier.  
Don't connect multi cameras with one adaptor ( Exceeding the loading of adapter may generate excess heat or fire)
- 3, Turn off the power supply when connecing or dismantling the camera, never operate the dome camera with power.
- 4, Completely fix the speed dome camera when installing the item on wall.
- 5, If there is fume, fetor or noisy of the dome camera, please turn off power supply immediatly and pull out the cable; And contact with our sales department right away.
- 6, If the camera can't work normally, please contact with us and never dismantle it. (We are not responsible for any unauthorized modification or dismantling.

### **Notice**

Prior to installation and use of this product, the following WARNING should be observed. This product can be only used in specified range in order to avoid any damage or danger.

- Installation and servicing should only be done by qualified service personnel;
- It can not be used in unqualified temperature( over 55°C or below -40°C), high humidity ( otherwise firing may be caused)
- Only use replacement parts recommended by us.
- After replacement/repair of this unit's electronic components, conduct a resistance measurement by multimeter to avoid short circuit or turnoff.
- Please use the soft cloth to clean the camera. Use neuter cleanser if bad smeared. No use the strong or corrosive cleanser avoiding scuffing.
- The installation bracket should be capable of supporting five times the total weight of the integrated camera.
- Keep the product away from anti-magnet fied, make sure not to install it shook and impactive area, and never let other objects fall on the product. (ignoring the tip may cause equiprment damage)

Please thoroughly read this manual prior to installation and operation.

## **2.2 Preparation of Installation**

### 1, Basic requirement

- 1) All electric working must be accorded to latest electric, fire proof and related specification.
- 2) Be sure all accessories are included as packing list and application and installation way are as required. If not, please contact with supplier.
- 3) Be sure the product is suitable for the working environment.

### 2, Check installation space.

Make sure there be enough space for the product and accessory.

### 3, Make sure the wall can afford 5 times of the speed dome camera and accessories.

### 4, Preparation of cable.

Using video cable according to transmitting distance. Specification of video coaxial cable is:

- 1) 75 ohm resistance
- 2) copper core cable
- 3) 95% copper shield.

## **2.3 Safety notice of installation.**

### 1, Prior installation, read the instruction carefully.

2, To use the power supply and voltage as the label instruction of cable, standard voltage is AC24V, DC12V 、 DC24V is available; Best voltage is  $AC24V \pm 10\%$ . Long time excess high or low voltage will cause damage of speed dome camera. Electric power must be kept over 50W, otherwise abnormal reset and control may occur.

### 3, Don't aim the lens at high light object, otherwise CCD will abate and no image or image fuzzy.

# **Chapter 3: Notice proceeding of Installation**

**3.1 Pedestal stand mode**

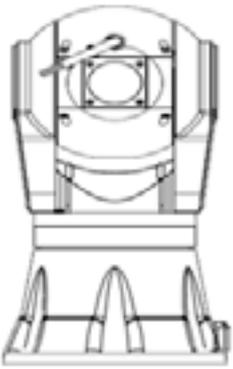
**3.2 Wall stand mode**

### 3.1 Pedestal stand mode

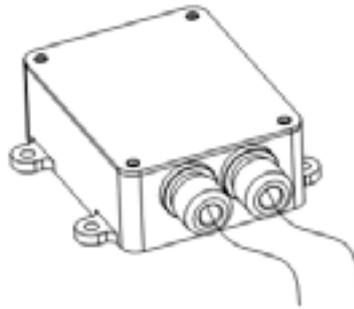
**Remark: Installation of pedestal stand mode with pitching angle 30°, pedestal reversed mode and pedestal stand mode is same.**

#### 3.1.1 Equipment list:

The mode of camera contains following parts. Inspect each package to make sure all parts are present.



Integrated high speed PTZ camera



Power supply box

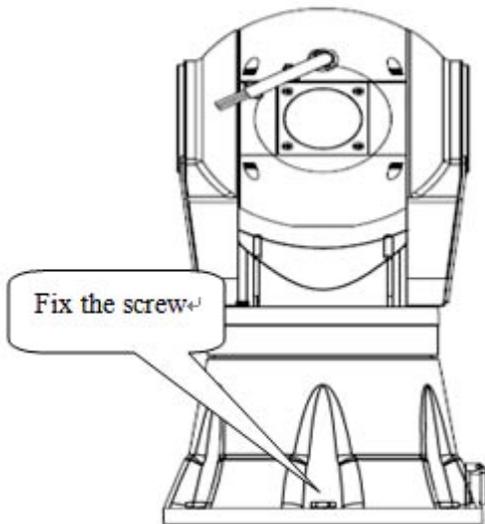
Camera body	1 pc	
Connecting cable	1 pc	
Manual	1 copy	
Guarantee	1 copy	
Certification	1 copy	
Glove	1 pair	
Power Supply box	1 pcs	
M8×35 hexagonal Screw		6pcs
Nut cap spanner		1pcs

**Steps of installation:**

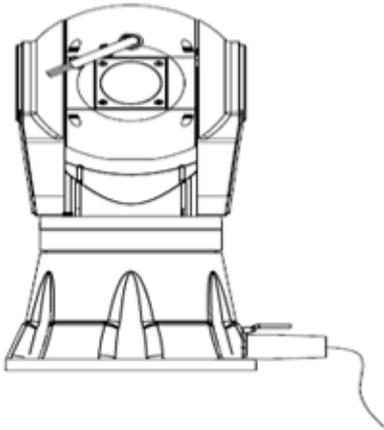
**STEP 1** Locate the floor or impending base level that can support 5 times the weight of camera. Fix the bulgy snail  $\Phi 8\text{mm}$  on the floor or firm surface.



Step 2 fix the camera body on the floor or impending base level

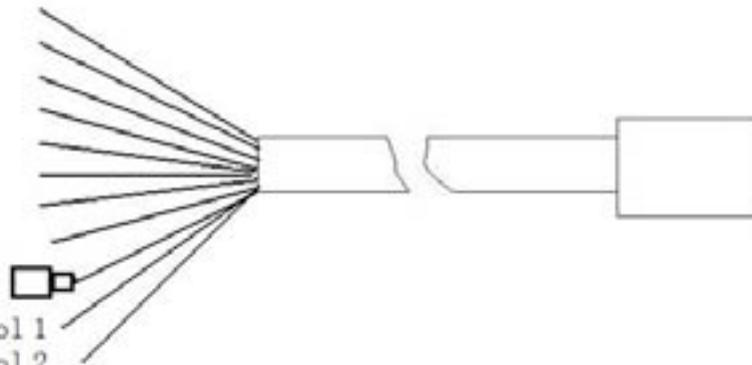


**STEP 3** Put power supply, video output, RS485 control input wiring through waterproof connector plugs, and connect them correspondingly to power supply, video, RS485 wiring of the connecting cable.

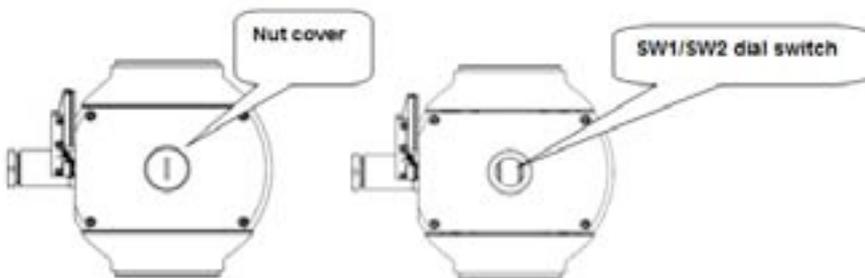


Remark: Cable can be from either side or bottom. Just take camera with cable from side for example  
 Connect the cable refer to the following picture:

Red	Power 1
Black	Power 2
White	485+
Blue	485-
Grey	GND
Yellow	Alarm 1
Green	Alarm 2
Yellowgreen	Earth
BNC	Video
Brown	washer control 1
Purple	washer control 2



**STEP 4** screws loose the nut cover on the camera, then you will see the 8 bit dial switch. Set the protocol, boud rate, address for the camera making reference to Appendix 1. Screw tight the nut cover when finish setting.



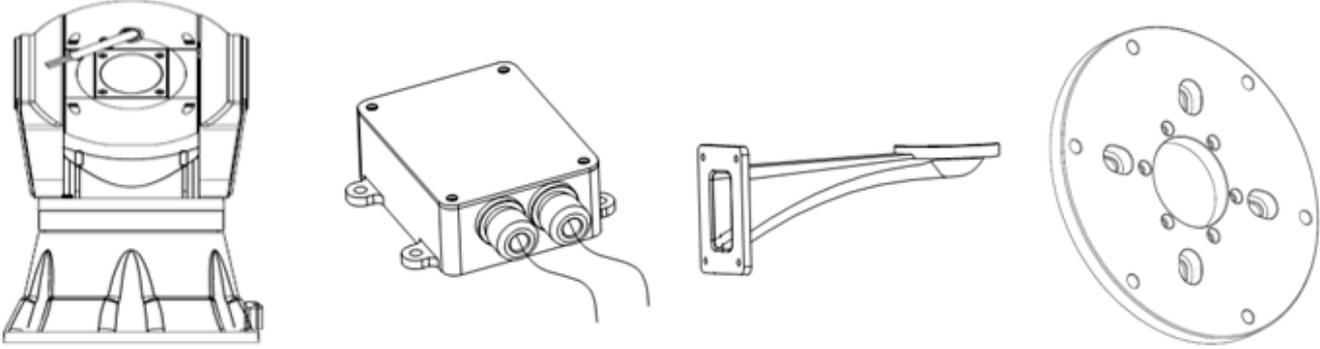
**STEP 5** turn on the power after finishing check

### 3.2 Wall pedestal stand mode

Remark: Installation of pedestal stand mode with pitching angle 30° and pedestal stand mode is same.

#### 3.2.1 Equipment list:

The mode of camera contains following parts. Inspect each package to make sure all parts are present.

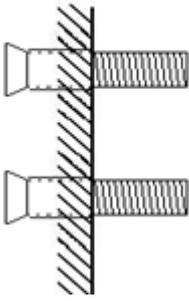


Integrated high speed PTZ camera    Power supply box(undetermined)    Wall mount bracket    connecting tray

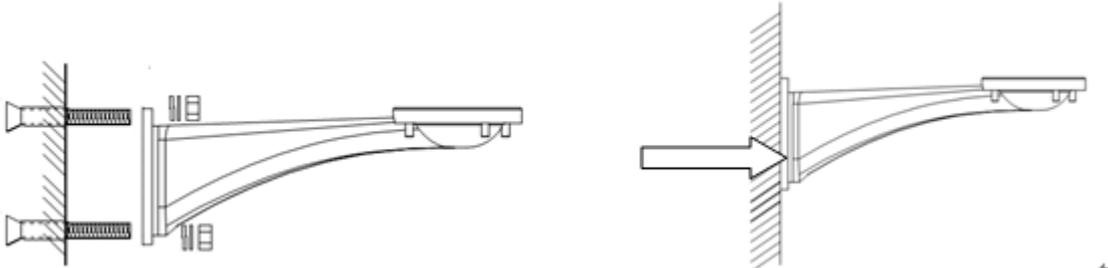
Camera body	1 pc
Connecting cable	1 pc
Wall mount bracket (choosable)	1 pc
Connecting Tray	1 pc
10. outer hexagonal wrench	1pcs
6. inner hexagonal wrench	1pcs
13. two-sides outer hexagonal wrench	1pcs
Manual	1 copy
Guarantee	1 copy
Certification	1 copy
Glove	1 pair
M8X35 inner Hexagon bolt	4pcs
Power Supply box(undetermined)	1 pcs
M8×35 Outer hexagonal screws	6pcs
nut cap spanner	1pcs

#### 3.2.2 Steps of installation:

**STEP 1** Locate the wall or impending base level that can support 5 times the weight of camera. Fix the bulgy snail  $\Phi 8\text{mm}$  on the floor or firm surface.



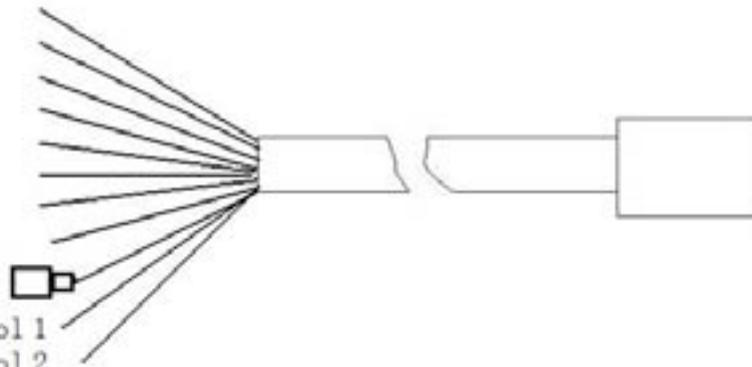
**STEP 2** If the power supply box is needed, fix the power supply box on the wall firstly, then fix the wall bracket on the power supply box; If the power supply box is not needed, then fix the wall bracket on the wall directly.



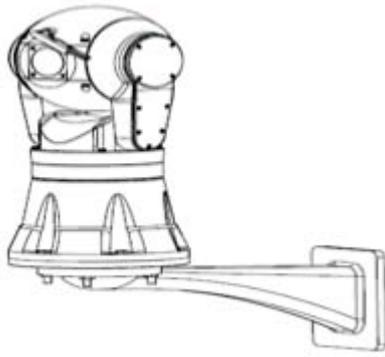
**STEP 3** Put power supply, video output, RS485 control input wiring through waterproof connector plugs, and connect them correspondingly to power supply, video, RS485 wiring of the connecting cable.

Connect the cable refer to the following picture

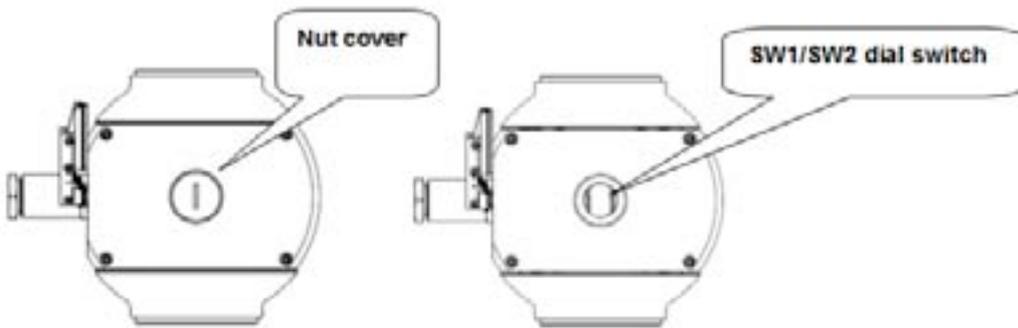
Red	Power 1
Black	Power 2
White	485+
Blue	485-
Grey	GND
Yellow	Alarm 1
Green	Alarm 2
Yellowgreen	Earth
BNC	Video
Brown	washer control 1
Purple	washer control 2



**STEP 4** Install the PTZ camera, insert the cables to the wall bracket, fix the bracket wall and connecting tray with 4pcs M8 x 35 outer hexangular screws, and then fix the PTZ camera with connecting tray by M8 x 30 outer hexangular screws.



**STEP 5** screws loose the nut cover on the camera, then you will see the 8 bit dial switch. Set the protocol, bound rate, address for the camera. Screw tight the nut cover when finish setting.



|

**STEP 6** turn on the power after finishing check

# **Chapter 4: TECHNICAL PARAMETER**

**4.1 Structure**

**4.2 Rotation Index**

**4.3 Electric Index**

**4.4 Camera module Parameter**

**4.5 IR lamps Parameter**

### 4.1 Structure

- Integrated dome drive: aluminum-alloy

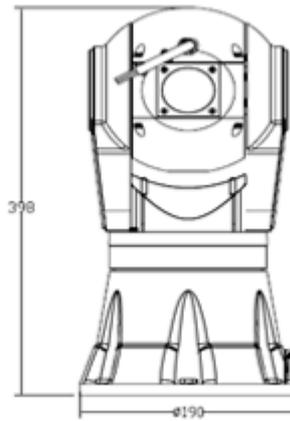
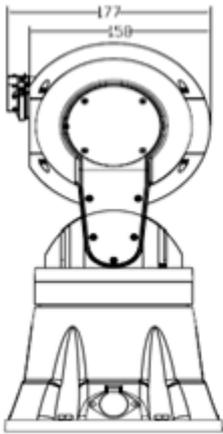
- Standard weight loading: 5KG

way of installation: pedestal mount wall mount, in-ceiling mount

the requirement for bracket :can stand more than 5 times the weight of camera

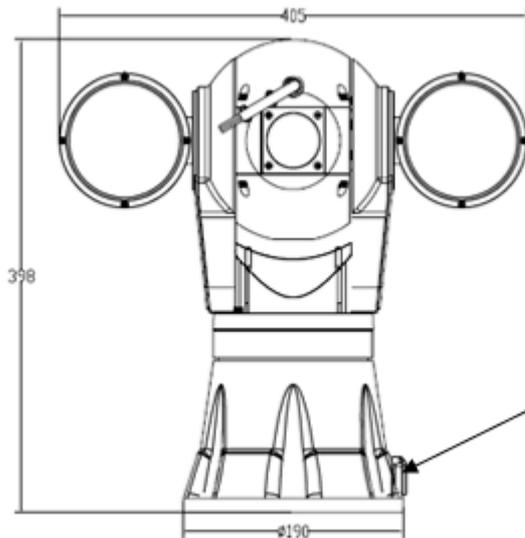
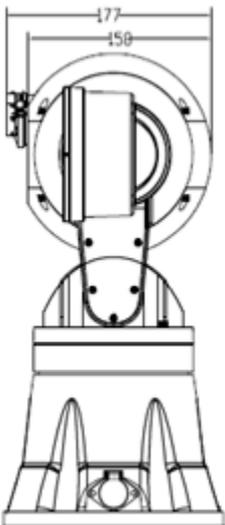
	Net weight	shipping weight
One without IR	12kg	14kg
One with IR	16kg	19kg

Dimension: see the following Dimension Drawing:



4 HOLES φ8.5 EQUISPACED  
ON A 170 PCD

With IR lamps one:



4 HOLES φ8.5 EQUISPACED  
ON A 170 PCD

- Operation Environment: indoor/outdoor
- working temperature: -40°C ~55°C (outdoor)

#### 4.2 Rotating index:

Pan rotation	360°continuous rotation
Tilt rotation	Pedestal stand mode: -35°~+90°
	Pedestal stand mode with pitching 30° angle: -65°~+90°
	Reversed mount: +35°~-90°
Manual control speed	
pan	0.1°~90°/Second manual operation
Tilt	0.1°~40°/Second manual operation
Preset speed	
Pan	90°/ Second
Tilt	40°/Second

#### 4.3 Electric index

Input voltage	Standard AC24V, DC12V or DC24VC is optional
Input power	
Without IR lamps	50W
With IR lamps	70W

The minimum requirement for coaxial cable is 75 ohms resistance; complete copper core conductor; complete copper shield layer, shield cover range 95%

#### 4.4 camera, lamps parameter

Mode	26×D/N	26x D/N (with stabilizer)	36×D/N
Optical zoom	26	26	36
Digital zoom	12		
Signal system	PAL/NTSC		
Scan system	2:1 interlacing scan		
CCD	1/4"CCD		
Effective Pixel	795(H)×596(V)		
Horizontal resolution	>480TVL	>480TVL	>520TVL
Lens focus	F1.4(f=2.5-91mm)	F1.4(f=2.5-91mm)	F1.4(f=3.4-122.4mm)
Horizontal angel	3.5mm wide angel 54.2° 91mm narrow angle 2.2°	3.5mm wide angel 54.2° 91mm narrow angle 2.2°	3.4mm wide angel 57.8°, 119mm narrow angle 1.7°
Focus Ctrl	Auto/ Manual first		
Minimum illumination	1/50sec Shutter Speed (color) 1.0Lux 1/3Shutter Speed (color) 0.1Lux	1/50 sec Shutter Speed (color) 1.0Lux 1/3sec Shutter Speed (color) 0.1Lux	1/50 sec Shutter Speed (color) 1.4Lux 1/3sec Shutter Speed (color) 0.1Lux
Sync system	built-in Sync		
Shutter Speed	auto、1/4-1/10000	auto、1/4-1/10000	auto、1/4-1/10000
Iris Ctrl	Auto/ Manual first		
Gain Ctrl	Auto/ Manual		
Video Output	1.0±0.2VP-P (75Ω, complex)		
S/N Ratio	50dB		
White Balance	Auto/ Manual		

#### 4.5 Technical Parameter of IR lamps

Distance	>100m
Angle	45°
IR Lens	Two pairs 7*1W, 6*Φ8
IR lamps efficiency	90%
wavelength	850nm
Voltage	DC12V

current	2*1A
Power	2*12W
Measurement (LXWXH)	Two pairs $\Phi 108 \times 85\text{mm}$
Net Weight	Two pairs *0.5kg

# **Chapter 5: Operation**

**5.1 Auto configure after power on**

**5.2 Basic Function Operation**

**5.3 Special Function Preset**

**5.4 Screen Character Display**

## 5.1. Auto configure after power on

After connect all wirings as the instruction and turn on the power, the camera will display its configure information. And after it finish configure, the menu will show "configure OK" information. If the user sets the POWER UP DONE, the camera will execute this movement and the tips information disappear; if the user does not set the POWER UP DONE, the tips information will be kept until the camera receive the control command, then the tips information will disappear and show the system communication control is normal. If the camera does not receive the control command, the tip information will disappear automatically after 3 minutes.

### NOTE:

1. VERSION 1.0 is the software version number of the camera, and it will change as the product's upgrade.
2. PROTOCOL P/D is control agreement, can support P, D protocol, and it will change as the dial switch chooses different protocol.
3. ADDRESS 1 for Protocol P is control address, can support 256 addresses, and it will change as the dial switch chooses different protocol.
4. ADDRESS 0 for Protocol D is control address, can support 256 addresses, and it will change as the dial switch chooses different protocol.
5. COMM 2400.N.8.1 is communication information, 2400 is communication baud rate, there are 1200, 2400, 4800, 9600 four baud rate for different dial switch. N.8.1 means no verify, 8 data byte, 1 dwell position.

After the dome finish configure, you can operate the camera as the following way:

## 5.2 Basic Function Operation

OPERATION	PROCEDURE
Pan/Tilt	<ol style="list-style-type: none"><li>1. To rocker control keyboard, camera will rotate to the operation direction if the rocker leans to one direction of up/down/left/right. The speed depends on the distance between rocker and center. The camera will move slowly to the operation direction if move the rocker lightly in one direction. The camera will speed to MAX. Speed of continuously move the rocker in one direction. The camera will stop when the rocker returns to the center.</li><li>2. To 2-dimension control keyboard, the camera will rotate to the operating direction if press direction key. The speed depends on the current speed code. To our KBD100 keyboard, press any one of 1-9, and then press direction key. The pressed number key is the speed stage. The larger number it is, the higher speed will be. The camera stops action of release the key.</li><li>3. To computer software control, press the direction key of control, the camera will rotate to the operating direction. The speed depends on current speed code. Some software can implement continuous rotation and some only can implement dot movement. Please refer to the software instruction provided by the manufacture for detailed operations.</li></ol> <p>This dome can do 3600 continuous pan rotation and +20~-920 vertical rotations. It will stop rotate when reaching tilt limit.</p>
STOP SCAN	Preset 96(hit"9"+"6"+ "Preset")

PRESET TOUR	Preset 98(hit"9"+"8"+ "Preset")
AUTO SCAN	Preset 99(hit"9"+"9"+ "Preset")
Pattern	<ol style="list-style-type: none"> <li>1. press pattern scan setting to start</li> <li>2. run the camera as the designed route</li> <li>3. press pattern scan setting to stop</li> <li>4. run the pattern scan, the camera will run the recorded route</li> </ol>
ZOOM WIDE	<ol style="list-style-type: none"> <li>1.Press the ZOOM WIDE button or turn the joystick clockwise until you have the picture you want</li> <li>2.release the button or joystick</li> </ol>
ZOOM TELE	<ol style="list-style-type: none"> <li>1.Press the ZOOM TELE button or turn the joystick anti-clockwise until you have the picture you want</li> <li>2.release the button or joystick</li> </ol>
IRIS OPEN	Continuously press key OPEN to open iris and increase brightness gain
IRIS CLOSE	Continuously press key CLOSE to close iris and increase brightness gain
FOCUS NEAR	Continuously press key NEAR, focus become near from far, the image becomes fog from clear or becomes clear from fog.
FOCUS FAR	Continuously press key FAR, focus become far from near, the image becomes fog from clear or becomes clear from fog.
PRESETS	<ol style="list-style-type: none"> <li>1. When set presetting, press "preset No."+ key "PRESET"(about for 3 seconds)</li> <li>2. When use presetting, press "preset No."+ key "PRESET"</li> <li>3. Please refer to operation instruction book for controller.</li> </ol>
Wiper Control	<p>Preparation:</p> <ol style="list-style-type: none"> <li>1, Press preset 95 to enter into OSD menu.</li> <li>2, Enter WIPER in AUX menu , there will be three kind of wiper running option: single mode, linkage mode, circle mode.</li> </ol> <p>Way 1:</p> <p>Presse preset 77 to set it "ON", wiper stops after 60 seconds, wiper stops if pressing preset 78 to set it "OFF" within 60secs</p> <p>Way 2:</p> <p>Use Pelco keyboard or UV900-KBD keyboard, press "1"+"ON" to set wiper "ON", wiper stops after 60 seconds, wiper stops if pressing "1"+ "OFF"to set it "OFF" within 60secs</p>
IR Lamps Control	<p>Way 1:</p> <ol style="list-style-type: none"> <li>1, Enter into menu by pressing preset 95</li> <li>2, Enter INFRARED in the AUX menu. ON means open IR, it will starts work when the illumination is lower than ILUX. OFF means close IR.</li> </ol> <p>Way 2:</p> <p>Pressing Preset 75 to set it "ON", pressing preset 76 to set it "OFF"</p> <p>Way 3:</p> <p>Use Pelco Keyboard press"2"+ "ON" to set IR lamps ON, pressing "1"</p>

+ "OFF" to set IR lamps OFF.
------------------------------

### 5.3 Special Function Preset

The following stipulations are for presetting,

Preset()	function
1-8	Parking Position
33	180° flip
34	lever home place
63	Repeat to run preset 63, open or close displayed centre line
64	(Setting) display all privacy zone. (Transfer) close all privacy zone
75	Open IR lamps
76	Close IR lamps
77	Open Wiper
78	Close Wiper
79	Open zoom in
80	Close zoom in
81	Auto low lux shift
82	Open law lux shift (B&W menu)
83	Close law lux shift (color menu)
84	Open wide dynamic
85	Close wide dynamic
86	Open Backlight Compensation
87	Close Backlight Compensation
88	Open video freeze
89	Close video freeze
92-93	Scan control limit
94	Exit menu
95	Enter menu
96	Scan stop
98	Preset tour
99	Auto scan

## 5.4 Screen Character Display

To keep convenient operation, the camera provides a series of display of screen characters. The displayable characters including lens zoom, orientation, date, time, week, the inner temperature of the pan/tilt, user header, camera position title, presets setting, running , clearing, pattern scan setting, close, and running display.

The camera zoom display, display format: X36, 36 means the optical zoom of the camera.

The orientation display: for example:"E", means the East orientation.

(Total 8 orientation: E, S, W, N, SE, SW, NE, NW)

Date, time, week display: for example: 2009-9-3 Thu

The inner temperature display: for example: 36°C

The user Title: initialization is "Minrray Industry Co.,Ltd", user can set the title by the menu.

The Camera Position Title: initialization is "Ganlanpeng Garden, No.3030, Caitian Rd" user can set the camera position title by the menu.

The Presets display:

*Set Preset Display*: "Set: Preset000001", means the 001 preset has been set successfully, the title of this preset is "Preset000001"

*Run Preset Display*: "Preset000001" means run preset 00001 successfully, the title of this preset is "Preset000001"

*Clear Preset Display*: "Clear: Preset000001", means the 001 preset has been cleared successfully, the title of this preset is "Preset000001"

Set Pattern 1 display: "P 1 Set" means pattern 1 setting starts.

Stop Pattern 1 display: "P 1 Stop" means pattern 1 setting stops.

Run Pattern 1 display: "P 1 Run" means to run the pattern 1 .

Set Pattern 2 display: "P 2 Set" means pattern 2 setting starts.

Stop Pattern 2 display: "P 2 Stop" means pattern 2 setting stops.

Run Pattern 2 display: "P 2 Run" means to run the pattern 2 .

# **Chapter 6: OSD OPERATION**

## **6.1 Operation Introduction**

## **6.2 Main Menu**

## **6.3 Second Menu**

### **6.3.1 System Menu**

### **6.3.2 Screen display setting menu**

### **6.3.3 Camera parameter setting menu**

### **6.3.4 Pan/Tilt Menu**

### **6.3.5 Privacy Zone Menu**

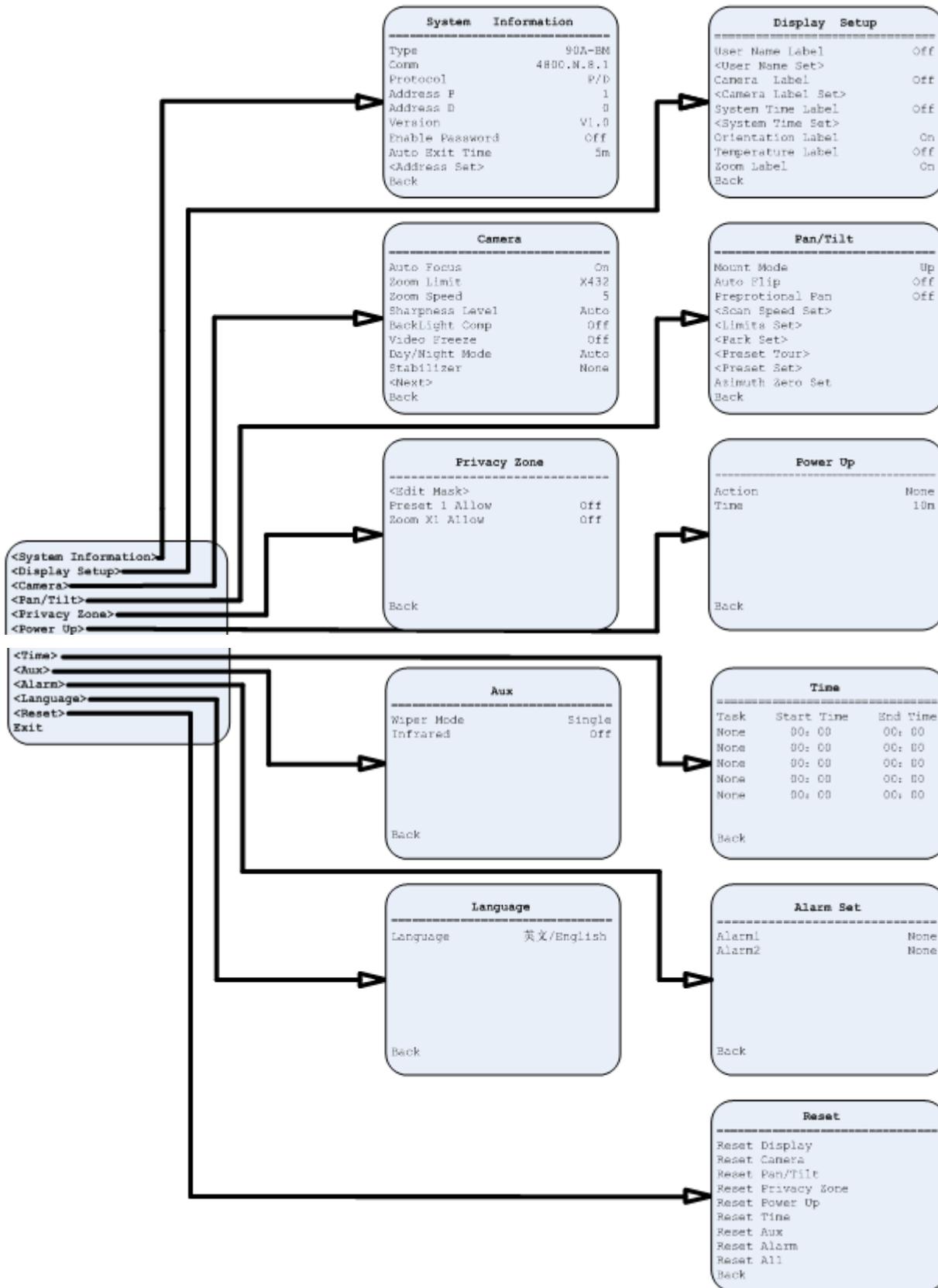
### **6.3.6 Power on Mode**

### **6.3.7 AUX Control**

### **6.3.8 Language setting menu**

### **6.3.9 Camera Reset**

# English menu index



## 6.1 Operation Introduction

The basic operation of the menu includes: move menu bar, enter next menu, turn back to previous menu, change setting value, confirm change and cancel change.

Control up and down command: move menu bar and change setting.

Iris open command: enter camera menu or select menu to verify change.

Iris closed command: return former menu and cancel change.

This series camera is stipulated according to P/D protocol, and use preset position No.95 to open the main menu. For other protocol equipment, please refer to protocol instruction.

Press "9"+"5"+"PRESET"

Press key 95+ PRESET to enter dome camera menu

Press "9"+"4"+"PRESET"

Press key 94+ PRESET to exit dome camera menu

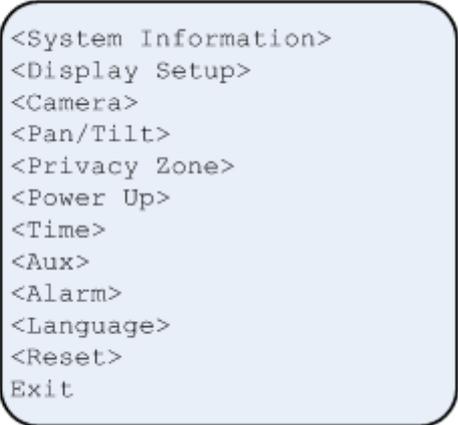
NOTE:

1 "< >"symbol means it contains next menu

2 use "up, down" key to move cursor "→", use "OPEN or CLOSE" key to confirm or exit the menu

3 when press "OPEN" key, the cursor becomes"★", then can use "UP or DOWN" key to amend the parameter;  
press OPEN key when finish your amendment.

## 6.2 MAIN MENU



```
<System Information>
<Display Setup>
<Camera>
<Pan/Tilt>
<Privacy Zone>
<Power Up>
<Time>
<Aux>
<Alarm>
<Language>
<Reset>
Exit
```

### (System Information)

display all the system information and Pan/Tilt address setting

### (Display Setup)

set all kinds of screen display information

### (Camera)

set the parameters of the camera

### (Pan/Tilt)

set the parameters of the Pan/Tilt

**( Privacy Zone )**

set the parameters of the privacy zone

**( Power Up )**

set the power-up action

**( Time )**

set the clock and the time finishing the assignment

**( Aux )**

set the wiper mode and the IR lamps switch

**( Alarm )**

set the action responding to the alarm input

**( Language )**

set the language

**( Reset )**

reset the camera

**( Exit )**

exit the menu

**6.3 Second Menu**

**6.3.1 System Menu**

System Information	
Type	90A-BM
Comm	4800.N.8.1
Protocol	P/D
Address P	1
Address D	0
Version	V1.0
Enable Password	Off
Auto Exit Time	5m
<Address Set>	
Back	

**( Type )**

The model of the Pan/Tilt

**( Comm )**

Comm,4800: baud rate, N: no verify, 8: 8 data byte, 1: 1 dwell position

**( Protocol )**

The type of the protocol will be different based on the change of the dial switch.

**( Address P )**

Address P, Pan/Tilt will respond to the control command based on the address.

**( Address D )**

Address D, Pan/Tilt will respond to the control command based on the address.

**( Version )**

Version number, it will change with the product's upgrade

**( Enable Password )**

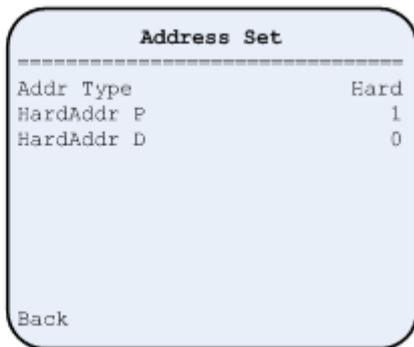
Open or close the menu password protection function

**( Auto Exit Time )**

Auto exit time: 2、3、4、5、6、7、8、9、10 minutes choosable

**( <Address Set> )**

Address set, the type include: software address, hardware address. Press the OPEN for Iris, address set menu will be displayed in the screen. If the address using is hardware address, the menu will be as follows:



**( Addr Type )**

Address type: software address and hardware address. The software address will be set by the user in the menu of Address Set, while the hardware address will be decided by the dial switch.

**( HardAddr P )**

HardAddr P, Pan/Tilt will respond to the control command based on the address.

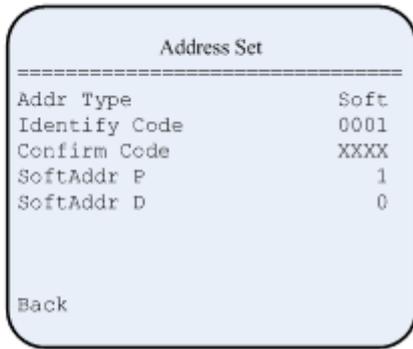
**( HardAddr D )**

HardAddr D, Pan/Tilt will respond to the control command based on the address.

**( Back )**

Return to the former menu

If the address using is software address, the menu will be as follows:



Ways to change the software address:

The first step: move the cursor to the confirm code according to the number of the Identify Code and press the open button, the first X will begin to flicker, then edit the inputted numerical value

The second step; Press the rightward button after the first number was inputted, the flicker of the first number will be cancelled and the second X will begin to flicker, then input the second number according to the former way. The third and fourth number can be edited in the same way.

The third step; Input the 4 numbers that are the same as the Identify Code and press the OPEN button to confirm, the screen will display "Correct Identify Code" and the English menu will display "Right" if the confirmed Identify Code is identical to the number that the system offered, the screen will display "Wrong Identify Code" and the English menu will display "Wrong" if the confirmed Identify Code is different from the number that the system offered.

Fourth, move the cursor to Protocol P or Protocol D and use UP/DOWN to change Protocol P address or Protocol D address to the targeted address. (Once one of the addresses is changed, the other one will change automatically)

Fifth, after the change, open IRIS to confirm the address; and at the bottom of the screen it will note: Please Change Controller's Address, which means the address has been changed successfully and the controller's address also needs to be changed.

(Back)

Return to the former menu

Note: Except for "Enable Password", "Auto Exit Time", "Address Set", other items can only be displayed, cannot be changed in this menu.

### 6.3.2 Screen Display Setting Menu



**(User Name Label)**

Default Setting: (Off)

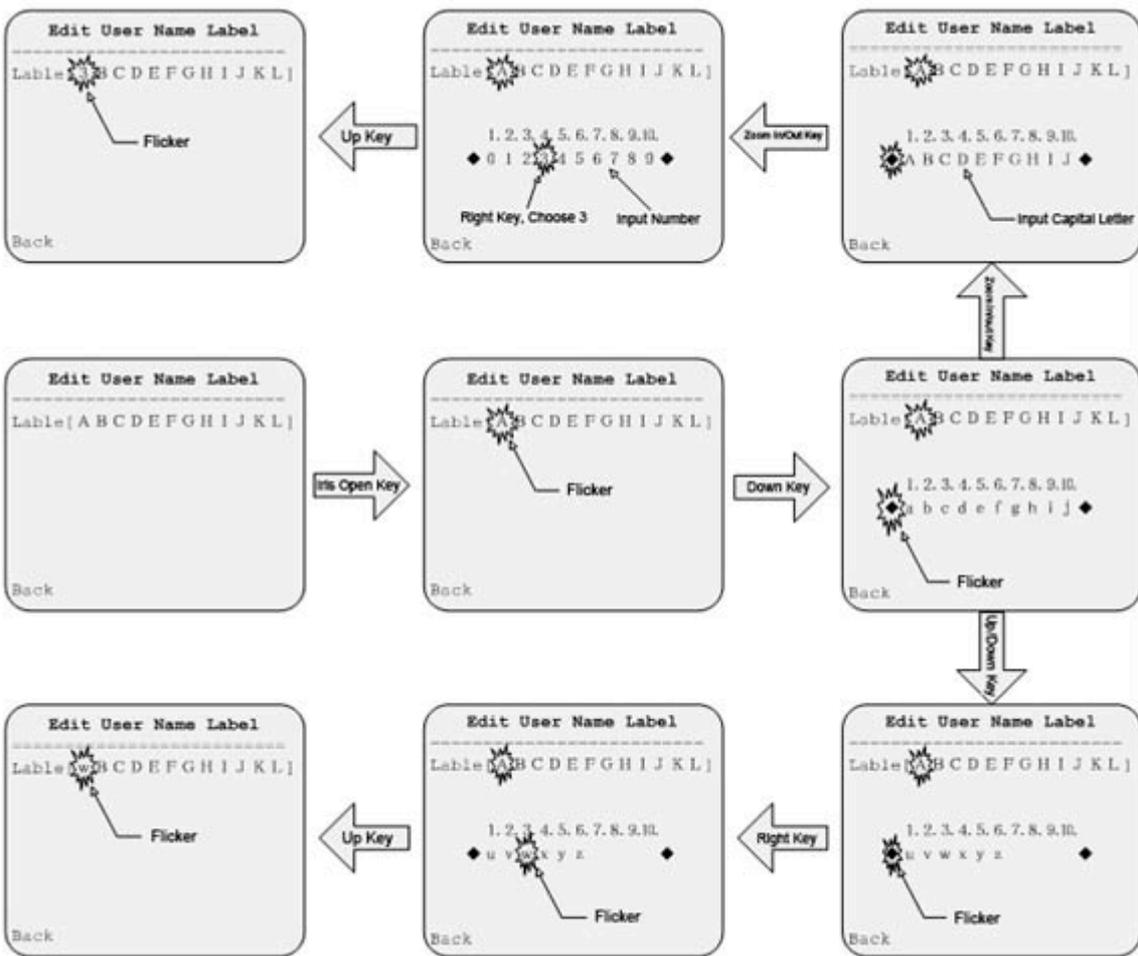
Setting mode: On and Off

**(<User Name Set>)**

Set the user self-defined Label: press the Open for Iris, and user Name Set menu will be displayed in the screen



Menu label input step:



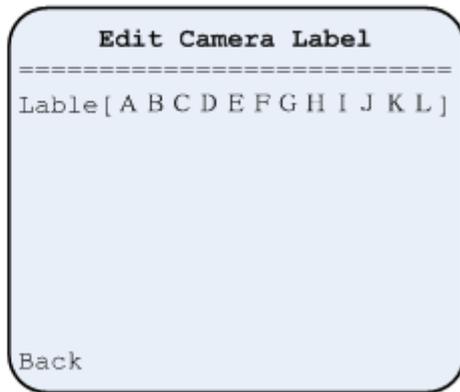
**( Camera Label)**

Default setting: (Off)

Setting mode: On and Off

**( <Camera Label Set>)**

Set the Camera Label, press the Open for Iris, Camera Label Set menu will be displayed in the screen. The process of Camera Label Set and User Label Set are the same.



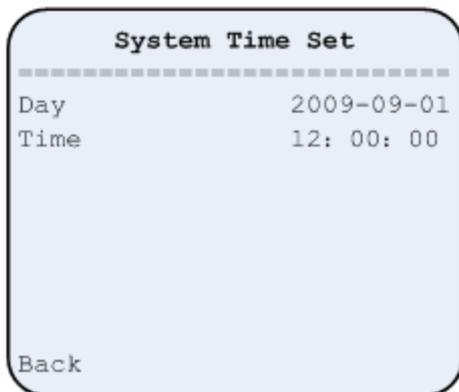
**( System Time Label)**

Default Setting: (Off)

Setting mode: On and Off

**( < System Time Set>)**

System Time Set: press Open in Iris, the System Time Set menu will be displayed in the screen



**Day** Default Setting: Local Time

**Time** Default Setting: Beijing Time

**Orientation Label** Default Setting: On

Setting mode: On and Off

**Temperature** Default Setting: Off

Setting mode: On and Off

**Zoom Label**

Default Setting: On

Setting mode: On and Off

**(Back)**

Return to the former menu

### 6.3.3 Camera parameter setting menu



Note: The function of STABILIZER, Video Freeze will be only available when the camera has such functions. If the camera has, it can be set in the menu. If camera hasn't, None item will be showed in the menu, and can not be set.

AUTO FOCUS(ZOOM RANGE): default setting is ON  
ON&OFF,.

ZOOM LIMIT: default setting is: X432  
Different cameras will show different zoom limit

ZOOM SPEED : default setting is: 5  
There are 0~7 grade zoom speed, different cameras will show different zoom speed.

SHARPNESS LEVEL: default setting is: AUTO  
There are 0~15 grade sharpness, but it available only when AUTO SHARPNESS setting is ON

BACKLIGHT COMP default setting is: OFF  
ON&OFF,

VIDEO FREEZE: default setting is: OFF  
There are two video freeze modes: ON& OFF

DAY/NIGHT:

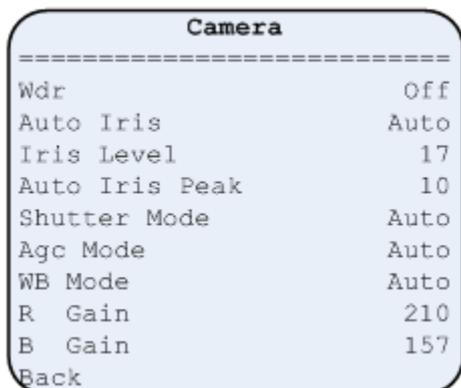
default setting is: AUTO

AUTO, DAY and NIGHT can be chosen

STABILIZER :default setting is: OFF

There are two stabilizer modes: ON& OFF, and it only available in the menu for camera which has this function.

( <Next> )



Camera	
Wdr	Off
Auto Iris	Auto
Iris Level	17
Auto Iris Peak	10
Shutter Mode	Auto
Agc Mode	Auto
WB Mode	Auto
R Gain	210
B Gain	157
Back	

Note: The function of WDR will be only available when the camera has such functions. If the camera has, it can be set in the menu. If camera hasn't, None item will be showed in the menu, and can not be set.

WDR

Default Setting: Off

WDR mode: On and Off

Different character will be showed for different camera module. If the module has not such function, None item will be showed in the menu.

Auto Iris

Default Setting: Auto

Two options for Auto Iris: Auto and Man

Iris Level

Default Setting: 17

0~17(available only when AUTO IRIS MODE is MAN)

**Auto Iris Peak**

Default Setting: 10

1~10(available only when AUTO IRIS MODE is MAN)

**Shutter Mode**

Default Setting: (Auto)

AUTO& MAN choosable, Shutter speed only available when the shutter mode is MAN. There is 1/1~1/10000 shutter speed, according to different cameras' parameter

**Agc Mode**

Default Setting: (Auto)

There are two auto gain control modes: AUTO& MANUAL, for manual, there are 0~28db grade of gain for choice

**WB Mode**

Default Setting: (Auto)

There are two modes of auto white balance: AUTO& MAN

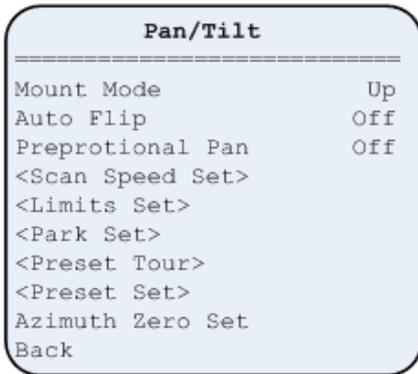
**R GAIN:** Default setting is: 210

There are 0~255 grade red gain available only under auto white balance mode: MAN

**B GAIN :** Default setting is: 157

There are 0~255 grade blue gain available only under auto white balance mode: MAN

### 6.3.4 PTZ menu



#### Mount Mode

Default setting is: Up

There are three kinds of installation: Up, Down, Up30

#### Auto Flip

Default setting is: Off

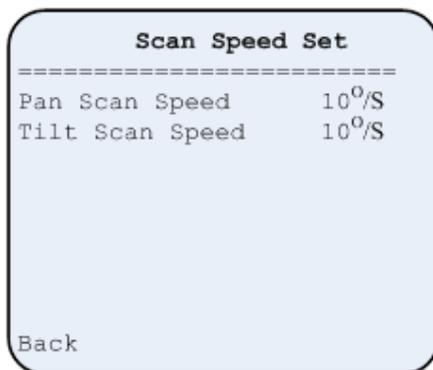
ON and OFF for choice

#### Proportional Pan

Default setting is: Off

ON and OFF for choice

#### <Scan Speed Set>



#### Pan Scan Speed

Default setting is: 10<sup>0</sup>/S

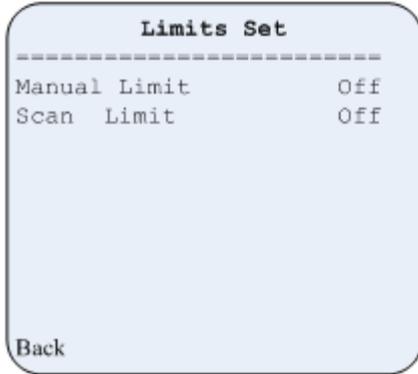
Pan Scan Speed: 1~40<sup>0</sup>/S

#### Tilt Scan Speed

Default setting is: 10<sup>0</sup>/S

Tilt Scan Speed: 1~20<sup>0</sup>/S

<Limit Set>



**Manual Limit**

Manual Limit: On and Off

Default setting is: Off

**Scan Limit**

Scan Limit: On and Off

Default setting is: Off

<Park Set>



**Park Action**

Park Action mode: None、Preset1~Preset8、Scan、P&T Scan、Tour、Pattern1、Pattern2 14 choices selectable

Default setting is: None

**Park Time**

Park Time: 2~60 Min selectable

Default setting is: 10 m

**<Preset Tour>**



**Tour NO.**

Default setting: No. 1

Tour No.: 1~4 tour line for choice

**<Tour Set>**

No.	Preset No.	Time (S)
1	1	10
2	2	10
3	3	10
4	4	10
5	5	10
6	6	10
7	7	10
8	8	10

Back

**(NO.)**

Tour No.: 1~8 for choice

**(Preset NO.)**

Preset No.: 1~32 for choice

**(Time (S))**

Time: 5~99 seconds for choice. It is the dwell time after preset reach the point.

**(Tour Run)**

Press Open key, there will be tip in the right of this column: confirm (Flash status); press Open once more, menu shows Success. PTZ system begin to execute Preset Tour, the preset line is the line with tour No.

**(Tour Clear)**

Press Open key, there will be tip in the right of this column: confirm (Flash status); press Open once more, menu shows Success, clear the tour successfully. If enter Tour Parameter Setting menu, the column of Preset No, will shows None, and time shows as "0"

( <Preset Set> )

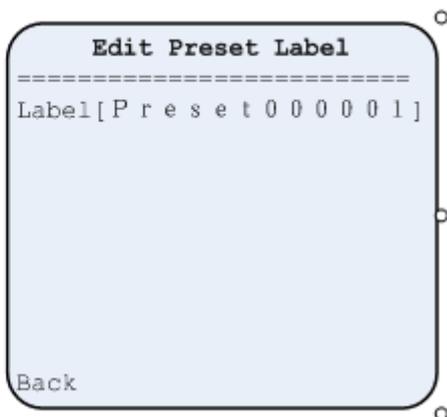


Preset No.: 1~256 for choice, among them, 33、 34、 75~99 is the special preset. The special preset can be run in the menu(set and call preset has the same function). When enter the menu, the preset No, will be shows as No.1.

( **Title** )

Note: English Label can only contain 12 characters.

Preset Label: Based on different preset No, users can edit themselves' preset label. Enter this column, Edit Preset Label item will be showed in the screen. For the setting of this item, please make reference to the Edit User Label item.



( **State** )

State: Display the status of selected preset position. States include: Defined and Undefined.

( **Set** )

Set preset: cursor stays in this column, press Open, and enter the Set preset item; Then move the PTZ to the position user want to set preset, press Open again, the preset set action has been finished.

( **Call** )

Call: cursor stays in this column, press Open, means confirm. Press Open again, the preset call has been finished; the PTZ will run to the preset position quickly.

( **Clear** )

Clear preset: cursor stays in this column, press Open, means confirm. Press Open again, the preset clear has been finished

( **Back** )

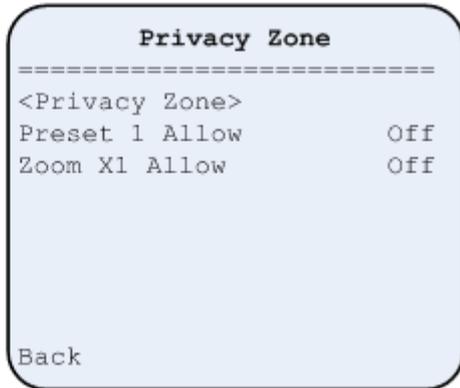
Return to the previous menu

( **Set Azimuth Zero** )

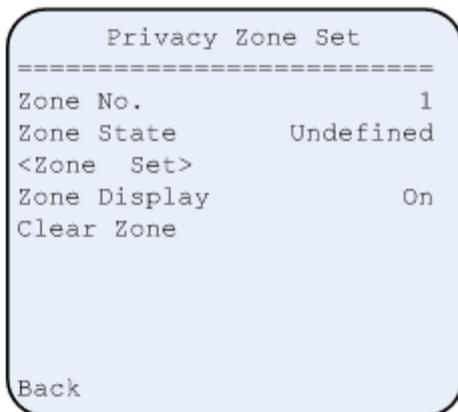
Set Azimuth Zero: Self-define Set Azimuth Zero, user can move the camera to the place which need to be defined, then

press Open to confirm the set.

### 6.3.5 Privacy Zone Setting



(<Privacy Zone>)



(Zone NO.)

Zone No. is available for SONY from 1~24, 24 privacy zones can be set and most 8 privacy zones set at each image.

(Zone State)

Confirm the privacy zone is defined or not to the current ZONE NO. It has "UNDEFINED" and "DEFINED". It can not be modified.

### (Zone Set)



Note: When it is selected, a central line appears in the image, user can change the position by moving the vertical and horizontal position. When user chooses a effective position and presses "OPEN", a new privacy zone is defined, exit <ZONE POSITION SET> and central line is closed; If user chooses a effective position and presses "Close", prior privacy zone is kept, exit <ZONE POSITION SET> and central line is closed; If user doesn't choose effective position, pressing "OPEN" is valid and pressing "close" to exit <ZONE POSITION SET>, central line is closed.

### (Zone Height)

Zone height is optional from 1~255.

### (Zone Width)

Zone width is optional from 1~255.

### (Zone Color)

Zone color concludes BLACK、GRAY1、GRAY2、GRAY3、GRAY4、GRAY5、GRAY6、WHITE、RED、GREEN、BLUE、CYAN、YELLOW、MAGENTA

### (Transparency)

Zone transparency has "ON" and "OFF"

### (Back)

Return to the previous menu

### (Zone Display)

It has " ON" and "OFF". When it is "ON", current privacy zone displays; when it is "OFF", current privacy zone closes.

### (Clear Zone)

Delete current privacy zone.

### (Preset 1 Allow)

Default setting is : (Off)

Preset 1 special function has selection of "ON" or "OFF"

Note: "ON" means allow preset 1 special function; "OFF" means forbid preset 1 special function

When allowed preset 1 special function, on non-menu status, PTZ camera run to preset 1 position after transferring preset 1, all privacy zones are closed. Privacy zone appears as soon as PTZ camera move or zoom at preset 1.

ZOOM X1 ALLOW(1 zoom special function) default setting is: OFF

Zoom x 1 Allow has selection of "ON" and "OFF"

Note: "ON" means allow ZOOM x1 ALLOW special function; "OFF" means forbid ZOOM x1 ALLOW.

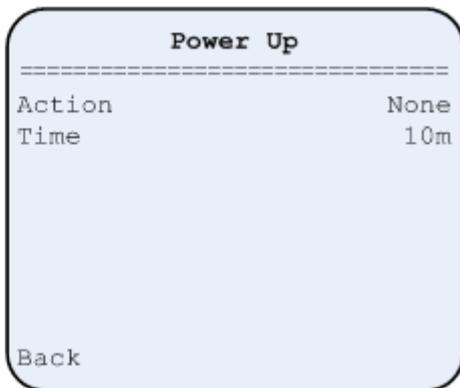
When ZOOM X1 ALLOW opens, optical zoom in zoom X1 status, all privacy zones won't display; over zoom X1, all privacy zones display. When ZOOM X1 ALLOW closes, all privacy zones display in any zoom status.

Special Circs: Under the circumstance that ZOOM x1 ALLOW and PRESET 1 ALLOW are both "ON", all privacy zones close when run the preset 1; when the camera moves or zooms at Preset 1, all privacy zones appear if the optical zoom is more than 1, and all privacy zones disappear if the optical zoom is less than 1. When camera runs to the other preset position, privacy zones won't display if the optical zoom is less than 1 and privacy zone displays if the optical zoom is more than 1.

(Back)

Return to the previous menu

### 6.3.6 Power Up Menu



(Power Up Action) default setting is: (None)

There are 15 power up action modes: NONE、1PRESET~8PRESET、SCAN、P & T Scan、PRESET TOUR、Pattern1、Pattern2、return to the status before power-off.

POWER UP TIME : default setting is: 10min

2 ~10 minutes for choice

(Back)

Return to the previous menu

### 6.3.6 Task Setting

Time		
Task	Start Time	End Time
None	00: 00	00: 00
None	00: 00	00: 00
None	00: 00	00: 00
None	00: 00	00: 00
None	00: 00	00: 00

Back

Note: 1 Regular time period settings do not allow the various time periods overlap.

2 When running the power-up action or park action, the current action will stop when the set time arrives; then execute the task.

3 During the task time, the current action will stop if the user operate the dome. If within 10 sec no other operation and it is still in the task time period, the task action will run continuously.

**(Task)** Default setting is: (None)

Task: Power-on option: There are 14 power up action modes: NONE、1PRESET~8PRESET、SCAN、P & T Scan、PRESET TOUR、Pattern1、Pattern2

**(Start Time)** Default setting is: 00: 00

The format of Start Time: hour: minute。hour: 00~23, minute: 00~59。

**(End Time)** Default setting is: 00: 00

The format of End Time: hour: minute。hour: 00~23, minute: 00~59。

**(Back)**

Return to the previous menu

### 6.3.7 Aux Menu

Aux	
Wiper Mode	Single
Infrared	Off

Back

**(Wiper Mode)** default setting is: (Single)

The wiper control output has three kind of options: SINGLE, CYCLE, COMBINE

INFRARED(IR lamps control)

default setting is: OFF

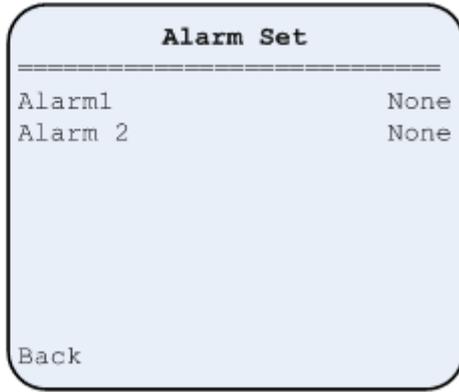
IR lamps control can choose ON、 OFF

When the IR lamp is OFF, the IR lamp will not work when it is above 1Lux; When the IR lamp is On, the IR lamp will work when it is below 1Lux, and then it will stop work when it is above 1Lux.

( **Back** )

Return to the previous menu

### 6.3.8 Alarm Set Menu



( **Alarm1** ) default setting is: (None)

Alarm input is for the situation when there is alarm, the action speed dome need to execute. There are 14 action modes: NONE、 1PRESET~8PRESET、 SCAN、 P & T Scan、 PRESET TOUR、 Pattern1、 Pattern2

( **Alarm2** ) default setting is: (None)

Alarm input is for the situation when there is alarm, the action speed dome need to execute. There are 14 action modes: NONE、 1PRESET~8PRESET、 SCAN、 P & T Scan、 PRESET TOUR、 Pattern1、 Pattern2

( **Back** )

Return to the previous menu

### 6.3.9 Language setting menu



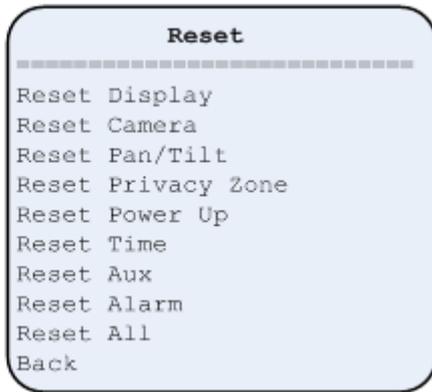
( **Language** ) default setting is : English

Chinese and English for option

( **Back** )

Return to the former menu

### 6.3.10 Reset Menu



#### ( **Reset Display** )

Reset Display: User Label, Edit Camera Label, Edit Preset Label

#### ( **Reset Camera** )

Reset Camera: all the camera parameter return to the default setting

#### ( **Reset Pan/Tilt** )

Reset Pan/Tilt: Pan/Tilt rotate to the zero position

#### ( **Reset Privacy Zone** )

Reset Privacy Zone: delete all privacy zone

#### ( **Reset Power Up** )

Reset Power Up, power-up mode: None; Power-up time: 10 min

#### ( **Time Reset** )

Time Reset:all the setting for the time task return to the default setting.

#### ( **Reset Aux** )

Reset Aux: all the setting for the Aux Switch return to the default setting

#### ( **Reset Alarm** )

Reset Alarm: all the setting for the Alarm return to the default setting

#### ( **Reset All** )

Reset all: screen display reset, camera parameter reset, Pan/Tilt parameter reset, privacy zone reset, power-up reset, task time reset, Aux switch reset, alarm reset.

#### ( **Back** )

Return to the previous menu

**Appendix 1 Dial Switching Setting**

**Appendix 2 Pelco P Protocol**

**Appendix 3 Pelco D Protocol**

**Appendix 4 Troubleshooting and Resolution**

## Appendix 1

### 1.1 CAMERA CONTROL

Note: When one control bus controls several (more than 2) dome cameras, it needs merging a 120ohm resistance at anode & cathode Com 485 in the farthest dome camera in order to ensure the normal work of control signal.

### 1.2 Switch setting for SW1

Note: Switch SW1 is used to set protocol, camera and baud rate

Protocol, camera , baud rate	SW1 setting							
	1	2	3	4	5	6	7	8
VCL	OFF	OFF	—	—	—	—	—	—
PELCO-P	ON	OFF	—	—	—	—	—	—
PELCO-D	OFF	ON	—	—	—	—	—	—
FV	ON	ON	—	—	—	—	—	—
SONY	—	—	ON	OFF	ON	OFF	—	—
HITACHI	—	—	OFF	ON	ON	OFF	—	—
1200	—	—	—	—	—	—	OFF	OFF
2400	—	—	—	—	—	—	ON	OFF
4800	—	—	—	—	—	—	OFF	ON
9600	—	—	—	—	—	—	ON	ON

### 1.3 Switch setting for SW2

Note: Switch SW2 is used to set receiving address.

Protocol P addresses setting:

Address	Switch setting							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	ON	OFF						
3	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16	ON	ON	ON	ON	OFF	OFF	OFF	OFF
17	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF

18	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
27	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
28	ON	ON	OFF	ON	ON	OFF	OFF	OFF
29	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
30	ON	OFF	ON	ON	ON	OFF	OFF	OFF
31	OFF	ON	ON	ON	ON	OFF	OFF	OFF
32	ON	ON	ON	ON	ON	OFF	OFF	OFF
33	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
35	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
36	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
37	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
38	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
39	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
40	ON	ON	ON	OFF	OFF	ON	OFF	OFF
41	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
42	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
43	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
44	ON	ON	OFF	ON	OFF	ON	OFF	OFF
45	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
46	ON	OFF	ON	ON	OFF	ON	OFF	OFF
47	OFF	ON	ON	ON	OFF	ON	OFF	OFF
48	ON	ON	ON	ON	OFF	ON	OFF	OFF
49	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
50	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
51	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
52	ON	ON	OFF	OFF	ON	ON	OFF	OFF
53	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
54	ON	OFF	ON	OFF	ON	ON	OFF	OFF
55	OFF	ON	ON	OFF	ON	ON	OFF	OFF
56	ON	ON	ON	OFF	ON	ON	OFF	OFF
57	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
58	ON	OFF	OFF	ON	ON	ON	OFF	OFF
59	OFF	ON	OFF	ON	ON	ON	OFF	OFF
60	ON	ON	OFF	ON	ON	ON	OFF	OFF
61	OFF	OFF	ON	ON	ON	ON	OFF	OFF

62	ON	OFF	ON	ON	ON	ON	OFF	OFF
63	OFF	ON	ON	ON	ON	ON	OFF	OFF
64	ON	ON	ON	ON	ON	ON	OFF	OFF
-----	-----	-----	-----	-----	-----	-----	-----	-----
255	OFF	ON						
256	ON							

Protocols D address setting:

Address	Switch setting							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	ON	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
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF

34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
61	ON	OFF	ON	ON	ON	ON	OFF	OFF
62	OFF	ON	ON	ON	ON	ON	OFF	OFF
63	ON	ON	ON	ON	ON	ON	OFF	OFF
64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
-----	-----	-----	-----	-----	-----	-----	-----	-----
254	OFF	ON						
255	ON							

## Appendix 2: P control protocol

### 1. Command format

BYTE	VALUE	FUNCTION
1	\$A0	STX(start transmission)
2	\$00 to \$FF	Address

3	Data byte 1	
4	Data byte 2	
5	Data byte 3	
6	Data byte 4	
7	\$AF	ETX(end transmission)
8	\$00-\$FF	Check sum (XOR 1-7 bytes)

## 2. Instruction command

Bit number	7	6	5	4	3	2	1	0
Data 1	0	Camera on	Auto scan on	Camera on/off	Iris Close	Iris Open	Focus Near	Focus far
Data 2	0	Zoom Wide	Zoom Tele	Tile Down	Tile Up	Pan Left	Pan Right	0 (for pan/tilt) 1 (extended)
Data 3	Pan speed \$00 to \$3F and \$40 for turbo							
Data 4	Tilt speed \$00 to \$3F							

## 3. Special command format

COMMAND	DATA BYTE1	DATA BYTE2	DATA BYTE3	DATA BYTE4
Set Preset .xx	00	03	00	01 to FF
Clear Preset .xx	00	05	00	01 to FF
Go to preset .xx	00	07	00	01 to FF
Flip	00	07	00	21
Zero pan position	00	07	00	22
Set aux. xx	00	09	00	01 to 08
Clear aux. xx	00	0B	00	01 to 08
Pattern start	00	1F	00	00
Pattern stop	00	21	00	00

Run pattern	00	23	00	00
Start Sequence prepos	81	81	00	00
Insert prepos in stack	82	81	00	Prepos number
Delete prepos from stack	83	81	00	Prepos number
Clear seq. Stack	84	81	00	00
Show seq. Stack	85	81	00	00
Sequence dwell time	86	81	00	(0-255)second
Home function	87	81	Prepos number	10X1 sec time-out
Auto-panning speed	88	81	1	(0-255)speed
Auto-panning limit	88	81	2	1(left)/2(right)
Auto-panning start	88	81	3	0
PT Speed	89	81	P speed(0-255)	T speed(0-255)

Example: No.1 address rotator speed:30

```

Right      A0 00 00 02 30 00 AF 3D
Left       A0 00 00 04 30 00 AF 3B
Up         A0 00 00 08 00 30 AF 37
Down      A0 00 00 10 00 30 AF 2F
NEAR      A0 00 02 00 00 00 AF 0D
FAR       A0 00 01 00 00 00 AF 0E
OPEN      A0 00 04 00 00 00 AF 0B
CLOSE     A0 00 08 00 00 00 AF 07

```

### Appendix 3: PELCO D control protocol

#### 1, Command format:

BYTE	VALUE	FUNCTION
1	\$FF	STX (start transmission)
2	\$01 TO \$1F	Address

3	Data byte 1	
4	Data byte 2	
5	Data byte 3	
6	Data byte 4	
7	\$00-\$FF	Checksum(add byte 2,3,4,5,6)

## 2, Instruction command:

Bit number	7	6	5	4	3	2	1	0
Data1	0	0	0	0	0	Iris close	Iris open	Focus near
Data2	Focus far	Zoom wide	Zoom tele	Tilt down	Tilt up	Pan left	Pan right	0(for pan/tilt) 1 (extended)
Data3	Pan speed \$00 to \$40 for turbo							
Data4	Tilt speed \$00 to \$3F							

## 3, Special command format:

COMMAND	DATA BYTE1	DATA BYTE2	DATA BYTE3	DATA BYTE4
Set preset. xx	00	03	00	01 to FF
Clear preset. xx	00	05	00	01 to FF
Go to preset. xx	00	07	00	01 to FF
Flip (rotate 180)	00	07	00	21
Zero pan position	00	07	00	22
Set aux. xx	00	09	00	01 to 08
Clear aux. xx	00	0B	00	01 to 08
Pattern start	00	1F	00	00
Pattern stop	00	21	00	00
Run pattern	00	23	00	00

Example: No.1 address

Right	FF 01 00 02 20 00 23
Left	FF 01 00 04 23 00 28
Up	FF 01 00 08 00 23 2C
Down	FF 01 00 10 00 23 34
OPEN	FF 01 02 00 00 00 03
CLOSE	FF 01 04 00 00 00 05
NEAR	FF 01 01 00 00 00 02
FAR	FF 01 00 80 00 00 81

## Appendix 4, TROUBLESHOOTING

### 1. Image

Ask: No image displayed monitor?

First check if the power supply wire connection, voltage, indicator and dome camera work well, and then check the video wires, or it may be the drive trouble.

Ask: Image becomes black after self check, but can be controlled

Disturb of control system changes the camera iris parameters. Enter the camera menu then reset camera.

Ask: Image becomes fog when dome camera connects with hard disk video recorder.

Maybe it is related with the compressed card of hard disk video recorder.

Ask: abnormal display of image

Check the video connecting wires is well and other connecting sockets and camera flat wires are well.

Ask: Iris is small with many snowflakes after connection

The camera parameter changed. Please enter the menu to reset the camera.

Ask: The camera can only works at one focus, other position can not be focused.

Change the position to see if this phenomenon still exists. If yes, it may be caused by camera control drive focus control system trouble.

Ask: image cannot be clearly seen even at MAX. Zoom

Maybe electronic zoom open or the observed object is too close to imaging.

Ask: the image is reddish or greenish. Does the WB parameter change?

The camera parameter changed. Enter the menu to reset the camera.

Ask: the color-to black& white camera can not change to black& white or cannot return to color

Check if the pharosage is too high or too low. Rotate control to other angle to see if normal. If no, reset camera parameter.

Ask: the image wobbles at MAX. Zoom

It is related to the firm of installation position if there are quaky machines or objects.

## 2. Control

Ask: the single dome camera cannot be controlled by keyboard or other control equipments?

First check if control line 485 is well connected to designed position with right direction. Then check the control equipment and dome control protocol, baud rate and address. If it still can not be controlled, use elimination to check whether the control equipments or camera has troubles.

Ask: single camera can be controlled but multi-cameras cannot be controlled

It may be caused by reflection of signal 485. Merge a 120 ohm resistance to the 485 anode and cathode control wires of the farthest camera.

Ask: other controls are normal except it can not rotate at a direction.

First check if any mechanical troubles without electrifying. If it can run well, check if the belt broke or loose. If yes, it is caused by the control decode board troubles.

Ask: the camera automatically rotates after electrifying.

First check if the electrifying mode is auto scan mode; if not, firstly cut 485 control lines to see if it happens. If stopping, it may be caused by the scrambled code from controller or disturb to 485 lines.

Ask: the provided keyboard software can control, but the DVR cannot control or only can control some?

DVR control protocol is not agreed with our company or the function is not completed.

Ask: why does the same dome have different control speeds at different hard disk video recorder?

Speed command codes in control software of DVR are different.

Ask: DVR cannot control speed of camera

Control command code of control software in DVR only has a fixed speed.

Ask: the camera rotates disorderly. The image is blackish or whitish.

There are disturbs to 485 lines, check the equipments in the lines such as optical transmitter and receiver.

Ask: the dome camera can be controlled normally in the morning and evening, but it cannot be controlled at the noon of summer.

High temperature may cause lower down of control line anti-jamming or change to control equipment and CMOS chips parameters to make troubles. Check if the temperature is over than the specified limit and the radiator fan.

### 3. Installation

Ask: what kind of power supply is needed?

AC 18V power supply is recommended. If it is not standard configuration, please use the construction on the cable as standard.

Ask: what is the MAX. Distance of AC 18V power wire and what requirements does it have to wire materials?

Normally, the power wires have some resistance. There is some loss during voltage transmission. The longer the wire is and the smaller the wire diameter is, the worse loss will be. Please refer to following wire diameter and distance requirement in order to avoiding the abnormal work caused by insufficient voltage.

Power wires diameter	0.5mm <sup>2</sup> (20#)	1.0 mm <sup>2</sup> (18#)	1.5 mm <sup>2</sup> (16#)	2.5 mm <sup>2</sup> (14#)
Dome camera distance	10m(37 ft)	20m(60 ft)	30m(95 ft)	45m(152 ft)

For example: the distance to power supply from the dome camera is 35m. It must take 2.5 mm<sup>2</sup> above section copper-core power wires or it may cause insufficient power supply leading to abnormal work

Ask: what is the MAX. Distance of video wire and what requirements does it have to wire materials?

The video wire also has inner loss as the power wire. The more the wire is and the small the specification is, the worse loss it will be. The high the signal frequency is, the obvious the loss is. The normal video wires models and the MAX. Transmission distance is listed in following table:

Video wire model	Max. distance	Video wire model	Max. distance
75-2	About 150m	75-5	About 370m
75-3	About 200m	75-7	About 500m
75-4	About 270m	75-9	About 680m

Ask: what wire and transmission distance should RS 485 control line take?

Transmission distance of RS 485 is related to wire diameter and transmission speed. Max. transmission distance for RS 485 is 1200M according to the specified 9600b/s transmission speed for 1.0mm<sup>2</sup> UTP.

Remarks: the same model wires may be different for produced by different manufacturers. Above data is the normal wire transmission reference distance.