Mini IR High Speed Dome Camera

User Manual

Please read this manual thoroughly before use or installation and keep it handy for future reference.

WARNINGS AND CAUTIONS

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH VENTILATION GRILLS OR OPENINGS ON THE EQUIPMENT.

CAUTION

EXPLANATION OF GRAPHICAL SYMBOLS

 The lighting flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user the presence of non-insulated "dangerous voltage" within the product's enclosure that maybe of sufficient magnitude to constitute a risk of electric shock to different persons.

 The exclamation point within an equilateral triangle, is intended to alert the user the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product

PRECAUTIONS:

1. Persons without technical qualifications should not attempt to operate this dome device before reading this manual thoroughly.

2. Remove any power to the dome before attempting any operations or adjustments inside the dome cover to avoid potential damage to the mechanism.

3. Inside the dome cover there are precision optical and electrical devices. Heavy pressure, shock and other sudden adjustments or operations should be avoided. Otherwise, you may cause irreparable damage to the product.

4. Please DO NOT remove or disassemble any internal parts of the video camera to avoid normal operation and possibly void the warranty. There are no serviceable parts inside the camera.

5. All electrical connections to the dome should be made in strict accordance with the attached labels and wiring instructions in this manual. Failure to do so may damage the dome beyond repair and void the warranty.

6. For outdoor installation especially in high places or poles, it is highly recommended that the proper lightning arrestors and surge suppressors are installed before the dome is entered into service.

7. Please do not use the product under circumstances where the limits exceed the maximum specified temperature, humidity or power supply specifications.

IMPORTANT SAFEGUARDS

1. Read these instructions before attempting installation or operation of dome device

2. Keep these instructions for future reference

3. Heed all warnings and adhere to electrical specifications Follow all instructions

4. Clean only with non abrasive dry cotton cloth, lint free and approved acrylic cleaners

5. Should the lens of the camera become dirty, use special lens cleaning cloth and solution to properly clean it.

6. Do not block any ventilation openings. Install in accordance with manufacturer's instructions

7. Use only attachments or accessories specified by the manufacturer

8. Verify that the surface you are planning to use for attaching the dome can adequately support the weight of the device and mounting hardware

9. Protect this devices against lighting storms with proper power supplies

10. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, when liquid traces are present, or the presence of loose objects is evident or if the device does not function properly, or has received sever impact or has been dropped accidentally.

11. Indoor dome is for indoor use only and not suitable for outdoor or high humidity locations. Do not use this product under circumstances exceeding specified temperature and humidity ratings.

12. Avoid pointing the camera directly to the sun or other extremely bright objects for prolonged period of time avoiding the risk of permanent damages to the imaging sensor.

13. The attached instructions are for use by qualified personnel only. To reduce the risks of electric shock do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

14. During usage, user should abide by all electrical safety standards and adhere to electrical specifications for the operation of the dome. The control cable for RS485 communications as well as the video signal cables should be isolated from high voltage equipment and or high voltage cables.

15. Use supplied power supply transformer only.

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* Indicates the functions with default protocol, it might not function by using other protocols

※ Indicates the optional functions, only with certain mode

1 Product Introduction

1.1 Package Contents

IR Speed dome   1pc

Wall mount bracket   1pc

Power supply   1pc

Screws kits   1pc

User manual   1pc

1.2 Specification

Horizontal Rotation Speed	200°/s
Tilt Rotation Speed	80°/s
Horizontal Rotation Range	360°
Tilt Rotation Range	93°
Auto Flip	Horizontal 180°, Vertical 93°
Auto control IR LED	PWM
A-B Scan	User programmable
A-B Scan Speed	01-64speed setting available
360° Scan Speed	01-64speed setting available
Dwell Preset	01-60s interval
Preset Points	220
Go to Preset Speed	200°/s
Guard Tours	3 groups
Guard Points	Max.16 points, dwell time user selectable
Home Pos Time	1-60mins available
PWR on Action	Restore as power up/Pan scan/A-B scan/Park action/Guard tour group 1-3/No action
Communication Protocol	Pelco-D,Pelco-P
Communication	RS485 Bus
Baud Rate	1200/2400/4800/9600bps
Privacy Mask	support (Sony & Samsung)
3D Location	support
Operating Temperature	Indoor: 0°~ +40° Outdoor: -40°~ +60°
Operating humidity	≤95% Non Condensing

Heater & Blower	Auto temperature control
Power	DC12V ≤3A
Lightning protection	transient voltage 6000V
IR Illumination Distance	50M
Power Consumption	≤ 15W
Compatible camera	SONY,LG,CNB,SAMSUNG,Domestic etc.

1.3 Function Description

● Super Communication

Address, baud rate and protocol could be changed both from Dip switch or from software.

● Multilanguage OSD Menu

The language display on screen menu, the available language is English etc.. User can set the function or parameter, or check the related information through the OSD.

● Privacy Masking

In the monitoring scope, areas that users can't or aren't willing to make show in the screen of the monitor can be set as privacy protected area (area masking), such as area where customers enter the password in monitoring system of bank or some doorway.

● IR Output Power Consumption

IR output power consumption can be set through the OSD after IR is turned on.

● IR Standby Power Consumption

After IR is turned on, if there is no operation and this period is more than the IR standby time set, the dome will be on the standby mode. user can set the max IR standby power consumption through OSD.

● IR Detection Time

Time duration switching from Color to B/W or B/W to Color. It can be set through OSD

● IR Standby Time

After IR is turned on. The duration from no operation to the standby mode is called IR standby time , it is settable through OSD.

● Focus

The auto focus enables the camera to focus automatically to maintain clear image. User can use manual focus to in special condition.

Under the following conditions camera will not auto focus on the camera target:

(1) Target is not the center of the screen;

(2) Attempting to view images that are far and near at the same time;

(3) Target is strongly lighted object, such as neon lamp, etc.;.

(4) Targets are behind the glass covered with water droplets or dust;

(5) Targets are moving quickly;

(6) Monotonous large area targets, such as wall;

(7) Targets are too dark or faint.

● BLC

If a bright backlight is present, the target in the picture may appear dark or as a silhouette, BLC enhance the target in the center of the picture, the dome uses the center of the pictures to adjust the iris. if there is a bright light source outside this area, it will wash out to white, the camera will adjust the iris so that the target in the sensitive area will properly exposed.

● Iris Control

Factory default is automatic camera aperture, in mode of which camera senses changes in ambient light through moving and adjust automatically lens aperture to make the brightness of output image stable.

Users can through pressing OPEN or CLOSE iris adjusting keys, manually adjust the aperture size to get the required picture brightness.

By controlling the keyboard up, down, left, right or zoom to resume auto iris (auto iris is recommended).

● Auto-recognize to Protocol and Module

The dome can auto-recognize to the corresponding protocol and module during self-inspection. eg. Module: Sony, CNB, LG, Samsung, domestic etc.

    Protocol: PELCO_P, PELCO_D etc.

● 3D Allocation

With this function users can move the image of some area to the center of screen according to specified level and vertical coordinates and auto control to zoom according to zoom parameter set.

● Day/Night Switch

With auto day/night switch function, when the illumination is low the picture will auto switch from day to night mode and when the illumination is high enough the picture will auto switch from night to day mode

● Ratio Speed

Intelligent pan and tilt speed is variable depend on the zoom factor. When zooming in, the speed will become slower and when zooming out, the speed will become quicker.

- A-B Scan

Dome circularly scan close-up real-time scene according to A-B points at setting speed in both horizontal and vertical directions.

- Pan Scan

Dome 360°clockwise continuous scan the display scene at setting speed in horizontal direction under the condition that pitch angle remains the same.

- Preset

After the dome camera keeps arbitrary PTZ location, it will automatically move to the defined position when preset is called.

- Guard Tour Scan

Dome patrol scans according to certain edited preset order.

- Power Off Memory

This feature allows the dome to resume its previous preset or status after power is restored. By default setting, the dome support power up memory, which improves the reliability and avoids repeated settings of the parameter.

- Park Action

If users don't operate the dome in set time, it will automatically run preset specific mode (pan scan, A-B scan, park action, cruise, preserve action etc.).

- Zero Alignment

There is a point specified as zero point. When the dome is working, the preset point is not accurate because of something caused by the operator. User can make the dome automatically enable the zero alignment by operational order.

- Auto Flip

In the manual tracking mode, when a target goes directly beneath the dome, the dome will automatically rotate 180 degree in horizontal direction to maintain continuity tracking. When the dome flips, the camera starts moving upward as long as you hold the joystick in the down position.

(See illustration above) Turn on the 1st and 3rd (allocated to ON position) and get the binary code 00000101, so the correspondence address is 5.

Detailed settings please refer to the back "Address Code Mapping Table"(appendix Ⅳ).

2.1 Product Dimension
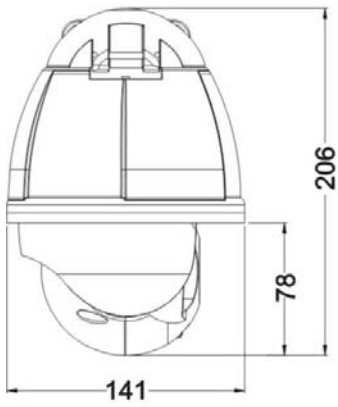
Wall Mounted
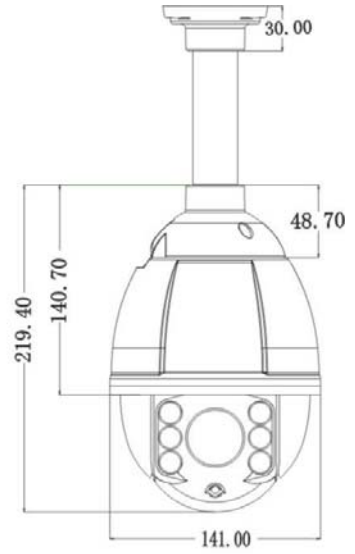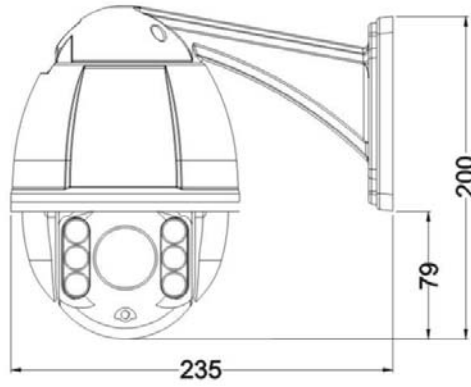
Ceiling Mounted

2.2 Bracket Dimensions

2.2.1 Wall Mounted Bracket
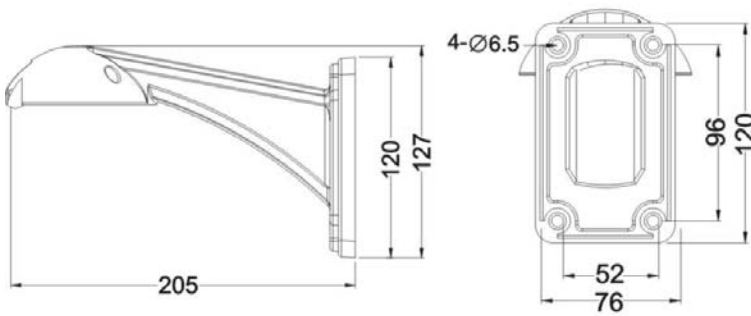
Wall Mounted Bracket
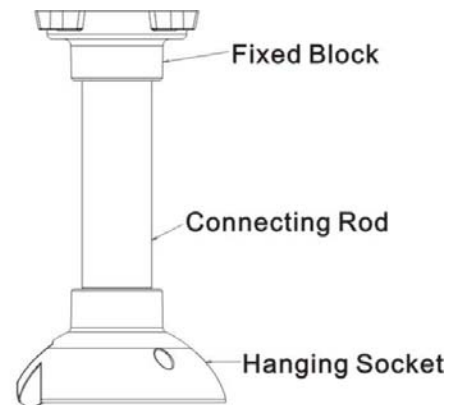
Ceiling Mounted Bracket

Fixed Block

Connecting Rod

Hanging Socket

2.3 Installation

Screws to fix bracket

Buckle

Screws to fix the bracket on the wall
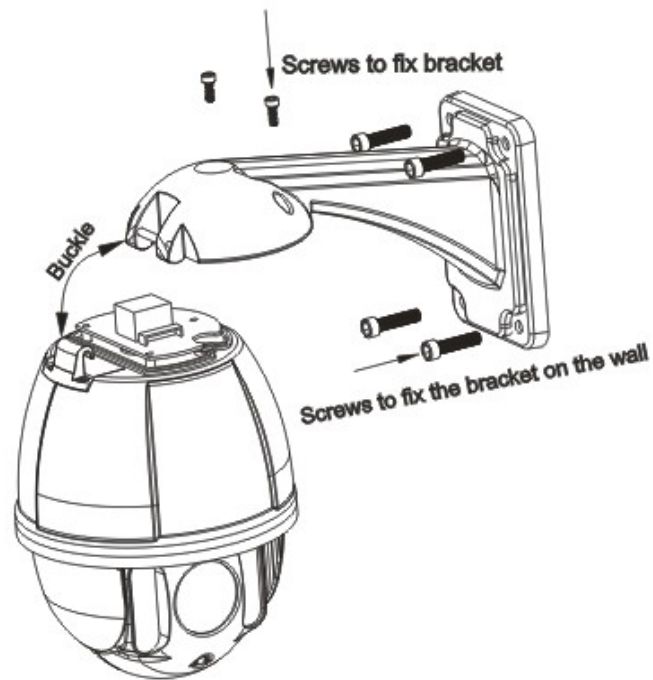
2.4 Connection

Connection of RS485

Before connecting, please turn off the power and read carefully the instructions of all connected devices.

power cable
DC 12V .50Hz
connected to
DC 12V / power

monitor cable
(75Ω coaxial-cable)

televimonitor

system controller

communication cable
(twisted-pair cable)

connected to Rs485
A/B terminal
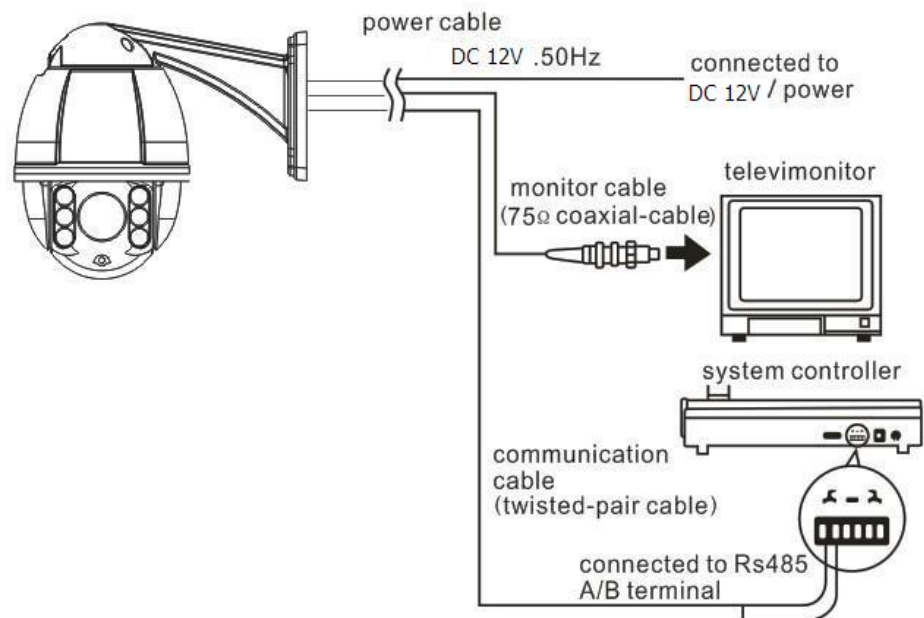
Fig 24

3. Function Instruction

3.1 Power Up Action

```
        <SYSTEM>
MFG
PROTOCOL          ATUO
DOME ID
COMM
VERSION
DETECTING
```

```
        <SYSTEM>
MFG
PROTCOL          ATUO
DOME ID
COMM
VERSION
PAN: XXX      TILT: XXX
```

Power Up Self Testing   Pan, Tilt, Camera Self-test Completion

✧　　　Pan action: Pan rotate in certain direction and stop in zero coordinate.

✧　　　Tilt action: Tilt rotate in certain direction and stop in zero coordinate.

✧　　　Lens action: Lens zooms out to the widest angle.

✧　　　From running the action above to power up mode completion, power up self-testing

　　　finishes.

3.2 Basic Function

● 　　　Dome Running

Control joystick or up, down, left and right key in the keyboard.

● 　　　Zoom

Press ZOOM- button to make the lens farther and minify the scene.

Press ZOOM+ button to make the lens closer and magnify the scene.

● 　　　Focus

After FOCUS- button is pressed, the object in vicinity will become clearer while the object far away will become ambiguous.

After FOCUS+ button is pressed, the object far away will become clearer while the object in vicinity will be ambiguous.

● 　　　Iris

Press IRIS- to gradually shrink the iris and decrease the image brightness.

Press IRIS+ to enlarge the iris and increase the image brightness.

● 　　　Preset Point

Setting preset press button "preset"+"number"+"enter".

Calling preset press button "call"+"number"+"enter".

Deleting preset press button "clear"+"number"+"enter".

Remark: Some preset points are used tentatively for special functions.

3.3 Special Function

The follow presets are predefined as special function, please shot+ preset No+ enter to enable those functions：

PREST	FUNCTION	PRESET	FUNCTION
33	Pan scan180 °	87	BLC off
34	Reset	88	Freeze on
79	Digital zoom on	89	Freeze off
80	Digital zoom off	92	A-B scan
81	Auto day/night	94	OSD off
82	Switch to night	95	OSD on
83	Switch to day	96	Guard tour 3
84	Force on far light	97	Guard tour 2
85	Force on near light	98	Guard tour 1
86	BLC on	99	Pan scan

Remark: If use some other equipments to control IR dome, some special functions probably can't be effective because of the limited of protocol.

3.4 Screen Character Operation

Call preset 95 to enter the OSD, call preset 94 to exit the OSD.

✧   Up or Down : Move the option of the OSD, change the value on the OSD.

✧   Right ：Enter the option, select the item or confirm.

✧   Left：Return to main menu or cancel

✧   Angle Display: XXX.XX(pan)/XXX.XX(tilt)

✧   IR Display: Display on the lower right corner of the screen.

" ⊕ "means the dome is on IR mode

" ⊦ "means the IR is turned on

" ⊦ "The IR output power

COMM. Display: Display the dome ID and baud rate on the top left corner of the screen.

Remark: 1. Items with"< >" mean they have sub menu.

2. "→"means the cursor selecting some option.

3. "※" means editing the content of some option selected.

4. When entering the setting page in menu, it is useless to call preset 94 to exit the menu directly. Such as the submenu <SET> in menu <GUARD TOUR SET>.

4 OSD Menu
4.1 Menu Index

```
<SYSTEM>
------------------------------
MFG
PROTOCOL          AUTO
MODE ID           001
COMM         2400.N.8.1
VERSION
EXIT
```

```
<COMM>
------------------------------
DEVICE ID
CHECK ID          0000
TARGET ID         001
SOFT PROTOCOL     AUTO
BAUD RATE      2400BPS
<COMM RESET>
SAVE
EXIT
```

```
<IR DISPLAY>
------------------------------
WORKING MODE   AUTO
TESTING TIME      08S
OUTPUT  POWER    100%
STANDBY POWER    80%
STANDBY TIME      20S
ILLUMINATION      03
AMBIENT LIGHT
IR SWITCH ZOOM    0S
EXIT
```

```
<DOME>
------------------------------
<COMM>
<IR DISPLAY>
<GUARD TOURS>
<A-B SCAN>
<PAN SCAN>
<PARK ACTION>
<PRIVACY ZONE>
<ALARM>
<ADVANCED>
EXIT
```

```
<A-B SCAN>
------------------------------
PRESET A          01
PRESET B          02
SCAN SPEED        10
DWELL TIME        06S
CALL
DELETE
EXIT
```

```
<GUARD TOURS>
------------------------------
GUARD TOUR        01
<SETTING>
INIT
CALL
DELETE
EXIT
```

```
<PARK ACTION>
------------------------------
PARK MODE        OFF
PARK TIME        01S
<SETTING>
CALL
DELETE
EXIT
```

```
<PAN SCAN>
------------------------------
PAN SCAN SPEED   10
INIT
CALL
EXIT
```

```
<GUARD TOUR 01>
------------------------------
ID  POINT  TIME<S>  SPEED
1    01      06       64
2    02      06       64
3    03      06       64
4    04      06       64
5    05      06       64
6    06      06       64
7    07      06       64
8    08      06       64
```

```
<MAIN MENU>
------------------------------
<SYSTEM>
<DOME>
<CAMERA>
<LANGUAGE>
<DISPLAY>
<RESET>
EXIT
```

```
<CAMERA>
------------------------------
CAM            AUTO
ZOOM SPEED    QUICK
DIGITAL ZOOM    OFF
FOCUS          AUTO
IRIS           AUTO
BLC             OFF
FREEZE          OFF
EXIT
```

```
<ALARM>
------------------------------
ALARM           OFF
PATROL TIME      06S
ALARM LINKAGE   OFF
ALARM 1          01
ALARM 2          02
ALARM 3          03
ALARM 4          04
RELEASE TIME    OFF
EXIT
```

```
<PRIVACY ZONE>
------------------------------
MASK NO.          01
MASK             OFF
<SETTING>
EXIT
```

```
<LANGUAGE>
------------------------------
LANGUAGE  ENGLISH
EXIT
```

```
<ADVANCED>
------------------------------
PWR ON ACTION MEMORY
RATIO SPEED      ON
AUTO FLIP        ON
<OTHERS>
EXIT
```

```
<SYS DATA>
------------------------------
CONFIRM
EXIT
```

```
<DISPLAY>
------------------------------
SYSTEM         PAL
P AND T         ON
ACTION          ON
IR              ON
DOME ID         ON
COMM            ON
EXIT
```

```
<MODE RESTART>
------------------------------
CONFIRM
EXIT
```

```
<CAM DATA>
------------------------------
CONFIRM
EXIT
```

```
<RESET>
------------------------------
<DOME RESTART>
<SYS DATA>
<CAM DATA>
<PRESET>
EXIT
```

```
<PREET>
------------------------------
CONFIRM：DELETE ALL PRESETS
CONFIRM：DELETE 1 TO 16
CONFIRM：DELETE 17 TO 32
CONFIRM：DELETE 33 TO 48
CONFIRM：DELETE 49 TO 64
EXIT
```

```
                    <MAIN MENU>

    <SYSTEM>

    <DOME>
    ------------------------------------------------
    <CAMERA>

    <LANGUAGE>

    <DISPLAY>

    <RESET>

    EXIT
```

4.2 System Information

```
                    <SYSTEM>
    ------------------------------------------------

      MFG

      PROTOCOL                        AUTO

      DOME ID                          001

      COMM                        2400.N.1

      VERSION

      EXIT
```

Fig 4.2.1

MFG：Max 15 characters display on the screen.

PROTOCOL：Display the protocol of the dome

DOME ID：Display the dome address.

COMM: Form: Baud rate. Check bit. Data bit. Start bit

VERSION: Version will update along with the product upgrading

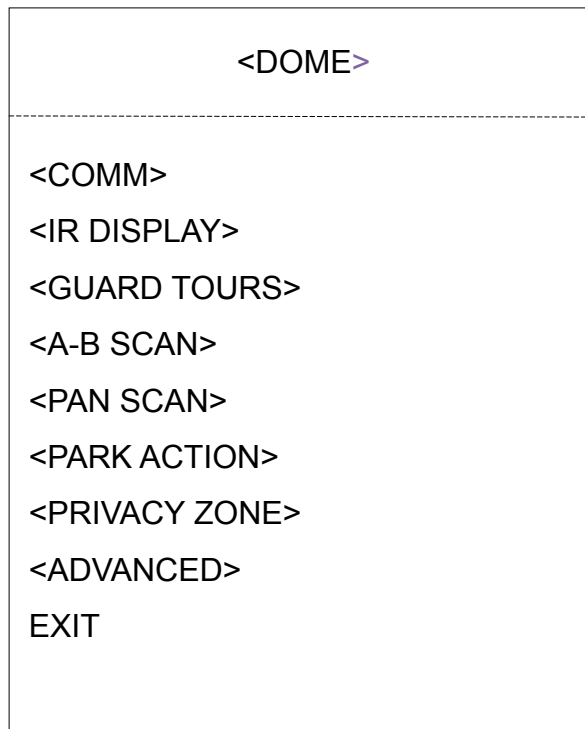**Remark:** Protocol, ID and COMM all can be set in menu <COMM>

4.3 Dome

```
┌─────────────────────────────────────┐
│            <DOME>                    │
│ ·································· │
│                                      │
│  <COMM>                              │
│  <IR DISPLAY>                        │
│  <GUARD TOURS>                       │
│  <A-B SCAN>                          │
│  <PAN SCAN>                          │
│  <PARK ACTION>                       │
│  <PRIVACY ZONE>                      │
│  <ADVANCED>                          │
│  EXIT                                │
│                                      │
│                                      │
└─────────────────────────────────────┘
```

Fig 4.3.1

4.3.1 Communication

```
┌─────────────────────────────────────┐
│            <COMM>                    │
│ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ │
│                                      │
│  DEVICE ID                           │
│  CHECK ID                    0000    │
│  TARGET ID                    001    │
│  SOFT PROTOCOL               AUTO    │
│  BAUD RATE                2400BPS    │
│  <COMM RESET>                        │
│  SAVE                                │
│  EXIT                                │
│                                      │
└─────────────────────────────────────┘
```
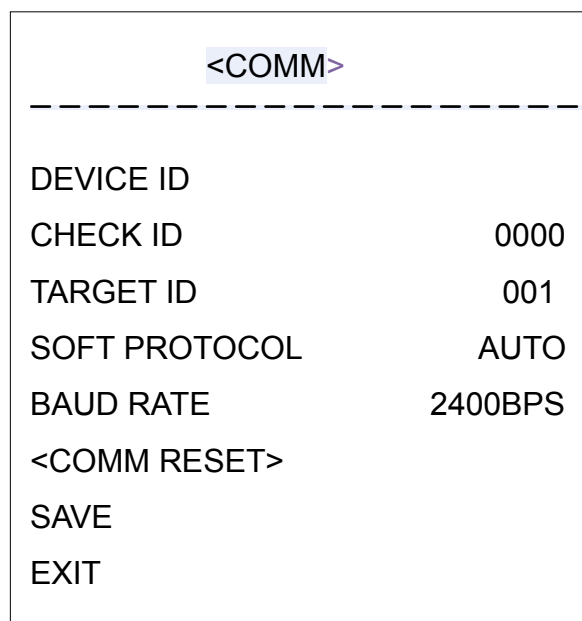
Fig 4.3.1.1

DEVICE ID

It is only and used to distinct from the ID of other domes.

CHECK ID

Distinguishing several domes with same ID and altering target ID, soft protocol and baud rate need to enter check ID in line with the device ID, otherwise altering can't be completed.

TARGET ID

Target ID is available from 001 to 250.

SOFT PROTOCOL

Soft protocol is auto, Pelco-D and Pelco-P available

BAUD RATE

1200BPS、2400BPS、4800BPS、9600BPS available

SAVE

Please save the change of communication. After saving, the dome will reboot.

Remark: The out-of-factory default of dome camera is hardware DIP set. After the COMM. is changed in menu, it can't be effective until saved. If needing to get hardware DIP set again, run the COMM RESET.

4.3.2 IR Display

```
          <IR DISPLAY>
- - - - - - - - - - - - - - - - - - - - - - - -
WORKING MODE        AUTO
TESTING TIME         08S
OUTPUT POWER        100%
STANDBY POWER        80%
STANDBY TIME         20S
ILLUMINATION ON       03
AMBIENT LIGHT
IR SWITCH ZOOM        05
EXIT
```

Fig 4.3.2.1

WORKING MODE

Working mode has auto, black/white, color selectable. Default is auto.

TESTING TIME

On IR auto working mode and the programmed time, the IR will execute the programmed action, eg. Switch from day to night or from night to day. The detection time is from 2s to 15s selectable.

OUTPUT POWER

IR output consumption has 40%、 60%、 80%、 100% selectable.

STANDBY POWER

IR stand by power has 20%、 40%、 60%、 80% selectable. IR standby power is much less than IR output power.

STANDBY TIME

IR standby time is 15-30s selectable. Default is 20s.

ILLUMINATION ON

Illumination on is 1 to15 grade selectable and default is 3. On the auto IR working mode, if the illumination on level is less than the ambient light, the picture will change to color, the IR illumination will turn off automatically. If the illumination on level is more than the ambient light, the picture will change to black , the IR illumination will turn on automatically.

AMBIENT LIGHT

Ambient light is a system data. User can not change it manually. It changes according to the environment all the time. The data will refresh every time when user enter the OSD. It is from 0 to 50 grade.

IR SWITCH ZOOM

IR switch zoom is 1-10 grade selectable and default is 5 zoom. User can set it according to the Environment.

4.3.3 Guard Tours

<GUARD TOURS>	
GUARD TOUR	01
<SETTING>	
INIT	
CALL	
DELETE	

<GUARD TOUR 01>			
ID	POINT	TIME(S)	SPEED
1	01	06	64
2	02	06	64
3	03	06	64
4	04	06	64
5	05	06	64
6	06	06	64
7	07	06	64
8	08	06	64

Fig 4.3.3.1   Fig 4.3.3.2

GUARD TOUR

Total 3 guard tours selectable: 01, 02, 03.

SETTING

Each guard tour includes max 16 presets. The number of the preset is from 0-64. 0 is not valid, dwell time is 1 to 60s selectable. Speed is 1 to 64 grade selectable.

INIT

After init., preset point, dwell time, speed will resume to default setting.

CALL

Call the new setting.

DELETE

Delete the guard tour set. After deleting, the present preset points all display as 0. While the exact preset point information doesn't be deleted. So it is convenient for user to select the preset point needing to be guarded tour.

4.3.4 A-B Scan

```
            <A-B SCAN>
    ----------------------------------

    PRESET A              01
    PRESET B              02
    SCAN SPEED            10
    DWELL TIME           06S
    CALL
    DELETE
    EXIT
```

Fig. 4.3.4.1

PRESET A

On A-B scan, A point can be preset from 0 to 64.

PRESET B

On A-B scan, B point can be preset from 0 to 64.

SCAN SPEED

A-B scan speed is 1 to 64 grade selectable.

DWELL TIME

Dwell time between A to B is 2s to 60s selectable.

CALL

Call the new setting.

DELETE

After deleted, the preset points display as 0. While the exact preset point information doesn't be deleted. So it is convenient for user to select the preset point needing to be scanned. Speed and dwell time will reset as default setting.

4.3.5 Pan Scan

```
┌─────────────────────────────────┐
│          <PAN SCAN>             │
│ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ │
│                                 │
│  PAN SCAN SPEED          10     │
│  INIT                           │
│  CALL                           │
│  EXIT                           │
│                                 │
└─────────────────────────────────┘
```

Fig. 4.3.5.1

PAN SCAN SPEED

Pan scan speed is 1 to 64 grade selectable.

INIT

Reset the scan speed and tilt degree as default setting.

CALL

Call the new setting.

4.3.6 Park Action

```
┌──────────────────────────────┐   ┌──────────────────────────────┐
│       <PARK ACTION>          │   │       <PARK ACTION>          │
│ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ │   │ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ │
│  PARK MODE           OFF     │   │                              │
│  PARK TIME           01M     │   │                              │
│  <SETTING>                   │   │                              │
│  CALL                        │   │                              │
│  DELETE                      │   │  PRESET 1: SAVE              │
│  EXIT                        │   │  PRESET 2: BACK              │
└──────────────────────────────┘   └──────────────────────────────┘
```

Fig. 4.3.6.1   Fig. 4.3.6.2

PARK MODE

Park mode includes OFF, Park action, A-B scan, Pan scan, guard tour01, guard tour02, guard tour03 and Preserve action.

When park mode is OFF status, the dome doesn't run park mode.

When park mode is PRESERVE ACTION status, it record previous action order(A-B scan, Pan scan, Guard tour 01, Guard tour 02, Guard tour 03).

Example: Running A-B scan at first, when the action stops unexpectedly, it enters the park mode to continue to run A-B scan.

PARK TIME

Park time is 01~60 mins selectable.

SETTING

After entering the OSD menu, as 7.4.8.2, move to the desired position and save the settings.

CALL

Call the new setting.

DELETE

Delete the settings.

4.3.7 Privacy Zone (If zoom module support)
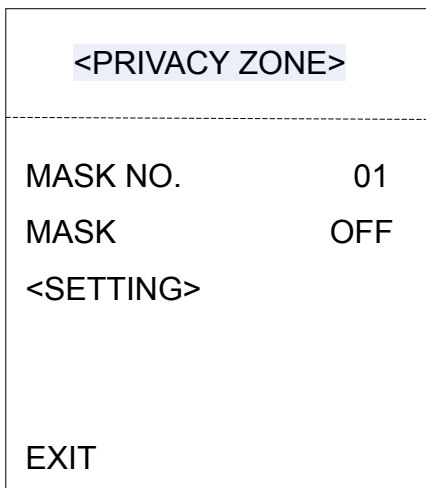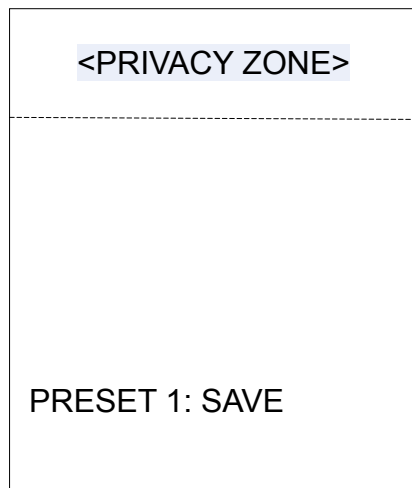
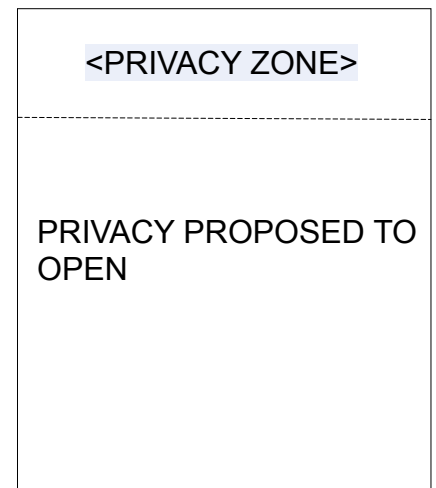| <PRIVACY ZONE>	<PRIVACY ZONE>	<PRIVACY ZONE>
MASK NO. 01 MASK OFF <SETTING> EXIT	 PRESET 1: SAVE	 PRIVACY PROPOSED TO OPEN
Fig. 4.3.7.1	Fig. 4.3.7.2	Fig. 4.3.7.3

MASK NO.

Mask No. depends on the number of the module supported. The selective range of Sony is from 1 to 24.

MASK

Mask has on and off selectable.

SETTING

Set the specific parameter of present mask NO. and call preset 1 to save the settings.

Direction operation—Modify the coordinate of dome

Zoom operation—Modify the size of scenery

Iris operation—Modify the size of privacy zone

Remark: The mask size is better more than double the target size. If needing to modify mask NO.02, set it again. If needing to stop it, set mask to OFF status.

If the module doesn't support privacy mask, the screen will display the interface as Fig. 4.3.7.3.

4.3.8 Advanced

```
            <ADVANCED>
  ------------------------------------

  PWR ON ACTION      MEMORY
  RATIO SPEED           ON

  AUTO FLIP             ON

  <OTHERS>

  EXIT
```

Fig. 4.3.9.1

PWR ON ACTION

Power on action can be set as Memory, A-B scan, Pan scan, Park action, Guard tour 01, Guard tour 02, Guard tour 03 and No action.

RATIO SPEED

Ratio speed can be set as ON or OFF status.

AUTO FLIP

Auto flip can be set as ON or OFF status.

OTHERS

Set other options.

4.4 Camera

```
            <CAMERA>
  ------------------------------------

  CAM                  AUTO

  ZOOM SPEED          QUICK

  DIGITAL ZOOM          OFF

  FOCUS                AUTO

  IRIS                 AUTO

  BLC                   OFF

  FREEZE                OFF

  EXIT
```

Fig. 4.4.1

CAM

Display the information of module supported by this dome.

ZOOM SPEED

Zoom speed is quick and slow selectable.

DIGITAL ZOOM

Digital zoom is on/off selectable.

FOCUS

Focus is auto and manual selectable

IRIS

Iris is auto and manual selectable

BLC

BLC is ON and OFF selectable

FREEZE

Video freeze is ON and OFF selectable

Remark: Only if those functions are available on the present module, the user can use it.

4.5 Language

```
┌──────────────────────────────────┐
│          <LANGUAGE>              │
│ ································ │
│                                  │
│  LANGUAGE          ENGLISH       │
│  EXIT                            │
└──────────────────────────────────┘
```

Fig. 4.5.1

LANGUAGE

Language can be set as Chinese or English. Default settings are English.

4.6 Display

```
┌─────────────────────────────────┐
│          <DISPLAY>              │
│ ┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄ │
│                                 │
│   SYSTEM              PAL       │
│   P AND T             ON        │
│   ACTION               ON       │
│   IR                   ON       │
│   DOME ID              ON        │
│   COMM                  ON       │
│                                 │
│                                 │
└─────────────────────────────────┘
```

Fig. 4.6.1

SYSTEM

Video system includes NTSC and PAL. N means NTSC and P means PAL.

P AND T

On screen, it displays the pan and tilt degree, user can enable or disable it.

ACTION

On the screen, it displays the current action, such as A-B scan, Call preset, Save preset, Call park action, Pan scan etc. User can enable or disable it

IR

IR can be set as ON or OFF.

"⊕"means the dome is on IR mode

"⊦"means the IR is turned on

"⊦"The IR output power

DOME ID

At the top left corner of screen, it displays the dome ID. User can enable or disable it.

COMM

At the top left corner of screen, it displays the dome communication information. User can enable or disable it.

4.7 Reset

```
                <RESET>
...............................................

<DOME RESTART>

<SYS DATA>

<CAM DATA>

<PRESET>

EXIT
```

```
            <DOME RESTART>
...............................................


CONFIRM: Save data,

              dome restart


EXIT
```

```
               <SYS DATA>
...............................................


CONFIRM：Factory default


EXIT
```

```
               <CAM DATA>
...............................................


CONFIRM：Factory default


EXIT
```

```
                <PRESET>
...............................................

CONFIRM：      DEL ALL PRESETS


CONFIRM 1：  DEL 01 TO 16


CONFIRM 2：  DEL 17 TO 32


CONFIRM 3：  DEL 33 TO 48


CONFIRM 4：  DEL 49 TO 64

EXIT
```

CONFIRM: Delete the presets information
          saved by the dome.

5. Auto Temperature Control

This product has built-in fan and heater, which accordingly cool or heat through temperature sensitive circuit inside the dome.

Appendix Ⅰ Anti-lightning, Anti-surge

This product is extremely air discharge and lightning protection with TVS tube technology, which can effectively prevent the transient lightning below voltage 3000V, surge and damages caused by other types of pulse signals.

However, necessary protective measures should be made in the premise of ensuring electrical safety for outdoor installation according to the actual situation :

·Signal transmission line must be at least 50 meters far away from the high-voltage equipment or high voltage cable.

· Try to choose outdoor wiring laid down along the roof line.

· Way of sealed steel pipe buried wiring is used in the area which opened, and steel pipe units grounded in one point. Overhead wiring is absolutely prohibited.

· In the strong thunderstorms area or areas with high induced voltage (such as high voltage substations), measure of installation of additional high power lightning protection equipment and lightning rod must be taken.

· Lightning protection and grounding of outdoor devices and lines must take the lightning-protection requirements of buildings into consideration, and comply with the related national standards and industry standards.

· System must be equipotential grounding. Grounding device must meet dual requirements of anti-interference and electrical safety, and should not be shorted or mixed with the adjacent lines in the strong power grid. When system is independently grounded, grounding impedance should be less than 4Ω, and cross-sectional area of grounding conductor must be not less than $25m^2$.
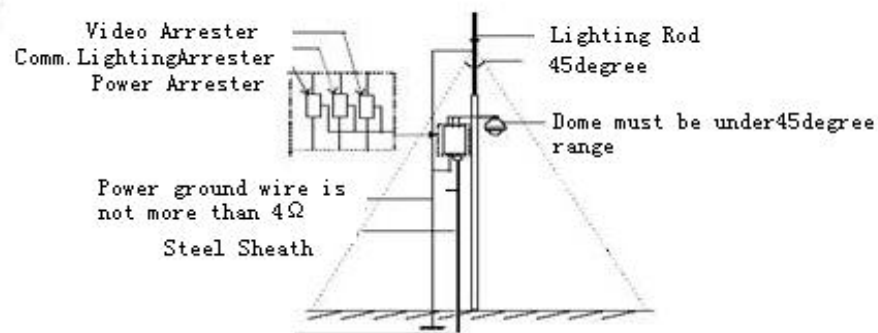

Fig 25

Appendix Ⅱ Clean Transparent Cover

In order to assure a clear image of dome, the under cover of dome should be cleaned regularly.

● Be careful when cleaning and hold the outer ring of under cover by hands to avoid directly touching with it. Because the acid sweat of finger membrane may corrode the surface coating of under cover. Hard tool scratching the under cover may lead to blurring the images of dome so that affecting image quality.

● Please uses a soft enough dry cloth or other alternatives to wipe internal and external surface.

● If dirt is serious, user can use a mild detergent. Any senior furniture cleaning products can be used to clean the under cover.

Appendix Ⅲ Common Knowledge on RS-485 Bus

1. Basic Feature of RS-485bus

According to industry bus standard of RS-485, RS-485 bus is half-duplex communication bus with the characteristic impedance of 120Ω, whose maximum load capacity is 32 payloads (including the master device and the controlled device).

2. Mode of Connection and Terminal Resistance

2.1 Industry standard of RS485 bus requires that connection mode of daisy chain should be used between the devices with 120Ω terminal resistances connected at the both ends.

As shown in fig. 26 and fig. 27 is simplified connection, but the distance of part "D" shall not beyond 7 meters.
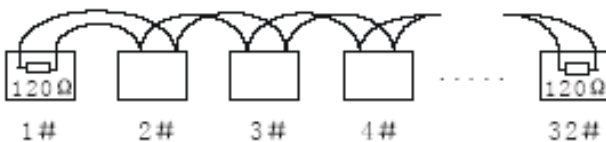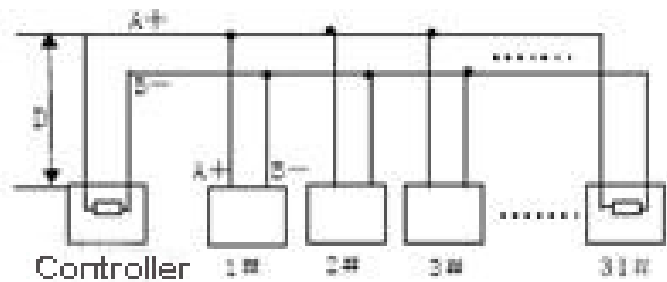

| Fig 26 | Fig 27 |

2.2 120Ω terminal resistance is connected as shown in fig 27.

120Ω terminal resistance is available in the circuit board and the connection is shown as following:

When needing to connect 120Ω resistance, toggle the 8th bit of DIP switch SW2 to "ON" . This way the 120Ω resistance is connected to the circuit.

Appendix Ⅳ Exception Handling

Issue	Possible Reason	Solution
After power is applied, there is no motion (self-test) and no video image.	Cable harness is improperly connected	Verify that the orientation of the connector input
	Input power voltage is too low	Verify the voltage of the input power
	Power supply is not work	Change a new power supply
Self-test is normal, but cannot control dome	Wrong communication settings	Set the correct protocol, baud rate and address of dome device
	Improper connection of control cable (polarity)	Verify the polarity of the RS485 connection as per the instruction manual
Noise after self-testing	Mechanical obstruction	Verify and correct it
	Camera module is not	Correct
	Low power	Change the correct power supply
Image is not stable	Low power	Check the power supply or make sure the power input is DC 12V
	Video cable is improperly contact	Verify the contact of the video cable
Image is blurring	Camera is on manual focus	Change to auto focus
	The lens is dusted	Clean the lens
Control to the dome is not smooth	Power is too low	Change the DC 12V Power supply
	Communication distance is too long	Make sure the distance is in the allowed range
	RS485 cable is not properly contact	Make the RS485 is properly contact
	Too many domes connected	Make sure the connected dome is in the allowed quantity

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