

Mini High Speed Dome Installation and Operation Manual

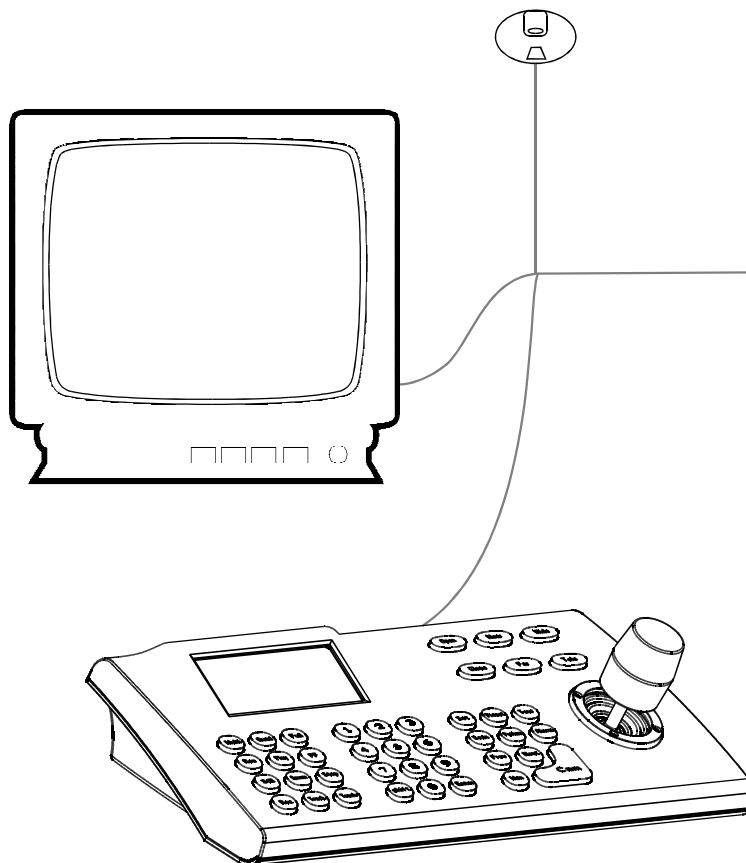


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1、Precaution



Please read the manual and product label carefully before installing the speed dome.

Ø Law

1.The product installation and use of the product must comply with the relevant laws of the country.

Ø Electrical safety

1.Strictly conform to country and local electrical safety standard when using or installing the product.

2.Using factory's power adapter. This dome uses 24VAC power supply. About the rated inputting voltage, please refer to power label.

Ø Transportation

1.The dome should be protected against extremes of pressure, vibration humidity and other damage during storage and transportation.

2.The dome should be shipped in parts disassembled as the original integrated packing during the transportation. Damage caused by improper transportation is not within the warranty.

Ø Installation of care

1. Please refer to user manual when installation, and sufficient strength of the wall or ceiling should be ensured .

2. Power must be cut off when installation.

3. Please handle with care ,do not squeeze and press structure parts, which may cause mechanical damage.

4. Down cover and lens of camera are precise optical items. Please don't touch it directly to avoid scratch which will affect the image quality.

Ø Requirements to service personnel

1.All the service work should be done by qualified technicians.

Ø Do not disassemble the pan/tilt module

Ø Environmental requirements

= Operation environment temperature: -30°C-+50°C

Humidity: < 90%

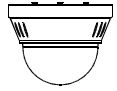
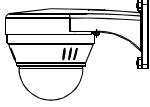
Air pressure: 86-106Kpa

Ø Don't place lens of the camera to strong light objects(like sun etc.)

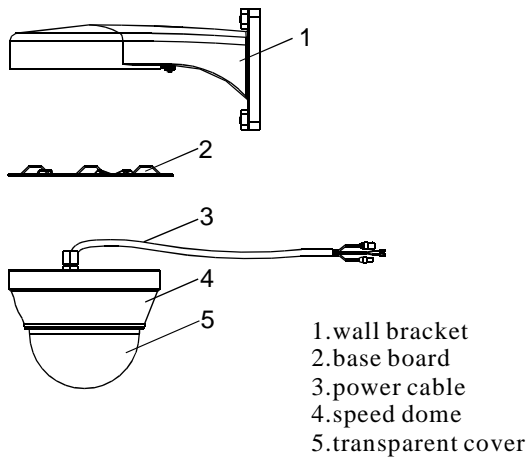
Ø Cleaning of down cover

1.when the image is unclear or there is so much dust on the down cover, please use soft cloth to clean or please use the water to wash the down cover and then wipe up.

1.2 Item no corresponding sheet

Mount	Picture	Place
Ceiling		Indoor only
Wall		Indoor and outdoor

1.3 details of relevant parts

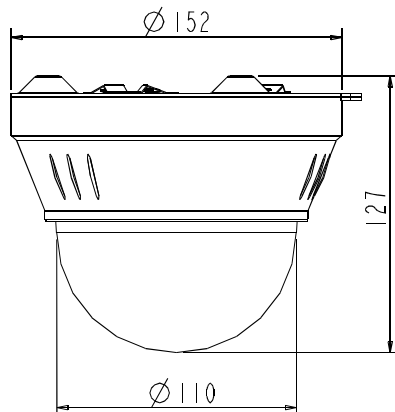


Picture 1-1

2. Installation instruction

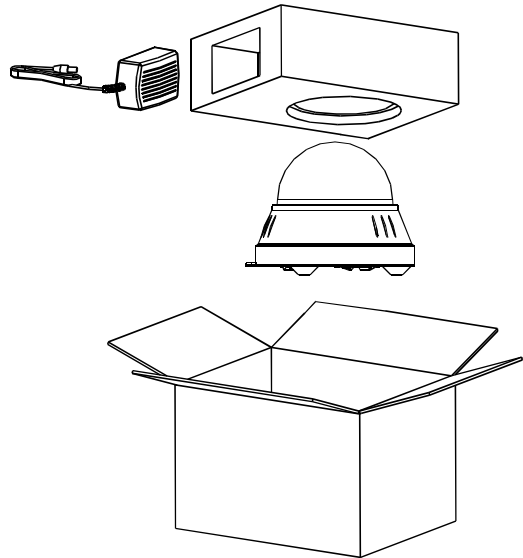
2.1 Ceiling mount

1. Dimension of product as picture below



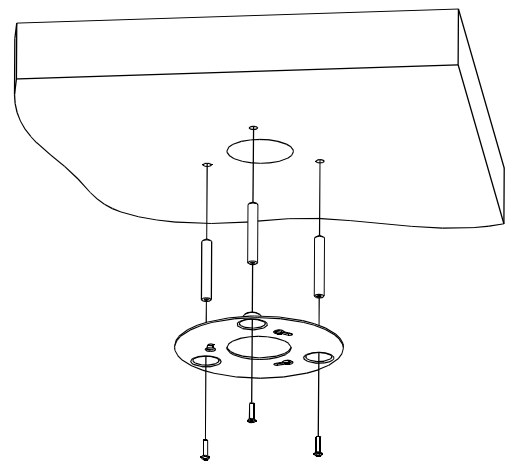
2. Installation of product

1. Get the products out from the packages. As Picture 2.1-1



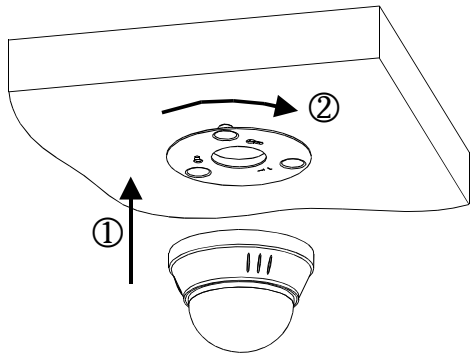
Picture 2.1-1

2. Drill holes and fix base board on the ceiling floor by using of 3 M4 bolts.(Like picture 2.2-2)



Picture2.1-2

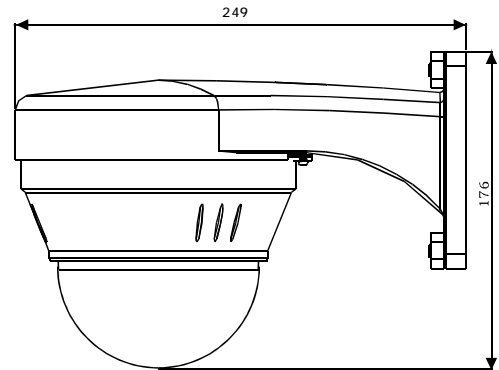
3. Insert three screws in the mini dome into the apertures on the base board(pls refer to①), then turn 15 degrees in clockwise(pls refer to②).



Picture 2.1-3

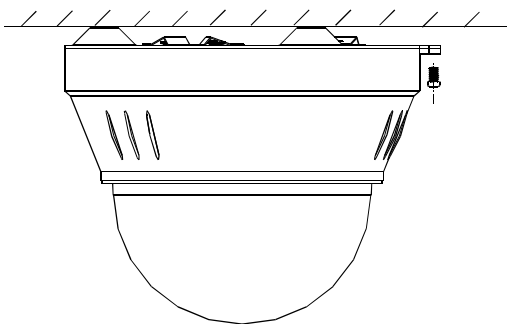
2.2 Wall mount

1. Dimension of product as picture below



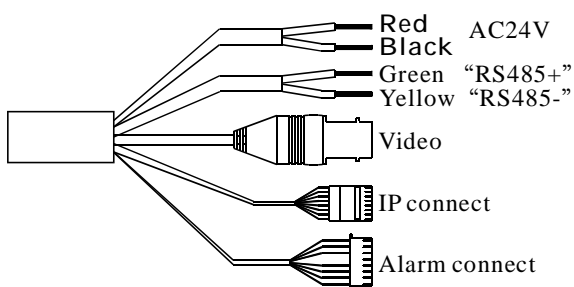
Picture2.2

4. Using 3 additional M3*5 screws to lock tightly.



Picture 2.1-4

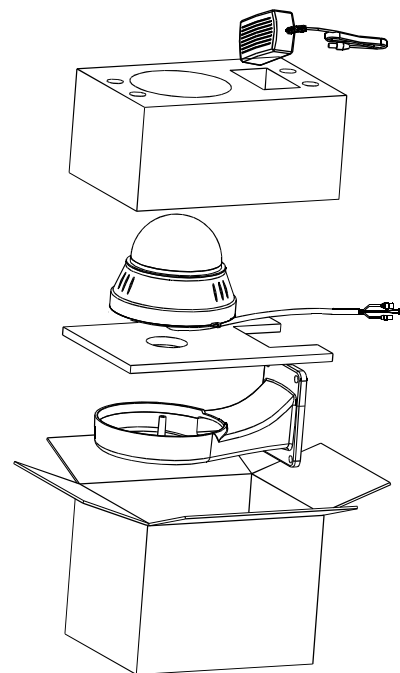
5. Connect the power cable, video cable and Rs485control-cable. As the picture below.



Picture 2.1-5

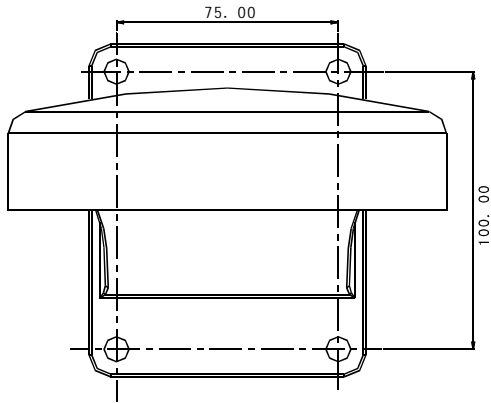
2. Installation of product

1、 Get the products out from the packages.
As picture 2.1-1



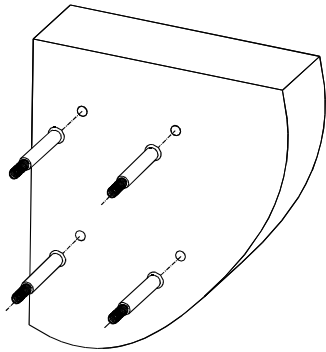
Picture2.2-1

2、 Make the wall bracket as the model on installation wall, and draw the central position of the drill hole. (As picture 2.2-2)



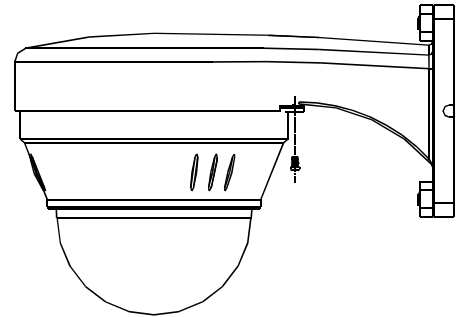
Picture2.2-2

3、 Please drill four installation holes for M8 metal expand screw with the lashed electric drill on the installation surface, and be sure with the installation hole of 75mm depth approximately and M8 expand metal screw. (As picture 2.2-3)



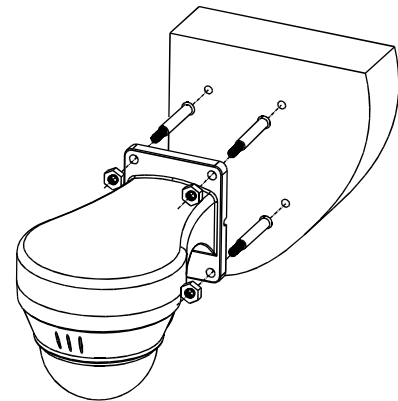
Picture2.2-3

4、 Get the water-proof output cable of mini dome through the wall bracket, and make the three screw of cover board in the mini dome into the aperture on the base board, then turn 15 degrees in clockwise, and be sure that central position of the two ear holes of base board and cover board are matched, and then lock it tightly using the additional M3*5 screw.



Picture2.2-4

5、 Pls make the wall bracket aims at the M8 screw, so that the output cable will be locked in the hole of motherboard bracket, and use the M8 screw to lock the wall bracket tightly. As picture 2.2-5.



Picture2.2-5

6、 Connect the power cable, video cable and Rs485 control-cable. As the picture below.

3. Dome performance

3. 1 Dome parameter

Power supply		Setting	
Power supply	AC24V	Baudrate (RS485)	2400/4800/9600/19200bps
Cosumption	9W	Communication Protocol	Pelco-D、Pelco-P、Factory
Operational		ID setting	0-255
Decoder	Built-in	Physical	
Pan rotation	360°	Operation temperature	-30℃ — +50℃
Tilt rotation	Tilt90° , with auto-flip	Environmental humidity	0—95%(no condensation)
Rotation speed	Pan1° - 200° /S Tilt1° -150° /S	Mount way	Wall mount/Ceiling
Preset	128	Weight	N: 1.4kg G: 1.7kg
Monitor way	Preset/tour/scan/ pattern	Bracket	N: 1.25kg G: 1.45kg
Speed	Limitless variable-speed controlling	Material	Aluminum, iron and carbon alloy, plastic

3. 2 Camera parameter

Model	Specification/parameter
Imaging Element	1/4" CCD
Scanning System	625lines, 50field/s
White Balance	Auto/manual
Gain Control	Auto Gain Control
S/N	≥50dB
Shutter	Auto: 1/50-1/120,000 s continuously/manual
Lens	10 times optical magnified lens
Magnification	100times(10 times optical × 10 times digital)
Video Output	Multiple Video Output, 1.0Vp-p
Environmental Temperature	-10℃-50℃
Environmental Humidity	0~95%(no condensation)

3.3 Dome performance and features

This product is high-technology surveillance product with high definition and color camera, variable-speed pan/tilt and multifunction decoder. It can reduce the connection and installation process between systematic parts at a max limit, and also can improve the stability and reliability of the system. Meanwhile it is easy to install and repair, and it has the following advantages: beautiful shape, rotate lightly and neatly, little noise, simple operation and so on.

1. Built-in high resolution color camera with pre-focus lens.

- Prefocus lens 6mm, 8mm, 12mm(Optional)
- Auto brightness controlling
- Auto white balance
- Auto back-light compensation
- Auto aperture
- Auto focus

2. Integrated and multi-protocol decoder

- Figure design, all the data are stored in the inner of camera pan/tilt, when power off, the storage data can't be lose.
- Built-in decoder, Integrated and multi-protocol, include PELCO-D、 PELCO-P、 FACTORY、 and mainstream protocols; The protocols can automatically recognized by the dome, and which can choose corresponding protocol to communicate with host, it need not to be set by customers
- 128 presets can be stored, support auto tour (but can transfer 1-80 presets), and 1 tour can store up to 32 preset.

3. Built-in pan/tilt

- ◆ Iron and carbon alloy structure, high intensity, and good heat dissipation.
- ◆ Precise stepping motor, rotate smoothly, react sensitivity and orientate accurately.
- ◆ Exquisite mechanical drive, support pan 360° continuously and tilt 0-90° , and may rotate 180° with auto flip.
- ◆ rotate slowly at pan 1° /s, and the image doesn't jitter.

4. OSD menu

- ◆ All the menu option are displayed in English.
- ◆ Video OSD menu. It is direct and simple to revise the dome information and parameter by keyboard and menu display.
- ◆ May set park action, and set power up action or carry out appointed action.

5. Internal temperature test

- ◆ when the temperature exceeds the upper limit, the screen will display alarm information.
- ◆ According to the real-time temperature, the fan will measure if it starts or not, and prolong the life of fan.

4. Function in structure

This passage mainly describes the main function and general principle of integrated speed dome, and does not refer to the concrete operation methods. Different system platform has different operation methods, generally we should according to the system Manufactory operation manual. Please contact dealer to get necessary information, under some conditions there are have some particular requirements and operations.

4.1 Auto-run motion

◆ Auto flip

If user holds the joystick in the down position, the camera rotates pan 180 degrees, then the camera rotates tilts up to 90 degrees, you may directly watch the rear view to realize surveillance all processes in portrait 180 degrees . In the menu, you may set the system parameter setting AUTO FLIP as ON, thus you may run this function.

◆ Park action

By the menu “ park time ” and “ park action ” , user may set auto-call preset or run tour, pattern, and scan, etc after pointing a few minutes if the dome doesn't run any motions.

◆ Power up action

By the menu “ power up action ” , after the dome powers up or restarts, user may set auto- resume motions before power up and auto- call preset or run tour, pattern, and scan etc .

4.2 Monitor function

◆ Set and call preset

Preset function is that dome stores the horizontal angle, slope angle parameters of current pan/tilt into the memory. When necessary dome can call these parameters, and adjust pan/tilt and camera to this position. User can call presets easily and promptly by using keyboard controlling. The dome can support 128 presets.

◆ Tour

Tour is the built-in function in the speed dome. It can appoint setting in advance, and make presets arranged in needful order in tour dwell. By inserting presets in tour dwell, to make the camera tour between these presets. Tour order can be programmed, each time you run tour, you can set park time. A tour can store 32 preset.

◆ Scan

User can easily preset right limit and left limit by controlling menu and menu, in order to make the camera scanned between right limit and left limit at a setting speed.

◆Pattern

Pattern is built-in function in the speed dome; the dome can record the tracks that are no less than 180s, when running pattern, the dome moves repeatedly according to the recorded tracks. A dome can set up to 4 pattern tours.

◆Lens position display

The position that the speed dome has finished to self-testing as 0 point of pan rotation and tilt rotation. The pan range is 0-360° , and tilt range is 0-90° . According to the displayed information, to set the position of camera lens, and the position can display on the screen.

4.3 Constant temperature Function

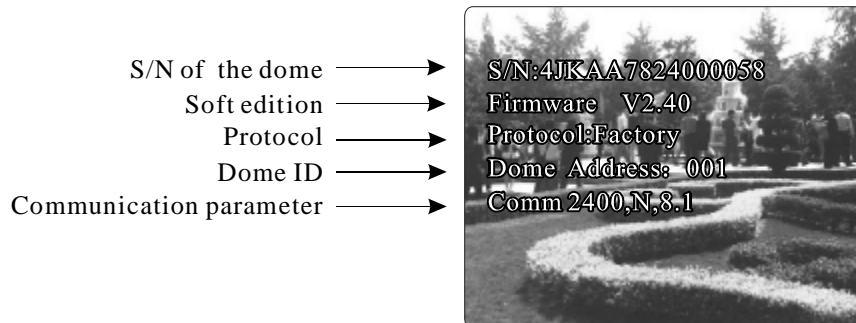
Inner temperature sensor surveille temperature inside of the dome. When the dome work in the high temperature, the dome will automatically to start-up the fan to reduce the heat, to make sure the dome work in the reliable temperature environment, increase its stability and prolong the life time of the dome.

5. System setting

5. 1 Basic operation

5.1.1 Current-carrying to dome and self-testing

The dome conducts self-testing after current-carrying, and it rotates slowly until displaying pan origin that is default setting, then moving to tilt origin, the lens will be pulled far to near and near to far, when self-testing is finished, there is relevant system information displaying on the screen, as follow:



The information will not disappear until you stop to operate the system. If you set “power up action”, the dome will automatically activate motions after self-testing. How to operate the function? We will explain detail introduction in following passages.

5.1.2 Call the main menu

The system enters into the main menu by 95 preset or twice transfer 9 preset within 3 seconds. All the menu setting must enter into the main menu at first. You need input password when you sign in the menu if you set up password and have a super- password for the time of forget the password (super-password "892226"), then the password will turn to factory setting (original password "000000"). You need set the password again if you need it, the detail of information show in password setting 6.7.

5.1.3 Basic operations of video server controlling software

Ø Basic operations:

Rotate up: it means camera rotate up as pan/tilt controlling, it means to choose the former item as menu choosing

Rotate down: it means camera rotate down as pan/tilt controlling, it means to choose the next item as menu choosing

Rotate left: it means camera rotate left as pan/tilt controlling, it means to exit and not to save as menu choosing

Rotate right: it means camera rotate right as pan/tilt controlling, it means to save the settings as menu choosing

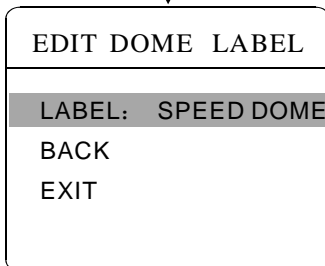
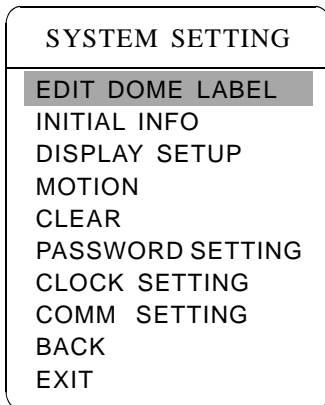
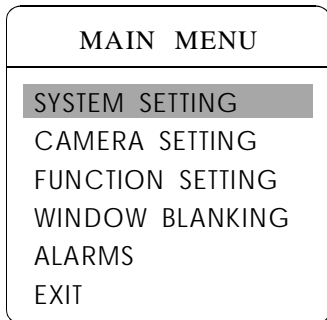
Ø Menu operation

“Back” : Back to the former menu

“ On ” : Open some setting

“Exit” : Exit to menu

“Off ” : Close some setting



5. 2 Edit dome label

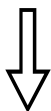
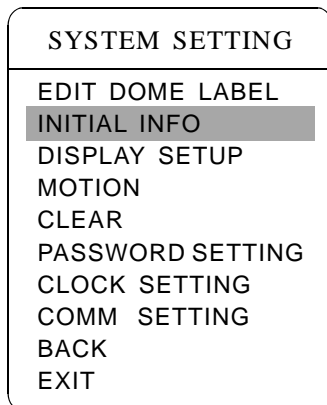
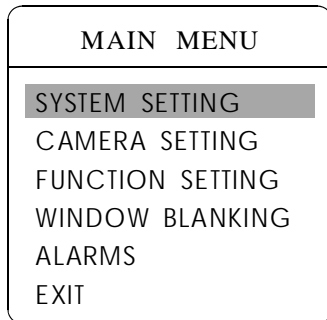
When using a lot of systems of the dome , in order to identify to each dome, the systems support title setting. The setting ways as follow:

- 1、 The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
- 2、 Click the up and down button of the software on video server monitoring system, move the cursor to **【SYSTEM SETTING】** ,click the right button to enter the next menu.
- 3、 Click the up and down button to **【EDIT DOME LABEL】** ,click the right button to enter the label setting menu.
- 4、 Click the up and down button to **【LABEL】** , click the right button to edit current label.
- 5、 When the cursor is twinkling at the first character of the label, moving cursor to choose character, after editing, click the right button to save.
- 6、 Click the down button to **【BACK】** ,click the right button to back to the former menu.

The label may set 16 characters, and doesn't need editing characters. Click the right button continuously to jump over and using spacebar to replace the deleted characters. When you finish to edit a character, click the right button to enter into the next editing character, when you editing the last character,click the right button to save.



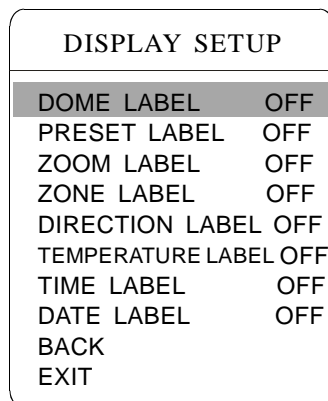
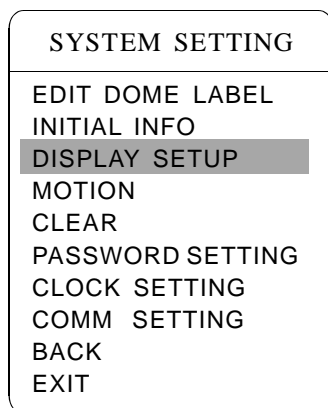
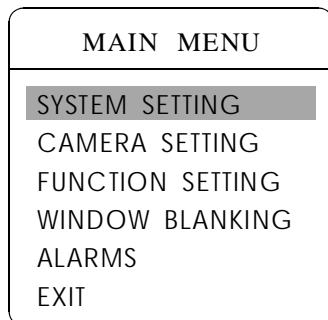
Click the left button to exit character of label is suitable for choosing as follow:0-9、 A-Z、 :<>-.,Space.Other labels' input ways are the same as above.



5. 3 Display initial information

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button to **【SYSTEM SETTING】** , click the right button to enter submenu.
3. Click the up and down button to **【INITIAL INFO】** , click the right button to display initial information, which as below the left picture shows.


Initial information includes S/N of the dome, the name of manufacturer, soft edition, camera address, communication parameter. System setting may change the numerical value of initial information.



5. 4 Display setup

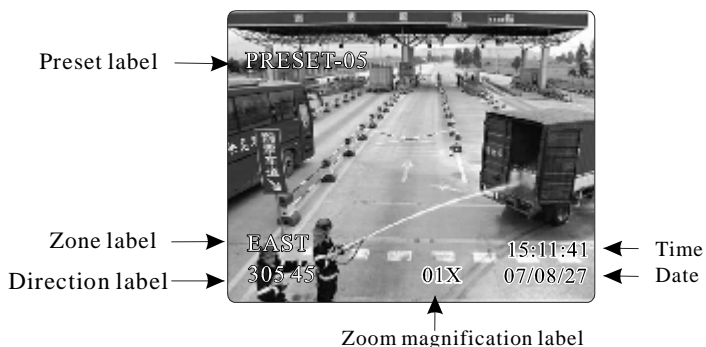
1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button to **【SYSTEM SETTING】** , click the right button to enter submenu.
3. Click the up and down button to **【DISPLAY SETUP】** , click the right button to enter display setup menu, may setting the content of the display setup as follow:

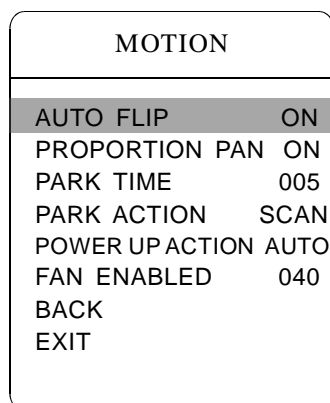
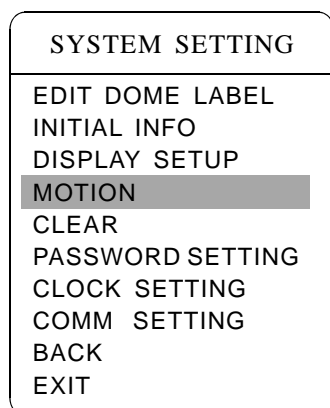
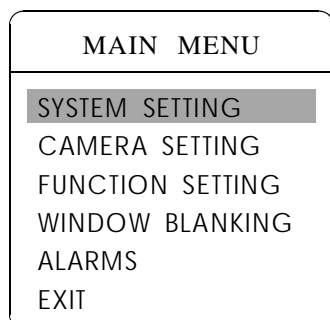
- **【DOME LABEL】** : dome label display setting
- **【PRESET LABEL】** : preset label or scan label display setting
- **【ZOOM LABEL】** : magnification display setting
- **【ZONE LABEL】** : zone label display setting
- **【DIRECTION LABEL】** : direction label display setting
- **【TEMPERATURE LABEL】** : temperature label display setting
- **【TIME LABEL】** : time label display setting
- **【DATE LABEL】** : date label display setting

4. Taking “display dome label” as an example to explain the operation process.
Click the up and down button to move cursor to **【DOME LABEL OFF】** , click the right button, there is a sign  besides **【DOME LABEL】** , the cursor is twinkling besides **【OFF】** , as left picture shows.

5. Click the up and down button, setting switch between ON/OFF, when displaying **【ON】** , it means to display dome label, click the right button, the cursor jump back to **【DOME LABEL】** , label setting is finished, move the cursor to **【EXIT】** , exit to the menu setting.

The display information on the screen will change by the dome rotation , user can see current dome inside temperature, magnification, display zone etc. When all the labels are displayed, the dome works as the following picture shows: (in the picture “305” means pan angel, “45” means tilt angle.)





5. 5 Systematic motion control

Systematic motion controlling may control a series of motions of the dome, and plays an important role in controlling the image of the dome.

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button to **【SYSTEM SETTING】** , click the right button to enter submenu.
3. Click the up and down button to **【MOTION】** , click the right button to enter systematic motion controlling menu, as left picture shows.

5. 5. 1 Auto flip

1. Click the up and down button, move the cursor to **【AUTO FLIP】** , click the right button to enter auto flip setting, Click the up and down button, for example; choosing ON to open auto flip; choosing OFF to close auto flip. Click the right button to save.

5. 5. 2 Speed proportion pan

2. Click the up and down button, move the cursor to **【PROPORTIONAL PAN】** ; Click the right button to enter “proportion pan” setting, Click the up and down button to choose, if choosing **【ON】** , it means to open proportion pan; if choosing **【OFF】** , it means to close proportion pan , Click the right button to save.



when opening the auto flip function, user holds the joystick in the down position, the camera rotates pan 180 degrees, after the camera rotates tilts up to 90 degrees, you may directly watch the rear view to surveillance all process in portrait 180 degrees.

MOTION	
AUTO FLIP	ON
PROPORTION PAN	ON
PARK TIME	005
PARK ACTION	SCAN
POWER UP ACTION	AUTO
FAN ENABLED	040
BACK	
EXIT	

MOTION	
AUTO FLIP	ON
PROPORTION PAN	ON
PARK TIME	005
PARK ACTION	SCAN
POWER UP ACTION	AUTO
FAN ENABLED	040
BACK	
EXIT	


MOTION	
AUTO FLIP	ON
PROPORTION PAN	ON
PARK TIME	005
PARK ACTION	SCAN
POWER UP ACTION	AUTO
FAN ENABLED	040
BACK	
EXIT	

5. 5. 3 Park action

This setting allows the dome to run an appointed action after it enters vacancy for a few time (1-240minutes). If default sets as 0, it means not to run this action.

1、 Click the up and down button, move the cursor to **【PARK TIME】** , click the right button, click the up and down button to set park time, the range is 0-240 (minute), click the right button to save.

【PARK ACTOIN】 is running action at park time, when **【PARK TIME】** sets as 0, this item can't be set.

2、 Click the button, move the cursor to **【PARK ACTON】** , click the right button there will be a sign  in the front of **【PARK ACTON】** , the cursor jump to right, after click the up and down button to choose “ park action” , there are options for choosing as follow, click the right button to save.

- **【NONE】** - (default) none action
- **【PRESET】** -use preset 1
- **【SCAN】** -run scan
- **【PAT1】** - run pattern X
- **【TOUR】** - run tour

5. 5. 4 Power up action

The dome starts to run actions after self-testing, if nobody intervenes with it, the dome will repeatedly run this action continuously , if default sets as **【NONE】** .

1、 Click the button, move the cursor to **【POWER UP ACTION】** : click the right button to jump to the following choice, tilt up/down joystick to choose “power up action” , Click the up and down button to save.

- **【NONE】** - none action
- **【AUTO】** - the dome resumes the primary action and

direction before power up.

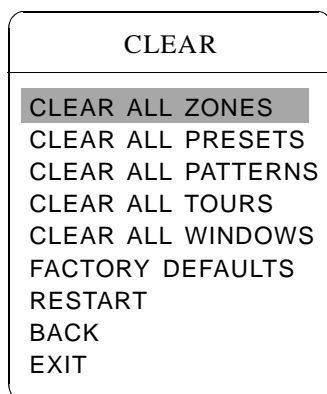
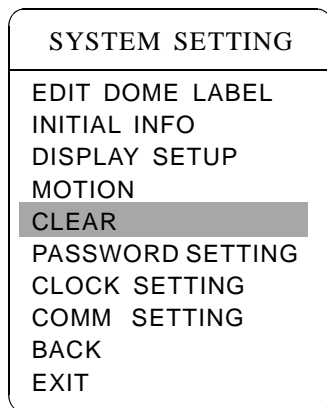
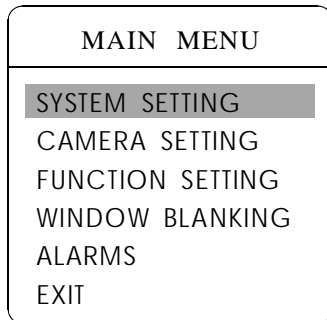
- **【PRESET】** - use preset 1
- **【SCAN】** - run scan
- **【PAT1】** - run pattern X
- **【TOUR】** - run tour

5. 5. 5 Fan startup by temperature

The temperature of the dome will rise when its environment is in high temperature. The fan will open automatically when the temperature reaches to a temperature value in order to make sure the stability of the dome.

Click the button, move the cursor to **【FAN ENABLED】** : Click the right button , the cursor will skip to the back option. The user can click the right button to save it in actual condition.

The default setting temperature of the fan startup is 40°C. The user also can enter into the fan startup setting to adjust the temperature of fan startup. As picture shows: the temperature range is 0-60°C.

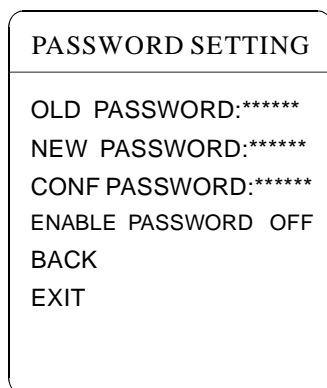
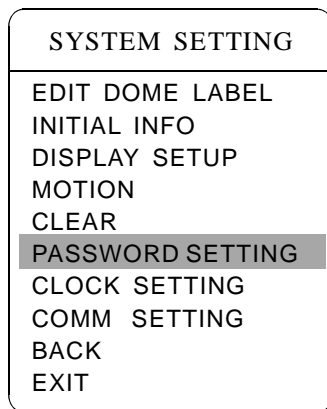
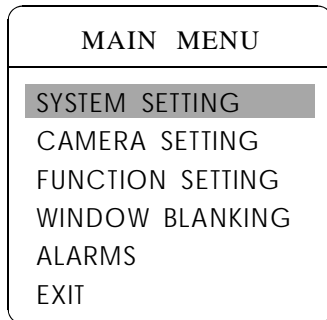


5. 6 Clear

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button to **【SYSTEM SETTING】** , click the right button to enter submenu.
3. Click the up and down button to **【CLEAR】** , click the right button to enter submenu, as left picture shows.
 - **【CLEAR ALL ZONES】**
 - **【CLEAR ALL PRESETS】**
 - **【CLEAR ALL PATTERNS】**
 - **【CLEAR ALL TOURS】**
 - **【CLEAR ALL WINDOWS】**
 - **【FACTORY DEFAULTS】** : resume the Factory default. Run this function, the camera parameter and system parameter will resume before production, clear all windows and alarm setting. Please be cautious to use this function.
 - **【RESTART】** The dome restart.
4. Set clear zone as an example to explain the process. Click the up and down button to **【CLEAR ALL ZONES】** , click the right button to clear all zones.





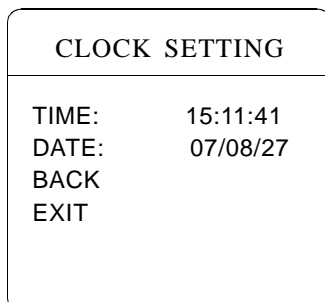
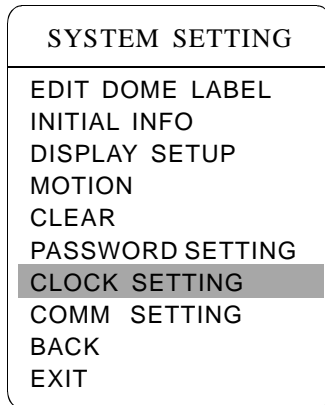
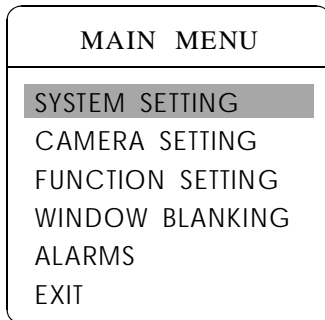
once clear all commands in the controlling menu, they does not resume, so please be careful of using.



5. 7 Password Setting

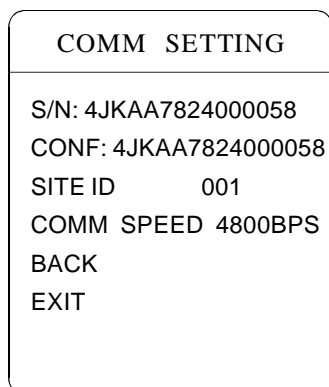
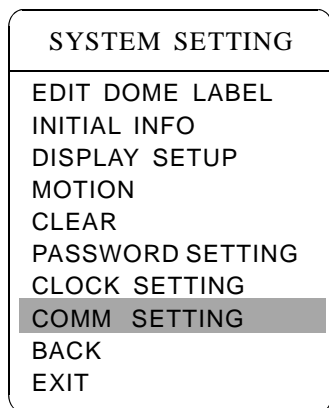
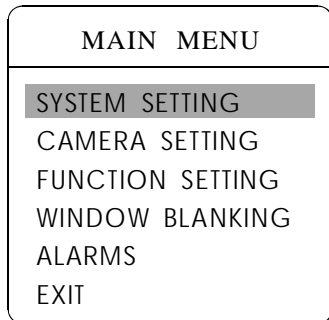
Password setting is the built-in function of high speed dome, By setting password (6 bits) it is very useful to protect the dome setting, if no password, you can't enter the setting menu. the initial password of the dome is "000000".

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button and move the cursor to **【SYSTEM SETTING】**, click the right button to call the submenu.
3. Click the up and down button and move the cursor to **【PASSWORD SETTING】**, click the right button to call System motion controlling menu, as the left picture shows.
4. Input old password: Click the up and down button, move the cursor to **【OLD PASSWORD】**, click the right button, there will be a  to display in the front of **【OLD PASSWORD】**, the cursor jumps to the first character on the right, click the up and down button to set the first password, its option range is 0-9, by click the up and down button to input the other bits, click the right button to save.
5. Input new password: Click the button, move the cursor to **【OLD PASSWORD】**, click the right button, there will be a  to display in the front of **【NEW PASSWORD】**, the cursor jumps to the first character on the right, according to the above instruction user can ordinarily input the password by click the up and down button, click the right button to over.
6. Confirm the new password: Input the user's needful password again according to above method. Failing to modify the password if inputted password is different with the fifth step.
7. Start password or not: click the up and down button, move cursor to **【ENABLE PASSWORD】**. Clicking the right button, then click the up and down button, switch setup value between ON/OFF, show **【ON】**, means the setting password is valid, show **【OFF】**, means the setting password is invalid.



5. 8 Date and clock setting

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Move the cursor to **【System setting】** by clicking the up and down button, click the right button to enter into the next menu
3. Move the cursor to **【Clock setting】** by clicking the up and down button. click the right button to call clock setting, you could set the following
 - **【TIME】**
 - **【DATE】**
4. For example. move the cursor to **【TIME】** by clicking the up and down button, click the right button. please move the cursor to the first number (the three number means hour, minute, second, it also means year, month, date under the **【DATE】** . Setting the [Hour] by clicking the up and down button. Setting the **【MINUTE】** 、 **【SECOND】** by turning right and left the joystick. Click the right button to save.



5. 9 Setup Dome parameter

1.The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.

2.Click the up and down button to move the cursor to **【SYSTEM SETTING】** , and click the right button to enter into the next menu.

3.Click the up and down button to move the cursor to **【COMM SETTING】** , and clicking the right button to enter into Dome parameter setup menu.

S/N: Show Series NO. of the dome ex-work.

CONF: Using to edit, the series NO. of the dome is the same as S/N series Number.

SITE ID: Setting up the ID Number of the dome, address scope (001-255).

COMM SPEED: Baud rate setup. The user can choose 4 kinds of Baud-rate (2400 BPS, 4800 BPS, 9600 BPS, 19200 BPS).

PROTOCOL: set protocol, the user can choose 16 kinds of protocol: PELCO 、 FACTORY、 DYNACOLOR、 ISD、 HUNDA、 VIDO B02 、 LILIN、 KALATEL、 DIAMOND、 SAMSUNG 、 PANASONIC、 SANTACHI、 VICON 、 MOLYNX、 VCL 、 SAE.



below operation can not be continue when above two series Number are not the same.


MAIN MENU
SYSTEM SETTING
CAMERA SETTING
FUNCTION SETTING
WINDOW BLANKING
ALARMS
EXIT



CAMERA SETTING
ZOOM SPEED HIGH
DIGITAL ZOOM ON
BLC MODE OFF
SLOW SHUTTER X2
IR CUT FILTER
ADVANCE SETTING
BACK
EXIT

6. Camera setting

6. 1 Zoom speed

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button to **【CAMERA SETTING】** ,click the right button to enter submenu.
3. Click the up and down button, move the cursor to **【ZOOM SPEED】** ; click the right button will appear a sign  in the front of **【ZOOM SPEED】** , the cursor moves to right, click the up and down button to choose **【HIGH】** or **【LOW】** .
4. click the right button to save, click the left button to cancel.

MAIN MENU	
SYSTEM SETTING	
CAMERA SETTING	
FUNCTION SETTING	
WINDOW BLANKING	
ALARMS	
EXIT	



CAMERA SETTING	
ZOOM SPEED	HIGH
DIGITAL ZOOM	ON
BLC MODE	OFF
SLOW SHUTTER	X2
IR CUT FILTER	
ADVANCE SETTING	
BACK	
EXIT	

6. 2 Digital zoom control

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button to **【CAMERA SETTING】** , click the right button to enter camera setting.
3. Click the up and down button, move the cursor to **【DIGITAL ZOOM】** , click the right button to enter digital zoom setting, click the up and down button, to choose **【ON】** means open digital zoom control which can be pulled near, if pulling the digital zoom near again, the dome enters into “ digital zoom increase” ; to choose **【OFF】** means to close digital zoom control.
4. Click the right button to save.



OPERATION KNACKS

When digital zoom be set as ON, the maximum zoom magnification of the dome is digital zoom magnification times optical zoom magnification; when digital zoom be set as OFF, the maximum zoom magnification of the dome is optical zoom magnification.




The option of the digital zoom is ON/OFF when the camera module is SONY 、 LG、 CNB、 HITACHI .

MAIN MENU	
SYSTEM SETTING	
CAMERA SETTING	
FUNCTION SETTING	
WINDOW BLANKING	
ALARMS	
EXIT	



CAMERA SETTING	
ZOOM SPEED	HIGH
DIGITAL ZOOM	ON
BLC MODE	OFF
SLOW SHUTTER	X2
IR CUT FILTER	
ADVANCE SETTING	
BACK	
EXIT	

6. 3 Back light compensation

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button, move the cursor to **【CAMERA SETTING】** to enter submenu.
3. Click the up and down button, move the cursor to **【BLC MODE】**, click the right button, There will be a sign  in the front of **【BLC MODE】**, the cursor jump to right, click the up and down button to open or close back light compensation function. If choosing **【ON】** means to open back light compensation mode; if choosing **【OFF】** means to close back light compensation mode.
4. Click the right button to save.



OPERATION KNACKS

Strong background ray can make backlighting objects engender shadow, (back light compensation), the speed dome can auto-adjust iris to match with the changes of various ray, and auto-revise the main lightness to make the pictures more legible.



This function relates to models and parameters of the built-in camera in the dome, when open black compensation, it has two functions which are auto-adjust (when you choose ON) or manual adjust(0-255) according to the different of the camera.

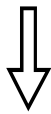


Without back light compensation, in strong sunshine, the back light side is subject to dark.




With back light compensation, the image is in gear.

MAIN MENU	
SYSTEM SETTING	
CAMERA SETTING	
FUNCTION SETTING	
WINDOW BLANKING	
ALARMS	
EXIT	



CAMERA SETTING	
ZOOM SPEED	HIGH
DIGITAL ZOOM	ON
BLC MODE	OFF
SLOW SHUTTER	X2
IR CUT FILTER	
ADVANCE SETTING	
BACK	
EXIT	

6. 4 Slow shutter control

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button, move the cursor to **【CAMERA SETTING】** to enter submenu.
3. Click the up and down button , move the cursor to **【SLOW SHUTTER】** , click the right button, then there will have a sign  in the front of **【SLOW SHUTTER】** , The cursor moves to right, you can make your choice when click the up and down button. (Can choose from X2、X4、X6、X8、X10、X12、X14、X16、X24、X32、X64、X128, which according to the time of lighting in turn, the more the long lighting).
4. Click the right button to save.



OPERATION KNACKS

When the dome monitors at night or dark environment, because the ray is not enough, the image on the screen is too dark, setting slow shutter can lengthen the time of lighting so that make the picture that is shoot in dark more legible.



This function depends on the models and parameters of built-in camera in dome, if the camera haven't this function, then this function is invalid.

MAIN MENU	
SYSTEM SETTING	
CAMERA SETTING	
FUNCTION SETTING	
WINDOW BLANKING	
ALARMS	
EXIT	




CAMERA SETTING	
ZOOM SPEED	HIGH
DIGITAL ZOOM	ON
BLC MODE	OFF
SLOW SHUTTER	X2
IR CUT FILTER	
ADVANCE SETTING	
BACK	
EXIT	

IR CUT FILTER	
IR CUT FILTER	AUTO
IR CUT ON TIME	N/A
IR CUT OFF TIME	N/A
BACK	
EXIT	

6.5 IR cut filter

1、 The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.

2、 Click the up and down button, move the cursor to **【CAMERA SETTING】** to enter submenu.

3、 Click the up and down button, move the cursor to **【IR CUT FILTER】** ; click the right button, there will be a sign  in the front of **【IR CUT FILTER】** , the cursor jumps to right, click the up and down button to “ IR cut filter” , choices as follow, **【AUTO】** is default.

- **【AUTO】** IR cut filter mode, it means the dome automatically transfers according to sensitivity.
- **【TIME】** Can set black/color time; for example, can set color image in day and set black in the night.
- **【COLOR】** set as color mode
- **【BLACK】** set as black and white mode

4、 Click the right button to save.



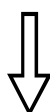
OPERATION KNACKS

IR cut filter function uses color in day; use black and white at night. This function not only guarantees the quality of image, but also saves the room of storage.



This function depends on the models and parameters of built-in camera in dome, if the camera haven't this function, then this function is invalid.(N/A)

MAIN MENU	
SYSTEM SETTING	
CAMERA SETTING	
FUNCTION SETTING	
WINDOW BLANKING	
ALARMS	
EXIT	



CAMERA SETTING	
ZOOM SPEED	HIGH
DIGITAL ZOOM	ON
BLC MODE	OFF
SLOW SHUTTER	X2
IR CUT FILTER	
ADVANCE SETTING	
BACK	
EXIT	



ADVANCE SETTING	
AE MODE	AUTO
SHUTTER	N/A
WB MODE	AUTO
R GAIN	N/A
B GAIN	N/A
BACK	
EXIT	

6. 6 Advance setting

- 1、 The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
- 2、 Click the up and down button, move the cursor to **【CAMERA SETTING】** to enter submenu.
- 3、 Click the up and down button, move the cursor to **【ADVANCE SETTING】** ; click the right button to enter submenu, as left picture shows;

6. 6. 1 AE mode

- 1、 Click the up and down button, move the cursor to **【AE MODE】** , click the right button, click the up and down button to choose AE mode, modes for choosing as follow:
 - **【AUTO】** : default setting, auto Iris mode
 - **【BRIGHT】** : brightness priority mode
 - **【IRIS】** : iris priority mode
 - **【SHUTTER】** : shutter priority mode
- 2、 Choose Iris priority mode **【IRIS】** , click the right button to save.
- 3、 Click the up and down button to the sub-choices of AE mode **【IRIS F1.4】** , click the right button to choose adequate Iris, click the right button to save.
 - **【SHUTTER 1/50】** it means shutter speed, when AE mode is shutter priority, this function can be set.
 - **【IRIS F1.4】** it means the size of iris, when AE mode is iris priority, this function can be set.
 - **【BRIGHT F2.0/ODB】** it means brightness, when AE mode is brightness priority, this function can be set.



Operation knacks

Quality of photo relates to exposure amount, that is to say how much light can make CCD receives legible image. Exposure amount is relative to the time of lighten (be up to shutter speed) and the area of lighten (be up to the size of iris).

The camera can automatically calculate suitable exposure amount according to brightness of scenery and CCD sensitivity, in the situation that the exposure amount is certain: **【SHUTTER】** (shutter priority) is to fix shutter speed, the camera will auto decide to use how much iris; **【IRIS】** (iris priority) is to fix the size of iris, and auto-decide to use shutter speed. **【BRIGHT】** (brightness priority) is point that the camera TTL check the light directly and control the brightness of image.

MAIN MENU	
SYSTEM SETTING	
CAMERA SETTING	
FUNCTION SETTING	
WINDOW BLANKING	
ALARMS	
EXIT	



CAMERA SETTING	
ZOOM SPEED	HIGH
DIGITAL ZOOM	ON
BLC MODE	OFF
SLOW SHUTTER	X2
IR CUT FILTER	
ADVANCE SETTING	
BACK	
EXIT	



ADVANCE SETTING	
AE MODE	AUTO
SHUTTER	N/A
WB MODE	➤ AUTO
R GAIN	N/A
B GAIN	N/A
BACK	
EXIT	

6. 6. 2 White balance mode

System supports **【AUTO】**、indoor mode **【INDOOR】**、outdoor mode **【OUTDOOR】**、auto track mode **【ATW】**、single mode **【OPW】**、**【OPT】** mode、manual mode **【MANUAL】** and kinds of white balance modes, etc. Detail setting as follow:

1、The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds. click each command enter into “ advanced setting” menu according to the order in left picture .

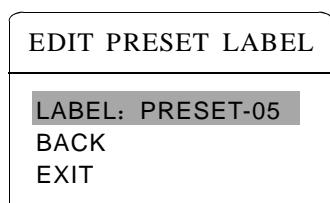
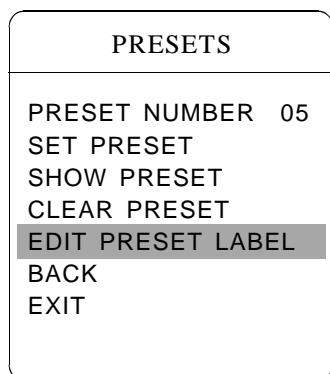
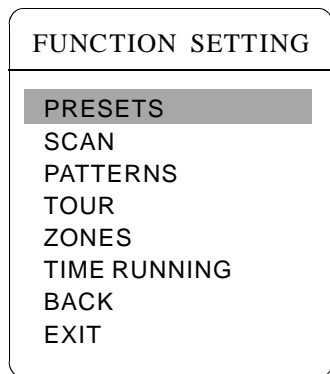
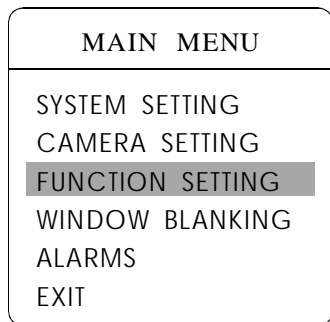
2、Click the up and down button, move the cursor to **【WB MODE】** to choose white balance mode, click the right button to save.

Auto mode **【AUTO】** is the default mode of speed dome, which is auto revert real color after the white balance sensor check the environment by camera. When choosing manual mode **【MANUAL】** , adjust the numerical value of **【R GAIN】** and **【B GAIN】** .

- **【R GAIN】** the range is 1-225; the numerical value is bigger, it means that adding red is more, the tone changes to be warm.
- **【B GAIN】** the range is 1-225; the numerical value is bigger, it means that adding green is more, the tone changes to be cold.



That means the current camera has no such function when the setting option shows N/A.



7. Function setting

7.1 Preset setting

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds. according to the order of the left picture, to click each command to enter “ preset menu” , various functions as follow:

- **【PRESET NUMBER】** select preset number as current preset
- **【SET PRESET】**
- **【SHOW PRESET】**
- **【CLEAR PRESET】**
- **【EDIT PRESET LABEL】**

Define preset and display preset function can be set by keyboard operation, input preset number at first, then click the key “ save reset/call preset” to carry out.

2、 Define current preset number: move the cursor to **【PRESET NUMBER】** , click the right button to choose preset number, the range is 01-128, as the left picture shows, here chooses number 5 as current preset, the following operations aim at the current preset.

3、 Define current preset: move the cursor to **【SET PRESET】** , click the right button, by clicking the up and down button to adjust magnification, to choose good objective image, click the right button to save. If the image is very near, the image is belong in digital zoom; when setting preset, the image will jump to maximal optical zoom.



Operation knacks

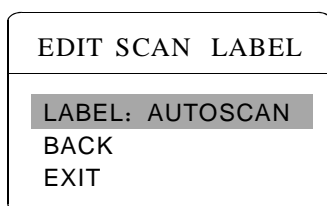
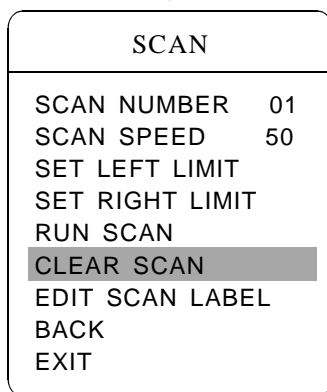
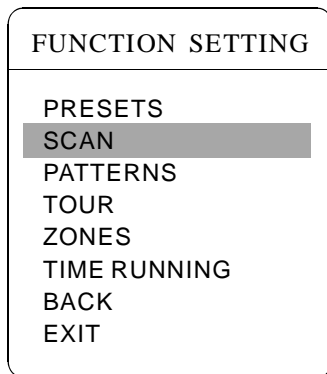
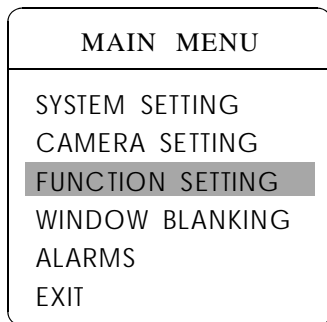
Preset function is that dome stores current pan/tilt angle, zoom and other position parameters into the memory. When necessary dome recalls these parameters and adjust camera to that position.

- 4、 Display current preset: move the cursor to **【SHOW PRESET】** , click the right button, the screen will display the current preset;
- 5、 Clear current preset: move the cursor to **【CLEAR PRESET】** , click the right button, the current preset is cleared.
- 6、 Edit current preset label: move the cursor to **【EDIT PRESET LABEL】** , click the right button to enter into editing preset submenu, system auto-sets label as PRESET-XX, click the right button to revise label.

1. When running to program, display, clear preset and edit label, should choose preset number at first.
2. The label may set up to 16 characters, and doesn't need editing characters. Click the right button continuously to jump over and use spacebar to replace the deleted characters. When you finish to edit a character, click the right button to enter into the next editing character ; when you finish to edit the last character, clicking the right button to save. Click the left button to exit.



Character of label is suitable for choosing as follow: 0-9、 A-Z、 :<>- . , space.



7. 2 Scan

Scan is that pre-set two points , then the camera repeatedly scan between the two points at a stable speed, the same magnification and pan . A dome only has one scan tour.

1.The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds. click menu to enter “scan” menu, as the left picture shows.

- **【SCAN SPEED】**
- **【SET LEFT LIMIT】**
- **【SET RIGHT LIMIT】**
- **【RUN SCAN】**
- **【CLEAR SCAN】**
- **【EDIT SCAN LABEL】**

2、 Define current scan number: click the up and down button ,move the cursor to **【scan number】** ,click the right button ,then click the up and down button to choose scan number, click the right button to save .the following operations aim at the current scan number.

3、 Scan speed setting: click the up and down button to **【SCAN SPEED】** , click the right button, then click the up and down button to adjust scan speed, click the right button to save.

4、 Left limit setting: click the up and down button to **【SET LEFT LIMIT】** , click the right button, click the up and down button to choose objective image, click the right button to save.

5、 Edit scan label: click the up and down button, move the cursor to **【EDIT SCAN LABEL】** , click the right button to enter submenu “ edit label” , move the cursor to **【LABEL】** , the system will auto-set the label as AUTO SCAN, click the right button to revise.



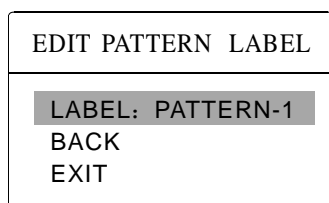
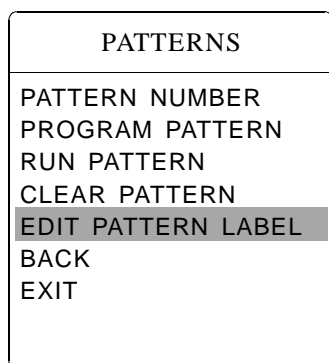
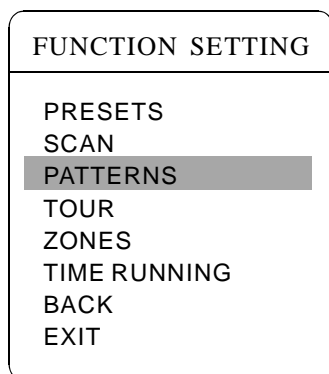
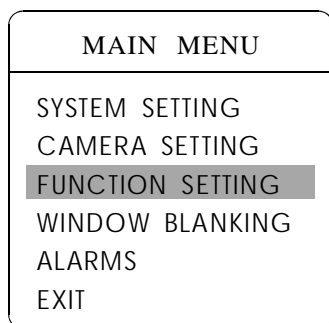
The label can set up to 16 characters, and doesn't need editing characters. Clicking the right button continuously to jump over and using spacebar to replace the deleted characters. When you finish to edit a character, Clicking the right button to enter into the next editing character; when you finish to edit the last character, clicking the right button to save. Clicking the right button to exit.

Character of label is suitable for choosing as follow: 0-9、 A-Z、 :<>-. , space. The editing ways of other labels are the same as above.

6、 Run scan: Click the button to **【RUN SCAN】** , click the right button to exit the menu, and it starts to run scan.



1. left limit and right limit of scan can't be set the same point.
- 2.Under scan process, speed, magnification and tilt direction won't change, if the speed, magnification and tilt direction of the two limits are inconsistent, run scan is base on left limit.



7.3 Pattern

Pattern is built-in function in camera; the speed dome can record tracks that are no less than 180s. (A series of pan/tilt controlling and lens controlling command). A dome may set up to 4 pattern tours.

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.

2. Click the up and down button, move the cursor to **【FUNCTION SETTING】**, click the right button to enter submenu.

3. Click the up and down button to **【PATTERN】**, click the right button to enter menu “Pattern” .

- **【PATTERN NUMBER】** choose current pattern number as the current pattern.
- **【PROGRAM PATTERN】** define the track of the current pattern
- **【RUN PATTERN】** run current pattern
- **【CLEAR PATTERN】** clear current pattern
- **【EDIT PATTERN LABEL】** edit current pattern label

4. Choose pattern number: move the cursor to **【PATTERN NUMBER】**, click the right button, pattern you choose as current pattern, the following operations aim at the current pattern;

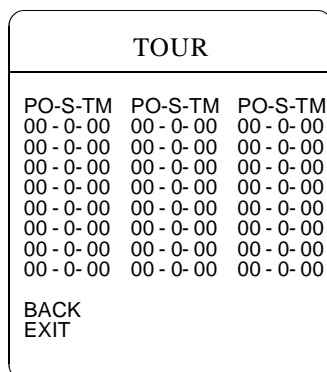
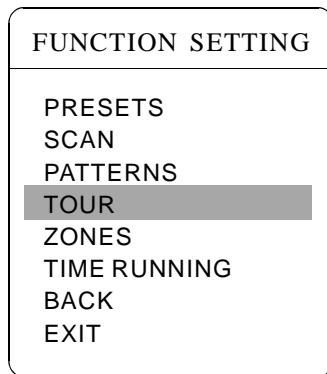
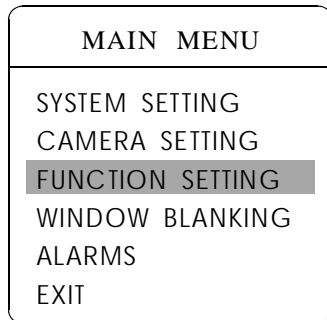
5. Define current pattern tour: move the cursor to **【PROGRAM PATTERN】**, click the right button to set pattern track, move the image wantonly, and draw the focus. The dome has a tour that is no less than 180s, a series of park time, magnification, focus will be recorded, click the right button to save.

6. Run pattern: Click the up and down button to **【RUN PATTERN】**, click the right button to run, the dome will continuously and repeatedly record the specific track.



Notice:

When carry out program, run, clear pattern and edit label, should choose pattern number at first.



7. 4 Tour

Tour is the built-in function in the speed dome, it will arrange the presets into the queue of auto-tour, and can set how long it will park at preset. Operate auto-tour is a process of incessantly transfer each preset. One tour can store 32 presets at most.

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button, move the cursor to **FUNCTION SETTING** , click the right button enter submenu.
3. Click the up and down button, move the cursor to **TOUR** , click the right button to enter menu “tour” .
4. Set the park time of preset: Click the up and down button, move the cursor to **TOUR DWELL** , click the right button, there will be a sign ⚙ in the front of **TOUR DWELL** , the cursor jumps to right, click the up and down to set park time, and the range is 000-255(s).
5. Set tour: move the cursor to tour dwell **00-00-00...00** , click the right button, the first dwell is activated, click the up and down to choose preset number, click the right button, the cursor jumps to the next dwell, click the left button, the cursor jumps to the former dwell. After finishing the last dwell of a line, click the left button to save. Click the left button to exit. If set the presets of the second line, move the cursor to the second line, Click the right button to edit continuously. When the numerical value is "00", the following presets are invalid. A tour can set up to 32 presets.
6. Run tour: Click the up and down button, move the cursor to **RUN TOUR** , click the right button to exit the menu, it stars to run tour.

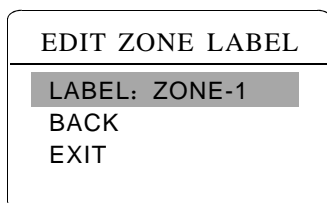
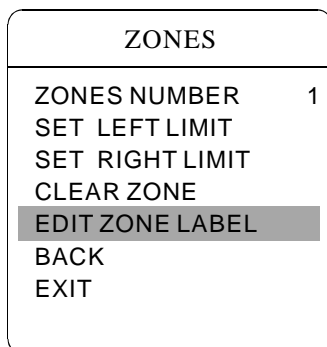
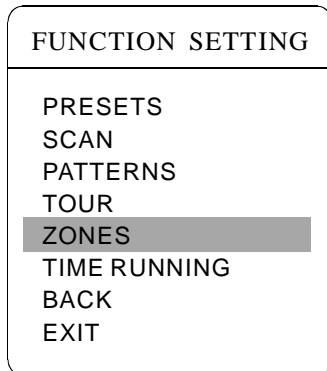
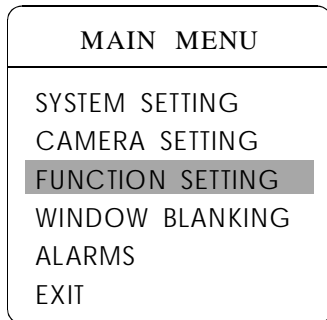
PO: Preset Number, optional scope: 00-80;

S: Movement speed of the dome (user can choose between 0-8 , the dome run fastest when choose 8 , slowest when choose 1 , the dome at rest when choose 0.);

TM: Stay time setup, optional scope: 00-60 (second).



Remark: the system will leap over the preset automatically when the stay time of one item setting up on 0; The dome will not run the tour of latter preset when preset or movement speed setting up on 0 .



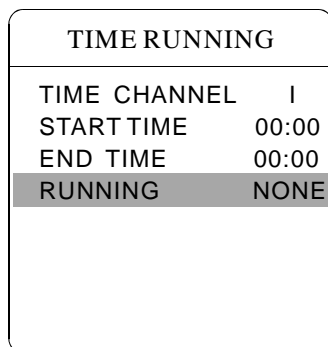
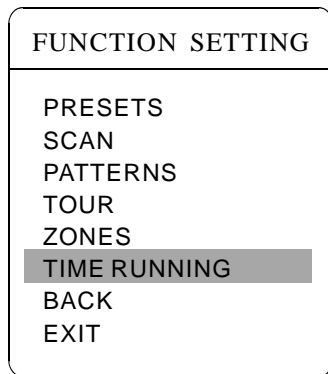
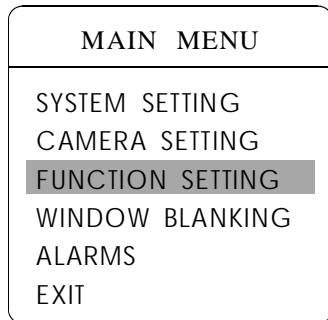
7.5 Zone setting

A dome may be set up to 8 zones; the regional scene can't be overlapped. User will set label for each zone. When setting **【ZONE LABEL】** as ON, the dome will display zone label as it runs some zone. It is convenient to know the zone that the camera shoots by setting zone label.

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.
2. Click the up and down button, move the cursor to **【FUNCTION SETTING】** click the right button to enter submenu.
3. Click the up and down button, move the cursor to **【ZONES】**, click the right button to enter submenu, as the left picture shows.

- **【ZONES NUMBER】** choose zone number as current zone, there choices in the menu aim at current zone.
- **【SET LEFT LIMIT】** set current zone's left limit
- **【SET RIGHT LIMIT】** set current zone's right limit
- **【CLEAR ZONE】** clear current zone setting
- **【EDIT ZONE LABEL】** edit current zone label, as zone number is 1. Zone label will auto-change as ZONE-1

Regard the left/right limit as the demarcation line, and set the middle part as a zone. Various operational ways are the same as other settings in the menu. Therefore we won't explain it again.



7. 6 Tour Time Setting

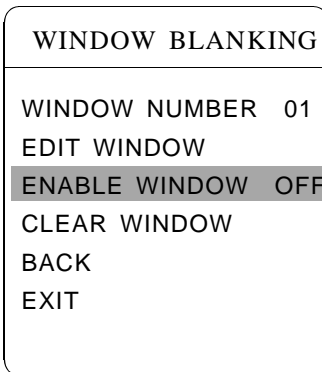
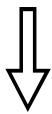
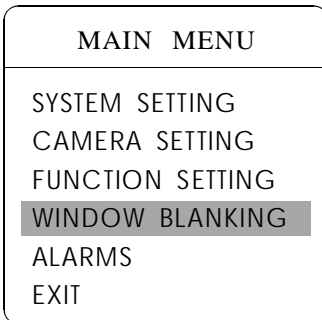
1.The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.

2.Click the up and down button, move the cursor to **【FUNCTION SETTING】** , click the right button to call the submenu.

3.Click the up and down button, move the cursor to **【TIME RUNNING】** , Click the up and down button to set time channel, this system can set up to 4 time channels, click the right button, the time channel that you choose is the current time channel, the following operations is only for current time channel.

4. Set the start and end of the time: move the cursor to **【START TIME】** , by clicking the up and down button to set the start time, click the right button to save; move the cursor to **【END TIME】** , by clicking the up and down button to set the end time, click the right button to save.

5. Motion setting: click the up and down button, move the cursor to **【RUNNING】** , click the right button, there will be a ⚙️ to display in the front of **【RUNNING】** , the cursor jumps to right, click the up and down button to choose the motion in corresponding time channel, click the right button to save. The following items can be selected.



8、 Privacy zone masking

Privacy function can show someone piece of regional shielding while protecting. For example, protect the window of bedroom or ATM of bank. A dome can set up to 24 privacy windows.(Masking setting function is relative with the model of camera module. The masking numbers will be different according to the different cameras.)

Hitachi Camera: It can be set 8 masking at most in 360° surveillance range, can set 2 masking at most per screen. The screen will note " please move " when the position can not be set. It can not set masking when the dome rotates down in the level $\geq 45^\circ$.

Sony Camera: It can be set 24 masking at most in 360° surveillance range. (Sony 45 series can be set 8 masking at most). It can not set masking when the dome rotates down in the level $\geq 20^\circ$.LG,CNB Camera module have no masking function.

1、 The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.

2、 Click the up and down button to **【WINDOW BLANKING】** , click the right button to enter menu " window blanking " .

- **【WINDOW NUMBER】** choose window number as current privacy window, other choices in the menu just aim at current privacy window;
- **【EDIT WINDOW】** program current window;
- **【ENABLE WINDOW】** permit/prohibit current privacy window, there are two choices: ON---permit current privacy window/OFF---prohibit current privacy window
- **【CLEAR WINDOW】** clear current privacy window, after clearing it, the window will auto- change as OFF.

3、 Program current privacy window: Firstly choose window number, then do the following operations:

A. Click the up and down button, move the cursor to **【EDIT WINDOW】** , click the right button to move the image that need privacy window to display in the screen.

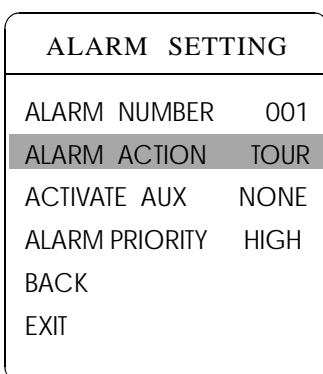
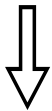
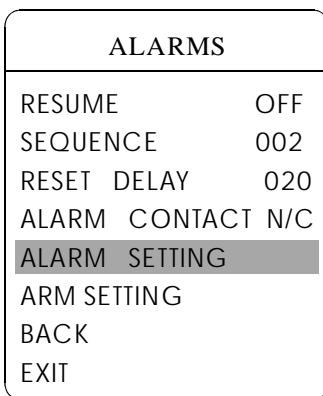
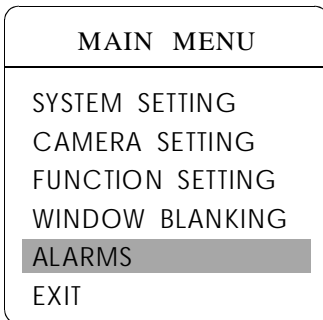
B. Click the right button, there will be a square displaying in the center of the screen, operate joystick, and move the square to the central place that need to conceal.

C. Click the right button, then click the up and down button to adjust the size of privacy zone: click the up button, the height is increased; joystick to down, the height is reduced; click the right button, the width is increased; click the left button, the width is reduced.

D. Click the right button to save the current privacy zone setting, and the window will auto-change as ON at the same time.

Privacy zone masking





9. Alarm function

Speed dome may connect with 4 alarm input, 1 alarm output, and support alarm linkage. The external alarm message sends to the dome, then the dome sends to alarm point shoot (to call preset, auto scan, auto cruise and auto pattern), and choose that to run alarm output or not.

1. The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds. click each menu according to the left picture, then enter menu alarm, choices as follow:

- **【RESUME】** resume mode after relieving alarm input, there are two choices: ON---clear alarm output, the dome will stop.
OFF---just clear alarm output.

- **【RESET DELAY】** set alarm reset and delay the time (1-225s), how long to relieve and run **【RESUME】** after the dome receives alarm message.

- **【ALARM CONTACT】** set state of the relay. N/C---often close the state, N/O---often hold the state. If setting as often closing the state, the relay is in closing the state when there is no alarm to output; when there is alarm to output, the relay is in holding the state.

- **【ALARM SETTING】**
- **【ARM SETTING】**

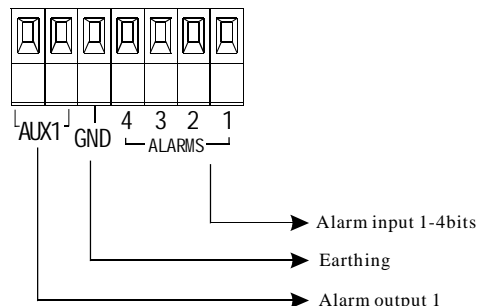
2. Operate joystick, move the cursor to **【ALARM SETTING】**, press **【OPEN】** to enter the menu alarm setting

- **【ALARM NUMBER】** alarm number is corresponding with 7 bits plug in the external switching board of the dome(as below shows).

- **【ALARM ACTION】** as current alarm input, to run the action. Choices for choosing as follow. NONE---none action/SCAN/PAT X---run a pattern tour /TOUR---run tour/PRESET---call preset, when the dome number is set as 1, to call preset 1; when the dome number is set as 2, to call preset2.

- **【ACTIVATE AUX】** as current alarm input, to run alarm output or not. NONE---none alarm output/AUX 1---the first alarm output

- **【ALARM PRIORITY】** alarm priority can be defined as three grades: high, middle, low.

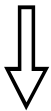


This function is relative with the type of the dome, if zoom camera hasn't this function, it is invalid.

MAIN MENU	
SYSTEM SETTING	
CAMERA SETTING	
FUNCTION SETTING	
WINDOW BLANKING	
ALARMS	
EXIT	



ALARMS	
RESUME	OFF
SEQUENCE	002
RESET DELAY	020
ALARM CONTACT	N/C
ALARM SETTING	
ARM SETTING	
BACK	
EXIT	



ARM SETTING	
DAY	SUN
ARM STATE	OFF
ARM TIME	N/A
UNARM TIME	N/A
BACK	
EXIT	

9.1 ARM Setting

1. Call 95 preset or call 9 preset twice within 3 seconds and then input the password to enter the main menu.

2. Operate the joystick up and down, move the cursor to **【ALARMS】**, press **【OPEN】** to call the submenu.

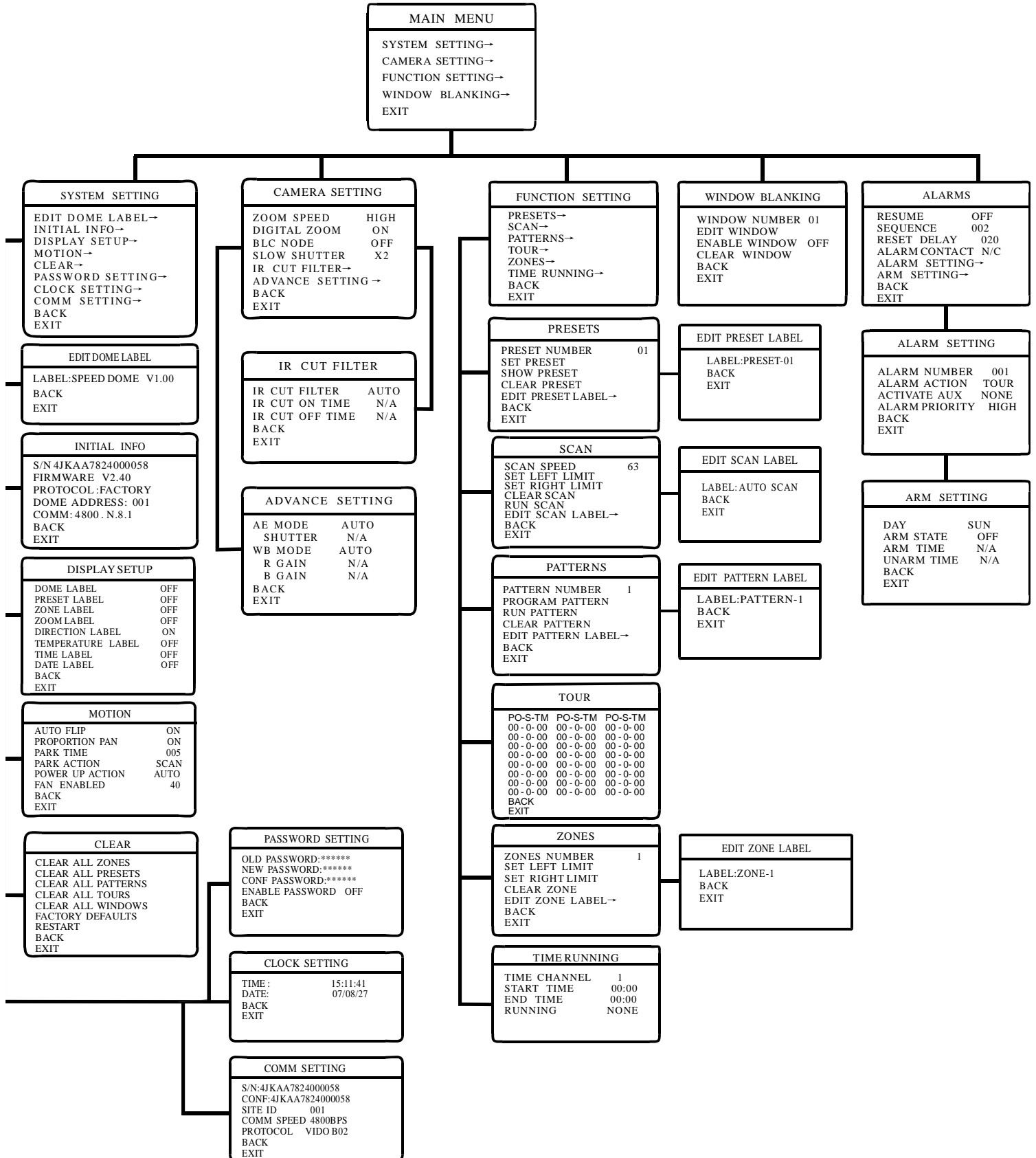
3. Operate the joystick up and down, move the cursor to **【ARM SETTING】**, press **【OPEN】** to call the submenu. Please refer to the left picture.

4. Operate the joystick up and down, move the cursor to **【DAY】**, Press **【OPEN】** to choose it, Operate the joystick up and down to set date, set the date according to the week. To set the Alarm state and Alarm date based on the time.

- **【ARM STATE】** Alarm off /Alarm on
(Alarm Setting is noneffective under Alarm off. Alarm Setting is effective under Alarm on)
- **【ARM TIME】** : User can set the alarm time.
- **【UNARM TIME】** : User can set the alarm off time.
- **【BACK】** : back to the former menu.
- **【EXIT】** : Exit the menu.

10. Appendix

10.1 Dome menu index



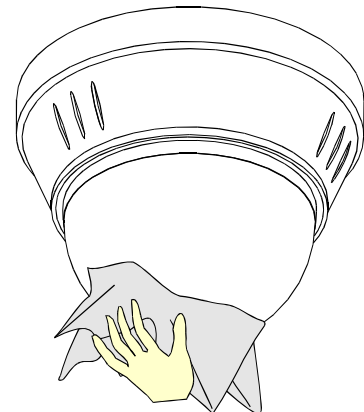
10. 2 Trouble shooting

Trouble	Possible causes	Solution
No action, no video after power up	Power supply is damage or power consumption is not enough	Replace
	Power line is bad connection	Correct
	Engineering line is malfunction	Check and repair
Self-testing and image are normal but the dome is uncontrollable	The dome DIP switch setting is incorrect	Refer to switch setting, reset the switch
	Rs485 may carve out a way	Check Rs485 connection, confirm the connection is correct and good in contact
	Rs485 is in malfunction	Pls consult appendix “Rs485 Bus acknowledge”
Video image is not steady.	Video line is bad connection	Eliminate
	Power consumption is not enough	Replace right power adapter, it is better to put the switch and power adapter near the dome
Video image is not steady and the motor is malfunction	Power consumption is not enough	Replace the power
Dome controlling is not smooth.	Controlling line is bad connection Rs485 loads so many or the distance of communication is much far	1.Connect 120Ω resistance in the dome pan/tilt that is far from the controller 2.Increase distributor

10. 3 The cleaning of clear down cover

To obtain constant clear videos, user should clean the down cover periodically.

- Be caution when cleaning, hold the down cover ring only to avoid direct touch to the acrylic down cover. The acid sweat mark of fingerprint will corrode the coating of down cover and scratch on down cover will cause vague image.
- Use soft dry cloth or the substitute to clean the inner and outer surfaces
- For hand contamination, use neutral detergent. Any cleanser for high grade furniture is applicable.



10. 4 Rs485Bus basic knowledge

Ø Characteristics of Rs485 Bus

As specified by Rs485 standard, Rs485 Bus is of half-duplexed data transmission cables with characteristic impedance as $120\ \Omega$. The maximum load capacity is 32unit loads(including main controller and controller equipment)

Ø Transmission distances of Rs485 Bus

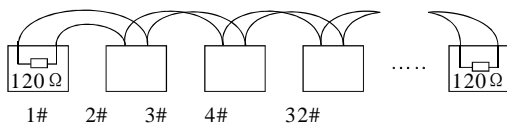
When user selects the 0.56mm(24AWG) twisted pair wires as data transmission cable, the maximum theoretical transmitting distance are as follow:

Baud rate	Max distance
2400BPS	1800m
4800BPS	1200m
9600BPS	800m
19200BPS	600m

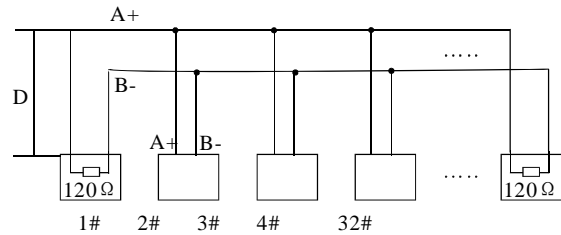
If user selects thinner cables, or installs the dome in an environment with strong electromagnetic interference, or connects lots of equipment to the Rs485Bus, the maximum transmitting distance will be decreased. To increase the maximum transmitting distance, do the contrary.

Ø Connection and termination resistor

The Rs485Bus standards require a daisy-chain connection between the equipment. There must be termination resistors with $120\ \Omega$ (as the picture10-4.1). Please refer to picture 10-4.2 for simple connection. D should not exceed 7m.



Picture10-4.1



Picture10-4.2

Ø The connection of $120\ \Omega$ termination resistor:

The termination resistor is ready on the protocol PCB. There are two kinds of connection (as shown in 11-4.3 form). It is the factory default connection. The jumper cap of the switchboard is seated on pin 2 & Pin 3 and the termination resistor $120\ \Omega$ is not connected.

When connecting the $120\ \Omega$ termination resistor, the user should pull out the protocol PCB and plug the jumper on Pin 1 & pin 2. Install the PCB back and the termination resistor is connected. (as shown in the picture 10-4.3)

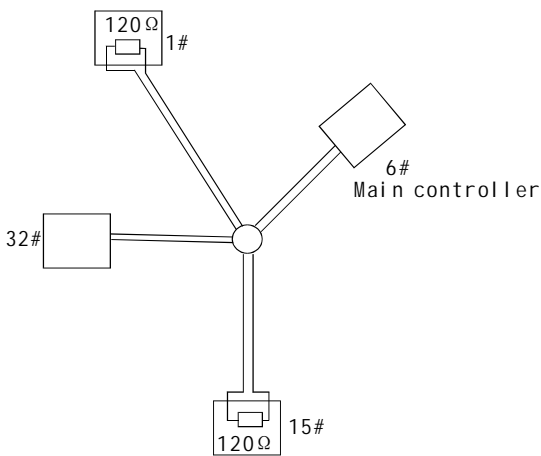
	1	2	3
Connection of $120\ \Omega$ setting	On	On	Off
Factory default setting	Off	On	On

On means insert the jumper cap

Picture10-4.3

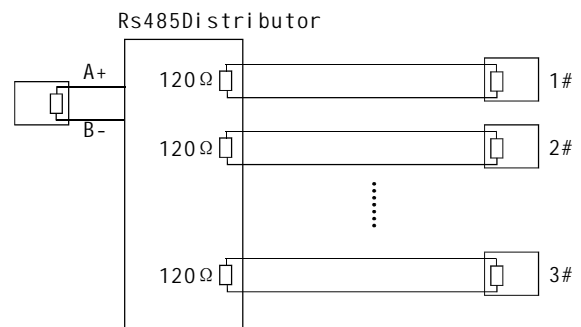
Ø Problems in practical connection

In some circumstances user adopts a star configuration in practical connection. The termination resistors must be connected to the two equipment 1# and 5# in picture 10-4.4. As the star configuration is not in conformity with the requirements of Rs485 standards, problems such as signal reflections, lower anti-interference performance arise when the cables are long in the connection. The reliability of control signals is decreased with the phenomena that the dome does not respond to or just responds at intervals to the controller, or does continuous operation without stop.



Picture10-4.4

In such circumstances the Factory recommends the usages of Rs485 distributor. The distributor can change the star configuration connection to the mode of connection stipulated in the Rs485 standards. The new connection achieves reliable data transmission. (Refer to picture 10-4.5)



Picture 10-4.5

Ø Rs485Bus troubles shooting

Trouble	Possible cause	Solution
Dome can do self-testing but cannot be controlled	A、 The address and baud rate setting of dome are not in conformity with those of controller. B、 The + and - connection of Rs485 Bus is incorrect C、 bad connection D、 there are circuit in the Rs485Bus.	A、 Chage the address and baud rate of controller or dome B、 Adjust the + and -connection of Rs485; C、 Make sure the connections are fully seated; D、 Change Rs485 Bus wires
The dome can be controlled but the operation is not smooth	A、 the Rs485Bus is not in good contact with the connectors B、 One wire of Rs485bus is broken C、 The dome is very far from controller D、 There are two many domes connected in the system	A、 Secure the connection; B、 Replace Rs485 bus wires C、 Add termination resistors to the system D、 Install Rs485 distributor

11.Maintenance service terms

1.Range of warranty

- The product will be maintained free for one year.
- The product will be obtained the free maintenance service if the same malfunction appears again within three months.
- Malfunction of products caused by force majeure (such as war, earthquake, lightning strike and so on), abuse, non-standard operation, change of construction, non-normal wear or accident are non-free of warranty.
- Please prevent from the damage which is caused by heavy pressure , the fierce vibration and soaks in the process of transportation and storage, which does not belong to the free maintenance scope.
- Please adopt the way of fission package or original package to transport because the product damage dose not belong to the free maintenance scope if you use the whole packing way , not the original packing way.
- The maintenance services will not be free when the pan/tilt module is disassembled or serviced by the user voluntarily.
- Our company implements the lifetime payable service if the product in malfunction has surpassed the warranty period.
- To the products with defect :if it's in the period of warranty, please fill in the form of warranty information correctly, describe the trouble in details , and provide the trouble in details , and provide original sales invoice or its copy.
- For the damage and loss which was caused by the user's specifically application, factory won't bear any risk and responsibility. The factory compensation made by breach of faith, negligence or tortious won't exceed the amount of the products. The factory won't bear any responsibility for the special, unexpected and continue damage caused by any other reasons.
- Our company has the final right of explanation for the above terms.

2.Warranty terms

- If the products are within the warranty time, the buyer should fill in the warranty card and send back together with the products.

3.Shipping

- If the product needs repaired , you can return it to the manufacturer through the supplier or directly. If you choose the later , please contact us in order to speed up the process. And our company only undertake the one-way freight from manufacturer to customer after maintenance.

Mini high Speed Dome
Installation and Operation Manual
Version V1.10