4-inch High Speed Dome

User Manual

V1.0.0

Hikvision Digital Technology Co., Ltd.

http://www.hikvision.com

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

This manual is applicable to 4-inch High Speed Dome.

This manual may contain several technically inaccurate points 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.

Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

CE This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

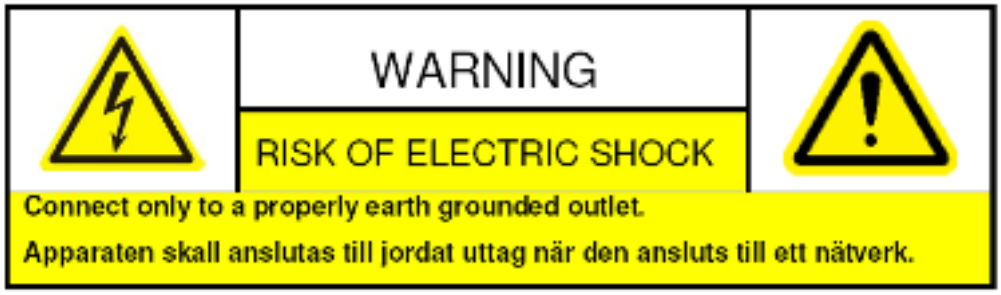
2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Safety Warnings and Cautions

Please pay attention to the following warnings and cautions:

Hazardous Voltage may be present: Special measures and precautions must be taken when using this device. Some potentials (voltages) on the device may present a hazard to the user. This device should only be used by employees from our company with knowledge and training in working with these types of devices that contain live circuits.

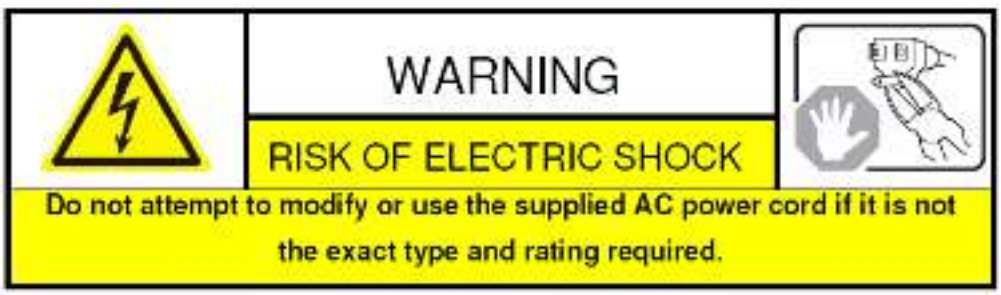
Power Supply Hazardous Voltage: AC mains voltages are present within the power supply assembly. This device must be connected to a UL approved, completely enclosed power supply, of the proper rated voltage and current. **No user serviceable parts inside the power supply.**



System Grounding (Earthing): To avoid shock, ensure that all AC wiring is not exposed and that the earth grounding is maintained. Ensure that any equipment to which this device will be attached is also connected to properly wired grounded receptacles and are approved medical devices.

Power Connect and Disconnect: The AC power supply cord is the main disconnect device to mains (AC power).The socket outlet shall be installed near the equipment and shall be readily accessible.

Installation and Maintenance: Do not connect/disconnect any cables to or perform installation/maintenance on this device during an electrical storm.



Power Cord Requirements: The connector that plugs into the wall outlet must be a grounding-type male plug designed for use in your region. It must have certification marks showing certification by an agency in your region. The connector that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, female connector. See the following website for more information http://kropla.com/electric2.htm.

Lithium Battery: This device contains a Lithium Battery. There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the vendor's instructions and in accordance with local environmental regulations.

Perchlorate Material: Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate. This notice is required by California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials. This device includes a battery which contains perchlorate material.

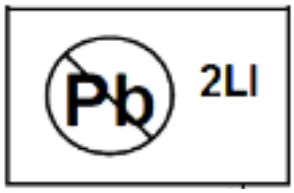
Taiwan battery recycling:

Please recycle batteries.

Thermal and Mechanical Injury: Some components such as heat sinks, power regulators, and processors may be hot; care should be taken to avoid contact with these components.

Electro Magnetic Interference: This equipment has not been tested for compliance with emissions limits of FCC and similar international regulations. This device is not, and may not be, offered for sale or lease, or sold, or leased until authorization from the United States FCC or its equivalent in other countries has been obtained. Use of this equipment in a residential location is prohibited. This equipment generates, uses and can radiate radio frequency energy which may result in harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is required to take measures to eliminate the interference or discontinue the use of this equipment.

Lead Content:



Please recycle this device in a responsible manner. Refer to local environmental regulations for proper recycling; do not dispose of device in unsorted municipal waste.

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 damage.

 **Warnings**

- In the use of the product, you must be strict compliance with the electrical safety regulations of the nation and region.
- Please use the power adapter, which is provided by normal company. The standard of the power adapter is AC24V/2A.
- Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.
- Please make sure that the plug is firmly connected on the power socket.
- When the product is installed on wall or ceiling, the device shall be firmly fixed.
- 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.
- 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**

- 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).
- 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.
- The dome cover for indoor use shall be kept from rain and moisture.
- Exposing the equipment to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).
- 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.

- 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.
- Please use a soft and dry cloth when clean inside and outside surfaces of the dome cover, do not use alkaline detergents.

Table of Contents

Chapter 1 Overview

1.1 Description

Integrated with the built-in pan/tilt unit, the high speed dome features highly sensitive response and reliable performance. The speed dome can be adopted in various surveillance fields with its full-integral functions and features, such as corridor, large venue, meeting room, station, community, etc.

Figure 1-1 Appearance

1.2 Functions

OSD (On Screen Display)

The on-screen display is an image superimposed on a screen picture, used for displaying information and menu.

Self-adaptive Protocol

The speed dome is compatible with PELCO-D, PELCO-P, PRIVATE-Code, VICON and KALATEL-312 protocol, etc., and is capable of being self-adaptive to these protocols without selecting protocol by DIP switch settings.

Keyboard 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.

Preset Freeze Frame

This feature freezes the scene on the monitor when going to a preset. This allows for smooth transition from one preset scene to another and also guarantees that masked area will not be revealed when going to a preset.

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 90 degrees in horizontal direction to maintain continuity of tracking.

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 PRIVATE-Code 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

Proportional pan 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.

DAY/NIGHT Auto-switch

The speed dome delivers color images during the day; as light diminishes at night, it switches to night mode and delivers black and white images with high quality. You can also switch it to NIGHT mode manually to increase the sensitivity in low light conditions.

Slow Shutter

Slow shutter is the function of extending the exposure time to accumulate more light when the light condition is low. Thus, the image can be brighter.

Backlight Compensation (BLC)

If the speed dome focuses on an object against strong backlight, the object will be too dark to be seen clearly. The BLC function can compensate light to the object in the front to make it clear, but

this causes the over-exposure of the background where the light is strong.

Wide Dynamic Range (WDR)

The wide dynamic range function helps the speed dome provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.

White Balance

White balance is the white rendition function of the speed dome to adjust the color temperature according to the environment automatically. It can remove the unrealistic color casts in the image.

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.

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 preset is being memorized.

Power-off Memory

This feature allows the dome to resume its previous position or status after power is restored. By default setting, the dome supports the power-off memory capability with the dwell time of 3 minutes.

Alarm Response Action

The speed dome supports 2 alarm inputs which can be set to NO or NC. Upon having received the alarm input signal, the dome will automatically activate a user-defined action, which can be programmed to: preset 1-8, pattern 1-4, patrol 1-8, pan scan, tilt scan, random scan, frame scan, panoramic scan, color or B&W mode. After the alarm is cleared, the dome is capable of resuming its previous activity or position.

AUX Output

An auxiliary output is a configurable signal from the dome back box that can trigger another device to operate. The dome provides one auxiliary output. The auxiliary output type can be set to NO (normally open) or NC (normally closed). And the alarm dwell time is configurable as well.

Manchester Code Self-test

The speed dome supports Manchester code self-test for fault diagnostic. You can enable the Manchester code diagnosis function by setting the positions 8 and 9 of DIP Switch to **ON**. The corresponding fault code will be displayed on the screen (not available during park time) while adopting Manchester protocol.

Table 1-1 Descriptions of the Fault Code

Fault Code	Description
E0	Normal control
E1	Cable is disconnected
E2	Cable is connected and data can be normally received, but the address setting is incorrect
E3	Cable is connected and data can be normally received, but the command setting is incorrect

E4	Cable is connected and data can be normally received, but the settings of address and command are incorrect
E5	Cable is connected, but the received data does not comply with the requirements of Manchester code

Time Task

A time task is a preconfigured action that can be performed automatically at a specific date and time. The programmable actions include: preset 1-8, pattern 1-4, patrol 1-4, pan scan, tilt scan, random scan, frame scan, panorama scan, day/night mode or none.

Zone

A zone is a user-defined area. The dome provides eight zones, each with configurable label. If the dome has dwelled at a zone without receiving any command over 4 minutes, this feature will enable the dome to perform panorama scan within the zone.

Password

The dome features password protection to prevent unauthorized changes to the dome settings.

Camera Title

Title text is the label used to identify the camera viewed on the monitor. Up to 15 characters can be used for a title

RS-485 Failure Diagnostics

In the presence of failure at the transmitting and receiving terminals of RS-485 communications, the speed dome is capable of performing self-test and detecting the fault results which will be displayed on the screen.

Soft Baudrate

The baudrate of dome can be configured by the menu without need of DIP switch settings.

Chapter 2 Getting Started

2.1 Power-up Action

After the power is applied, the speed dome will perform a series of self-test actions. It performs lens actions firstly, then the panning movement and the tilting movement at last. After the power-up self-test actions, the system information will be displayed for 2 minutes on the live view screen as shown below.

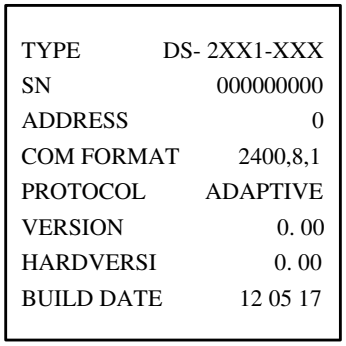


Figure 2-1 System Information

Table 2-1 Descriptions of the System Information

System Info	Description
TYPE	The model of the speed dome.
SN	The serial number of the speed dome.
ADDRESS	The default communication address of the speed dome.
COM Format	The communication settings of the speed dome. Baudrate (4 digits), data bit (1 digit) and stop bit (1 digit).
PROTOCOL	It is for communicating with other devices.
VERSION	The version of the firmware.
HARDVERSI	The version of the hardware.
BUILD DATE	The date when the program of the software is compiled.

Note: You have to configure a protocol, an address and a baudrate for the dome the same as it in the other devices.

2.2 Basic Operations

You can operate the speed dome using a control device. The control devices include the control

keyboards, DVRs, DVSs, etc. In this and the following chapters, operation of the speed dome by the IE browser of a DVR will be taken as an example.

Note: Please make sure that the baudrate, date bit and address have been configured to the same as those of the speed dome in the remote configuration interface of the control device. Please refer to Table 2-1 for details of the configuration.

Panning and tilting:

Click the direction buttons to control the movement of the speed dome.

Zooming:

Click the **ZOOM** in/out buttons to control the zooming.

Focusing:

Click the **FOCUS+** and **FOCUS-** buttons to adjust the focus.

Iris:

Click the **IRIS+** and **IRIS-** buttons to adjust the iris.

2.3 System-defined Presets

Purpose:

The section lists the system-defined presets with special functions. These presets cannot be edited but only called through a control device e.g. a DVS or web browser. To call the system-defined presets remotely, you can choose the preset number from the list in the PTZ control panel. Please refer to below table for details.

For instance, preset 99 is the “Start auto scan”. If you call the preset 99, the speed dome starts auto scan function.

Table 2-2 System-defined Presets

Preset NO.	Function	Preset NO.	Function
33	Auto-flip	93	Set manual limit stops
34	Return to home position	94	Remote reboot
35	Patrol 1	95	Access main menu
36	Patrol 2	96	Stop scanning
37	Patrol 3	97	Start random scanning
38	Patrol 4	98	Start frame scanning
39	IR cut filter in	99	Start auto scanning
40	IR cut filter out	100	Start tilt scanning
41	Pattern 1	101	Start panorama scanning
42	Pattern 2	102	Patrol 5
43	Pattern 3	103	Patrol 6
44	Pattern 4	104	Patrol 7
92	Enable limit stops	105	Patrol 8

Note: For Manchester code control protocol, the system-defined presets with special functions are shown as below:

Table 2-3 System-defined Presets of Manchester Code Control Protocol

Preset NO.	Function	Preset NO.	Function
65	Remote reboot	67	Auto-flip
66	Access main menu	70	Call Pattern 1
69	Stop programming pattern	71	Call Pattern 2
70	Set Pattern 1	72	Call Pattern 3
71	Set Pattern 2		
72	Set Pattern 3		

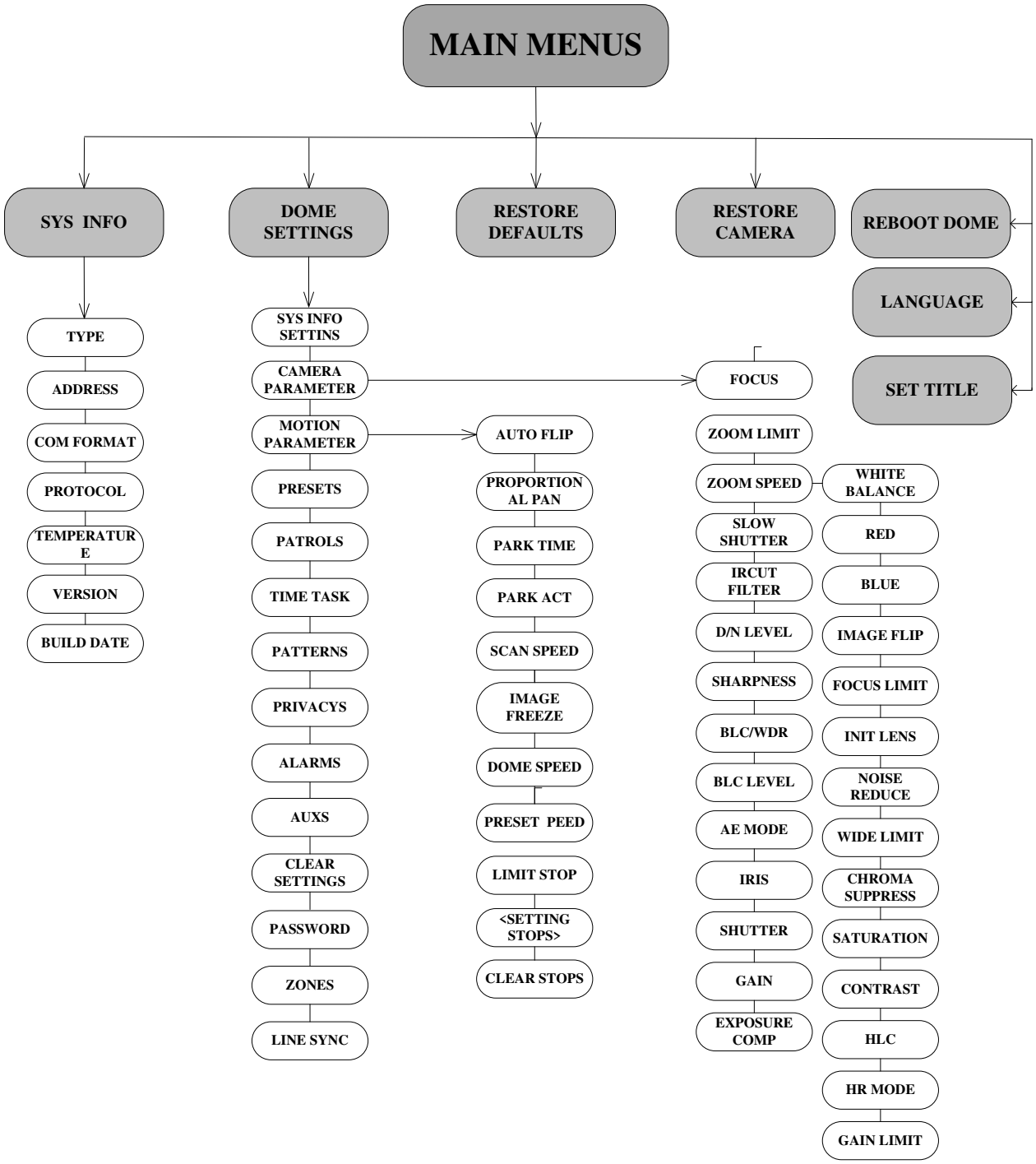
2.4 On Screen Displays

The speed dome supports following on screen displays:
Zoom: Identifies the amount of magnification. The format is ZXXX. XXX is the zoom amount.
Direction: Displays panning and tilting direction, with the format of NEXXX TXXX. The XXX following NE indicates the degrees in north east direction, while the XXX following T indicates the degrees in tilt position.
Time: Supports for time display.
Preset Title: Identifies preset being called.

Chapter 3 Menu Operation

The OSD menu tree is shown in the following figure.

Note: The menu varies depending on the model of speed dome.



Before you start:

You can operate the speed dome using the on-screen display menu remotely by connecting to a DVR or a DVS (encoder).

Examples of entering speed dome menu are listed as follows:

- Enter the menu by pressing buttons: **PTZ** -> **REC** -> **9** -> **5** on the front panel of the DVR.
- Enter the menu by pressing buttons: **CALL** -> **9** -> **5** -> **ENTER** on the keyboard.
- Enter the menu via the IE browser of a DVR/DVS.

Menu operations via the IE browser of a DVR will be taken as an example in this chapter.

3.1 Accessing and Operating the Menu

To enter the main menu:

Steps:

1. Connect the video and RS-485 cables of speed dome to a DVR.
2. Visit the DVR with the IE browser.
3. View the live video of the speed dome.
4. Call preset 95 from the preset list in the PTZ control panel of the DVR.

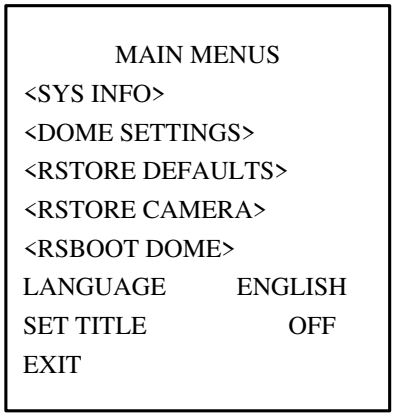


Figure 3-1 Main Menu

To move the cursor and operate the menu:

- Move the cursor up/down: On control panel of the live view interface of the DVR, click up and down direction buttons or **FOCUS+** and **FOCUS-** buttons to move the cursor in the menu up and down.
- Enter / Exit: On control panel of the live view interface of the DVR, click **IRIS+** to enter a submenu; move the cursor to **BACK** in the menu and click **IRIS+** to return to the previous menu; move the cursor to **EXIT** in the menu and click **IRIS+** to exit the main menu.
- Page up / page down: There is no “RETURN” or “NEXT” menu items for turning page up or down. On control panel of the live view interface of the DVR, you can click left and right direction buttons to turn page up or down.

To change the value of a parameter:

Steps:

1. Move the cursor to the target item and click **IRIS+** button and you can see the cursor (diamond mark) will change to be totally hollow.
2. Click the up/down or left/right buttons in the PTZ control panel to choose the value from the selectable value list.
3. Press **IRIS+** to confirm the change or click **IRIS-** to cancel and restore the original value. The diamond mark will change back to be stuffed or half stuffed.

3.2 Configuring System Information

3.2.1 Checking System Information

Purpose:

System information menu displays the current system information of the speed dome as shown in Figure 3-2, including model, address, protocol, etc. The information shown on this submenu is similar to the system information shown after the power-up action. Please refer to *Section 2.1* for more details.

Enter the system information display menu:

MAIN MENUS > SYS INFO

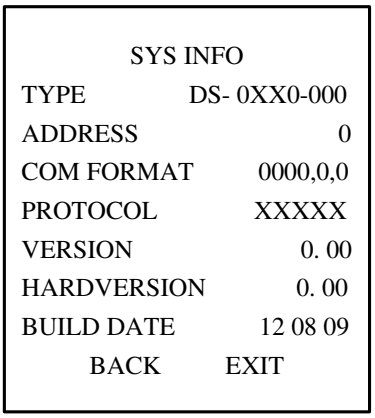


Figure 3-2 System Information

Notes:

- Information in this interface cannot be edited.
- The temperature refers to the internal temperature of the speed dome.

3.2.2 Configuring System Parameters

Purpose:

You can check and also edit the system information of software address, baudrate, system time, etc. on the system information settings menu.

Enter the system information settings menu:

MAIN MENUS > DOME SETTINGS > SYS INFO SETTINGS

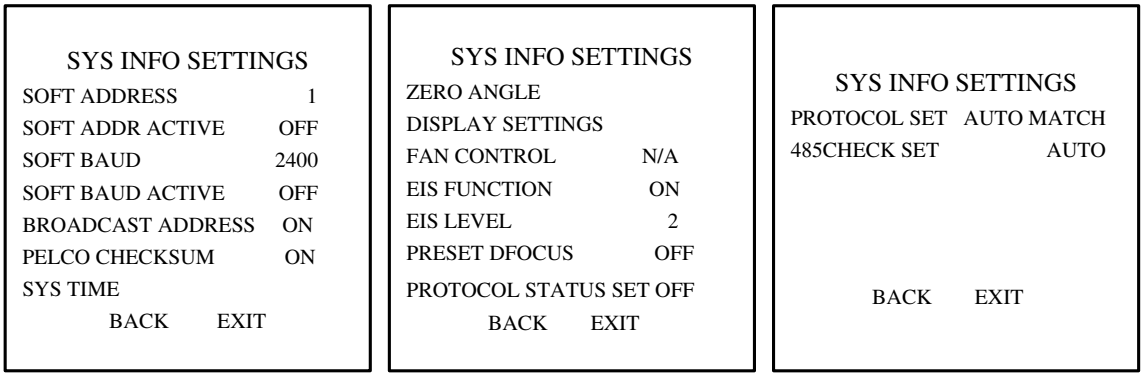


Figure 3-3 System Information Settings

Note: You can click the left and right direction buttons in the PTZ control panel via the IE browser of the DVR for page up or page down if more than one page is available.

Descriptions of system parameter configuration:

- Dome address settings

Task 1: Set the soft address of the speed dome.

If the **SOFT ADDR ACTIVE** is set as **ON**, the soft address is the valid address for connecting the speed dome. The **SOFT ADDRESS** ranges from 1 to 255;

If the **SOFT ADDR ACTIVE** is set as **OFF**, the hard address set by the DIP switch is the valid address of the speed dome.

Task 2: Set the broadcast address of the speed dome.

When the **BROADCAST ADDRESS** is set to **ON**, the control devices with address 0 can control the speed dome remotely regardless of the address of the speed dome.

With this function on, the control device with address 0 is capable of controlling all domes connected to it. This function is usually for debugging.

- Soft baudrate settings

If the **SOFT BAUD ACTIVE** is set as **ON**, the soft baudrate is the valid baudrate for the speed dome, with 2400, 4800, 9600 and 19200 selectable.

If the **SOFT BAUD ACTIVE** is set as **OFF**, the baudrate should be set by the DIP switch.

Note: After you enable/disable the soft baudrate, the speed dome will reboot automatically to activate the settings.

- PELCO checksum

If the speed dome uses PELCO-P or PELCO-D protocol, you can set the **PELCO CHECKSUM** as **ON** for improving the controlling effect.

- System time configuration

Steps:

(1) Move the cursor to **SYSTEM TIME** using the direction buttons and click **IRIS+** to enter.

(2) Click the left/right direction buttons to position the cursor on the specific item

(year/month/day or hour/minute/second) of which you want to change the value.

(3) Click the up/down direction buttons to increase/decrease the value.

(4) Click **IRIS+** button to confirm and exit.

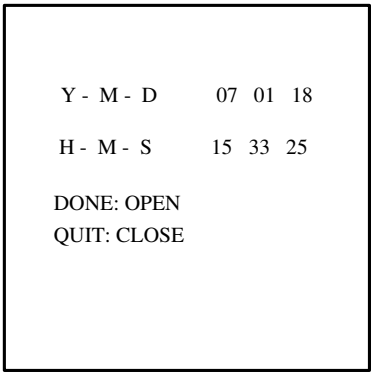


Figure 3-4 Set the System Time

- Zero angle (initial position) configuration

Purpose:

You can define the initial position of the speed dome on the **ZERO ANGLE** submenu.

Steps:

1. Move the cursor to **ZERO ANGLE** using the direction buttons and click **IRIS+** to enter.
2. Click the left/right/up/down direction buttons to adjust the view angle.
3. Click **IRIS+** button to confirm and exit.

- Fan parameter configuration

  You can set the **FAN CONTROL** as **TEMP**, **ON** or **OFF**.

- EIS (Electronic Image Stabilization) configuration

  You can set the **EIS FUNCTION** as **ON** or **OFF**.

  Note: The selectable EIS levels vary depending on the camera models.

- Preset direct focus

  You can set the preset direct focus function **ON/OF** on **PRESET DFOCUS** submenu.

- Protocol settings

You can set the **PROTOCOL STATUS SET** as **ON** or **OFF**, and set the **PROTOCOL SET** as AUTO MATCH, PELCP-P, PELCO-D, Private-code, etc.

- RS-485 checksum setting

You can set the **485CHECK SET** as **ON** or **AUTO** for improving the controlling effect.

3.3 Configuring Image Parameters

3.3.1 Configuring Camera Parameters

Purpose:

You can set the camera parameters including focus, shutter speed, iris, etc.

Enter the camera parameters settings menu:

MAIN MENUS > DOME SETTINGS > CAMERA PARAMETER

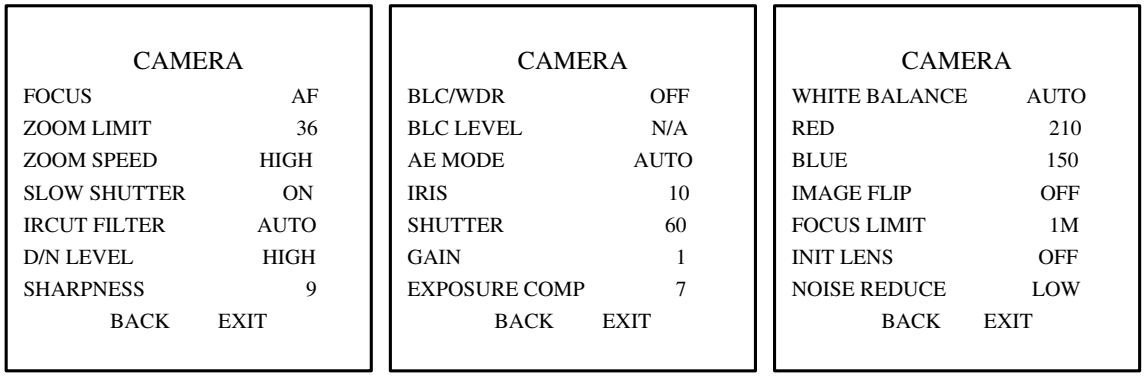


Figure 3-5 Camera Settings

Task 1: Configure the focus settings.

- Setting the focus mode

Steps:

(1) Move the cursor to **FOCUS** using the direction buttons and click **IRIS+** to change the cursor to totally hollow.

(2) Click up/down direction buttons to choose the focus mode as **AF**, **MF** or **HAF**.

AF (Auto-focus): The lens remains in focus during PTZ movements.

MF (Manual Focus): You need to adjust the focus with **Focus+** and **Focus-** buttons manually.

HAF (Half-auto Focus): The speed dome focuses automatically only once after panning, tilting and zooming.

(3) Click **IRIS+** button to save the settings.

- Setting the focus limit

Purpose:

This function is used to limit the minimum focus distance. You can configure the focus limit longer when the target is at a distance, to avoid the speed dome focusing on the objects close to it; or configure the focus limit shorter when the target is near the speed dome, and avoid it focusing on the objects father.

You can set **FOCUS LIMT** as **1CM**, **30CM**, **1M**, **3M** or **AUTO**.

Note: The focus limit value varies depending on the models of speed dome.

Task 2: Configure the iris, gain and shutter speed.

- Setting the AE mode

Purpose:

AE mode defines the priority of iris, shutter and gain when the speed dome adjusts the brightness of the video.

The options in **AE MODE** are as follows:

AUTO: Auto iris, auto shutter and auto gain. The speed dome adjusts these values automatically responding to the lighting conditions. It is the default mode.

HAUTO: You can adjust the video brightness with **IRIS+** and **IRIS-** buttons when you select this mode and .

IRIS: It is the iris-priority mode. You need to adjust the iris value manually. The shutter and gain values will be adjusted automatically according to the lighting conditions.

Please define the iris value according to related content in this section after you choose **IRIS** mode.

SHUTTER: It is the shutter-priority mode. You need to adjust the shutter value manually. The iris and gain values will be adjusted automatically according to the lighting conditions.

Please define the shutter speed value according to related content in this section after you choose **SHUTTER** mode.

MANUAL: You need to adjust the shutter, iris and gain values manually when you select this mode.

Please define the iris, gain and shutter speed according to related content in this section if you choose **MANUAL** mode.

- Setting the iris value

Purpose:

To adjust the iris size for light entering the lens, you can set **IRIS** value manually according to light conditions. The iris value ranges from 0 to 17.

Note: Iris is fully closed at value 0 and fully open at value 17.

- Setting the gain

The value of gain indicates the amplification degree of the original light signal. You can set the value from 0 to 15.

- Setting the shutter speed

Purpose:

The speed of the electronic shutter controls the amount of light entering the lens in a unit of time (a second). You can manually configure the shutter speed for the speed dome, and you can also enable the slow shutter function for low lighting circumstances.

(1) Shutter speed. If you set the **SHUTTER** value bigger (shutter speed is faster), the amount of entering light per second is fewer, and the image is darker. You can set it as 1, 2, 4, 8, 15, 30, 50, 125, 180, 250, 500, 1000, 2000, 4000 or 10000.

Note: The value of X indicates that the shutter speed is 1/X second.

(2) Slow shutter. You can set the **SLOW SHUTTER** value as 0, 1, 2, 3, 4 and 5.

Task 3: Configure the zoom settings.

- Setting the zoom limit

Purpose:

Zoom limit is a user-defined limitation of the zoom amount.

Steps:

(1) Move the cursor to **ZOOM LIMIT** using the direction buttons and click **IRIS+** to enter.
(2) Click up/down direction buttons to choose the limit from 12, 24, 48, 96, and 192.
(3) Click **IRIS+** button to confirm.

Note: The **ZOOM LIMIT** value varies depending on the model of the speed dome.

- Setting the zoom speed

Purpose:

You can define the zooming speed of the lens.

Steps:

(1) Move the cursor to **ZOOM SPEED** using the direction buttons and click **IRIS+** to enter.
(2) Click up/down direction buttons to choose the speed from **HIGH**, **MEDUIM** and **LOW**.
(3) Click **IRIS+** button to confirm.

Task 4: You can turn **INIT LENS** on to trigger a spontaneous lens initiation for ensuring the normal operation.

Task 5: Set the sharpness level.

The sharpness function can increase the gain of the image and sharpen the edges in the picture to enhance the picture details. You can set the **SHARPNESS** level from 0 to 15.

Task 6: Set the Day/Night Mode.

There are two parameters available for day/night mode configuration.

(1) IR cut filter. It can be set as **AUTO**, **DAY** or **NIGHT**.

AUTO: The speed dome is capable of automatically switching from Black and White mode (NIGHT) and Color mode (DAY) regarding to the lightening conditions. It is the default value.

NIGHT (B/W): You can switch the IR cut filter into **NIGHT** mode to increase the lens sensitivity in low light conditions.

DAY (Color): You can switch it to **DAY** mode in normal lighting conditions.

Note: You can also call preset 39 to set the IR cut filter mode to **DAY** mode and call preset40 to set it as **NIGHT** mode.

(2) D/N level. The D/N level is the switching sensitivity for **AUTO** mode. As a dividing line, IR cut filter switches between DAY and NIGHT when the light condition reaches the user-defined D/N level. Three levels are selectable: 0, 1 and 2.

Note: D/N level configuration varies depending on the model of the speed dome. Some models don't support D/N level function.

Task 7: Set the BLC function.

You can set the **BLC/WDR** value as **ON** or **OFF** to enable or disable the function.

BLC LEVEL: You can manually adjust the backlight compensation level.

Note: BLC level configuration varies depending on the model of the speed dome. Some models don't support **BLC LEVEL** function.

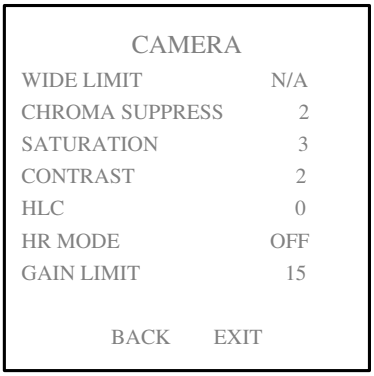


Figure 3-6 Further Settings

Task 8: Configure the image quality parameters:

Chroma suppress: You can adjust the value of **CHROMA SUPRESS** between 0, 1, 2 and 3 to suppress the color noises in low lighting environment. Higher setting values produce stronger chroma suppressing effects.

Saturation: The **SATURATION** value ranges from 0 to 7.

Contrast: adjust the image contrast on **CONTRAST** submenu between 0 and 7.

Note: The selectable values of contrast and saturation vary depending on the models of speed dome.

HLC: High Light Compensation (HLC) masks strong light sources that usually flare across a scene. This makes it possible to see the detail of the image that would normally be hidden. The value ranges from 0 to 3.

Resolution setting: you can set **HR MODE** as **ON** to adjust the resolution lower to avoid cross color of the image, or switch if **OFF** to disable the function. This mode enhances edges and produces higher definition images.

Task 9:Configure the advanced settings.

- Exposure compensation function:
  You can set the **EXPOSURE COMP** value from 0 to 14. The default value is 7.
- White balance:
  You can set **WHITE BALANCE** mode as **AUTO**, **INDOOR**, **OUTDOOR**, **SELFDEF** (self-defined), **ATW** (auto-tracking) and **HAUTO** (half-auto).
  AUTO:
  In Auto mode, the dome retains color balance automatically according to the current color temperature.
  INDOOR, **OUTDOOR:**
  These two modes are for indoor use and outdoor use respectively.
  SELFDEF:
  In this mode, you can adjust the color temperature manually to meet your own demand.
  Note: In **SELFDEF** mode, you need to adjust the **RED** and **BLUE** values manually.
  ATW:
  In auto-tracking mode, white balance is continuously being adjusted in real-time according to the color temperature of the scene illumination.
  HAUTO:

Selecting this mode, the viewed image retains color balance automatically according to the current color temperature.

- Digital noise reduction:
  To reduce the image noise, you can set the **NOISE REDUCE** function **OFF**, **HIGH**, **MID** or **LOW**.
- Image flip:
  If you turn the **IMAGE FLIP** function on, the image will be flipped. It is like the image in the mirror.
- Gain limit:
  You can set this function to limit the gain value. The **GAIN LIMIT** value ranges from 0 to 15.

3.3.2 Configuring Privacy Mask

Purpose:

Privacy mask enables you to cover certain areas on the live video to prevent certain spots in the surveillance area from being live viewed and recorded. The masked areas can move with the panning/tilting movements and automatically adjust the size as the lens zooming in/out.

Steps:

1. Move the cursor to enter the privacy mask configuration submenu:
   MAIN MENUS > DOME SETTINGS > PRIVACYS

Figure 3-7 Privacy Mask Configuration Menu

2. Choose the privacy mask number:
   Steps:
   (1) Move the cursor to **BLANK NUM** and click **IRIS+** to enter the editing mode.
   (2) Click the up and down direction buttons to select a mask number for configuration.
   (3) Click **IRIS+** again to confirm and exit the editing mode.
   Note: The configurable privacy mask numbers vary depending on the camera models.
3. Configure the position and size of the privacy mask.
   Steps:
   (1) Move the cursor to **SET BLANK** and click **IRIS+** button to enter the editing mode as shown in the following figure. You can see a privacy mask on the live window.

Figure 3-8 Set the Privacy Mask

(2) You can see *ADJUST BLANK POS* message on the screen. Click the direction buttons to adjust the position of the privacy mask to the designed scene.

(3) Click **FOCUS+** button, and you can see *ADJUST BLANK SIZE* message on the screen. Click the up/down buttons to increase/decrease the height of the mask and click right/left buttons to increase/decrease the width of the mask. Click **IRIS+** button to save the settings and return to the previous menu and you can see the mask turn to gray.

(4) To modify the configured mask, click **IRIS+** button to enter the **SET BLANK** menu and click **IRIS+** button again to modify.

Note: The tilt range for configuring the privacy masks is from 0° to 70°.

4. Enable or disable the privacy mask function.
   Enter the **BLANK STATUS** submenu and click the up and down direction buttons to set it **ON** or **OFF**.
   Note: If no privacy mask has been configured, you cannot set the status as **ON**.
5. Delete the privacy mask.
   You can enter the **CLEAR BLANK** menu to delete the current privacy mask.

3.3.3 Configuring OSD Settings

Purpose:

You can configure the on-screen display of the dome name, PTZ control information, viewing direction, etc.

- **Display the dome title**

Steps:

1. Enter the dome title setting menu:
   MAIN MENUS > SET TITLE
2. Click **IRIS+** to enter the editing mode.
3. Click **FOCUS +** to set it to **ON.**
4. Click **IRIS+** again to confirm.
5. Exit the **MAIN MENUS** interface.
6. On the live view screen, call preset 11 twice within 5 seconds to enter the **SET TITLE** menu, as shown in the following figure.

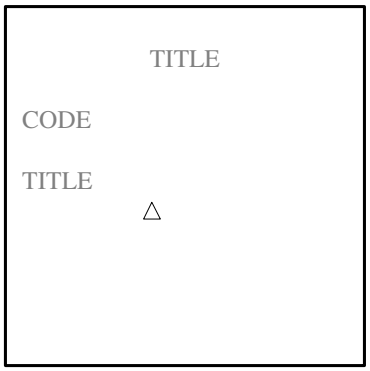


Figure 3-9 Set Dome Title

7. Click the left/right direction buttons to position the cursor to the characters of the title.
8. Get the codes for a specific character and enter each code (number) by calling the preset number, i.e. calling presets 1-9 to enter number 1-9 respectively, and calling preset 10 to enter number 0.

Note: You can get the codes of a specific character using the software we provided. For example, if you want to display the word HALL as a part of the dome name, please follow below steps:

Steps:

(1) Enter **HALL** in the **Title** filed of the software, click **OK**, and you'll see the corresponding codes 0227-0220-0231-0231 listed for it.

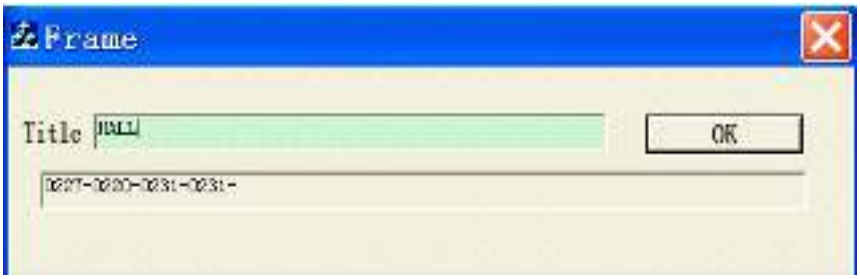


Figure 3-10 Get the Codes of a Character

(2) On the SET TITLE menu, call the presets standing for each code in sequence to enter the codes. E.g. call preset 10 to get 0, and call preset 2 to get 2. The corresponding numbers, characters and position information will be displayed on the screen when you are calling the presets.

(3) You can call preset 16 to delete the character at the current position.

Note: You can set up to 15 characters for the dome title.

9. Exit the title setting menu and display the dome title.

You can call preset 12 twice within 5 seconds to exit the title setting menu and display the title in the lower right corner; or call preset 13 twice within 5 seconds to exit the title setting menu and display the title in the lower left corner; or call preset 14 twice within 5 seconds to exit the title setting menu and display the title in the upper left corner; or call preset 15 twice within 5 seconds to exit the title setting menu and display the title in the upper right corner.

Note: After exit the **SET TITLE** menu, you can call preset 12 twice within 5 seconds to delete the defined title and remove it from the screen.

- **Display the PTZ movements, alarm, system time, etc.**

Purpose:

You can enable or disable the on-screen display of PTZ movements, alarms, time, presets, etc., and configure the display time.

Steps:

1. Enter the display settings menu:
   MAIN MENUS > DOME SETTINGS > SYS INFO SETTINGS > DISPLAY SETTINGS

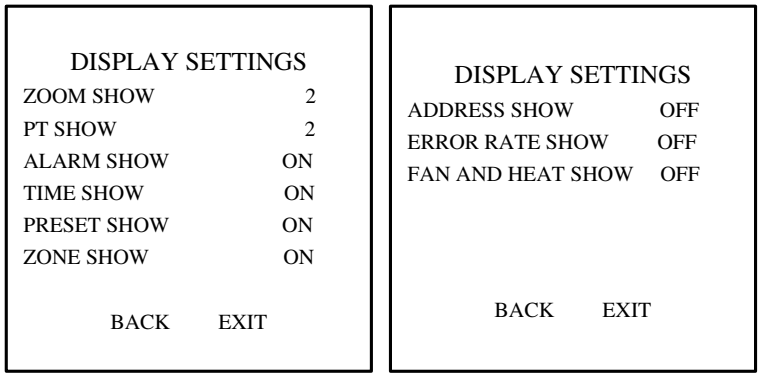


Figure 3-11 Display Settings

2. Move the cursor to **DISPLAY SETTINGS** using the direction buttons and click **IRIS+** to enter.
3. Move the cursor to the target item and click **IRIS+** and click up/down direction buttons to choose each display mode as **ON** or **OFF**, and define each display time as 2 seconds, 5 seconds or 10 seconds.
4. Click **IRIS+** button to confirm.

Note: If you enable the **ZOOM** and **PT** OSD both, while calling a preset, the preset label will be displayed on the screen until the preset finishes.

- **Display the viewing direction**

The speed dome shows the viewing direction when you manually control it to rotate.

Table 3-1 Viewing Direction Display

Display	N	NE	E	SE	S	SW	W	NW
Indication	North	Northeast	East	Southeast	South	Southwest	West	Northwest

Note: The north direction refers to the 0ºangle (initial position).

3.4 Configuring PTZ Control Parameters

Purpose:

You can configure panning, tilting and zooming movements, and configure PTZ control functions including presets, patrols, patterns, etc. for the speed dome.

3.4.1 Configuring PTZ Parameters

Enter PTZ configuration menu:

MAIN MENUS > DOME SETTINGS > MOTION PARAMETER

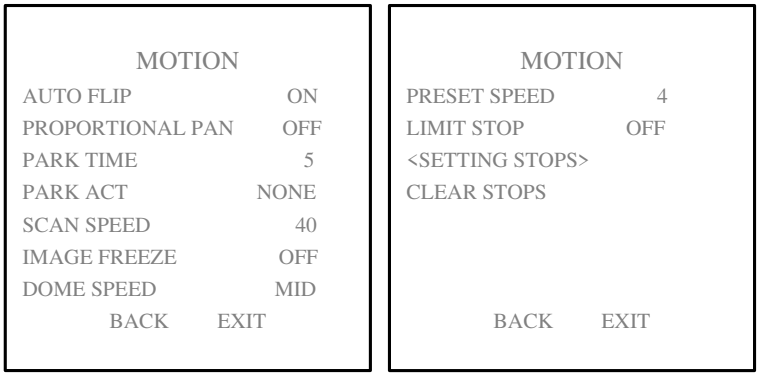


Figure 3-12 PTZ Configuration

Descriptions of PTZ parameter configuration:

- **Auto-flip**

In manual tracking mode, when a target object goes directly beneath the speed dome, the speed dome automatically rotates 90 degrees horizontally for tracking.

Note: **AUTO-FLIP** is set as **ON** for this speed dome by default.

- **Proportional Panning**

Purpose:

If you enable this function, the pan/tilt speeds change according to the amount of zoom. When there is a large amount of zoom, the pan/tilt speed will be slower for keeping the image from moving too fast on the live view image.

You can set **PROPORTIONAL PAN** to **ON** or **OFF** to enable/disable the function.

Note: This function is enabled automatically while setting the patterns.

- **Park time and actions**

Purpose:

This feature allows the speed dome to start a predefined action (park action: scan, preset, pattern, etc.) automatically after a period of inactivity (park time).

You can set **PARK TIME** from 5 to 720 seconds and set the park action (**PARK ACT**) as preset 1 to 8, pattern 1 to 4, patrol 1 to 8, pan scan, tilt scan, random scan, frame scan, panoramic scan, day mode, night mode or none.

Note: If no control signal is received after the park time under the following circumstances, no park actions will be performed: in the process of performing dome actions by calling special presets; or in the process of performing external alarm linked actions.

- **Image freeze**

This feature enables the live view to switch directly from one scene defined by a preset to another, without showing the middle areas between these two, to ensure the surveillance efficiency. It can also reduce the use of bandwidth in a digital network system.

You can set **IMAGE FREEZE** on to enable this function.

- **PTZ speed**

Purpose:

You can define the speed of the dome movements.

(1) **DOME SPEED:** the manual movement speed can be set as **HIGH**, **MID** or **LOW**.

(2) **SCAN SPEED:** scan speed defines the scan degree per second of panning scan, tilting scan, frame scan, random scan and panoramic scan. Scan speed is adjustable from 1 to 40 degrees per second.

(3) **PRESET SPEED:** the speed of calling a preset can be set from level 1 to 8. The higher level corresponds to the faster speed to call a preset.

- **Limit stops**

Purpose:

The dome can be programmed to move within the configurable limit stops (left/right, up/down).

Steps:

1. Move the cursor to **LIMIT STOPS** and click **IRIS+** to set it **ON** to enable this feature. Click **IRIS+** again to confirm.
2. Move the cursor to **<SETTING STOPS>** and click **IRIS+**. You will see the message *SET LEFT LIMIT* on the screen.
3. Click the direction buttons in the PTZ panel to configure the left limit stop. Click **IRIS+** to confirm.
4. Follow the prompts to configure the right, up and down limit stops on the menu.

Note: The new limit stops will overwrite the existed ones by default.

5. You can clear the defined limit stops. Click **IRIS+** to enter **CLEAR STOPS** and click **IRIS+** again to clear the stops.

3.4.2 Configuring Presets

Purpose:

A preset is a predefined image position. For the defined preset, you can simply click the calling button to view the desired image position.

TASK 1: Set a preset.

Steps:

1. Move the cursor to enter preset configuration submenu:
   MAIN MENUS > DOME SETTINGS > PRESETS

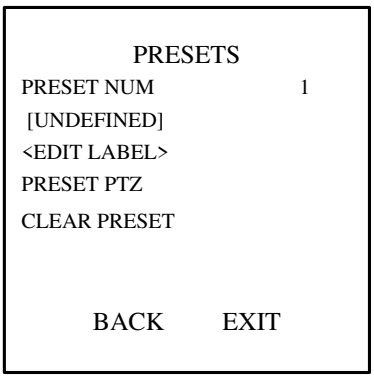


Figure 3-13 Preset Configuration Menu

2. Choose the preset number:
   Move the cursor to **PRESET NUM** and click **IRIS+** to enter. Click the up and down buttons to choose the preset number which needs to be edited. If the preset has been defined, the preset label will be listed under the number; if it has not been defined, you will see **[UNDEFINED]** under the number.

Notes:

- There are up to 254 presets can be set for the speed dome.
- The system-defined presets will be displayed on this submenu and they are not editable.

3. Edit the label of the preset.

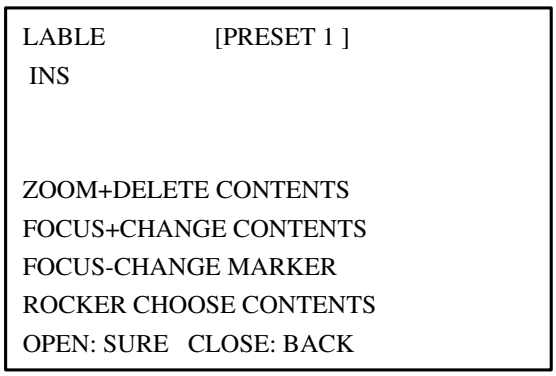


Figure 3-14 Edit the Preset Label(1)

Steps:

(1) Move the cursor to **EDIT LABLE** and click **IRIS+** to enter the edit mode.
(2) Click **FOCUS+** in the PTZ control panel to switch between the character lists, including capital alphabet, lowercase alphabet, symbols and numbers; click the up/down and left/right direction buttons to move the cursor to choose a specific character to input.
(3) Click **FOCUS-** to position the cursor on the label where the character needs to be modified. Click **ZOOM IN** to delete it.
(4) Click **IRIS+** to select the character from the letter/number/symbol list to the label.
(5) Click **FOCUS+** to exit the character lists and click **IRIS+** again to confirm and exit the submenu.

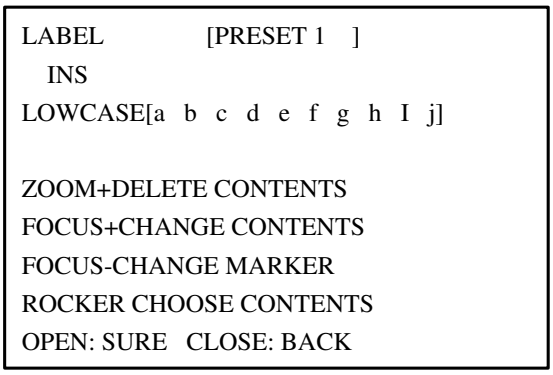


Figure 3-15 Edit the Preset Label(2)

4. Set the preset position.

Move the cursor to **PRESET PTZ** and click **IRIS+** to edit the preset position. Use the direction buttons to move the speed dome to find the desired scene/position, and then press **IRIS+** to confirm the settings and return to the previous menu, or press **IRIS-** to cancel.

Note: The preset position settings will be restricted by the limit stops if they are defined.

TASK 2: Clear the preset settings.

Move the cursor to **CLEAR PRESET** and click **IRIS+** to clear the settings of the current preset.

TASK 3: Call the presets.

You can select the preset number from the drop-down preset list in the control panel of the DVR through a web browser, and click the arrow to call a user-defined preset.

3.4.3 Configuring Patrols

Purpose:

A patrol is a memorized series of preset function. It can be set and previewed on the patrol settings interface.

Task 1: Set a patrol.

Steps:

1. Move the cursor to enter patrol configuration submenu:
   MAIN MENUS > DOME SETTINGS > PATROLS
2. Choose the patrol number.
   Steps:
   (1) Move the cursor to **PATROLS NUM** and click **IRIS+** to enter edit mode.
   (2) Click the up and down direction buttons to select the number of the patrol which is to be configured.
   (3) Click **IRIS+** again to confirm and exit edit mode of this column.

Note: You can configure up to 8 patrols.

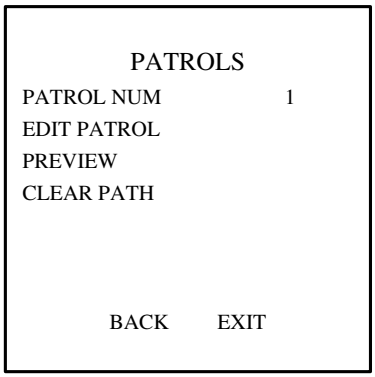


Figure 3-16 Patrol Configuration Menu

3. Edit the patrol.
   Steps:

(1) Move the cursor to **EDIT PATROL** and click **IRIS+** to enter edit mode.

NUM	PRESET	DWELL	SPEED
1	0	6	30
2	0	6	30
3	0	6	30
4	0	6	30
5	0	6	30
6	0	6	30
7	0	6	30
DONE: OPEN		QUIT:CLOSE	

Figure 3-17 Edit the Patrol

(2) Click up/down direction buttons to position the preset to be edited.

(3) Click left/right direction buttons to position the cursor to **PRESET**, **DWELL TIME** and **SPEED** of a preset. Click the up and down direction buttons to set each value.

Note: The presets you set for a patrol should be the defined presets; dwell time (0-30 seconds selectable) is the time that the speed dome pauses on the certain preset; speed is the patrol speed the dome switching between the presets.

(4) Follow above steps to define other presets for the selected patrol. You can configure up to 32 presets in sequence for a patrol. Press **IRIS+** to save the current settings or press **IRIS-** to cancel and return to the previous menu.

Task 2: Preview the patrol.

Move the cursor to **PREVIEW** and click **IRIS+** to preview the current patrol and enable the speed dome to scan among the presets.

Task 3: Delete a patrol.

You can move the cursor to **CLEAR PATH** and click **IRIS+** to delete the current patrol.

Task 4: Call the defined patrol.

You can select the corresponding preset number from the drop-down preset list in the control panel of the DVR through a web browser, and click the arrow to call the related patrol. E.g. call preset 35 to call patrol 1. Please refer to *Section 2.3* to find the corresponding preset number for each patrol.

3.4.4 Configuring Patterns

Purpose:

A pattern is a memorized, repeatable series of panning, tilting, zooming and preset movements that can be recalled by a command or automatically performed by a configured function (alarm, park, time task, and power-up).

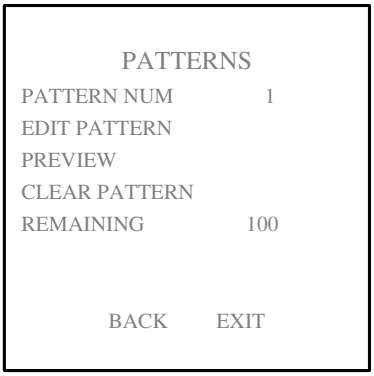


Figure 3-18 Pattern Configuration Menu

Task 1: Set a pattern.

Steps:

1. Move the cursor to enter the **PATTERNS** submenu:
   MAIN MENUS > DOME SETTINGS > PATTERNS
2. Choose the pattern number.

Steps:

(1) Move the cursor to **PATTERN NUM** and click **IRIS+** to enter edit mode.

(2) Click the up and down direction buttons to select the number of the pattern which is to be configured.

(3) Click **IRIS+** again to confirm.

Note: You can configure up to 4 patterns.

3. Edit the pattern.

Steps:

(1) Move the cursor to **EDIT PATTERN** and click **IRIS+** to enter edit mode.

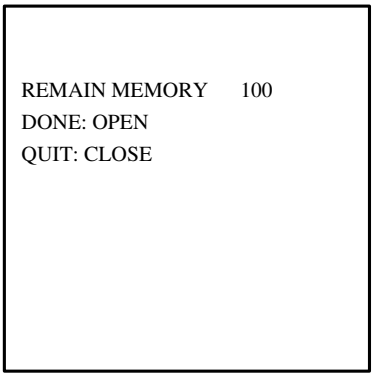


Figure 3-19 Edit the Pattern

(2) Click the PTZ control buttons and direction buttons to pan, tilt, or zoom in/out the speed dome to draw a movement path. The speed dome can automatically memorize the path you operated as a pattern.

(3) Click **IRIS+** again to save the pattern and exit edit mode.

Notes:

- **REMAIN MEMORY** indicates the remaining memory of the speed dome for configuring the patterns. When it reaches 0, no more patterns can be configured. You can also see the

remaining memory shown under **PATTERNS** menu as *REMAINING*.

- The panning/tilting movements and the lens operations cannot be memorized simultaneously.

Task 2: Preview the pattern.

Enter the **PREVIEW** menu to preview the current pattern.

Task 3: Delete the patterns.

- Delete a chosen pattern

Click **IRIS+** to enter **EIDT PATTERN** and you can see *DEL PATH ABOVE*. Click **IRIS+** to delete the pattern.

Note: If you delete the current pattern, the following pattern will also be deleted. E.g., if pattern 2 is deleted, pattern 3 and pattern 4 will be deleted as well.

- Clear all the patterns

Enter **CLEAR PATTERN** menu and click **IRIS+** to delete all the defined patterns.

Task 4: Call the defined pattern.

You can select the corresponding preset number from the drop-down preset list in the control panel of the DVR through a web browser, and click the arrow to call the related pattern. E.g. call preset 41 to call pattern 1. Please refer to *Section 2.3* to find the corresponding preset number for each pattern.

3.4.5 Configuring Time Tasks

Purpose:

A time task is a scheduled dome action which can be configured to perform automatically at the specific time.

Task 1: Set time tasks.

Steps:

1. Move the cursor to enter the **TIME TASK** submenu:
   MAIN MENUS > DOME SETTINGS > TIME TASK
2. Choose the task number.

   Steps:

   (1) Move the cursor to **TASK NUM** and click **IRIS+** to enter edit mode.

   (2) Click the up and down direction buttons to select the number of the task which is to be configured.

   (3) Click **IRIS+** again to confirm and exit edit mode of this column.

Note: You can configure up to 8 tasks.

Figure 3-20 Time Task Configuration Menu

3. Set the task status.

Steps:

(1) Move the cursor to **TASK STATE** and click **IRIS+** to enter edit mode.

(2) Click the up and down direction buttons to set the task status to **ON**.

(3) Click **IRIS+** again to confirm and exit edit mode of this column.

4. Configure the task action.

Steps:

(1) Move the cursor to **TASK ACTION** and click the **IRIS+** to enter edit mode.

(2) Click the up and down direction buttons to select the task action from preset 1 to 8, pattern 1 to 4, patrol 1 to 8, panning scan, tilting scan, random scan, frame scan, panoramic scan, day mode, night mode and none.

(3) Click **IRIS+** again to confirm and exit edit mode of this column.

5. Set the task time.

Steps:

(1) Move the cursor to **TASK TIME** and click **IRIS+** to enter edit mode.

(2) Click the left and right direction buttons to position the cursor to **WEEK**, **START (H-M)** and **END (H-M)**.

(3) Click the up and down direction buttons to select the specific day and time.

(4) Click **IRIS+** to confirm and exit.

Note: The weekday can be set to be from **Monday** to **Sunday** or **Whole Week**.

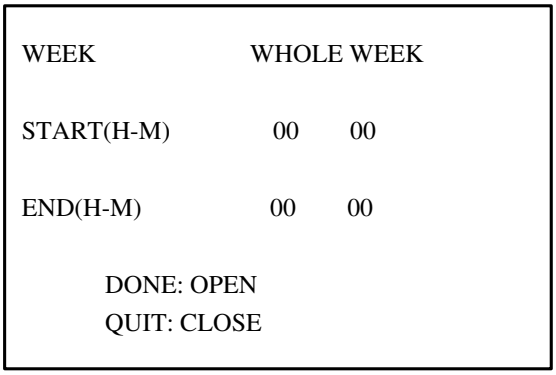


Figure 3-21 Set the Task Time

Task 2: Preview the task.

Move the cursor to **TASK PREVIEW** and click **IRIS+** to view the time, action and status of the scheduled task.

NUM	TIME	ACTION	STATE
1	WHO 0 0 0 0	NONE	OFF
2	WHO 0 0 0 0	NONE	OFF
3	WHO 0 0 0 0	NONE	OFF
4	WHO 0 0 0 0	NONE	OFF
5	WHO 0 0 0 0	NONE	OFF
6	WHO 0 0 0 0	NONE	OFF
7	WHO 0 0 0 0	NONE	OFF
8	WHO 0 0 0 0	NONE	OFF

Figure 3-22 Preview the Time Task

Task 3: Delete the task.

Move the cursor to **CLEAN TASK** and click **IRIS+** to delete the time and action of the current task.

3.4.6 Configuring Zones

Purpose:

ZONE submenu is used to divide the scene into several parts with user-defined labels displayed on the screen. You can also set the speed dome to scan in a zone automatically after a period of inactivity.

Task 1: Set a zone.

Steps:

1. Move the cursor to enter the zone configuration submenu:
   MAIN MENUS > DOME SETTINGS > ZONES

ZONES

ZONE NUM 1
[UNDEFINED]
EDIT LABEL
EDIT ZONE
ZONE STATUS ON
SCAN STATUS ON
CLEAR ZONE
BACK EXIT

Figure 3-23 Zone Configuration

2. Choose the zone number:
   Move the cursor to **ZONE NUM** and click **IRIS+** button to enter. Click the up and down buttons to choose the zone number to be configured.

Note: You can configure up to 8 zones.

3. Edit the label of the zone.
   Please refer to ***Step 3. Edit the label of the preset*** in *Section 3.4.2.*
4. Configure the zone area.

   Steps:

   (1) Move the cursor and click **IRIS+** button to enter **EDIT ZONE** submenu.
   (2) You can see *SET LEFT LIMIT* on the screen. Click the direction buttons to set the left limit stop.
   (3) Follow the prompts on the screen to set the right limit, up limit and down limit.
   (4) Click **IRIS+** button to save the settings and exit.
5. Set the zone status and scan status.
   SCAN STATUS: enable/disable the scanning in the zone.
   Note: **ZONE STATUS** is not editable. After you edited the zone, it will switch to **ON** automatically; if you delete the zone, the **ZONE STATUS** will switch to **OFF**.

Task 2: Clear the zone settings.
Move the cursor to **CLEAR ZONE** and click **IRIS+** to clear all the settings of the current zone.

3.4.7 Clearing PTZ Control Settings

Purpose:

You can clear all user-defined PTZ control settings, including presets, patrols, patterns, zones and time tasks. You can also clear privacy masks on this menu.

Steps:

1. Enter the **CLEAR SETTINGS** menu:
   MAIN MENUS > DOME SETTINGS > CLEAR SETTINGS

Figure 3-24 Clear Dome Settings

2. Click **IRIS+** on each submenu, e.g., CLEAR ALL PATTERNS. Click **IRIS+** again to confirm and exit.

   On **DIAGNOSTICS** submenu, you can also see the self-diagnostics information of the speed dome, including the occurrence of high temperature, the highest temperature, the occurrence of low temperature, the lowest temperature, the occurrences of video loss, low voltage, dome reboot,

panning loss, tilting loss and communication loss.

Note: Panning loss and tilting loss refer to the failures of panning and tilting, for diagnosing the electric motor of the speed dome.

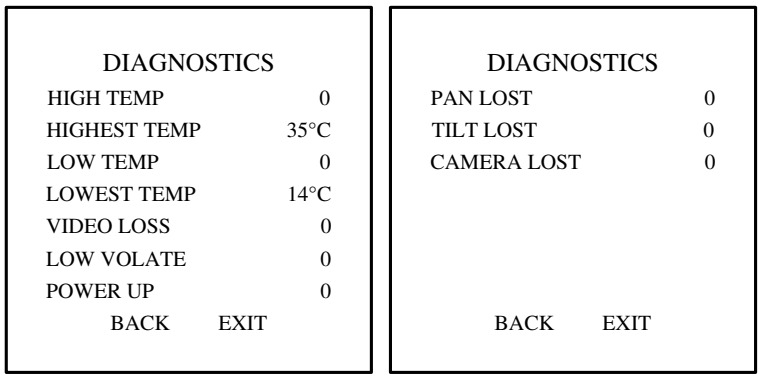


Figure 3-25 Self-diagnostics

3.5 Configuring and Handling Alarms

3.5.1 Configuring Alarm Input and Linked Actions

Purpose:

This section explains how to configure the speed dome to respond to alarm events with alarm linked actions, such as calling presets, patrols, patterns, scanning, etc.

Steps:

1. Move the cursor to enter the alarm configuration submenu:
   MAIN MENUS > DOME SETTINGS > ALARMS > ALARM SETTING

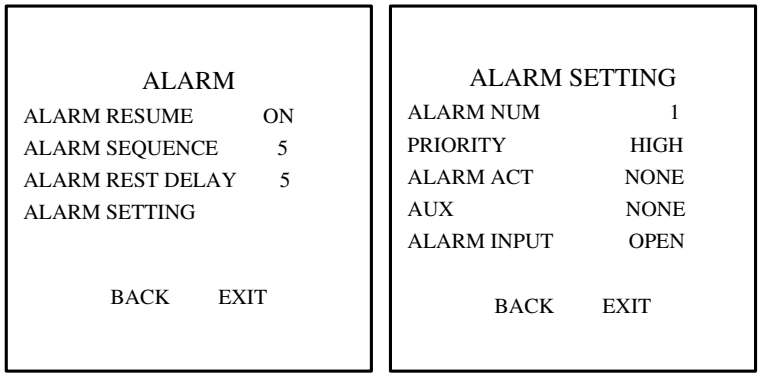


Figure 3-26 Alarm Configuration Menu

2. Choose the alarm number.

   Steps:

   (1) Move the cursor to **ALARM NUM** and click the **IRIS+** to enter edit mode.

   (2) Click the up and down direction buttons to select the number of the alarm which is to be configured.

   (3) Click **IRIS+** again to confirm and exit edit mode of this column.

Note: You can configure up to 7 alarms.

3. Configure the alarm input.

Steps:

(1) Move the cursor to **ALARM INPUT a**nd click the **IRIS+** to enter edit mode.

(2) Click the up and down direction buttons to set the input status. You can configure it as **OPEN** (Normally open), **CLOSE** (Normally closed) or **OFF** (disable the alarm input).

(3) Click **IRIS+** again to confirm.

Note: If you set the status as **OPEN**, alarm will be triggered by high electricity level; if you set the status as **CLOSE**, alarm will be triggered by low electricity level; if you set the status as **OFF**, it will be triggered when this input channel is shut off.

4. Configure the alarm linkage action.

You can specify the linked action when an alarm occurs. On the **ALARM ACT** submenu, you can set the alarm action as preset from 1 to 8, pattern from 1 to 4, patrol from 1 to 8, panning scan, tilting scan, random scan, frame scan, panoramic scan, day mode, night mode or none. You can also set the alarm output for the alarm. Please refer to *Section 3.5.3* ***Configuring Auxiliary Alarm Output*** for details.

5. Configure alarm priority.

Enter the **PRIORITY** menu and set the alarm priority as **HIGH**, **MID** or **LOW**.

If multiple alarms with different priorities are triggered at the same time, the dome only responds to the alarm with the highest priority. If multiple alarms with the same priority are triggered at the same time, then the dome will respond to each alarm according to the defined alarm sequence.

3.5.2 Configuring Alarm Parameters

Purpose:

You can set the alarm related parameters following below instructions, including linkage action interval, alarm duration and dome activity resumption.

Steps:

1. Enter the alarm parameter configuration menu:

MAIN MENUS > DOME SETTINGS > ALARMS > ALARM SETTING

2. Configure the interval of the alarm sequence.

When more than one alarm of the same priority occurs at the same time, the speed dome will respond to one alarm first and then respond to the next one after the user-defined interval. You can set the on **ALARM SEQUENCE** submenu from 1 to 200 seconds.

3. Configure the alarm rest delay.

If there's a linkage action has already been triggered by an alarm input, the speed dome will only respond to the input from the same channel again after the user-defined reset delay time**.** This is the rest time that the speed dome considers an alarm to be active when it's physically cleared. You can set the **ALARM REST DELAY** from 0 to 300 seconds.

4. Resume the dome activity.

You can set **ALARM RESUME** to **ON** to enable the speed dome to resume its previous activity after the triggered actions finished.

Notes:

- If the speed dome is moving when a linkage action is triggered, it will stop at the current position and resume from this position after the linkage action finishes.
- The speed dome can be configured to resume the PTZ positions, focus and iris value.

3.5.3 Configuring Auxiliary Alarm Output

Purpose:

An auxiliary output is a configurable alarm output interface on the speed dome back box which can connect and trigger another alarm device to operate.

Steps:

1. Enter the alarm auxiliary output configuration submenu:
   MAIN MENUS > DOME SETTINGS > AUXS

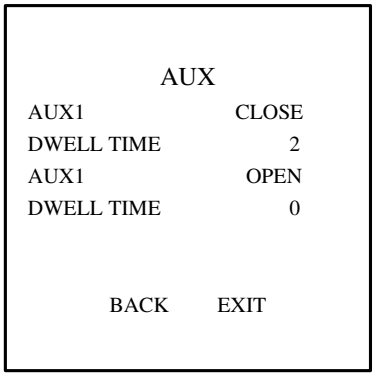


Figure 3-27 Configure the AUX Output

2. Click **IRIS+** to edit the status of the auxiliary outputs. You can set the alarm output type as **OPEN** (normally open) and **CLOSE** (normally closed).
   Note: there are 2 auxiliary outputs configurable.
3. Move the cursor to **DWELL TIME t**o set the duration of the auxiliary output signal. The configurable rage is 0~60 seconds.
4. Link the auxiliary output to the configured alarm.

Steps:

(1) Enter **MAIN MENUS > DOME SETTINGS > ALARMS > ALARM SETTING** and choose the alarm number that you want to link the auxiliary output to.

(2) Move the cursor to **AUX** and click **IRIS+** to configure the auxiliary output to the alarm. You can choose **NONE** to disable auxiliary alarm outputs, choose **1** to active AUX 1 or choose **2** to active AUX 2.

3.6 Others

3.6.1 Line Synchronization

When you set LINE LOCK as OFF, the synchronization mode is internal synchronization.
When you set LINE LOCK as ON, the synchronization mode is external synchronization.

Note: The speed dome does not support the external synchronization yet.

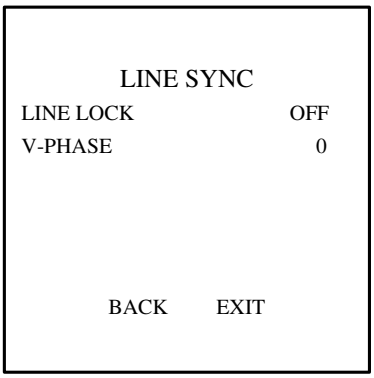


Figure 3-28 Line Sync

3.6.2 Setting the language of the menu

Enter **MAIN MENUS > LANGUAGE**, you can set the language of the on-screen display menu in Chinese or in English.

3.6.3 Configuring Dome Authentication

Purpose:

You can change and enable/disable the password to set the dome authentication to prevent unauthorized changes to the dome settings. After you set and enable the password, you need to input the password every time you call preset 95 to enter the menu.

Steps:

1. Move the cursor to enter password modification submenu:
   MAIN MENUS > DOME SETTINGS > PASSWORD > EDIT PASSWORD
2. Click **IRIS+** to enter edit mode.
3. Click the left/right buttons to move the cursor on the current password and click up/down or **FOCUS+/-** buttons to choose the number.
4. Click the right direction button to move the cursor to **INPUT PW AGAIN** and input the password again.
5. Click **IRIS+** to save the changes and exit.
6. Enter the **START USING** submenu and switch the status to **ON** and click **IRIS+** to save.

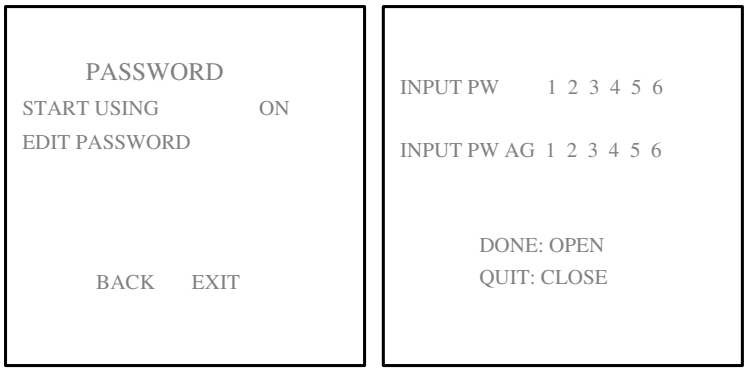


Figure 3-29 Set the Password

3.6.4 Restoring Default Dome Settings

Purpose:

You can reset all dome settings to factory default parameters as shown in the table below.

Note: Dome settings are mainly of PTZ parameters and alarm parameters, and also include some system settings, e.g. dome address.

Enter default dome settings menu:

MAIN MENUS > RESTORE DEFAUTLS

Click **IRIS+** to restore the dome settings to the default value as shown in below table; or click **IRIS-** to exit.

Table 3-2 Default Dome Settings

Parameters	Default Value
Dome address	0
Baudrate	2400bps
120Ω matching resistance	Off
Soft address	Off
Initial Position	Zero angle
Soft Baudrate	Off
Auto-focus	On
Zoom limit	Max. Optical Zoom
Zoom speed	High
Slow Shutter	0
IR cut filter	Auto
Backlight compensation	Off
AE mode	Auto
Exposure compensation	Off
White balance	Auto

Auto-flip	Off
Proportional pan	On
Park time	5 seconds
Park action	None
Scan speed	Level 28
Preset image freeze	Off
Limit stops	Off
Alarm resume	On
Alarm sequence	5 seconds
AUX1/AUX2	NO
Alarm display	On
Time display	Off
Zoom, azimuth/elevation and preset label display	Display for 2 seconds

3.6.5 Restoring Default Camera Settings

Enter **MAIN MENUS > RESTORE CAMERA**
Click **IRIS+** to restore the camera settings to the default value; or click **IRIS-** to exit.
Note: Camera settings include the image parameters, lens settings and display settings.

3.6.6 Rebooting the Dome

Enter **MAIN MENUS > REBOOT DOME** and click **IRIS+** to reboot the speed dome remotely.

Appendix

Appendix 1 Lightning & Surge Protection

This product adopts TVS plate lightning protection technology to avoid damage caused by pulse signal that is below 3000W, like instantaneous lighting, surging, etc. According to the actual situation outdoors, necessary protection measures must be taken to secure the electrical safety.

- The distance between signal transmission line and High-voltage equipment or high-voltage cable is at least 50m.
- Outdoor wiring should better be along the eaves as much as possible.
- In the open field, wiring should be buried underground in sealed steel pipe, and the steel-pipe should be one-point grounding. Overhead routing method is forbidden.
- In strong thunderstorm area or high induction voltage areas (such as high-voltage transformer substation), high power lightning protection apparatus and lightning conductor are necessary to be appended.
- The design for installation and wiring with lightning protection and grounding in mind should be combined with the lightning protection consideration of the building, and conform to the related national standards and industry standards.
- The system should be equipotentially grounded, and the grounding equipment must satisfy double-request of system anti-jamming and electric safety, and it must not appear short circuit and open circuit with the zero conductor of strong grid. When the system is grounding individual, the resistance should be no more than 4Ω, the section al area of the grounding cable should be no less than 25mm2. For grounding instructions, please refer to the Installation Manual of Speed Dome.

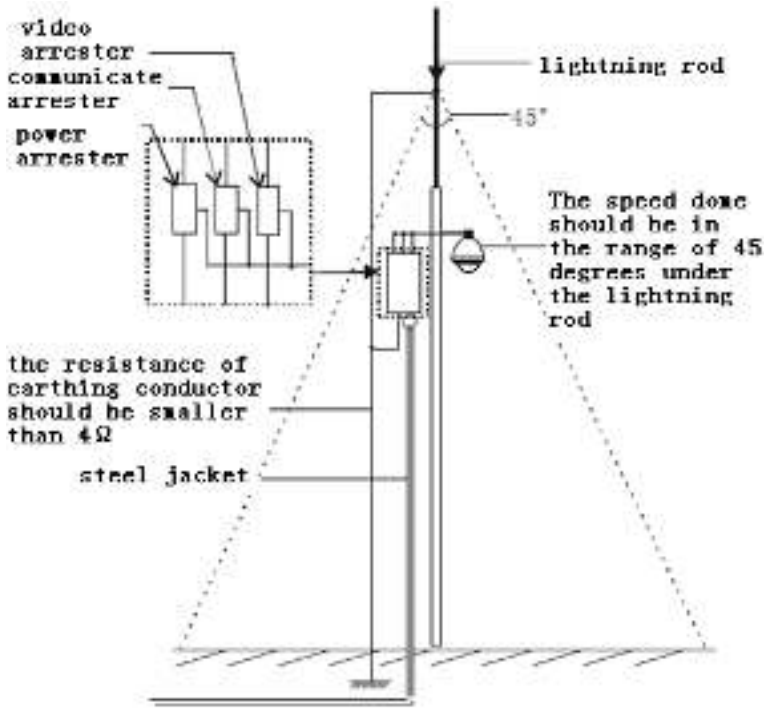


Figure A- 1 Lightning & Surge Protection

Appendix 2 RS485 Bus Connection

- General Property of RS485 Bus

According to RS485 industry bus standard, RS485 is a half-duplex communication bus which has 120Ω characteristic impendence, the maximum load ability is 32 payloads (including controller device and controlled device).

- RS485 Bus Transmission Distance

When using 0.56mm (24AWG) twisted-pair line, according to different baudrate, the maximum transmission distance theory table is shown as below:

Table A-1 Max. Distance of RS485 Transmission

Baudrate	Max Distance
2400BPS	1800m
4800BPS	1200m
9600BPS	800m

The transmission distance will be decreased if we use the thinner cable, or use this product under the strong electromagnetic interference situation, or there are lots of devices are added to the bus; on the contrary, the transmission distance will be increased.

- Connection Methods

  RS485 industry bus standard require daisy-chain connection method between any devices, both sides have to connect a 120Ω terminal resistance (show as Diagram 1), the simplified connection method is shown as diagram 2, but the distance of "D" should not be too long.

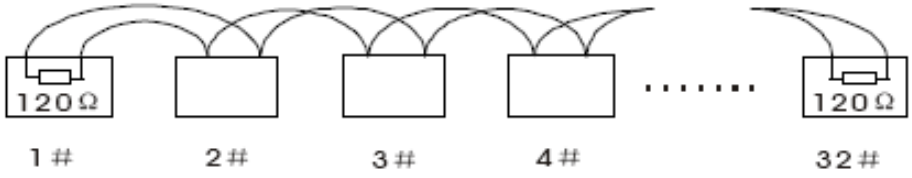
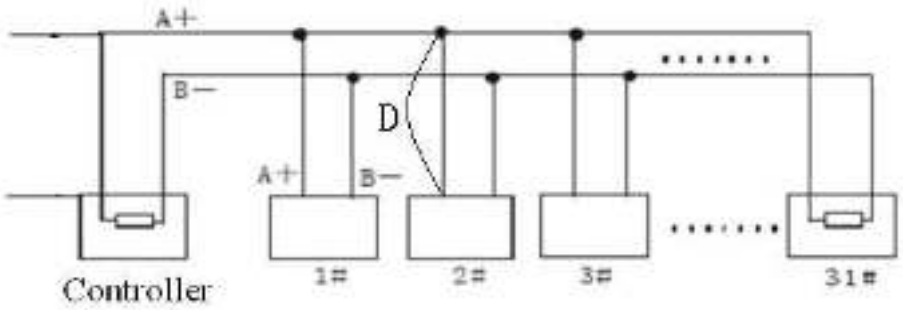


Figure A-2 RS485 Connection 1



1) Figure A-3 RS485 Connection 2

- Problems in the Practical Application

Normally, users adopt star-shape connection method in construction, under this situation, the terminal resistors must be connected between two farthest devices (as Figure 4, 1# and 15#), but this connection method is not satisfy the requirement of the RS485 industry standard so that it will lead to some problems such as signal reflection, anti-jamming ability decline when the devices are

faraway. At this time, the dome will be uncontrollable, or self-running, etc.

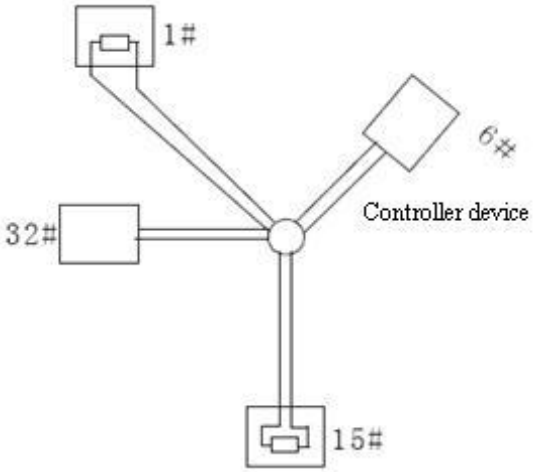


Figure A-4 Star Shape Connection

For such case, the best way is adding a RS485 distributor. This product can effectively change the star-shape connection to which satisfies the requirement of RS485 industry standard, in order to avoid those problems and improve the communication reliability. Show as figure 5.

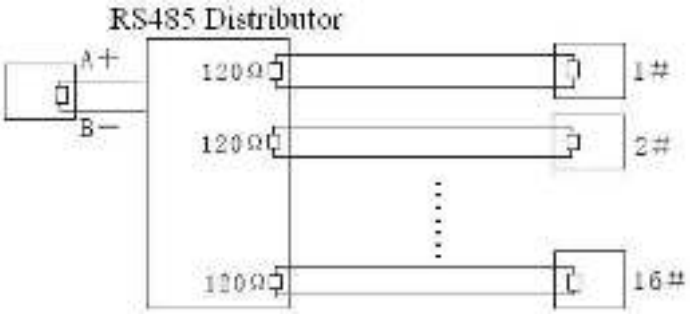


Figure A-5 RS485 Distributor

- FAQ of RS485 Bus

Fault Phenomenon	Probable Cause	Solutions
The speed dome do the self-check but can not be controlled.	1. The address or Baud Rate is not matched between Host and the Speed Dome.	1. Adjust the address or Baud Rate of Host or Speed Dome to make a match.
	2. RS485+,- are connected incorrectly.	2.Change the RS485+ and RS485- wires.
	3. Wiring drops,	3.fastening the wire
	4. RS485 wire broke;	4. Change RS485 wire.
The speed dome can be controlled but not smoothly	1. loose contact of RS485	1. fastening RS485 wire;
	2. one RS485 wire broke;	2. Change RS485 wire.
	3. Host and speed dome are too far away	3. Add terminal matched resistance
	4. Too many speed domes are connected	4. Add RS485 distributor

Appendix 3 24VAC Wire Gauge & Transmission Distance

The following table has described the recommended max. distance adopted for the certain wire gauge when the 24VAC voltage loss rate is less than 10%. For the AC driven device, the maximum voltage loss rate allowable is 10%. For example, for a device with the rating power of 80VA which is installed at a distance of 35 feet (10m) away from the transformer, then the minimum wire gauge required is 0.8000mm.

Wire Gauge mm / Distance feet(m) / Power (va)	0.8000	1.000	1.250	2.000
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 4 Table of Wire Gauge Standards

Bare Wire Gauge (mm)	American Wire Gage AWG	(British)Standard Wire Gauge SWG	Cross-sectional Area ofBare Wire 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.
3.00			7.0683

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