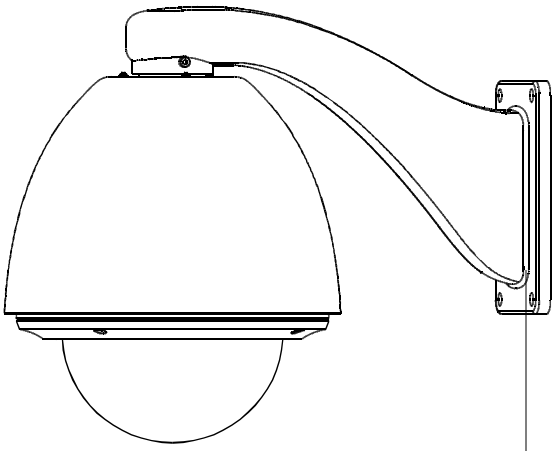
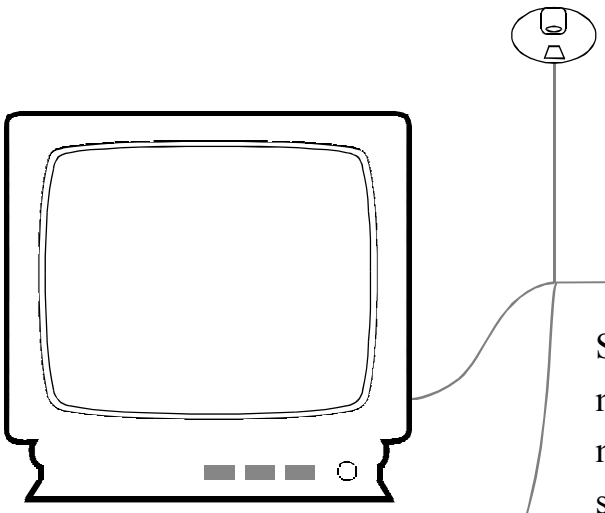


HIGH SPEED DOME
OPERATION MANUAL



Speed d ome camera l ook s li ke a mys t eri ous ow l a t n i g h t, qu i et , make a compr ehensive vi ew, b e se ns i t iv e t o c a t c h .

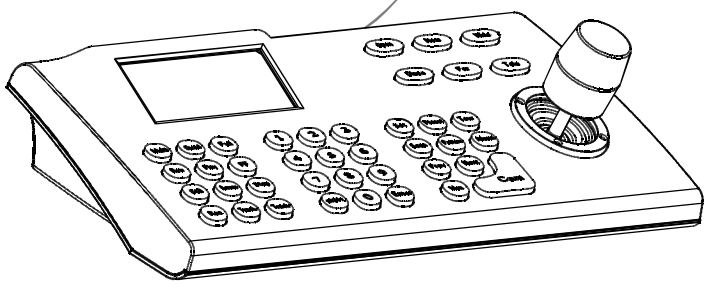


TABLE OF CONTENT

1. Precaution

- Electrical safety

Conform to country and local electrical safety standard when us ing or installing the product.

- Transportation

The dome should be protected against extremes of pressure, vibration and humidity during storage installati on and transportation. It should be shipped in parts disassembled as the original packing did during the transportation . Damage caused by improper transportation is not within the warranty.

- Installation of care

Do not install it in any other orientation. Do not squeezed structure parts, which may cause mechanical damage. Down cover is a precise optical product. Do not touch it directly to avoid scratches which can affect image quality.

- Requirements to service personnel

All the service work should be done by qualif ied technicians.

- Do not disassemble the pan/tilt module

Do not disassemble screws or open the dome cover, and don't maintain the parts in th e Pan/Tilt by yourself. Only q ualified and authorized personnel can undertake repairs.

- Environmental requirements

- Requirements for Indoor dome:
  Environmental temp ：-10~+50℃
  Humidity ：<90%
  Air pressure ：86~106Kpa
  AC Power supply ：24V/1000MA ，50/60HZ
- Requirements for Outdoor dome:
  Environmental temp ：-40~+60℃
  Humidity ：<90%
  Air pressure ：86~106Kpa
  AC Power supply ：24V/2500MA ，50/60HZ

- Don't place the camera to be shoot by strong light objects

Don't place the camera to be shoot by strong light objects. Don't point the dome to the sun or other bright objects when in use or not. It may affect image quality.

- Function of waterproof

The outdoor dome has perfect function of water-proof, moisture-proof and du st-proof and It can reach IP66 International standard. The indoor dome doesn't install in outdoor environment where there is filled with hydrosphere. N o matter Indoor dome or outdoor dome should avoid dropping which affect element quality.

2. 1 Technology parameter

El ectrical ：		Setting:	
Power s upply	AC24V	Ba ud r ate (RS485)	2 400/4800 /960 0/19 200bps
Consumption	Indoor10W outdoor45W	Pr otoc ol	Pelc o、Ka latel、P hlips、Diam ond, an d seve nteen p rotoco ls, etc.
Decoder	B uilt-in	A ddr ess s ettin g	0 -255
Operation:		E nvir onmental :	
Pa n rotation	360° continuously	Operational environment	Outdoor : -40 — +60 ℃ Ind oor:-10 — +50 ℃
Til t rot ation	Til t90° , w ith auto flip	Environmental humidity	0—95% no compensation
Rotation speed	Pa n0.4 ~ 320 °/S Tilt 0.4 ~ 150 °/ S	P rote ction g rad e	IP66,We ather pro of housin g, (outdo or) TVS150 0w lightn ing proof surge pr oof (indoor/ outdoor)
Alarm fu nctio n	7 alar m input/2 al arm output	Physic al:	
Pres et	128pres ets	Mount	Wall、P endant、Corn er、P ole、In sert
Surveillance	Pres et、Tour、Scan、Pattern	Weight	4.25Kg(Outdoor)/3.85Kg(Indoor)
Speed	Magnification and proportion pan		

2. 2 Camera parameter

TYPE / S PEC	A :18X Color	B :18X Color	C :18X Color&D/N	D :26X Color&D/N	H :22X Color	K :22X C olor	J :23X Color&D /N	R:16X Color	Q:16X Color	S:18X Colo r&D/N	P:27X Color&D/N
Sync system	Internal	Ext ernal/Int ernal						Internal			
CCD	1/4 ”										
Scan system	2 :1 i nterl acing										
Definition	470Lines	480 Lines	480 Lines	480 Lines	480 Lines	480 Lines	480/570 Lines	420 Lines	480 Lines	480 Lines	480 Lines
Sensi ti vity	0.9Lux	0.7Lux	Color0.7Lux Bl ack /wh ite0 .01 Lu x	Col or0.7Lux Blac k/w hit e0. 01L ux	0.9Lux	0.01Lux	Color0.8Lux Blac k/w hit e0.0 1Lux				
I r is	Auto/manual										
Focus	Auto/manual										
Magnification	216X (18X,12X)			312X (26X,12X)	264X (22X,12X)		230X (23X,10X)	128X (16X,8X)		216X (18X, 12X)	270X (27X, 10X)
Zoom length	4.1—73.8mm			3.5—91mm	4—88mm		3 .6—82.8m m	3.9—63mm			3.6— 97.2mm
View of angle	W48° T2.7°			W54° T2.2°	W47° T2.2°		W54° T2.4°				
Back light compensation	Off/Auto							Off			
Gain control	Auto /manual										
Shield window	setabl e				None	se table		None			
Signal format	PAL/NTSC							PAL			
S/N	≥50dB				≥48dB	≥50dB		≥48dB			
Video output	1.0 ±0.2V P-P										
Video output	Female BNC										
Slow s hu tter	None	setable			None	set able		None			

2. 3 Performance and feature

A series of intelligent high speed dome is latest design with AMP electrical outlet, built-in constant device, convenient installation, an d black cover which make an invisible surveillance. The camera rotates smartly with little noise, an d has all kinds of functions, in order to supply perfect image to customer.

➢ Built-in receiver

- All configurable option s stored in main control board to protect against power cuts
- Integrate design and high durability
- 128 presets can be randomly stored
- 01-80preset support auto-tour, and each tour can sto re up to 32 presets.
- 4 pattern tours
- 1 scan
- Built-in direction indic ator
- Built-in temperature indicator
- Rs485 Bus communication or American Dynamics Manchester code or coaxial video cable
- Support 24 masking zones at most （This function is de cide by th e param eter of built-in cam era, if the came ra has not this function, this option is invalid.)
- 7 alarm input, 2 alarm output （This function is relative with the type of the dome, if zoom camera hasn't t his func tion, it is inva lid) 。

➢ Built-in pan/tilt

- Pan/tilt can be divided as two kinds of material: aluminum and PC plastic

（一）Aluminum alloy material, high intensity, good radiate the heat.

（二）PC plas tic, airily and high intensity

- Precise s tepping motor drives the pan to run smoothly and react sensitivity.
- Integrated design, compact structure, easy to remove.
- Exquisite mechanical drive, support to rotate pan 36 0 ° con tinuous ly and tilt 0-90 °, and may rotate 180° with au to flip.
- Pan 0.4° /s to rotate slowly, and the image do esn't vibrate.

➢ Built-in digital camera

- High sen sitivity, high resolution, and integrated digital processing
- Auto-focus
- Auto-Iris
- Auto brightness control
- Auto white balance
- IR cut fil ter
- Auto back light compensation
- Auto slow shutter

➢ OSD menu

- All English menu can be selected.
- Visual OSD menu. Revising the speed dome's information and parameter by keyboard and OSD menu, and it is easy to operate.
- Set park action function and set prese ts, or run scan, pattern, tour, etc during out of service.
- Auto-resume movement or carry out pointed movements after power up.

➢ Internal temperature test

- Set time display
- When the temperature exceeds the limit, the screen w ill dis play alarm informatio n.
- When the temperature is under the limit, the speed dome will delay to startup, and when the heat device is heated and got higher than low limit temperatu re to startup.
- According to th e temperature, the fan measures if it is to st art or not, and prolong the life of fan.

3. Function Instruction

This passage mainly describes the main function and general principle of integrative 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's operation manual. Please contact dealer to get necessary information, under some conditions there are have some particular requirements and operations.

3.1 Camera ID

There are two 8-b it switch sw1 and sw2 on the commutator, and Sw2 is for setting communication baud rate and controlling protocol. (For detail setting, pleas e refer to 9.7 DIP switch setting)

Except the factory protocol(FACTORY), the speed dome is compatible with various popular protocols, such as PECLO-D、PECLO-P、ERNITEC、VCL、MOLYNX、VICON、SANTACHI、PANASONIC、SAMUNG、DIAMOND、KALATEL、LILIN、PHILIPS、VIDO B02、AD and so on.

Any controlling command must base on the objective camera address, and the camera only answer to the controlling command the address which coincide with itself. There are three kinds of camera address:

- Common address: Use camera's switch number to set address 1-8 bits, the address rang e is 1-254.
- Broadcast address:(Only factory protoco l and P elco can be set) If user chooses broadcast address to control, all the cameras connected with the control system will react to the same commands. When set as factory protocol, the broadcast address is 255.
- Debug address: (Only factory protocol and PELCO can be set) if camera ID is s et 0, user may select any address to control the dome.

3.2 Auto-run motion

- Focus/speed proportion pan

When manually adjusting, for far focus situation, the dome responds at a high-speed so that touching rocker slightly may make picture move rapidly, thus cause the picture to lose. To base on humanized design, the dome automatically adjust pan and tilt rotation according to zoom near and far, which make it is convenient to operate manually to make tracks for the object. In the menu, you may change system parameter setting pro portion pan as ON, thus you may run this function.

- Auto flip

If us er holds the joystick in the down position, the camera rotates pan 180 degrees, then t he camera rotates tilts up to 90 degrees, you may directly watch the rear view to reali ze surveillance all pr ocess es 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 movements before power up and auto- call preset or run tour, pattern, and scan etc .

3. 3 Camera control

➢ Magnification control

The user can control "Wide/Tele" to adjust zoom far and near of the image by keyboard controller to obtain panoramic image or close view that you need. The speed dome support digital zoom and optical zoom.

➢ Focus control

System defaults Auto focus. When the lens changes, camera will auto-adjust focus according to the centre of the image to get legible image; user also can manually focus to get desire image by operating keyboard "FAR/NEAR". When operating keyboard joystick, camera resumes to auto focus.

The camera cannot auto focus in the following status:

- Target is not the centre of the image
- Observation the target near and far at the same time, can not be clear at the same time.
- Target is a strong light object, such as spotlight & etc.
- Target moves too fast
- Target area such as wall
- Target is too dark or vague
- Target image is too small

➢ Iris control

System defaults Auto Iris. Camera can rapidly adjust size of Iris, through the automatically induct the changing of environment ray, and thus make the brightness of deferent image stable.

User may adjust Iris by controller keyboard "open/close" to get required brightness that you need. User also can resume auto Iris by joystick operation. When controlling the Iris manually, the dome locks current position you manually controlled; when operating joystick, the dome resume auto Iris.

➢ Auto back light compensation

Camera sub-area can carry out auto back light compensation. Under a strong light background, camera will auto compensate light for the darker object and adjust daylight to the bright background. In order to avoid making the image lack fidelity by the back line is too bright, and the object is unable to recognize because of darkness, thus gain legible image.

➢ Auto white balance

Camera can automatically adjust white balance in accordance with the alteration of background lightness to reach a true colour.

3. 4 Monitor function

➢ Set and call preset

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. User can store and recall presets easily and promptly by using keyboard controlling. The dome can store up to 128 presets.

➢ Tour

Auto tour is the built-in function in the speed dome, is to make preset arranged in needful order in tour queue by programming in advance. To make camera tour between presets by inserting presets in cruise tour. It is feasible to program tour order, each time as you run tour, you can set the park time of preset. A tour can store 32 presets.

- Scan

The operator can prompt set right limit and left limit in advance by keyboard and menu, so as to make the camera repeatedly scanned between right and left limit at a setting speed.

- Pattern

Pattern is built-in function in camera; the speed dome can record 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.

- Alarm input/output controlling function

The dome receive an external alarm message, to implement the action that you pre-set, till the alarm release to resume, if abnormity, it will send another alarm message. The dome can set up to 7 alarm input and 2 alarm output. （This function is decide by the parameter of built-in camera, if the cam era has not this fu nction, th is option is invalid N/A .)

- Privacy zone masking

The user can set a black shadow to mask the area so that it will not appear on the monitor to protect privacy. （This function is relative with the type of the dome, if zoom camera hasn't this function, it is invalid) 。

- Lens position display

The position that the speed dome has finished to auto-checking as 0 point of pan movement and tilt movement. 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. System setting

4. 1 Basic operation

4. 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 is adjusted from far zoom to near zoom, then from near zoom to far zoom, 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.

4. 1. 2 Call the main menu

The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds. All the menu setting must enter into the main menu at first.

4. 1. 3 Menu and keyboard operation

- Keyboard operation:

【OPEN】 when choosing pictures, it means to increase Iris; when setting menu, it means to enter into the next menu or setting, or means to save after setting .

【CLOSE】when choosing pictures, it means to reduce Iris; when setting menu, it means to exit without saving setting.

【NEAR】 Focus to near

【TELE】Increase magnification

【WIDE】Reduce magnification

Joystick to up: When choosing menu, it means to choose the former one; when choosing picture, it means camera tilt up.

Joystick to down: when choosing menu, it means to choose the next one; when choosing picture, it means camera tilt down.

Joystick to left: when choosing menu, it is equal with 【CLOSE】, when choosing picture, it means camera tilt left .

Joystick to right: when choosing menu, it is equal with 【OPEN】, when choosing picture, it means camera tilt right.

Press【TELE】and 【WIDE】at the same time, it means 3D joystick rotates joystick cap.

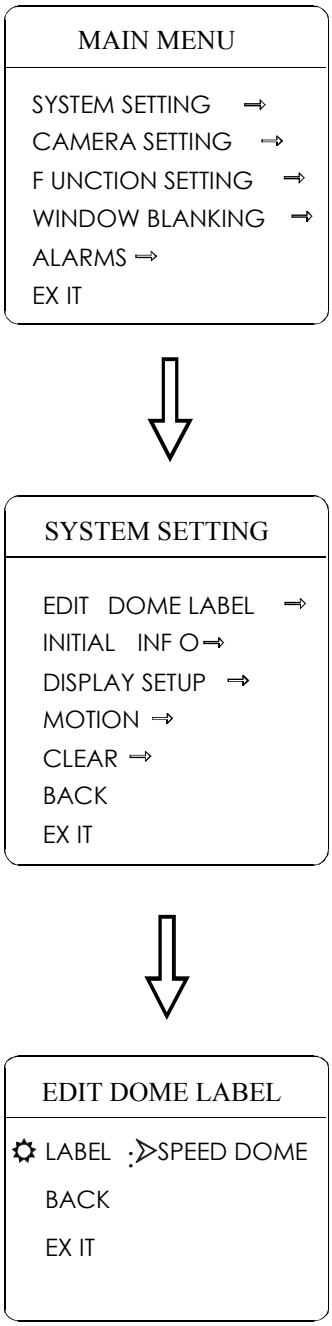
- Menu operation

“BACK” : Back to the former menu

“EXIT” : Exit to menu

“ON” : Open some setting

“OFF” : Close some setting



4. 2 Edit dome label

When using a lot of domes ’ s ystems , in order to identify 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 seco nds.

2、Mo ving joystick up and down to move the cu rsor to 【SYSTEM SETTI-NG】, and pressing 【OPEN】 to enter into the next menu.

3、Moving joystick up and down to move the cursor to 【EDIT DOME L-ABEL】, and pressing 【OPEN】 to enter into the label setting menu.

4、Mo ving joystick up/down to move the cursor to 【LABEL】, and press-ing 【OPEN】 to edi t current label .

5、When the cursor is twinkling in the first character of the label, to move joystick to choose character, after editing, pressing 【OPEN】 to sav e.

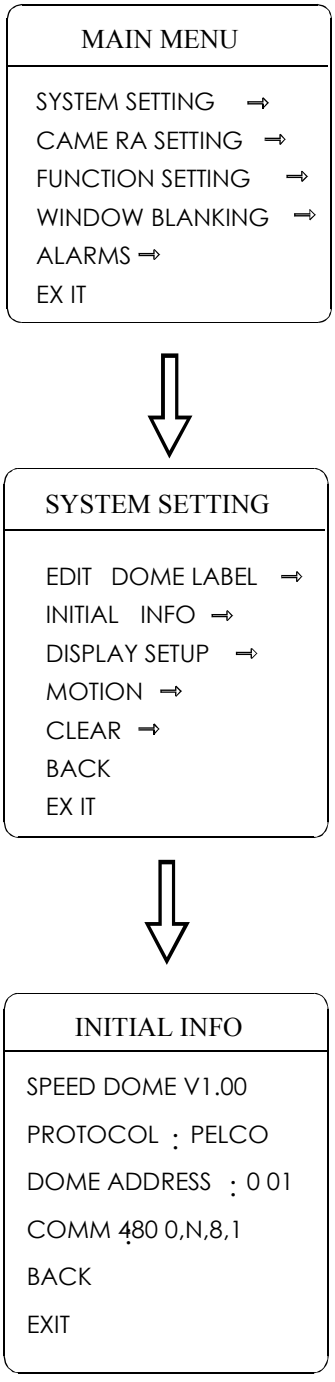
6、Mo ving joystick to 【BACK】 and pressing 【OPEN】 to back to the former menu.

NOTICE

Th e lab el ma y se t 16 c hara cter s, an d doe sn't need edit ing characters. P ress ing 【OPEN】 con tinu ously to jump over and using sp aceb ar to rep lace the d elete d ch aracters. Whe n you fini sh to e dit a cha racte r, pr ess【OPEN】 to en ter i nto the ne xt e ditin g character; w hen you e ditin g th e last cha racte r, pr essin g 【OPEN】 to s ave. Pre ss 【Close】 t o ex i t.

Cha racte r of l abel is su itab le fo r cho osin g as follo w: 0- 9、A-Z、:<>- ., Sp ace.

Othe r lab els’ inp ut wa ys a re th e sam e as above.



4. 3 Display initial information

1、The system enters into the main menu by calling 95 preset or by calling 9 pres et twice within 3 seco nds.

2、Tilt up/dow n joys tick to 【SYSTEM SETTING 】, press 【OPEN】 to enter submenu.

3、Tilt up/dow n joys tick to 【INITIAL INFO 】, press 【OPEN】 to display initial information which as below the left picture shows:

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

MAIN MENU

S YSTEM SETTING ⇒
CAMERA SETTING ⇒
F UNCTION SETTING ⇒
WINDOW BLANKING ⇒
ALARMS ⇒
E X IT

SYSTEM SETTING

EDIT DOME LABEL ⇒
INITIAL INF O ⇒
DISPLAY SETUP ⇒
MOTION ⇒
CLEAR ⇒
BACK
EXIT

DISPLAY SETUP

☼DOME LABEL ⮞ OFF
PRESET LABEL OFF
ZOOM LABEL ON
ZONE LABEL OFF
DIRECTION LABEL ON
TEMPERATURE LABEL OFF
BACK
EXIT

4. 4 Display setup

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

2、Tilt up/down joystick to 【SYSTEM SETTING 】, press 【OPEN】 to enter submenu.

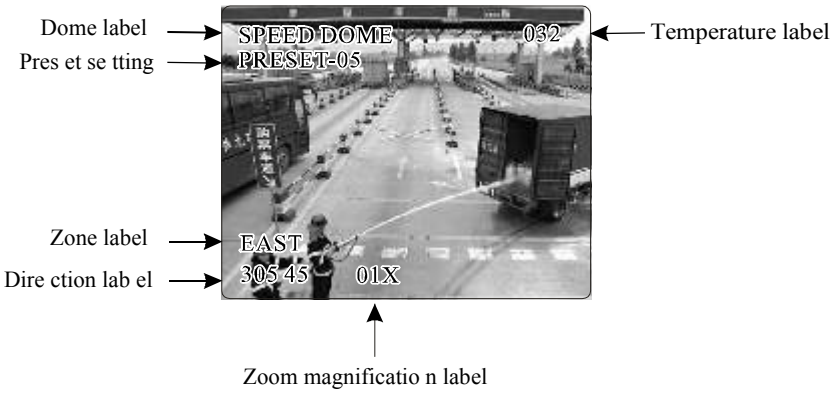
3、Tilt up/down joystick to 【DISPLAY SETUP 】, press 【OPEN】 to enter " display setup " menu, May setting the content of the display setup as follow:

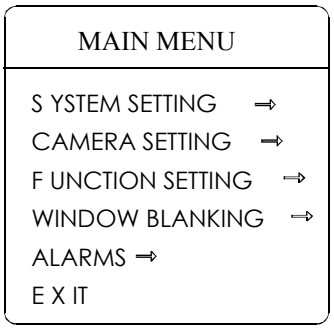
- 【DOME LABEL 】
- 【PRESET LABEL 】
- 【ZOOM LABEL 】
- 【ZONE LABEL 】
- 【DIRECTION LABEL 】
- 【TEMPERATURE LABEL 】

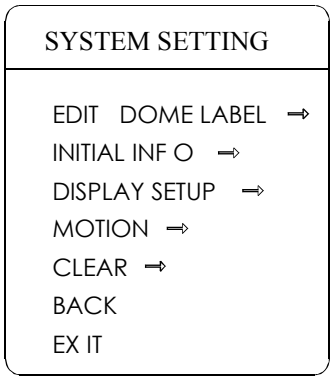
4、Taking display dome label as an example to explain the operation process. Tilt up/down joystick to move cursor to 【DOME LABEL OFF 】, pre ss 【OPEN】, there is a sign ☼ besides 【DOME LABEL 】, the curs or is twinkling besides 【OFF】, as left picture shows;

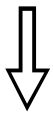
5、Joystick tilts up/down, setting number changes between ON/OFF, when setting 【ON】, it means to display " dome label " ;when setting 【OFF】, it means not to display " dome label " .when p ress ing 【OPEN】, the cursor jump back in front of 【DOME LABEL 】, means label setting is finished, when moving the cursor to 【EXIT 】, it means exiting the menu s etting.

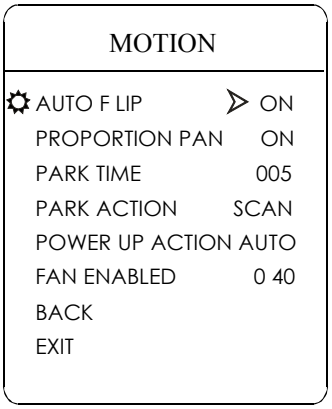
The displaying information on the screen will change with the dome rotation; Through the information on the screen, user can see current dome inside temperature, magnif ication, display zone etc. When all the label are displayed, the dome works as the following picture shows,:
(In th e picture "305" means pan angle, "45° means tilt angle.)











4. 5 Systematic motion control

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

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

2、Tilt up/down joystick to 【SYSTEM SETTING 】, press 【OPEN】 to enter submenu.

3、Tilt up/down joystick to 【MOTION】, press 【OPEN】 to enter systematic motion controlling menu, as left picture shows.

4. 5. 1 Auto flip

1、Operate joystick, move the cursor to 【AUTO FLIP】: press 【OPEN】 to e nter" auto fl ip " setting, tilt up/down joystick, for example: choosing ON to open " auto flip " ; choosing OFF to close " auto flip " .
Press 【OPEN】 to save .

OPERATION KNACKS

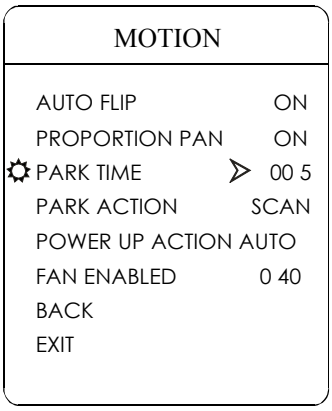
W hen opening the auto flip function, user holds the joystick in the down position, the cam era rotates pan 180 degrees, after the camera rotates tilts up to 90 degrees, you may directly w atch the rear view to surveillance all processes in portrait 180 degrees .

4. 5. 2 Speed proportion pan

Operate joystick, move the cursor to 【PROPORTIONAL PAN】; press 【OPEN】 to en ter" proportion pan " setting, tilt up/down joystick to choos e, if choosing 【ON】, it means to open propo rtion pan; if choosin g 【OFF】, it mean s to close proportion pan , press 【OPEN】 to save.

OPERATION KNACKS

When m anually adjusting, for far focus situation, th e dome responds at a high-speed so that touching rocker slightly may make picture move rapidly, thus cause the picture to lose. To base on hu manized design, the do me automatically adjust pan and tilt rot ation according to zoom near and far, whi ch make it is convenient to operate manually run after object.



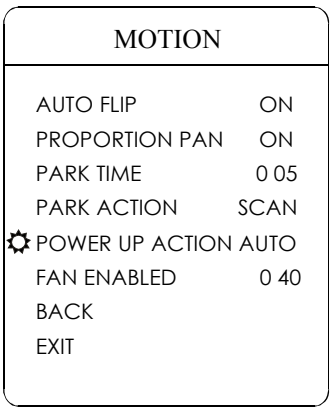
4. 5. 3 Park action

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 th is action.

1、Operate joystick, move the cursor to 【PARK TIME】, press 【OPEN】 to tilt up/down joystick to s et park time, the range is 0-240 (minute), press 【OPEN】 to save. 【PARK ACTON】 is running action at park time, when 【PARK TIME】 se ts as 0, this ite m can't be set .

2、Op erate joystick, move the cursor to 【PARK ACTON】, press 【OPEN】 there will be a sign ☼ in the front of 【PARK ACTON】, the cursor jump to right, after tilting up/down joys tick to choose " park action ", there are options for choosing as follow, press 【OPEN】 to save.

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

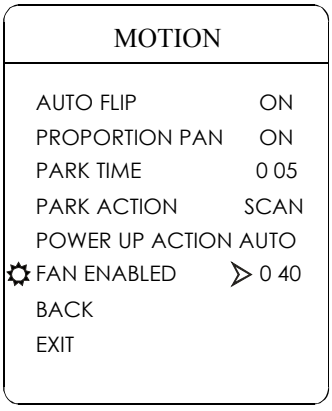


4. 5. 4 Power up action

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

1、Operate joystick, move the cursor to 【POWER UP ACTION】: press 【OPEN】 to jump to the following choice, tilt up/dow n joystick to choose " power up action ", press 【OPEN】 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

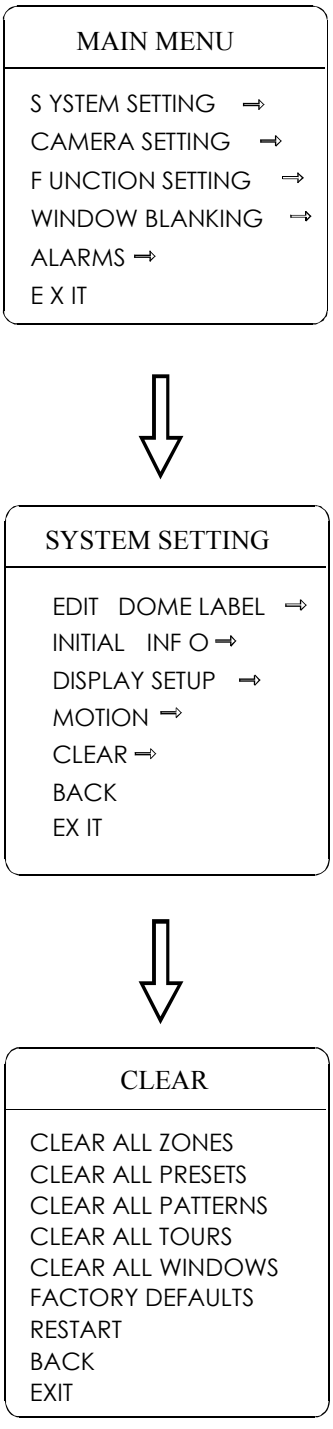


4. 5. 5 Fan startup by temperature

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.

Operate joystick, move the cursor to 【FAN ENABLED】: press 【OPEN】, the cursor will skip to the back option. The user can choose the fan to start up temperature, and press 【OPEN】 to save it in actual condition.

The default setting temperature of the fan startup is 40 ℃. 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 ℃.



4．6 Clear and restart

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

2、Tilt up/down joystick to 【SYSTEM SETTING 】, pre ss【OPEN】to enter submenu.

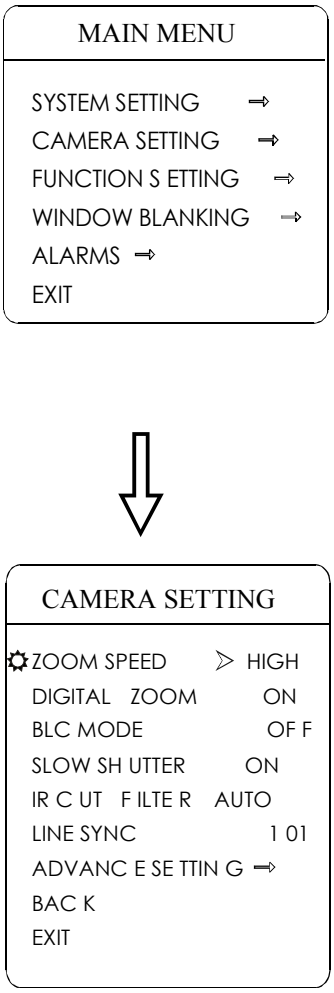
3、Tilt up/down joystick to 【CLEAR】, press 【OPEN】to enter submenu, as left picture s hows.

- 【CLEAR ALL ZONES 】
- 【CLEAR ALL PRESETS 】
- 【CLEAR ALL PATTERNS 】
- 【CLEAR ALL TOURS 】
- 【CLEAR ALL WINDOWS 】
- 【FACTORY DEFAULTS 】:resume the factory default. Run this funct-ion, the camera parameter and system parameter will resume before produ-ction, clear all window s and alarm setting. Please be cautious to use this f-unction .
- 【RESTART】

4、Set clear zone as an example to explain the process. Tilt up/down joyst-ick to 【CLEAR ALL ZONES 】, pre ss【OPEN】t o clear all zones.

NOTICE

once c lear all commands in th e control ling men u, th ey doesn' t res um e, so p lease be c aref ul of usin g.



5. Camera setting

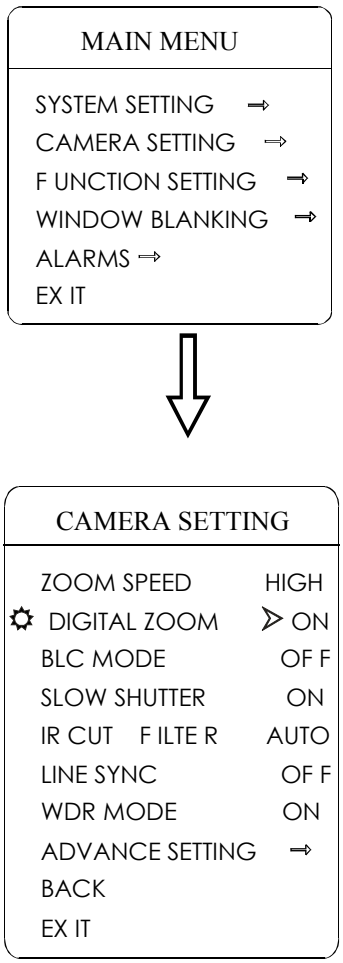
5. 1 Zoom speed

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

2、Tilt up/down joystick to 【CAMERA SETTING 】, press 【OPEN】to enter submenu ;

3、 Operate joystick, move the cursor to 【ZOOM SPEED 】; press 【OPEN】 will appear a s ign ☼ in the front of 【ZOOM SPEED 】, the cursor moves to right, tilt up/down joystick to choose 【HIGH】 or 【LOW】 ;

4、 Press 【OPEN】 to save, press 【CLOSE】 to canc el.



5．2 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、Tilt up/down joystick to 【CAMERA SETTING 】, press 【OPEN 】 to enter camera setting;

3、Operate joystick, move the cursor to 【DIGITAL ZOOM ,】press 【OPEN】 to enter digital zoom setting, tilt up/dow n joystick, to choose ON means open digital zoom control which is digital zoom is 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、Press 【OPEN 】 to save.

OPERATION KNACKS

When di gital zoom be set as ON, the maximum zoom magnification of th e dome is digital zoom m agnification times optical zoom magnif ication; w hen digi tal zoom be set as OFF, the maximum zoom magnif ication of the dome is optical zo om magn ification.

NOTICE

The o ptio n of the d igita l zoo m is ON/ OFF whe n the camera module is SONY 、LG、CNB、HITACHI .

MAIN MENU

S YSTEM SETTING ⇒
CAMERA SETTING ⇒
F UNCTION SETTING ⇒
WINDOW BLANKING ⇒
ALARMS ⇒
E X IT

CAMERA SETTING

ZOOM SPEED HIGH
DIGITAL ZOOM ON
☼ BLC MODE ⮞ OFF
SLOW SHUTTER ON
IR CUT FILTE R AUTO
LINE SYNC OFF
WDR MODE ON
ADVANCE SETTING ⇒
BACK
EXIT

5. 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、Operate joystick, move the cursor to 【CAMERA SETTING】 to enter submenu.

3、Operate joystick, move the cursor to 【BLC MODE 】, press 【OPEN】, There will be a sign ☼ in the front of 【BLC MODE 】, the cursor jump to right, tilt joystick to open or close back light compensation function. If cho-osing ON means to open back light compensation mode; if choosing OFF m-eans to close back light compensation mode;

4、Press 【OPEN】 to save.

OPERATION KNACKS

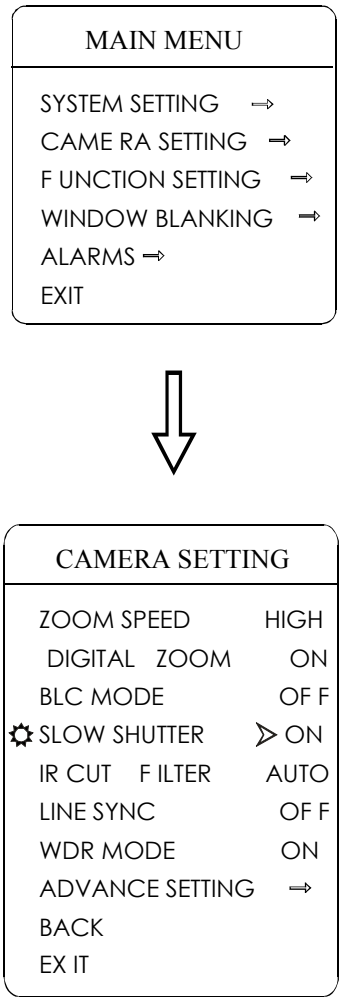
Strong background ray can make backlighting objects engender shadow, (back light compensation), the speed dome can auto-adjust iris to match with the changes of various ray, and auto-revise the main lightness to make the pictures more legible.

NOTICE

This fu ncti on re lates to models and param eters of the built-in ca mera in the dome, when open black c ompensation, it has two functions which are auto-adju st (when you choose ON) o r manual adjust(0-255) according to the diffe rent of the cam era.

Non-use back light compensation, in strong sunshine, the back l ight side is subj ect to dark.

Use back light compensation, the image is in gear.



5. 4 Slow shutter control

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

2、Op erate joystick, move the cursor to 【CAMERA SETTING 】 to enter submenu.

3、Op erate joystick, move the cursor to 【SLOW SHUTTER 】, press 【OPEN】, there will be a s ign ☼ in the front of 【SLOW SHUTTER 】, the cursor moves to right, tilt up/down joystick to "slow shutter " choice, if choosing ON means to open slow shutter function, if choosing OFF means close "slow shutter " function.

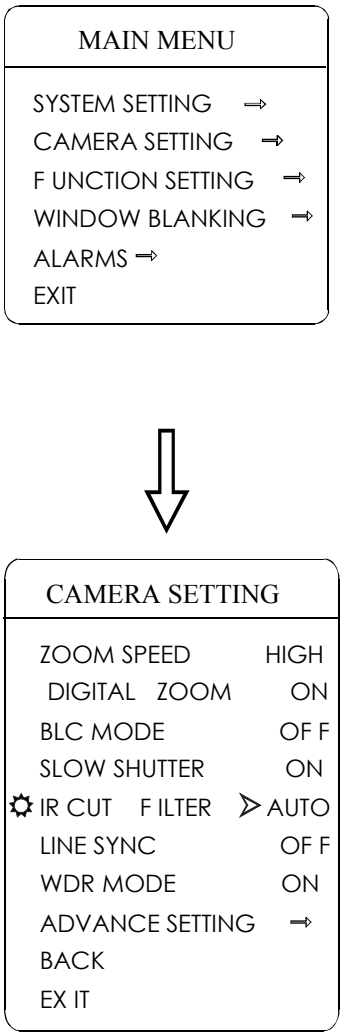
4、Press 【OPEN】to save.

OPERATION KNACKS

When the dome monitors at night or dark environment, because the ray i s not enough, the image on the screen is too da rk, setting slo w shut ter c an le ngth en th e time of lighting so that make the pi cture that is sh oot i n dark more legible.

NOTICE

T his func tion d epe nds o n the mo dels and p arameter s o f bu ilt-in cam era i n do m e, i f the cam era h aven 't th is f unct ion, then this func tion is inv alid .



5. 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、Operate joystick, move the cursor to 【CAMERA SETTING 】 to enter submenu.

3、Operate joystick, move the cursor to 【IR CUT FILTER 】; press 【OPEN 】, there will be a sign ☼ in the front of 【IR CUT FILTER 】, the cursor jumps to right, move joystick to “ IR cut filter ”, choices as follow, 【AUTO 】is default.

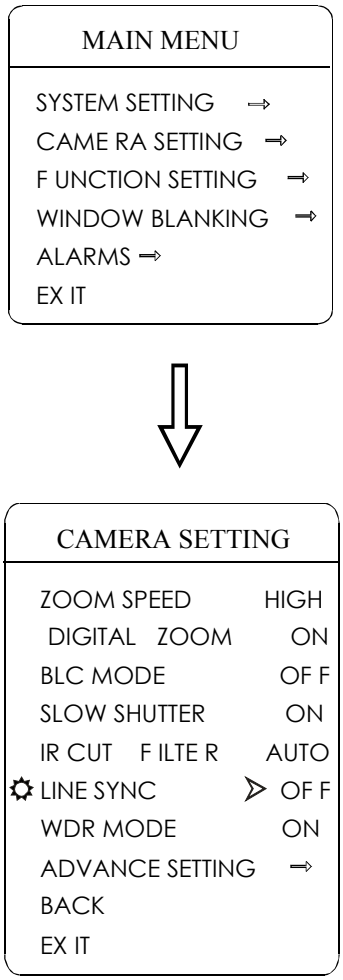
- 【AUTO 】IR cut filter mode, it means the dome automatically transfers ac cording to sensitivit y.
- 【COLOR 】set as color mode
- 【BLACK 】 set as black and white mode

4、Press 【OPEN 】 to save.

OPERATION KNACKS

IR c ut fi lter f unction u ses color in d ay; u se bl ack and w hite at nigh t. Th is fu ncti on no t on ly gu aran tees the quality of imag e, bu t also save s the roo m of storage.

NOTICE This fun ction dep ends on the models and par ameters of b uilt- in camera in d om e, if th e camera hav en't t his fun ction , the n this fun ction is invali d.(N /A)



5. 6 Line sync control

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

2、Operate joystick, move the cursor to 【CAMERA SETTING 】, press 【OPEN】 to enter submenu.

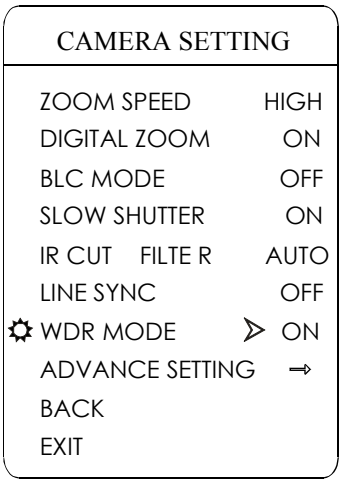
3、Operate joystick, move the cursor to 【LINE SYNC 】; press 【OPEN】, tilt up/down joystick to set line sync. Line sync can divide two kinds: internal/external, choose OFF is internal sync; choose ON is external sync; press 【OPEN】 to save .

OPERATION KNACKS

Wh en a lot o f domes u se a line in the sam e time, if the imag e is twinkling as switching, pl ease set e ach dome as e xternal line an d adjust the nu m erical v alue of extern al li ne.

NOTICE

This func tion is relative with the m odel and pa rameter of the camera module which in sert in the dome. T he option is useless (N/A) when the camera module has n o such function.



5. 7 WDR Control

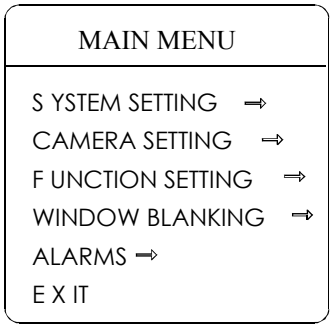
1、The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seconds.

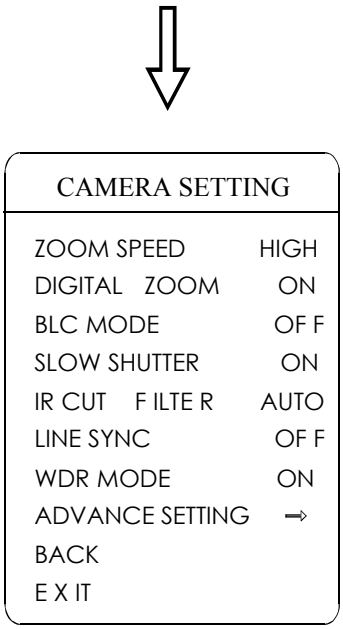
2、Operate joystick, move the cursor to 【CAMERA SETTING 】 press 【OPEN】 to enter submenu.

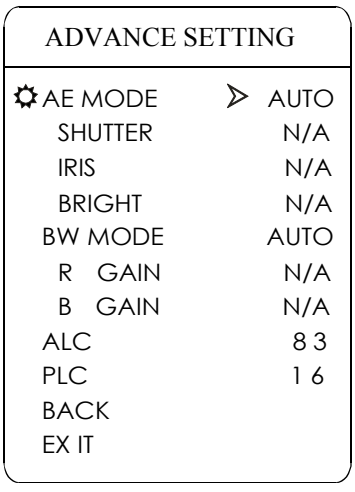
3、Operate joystick, move the cursor to 【WDR MODE 】,press 【OPEN】, tilt up/down joystick to set WDR; Choose ON means open WDR, choose OFF means close WDR, Press 【OPEN】 to save.

NOTICE

T his functi on is relative with the mode l and par am eter o f the camera modu le which i nser t in the dome. The o ption is u seles s(N/A)when the camer a mo dule has no such functi on.







5. 8 Advance setting

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

2、Operate joystick, move the cursor to 【CAMERA SETTING 】 to enter submenu.

3、Operate joystick, move the cursor to 【ADVANCE SETTING 】; pre ss 【OPEN 】 to enter submenu, as left picture shows;

5. 8. 1 AE mode

1、Operate joystick, move the cursor to 【AE MODE 】, press 【OPEN 】, tilt u p/down joystick to choose AE mode, mo des for choosing as follow:

- 【AUTO 】: de fault setting, auto Iris mode
- 【BRIGHT 】: brightness priority mode
- 【IRIS 】: iris priority mode
- 【SHUTTER 】: shutter priority mode

2、Choose Iris priority mode 【IRIS 】, press 【OPEN 】to save.

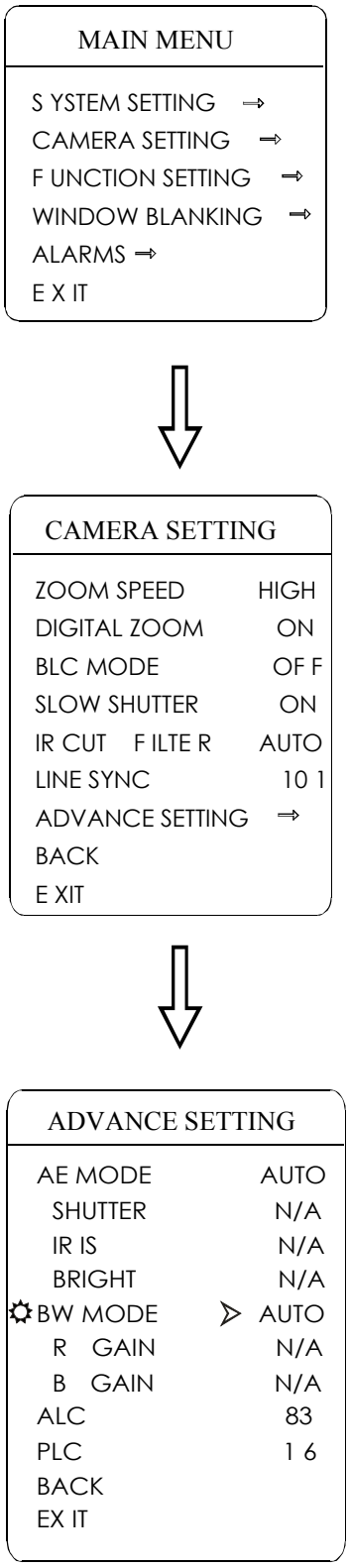
3、Move joystick to the sub-choices of AE mode 【IRIS F1.4 】, press 【OPEN 】 to choose adequate Iris, press 【OPEN 】 to save.

- 【 SHUTTER 1/50 】it means shutter speed, when AE mode is shutter priority, thi s function can be set .
- 【 IRIS F1.4 】 it means the size of iris, when AE mode is iris priority, thi s function can be set .
- 【BRIGHT F2.0/ODB 】it means brightness, when AE mode is brigh-tness priori ty, this functi on can be set.

OPERATION KNACKS

Quality of ph oto relat es to expo sure amo unt, that is to say how much light can make CCD rece ives legib le im age. Exp osure amount is relative to t he tim e of ligh ten (be u p to shutter speed) and the area of lig hten (be up to the size of iri s).

The camera can automatically calculate suitable exp osure amount acc-ording to brightness of scenery and CCD sensitivity, in the situation that the exposure amount is certain: 【SHUTTER 】 (shutte r priority) is t o fix shutter speed, the camera will auto decide to u se how much iris; 【IRIS 】(iris p rior-ity) i s to fix the size of iris, and auto-decide t o use shutter speed. 【BRIGHT 】(brightness priority)is point that the camera TTL check the light directly and control the brightness of image.



5. 8. 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 se tting" menu accordin g to the order in left picture .

2、Operate joystick, move the cursor to 【BW MODE】to choose white balance mode, press 【OPEN】to save.

Auto mode 【AUTO】is the default mode of speed dome, which is auto-revert real color after th e 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 addin g green is more, the tone changes to be cold.

Indoor mode 【INDOOR】, and the tone leans to cold.

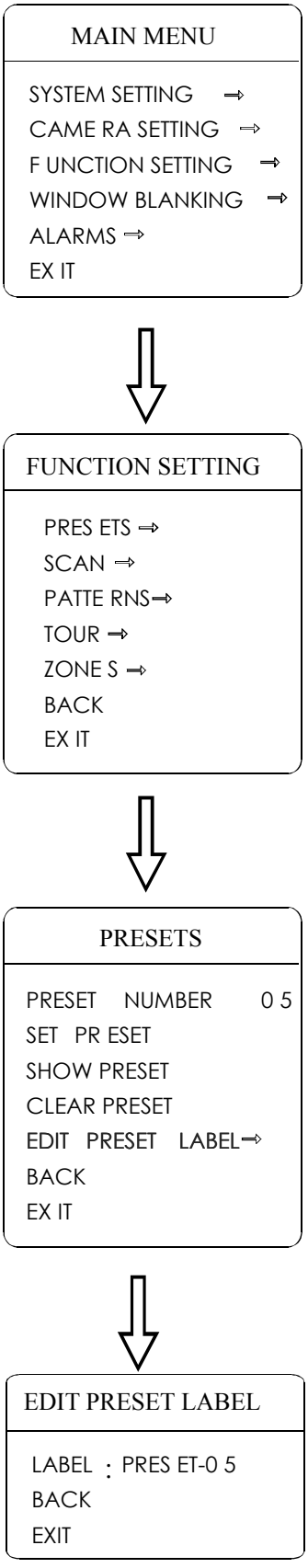
Outdoor mode 【OUTDOOR】, and the tone leans to warm.

Average Level Control 【A L C】range is 000-255.

Peak Level C ontrol 【PLC】range is 000-127.

NOTICE

It i s possi ble tha t differ ent cam era ha s not th e setti ng of 【INDOOR】, 【OUTDOOR】, 【ALC】, 【PLC】; Th at mea ns the c urrent camera has no such f unctio n when the settin g optio n show s N/A.



6. Function setting

6. 1 P reset

1、The system enters into the main menu by calling 95 preset or by calling 9 preset twice within 3 seco nds. click each command to enter "preset menu" according to the order of the left picture. As following:

- 【PRESET NUMBER 】
- 【SET PRESET 】
- 【SHOW PRESET 】
- 【CLEAR PRESET 】
- 【EDIT PRESET LABEL 】

Define preset and call preset function can be set by keyboard operation, input preset number at first, then click the key "sa ve /cal l prese t" to carry out.

2、Define current preset number: move the cursor to 【PRESET N UMBER】,press 【OPEN】 to choose preset number, the range is 01-128as the left picture show, here chooses number 5 as current preset, the follow ing operations aim at the current preset.

3、Define current preset: move the cursor to 【SET PRESET 】,press 【OPEN】, by operating joystick to adjust magnification, to choose good objective image, press 【OPEN】 to save. If the image is very near, the Image is belong in digital zoom; w hen setting preset, the image will jump to maximal optical zoom.

OPERATION KNACKS

Pre set function is that dom e stores c urre nt pa n/til t ang le, z oom and othe r pos ition parameters into the memory. W hen necessary dome reca lls these paramete rs an d adj ust c ame ra to that position.

4、Display current preset: move the cursor to 【SHOW PRESET 】, press 【OPEN】, the screen will display the current preset;

5、Clear current preset: move the cursor to 【CLEAR PRESET 】, press 【OPEN】, t he current pre set is c leared.

6、Edit current preset label: move the cursor to 【EDIT PRESET LABEL 】, press 【OPEN】 to enter into editing preset submenu, system auto-sets label as PRESET-XX, press 【OPEN】 to revise l abel.

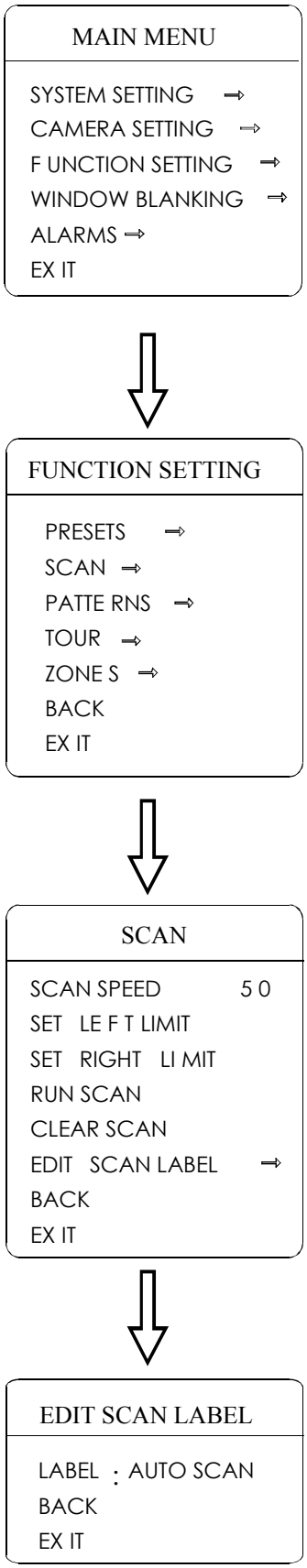
NOTICE

1.W hen r unni ng to pro gram , display, clea r pre set and e dit la bel, shou ld ch oose pre set n umbe r at first.

2. Th e lab el m ay s et up to 16 cha racters, and d oesn 't nee d ed iting char acters. Pr ess 【OPEN】 con tinu ously to j ump over and use spac ebar to re plac e the dele ted characters .

W hen you finis h to edit a cha racter, pr ess 【OPEN】 to e nter into the n ext editin g ch arac ter;

w hen you finis h to e dit the last ch arac ter, p ress ing 【OPEN】 to save. P ress 【CLOSE 】 to exit.Ch arac ter o f lab el is suita ble for choosing as fo llow : 0-9 、A -Z、:<>- . , sp ace.



6. 2 Scan

Scan is that pre-set two points , then the camera repeatedly scan betw - een the two points at a stable speed, the same magnification and pan. A do- me 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 show s.

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

2、Scan speed setting: operate joystick to 【SCAN SPEED 】, pre ss 【OPEN】, tilt up/down joystick to adjust scan speed, press 【OPEN】 to save.

3、 Left limit se tting: operate joystic k to 【SET LEFT LIMIT 】, press 【OPEN】, operate joystick to choos e objective image, press 【OPEN】 t o sa ve. Right limit setting is the same a s left lim it sett ing.

4、Edit scan label: operate joystick, move the curso r to 【EDIT SCAN LABEL】, press 【OPEN】 to enter submenu “ edi t label”, move the cur- so r to【LABEL】, the system will auto-set the label as AUTO SCAN, press 【OPEN】 to re vise.

NOTICE

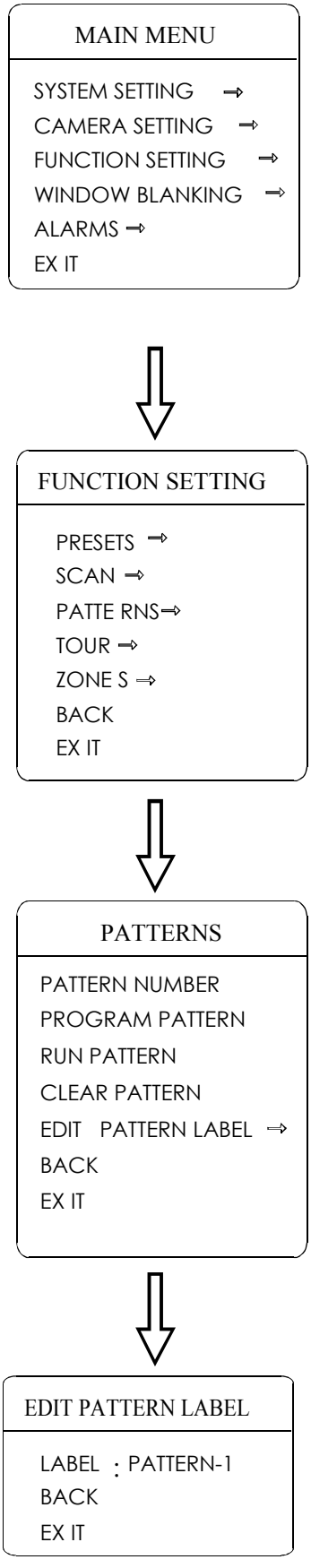
The label can set up to 16 ch aracters, and doesn't need e ditin g characters. Pressing 【OPEN】 continuously to jump o ver a nd using spacebar to replace the deleted character s. W hen you f inish to edit a character, pressing 【OPEN】 to enter into the nex t editing character when you finish to edit the last character, pressing 【OPEN】to save. Press 【CLOSE】 t o exit .

C hara cter of label is suit able for choosing as follow: 0-9 、A-Z、: <> -. , Space. The editing ways o f oth er la bels are the sa me a s above.

5、Run scan: operate joystick to 【RUN SCAN】, press 【OPEN】 to exit the menu, and it stars to run scan.

NOTICE

1. left limi t and right limit of scan can't be set th e same point.
2.U nder sc an process, sp eed, m agnific ation and tilt direc tion won't change, if the speed, m agnifi catio n and tilt direction of the two li mits are incon sistent, run scan is base on left lim it .



6. 3 Pattern

Pattern is built-in function in camera; the sp eed 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、Operate joystick, move the cursor to 【FUNCTION SETTING 】, press 【OPEN】 to enter submenu.

3、Operate joystick to 【PATTERN】, press 【OPEN】to enter menu " Pattern".

- 【PATTERN NUMBER 】
- 【PROGRAM PATTERN 】
- 【RUN PATTERN 】
- 【CLEAR PATTERN 】
- 【EDIT PATTERN LABEL 】

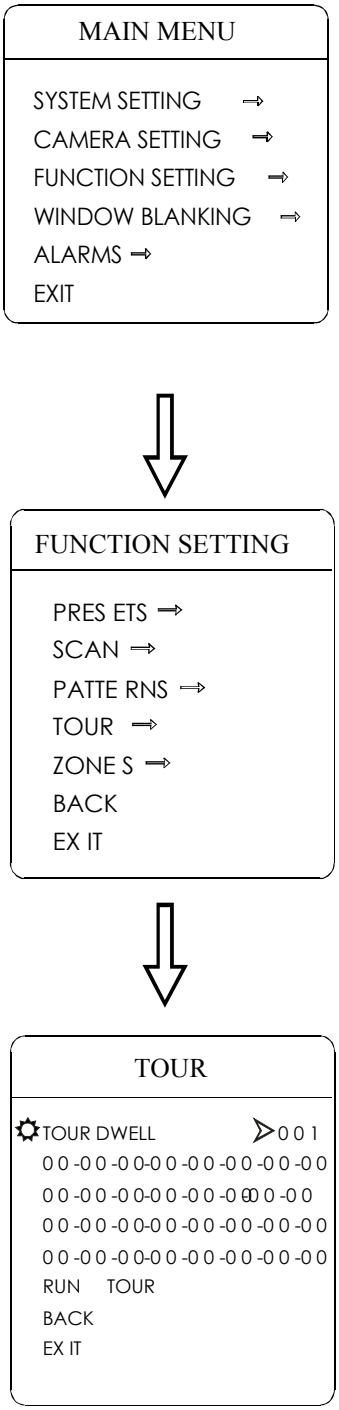
4、Choose pattern number: move the cursor to 【PATTERN NUMBER 】, press 【OPEN】, pattern you choose as current pattern, the following operations aim at the current pattern;

5、Define current pattern tour: move the cursor to 【PROGRAM PATTERN】, press 【OPEN】to set pattern track, move the image random, 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, press 【OPEN】 to save.

6、Run pattern: operate joystick to 【RUN PATTERN】, press 【OPEN】 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.



6. 4 Tour

Tour is the built-in function in the speed dome, it w ill 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、 Th e system enters into the main menu by calling 95 preset or by calling 9 pres et twice within 3 seco nds.

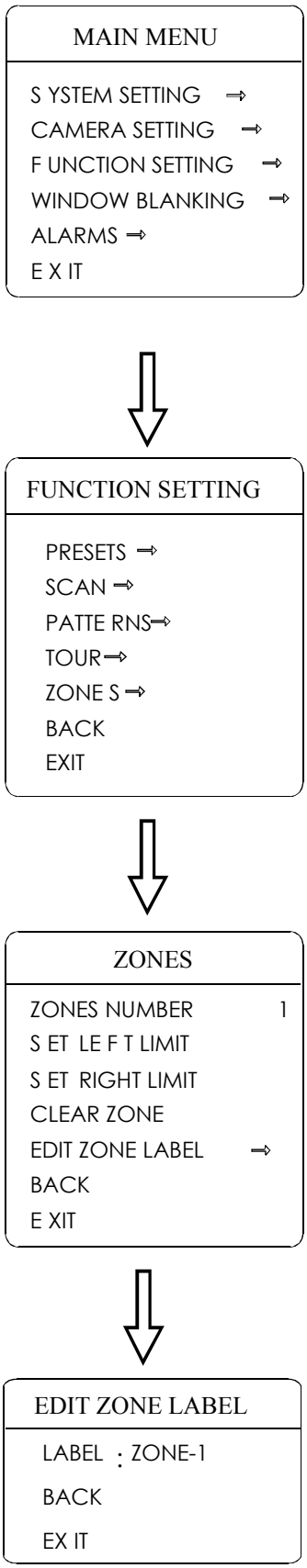
2、 Operate joystick, move the cursor to 【FUNCTION SETTING 】, press 【OPEN】 enter submenu.

3、Op erate joystick, move the cursor to 【TOUR】, press 【OPEN】 to enter menu “tour〃;

4、Set the park time of preset: Operate joystick, move the cursor to 【TOUR DWELL 】, press 【OPEN】, there will be a s ign ☼in the fr ont of 【TOUR DWELL 】, the cu rsor ju mps to right, tilt up/down to set park time, and the range is 000-255(s);

5、Set tour: move the curs or to tour dwell [00-0 0-00...00], press 【OPEN】, the first dwell is activated, tilt up/down joystick to choose preset number, press 【OPEN】, the cursor jumps to the next dwell, press 【CLOSE】, the cursor jumps to the former dwell. After finishing the last dwell of a line, press 【OPEN】 to save. Press 【CLOSE】 to exit . If set t he presets of t he second line, move the cursor to the s econd line, press 【OPEN】 to edit continue inuously. When the numerical value is 00, the following presets are invalid. A tou r can set up to 32 presets.

6、Run tour: Operate joys tick, move the cursor to 【RUN TOUR】, press 【OPEN】 to exit the menu, it sta rs to ru n tour.



6. 5 Zone

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、Operate joystick, move the cursor to 【FUNCTION SETTING 】, press 【OPEN】 to enter submenu.

3、Operate joystick, move the cursor to 【ZONES】, press 【OPEN】 to enter submenu, as the left picture shows.

- 【ZONES NUMBER 】
- 【SET LEFT LIMIT 】
- 【SET RIGHT LIMIT 】
- 【CLEAR ZONE 】
- 【EDIT ZONE LABEL 】

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.

MAIN MENU

SYSTEM SETTING ⇒
CAMERA SETTING ⇒
FUNCTION SETTING ⇒
WINDOW BLANKING ⇒
ALARMS ⇒
EX IT

WINDOW BLANKING

WINDOW NUMBER 0 1
ED IT WINDOW
ENABLE WINDOW OFF
CLEAR WINDOW
BACK
EX IT

Privacy zo ne masking

7. 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 d ifferent cameras.)

Hi tachi Camera: It c an b e set 8 maskin g at most in 3 60 ° surv eilla nce range,c an s et 2 m ask ing a t mo st pe r scr een. The screen wi ll no te" plea se move " wh en the po sitio n can not be se t. It can n ot se t maskin g wh en th e do me rotate s do wn in the leve l ≥45 .
Sony Camera: It can be s et 24 ma sking at most in 36 0 ° surveillance ra nge . (S ony 45 series can be se t 8 m ask ing a t mo st). I t can not set masking wh en the do me rotates do wn in the level ≥20 .LG,C NB Camera m odule ha ve n o ma sking fun ction .

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

2、Op erate joystick to 【WINDOW BLANKING 】, press 【OPEN】 to enter menu “ window blanking ”.

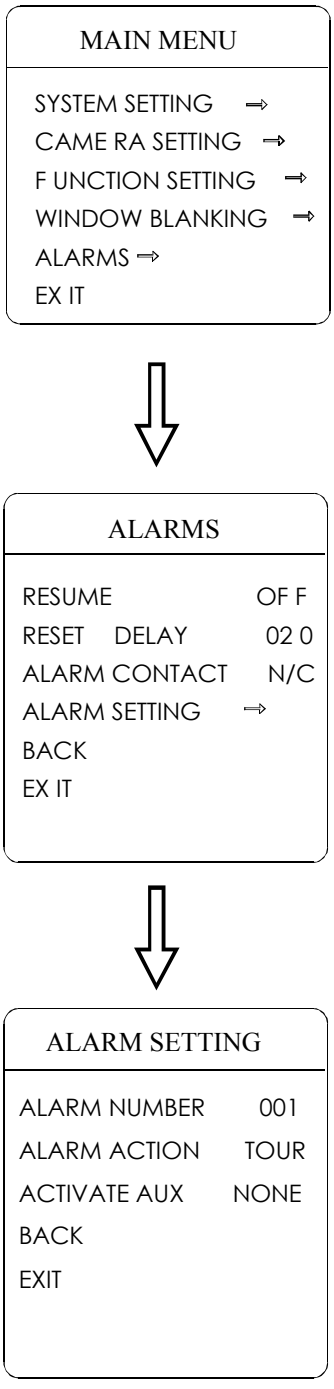
- 【WINDOW NUMBER 】choose window number as current privacy win dow, o ther choices in the menu just aim at current privacy win dow;
- 【EDIT WINDOW 】program current window ;
- 【ENABLE WINDOW 】permit/prohibit current privacy w indow, there are two choices: ON---permit current privacy window/OFF---prohibit current privacy window
- 【CLEAR WINDOW 】clear current p rivacy window, after clearin g it, the window will auto- change as OFF.

3、Pr ogram current privacy window: Firstly ch oose window number, then do the follow ing operations:

a. Operate joystick, move the cursor to 【EDIT WINDOW 】,press 【OPEN】 to move the image that need privacy window to display in the screen.
b. Press 【OPEN】, there w ill be a square displaying in the centre of the screen, operate joystick, and move the s quare to the central place that need to conceal.
c. Press 【OPEN】, operate joystick to adjust the size of privacy zone:joys tick to up, the height is increased; joystick to down, the height is reduced; joystick to right, the width is increase d; joys tick to left, the width is reduced .
d. Press 【OPEN】 to save the current privacy zone setting, and the window will auto-change as ON at the same time.

NOTICE

This fun ctio n is d ecid e by the p aram eter of b uilt-in ca mera, if th e cam era has not th is fu nction, this o ption is in vali d. (N /A)



8. Alarm function

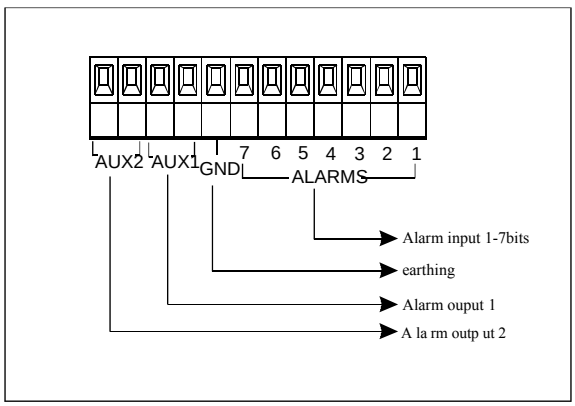
Speed dome may connect with 7 alarm input, 2 alarm output, and support alarm linkage. The external alarm message sends to the dome, then the dome sends to alarm point shoot (to call preset, auto scan, auto cruise and auto pattern), and choose that to run alarm output or not.

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 】

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

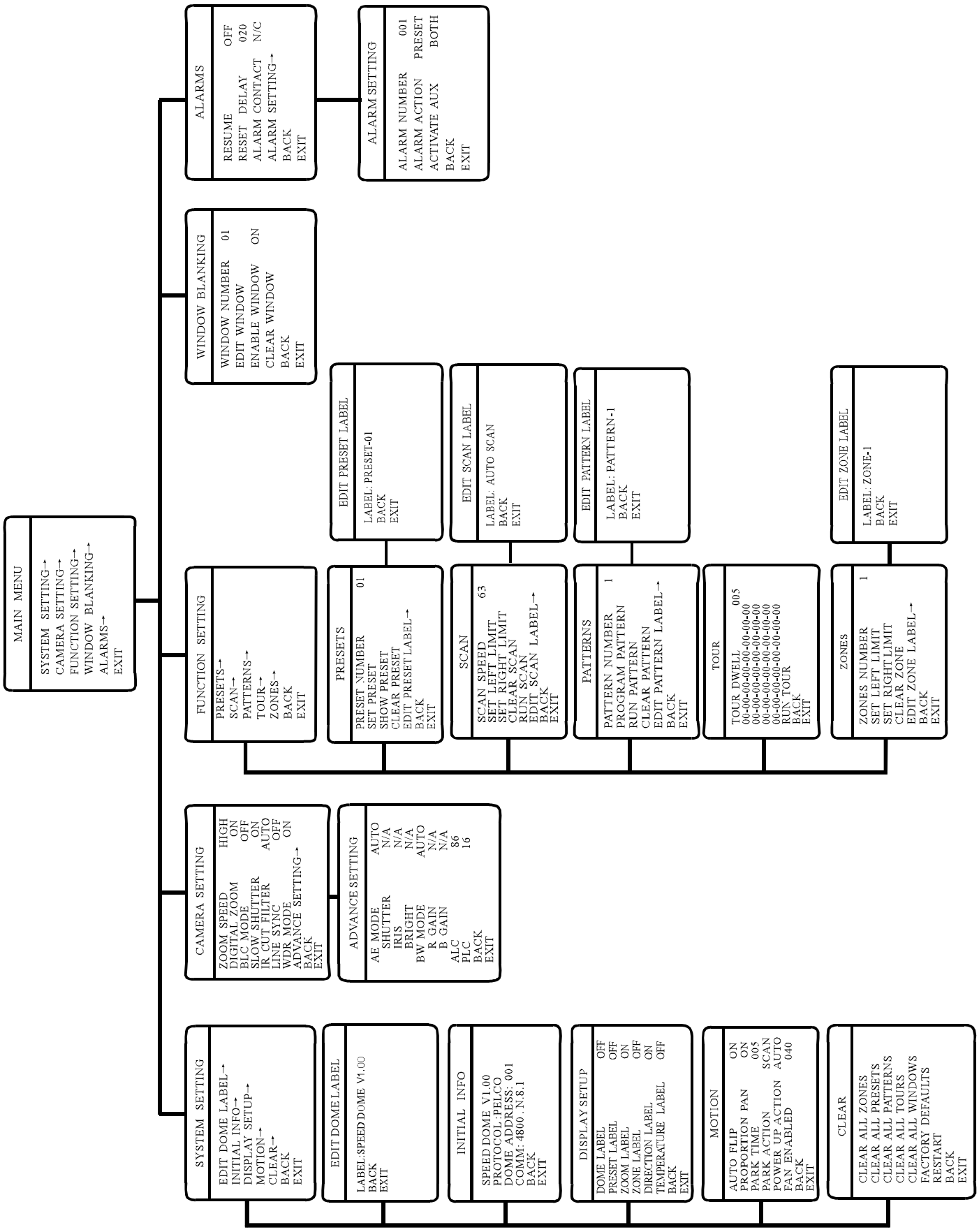
- 【ALARM NUMBER】alarm number is corresponding with 12 bits plug in the external switching board of the dome(as below shows). 001 priority is the highest, 007 priority is the lowest. The two lines alarm input at the same time, the dome run alarm that the highest priority.
- 【ALARM ACTION】as current alarm 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/AUX 2---the secretaryond alarm output/BOTH--- two alarms output.



NOTICE

This function is relative with th e type of the dome, if zoom camera hast ' tthis function, i t is invali d .

9. 1 Menu Index



9. 2 Troubleshooting

Trouble	Possible causes	Solution
No action , no Video after power up	1. The 24vAC power supply is Not connected to the port of the Circuit connection board or the contact is not good. 2、The municipal power has been cut off o r the transformer is in malfunction.	1. Check the power su pply to see if it is connected or confirm if the plug cont act well. 2. Check to see the municipal power supply has been cut off. Check to see if the 24V AC transformer is OK.
Self-testing and image Are normal but th e dome is uncontrollable	1. The dom e Dipswitch setting is incorrect. 2. RS485 m ay carve out a way 3. RS485 i s in malfunction.	1 . Rese t the D ip sw itch a s per the D ip swi tch se ttin g char t. 2 . Chec k RS4 85 an d con firm t he connecti on is corre c t a nd good in co ntact . 3 . Pleas e con sult a ppend ix 9.6 RS48 5 Bus ac know ledge .
Vague image	1. Manua l focus has been set. 2. Unclean down cover.	1 .Operate dome and set the state of focus as auto o r ca ll any pr eset . 2 .Clean the down cover.

9. 3 The cleaning of clear down cover

To obtain constant clear vid eos, user should clean the dow n cover periodically.

- Be caution when cleaning, Hold the down cover ring only to avoid direct touch to the acrylic down cover. The acid sw eat mark of fingerprint will corrode the coating of down cover and scratch on do wn cover will cause vague image.
- Use so ft dry cloth or the substitute to clean the inner and oute r surfaces.
- For hard contamination, use neutral detergent. Any cleanser for high grade furniture is applicable.

9．5 Domestic and Board Wire Gauge Conversion Chart

Bare Wire Diameter Metric Size(mm)	AWC (Apprximate)	SWC (Approximate)	Bare Wire Cross-Sectional Area (mm^2)
0．0 50	4 3	4 7	0．0 01 9 6
0．0 60	4 2	4 6	0．0 02 8 3
0．0 70	4 1	4 5	0．0 03 8 5
0．0 80	4 0	4 4	0．0 05 0 3
0．0 90	3 9	4 3	0. 0 06 36
0．0 10	3 8	4 2	0．0 07 8 5
0．1 10	3 7	4 1	0. 0 09 50
0．1 30	3 6	3 9	0．0 13 27
0．1 40	3 5		0．0 15 3 9
0．1 60	3 4	3 7	0. 0 20 11
0．1 80	3 3		0．0 25 4 5
0．2 00	3 2	3 5	0．0 31 4 2
0．2 30	3 1		0．0 41 1 5
0．2 50	3 0	3 3	0．0 49 0 9
0．2 90	2 9	3 1	0．0 66 0 5
0．3 30	2 8	3 0	0．0 85 5 3
0．3 50	2 7	2 9	0. 0 96 21
0．4 00	2 6	2 8	0．1 25 7
0．4 50	2 5		0．1 60 2
0．5 60	2 4	2 4	0．2 46 3
0．6 00	2 3	2 3	0．2 82 7
0．7 10	2 2	2 2	0．3 95 8
0．7 50	2 1		0．4 41 7
0．8 00	2 0	2 1	0．5 02 7
0．9 00	1 9	2 0	0．6 36 2
1．0 00	1 8	1 9	0．785 4
1．2 50	1 6	1 8	1．226 6
1．5 00	1 5		1．7 66 3
2．0 00	1 2	1 2	3．142 0
2．5 00			4．908 0
3．0 00			7．0 68 3

9. 6 Rs485 Bus Basic Knowledge

➢ Characteristics of Rs485 Bus

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

➢ Transmission distances of Rs485 Bus

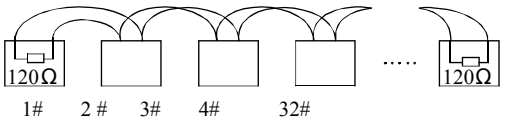
When user selects the 0.56mm(24AWG)twisted pair w ires as data transmission cable, the maximum theoretical transmitting distance are as follows:

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

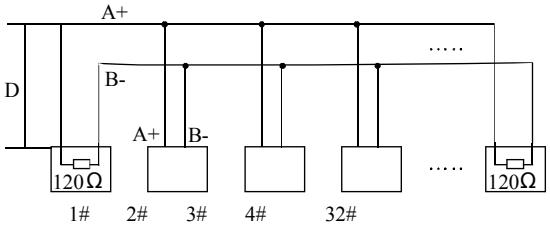
If user selects thinner cables, or installs the dome in an environment with strong electromagnetic interference, or connects lots of equipment to the Rs485 Bus, the maximum transmitting distance will be decreased. To increase the maximum transmitting distance, do the contrary.

➢ Connection and termination resistor

The Rs485 standard s require a daisy-chain Connection between the equipment. There must be termination resistors with 120 Ω (as the picture 9-6.1). Please refer to picture 9-6.2 for simple connection. " "D should not exceed 7m.



Picture9-6.1

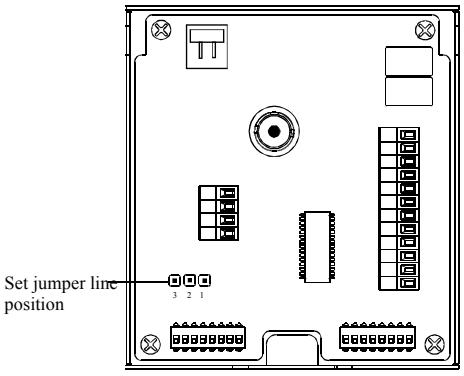


Pict ure9-6.2

➢ The connection of 120 Ω termination resistor:

The termination resistor is ready on the protocol PCB. The are two kinds of connection(as show 9-6.3 form). It is the factory default connection. The jumper cap of switchboard is seated on p in 2 &pin 3 and the termination resistor120 Ω is not connected.

When connecting the 120 Ω t ermination re sistor, user should pull out the protocol PCB and plug the jumper on pin1& pin2. Install the PCB back and the termination resistor is con nected.(as show the p icture 9-6.3)



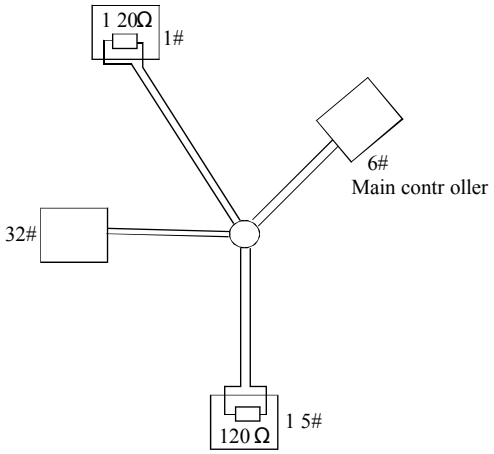
	1	2	3
Connetction of 120 Ωsetting	ON	ON	OFF
Facto ry defaul t sett ing	OFF	ON	ON

" On " means insert the jumper cap.

Picture 9-6.3

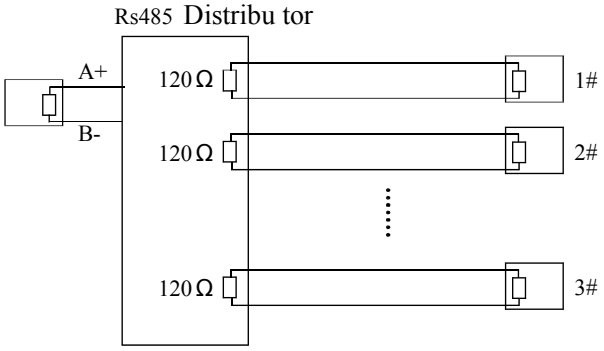
➢ Problems in practical connections

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 9-6.4. As the star configuration is not in conformity with the requirements of RS48 5 standards, problems such as signal reflections, lower anti-interference performance arise when the cables are lon g in the connec tion. The reli ability of control signals is decre ased with the phenomena that the dome does not respond to or just res ponds at intervals to the controller, or does continuous operation without stop.



Picture 9-6.4

In such circumstances the factory recommends the usage 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. (Re fer to P icture 9 -6.5).



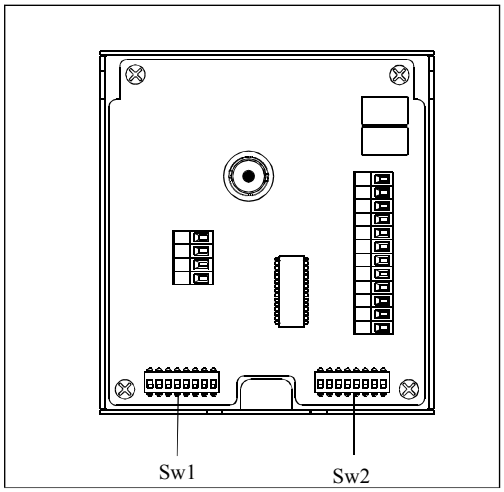
P ictu re 9- 6.5

➢ Rs485 Bus troubleshooting

Trouble	Possible cause	So lution
Dome can do self-testing but cannot be control led	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、The dome is very far away from controller. D、There are too many domes connected in the System.	A、Change the address and baud rate of controller or dome B、Replace Rs485 Bus wires C、Make sure the connections are fully seated
The dome can be con trolled but the operati on is not smooth.	A、T he Rs4 85 Bus line is n ot in g ood conta ct with the con nector s. B、O ne wire of the Rs485 Bus is broke n. C、T he dom e is very far fr om con tr oller. D、T here ar e too m any domes conn ected in the sy stem.	A、Secure th e conn ection ; B、Re place R s485 Bus Wi res C、Ad d term ination resist ors to t he sys tem D、Ins tall Rs 485 di stribut or

9. 7 DIP switch setup

There is a switchboard in the upper cover of dome, lift the metallic button can open the switchboard. There are two 8-bit DIP switches on it. Sw2 is for protocol and baud rate setting and Sw1 is for dome address setting.



Picture 9-7.1

In the following li st, " 1 set DIP as " ON" 0 set DIP as " OFF "

9. 7. 1 Baud rate setup (SW2) :

Please according to "AppdienxRs485 Bus Basic knowledge", to check whether Baud rate is satisfied with the demand of transmission distance.

Baud rate	Sw itch number (Sw2)
(Bi t)7 8	
2400bps	0 0
4800bps	1 0
9600bps	0 1
19200bps	1 1

9. 7. 2 Protocol setup (SW2)

PROTOCOL	SWITCH NUMBER (SW2)
(B it)	1 2 3 4 5 6
FACTORY (FACTORY PROTOCOL)	0 0 0 0 0 0
PELCO	1 0 0 0 0 0
ERNITEC	0 1 0 0 0 0
VCL	1 1 0 0 0 0
MOLYNX	0 0 1 0 0 0
VICON	1 0 1 0 0 0
SANTACHI	0 1 1 0 0 0
PANASONIC	1 1 1 0 0 0
SAMSUNG	0 0 0 1 0 0
DIAMOND	1 0 0 1 0 0
KALATEL	0 1 0 1 0 0
L ILIN	1 1 0 1 0 0
VIDO B02	0 0 1 1 0 0
HUNDA	1 0 1 1 0 0
PHIL IP S	0 0 0 0 0 1
AD	1 0 0 0 0 1
UNI VISION	0 1 0 0 0 1
RESERVED	OTHER S

9. 7. 3 ID setting (SW1)

In a system, a decoder includes speed dome camera and common decoder, there aren't the same ID between them. The ID switch in decoder and the ID setting of the dome as follow, in the picture,"1" set DIP switch as "NO", "0" set DIP switch as OFF.

ID	Switch number (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
Factory defaults set as debug address	0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0	0
3	1	1	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0
5	1	0	1	0	0	0	0	0
6	0	1	1	0	0	0	0	0
7	1	1	1	0	0	0	0	0
8	0	0	0	1	0	0	0	0
9	1	0	0	1	0	0	0	0
10	0	1	0	1	0	0	0	0
11	1	1	0	1	0	0	0	0
12	0	0	1	1	0	0	0	0
13	1	0	1	1	0	0	0	0
14	0	1	1	1	0	0	0	0
15	1	1	1	1	0	0	0	0
16	0	0	0	0	1	0	0	0
17	1	0	0	0	1	0	0	0
18	0	1	0	0	1	0	0	0
19	1	1	0	0	1	0	0	0
20	0	0	1	0	1	0	0	0
21	1	0	1	0	1	0	0	0
22	0	1	1	0	1	0	0	0
23	1	1	1	0	1	0	0	0
24	0	0	0	1	1	0	0	0
25	1	0	0	1	1	0	0	0
26	0	1	0	1	1	0	0	0
27	1	1	0	1	1	0	0	0
28	0	0	1	1	1	0	0	0
29	1	0	1	1	1	0	0	0
30	0	1	1	1	1	0	0	0
31	1	1	1	1	1	0	0	0
32	0	0	0	0	0	1	0	0
33	1	0	0	0	0	1	0	0

ID	Switch number (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
34	0	1	0	0	0	1	0	0
35	1	1	0	0	0	1	0	0
36	0	0	1	0	0	1	0	0
37	1	0	1	0	0	1	0	0
38	0	1	1	0	0	1	0	0
39	1	1	1	0	0	1	0	0
40	0	0	0	1	0	1	0	0
41	1	0	0	1	0	1	0	0
42	0	1	0	1	0	1	0	0
43	1	1	0	1	0	1	0	0
44	0	0	1	1	0	1	0	0
45	1	0	1	1	0	1	0	0
46	0	1	1	1	0	1	0	0
47	1	1	1	1	0	1	0	0
48	0	0	0	0	1	1	0	0
49	1	0	0	0	1	1	0	0
50	0	1	0	0	1	1	0	0
51	1	1	0	0	1	1	0	0
52	0	0	1	0	1	1	0	0
53	1	0	1	0	1	1	0	0
54	0	1	1	0	1	1	0	0
55	1	1	1	0	1	1	0	0
56	0	0	0	1	1	1	0	0
57	1	0	0	1	1	1	0	0
58	0	1	0	1	1	1	0	0
59	1	1	0	1	1	1	0	0
60	0	0	1	1	1	1	0	0
61	1	0	1	1	1	1	0	0
62	0	1	1	1	1	1	0	0
63	1	1	1	1	1	1	0	0
64	0	0	0	0	0	0	1	0
65	1	0	0	0	0	0	1	0
66	0	1	0	0	0	0	1	0
67	1	1	0	0	0	0	1	0

ID	Switchnumber (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
68	0	0	1	0	0	0	1	0
69	1	0	1	0	0	0	1	0
70	0	1	1	0	0	0	1	0
71	1	1	1	0	0	0	1	0
72	0	0	0	1	0	0	1	0
73	1	0	0	1	0	0	1	0
74	0	1	0	1	0	0	1	0
75	1	1	0	1	0	0	1	0
76	0	0	1	1	0	0	1	0
77	1	0	1	1	0	0	1	0
78	0	1	1	1	0	0	1	0
79	1	1	1	1	0	0	1	0
80	0	0	0	0	1	0	1	0
81	1	0	0	0	1	0	1	0
82	0	1	0	0	1	0	1	0
83	1	1	0	0	1	0	1	0
84	0	0	1	0	1	0	1	0
85	1	0	1	0	1	0	1	0
86	0	1	1	0	1	0	1	0
87	1	1	1	0	1	0	1	0
88	0	0	0	1	1	0	1	0
89	1	0	0	1	1	0	1	0
90	0	1	0	1	1	0	1	0
91	1	1	0	1	1	0	1	0
92	0	0	1	1	1	0	1	0
93	1	0	1	1	1	0	1	0
94	0	1	1	1	1	0	1	0
95	1	1	1	1	1	0	1	0
96	0	0	0	0	0	1	1	0
97	1	0	0	0	0	1	1	0
98	0	1	0	0	0	1	1	0
99	1	1	0	0	0	1	1	0
100	0	0	1	0	0	1	1	0
101	1	0	1	0	0	1	1	0

ID	Switchnumber (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
102	0	1	1	0	0	1	1	0
103	1	1	1	0	0	1	1	0
104	0	0	0	1	0	1	1	0
105	1	0	0	1	0	1	1	0
106	0	1	0	1	0	1	1	0
107	1	1	0	1	0	1	1	0
108	0	0	1	1	0	1	1	0
109	1	0	1	1	0	1	1	0
110	0	1	1	1	0	1	1	0
111	1	1	1	1	0	1	1	0
112	0	0	0	0	1	1	1	0
113	1	0	0	0	1	1	1	0
114	0	1	0	0	1	1	1	0
115	1	1	0	0	1	1	1	0
116	0	0	1	0	1	1	1	0
117	1	0	1	0	1	1	1	0
118	0	1	1	0	1	1	1	0
119	1	1	1	0	1	1	1	0
120	0	0	0	1	1	1	1	0
121	1	0	0	1	1	1	1	0
122	0	1	0	1	1	1	1	0
123	1	1	0	1	1	1	1	0
124	0	0	1	1	1	1	1	0
125	1	0	1	1	1	1	1	0
126	0	1	1	1	1	1	1	0
127	1	1	1	1	1	1	1	0
128	0	0	0	0	0	0	0	1
129	1	0	0	0	0	0	0	1
130	0	1	0	0	0	0	0	1
131	1	1	0	0	0	0	0	1
132	0	0	1	0	0	0	0	1
133	1	0	1	0	0	0	0	1
134	0	1	1	0	0	0	0	1
135	1	1	1	0	0	0	0	1

ID	Switch number (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
136	0	0	0	1	0	0	0	1
137	1	0	0	1	0	0	0	1
138	0	1	0	1	0	0	0	1
139	1	1	0	1	0	0	0	1
140	0	0	1	1	0	0	0	1
141	1	0	1	1	0	0	0	1
142	0	1	1	1	0	0	0	1
143	1	1	1	1	0	0	0	1
144	0	0	0	0	1	0	0	1
145	1	0	0	0	1	0	0	1
146	0	1	0	0	1	0	0	1
147	1	1	0	0	1	0	0	1
148	0	0	1	0	1	0	0	1
149	1	0	1	0	1	0	0	1
150	0	1	1	0	1	0	0	1
151	1	1	1	0	1	0	0	1
152	0	0	0	1	1	0	0	1
153	1	0	0	1	1	0	0	1
154	0	1	0	1	1	0	0	1
155	1	1	0	1	1	0	0	1
156	0	0	1	1	1	0	0	1
157	1	0	1	1	1	0	0	1
158	0	1	1	1	1	0	0	1
159	1	1	1	1	1	0	0	1
160	0	0	0	0	0	1	0	1
161	1	0	0	0	0	1	0	1
162	0	1	0	0	0	1	0	1
163	1	1	0	0	0	1	0	1
164	0	0	1	0	0	1	0	1
165	1	0	1	0	0	1	0	1
166	0	1	1	0	0	1	0	1
167	1	1	1	0	0	1	0	1
168	0	0	0	1	0	1	0	1
169	1	0	0	1	0	1	0	1

ID	Switch number (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
170	0	1	0	1	0	1	0	1
171	1	1	0	1	0	1	0	1
172	0	0	1	1	0	1	0	1
173	1	0	1	1	0	1	0	1
174	0	1	1	1	0	1	0	1
175	1	1	1	1	0	1	0	1
176	0	0	0	0	1	1	0	1
177	1	0	0	0	1	1	0	1
178	0	1	0	0	1	1	0	1
179	1	1	0	0	1	1	0	1
180	0	0	1	0	1	1	0	1
181	1	0	1	0	1	1	0	1
182	0	1	1	0	1	1	0	1
183	1	1	1	0	1	1	0	1
184	0	0	0	1	1	1	0	1
185	1	0	0	1	1	1	0	1
186	0	1	0	1	1	1	0	1
187	1	1	0	1	1	1	0	1
188	0	0	1	1	1	1	0	1
189	1	0	1	1	1	1	0	1
190	0	1	1	1	1	1	0	1
191	1	1	1	1	1	1	0	1
192	0	0	0	0	0	0	1	1
193	1	0	0	0	0	0	1	1
194	0	1	0	0	0	0	1	1
195	1	1	0	0	0	0	1	1
196	0	0	1	0	0	0	1	1
197	1	0	1	0	0	0	1	1
198	0	1	1	0	0	0	1	1
199	1	1	1	0	0	0	1	1
200	0	0	0	1	0	0	1	1
201	1	0	0	1	0	0	1	1
202	0	1	0	1	0	0	1	1
203	1	1	0	1	0	0	1	1

ID	Switch number (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
204	0	0	1	1	0	0	1	1
205	1	0	1	1	0	0	1	1
206	0	1	1	1	0	0	1	1
207	1	1	1	1	0	0	1	1
208	0	0	0	0	1	0	1	1
209	1	0	0	0	1	0	1	1
210	0	1	0	0	1	0	1	1
211	1	1	0	0	1	0	1	1
212	0	0	1	0	1	0	1	1
213	1	0	1	0	1	0	1	1
214	0	1	1	0	1	0	1	1
215	1	1	1	0	1	0	1	1
216	0	0	0	1	1	0	1	1
217	1	0	0	1	1	0	1	1
218	0	1	0	1	1	0	1	1
219	1	1	0	1	1	0	1	1
220	0	0	1	1	1	0	1	1
221	1	0	1	1	1	0	1	1
222	0	1	1	1	1	0	1	1
223	1	1	1	1	1	0	1	1
224	0	0	0	0	0	1	1	1
225	1	0	0	0	0	1	1	1
226	0	1	0	0	0	1	1	1
227	1	1	0	0	0	1	1	1
228	0	0	1	0	0	1	1	1
229	1	0	1	0	0	1	1	1
230	0	1	1	0	0	1	1	1
231	1	1	1	0	0	1	1	1
232	0	0	0	1	0	1	1	1
233	1	0	0	1	0	1	1	1
234	0	1	0	1	0	1	1	1
235	1	1	0	1	0	1	1	1
236	0	0	1	1	0	1	1	1
237	1	0	1	1	0	1	1	1

ID	Switch number (Sw1)							
	(Bit) 1	2	3	4	5	6	7	8
238	0	1	1	1	0	1	1	1
239	1	1	1	1	0	1	1	1
240	0	0	0	0	1	1	1	1
241	1	0	0	0	1	1	1	1
242	0	1	0	0	1	1	1	1
243	1	1	0	0	1	1	1	1
244	0	0	1	0	1	1	1	1
245	1	0	1	0	1	1	1	1
246	0	1	1	0	1	1	1	1
247	1	1	1	0	1	1	1	1
248	0	0	0	1	1	1	1	1
249	1	0	0	1	1	1	1	1
250	0	1	0	1	1	1	1	1
251	1	1	0	1	1	1	1	1
252	0	0	1	1	1	1	1	1
253	1	0	1	1	1	1	1	1
254	0	1	1	1	1	1	1	1
255	1	1	1	1	1	1	1	1

Notice: 1. Debug address: (Only factory protocol and Pelco can be set): if the camera address is set as 0, user can select any protocols to control the dome.

2. Broadcast address(O nly factory protocol and Pelco can be set): if user sele cts “255” to control, all the systematic connection cameras will carry our the same motions.