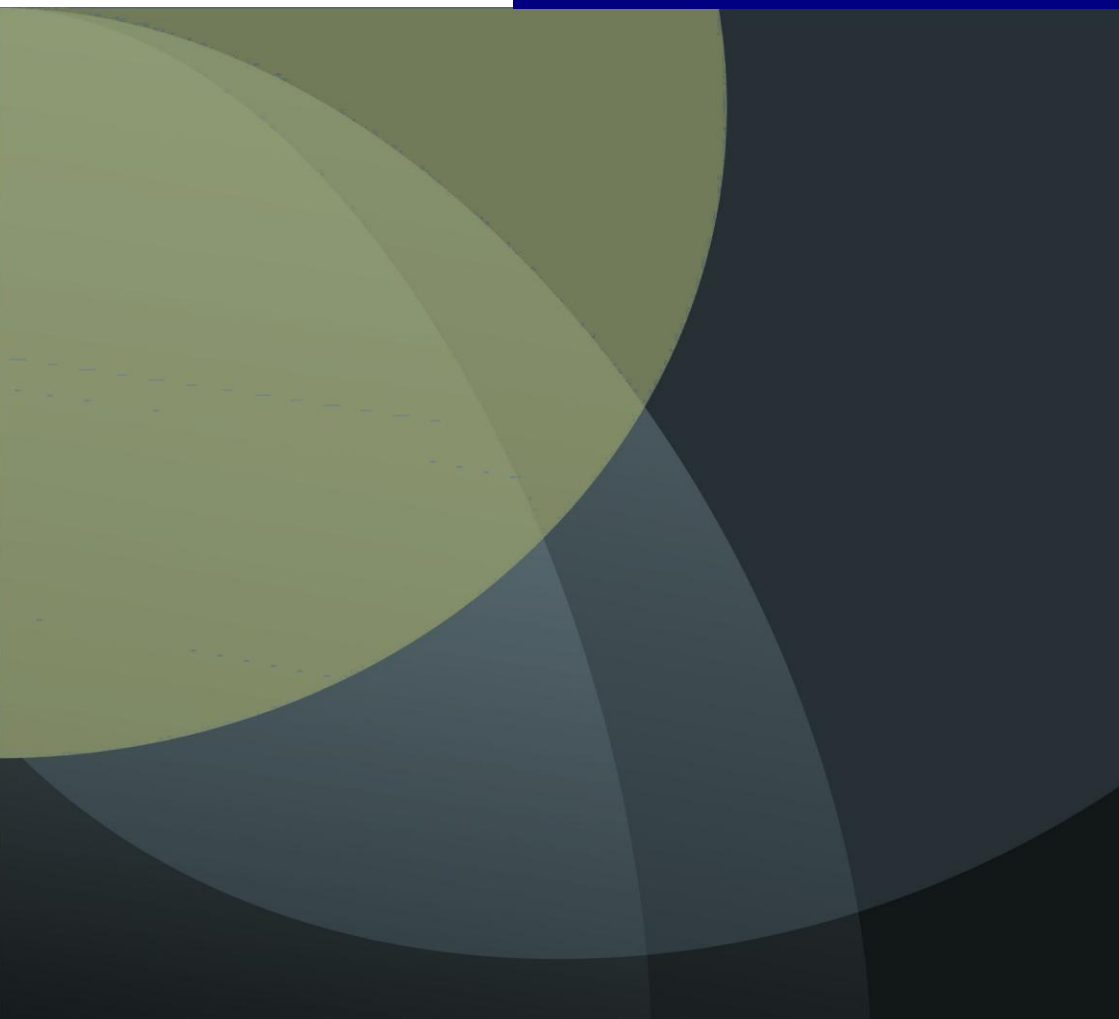


V3.03
English Vision

Speed Dome User Manual



Welcome



Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact us.

This manual is applicable to Speed Dome.

This manual may contain several technically incorrect places or printing errors, and the content is subject to change without notice. The updates will be added into the new version of this manual. We will readily improve or update the products or procedures described in the manual.

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions":

Warnings: Neglecting any of the warnings may cause serious injury or death.

Cautions: Neglecting any of the cautions may cause injury or equipment damage.

 Warnings Follow these safeguards to prevent serious injury or death.	 Cautions Follow these precautions to prevent potential injury or material
--	--



Warnings

1. In the use of the product, you must be strict compliance with the electrical safety regulations of the nation and region.
2. Please use the power adapter, which is provided by normal company. The standard of the power adapter is DC12V/4A or AC24V/2A.
3. Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.
4. Please make sure that the plug is firmly connected on the power socket.
5. When the product is installed on wall or ceiling, the device shall be firmly fixed.
6. If smoke, odors or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.
7. If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)



Cautions

1. Do not drop the dome or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the equipment installation on vibrations surface or places subject to shock (ignorance can cause equipment damage).
2. Do not place the dome in extremely hot, cold (the operating temperature shall be -30°C ~ +65°C), dusty or damp locations, or fire or electrical shock will occur otherwise.
3. The dome cover for indoor use shall be kept from rain and moisture.
4. Exposing the equipment to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).

5. Do not aim the camera at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of CCD at the same time.
6. Please use the provided glove when open up the dome cover, avoid direct contact with the dome cover, because the acidic sweat of the fingers may erode the surface coating of the dome cover.
7. Please use a soft and dry cloth when clean inside and outside surfaces of the dome cover, not to use alkaline detergents.

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Chapter 1 Brief Introduction

1.1 Description

Speed Dome is new products model which features built-in Auto focus camera module. Inner Pan/tilt integrated with digital decoder which support line fault diagnosis, and 3D position function. Speed dome set up the precision sensitive and stability motor gives camera no shake in any level speed.

Speed Dome is via digital control with precis simple drive system. The function is not only realize the presets; horizontal scanning;frame scanning;following scanning, and panoramic scanning but also realize the manual limit position;auto flip;privacy mask;and backlight compensation. The personal privacy is given the best protection when the speed dome works on no blind spot panoramic monitoring.

Speed Dome support PELCO-D;PELCO-P,TA protocol ..etc, and it can match protocol automatically. To convenience to user, the speed dome capability with hardware dip address and software address. User can config the System Information; Display; Camera Settings; Presets Settings; Mode Settings; Alarm Settings; Auxiliary Switcher Settings ..etc via the Muti-language Menu.

1. Infrared Function(Apply to IR Speed Dome)

- ◆ Quickly cooling cast aluminum design.
- ◆ CCVE and PWM design, IR LED can work steady in long time.
- ◆ IDS (Intelligent Dimmer System), The IR brightness can be fixed by distance, zoom and brightness of picture.
- ◆ Individual MCU infrared control system, The muti mode and remote upgrade system can be configured
- ◆ Multi-mode infrared settings, unique MCU IR control system,Remote upgrade system.
- ◆ 10 grade IR power and illumination can be set.
- ◆ Perfect IR vision via internal switch between IR control and camera module optical filter .
- ◆ IP 66 Grade,TVS 4,000V lightning protection and voltage transient protection.
- ◆ 3 Channel temperature control system, detect the camera and IR LED temperature.

2. System Function

- ◆ Integrate Structure Design.
- ◆ CGS (Cooling GAS System).
- ◆ IP 66 Grade,TVS 4,000V lightning protection and voltage transient protection.
- ◆ 3 Channel temperature control system, detect the camera and IR LED temperature.
- ◆ Multi-Axis Design.
- ◆ Heat balance device built in, fog proof.

- ◆ Precise motor device which sensitively and steady. The accuracy deviation >0.1, no picture shake.
- ◆ Support online upgrade , reduce the service cost
- ◆ Support 3D Positioning Function
- ◆ Easy setting for DIP and Protocol
- ◆ Friendly Graphical User Interface Menu
- ◆ Support Preset / Patrol / Pattern / Linear scan / Frame
- ◆ Support Title Display
- ◆ Support Menu Code Protection
- ◆ Low Consumption Design

3. PTZ Function

- ◆ Pan: 0°~360°endless, Tilt: -5°~90° auto flip 180° to continue monitor.
- ◆ 255 presets, Power off Memory.
- ◆ Support 4 preset cruise scanning, It can be added 32 presets in every cruise scanning.
- ◆ Support pattern scanning, Recording time is from 10 min to 1000 min.
- ◆ Support Proportional Pan/Tilt Zoom, rotation speed can fix automatically with lens zoom.
- ◆ Built-in RTC clock, support 16 timing task, individual execute cycle can be set.

4. Built-in HD camera module

- ◆ Auto IRIS and BLC
- ◆ Auto/Manual white balance
- ◆ Auto/Manual Focus
- ◆ Auto brightness control

1.2 Functions

- **Multi-lingual OSD Menu:** The dome provides multi-lingual OSD menu for display of system information and setting of dome parameters.
- **Self-adaptive to Multiple Protocols:**The dome is compatible with PELCO-D, PELCO-P, TA,HIK and DH, etc., and is capable of being self-adaptive to these protocols without need of selecting protocol by DIP switch settings.
- **Control:**The pan/tilt movement and zoom actions of dome can be controlled by the control keyboard, DVR, matrix, etc.
- **Limit Stops:**The dome can be programmed to move within the limit stops (left/right, up/down) which are configurable by the control keyboard, DVR or client application software.
- **Auto Scan:**The dome provides 5 scanning modes: pan scanning, tilt scanning, frame scanning, random scanning and panorama scanning. The scanning speed can be set by OSD menu from level 1 to 40, with the corresponding speed ranging from 1°/second to 40°/second.

- **Presets:**Each of the user-definable presets can be programmed to use pan, tilt, camera settings and other settings. When preset is called, the dome will automatically move to the defined position. User is allowed to add, modify, delete and call each preset.
- **Label Display:**The on-screen label of the preset title, azimuth/elevation, zoom and other operations can be programmed by menu and displayed on the monitor.
- **Auto Flip:**In manual tracking mode, when a target object goes directly beneath the dome, the dome will automatically rotate 180 degrees in horizontal direction to maintain continuity of tracking. When the dome rotates (flips), the camera starts moving upward as long as you continue to hold the joystick in the down position. This function can be realized by image center flip depending on different camera models. The feature can be enabled/disabled through the menu.
- **Privacy Mask:**The privacy mask allows a user to program user-defined areas that cannot be viewed by the operator of the dome system. A masked area will move with pan and tilt functions and automatically adjust in size as the lens zooms telephoto and wide.
- **3D Intelligent Positioning:**The speed dome can be controlled with the 2 buttons and scroll of mouse can be used under protocols with devices and client software. Click on a certain area and the device will move to the scene with corresponding point as the center. When a rectangular area is selected by left-clicking the mouse, device will move to its center and enlarge it. With right-clicking, the lens will zoom in, and the scroll can easily make the lens zooming, and mouse operation automatically incorporates zooming effect.
- **Proportional Pan/Tilt:**Proportional pan/tilt automatically reduces or increases the pan and tilt speeds in proportion to the amount of zoom. At telephoto zoom settings, the pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image from moving too fast on the monitor when there is a large amount of zoom.
- **Auto Focus:**The auto focus enables the camera to focus automatically to maintain clear video images. In manual mode, it can controlled by "Near" and "Far". When the PTZ moving or lens zooming, the manual mode will back to Auto focus mode
- **IR Cut Filter:**The IR cut filter can be set to Auto, Day and Night. In auto mode, the camera is capable of automatically switching Black & White mode (Night) and Color mode (Day) with regard to environment lightening conditions. In manual switch mode, user can increase sensitivity in low light conditions by switching to Black & White mode, while the Color mode is preferred in normal lighting conditions.
- **Low Light Electronic Shutter:**The shutter speed will automatically slow down in low illumination conditions to maintain clear video images by extending the exposure time. The feature can be enabled/disabled by the menu.

- **Backlight Compensation (BLC):** If a bright backlight is present, the subjects in the picture may appear dark or as a silhouette. Backlight compensation (BLC) enhances objects in the center of the picture. The dome uses the center of the picture to adjust the iris. If there is a bright light source outside of this area, it will wash out to white. The camera will adjust the iris so that the object in the sensitive area is properly exposed.
- **White Balance (WB):** This feature automatically processes the viewed image to retain color balance over a color temperature range. The default setting for white balance is AUTO.
- **Support 4 preset cruise scanning:** It can be added 32 presets in every cruise scanning
- **Pattern:** A pattern is a memorized, repeating series of pan, tilt, zoom, and preset functions that can be recalled with a command from a controller or automatically by a configured function (alarm, park, time task, or power-up). By default the focus and iris are in auto status during the pattern is being memorized.
- **Power Loss Position:** The dome supports the power loss position capability with the predefined dwell time. It allows the dome to resume its previous position after power is restored.
- **Patrol:** The high speed dome provides up to 8 patrols. In each patrol, user is allowed to specify the scanning track by a group of user-defined presets, with the scanning speed between two presets and the dwell time at the preset separately programmable.
- **Alarm Response Action:** The speed dome supports 4 alarm inputs which can be set to NO (normally open), NC (normally closed). Upon having received the alarm input signal, the dome will automatically activate a user-defined action, which can be programmed to patrol, pattern or preset call up.
- **AUX Output:** An auxiliary output is a configurable signal from the dome back box that can trigger another device to operate. The dome provides 1 auxiliary outputs: AUX1. The auxiliary output type can be set to NO or NC by menu. And the alarm dwell time is configurable as well.
- **Timing Tasking:** The speed action can be preset in some period, in including: preset 1-8, pattern 1-8, cruise 1-8, Pan scanning...etc.
- **Zone Function:** It including Zone function operation, Zone name setting, Zone action, Zone Setting, and Zone delete. Zone action: When the camera stop in some zone without any command for more than 4 min, the Pan&Scan will be enabled in this zone.
- **Code Protection:** Right code must be input for following speed dome configuration
- **Compass Function:** It is display the specific location. The zero azimuth is regarded as North in general rule.

Following is the Diagram:

Display	N	NE	E	SE	S	SW	W	NW
Means	North	North East	East	East South	South	West South	West	West North

- **485 Fault Detect:** The speed dome will display the fault case when there is some fault between control side and receiver side. For example: The fault of camera, motor, communication and IR etc. will display on screen with some special characters.
- **Software protocol:** The protocol can be configured via speed dome menu.

Chapter 2 Speed Dome Installation

2.1 Install Preparation

1. Basic Requirement

Before the installation, please read following caution information:

- 1) Installation and maintenance should be carried out by professional personnel as per relative regulations. All electrical work must obey the latest electrical regulations, fire regulations and relevant regulations. Check whether the accessories of the unit are complete according to packing list and confirm whether the place and method of installation is in accord with required, if not, please contact your supplier. Please use this product in required environment.
- 2) Indoor IR intelligent high-speed dome only designs for house supply. It can't be installed exposed to rain or in very humid place.
- 3) After re-installation or repair, you need to measure the resistance between the circuit and shell to check whether the insulation is good, and ensure there is no short-circuit between the circuit and shell.
- 4) Confirm there is enough place to contain the product and its structure components. Confirm the ceiling, wall and bracket for installation can take the total weight of the product and its structure components, and materials used to support the weight can sustain four times the weight of the product.

Temperature	-30 ~ 65°C	Atmospheric Pressure	86 ~ 106KPa
Humidity	< 90%RH	Power	DC12V/4A

5) Please refer to following table of work environment:

2. Preparation of wire

- 1) Choose the right wire according distance.

Minimum requirement of Coaxial Cable: 75Ω impedance; full Copper Core; and 95% Braided copper network shielding

National Mode	International Mode	Max Distance(M/ft)
RG59/U	RG59/U	229m(750ft)
5C-2V	RG6/U	305m(1000ft)
7C-2V	RG11/U	457m(1500ft)

2)Following is recommend Max distance for 12VDC. Please refer the Appendix 3 Wire Gauge&Transmission Distance

Cable Diameter	Max Distance(M/ft)
0.75mm ²	6m(20ft)
1mm ²	9m(30ft)
1.5mm ²	12m(40ft)
2mm ²	15m(50ft)

3. Please keep the product package well

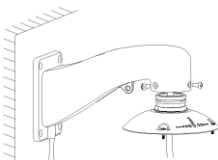
Please keep the product package well, You can send the speed dome to factory with that package if there is any problem need to service.

2.2 Installation

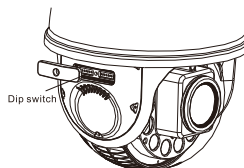
1. Speed Dome Installation

Different Bracket install way please refer to chapter 2 and chapter 3

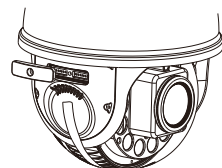
- 1) Take out the cable from the speed dome.Remove the connected cover from speed dome, and put the wire though the bracket. Connect the bracket and cover with 3 pcs screws, and fix it to wall.(As pic 2.2.1) (Caution: The bracket must be with waterproof fodder together)
- 2) Open the Dip Switch Cap with screw driver. Configure the protocol,Baud rate, and Speed Dome address. (As pic 2.2.2). Please refer the chapter 2.4" Dip Switch Setting"
- 3) Remove the protect gummed tape (As pic 2.2.3), check the situation of seal ring on top of speed dome.
- 4) Connect the safe rope of speed dome to the bracket, then hook up speed dome to the connected cover(As pic 2.2.4). You should plugged the cable into right pin by reference by cable mark(As pic 2.2.5).
- 5) Fix the speed dome with the screws.



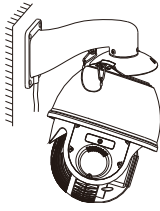
2.2.1



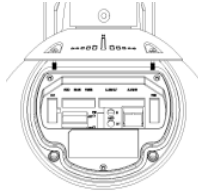
2.2.2



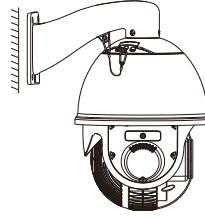
2.2.3



2.2.4



2.2.5



2.2.6

2.3 Default Setting

Protocol: Auto Match

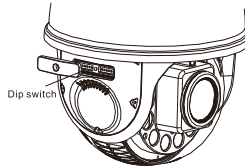
Address: No.1

Baud rate: 2400-N-8-1

120Ω ohmic resistance : OFF

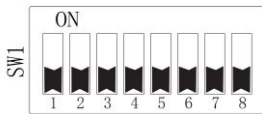
2.4 DIP SWITCH SETTING

Before install the speed dome, please configure the protocol, baud rate, and speed dome address. The Dip switch is on side of speed dome(Analog speed dome As pic 2.4.7) or in the connected cover(IP speed dome as pic 2.4.8)

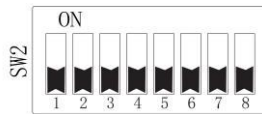


2.4.7 Diagram of Analog Speed Dip Switch

SW1 Configure speed dome protocol , baud rate and 120Ω ohmic resistance; SW2 configure speed dome communicated address.

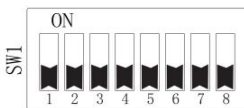


SW1 Protocol&Baud Rate Switch

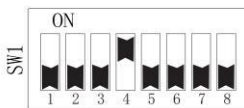


SW2 Speed Dome Address

E.g. Some parts of Dip for Protocol&Baud Rate



Auto Match



PELCO-D&2400BPS



PELCO-P&9600BPS

1) Protocol Rule

Protocol	SW1-1	SW1-2	SW1-3
Auto Match/PELCO-D	OFF	OFF	OFF
TA	OFF	OFF	ON
PELCO-P	ON	OFF	OFF
HKV	ON	ON	OFF
DH	ON	OFF	ON

2) Baud Rate Rules

Baud Rate	SW1-4	SW1-5
Auto Match/1200BPS	OFF	OFF
2400BPS	ON	OFF
4800BPS	OFF	ON
9600BPS	ON	ON

3) 120Ω ohmic resistance Configuration

SW1 is the 120Ω ohmic resistance of RS485. Please configure it as the 《Appendix 2 RS485 BUS Connection》.

4) Communicated Address Configuration

SW2 configure the Speed Dome address. The speed dome address is binary system, No.8 is MSB, No.2 is the LSB. PELCO-D/TA please refer as Appendix 5 <Table of Address Code> .

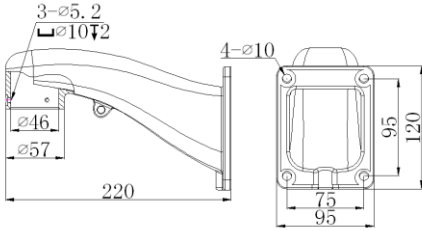
2.5 Alarm Wire Diagram

Speed Dome support 4 channel alarm output and 2 channel input; Following is the diagram.

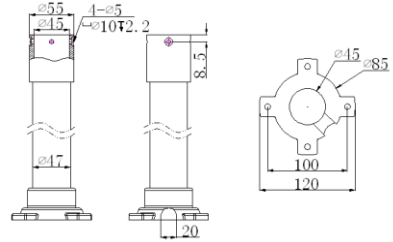
Port Name	Description
COM1	Alarm Output Channel , 1 Common Port
NO1	Alarm NO Output Channel 1
COM2	Alarm Output Channel 2 Common Port
NO2	Alarm NO Output Channel 2
GND	Alarm Output GND
IN 4	Alarm Input Channel 4
IN 3	Alarm Input Channel 3
IN 2	Alarm Input Channel 2
IN 1	Alarm Input Channel 1
GND	Alarm Input GND

Chapter 3 Installation Description

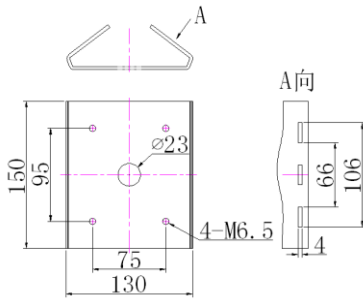
3.1 Bracket Dimension



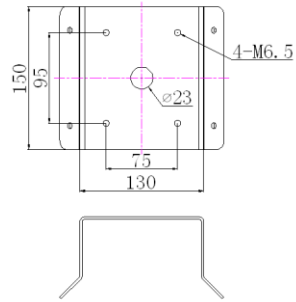
Wall Mount Dimension



Ceiling Mount Dimension



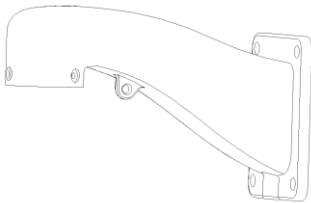
Pole Mount Dimension



Corner Mount Dimension

3.2 Wall Mount

1) Accessories Installation

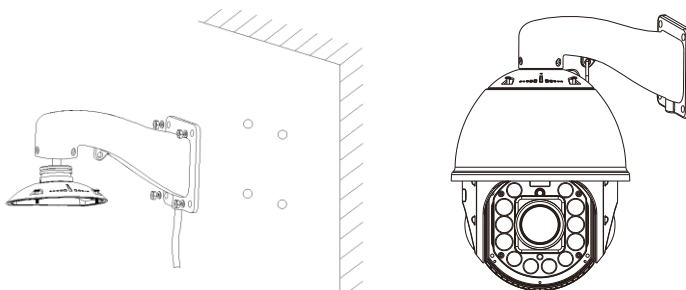


Wall Mount Bracket



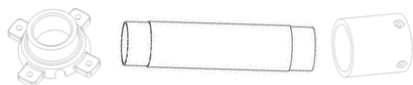
Washer&Screw Cap

2) Mount Step



3.3 Ceiling Mount bracket Installation

1) Accessories Installation

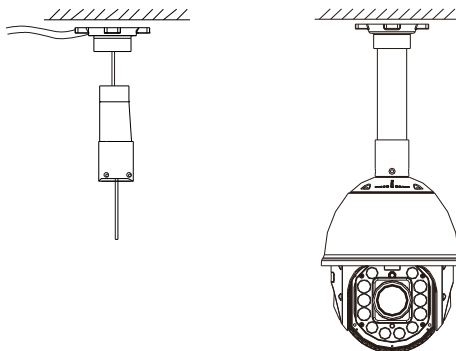


Ceiling Mount Bracket (length Optional)



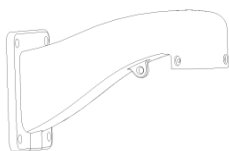
Washer&Screw Cap

2) Mount Step

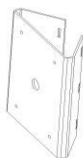


3.4 Pole Mount

1) Accessories Mount



Wall Mount bracket



Pole Mount bracket

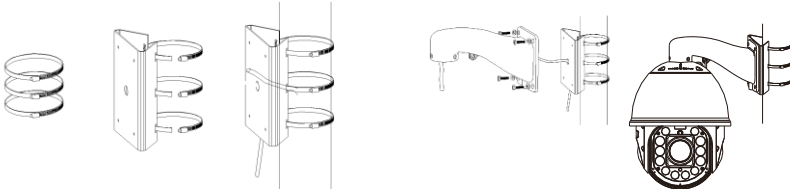


Fastener



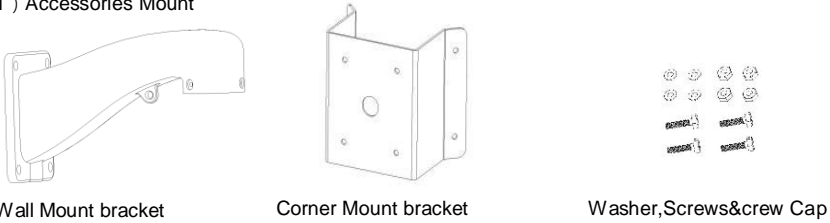
Washer, Screws & screw Cap

2) Mount Step

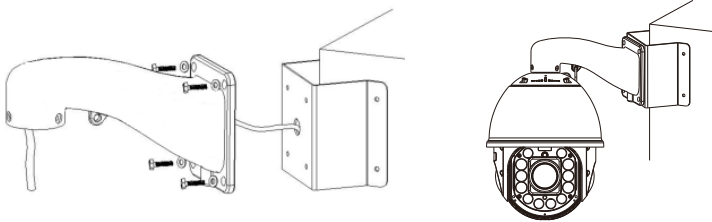


3.5 Corner Mount

1) Accessories Mount



2) Mount Step

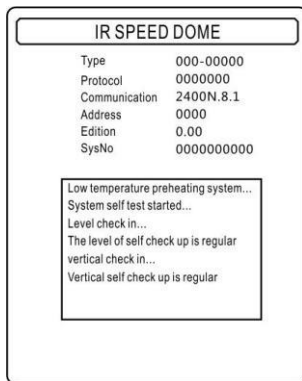


Chapter 4 Operation

4.1 POST(Power On Self Test)

The Speed Dome Power on, execute the self test. The steps: System preheat(If it is necessary), camera test,Pan test, Tilt test. The Self Test display as pic 4.1.1, it takes 40 sec.

Note: If the speed dome address is unavailable, the address display the software address, otherwise it will display the address which configured by Dip Switch, The operation of speed dome software address, please referenced by chapter5.3.6. The communication bar show the information of communication speed , date bits, stop bits etc. E.g."2400.N,8.1" means the communication speed is 2400Bps, None Check, 8 bits, 1 stop bits.



Pic 4.1.1 Splash Screen

4.2 Basically Operation

Following is the integrated operation with the Keyboard,DVR, and software etc.It is normally operation. Please referenced by User Manual

- Pan/Tilt: Control the joystick of Keyboard to expected direction, or enable KEY of UP , DOWN,LEFT, RIGHT .
- ZOOM: Control the Key of TELT and WIDE from Keyboard and DVR to enable camera ZOOM IN and ZOOM OUT.
- FOCUS: Control the Key of FAR and NEAR from Keyboard and DVR to enable camera FOCUS.In the AUTO mode, the camera will FOCUS Automatically. The manual FOCUS mode will back to AUTO FOCUS MODE if the speed dome is operated by manual.
- IRIS: Control the Key of OPEN and CLOSE from Keyboard and DVR to enable camera IRIS Control. The Manual IRIS mode will back to Auto Mode if there is manual operation for Speed Dome.

- PRESET: The Speed Dome support 255 presets. The setting and operation, please reference by Chapter 5.3.

4.3 SPECIAL FUNCTION PRESET

Call Preset	Function	Call Preset	Function
33	Auto Flip	75	Open Digital Zoom
34	Back to Zero Point	79	Factory Reset
35	Preset Scanning 1	94	Remote Reboot
36	Preset Scanning 2	96	Stop Preset Scanning
37	Preset Scanning 3	97	Random Preset Scanning
38	Preset Scanning 4	98	Frame Scanning
39	Day Mode	99	Pan Scanning
40	Night Mode	100	Tilt Scanning
41	Pattern Scanning 1	101	Panoramic Scanning
42	Pattern Scanning 2	102	Preset Scanning 5
43	Pattern Scanning 3	103	Preset Scanning 6
44	Pattern Scanning 4	104	Preset Scanning 7
60	Call the camera menu	105	Preset Scanning 8

4.3.1 Grade 1 Special Function Preset

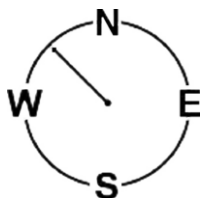
Call following preset can enable relevant function. E.g. Call Preset 99 can enable Pan Scanning.

Grade 1	Grade 2	Specification of Special Preset Function
49	1	Grade 1 of IR Sensitivity (Highest)
	2	Grade 2 of IR Sensitivity
	3	Grade 3 of IR Sensitivity
	4	Grade 4 of IR Sensitivity
	5	Grade 6 of IR Sensitivity
	6	Grade 6 of IR Sensitivity (Lowest)
	7	IR LED ON
	8	IR LED OFF
	9	AUTO IR LED ON/OFF
	50	AUTO SWITCH HIGH AND LOW IR
	56	INITIALIZE IR SYSTEM
	57	LOW IR BEAM MODE
	58	ALL IR LED ON
	59	HIGH IR BEAM MODE
	131	INITIALIZE WHOLE SPEED DOME
	40	SPEED LIMIT IN 40 DEGREE/SEC
	70	SPEED LIMIT IN 70 DEGREE/SEC
	150	SPEED LIMIT IN 150 DEGREE/SEC
250	SPEED LIMIT IN 250 DEGREE/SEC	

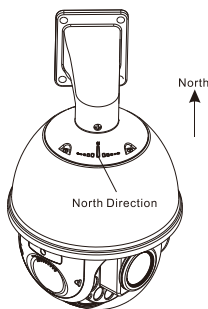
4.4 Screen Character prompted

The speed dome supply the screen character prompted for easily to operation.It can display the multiples of lens,azimuth angle,alarm,Date and title of the presets.

- **Lens Multiples:** Display the format for Z XXX,XXX is multiples of lens.
- **3D Position angle:** Shown in Pic. 5.4.1.The length of radius lines means the multiples of camera module lens,the longer the length,the greater multiples.



Pic. 4.4.1



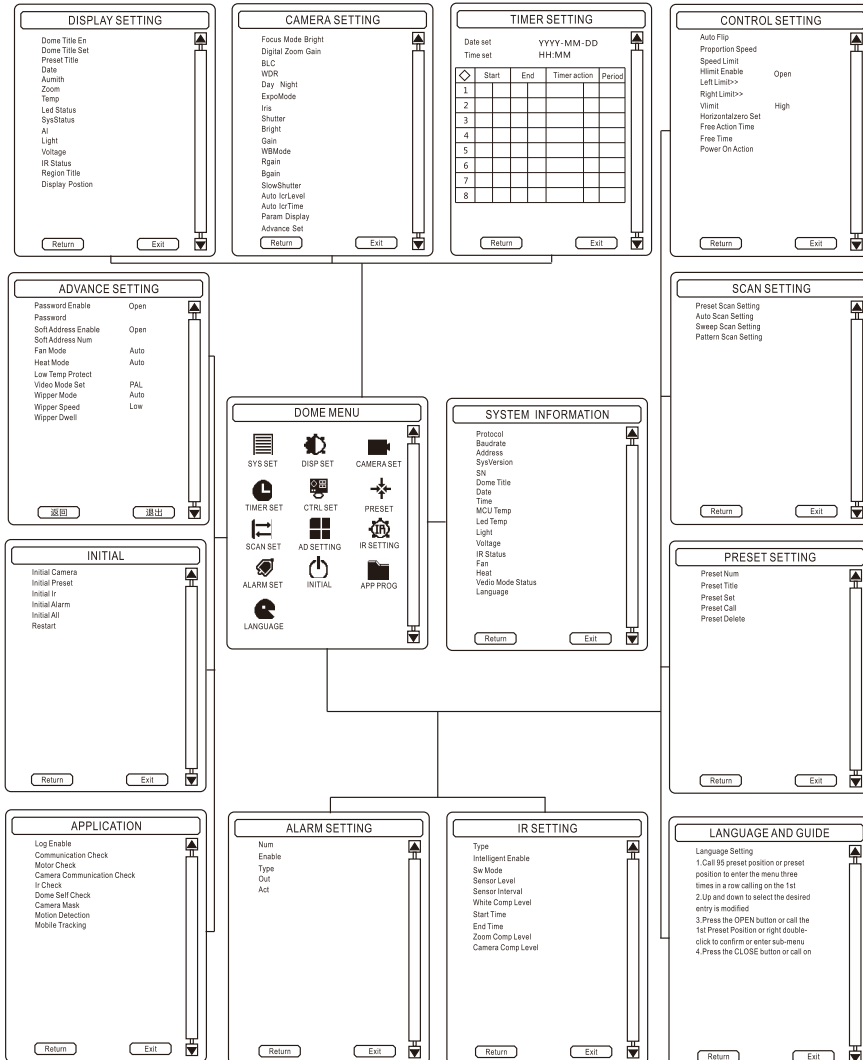
Pic. 4.4.2

- **Digital azimuth angle display:** The format display for SEXX | TXX,there have three numbers for how many degrees of south-easterly direction.Customer could set the North in menu or for default by system.Please see the North marked of connect cover on top of the speed dome.(Show in Pic. 5.4.2).Such as: Displayed SE128 | T28 on the screen,It means the lens of speed dome located in south-easterly 128 degree,vertical 28 degree.
- **Alarm:** When trigger alarm inputs signal,The screen will show the number of alarm.It will show a horn pattern on front of alarm number.When trigger many alarm inputs signal at same time,the alarm number will display blinks when current alarm signal
- **Date and Time:** Support different format setting.Such as "XXX Year-X Month-X day Week X-XX Hour-XX Minutes-XX Seconds".it is 24 hours format.
- **Preset Tilt:** Display the current preset tilt.

Chapter 5 Menu Guide

Menu of Speed dome as follows:

Remarks: If the menu have many pages need to display, customer can operate "Down" of arrow keys for turn to next pages. There maybe difference in the camera module function. Different camera module's function may be display on the menu in difference. Please prevail in kind.



5.1 Menu operation guide

Call preset point No.95 to open the menu via controller keyboard,DVR,client software.Please refer to 5.1.1.For example,If you want to open the camera menu.you could enter PTZ Housing mode according to at front of panel with "PTZ Housing"button,then press "Video"button,Finally press No.keys "0 9 5" or press No.keys "0 9 5" on the controller keyboard,then press "call" button.

Changed the cursor position via operate up,down,left,right.Please move the cursor to the menu you needed,press " Aperture + (OPEN) " button or call preset point No.1 for SURE.(Represented with the OPEN in this Manual),it was operate the menu.If the menu item have the sub-menu,please enter the corresponding sub-menu;Press "IRIS-(CLOSE)" Button or call preset point 2 for give up and return back(Represented with the CLOSE in the Manual),So it will give up to editing the menu items,When you are in selecting menu mode,it will return back to previous menu until exit the menu.

In this GUI menu,When you modify the menu,it will press <OPEN> button for enter the modify type.There are drop-down list,table,input method,Coordinate curve editing operation in modification of the menu items.

List Operation: At most modify objects,using list box operation.When you press <OPEN>,it will pop-up the list of items you could modify.it can move to the options you need when operation upper and lower,Choose the options you need,press <OPEN> button for confirmation modify.When an entry exists in multiple sub-item,the left and right operation will be around you need to modify the subproject.

Table Operation: in the form selected state,press <OPEN> button enter cells selected state,Upper and lower operation could selected the cell you modify.When the table can not fully display the data items,the table will smart scroll.Press OPEN for pop-up the modify items.In the modify interface,press <OPEN> for modify,press <CLOSE> for cancel.

In selected cell state,it can bulk editing mode via TELE,WIDE operation,When it was bulk editing mode,selected cells for anti-color display,upper and lower operation can be smart filled at same time.The default that as copy way for filling.Selected the modify of items you need,press <OPEN> for confirmation revise,press <CLOSE> for cancel revise.When you need filling with increment or decrement,when you in the second cell,left and right operate for second cell numerical,it is length between the difference numerical of frist cell and second cell.

Coordinate curve operate : Selected coordinate curve,press <OPEN> button for enter spline modification,it will show triangle guidepost above modification spot.Modify the spot numerical with left and right operate.when it was adjusted,press <OPEN> button confirmation modification.

Text Input : When it was text type in selected modification items,the system will pop-up text input keyboard.Upper,lower,left and right operate for selected the input data you need.Press <OPEN> button

confirmation items,press <CLOSE> button for cancel.

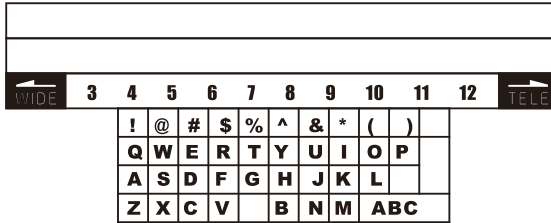
Keyboard special definition key as below :

"←" : Delete one byte

"↵" : Confirmation input and return

"_" : Input Space

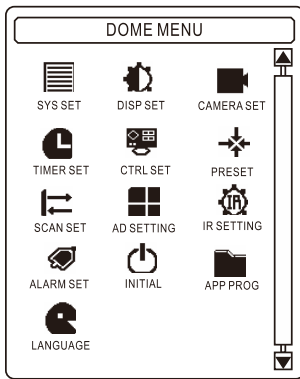
"ABC/abc/Pinyin" : Input method select button.



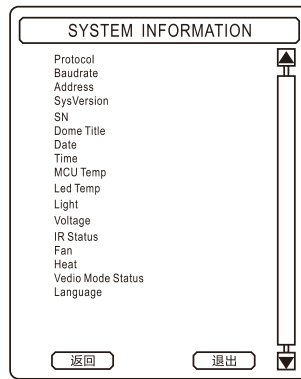
Pic 5.1.1 input method

When the input method is spell type,it will display the selected byte in third lines.The selected cursor move to the byte you need,press <OPEN> button for confirmation input byte.When the selected byte can not display fully in first line,you could press TELE or WIDE for page turning.

5.2 Main Menu and System Information



Pic 5.2.1 Main Menu



Pic5.2.2 System Information

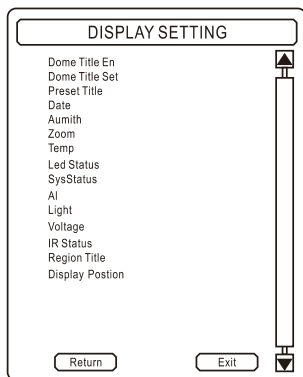
System information menu display the dome type camera mode information,Reference 5.2.2.The menu information can not be modified,The temperature is inside of PTZ Housing.

Moving the cursor to "return" and press <OPEN> button confirmation and go back to menu,move to "exit" and press <OPEN> button for exit the menu operation.

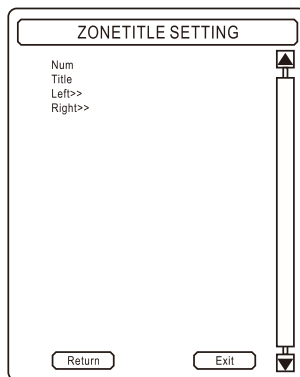
5.3 FUNCTION SETTING

5.3.1 DISPLAY SETTING

"DISPLAY INFORMATION SETTING" menu has two pages,As shown 5.3.1.Each menu item can be selected independently continuous display of the time,each items displays a fixed location in the video on the screen,the display time interval is 1sec,3sec,6sec,also can select normally open or close."Alarm Indication" also can operate with menu operation at same time,the difference is that in the non-menu state will trigger the alarm linkage.Opposite,it can not trigger the alarm linkage.



Pic.5.3.1 Display Setting



Pic.5.3.2 Zone title Setting

1. Zone Title Setting

➤ **"Region title" menu as shown 5.3.2.**

Zone number mean current operating region numeral,Option 1-8."Zone Title Setting" display title name of the current zone number."Left Limit Setting" and "Right Limit Setting" set the right limit and left limit in current region.

Regional can input numbers,English letters of the alphabet,special symbols and Chinese letters of the alphabet,and input method includes simple editing function.Input method as shown 5.1.1,it includes function keys as below:

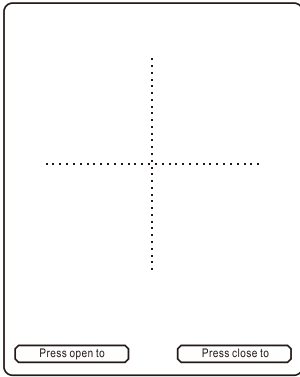
Diaphragm + : confirmation,save setting,and return to previous menu.

Diaphragm - : cancel current operation,and return to previous menu.

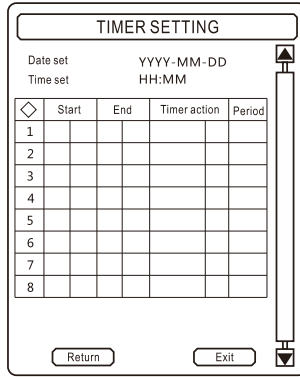
Up,Down,Left,Right : Select Chinese / Move cursor / input spell.

➤ **Regional limit setting**

If setting limit,please enter left limit setting,As shown 5.3.3,According to the prompt,move to the left limit area,call preset point 001 or press <OPEN> for confirmation,That complete left limit setting.Similarly you can set the right limit.



5.3.3 Regional Limit Pic.



5.3.4 Timer setting

5.3.2 Timer setting

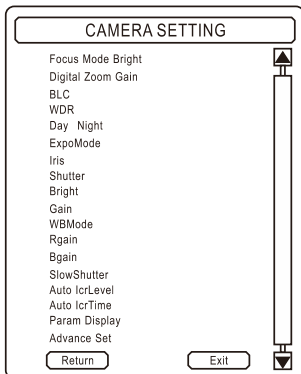
As shown 5.3.5, Move the keyboard joystick left and right or press the left and right button on front of DVR panel for change the menu items. Move the keyboard joystick up and down or press the up and down button on front of DVR panel for change the menu items. Optional Timer 1-8. Timing action include 1-8 presets, Pattern scan 1-4, Cruise scan 1-8, Horizontal scan, Linear sweep tow points,, etc. The customer can set start time and end time.

> Timing cycle setting

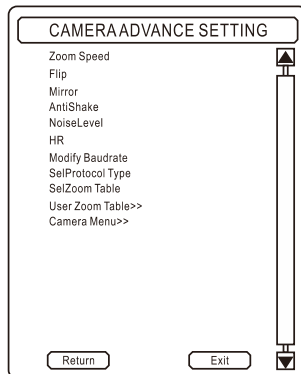
Move the cursor to cycle column, Press <OPEN> button enter cycle setting, Move the cursor by "up", "down" operation, Selected open or close by "left", "right" operation, Can set open or closed from "Monday" to "Sunday".

5.3.3 Camera setting

PTZ camera allow user to adjust the parameters via menu. The menu as show 5.3.5



5.3.5 Camera setting



5.3.6 Camera advanced setting

Parameters special meaning and Setting Method as follows:

- Focus Mode: Optional Automatic, Hand and Semi-automatic. In the automatic focus mode, speed dome will automatic adjust the focus of camera module, keeping clearly image. Control keyboard by hand or "focus+" and "focus-" button on front of DVR panel can not adjust the far or near of the focus. When not enabled auto-focus, it need manual focus. When select semi-automatic focus, speed dome will auto-focus in movement or zoom. The speed dome will fixed focus when it stop movement or zoom. The default for auto-focus.
 - Digital Zoom: Refers to choice the module camera multiples, camera module zoom include Optic zoom and Digital zoom. Different speed dome may have difference camera module zoom. $\text{Zoom} = \text{Digital zoom} \times \text{Digital zoom}$, If select Min. "Digital Zoom", it is said digital zoom close, The default Max. Optic zoom.
 - Backlight compensation : When open the backlight compensation, The lens of speed dome will brightness compensation in dark area, Adjusted the bright background, Avoided the brightness is too high, can not see the target clearly because of darkness. So as to obtain a clearly image.
 - WDR : Opening WDR function, When have both of darkness and brightness scene in image, it can balance between the two scenarios, in order to see more details in images.
 - B/W Mode: it can be setted in automatic, day and night total of three mode, in automatic mode, The camera module can automatic adjust clour display or B/W display when it sensing ambient changes, the default is Automatic. Also you could select call preset point 049 and 008 for change to day mode, and call preset pint 049 and 007 for change to B/W mode.
 - Exposure Mode: Setting the number of Aperture, shutter, brightness, gain. Optional setting Aperture from 0 to 17, When the aperture in 17, the Aperture is most largest, the image is most brightness. Option setting shutter 1、2、4、8、15、30、60、125、180、250、500、1000、2000、4000、10000. If it is X, represent the shutter is 1/X second. Optional setting gain from 0 to 15. The number shows the original signal's degree of amplification.
 - White Balance: In Different light have large different color, White balance can compensation in it. In order to restore the target real kinds of clour.
 - Slow shutter: when illumination is slow, the shutter will slow. By extending the exposure time to get a clearer and brighter image. The default is closed.
 - Automatic B/W Mode threshold: there have high, middle, low sensitivity can be selected.
 - Automatic B/W mode interval: Can set B/W switch shortest time via this function.
 - Camera module parameter display : Display current camera module parameter.
 - Camera module advanced setting: Camera module can set the rest of parameter via this function.
- Zoom Rate: There have high, middle, low total of three zoom rate you could choose.

Image Flip: You could set display the picture on the screen up,down,left and right reverse.

Image Mirror:The picture on the screen will reverse by right and left via this function

Shake Reduction Level:Shake Reduction have closed,high,medium and low four options,Closed for don't start shake reduction function; High for shake reduction very good,Image jitter relatively small.The default is Medium.

S/N Ratio Level:S/N Ratio have closed,high,medium,low four options,Closed for don't start S/N Ratio function;High for S/N Ration ability are very good,Less Noise.Medium for S/N Ration ability are good;Low for S/N Ratio ability is not good.Default for Medium.

High Resolution Mode:When you open this function,the image will high clearly and better contrast,Does not make the screen color distortion.

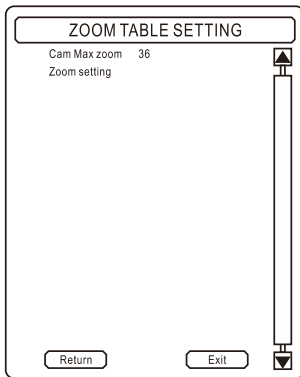
Camera module protocol:You could set the protocol of camera module by hand.

Camera module zoom table:You could set the zoom table of camera module by hand.

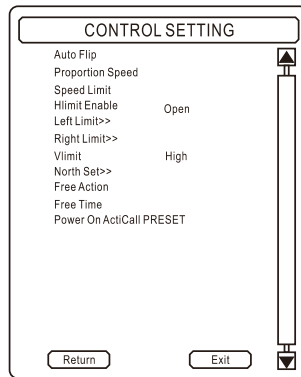
Custom zoom table setting:You could set the zoom of camera module,and the position of lens with each zoom,As shown 5.3.7.Please see the 5.3.3 for set the position of lens method.

Enter Camera module Menu: User can enter camera module menu through this option and setting the parameter of camera module.

Remarks:The camera setting items depending on the model of camera mdouel.Certain features may not be supported.



5.3.7 Zoom table setting



5.3.8 Control setting

5.3.4 Operation Setting

Enter "Control Setting" menu,Shown in Figure 5.3.8.

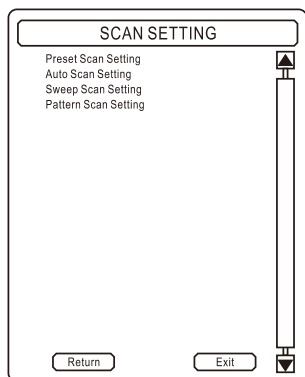
- Auto-Flip:When the lens runs vertically to 90°, if user keeps pressing the joystick, the lens will automatically flip 180° horizontally, thus consecutive monitoring of moving object can be realized. Setting method: move the cursor to "AUTO FLIP ", and select ON or OFF by moving the joystick to

left or right.

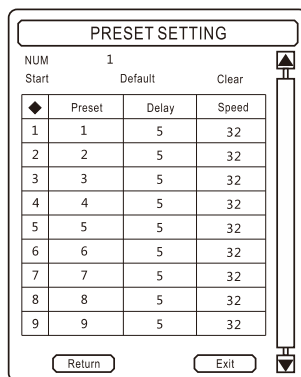
- Proportional Zooming: when open proportional zooming function, the PTZ Housing will change the zoom according to zoom magnification in keyboard control state. When the zoom magnification is increased, the speed of speed dome will automatic change slowly; When the zoom magnification decreases, the movement speed of speed dome will automatic change to fast. In order to get the good tracking effect. If closed this function and in the higher magnification, it is difficult for tracking slow target and stop target.
- Speed Limit: There have high, medium, low options when you control the speed of speed dome.
- Horizontal Limit: You could open or closed horizontal limit function through control the keyboard joystick left and right or press "Left" and "Right" button on front of DVR panel. If need to set the limit, Shown in figure 5.3.1 for setting the position of area.
- Vertical Limit: You could select high, medium, low options through controlling keyboard joystick right and left or press the "left" and "right" button on front of DVR panel.
- Idle Action: You could select presets 1-8, Pattern 1-2, Cruise 1-8, Scan and Closed through moving the keyboard joystick left and right or press "left" and "right" button on front of DVR Panel.
- Idle time setting: When the signal don't come in few times and there is not set the auto-action, the speed dome will do the action.
- Power up Action: You could select presets 1-8, Pattern 1-2, Cruise 1-8, Scan and Closed through moving the keyboard joystick left and right or press "left" and "right" button on front of DVR Panel.
- Event Priority: When the function is activated at same time, preferentially activated in accordance with the priority.

5.3.5 Scan Setting

Enter "Scan Setting" Menu, Shown in Pic. 5.3.9.



Pic.5.3.9 Scan setting



Pic.5.3.10 Preset setting

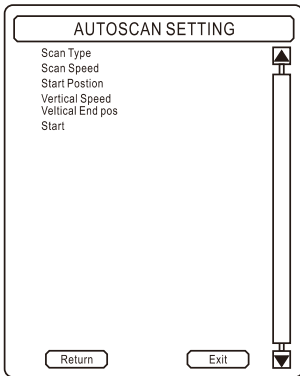
1. Presets Setting

Enter "Presets Setting" Menu, Shown in Fig 5.3.10.

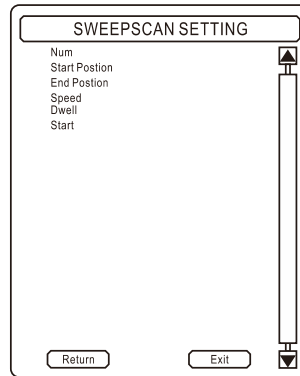
Preset means the unit can monitor the zone among the specified presets. You could select Cruise Numbers from 1 to 8, the number of presets, speed or time through moving control keyboard joystick left and right or press "left" and "right" button on front of DVR panel. Press <OPEN> button to enter modification mode and can be modified by controlling keyboard joystick left and right.

2. Automatic Scan Setting

Enter "Automatic Scan Setting" Menu, Shown in Pic.5.3.11



Pic.5.3.11 Autoscan setting



Pic.5.3.12 Sweep scan setting

- Scan Mode: You could select pattern or horizontal scan
- Speed of horizontal scan: You could select high, medium, low three options
- Setting Scan start position: Press <OPEN> button to enter Setting scan start, Shown in Pic. 5.3.1
- Vertical speed of Pattern: You could select high, medium, low three gear options
- Pattern up limit and Pattern down Limit: Press <OPEN> button for setting up and down limit. See the Pic.5.3.1.

2. SWEEP SCAN SETTING

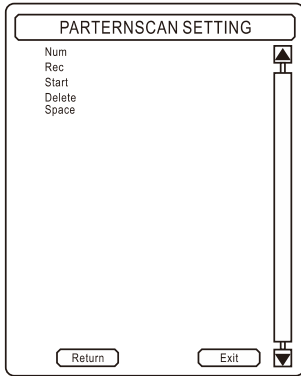
Horizontal sweep scan means that the unit scans back and forth between two specified horizontal presets, and the scanning speed and scanning direction can be set by users. Shown in Pic.5.3.12.

- Scan Number: Optional scan number is from 1 to 20.
- Sweep scan left limit and Linear scan right limit: press <OPEN> button for entering set left limit and right limit, As shown in Pic.5.3.1.
- Speed of Sweep scan: You could select high, medium, low three options.
- Sweep scan Park time: Linear scan park time can set left and right linear scan time.

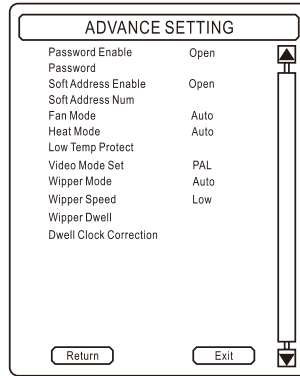
4. Partern Scan

Enter "Partern Scan" Menu, Shown in Pic.5.3.13.

Partern Scan means that user operation series action records inside the speed dome. Such as horizontal moving, Camera module zooming, etc.



Pic. 5.3.13 Partern scan setting



Pic.5.3.14 Advance Setting

- Partern scan numbers: Option pattern scan numbers is from 1 to 4.
- Partern scan setting: Press <OPEN> Button to enter setting pattern scan, press <OPEN> button for recording the path of pattern scan. After it, press <OPEN> for save it.
- Delete: Press <OPEN> button for delete the pattern scan.
- Remaining Space: View pattern scan the remaining space.

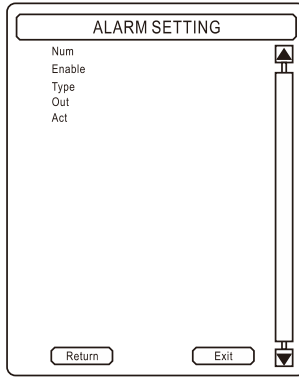
5.3.6 ADVANCE SETTING

Enter "ADVANCE SETTING" Menu, Shown in Pic.5.3.14

- Menu password protection: "Menu password protection" can select open or closed. Press <OPEN> button for entering edit password. Shown in Pic.5.3.1
- Soft Address: "Soft Address" can select open or closed. Press <OPEN> button for setting it. Shown in Pic. 5.3.1. (Remarks: It is just numbers of soft address).
- Fan Mode: Fan mode can select opening, closed and automatic three options.
- Heat mode: Heat mode can select opening, closed and automatic three options.
- Low-temperature protection: You could select opening or closed for low-temperature protection. When you open the option, the speed dome will pre-heating and then will start.
- Video System: Video System can select PAL or NTSC system.

5.3.7 ALARM SETTING

Enter "ALARM SETTING" Menu,Shown in Pic.5.3.15

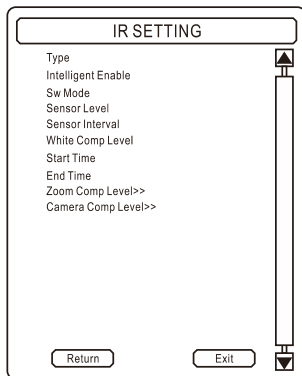


PIC.5.3.15 ALARM SETTING

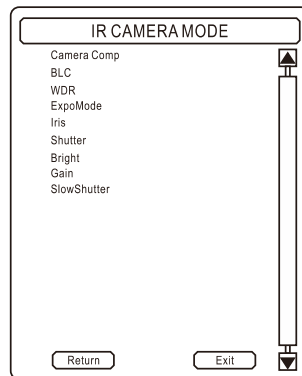
- Alarm Channel: Alarm channel can select the Number from 1 to 4.
- Alarm Switcher: Selecting open or closed in alarm switcher.
- Alarm output channel: Selected No.1 or No.2 channel in alarm output channel.
- Alarm action: Each channel alarm can set one alarm output alarm action. When the alarm signal input, it will automatic do this action. Alarm output action can set preset from 1 to 8, Pattern scan from 1 to 2, Cruise scan from 1 to 8, horizontal scan, pattern scan,, etc.

5.3.8 IR LED SETTING

Enter "IR LED SETTING" Menu,Shown in Pic. 5.3.16



Pic. 5.3.16 IR setting



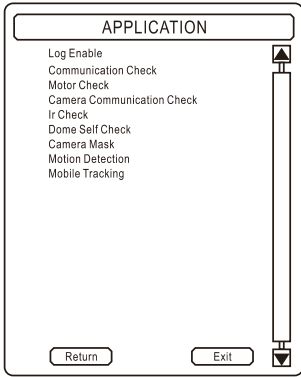
Pic.5.3.17 IR camera mode

- IR Compensation type: it will display the IR LED is Dot matrix LED or Laser.
- Dimming Type: Intelligent dimming can select automatic or hand.

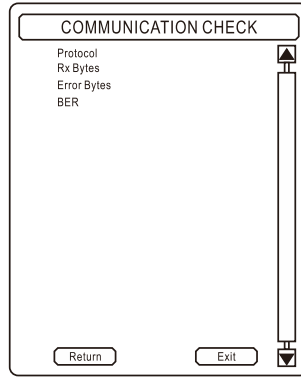
- IR switch mode: IR switch mode can select IR open, closed, timing or auto.
- Photosensitive threshold: Photosensitive threshold can select high, medium, low grades.
- White Light Protection Mode: It can select high, medium and low three options, it can improve the white brighter performance, in order to automatic open the IR LED.
- Time of when IR open or closed: Controlling the time of IR LED when it open or closed, and only set the IR LED is timing mode, The time when IR LED is open or closed, please see setting time and date chapter as your reference.
- **Setting IR Magnification Compensation:**
Enter "IR camera mode" Menu, Shown in Pic.5.3.17.
- IR camera mode: IR Camera Compensation Mode can select for open or closed.
- Backlight Compensation: The backlight compensation is that when the brightness of the image center is relative low, you can open backlight compensation function to improve the brightness of the image.
- Wide Dynamic Range: Wide dynamic range function can improve the image quality and get clear image in the stronger contrast light condition.
- Exposure: Exposure can setting IRIS, Shutter, Brightness, Gain. The more IRIS is big, the image is more clearly. You could setting shutter with 1、2、4、8、15、30、60、125、180、250、500、1000、2000、4000、10000. If you set it for X, it means for 1/X second. Gain can show degree of the original signal.
- White Balance: You can change white balance from menu, so that the most effective and real color image can be got in full ambient light.
- Slow Shutter: When the illumination is slow, shutter will change slowly. You could get the clear and brightness image through to extend the exposure time. The default is closed.

5.8.10 Application

Enter "Application" Menu.Shown in Pic.5.3.18.

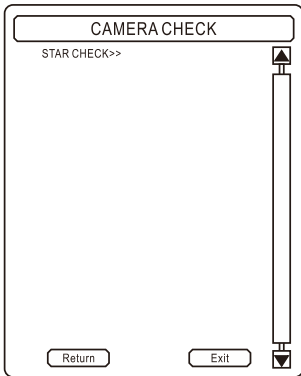


Pic.5.3.18 Application

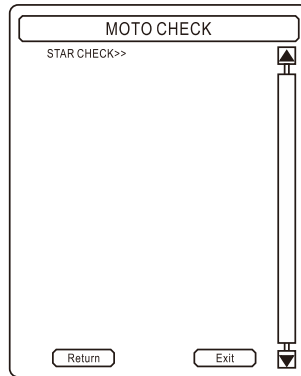


Pic.5.3.19 Communication check

- Communication Log: You could select open or closed. When the speed dome has a problem, the customer could send the communication Log to our factory engineer for analysis.
- Communication Test: Press <OPEN> Button for enter communication test, it needs software to support it.
- Motor Check: Press <OPEN> button for enter the Motor Check.
- Camera Check: Press <OPEN> button for Camera Check.

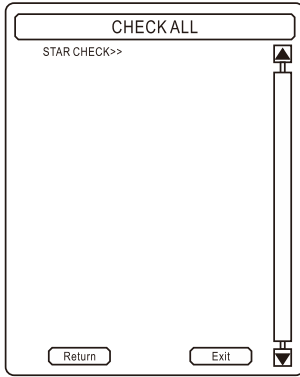


Pic.5.3.20 Camera Check

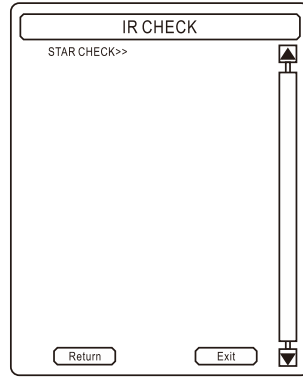


Pic.5.3.21 Motor Check

- IR Check: Press <OPEN> button for enter IR Check.
- Check All: Press <OPEN> button for enter Check All.



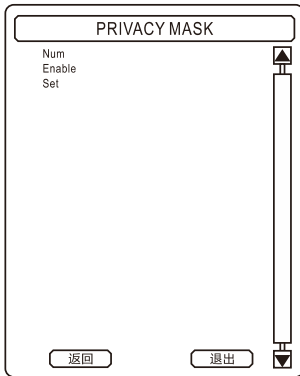
Pic.5.3.22 Check All



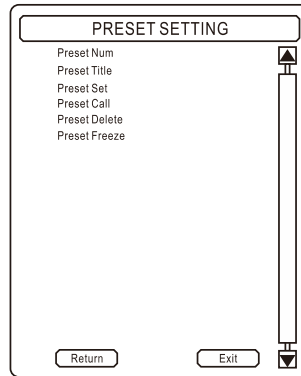
Pic.5.3.23 IR self

5.3.11 Privacy Mask

Enter "Privacy Mask" Menu, Shown in Pic.5.3.24. (Remarks: some module camera don't support this function)



Pic. 5.3.24 Privacy Mask



Pic. 5.3.25 Preset setting

- Mask Number: Mask number can select from 1 to 24.
- Enable Mask: You could open or closed the function by joystick left and right.
- Setting Privacy Area: Move the cursor to "Set Privacy Area", and press <OPEN> to set mask zone, and then operate the joystick to control the unit, move the zone which need to be masked to the center of the screen, and then press <OPEN> to enter the size setting mode of mask zone, and then adjust the size of mask area by moving the joystick to up, down, left or right, then press <OPEN> after the setting is complete.

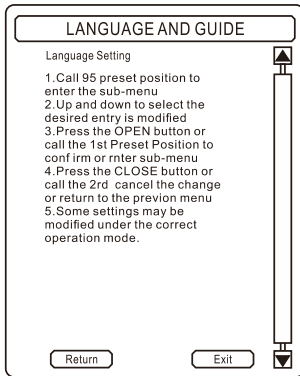
5.3.12 Preset

Enter "Preset" Menu, Shown in Pic. 5.3.25.

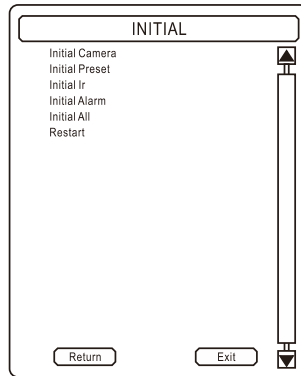
- Preset Number: Preset Number can select the number from 1 to 48.
- Preset Tile: Press <OPEN> button for editing the tile of preset. See 5.3.1 Area tilt setting as your reference.
- Setting Preset: Press <OPEN> button for setting preset. See Pic. 5.3.1 Area tilt setting as your reference.
- Call Preset: After press <OPEN> Button, controlling the joystick left and right for selecting preset number, then press <OPEN> button for confirmation.
- Delete Preset: After press <OPEN> button, controlling the joystick left and right for selecting preset number, then press <OPEN> button for confirmation.

5.3.13 Language guide

Enter "Language guide" Menu, Shown in Pic. 5.3.26.



Pic. 5.3.26 Language guide



Pic. 5.4.1 Initial

- Setting Language: Setting Language can select the language menu you needed.

5.4 Initial

Enter "Initialization" Menu, Shown in Pic. 5.4.1.

You could set the camera, preset, IR Setting, Alarm for initialization. Also can set all specification of speed dome for initialization.

Lightning and Surge Protection

This product adopts Ceramic Gas Discharge Tube and TVS-class lightning protection technology to effectively prevent such pulse signal damage caused by instantaneous lightning under 4000W or electric surge. But, for outdoor installing, on the premise of ensuring electric safety, necessary protective measures should be taken according to practical situation:

- Signal transmission lines must be kept at least 50 meters from high voltage equipment and high voltage.
- For outside, please select the place under eaves to layout the routing
- For open field, you must use underground sealed steel tube, and the steel tube must be adopted one point grounding mode, and absolutely forbid adopted overhead wiring.
- In intense thunderstorms or high induced voltage areas (such as high voltage substations), must use extra high-power lightning protection equipment and install lightning rod and others measures.
- The lightning protection and grounded design for outdoor installation and wiring must be combined with requirements of building's lightning prevention, and comply with the relevant national standards and industry standards.
- The system must be equipotential grounding. Grounded device must meet double requirements of system anti-jamming and electrical safety, and can't be short-circuited or hybrid-circuited with neutral leg of forceful electric power. When system grounded alone, the impedance of grounded conductor can't more than 4 ohm, and sectional area of grounded wire can't more than 25mm² wire shorted.

Appendix I RS485 Bus-mastering knowledge

➤ **RS485 Bus-mastering basic characteristics**

According to RS485 bus-mastering standard,RS485 bus for half-duplex communication bus,its maximum load capacity is 32 payload(including main controller and controlled set)

➤ **RS485 bus-mastering transmission distance.**

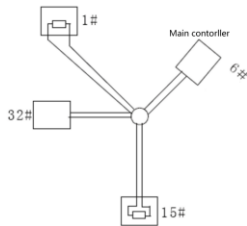
When you use Twisted pair with 0.56mm(24AWG) for communication cable,The baud rate is different.The Max. Transmission distance theoretical value as shown below:

Baud Rate	Max. Distance
2400BPS	1800m
4800BPS	1200m
9600BPS	800m

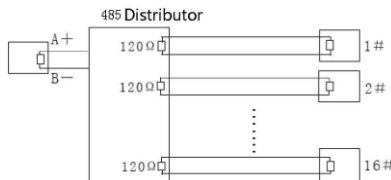
When you use our products with thin cable or in strong electromagnetic interference environment.The Max.transmission distance will be shorten.Opposite,The Max.transmission distance will be longest.

➤ **Problem in practical application**

Customer often use star type connection method in installation,So the termination resistors must connect to the equipments which these two devices spacing farthest in distance.(as follow,1# and 15# devices),But this connection method is not comply with RS485 standard provisions,Various equipments have more longer distance,Easy to form signal reflections and decline in anti-jamming capability,lead to the control signal is weak.The speed dome will not be controlled or can not stop moving in this time.



For this case,we suggest you add one RS485 distributor.It can solved all problem.Avoid production problems and improve communications reliability.



Appendix II Simple Trouble Shooting Table

Problems	Possible causes	solutions
No action, no picture when power is switched	Power supply adaptor damaged or Power supply not sufficient	Replace
	Wrong contact of power cables	Correct
	Engineering line fault	Exclude
Abnormal self-check, image shown with motor	Mechanical failure	Repair
	Camera inclined	Reinstall
	Power supply not sufficient	Replace, better to place the adaptor nearby the unit
Normal self-check but no image	Wrong contact of video lines	Correct
	Bad contact of video cables	Exclude
	Camera is damaged	Replace
Normal self-check and image but out of control	Wrong contact of control signal	Correct
	Address configuration wrong	Choose new address and power up
	Protocol or Baud rate configuration wrong	Adjust Protocol, baud rate to match controller and power up
Unstable image	Bad contact of video cable	Exclude
	Power supply not sufficient or Power cables too long	Replace
IR intelligent high-speed dome out of control	Abnormal self-check	Power On again
	Bad contact of control lines	Remove
	The host operations have a problem	Power up the host again
	the load is too much ,the distance is too far	Increase yards distributor
Focus out of control	Focus is in automatic mode	Set focus mode to manual

Appendix III The relationship between Wire and Distance

When the Wire diameter size is same and the 24VAC power loss below 10%,Recommended Max.transmission distance.(For AC powered equipment,Max. Power loss is 10% is allowed.For example,One deceive rated power is 80W,Installed 35 feet from the transformer <10M> distance,it will need the Min.wire size is 0.80mm).

Power W	Wire Dia. mm	0.80	1.00	1.25	2.00
	Distance(m)				
10		283(86)	451(137)	716(218)	1811(551)
20		141(42)	225(68)	358(109)	905(275)
30		94(28)	150(45)	238(72)	603(183)
40		70(21)	112(34)	179(54)	452(137)
50		56(17)	90(27)	143(43)	362(110)
60		47(14)	75(22)	119(36)	301(91)
70		40(12)	64(19)	102(31)	258(78)
80		35(10)	56(17)	89(27)	226(68)
90		31(9)	50(15)	79(24)	201(61)
100		28(8)	45(13)	71(21)	181(55)
110		25(7)	41(12)	65(19)	164(49)
120		23(7)	37(11)	59(17)	150(45)
130		21(6)	34(10)	55(16)	139(42)
140		20(6)	32(9)	51(15)	129(39)
150		18(5)	30(9)	47(14)	120(36)
160		17(5)	28(8)	44(13)	113(34)
170		16(4)	26(7)	42(12)	106(32)
180		15(4)	25(7)	39(11)	100(30)
190		14(4)	23(7)	37(11)	95(28)
200		14(4)	22(6)	35(10)	90(27)

Appendix IV AWG sheet at Home and Abroad

Metric bare wire dia.	USA Wire Gauge	British Wire AWG SWG	cross-sectional area(mm ²)
0.050	43	47	0.00196
0.060	42	46	0.00283
0.070	41	45	0.00385
0.080	40	44	0.00503
0.090	39	43	0.00636
0.100	38	42	0.00785
0.110	37	41	0.00950
0.130	36	39	0.01327
0.140	35		0.01539
0.160	34	37	0.02011
0.180	33		0.02545
0.200	32	35	0.03142
0.230	31		0.04115
0.250	30	33	0.04909
0.290	29	31	0.06605
0.330	28	30	0.08553
0.350	27	29	0.09621
0.400	26	28	0.1257
0.450	25		0.1602
0.560	24	24	0.2463
0.600	23	23	0.2827
0.710	22	22	0.3958
0.750	21		0.4417
0.800	20	21	0.5027
0.900	19	20	0.6362
1.000	18	19	0.7854
1.250	16	18	1.2266
1.500	15		1.7663
2.000	12	14	3.1420
2.500			4.9080
3.000			7.0683

Appendix V Address Coding Table

SW2 Address Setting

Add	1	2	3	4	5	6	7	8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF

Add	1	2	3	4	5	6	7	8
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
61	ON	OFF	ON	ON	ON	ON	OFF	OFF
62	OFF	ON	ON	ON	ON	ON	OFF	OFF
63	ON	ON	ON	ON	ON	ON	OFF	OFF
64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF

SW2 Address Setting (Continued)

Add	1	2	3	4	5	6	7	8
65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
71	ON	ON	ON	OFF	OFF	OFF	ON	OFF
72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
75	ON	ON	OFF	ON	OFF	OFF	ON	OFF
76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
77	ON	OFF	ON	ON	OFF	OFF	ON	OFF
78	OFF	ON	ON	ON	OFF	OFF	ON	OFF
79	ON	ON	ON	ON	OFF	OFF	ON	OFF
80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
83	ON	ON	OFF	OFF	ON	OFF	ON	OFF
84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
85	ON	OFF	ON	OFF	ON	OFF	ON	OFF
86	OFF	ON	ON	OFF	ON	OFF	ON	OFF
87	ON	ON	ON	OFF	ON	OFF	ON	OFF
88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
89	ON	OFF	OFF	ON	ON	OFF	ON	OFF
90	OFF	ON	OFF	ON	ON	OFF	ON	OFF
91	ON	ON	OFF	ON	ON	OFF	ON	OFF
92	OFF	OFF	ON	ON	ON	OFF	ON	OFF
93	ON	OFF	ON	ON	ON	OFF	ON	OFF
94	OFF	ON	ON	ON	ON	OFF	ON	OFF
95	ON	ON	ON	ON	ON	OFF	ON	OFF
96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF

Add	1	2	3	4	5	6	7	8
97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
99	ON	ON	OFF	OFF	OFF	ON	ON	OFF
100	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
101	ON	OFF	ON	OFF	OFF	ON	ON	OFF
102	OFF	ON	ON	OFF	OFF	ON	ON	OFF
103	ON	ON	ON	OFF	OFF	ON	ON	OFF
104	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
105	ON	OFF	OFF	ON	OFF	ON	ON	OFF
106	OFF	ON	OFF	ON	OFF	ON	ON	OFF
107	ON	ON	OFF	ON	OFF	ON	ON	OFF
108	OFF	OFF	ON	ON	OFF	ON	ON	OFF
109	ON	OFF	ON	ON	OFF	ON	ON	OFF
110	OFF	ON	ON	ON	OFF	ON	ON	OFF
111	ON	ON	ON	ON	OFF	ON	ON	OFF
112	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
114	OFF	ON	OFF	OFF	ON	ON	ON	OFF
115	ON	ON	OFF	OFF	ON	ON	ON	OFF
116	OFF	OFF	ON	OFF	ON	ON	ON	OFF
117	ON	OFF	ON	OFF	ON	ON	ON	OFF
118	OFF	ON	ON	OFF	ON	ON	ON	OFF
119	ON	ON	ON	OFF	ON	ON	ON	OFF
120	OFF	OFF	OFF	ON	ON	ON	ON	OFF
121	ON	OFF	OFF	ON	ON	ON	ON	OFF
122	OFF	ON	OFF	ON	ON	ON	ON	OFF
123	ON	ON	OFF	ON	ON	ON	ON	OFF
124	OFF	OFF	ON	ON	ON	ON	ON	OFF
125	ON	OFF	ON	ON	ON	ON	ON	OFF
126	OFF	ON	ON	ON	ON	ON	ON	OFF
127	ON	ON	ON	ON	ON	ON	ON	OFF
128	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

SW2 Address Setting (Continued)

Add	1	2	3	4	5	6	7	8
129	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
130	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
131	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
132	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON
134	OFF	ON	ON	OFF	OFF	OFF	OFF	ON
135	ON	ON	ON	OFF	OFF	OFF	OFF	ON
136	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
137	ON	OFF	OFF	ON	OFF	OFF	OFF	ON
138	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
139	ON	ON	OFF	ON	OFF	OFF	OFF	ON
140	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
141	ON	OFF	ON	ON	OFF	OFF	OFF	ON
142	OFF	ON	ON	ON	OFF	OFF	OFF	ON
143	ON	ON	ON	ON	OFF	OFF	OFF	ON
144	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON
146	OFF	ON	OFF	OFF	ON	OFF	OFF	ON
147	ON	ON	OFF	OFF	ON	OFF	OFF	ON
148	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
149	ON	OFF	ON	OFF	ON	OFF	OFF	ON
150	OFF	ON	ON	OFF	ON	OFF	OFF	ON
151	ON	ON	ON	OFF	ON	OFF	OFF	ON
152	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
153	ON	OFF	OFF	ON	ON	OFF	OFF	ON
154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
155	ON	ON	OFF	ON	ON	OFF	OFF	ON
156	OFF	OFF	ON	ON	ON	OFF	OFF	ON
157	ON	OFF	ON	ON	ON	OFF	OFF	ON
158	OFF	ON	ON	ON	ON	OFF	OFF	ON
159	ON	ON	ON	ON	ON	OFF	OFF	ON
160	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON

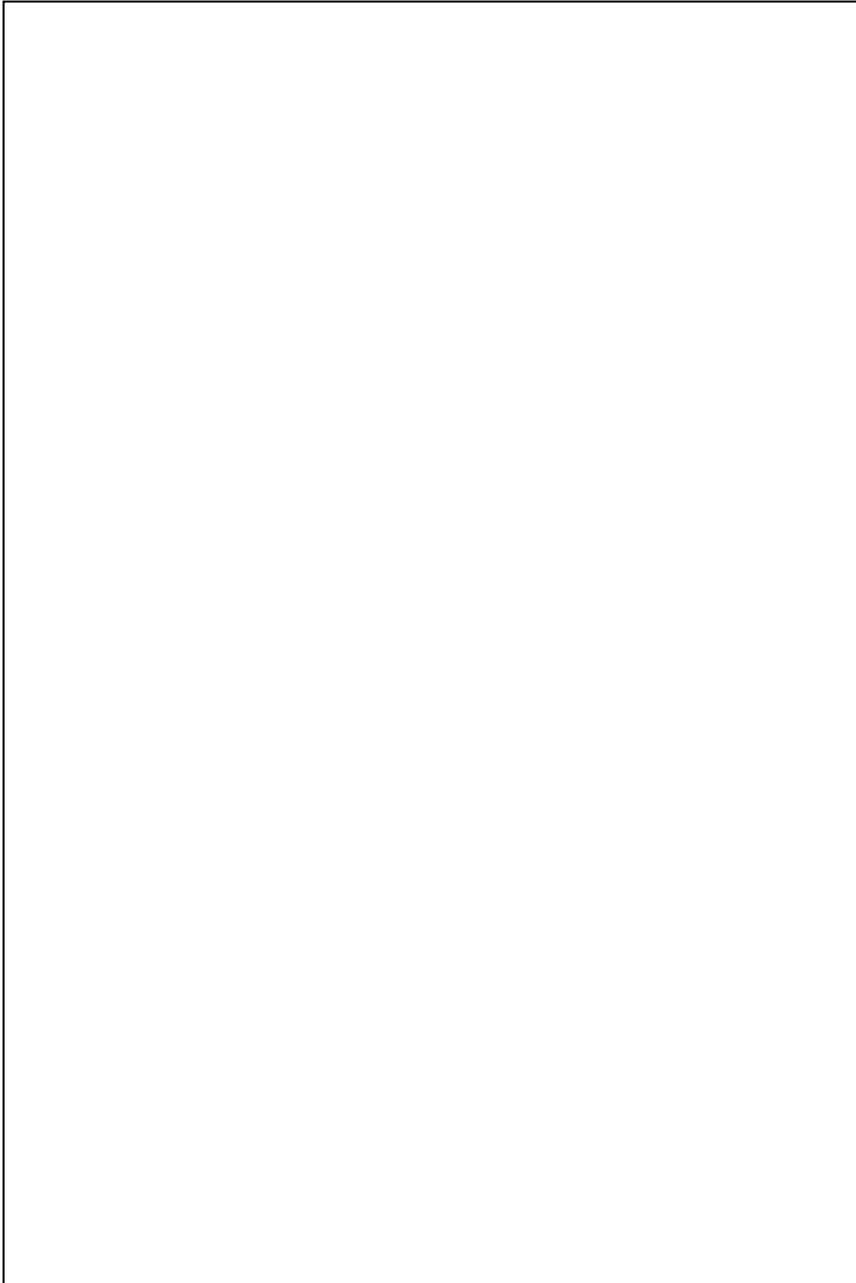
Add	1	2	3	4	5	6	7	8
161	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
162	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
163	ON	ON	OFF	OFF	OFF	ON	OFF	ON
164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
165	ON	OFF	ON	OFF	OFF	ON	OFF	ON
166	OFF	ON	ON	OFF	OFF	ON	OFF	ON
167	ON	ON	ON	OFF	OFF	ON	OFF	ON
168	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
169	ON	OFF	OFF	ON	OFF	ON	OFF	ON
170	OFF	ON	OFF	ON	OFF	ON	OFF	ON
171	ON	ON	OFF	ON	OFF	ON	OFF	ON
172	OFF	OFF	ON	ON	OFF	ON	OFF	ON
173	ON	OFF	ON	ON	OFF	ON	OFF	ON
174	OFF	ON	ON	ON	OFF	ON	OFF	ON
175	ON	ON	ON	ON	OFF	ON	OFF	ON
176	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
177	ON	OFF	OFF	OFF	ON	ON	OFF	ON
178	OFF	ON	OFF	OFF	ON	ON	OFF	ON
179	ON	ON	OFF	OFF	ON	ON	OFF	ON
180	OFF	OFF	ON	OFF	ON	ON	OFF	ON
181	ON	OFF	ON	OFF	ON	ON	OFF	ON
182	OFF	ON	ON	OFF	ON	ON	OFF	ON
183	ON	ON	ON	OFF	ON	ON	OFF	ON
184	OFF	OFF	OFF	ON	ON	ON	OFF	ON
185	ON	OFF	OFF	ON	ON	ON	OFF	ON
186	OFF	ON	OFF	ON	ON	ON	OFF	ON
187	ON	ON	OFF	ON	ON	ON	OFF	ON
188	OFF	OFF	ON	ON	ON	ON	OFF	ON
189	ON	OFF	ON	ON	ON	ON	OFF	ON
190	OFF	ON	ON	ON	ON	ON	OFF	ON
191	ON	ON	ON	ON	ON	ON	OFF	ON
192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON

SW2 Address Setting (Continued)

Add	1	2	3	4	5	6	7	8
193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
195	ON	ON	OFF	OFF	OFF	OFF	ON	ON
196	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
197	ON	OFF	ON	OFF	OFF	OFF	ON	ON
198	OFF	ON	ON	OFF	OFF	OFF	ON	ON
199	ON	ON	ON	OFF	OFF	OFF	ON	ON
200	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
201	ON	OFF	OFF	ON	OFF	OFF	ON	ON
202	OFF	ON	OFF	ON	OFF	OFF	ON	ON
203	ON	ON	OFF	ON	OFF	OFF	ON	ON
204	OFF	OFF	ON	ON	OFF	OFF	ON	ON
205	ON	OFF	ON	ON	OFF	OFF	ON	ON
206	OFF	ON	ON	ON	OFF	OFF	ON	ON
207	ON	ON	ON	ON	OFF	OFF	ON	ON
208	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
209	ON	OFF	OFF	OFF	ON	OFF	ON	ON
210	OFF	ON	OFF	OFF	ON	OFF	ON	ON
211	ON	ON	OFF	OFF	ON	OFF	ON	ON
212	OFF	OFF	ON	OFF	ON	OFF	ON	ON
213	ON	OFF	ON	OFF	ON	OFF	ON	ON
214	OFF	ON	ON	OFF	ON	OFF	ON	ON
215	ON	ON	ON	OFF	ON	OFF	ON	ON
216	OFF	OFF	OFF	ON	ON	OFF	ON	ON
217	ON	OFF	OFF	ON	ON	OFF	ON	ON
218	OFF	ON	OFF	ON	ON	OFF	ON	ON
219	ON	ON	OFF	ON	ON	OFF	ON	ON
220	OFF	OFF	ON	ON	ON	OFF	ON	ON
221	ON	OFF	ON	ON	ON	OFF	ON	ON
222	OFF	ON	ON	ON	ON	OFF	ON	ON
223	ON	ON	ON	ON	ON	OFF	ON	ON
224	OFF	OFF	OFF	OFF	OFF	ON	ON	ON

Add	1	2	3	4	5	6	7	8
225	ON	OFF	OFF	OFF	OFF	ON	ON	ON
226	OFF	ON	OFF	OFF	OFF	ON	ON	ON
227	ON	ON	OFF	OFF	OFF	ON	ON	ON
228	OFF	OFF	ON	OFF	OFF	ON	ON	ON
229	ON	OFF	ON	OFF	OFF	ON	ON	ON
230	OFF	ON	ON	OFF	OFF	ON	ON	ON
231	ON	ON	ON	OFF	OFF	ON	ON	ON
232	OFF	OFF	OFF	ON	OFF	ON	ON	ON
233	ON	OFF	OFF	ON	OFF	ON	ON	ON
234	OFF	ON	OFF	ON	OFF	ON	ON	ON
235	ON	ON	OFF	ON	OFF	ON	ON	ON
236	OFF	OFF	ON	ON	OFF	ON	ON	ON
237	ON	OFF	ON	ON	OFF	ON	ON	ON
238	OFF	ON	ON	ON	OFF	ON	ON	ON
239	ON	ON	ON	ON	OFF	ON	ON	ON
240	OFF	OFF	OFF	OFF	ON	ON	ON	ON
241	ON	OFF	OFF	OFF	ON	ON	ON	ON
242	OFF	ON	OFF	OFF	ON	ON	ON	ON
243	ON	ON	OFF	OFF	ON	ON	ON	ON
244	OFF	OFF	ON	OFF	ON	ON	ON	ON
245	ON	OFF	ON	OFF	ON	ON	ON	ON
246	OFF	ON	ON	OFF	ON	ON	ON	ON
247	ON	ON	ON	OFF	ON	ON	ON	ON
248	OFF	OFF	OFF	ON	ON	ON	ON	ON
249	ON	OFF	OFF	ON	ON	ON	ON	ON
250	OFF	ON	OFF	ON	ON	ON	ON	ON
251	ON	ON	OFF	ON	ON	ON	ON	ON
252	OFF	OFF	ON	ON	ON	ON	ON	ON
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

The memo



PROFESSIONAL CREATE QUALITY

