# 6 Inch Network High-definition Speed Dome

## **User Manual**

**V2.0.0** 

2010-01

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

This manual is applicable to 6 Inch Network High-definition 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.

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



#### Varnings

- 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 AC24V/3A.
- 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.)



- 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  $-30^{\circ}C \sim +65^{\circ}C$ ), 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**

Integrating the network remote monitoring capability with the functions of the high speed dome, the Network High Speed Dome is a new product model which features easy installation and operation and facilitated wiring design. With built-in video server, the Network Speed Dome is capable of providing the following new features: real-time video stream compressed and then transmitted via network to different clients simultaneously; based on Ethernet, and analog video output supported; TI DAVINCI processing chip and platform adopted to ensure high reliability and stability of performance; H.264 compression adopted to effectively save network transmission bandwidth and HD storage space; dynamic configuration of encoding parameters; PPPoE, DHCP, UDP, MCAST and TCP/IP protocols supported; bidirectional voice talk, OSD overlay and RS-485 serial port control; built-in Web Server allows control of speed dome via IE browser; main stream and sub stream selectable for transmission; local and remote alarm response actions; multi-zone motion detection with different sensitivity levels configurable; remote integrated storage based on IPSAN and NAS; and watermark technology adopted for stream data to prevent unauthorized operation of the record files, etc.

The Network High-definition Speed Dome can be widely applied to various monitoring scenes such as the river, forest, road, railway, airport, harbor, oil field, sentry, plaza, park, scenic spot, street, station, stadium, etc.

### **1.2 Outline**



6 Inch Network High-definition Speed Dome

## **1.3 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, PRIVATE-Code protocol, etc., and is capable of being self-adaptive to these protocols without need of 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 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 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.

Note: Please refer to Section 4.2.2 3D Intelligent Positioning for the specific instructions.

#### 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.

#### • 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.

#### • Wide Dynamic Range (WDR)

When the Wide Dynamic Range (WDR) function is on, the dome is able to balance the brightest and darkest sections of a scene to produce a picture that is better balanced in lighting and provides more details.

#### • 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.

#### • 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 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.

#### • Alarm Response Action

The speed dome supports 1 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 callup.

#### • 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.

#### • User Management

The dome allows the users to be edited in groups with different levels of permission. In the *admin* login status, the user is allowed to configure the user groups and user parameters. Multiple users are allowed to access and control the same network speed dome via network simultaneously.

### **1.4 Features**

#### **Built-in WEB Server**

- 1 channel of compressed video stream transmitted via network and decoded for local display;
- Up to 6 domes can be simultaneously connected via network;
- Support multiple network transmission protocols;
- WEB access for WAN applications;
- Management of dome configuration and user permission administration via Ethernet;
- IP address dynamic allocation.

#### **Built-in Driver/Receiver**

- Full-digital design, with power-off protection for all data;
- Integrated design ensures high reliability;
- 256 presets and 8 patrols programmable; each patrol with a maximum of 32 presets configurable;

- 4 patterns, with the recording time reaching up to 10 minutes;
- RS-485 bus control;
- Up to 24 privacy mask areas programmable (depending on camera models)
- Self-adaptive to PELCO-D, PELCO-P, PRIVATE-Code, etc., with various baud rates selectable.

#### **Built-in Pan/Tilt**

- High-precision motor drive, stable operation, sensitive reaction and precise positioning;
- Integrated design with compact construction;
- 360° continuous rotation;
- Low-speed movement ensures high image stability;
- Preset positioning tolerance less than 0.1°

#### **Built-in Zoom Lens**

- High sensibility and high resolution
- Auto focus
- Auto gain
- Auto white balance
- Auto IR cut filter

## 1.5 Default IP, User Name and Password

Default IP: 192.0.0.64 User Name: admin Password: 12345

# **Chapter 2 Operation Instructions**

### 2.1 Power-up Action

After the power is applied, the speed dome will perform self-test action that begins with lens actions and then pan and tilt movement. After completion of power-up self-test actions, the interface as shown in Figure 2.1 will be displayed on screen for 40 seconds.

The System Information displayed on the screen includes the Dome Address, Protocol, Version and other information. The COMMUNICATION refers to the baud rate, parity,data bit and stop bit of the dome, e.g., "2400, N,8, 1" indicates the dome is configured with the baud rate of 2400, no parity,8 data bits and 1 stop bit. Please refer to Section 3.3.1 for detailed information.

MODELDS-2DF1-671ADDRESS0COMMUNICATION2400,N,8,1SOFTWARE VERSION2.0.1LANGUAGEENGLISH		
COMMUNICATION 2400,N,8,1 SOFTWARE VERSION 2. 0.1		
		•
Endelonal Endelon		
	LANGUAGE	ENGLIGHT

Figure 2.1

## 2.2 Presets with Special Functions

The following presets are predefined with special functions:

Call Preset	Function	Call Preset	Function
33	Auto flip	93	Set manual limit stops
34	Pan zero	94	Remote reboot
35	Patrol 1	95	Access main menu
36	Patrol 2	96	Stop a scan
37	Patrol 3	97	Start random scanning
38	Patrol 4	98	Start frame scanning
39	IR cut filter in	99	Start pan scanning
40	IR cut filter out		
41	Pattern1		
42	Pattern2		
43	Pattern3		
44	Pattern4		
92	Enable limit stops setting		

## 2.3 Label Display

The dome allows you to configure how labels are displayed on the monitor. The following labels are available:

**Zoom**: Identifies the amount of magnification.

Direction: Displays compass direction, with the format of PXXX TXXX. The XXX following P refers to the degrees in pan direction,

while the XXX following T indicates the degrees in tilt position. The north direction can be set by menu.

Alarm Message: Displays activated alarm message.

Time: Support for time display.

Preset Title: Identifies preset being called.

# **Chapter 3 Menu Operation**

Note: The menu varies depending on camera models.

#### Menu Tree



## **3.1 MAIN MENU**

After logon to IE browser or client software, call preset 95 to access the main menu of the dome. Refer to Figure 3.1.1.

Click the direction buttons on PTZ control section to move the cursor to the selected menu item. Press *IRIS*+ to confirm, i.e., operation can be done on this menu options. If current menu contains sub-menu, enter the corresponding sub-menu.

To perform operation on menu option, the selected number behind menu item can be changed by clicking up and down buttons. Click *IRIS*+ to confirm and return to previous menu. The same procedure is followed for the next operation for which no description is given. Select *Exit* menu option to confirm and exit from menu operation.

MAIN MENU <SYSTEM INFORMATION> <SYSTEM SETTINGS> <FACTORY SETTINGS> <RESETCAMERA> <REBOOT SYSTEM> EXIT

<system in<="" td=""><td>FORMATION&gt;</td></system>	FORMATION>
MODEL	DS-2DF1-671
ADDRESS	0
COMMUNICATION	2400,N,8,1
SOFTWARE VERSI	ON 2.0.1
LANGUAGE	ENGLISH
BACK	EXIT

Figure 3.1.1



## **3.2 SYSTEM INFORMATION**

This menu displays current dome system information, as shown in Figure 3.2.1. Information in menu option cannot be changed and *Temperature* refers to internal temperature of dome.

Move the cursor to *Back* and click *IRIS*+ to return to the previous menu, or move the cursor to *Exit* and click *IRIS*+ to save the settings. Operation is similar to all other submenus.

## **3.3 SYSTEM SETTINGS**

Enter the SYSTEM SETTINGS menu, as shown in Figure 3.3.1 and Figure 3.3.2.

Note: Enter the next page by moving the cursor beside NEXT PAGE and click IRIS+ button.

<SYSTEM SETTINGS> <SYSTEM INFO SETTINGS> <CAMERA> <MOTION> <LINE SYNC> <PRESETS> <PATROLS> NEXT PAGE BACK EXIT





Figure 3.3.2

### 3.3.1 SYSTEM INFO SETTINGS

The SYSTEM INFO SETTINGS menu is used for setting the soft address, date and time, display information, etc. Refer to Figure 3.3.3 and Figure 3.3.4.

#### • SOFT ADDRESS

When the ENABLE SOFT ADDRESS option is set to ENABLE, the speed dome will use the soft address, and the addresses from 1 to 255 selectable. Please note the dome address range supported by the current control keyboard. When the ENABLE SOFT ADDRESS option is set to DISABLE, the address set by DIP switch is used. When the address is set to 0, the dome is capable of receiving the control command from the control device of any address; when the address of the control device is set to 0, then the speed dome of any address can be controlled as well. Refer to Figure 3.3.3.



Figure 3.3.5

#### • DATE AND TIME

The DATE AND TIME allows user to set the date and time of the dome. As shown in Figure 3.3.5, the message indicates the current date and time is 14:39:17 on December  $30^{th}$ ,2009.

Use the Left and Right buttons to select the option, and click the Up and Down buttons to modify the value.

#### • ZERO POINT SETTING

Enter the ZERO POINT SETTING menu and then use the direction buttons to define the amount of pan from zero degrees vertical and the amount of tilt from zero degrees horizontal, and finally press the *Iris*+ button to save settings and exit the current menu.

#### • DISPLAY SETTINGS

The DISPLAY SETTINGS menu is displayed in one page, as shown in Figure 3.3.6.

Each item can be set with the separate display time on screen from 2sec, 5sec and 10sec selectable, or set to be ON or OFF. The preset display position can overlapped the display positions of azimuth/elevation and zoom. If both of the ZOOM SHOW and the PT SHOW are set to ON, then in the preset operation status, the preset label will be displayed all the time; while in other operation status, the

azimuth/elevation and zoom label are displayed all the time in other status. The external alarm response actions can be activated in non-menu programming mode while disabled in the menu programming mode.

#### • IP ADDRESS

Enter the IP ADDRESS menu and then use the direction buttons to define of value of IP address and sub mask. Finally click the *Iris+* button to save settings and exit the current menu.

#### • 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. The function can be set to 30 sec, 60 sec, 300 sec, 600 sec or Disable.

#### • **REBOOT PERIOD**

The dome reboots at 00:00:00 of the current day for the first time, and the second reboot action will take place after the predefined period which can be set to  $1\sim7$  days or Disable.

#### • PT ADJUST PERIOD

The dome performs pan and tilt self-test at 00:00:00 of the current day for the first time, and the second pan/tilt self-test action will take place after the predefined period which can be set to  $1\sim7$  days or Disable. If the reboot time and the PT adjust time are overlapped with each other, the system will perform the scheduled reboot with the priority, and no scheduled PT adjust action will be taken.

<display s<="" td=""><td>ETTINGS&gt;</td></display>	ETTINGS>
ZOOM LABEL	2 SECS
PT LABEL	2 SECS
TIME DISPLAY	ENABLE
PRESET LABEL	2 SECS
LANGUAGE	ENGLISH
BACK	EXIT

 IP ADDR:
 172
 008
 003
 205

 SUB MASK:
 255
 255
 255
 000

 IRIS+OK
 IRIS- CANCEL
 100
 100

Figure 3.3.6

```
Figure 3.3.7
```

### **3.3.2 CAMERA SETTINGS**

Note: The menu varies depending on camera models.

Г

Enter the Camera Settings menu, as shown in Figure 3.3.8, Figure 3.3.9 and Figure 3.3.10.

<camera< td=""><td>&gt;</td></camera<>	>
AUTO FOCUS	ENABLE
ZOOM LIMIT	36
ZOOM SPEED	HIGH
SLOW SHUTTER	ENABLE
IR CUT FILTER	NIGHT
IRCUT SENSITIVITY	N/A
NEXT PAGE	
BACK E	XIT

<came< th=""><th></th></came<>	
<came!< td=""><td>XA-</td></came!<>	XA-
SHARPNESS	9
BLC/WDR	DISABLE
EXPOSURE MODE	AUTO
IRIS	10
SHUTTER	60
GAIN	1
NEXT PAGE	
BACK	EXIT

Figure 3.3.8

Figure 3.3.9

<camer< td=""><td>A&gt;</td></camer<>	A>
EXP COM/NOISE RE	EDUCE 7
PICTURE FLIP	DISABLE
WHITE BALANCE	ATW
R GAIN	210
B GAIN	150
FOCUS NEAR LIMIT	1M
INITIALIZE LENS	DISABLE
BACK	EXIT

Figure 3.3.10

#### • AUTO FOCUS

The camera provides three focus modes for selection: ENABLE, DISABLE and PTZ TRIGGER.

In auto focus mode (ENABLE), the camera will allow the lens to remain in focus when using pan, tilt and zoom (PTZ) functions.

In manual focus mode (DISABLE), the focus can be operated manually.

In half-auto focus mode (PTZ TRIGGER), the camera will remain in a fixed focus position when all PTZ motions are stopped. And when the PTZ motions are resumed, the camera will focus automatically.

#### • ZOOM LIMIT

Zoom limit allows the user to define a limitation on the amount of telephoto zoom. The settings vary depending on camera models. Zoom amount=optical zoom× digital zoom. When the ZOOM LIMIT is set to the minimum value, it indicates the digital zoom is disabled, and the optical zoom is in its maximum value.

#### ZOOM SPEED

Zoom speed allows the user to define the speed at which the dome will go from full wide zoom to the optical zoom, with three levels selectable: HIGH, MIDDLE and LOW. The default setting is HIGH.

#### • SLOW SHUTTER

The shutter will automatically slow down to obtain clearer figure through exposure time extension under low lightening. The default setting is ENABLE.

#### • DAY/NIGHT

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. The default setting is AUTO.

The DAY mode can be set by calling preset 39, and the NIGHT mode set by preset 40.

#### • IRCUT SENSITIVITY

The IR cut sensitivity is the light level at which the IR cut filter switches DAY or NIGHT. Three levels are selectable: HIGH, MID and LOW. The default setting is MID.

Note: This feature varies depending on camera models.

#### • SHARPNESS

The sharpness function enhances picture detail by increasing the aperture gain of the camera and sharpening the edges in the picture. Levels from 1 to 16 are selectable, with the default setting of level 9.

#### • BLC/WDR

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.

When the Wide Dynamic Range (WDR) function is on, the dome is able to balance the brightest and darkest sections of a scene to produce a picture that is better balanced in lighting and provides more details.

Note: The BLC/WDR feature varies depending on camera model. The default setting is for BLC function.

#### • EXPOSURE MODE

The exposure mode can be set to IRIS PRIORITY, SHUTTER PRIORITY, GAIN/MANUAL or AUTO. When it is set to AUTO, the auto iris, auto shutter and auto gain functions are all enabled; when it is set to IRIS PRIORITY, the iris function adopts the defined value while the auto shutter and auto gain remain to be enabled; when it is set to SHUTTER PRIORITY, the shutter function adopts the defined value while the auto iris and auto gain remain to be enabled; and when it is set to GAIN/MANUAL, the gain value can be adjusted, or the iris, gain and shutter values are all adjustable. The default setting is AUTO.

Note: The Gain/Manual feature varies depending on camera models.

#### • IRIS

The iris is the lens function that opens and closes the iris in response to changing light conditions, with the numeric values from 0 to 17 selectable.

#### • SHUTTER

The Shutter is the duration of the electronic shutter. User can set the shutter speed to 1, 2, 4, 8, 15, 30, 60, 125, 180, 250, 500, 1000, 2000, 4000 or 10000. The numeric value of X indicates the shutter speed is 1/X second.

#### • GAIN

The Gain indicates the amplification degree of the original image signal, with the numeric values from 0 to 15 selectable.

#### • EXP COMP/NOISE REDUCE

The exposure compensation effect can be adjusted through exposure volume adjustment. The numeric values from 0 to 14 are selectable, with the default setting of 7.

The noise reduce function can be set to OFF, HIGH, MID and LOW. The default setting is MID.

Note: This feature varies depending on camera models.

#### • IMAGE FLIP

This feature allows the video image to be mirrored horizontally and vertically on the screen.

#### • WHITE BALANCE

This feature automatically processes the viewed image to retain color balance over a color temperature range. The dome provides 5 modes for selection: AUTO, INDOOR, OUTDOOR, SELFDEFINE and ATW. When the SELFDEFINE is selected, set the value of RED and BLUE.

#### • FOCUS NEAR LIMIT

The focus near limit can be set to 1CM, 30CM, 1M or 3M. The feature allows the camera to perform auto focus out of the focus near limit.

#### • INITIALIZE LENS

This feature enables the camera to perform daily lens initiation action at 00:00:00 to ensure the normal operation.

### **3.3.3 MOTION SETTINGS**

The MOTION menu is displayed in two pages, as shown in Figure 3.3.11 and Figure 3.3.12.

L	<motion></motion>		
L	PROPORTIONAL PAN	ENABLE	
L	PARK TIME(SECS)	5	
L	PARK ACTION	DISABLE	
L	SCAN SPEED	28	
L	PRESET FREEZE FRAME	DISABLE	
L	<limit settings=""></limit>		
L	NEXT PAGE		
L			
	BACK EX	IT	

Figure 3.3.11

#### • PROPORTIONAL PAN

When the PROPORTIONAL PAN is set to ENABLE, the dome will automatically reduce or increases the pan and tilt speeds in proportion to the amount of zoom. At telephoto pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image fast on the monitor when there is a large amount of zoom.

When the PROPORTIONAL PAN is set to DISABLE, it will be difficult to trace the object at low pan and tilt speeds or no movement in large amount of zoom.

#### • PARK TIME (SECS)

This feature allows the dome to begin a specified operation (scan, preset, or pattern) after a configured period of inactivity.

Park time can be configured from 5 to 720 seconds.

Note: If no control signal is received for a period of time under the following circumstances, no automatic actions will be performed:

1. In the process of performing dome actions by callup of special presets; 2. In the process of performing external alarm response actions.

#### • PARK ACTION

This feature will define the activity when the dome parks. The selectable park actions include: presets1-8, patterns 1-4, patrols 1-8, auto scan, tilt scan, random scan, frame scan, panorama scan, or disable.

#### • SCAN SPEED

Scan speed is the degrees per second of the auto scan, tilt scan, frame scan, random scan and panorama scan. Scan speed is adjustable from 1 to 40 degrees per second through the camera menu.

#### • FRESET 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.

#### • LIMIT SETTINGS

Limit stops are configurable stops that limit the pan and tilt range of the dome. There may be left/right and up/down limit stops configurable to define an area. When the LIMIT ENABLE function is set to DISABLE, the movement of dome will not be limited despite of defined limit stops. Refer to Figure 3.3.12.

<LIMIT SETTINGS>LIMIT ENABLEDISABLE<SET MANUAL STOPS><CLEAR MANUAL STOPS><SET SCAN STOPS><CLEAR SCAN STOPS><SET PANORAMA SCAN STOPS><CLEAR PANORAMA SCAN STOPS>BACKEXIT

Figure 3.3.12

#### • SET MANUAL STOPS:

To set limit stops manually:

- 1. Enter the SET MANUAL STOPS menu.
- 2. Follow the directions (SET LEFT LIMIT) displayed on the monitor and use the joystick or direction buttons to the desired location of left limit stop.
- 3. Press the IRIS + button to finish the setting of left limit stop.
- Follow the same steps to set the right, up and down limit stops in sequence according to the directions displayed on the monitor.

When the limit stops have been defined, the left or right limit stop can be reached by moving the joystick to the left or right.

The new settings of limit stops will overwrite the existed settings.

#### • CLEAR MANUAL STOPS:

The defined manual left or right limit stops can be cleared by this menu.

#### • SET SCAN STOPS:

The auto san stops can be set by this menu. Follow the same instructions with the SET MANUAL STOPS section described above to set the auto scan stops.

*Note:* When the manual limit stops have been set, the auto scan stops function is invalid, and the operation will be subject to the defined manual limit stops.

#### • CLEAR SCAN STOPS:

The defined auto scan limit stops can be cleared by this menu.

#### • SET PANORAMA SCAN STOPS:

The panorama scan stops can be set by this menu. Follow the same instructions with the SET MANUAL STOPS section described above to set the auto scan stops.

#### • CLEAR PANORAMA SCAN STOPS:

The defined panorama scan limit stops can be cleared by this menu.

### **3.3.4 LINE SYNC**

Note: This feature is not supported currently.

### **3.3.5 PRESETS**

The PRESETS menu is displayed as shown in Figure 3.3.13.

<pres< th=""><th>ETS&gt;</th></pres<>	ETS>	
PRESET NUMBER	1	
PRESET LABEL	PRESET1	
<set label="" preset=""></set>		
<edit preset="" scene=""></edit>		
<clear preset=""></clear>		
BACK	EXIT	

Figure 3.3.13

#### PRESET NUMBER

The dome provides 256 presets. The PRESET NUMBER displays the preset under current operation. If the preset has been defined, the corresponding number will appear; while no preset is defined, it will display UNDEFINED. The presets which are predefined for specific functions will not be displayed and no change is allowable. Please refer to page 9 for presets with specific functions.

#### • SET PRESET LABEL

Select SET PREST LABEL to enter the menu shown in Figure 3.3.14, and then press *IRIS*+ button to enter the menu for editing the preset label. Refer to Figure 3.3.15.

Use the following functions buttons on the keyboard or the DVR front panel to edit preset label:

IRIS+: Confirm and save the current settings and return to the previous menu.

IRIS-: Cancel the current operation and return to the previous menu.

FOCUS+: Select and enter the character.

FOCUS-: Delete the character currently entered.

Direction Buttons: Move the cursor to select the numbers/lowercases/capitals/symbols.



Figure 3.3.14

Figure 3.3.15

#### • EDIT PRESET SCENE

Select EDIT PREST SCENE to enter the menu, use the direction buttons to move PTZ to the desired scene and then press the *IRIS*+ to confirm the settings and return to the previous menu, or press *IRIS*- to cancel settings.

Note: the setting of preset scene will be restricted by the limit stops if defined.

#### • CLEAR PRESET

This feature is used for clearing the current preset.

### **3.3.6 PATROLS**

The PATROLS settings menu is shown in Figure 3.3.16.

#### • PATROLS NUMBER

The dome provides 8 patrols numbering from 1 to 8.

		X PRESET	TIME	SPEED
<patrols></patrols>	INDE			
PATROL NUMBER 1	1	0	2	30
<patrol edit=""></patrol>	2	0	2	30
<patrol perview=""></patrol>	3	0	2	30
<patrol clear=""></patrol>	4	0	2	30
	5	0	2	30
	6	0	2	30
	7	0	2	30
BACK EXIT		IRIS+ OK	IRIS- C.	ANCEL

Figure 3.3.16

Figure 3.3.17

#### • PATROL EDIT

The EDIT PATROL settings menu is shown in Figure 3.3.17. A patrol can be configured with 32 presets. To edit a patrol:

- 1. Use the *Up* and *Down* direction buttons to select the preset to be edited.
- 2. Use the Left and Right direction buttons to select among PRESET, DWELL TIME and SPEED.
- 3. After having selected the item to be edited, use the Up and Down direction buttons to set values.
- 4. Follow the same steps to edit the other presets. Click the *Down* button to enter the next page. The preset edited in the patrol can be modified or deleted as well. In default setting, the preset number is initialized as 0, the dwell time is 2 seconds (0-30 seconds selectable) and the patrol speed is level 30 (level 1-40 selectable).
- 5. Press IRIS+ to save the current settings or press IRIS- to cancel settings and return to the previous menu.

*Note*: The patrol speed of the dome is shown as below:

Level	Speed(°/s)	Level	Speed(°/s)	Level	Speed(°/s)
1	0.3	2	2	3	4
4	6	5	8	6	10
7	12	8	14	9	16
10	18	11	20	12	25
13	30	14	35	15	40
16	45	17	50	18	55
19	60	20	65	21	70
22	80	23	90	24	100
25	110	26	120	27	130
28	140	29	150	30	160
31	170	32	190	33	210
34	230	35	250	36	270
37	290	38	310	39	330
40	350				

#### • PATROL PREVIEW

Enter the PATROL PREVIEW menu to view the current patrol if defined, which enables the dome to scan among the presets as predefined.

#### • PATROL CLEAR

Enter the PATROL CLEAR menu to clear the current patrol.

### **3.3.7 PATTERNS**

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).

Refer to Figure 3.3.18 for the PATTERNS settings menu:



Figure 3.3.18

Figure 3.3.19

#### • PATTERN NUMBER

The number of pattern under current operation. The dome provides 4 patterns numbering from 1 to 4.

#### • PATTERN RECORD

Enter the PATTERN RECORD menu, as shown in Figure 3.3.19. Operate camera functions to configure the pattern. The REMAINING MEMORY indicates the memory available to configure the patterns. When it displays 0, no patterns can be memorized any more.

*Note*: These 4 patterns can be operated separately and with no priority level. When configuring and calling the pattern, the limit stops operation and auto flip will be invalid, while the proportional pan is invalid; and the 3D intelligent positioning operation is not supported (pan/tilt movement and zoom operation cannot be memorized simultaneously).

#### • PATTERN PREVIEW

Enter the PATTERN PREVIEW menu to view the current pattern which has been defined.

#### • PATTERN CLEAR

Enter the PATTERN CLEAR menu to delete the current pattern.

### **3.3.8 PRIVACY MASK**

The window blanking allows a user to configure the four-sided areas that cannot be viewed by the operator of the dome system. A blanked area will move with pan and tilt functions and automatically adjust in size as the lens zooms telephoto and wide. Refer to Figure 3.3.20 for the PRIVACY MASK settings menu.

#### • WINDOW NUMBER

The number of window blank under current operation. The dome provides user-defined 24 window blanks numbering from 1 to 24, and up to 8 windows can be configured at the same image. Specific number of available window blanks varies depending on camera model.

#### • WINDOW ENABLE

The WINDOW ENABLE can be set to ENABLE or DISABLE. If no window blanking has been configured, then the WINDOW ENABLE cannot be set to ENABLE.

 <PRIVACY MASK>

 WINDOW NUMBER
 1

 WINDOW ENABLE
 DISABLE

 <WINDOW SETTINGS>
 FOCUS+SWITCH CONTENT

 <CLEAR WINDOW>
 IRIS+ OK

 BACK
 EXIT

Figure 3.3.20

Figure 3.3.21

#### • WINDOW SETTINGS

To set a window blanking area:

- 1. Use the joystick or direction buttons to position the cursor beside WINDOW SETTINGS and then press IRIS+ to enter the window blank settings menu. Refer to Figure 3.3.21. A purple smear window will appear on the screen (the color of window varies depending on camera models).
- 2. Follow the instructions that appear on the screen. Use the joystick or direction buttons to move the window to the desired location.
- 3. Press FOCUS+ to start the setting of window blank size. Use the joystick or direction buttons to adjust the size of window blanking area. After completion, press IRIS+ to save settings, and the window color will turn to gray.

*Note:* The tilt range for configuring the window blank area is from 0~70°.

#### • CLEAR WINDOW

Enter the CLEAR WINDOW menu to delete the current window blank.

### 3.3.9 AUX

An auxiliary output is a configurable signal from the dome back box that can trigger another device to operate. Refer to Figure 3.3.22 for the AUX settings menu.

#### • AUX NUMBER

Select AUX1 through this item.

#### • AUX MODE

It is used for defining alarm output type. Available settings include ALWAYS OPEN (default) and ALWAYS CLOSE, which correspond to normally open and normally closed respectively.

A	ΔUX
AUX NUMBER	1
AUX MODE	ALWAYS OPEN
D t CII	
BACK	EXIT

Figure 3.3.22

### 3.3.10 CLEAR

Refer to Figure 3.3.23 for the CLEAR settings menu.

Use this menu to clear all user-defined settings, including presets, patrols, patterns and privacy mask.



Figure 3.3.23

## **3.4 FACTORY SETTINGS**

Use this function to reset all dome settings to factory default parameters, including:

Dome Address	0
Baud Rate	2400bps
$120\Omega$ matching resistance	Off
Soft Address	Off
Azimuth Zero	Zero angle
Auto Focus	On
Zoom Limit	Max Optical Zoom
Zoom Speed	High
Low Light Limit	Off
IR Cut Filter	Auto
Backlight Comp	Off
AE Mode	Auto
Exposure Comp/Noise Reduce	0
White Balance	Auto
Auto Flip	Auto
Proportion Pan	On
Park Time	5 seconds
Park Action	None
Scan speed	28 °/second
Preset Image Freeze	Off
Limit Stops	Off

Alarm Inputs	Off
AUX1	NO
Alarm Display/Time Display	On
Display of Zoom, Azimuth/Elevation and	Display for 2 seconds
Preset Label display	

## 3.5 RESET CAMERA

This function is used to reset all camera settings to factory default parameters.

## **3.6 REBOOT SYSTEM**

This function is used to reboot the system.

# **Chapter 4 Access to Network Speed Dome**

Note: This chapter has described the configuration for the network speed dome through IE or client software.

There are several network parameters of the network speed dome that need to be set after the hardware installation. Those parameters including IP address, subnet mask and port number, etc. can be set through various kinds of methods, two methods of which are introduced as below.

1. Set the network speed dome parameters such as IP address and PPPOE through IE.

2. Set the network speed dome parameters through the client software.

Please make sure that the PC and network speed dome are correctly connected and network connection is established successfully before the configuration. Two different ways of connection are showed as Figure 4.1 and Figure 4.2.



Figure 4.1 Straight Line Connection Figure

Figure 4.2 Crossover Line Connection

### **4.1Access through IE**

When the network connection between the dome and PC has been successfully established, open IE browser and input the IP address of dome (e.g., 192.0.0.64). The system will remind you to install the ActiveX control. Click and install the ActiveX control. The system will display the warning message as shown in Figure 4.1.1.

*Note:* If the ActiveX control installation is blocked by the related software in PC, the following warning message will appear, as show in Figure 4.1.1. Click *Yes* to install the ActiveX control.

🕘 iView - Microsoft Internet Explorer	
File Edit View Favorites Tools Help	
🚱 Back 🝷 🕥 🐇 📓 🏠 🔎 Search 👷 Favorites 🚱 🙆 😓 🌡	8
Address 🕘 http://192.0.0.64/NetVideoOCX.htm 🛛 💽 Go	Links »
	<u>^</u>
Internet Explorer - Security Warning	
Do you want to install this software?	
Name: NetVideoOCX.cab Publisher:	
More options     Install     Don't Install	
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. <u>What's the risk?</u>	
Opening page http://192.0.0.64/NetVideoOCX.htm	

Figure 4.1.1

If it still fails to install the ActiveX Control, please open the IE browser and set the security level to *Low* in *Tools/Internet Options/Security/Customize* or enable the *ActiveX Controls and Plug-Ins* directly. Refer to Figure 4.1.2. For safety on the Internet, once you can view the video from camera, the security level can be resumed to "default level".

ennet Options	Security Settings
Select a Web content zone to specify its security settings.	Settings:
Internet Local intranet Trusted sites Restricted	Disable     Disable     Disable     Disable     Prompt     Run ActiveX controls and plug-ins     Administrator approved
Internet This zone contains all Web sites you haven't placed in other zones	Disable     Disable     Disable     Prompt     Script ActiveX controls marked safe for scripting     Otsable
Security level for this zone Custom Custom settings. - To change the settings, click Qustom Level - To use the recommended settings, click Default Level	Conduct Conduct Prompt Conduct Cond
Custom Level Default Level	Reset to: Reset
Custom Level Default Level	OK Cancel

Figure 4.1.2 Security Settings

The dome has the default IP as 192.0.0.64, default port as 8000, user name as *admin* and password as 12345. The administrator can create up to 15 separate operators with different permission levels. To access the dome through IE, input the IP address in the address column, and the *Login* dialog box will pop up as Figure 4.1.3. Input your user name and password, and then click *Login* to enter the

Live Preview interface. Double click the *Camera 01* or *Preview* button to view the menu as Figure 4.1.4. Right double click the *Camera 01* channel, and the *Main Stream*, *Sub Stream* and *Open Sound* options will pop up.

🗾 DVR/DVS	V2.2 Sold 2001215
Brown Broked W La	

Figure 4.1.3 Login



Figure 4.1.4 Live Preview

As shown in Figure 4.1.4, the *Playback* and *Log* functions are operable only when the speed dome is configured with SD memory card (above 1G).

*Note:* If the speed dome is configured with SD card, the SD card must be formatted before use by clicking *Enter Remote Configuration* in *Configure* menu to enter the HDD management.

DVR/DVS			V2.2 build
	🔜 🔏 Logout 📮 Preview	v 🔛 Playback 🌮 Log 🏠	dingan:
	Protocol Type:	TCP	
	The Size of File Packeting:	256M <b>•</b>	
	Network Transmission Feature:	Less Delay,Good Fluency	
	Path for saving recording files:	C:\Recordfile	Browse
	Path for saving preview captured images:	C:\Picture	Browse
		, Internet	- []
	Path for saving playback captured images:	C:\Picture	Browse
	Path for saving download files:	C:V	Browse
	Enter Remote Configuration	Save	Reset

Figure 4.1.5 Configuration

To set the dome parameters through IE browser, click *Configure* to enter the *Remote Configuration* dialog box, and set the parameters including IP address, etc., as shown in Figure 4.1.6.

Call preset 95 to access the main menu of speed dome, and use the up/down/left/right buttons to select the submenu and then click *IRIS*+ button to enter the submenu to be configured.

Please refer to User Manual of iWMS-4000 (V2.0) for detailed information about Remote Configuration.

DVSR Para.       Image: Serial Para.       Alarm Para.       Image: User       Other         DVSR parameters information       DVSR Name       Inetwork camera       Cycle Record       Yes       Image: Ves         Device ID       88       Use Scale       UnUse       Image: Ves       Image: Ves	emote parameters Co	onfig		
DVSR Name       network camera       Cycle Record       Yes         Device ID       88       Use Scale       UnUse         Channel Number       1       HDD Number       0         Alarmin Number       4       AlarmOut Number       2         DVSR Type       DVS       Serial Number       2         DVSR Type       DVS       Serial Number       2         DVSR net parameters information       MAC Address       00:40:30:7c:c4:07         NIC Type       10M/100M AUTO       MAC Address       00:40:30:7c:c4:07         DVSR IP       192.0.0.5       Southet Mask       255.255.248.0       Gateway IP       0.0.0.0         DNS IP       192.0.1.1.13       Multicast IP       0.0.0.0       0       0         Manage Host IP       192.0.1.1.3       Manage Host Port       7200       PPPoE IP         PPPoE User       PPOE       PPOE IP       O       O       O       O         NAS Host IP       0.0.0.0       NAS Directory       ItardwareVersion       DXS Directory       ItardwareVersion       DXO         SoftwareVersion       V2.0 build 070427       HardwareVersion       0       O       ItardwareVersion       ItardwareVersion       ItardwareVersion       ItardwareVersion<	📃 DVSR Para. 😽 C	han Para. 🛛 💷 Serial Para. 🗎	斗 Alarm Para. 🏽 🚳 User	🔊 Other
Device ID       88       Use Scale       UnUse         Channel Number       1       HDD Number       0         AlarmIn Number       4       AlarmOut Number       2         DVSR Type       DVS       Serial Number       2         DVSR Type       DVS       Serial Number       00:40:30:7c:c4:07         DVSR net parameters information       MAC Address       00:40:30:7c:c4:07         DVSR IP       192.0.0.5       Port       8000         DNS IP       192.0.1.1.13       Maticast IP       0.0.0.0         Manage Host IP       192.0.1.1.13       Manage Host Port       7200         Use PPoE       UnUse       PPoE IP       0.0.0.0       0         PPoE User       PPoE Password       NAS Directory       NAS Directory         NAS Host IP       0.0.0.0.0       NAS Directory       0x0         DVSR version information       SoftwareVersion       V2.0 build 070427       HardwareVersion       0x0         SoftwareVersion       V4.0 build 070411       FrontPanel Version       0       0	DVSR parameters inform	ation		
Channel Number       1       HDD Number       0         Alarmin Number       4       AlarmOut Number       2         DVSR Type       DVS       -       -         Serial Number       DS6101HF-IP0020070519BCCH004000055wCU       -       -         DVSR net parameters information       MAC Address       00:40:30:7c:c4:07         DVSR IP       192.0.0.5       Port       8000         Subnet Mask       255.255.248.0       Gateway IP       0.0.0.0         DNS IP       192.0.1.1.13       Multicast IP       0.0.0.0         Manage Host IP       192.0.1.1.13       Manage Host Port       7200         Use PPPoE       UnUse       PPPoE IP       0.0.0.0       0         PPoE User       PPPoE Password       NAS Directory       NAS Directory         NAS Host IP       0.0.0.0       NAS Directory       0         DVSR version information       SoftwareVersion       0x0       0x0         SoftwareVersion       V2.0 build 070427       HardwareVersion       0         DSP Version       V4.0 build 070411       FrontPanel Version       0	DVSR Name	network camera	Cycle Record	Yes
Alarmin Number       4       AlarmOut Number       2         DVSR Type       DVS           Serial Number       DS6101HF-IP00200705198CCH004000055w/CU           DVSR net parameters information        MAC Address       00:40:30:7c:c4:07         DVSR IP       192.0.0.5       Port       8000         Subnet Mask       255.255.248.0       Gateway IP       0.0.0.0         DNS IP       192.0.1.1.13       Multicast IP       0.0.0.0         Manage Host IP       192.0.1.1.13       Manage Host Port       7200         PPPoE       UnUse       PPPoE IP       0.0.0.0       0         PVSR version information       NAS bisectory       NAS Directory       NAS Directory         SoftwareVersion       V2.0 build 070427       HardwareVersion       0x0         DVSP Version       V4.0 build 070411       FrontPanel Version       0	Device ID	88	Use Scale	UnUse 🗸
DVSR Type       DVS         Serial Number       DS6101HF-IP0020070519BCCH004000055WCU         DVSR net parameters information       MAC Address         NIC Type       10M/100M AUTO         DVSR IP       192.0.0.5         Subnet Mask       255.255.248.0         Gateway IP       0.0.0.0         DNS IP       192.0.1.13         Manage Host IP       192.0.1         Use PPPoE       UnUse         PPPoE User       PPOE Password         NAS Host IP       0.0.0.0         NAS Host IP       0.0.0.0         DVSR version information       SoftwareVersion         SoftwareVersion       V2.0 build 070427         DSP Version       V4.0 build 070411	Channel Number	1	HDD Number	0
DVSR Type         DVS           Serial Number         DS6101HF-IP0020070513BCCH004000055WCU           DVSR net parameters information         MAC Address           NIC Type         10M/100M AUTO           DVSR IP         192.0.0.5           Subnet Mask         255.255.248.0           DNS IP         192.0.1.13           Manage Host IP         0.0.0.0           Use PPPoE         UnUse           PPPoE User         PPOE           NAS Host IP         0.0.0.0           NAS Host IP         0.0.0.0           NAS Host IP         0.0.0.0           DSR         PPoE           DPPoE User         PPPoE Password           NAS Host IP         0.0.0.0           DVSR version information         SoftwareVersion           SoftwareVersion         V2.0 build 070427           DSP Version         V4.0 build 070411	Alarmin Number	4	AlarmOut Number	2
Serial Number         DS6101HF-IP0020070519BCCH004000055w/CU           DVSR net parameters information         MAC Address         00:40:30:7c:c4:07           NIC Type         10M/100M AUTO         MAC Address         00:40:30:7c:c4:07           DVSR IP         192.0.0.5         Port         8000           Subnet Mask         255.255.248.0         Gateway IP         0.0.0.0           DNS IP         192.0.1.13         Multicast IP         0.0.0.0           Manage Host IP         192.0.1.13         Manage Host Port         7200           Use PPPoE         UnUse         PPoE IP         0.0.0.0           PPPoE User         PPPoE Password         NAS host IP         0.0.0.0           NAS Host IP         0.0.0.0         NAS Directory         NAS Directory           DVSR version information         SoftwareVersion         V2.0 build 070427         HardwareVersion         0           DSP Version         V4.0 build 070411         FrontPanel Version         0         0         0	DVSR Type	J -		) <del>-</del>
DVSR net parameters information         MAC Address         00:40:30:7c:c4:07           NIC Type         10M/100M AUTO         MAC Address         00:40:30:7c:c4:07           DVSR IP         192.0.0.5         Port         8000           Subnet Mask         255.255.248.0         Gateway IP         0.0.0.0           DNS IP         192.0.1.13         Multicast IP         0.0.0.0           Manage Host IP         192.0.1.13         Manage Host Port         7200           Use PPPoE         UnUse         PPPoE IP         0.0.0.0           PPPoE User         PPPoE Password         NAS Directory           NAS Host IP         0.0.0.0         NAS Directory           DVSR version information         SoftwareVersion         V2.0 build 070427           SoftwareVersion         V4.0 build 070411         FrontPanel Version			BCCH004000055WCU	
NIC Type         10M/100M AUT0         MAC Address         00:40:30:7c:c4:07           DVSR IP         192.0.0.5         Port         8000           Subnet Mask         255.255.248.0         Gateway IP         0.0.0.0           DNS IP         192.0.1.13         Multicast IP         0.0.0.0           Manage Host IP         192.0.1.01         Manage Host Port         7200           Use PPPoE         UnUse         PPoE IP         0.0.0.0           PPPoE User         PPPoE Password         NAS Directory         Image Host Port           NAS Host IP         0.0.0.0         NAS Directory         Image Host Port           DVSR version information         SoftwareVersion         V2.0 build 070427         HardwareVersion           DSP Version         V4.0 build 070411         FrontPanel Version         0		,		
DVSR IP       132.0.0.5       Port       8000         Subnet Mask       255.255.248.0       Gateway IP       0.0.0.0         DNS IP       192.0.1.13       Multicast IP       0.0.0.0         Manage Host IP       192.0.1.13       Manage Host Port       7200         Use PPPoE       UnUse       PPoE IP       0.0.0       0         PPoE User       PPoE Password       NAS Host IP       0.0.0       0         NX Host IP       0.0.0.0       NAS Directory       Image Host Port       0         DVSR version information       SoftwareVersion       V2.0 build 070427       HardwareVersion       0x0         DSP Version       V4.0 build 070411       FrontPanel Version       0       Image Note       Image Note			MAC Address	00:40:20:7~:-4:07
Subnet Mask         255.255.248.0         Gateway IP         0.0.0.0           DNS IP         132.0.1.13         Multicast IP         0.0.0.0           Manage Host IP         132.0.1.13         Manage Host Port         7200           Use PPPoE         UnUse         PPoE IP         0.0.0.0           PPPoE User         PPPoE Password         NAS Directory           HTTP Port         80         NAS Directory           DVSR version information         V2.0 build 070427         HardwareVersion           DSP Version         V4.0 build 070411         FrontPanel Version				
DNS IP       132.0.1.13       Multicast IP       0.0.0.0         Manage Host IP       132.0.1.13       Manage Host Port       7200         Use PPPoE       UnUse       PPoE IP       0.0.0       0         PPPoE User       PPPoE Password       NAS Host IP       0.0.0       0         NAS Host IP       0.0.0       0.0       0       0       0         DVSR version information       SoftwareVersion       V2.0 build 070427       HardwareVersion       0x0         DSP Version       V4.0 build 070411       FrontPanel Version       0       0       0				
Manage Host IP       132.0.1.13       Manage Host Port       7200         Use PPPoE       UnUse       PPoE IP       0.0.0.0         PPPoE User       PPPoE Password       NAS Directory         NAS Host IP       0.0.0.0       NAS Directory         DVSR version information       SoftwareVersion       V2.0 build 070427         DSP Version       V4.0 build 070411       FrontPanel Version			2	
Use PPPoE       UnUse       PPPoE IP       0.0.0.0         PPPoE User       PPPoE Password       NAS Host IP       0.0.0.0         NAS Host IP       0.0.0.0       NAS Directory       NAS Directory         DVSR version information       SoftwareVersion       V2.0 build 070427       HardwareVersion       0x0         DSP Version       V4.0 build 070411       FrontPanel Version       0       0				
PPPoE User     PPPoE Password       NAS Host IP     0 . 0 . 0 . 0       HTTP Port     80       DVSR version information       SoftwareVersion     V2.0 build 070427       DSP Version     V4.0 build 070411	-		-	
NAS Host IP     0.0.0.0     NAS Directory       HTTP Port     80       DVSR version information       SoftwareVersion     V2.0 build 070427       DSP Version     V4.0 build 070411   FrontPanel Version	Use PPPoE	UnUse		0.0.0.0
HTTP Port     80       DVSR version information     SoftwareVersion       SoftwareVersion     V2.0 build 070427       DSP Version     V4.0 build 070411       FrontPanel Version     0	PPPoE User		PPPoE Password	
DVSR version information       SoftwareVersion       V2.0 build 070427       HardwareVersion       0x0       DSP Version       V4.0 build 070411       FrontPanel Version	NAS Host IP	0.0.0.0	NAS Directory	
SoftwareVersion     V2.0 build 070427     HardwareVersion     0x0       DSP     Version     V4.0 build 070411     FrontPanel Version     0	HTTP Port	80		
DSP Version V4.0 build 070411 FrontPanel Version 0	DVSR version informatio	n		
	SoftwareVersion	V2.0 build 070427	HardwareVersion	0x0
Restore Reboot Save Exit	DSP Version	V4.0 build 070411	FrontPanel Version	0
Restore Reboot Save Exit				
	Restore	Reboot		Save Exit

Remote setting		X
<ul> <li>Device Parameters</li> <li>Perice Information</li> <li>Version Information</li> <li>Channel Parameters</li> <li>Display Settings</li> <li>Video Parameters</li> <li>Schedule Record</li> <li>Motion Detection</li> <li>Video Lost</li> <li>Video Campering</li> <li>Video Mask</li> <li>Petr Overlay</li> <li>Network Parameters</li> <li>Network Settings</li> <li>PFPOE Settings</li> <li>NET Settings</li> <li>PFS Settings</li> <li>Serial Port Settings</li> <li>Exception Parameters</li> <li>Account Management</li> <li>ATM Data</li> <li>HDD Settings</li> <li>Update Remotely</li> </ul>	Device Information Device Name: Device No. : Record Replace: Main BNC scale: Spot BNC scale: Device Type: Channel Number: HDD Number: Alarm Input Alarm Output Device Serial No. :	Net IFDOME 88 Yes • Disable • IFDOME 1 0 7 2 DS-2DF1-5170020091013BCCH291500618WC
Default Reboot		Save Cancel

Figure 4.1.6 Remote Configuration

## 4.2Access by Client Software

### 4.2.1 Configuration through Client Software

After the installation of *iWMS-4000 (V2.0)*, click *Start->>Program->> iWMS-4000 (V2.0)* to start the client software and a dialog box of *Register Administrator* will appear, as shown in Figure 4.2.1. Input the user name and password for registration. *Note:* The password should be no less than 6 characters.

Register a	dministator	×
Please create	an administator for login!	
User name:	user01	1
Password:	******	1
Verification:	******	1
	OK Cancel	]

Figure 4.2.1 Register Administrator

/After the registration is succeed, input the user name and password in the User Login dialog box and then click *Login* to enter the Preview interface. Refer to Figure 4.2.3:



Figure 4.2.2 User Login



Figure 4.2.3 Preview Interface

Click Setup from the menu bar to enter the configuration interface. Refer to Figure 4.2.4. Right click the blank on the left and select *Add Area*.

iVMS-4000							
Preview	Playback -	Map	Logs Se	etup Help		User01	
Preview Right-click to add ar Add Area	Playback - ea, add stream media, a Media Server		Logs S	etup Help ===== ==== Up Down	Sort by camera Sort by group	1	

Figure 4.2.4 Add Area

The Add Area dialog box will pop up, as shown in Figure 4.2.5. Input the area name in the text box and click OK to save the area.

Add Area							
Area Information							
Area Name							
Upper Area Name							
	OK Cancel						

Figure 4.2.5 Add Area Name

The area name added will appear under the site tree. Refer to Figure 4.2.6. Right click the area name and select Add Device.



Figure 4.2.6 Add Device

The Add Device dialog box will pop up, as shown in Figure 4.2.7. Input the device name, register mode (Normal IP), device IP (e.g., 172.8.3.205), user name (admin), password (12345), port (8000) and channel No. (1) in the text boxes and click *OK* to save the device information.

Add Device								
Device Information -								
Device Name	camera01	Register Mode	Normal IP					
Device IP	172 . 8 . 3 . 205	Port	8000					
Username	admin	Password	*****					
Channel No.	1	Multicast						
DNS Address		Belongs to area	5-inch IP Speed Dome					
Serial Number								
Online Device			OK Cancel					

Figure 4.2.7 Add Device Information

The device name added will appear under the site tree. Refer to Figure 4.2.8.



#### Figure 4.2.8 Site Tree

After having added the site tree, click the *Preview* button from the menu bar to enter the Preview interface, as shown in Figure 4.2.9. Double click the channel name under the site tree to view the camera video.



Figure 4.2.9 Preview Interface

iVMS-4000				1 i - X
Preview Playback	- Map Logs Setup	Help		User.01
List Sort by group Schoh P Speed Dome Chemedal Chemedal	01-06-2010MAGINGING SYSTEM INFORMATION SYSTEM SETTINGS CFACTURY SETTINGS CHESET CAMERA CHEBULT SYSTEM EXIT	Previe	w	
		IlCanera 01		
No.         Preset Name           04         100           96         97           90         99           100         100			ē	
Time		Alarm Events		**

In the Preview interface, call preset 95 to access the main menu of speed dome, and use the up/down/left/right buttons to select the submenu and then click *IRIS*+ button to enter the submenu to be configured. Refer to Figure 4.2.10.

Figure 4.2.10 Enter Main Menu

Please refer to User Manual of iWMS-4000 (V2.0) for detailed information about configuration.

### 4.2.2 3D Intelligent Positioning

Select the *3D Position* section from the Preview interface, and the icon will replace the mouse icon. Use the left key of mouse to click on the desired position in the video image and drag a rectangle area in the lower right direction, then the dome system will move the position to the center and allow the rectangle area to zoom in. Use the left key of mouse to drag a rectangle area in the upper left direction to move the position to the center and allow the rectangle area to zoom out. Refer to Figure 4.2.12 and Figure 4.2.13. Use the scroll of the mouse to realize the PTZ operation, and the proportional pan/tilt can be achieved during 3D positioning. In live preview interface, the dome can be controlled by holding and dragging the left button of mouse. Refer to Figure 4.2.14.



Figure 4.2.11 3D Position Icon



Figure 4.2.12 3D Positioning
iVMS-4000								16-*
Preview Playb	ack <del>v</del> Map	Logs	Setup	Help				User01
List Sort by gr	que				Preview	Υ		
<ul> <li>Sinch IP Speed Dome</li> <li>camera01</li> </ul>	10-28-	2009 20:51:4	19	1172.1 5 0				
	2 2 2							
C Position Light Wip	. 🔿			$\bigcirc$		0		
Time				Alarm Eve	ds.			

Figure 4.2.13 3D Positioning

Clicking and dragging the mouse from upper left to lower right will realize zoom in function, and from lower right to upper left will realize zoom out function.



Figure 4.2.14 3D Positioning

## 4.2.3 Presets

Add Preset: After having moved PTZ to the desired position, click the icon from the Preview interface, select a preset number from the list, and finally click the *Add Preset* button to enter the *Add Preset* dialog box. Input the preset name in the text box, and then click *OK* to add the preset. Refer to Figure 4.2.15 and Figure 4.2.16. The preset can also be added by right-clicking the preset number and select *Add* submenu.





Figure 4.2.15 Add Preset

Figure 4.2.16 Add Preset

Add Preset	×
Preset Name	
ОК	Quit

Figure 4.2.17 Input Preset Name

Call Preset: Select a predefined preset from the list and click the Call preset button to call a preset. Refer to Figure 4.2.18.

-	1	٩.	3	
No.	1	Pres	et Name	
01	A			
02	в			
03				
04				
05				
06				
07				
00	_	_	_	
1			Ca	ll preset

Figure 4.2.18 Call Preset

**Delete Preset:** Select a predefined preset from the list and click the *Delete preset* button to delete a preset. Refer to Figure 4.2.19. The system will pop up a message as shown in Figure 4.2. 20. Click *OK* to delete the preset.

The preset can also be deleted by right-clicking the predefined preset and select Delete submenu.



Figure 4.2.19 Delete Preset

Figure 4.2.20 Delete Preset

**Modify Preset:** Right-click the predefined preset from the list and select *Modify* submenu to enter the *Modify Preset* dialog box. Input the new preset name in the text box, and then click *OK* to modify the preset. Refer to Figure 4.2.21 and Figure 4.2.22.

- 2		<b>−</b> .	<b></b>	
No.		Pres	et Name	-
01	A			
02		Add		
03		Modify		
04				
05		Delete		
06				1
07				
00	_	-	-	

Figure 4.2.21 Modify Preset





### 4.2.4 Patrols

Set Patrol: Click the 1 icon from the Preview interface, click the *Patrol Setting* button or select *Patrol Setting* from the right-click submenu to enter the patrol settings menu. As shown in Figure 4.2.23. In the *Patrol Setting* menu, user may select a patrol number to be programmed from the drop-down list, and then add a patrol point, in which the preset number (1~256), dwell time (1~128 seconds) and dwell speed (1~ 40) can be set. Click *Save* to finish the settings of the current patrol number. Continue to set other patrol numbers by following the same steps.

Note: Up to 8 patrols can be added, and each patrol can be configured with a maximum of 32 presets.

-2	۵ 🗞 🕂	Patro	l Setting		-
lo.	Patrol Name 🔄	Patrol	Patrol	01 🔻	
	Patrol 01	Patro	I Presets	Dwell Time(s)	Dwell Sp
	Patrol 02	1	Preset 2	1	30
Pat	trol 03	2	Preset 3	2	2
		3	Preset 6	2	1
Patrol 04		4	Preset 4	4	1
Patrol 05	5	5	Preset 7	3	3
Patrol	06	6	Preset 9	2	30
		7	Preset 10	2	30
Patrol 0		8	Preset 12	▼ 2	30
		I Setting	Add patrol points	Pelete patrol point	Save

Figure 4.2.23 Patrol Setting



**Call Patrol:** Select a predefined patrol from the list and click *Call the Patrol* button to call a patrol. Refer to Figure 4.2.25. **Stop Patrol:** Select a predefined patrol from the list and click *Stop the Patrol* button to stop a patrol. Refer to Figure 4.2.26.

-9				e: 7.	
No.	Patrol Name 🛛 🔄		No.	Patrol Nam	e 🔼
01	Patrol 01		01	Patrol 01	
02	Patrol 02		02	Patrol 02	
03	Patrol 03		03	Patrol 03	
04	Patrol 04		04	Patrol 04	
05	Patrol 05		05	Patrol 05	
06	Patrol 06		06	Patrol 06	
07	Patrol 07		07	Patrol 07	1000
00	Dotrol 00		00	Datrol 00	
•	Call the patro	<mark>) </mark>		¢	Stop the pa

Figure 4.2.25 Call Patrol

# 4.3 Configuration by DS-9000 Series DVR

Prior to configuration for the network speed dome through DS-9000 series Hybrid DVR, please make sure the speed dome has been connected to the same network segment with DVR and the network settings for DVR has been properly configured. In DS-9000 DVR, click *Menu->>Setting->>Camera* to enter the camera management menu, and then select *Add* to enter *IP Channel Settings* menu, as shown in Figure 4.3.1.

Figure 4.2.26 Stop Patrol

Channel N	Camera I	Name	IP Address	Port	Status^
A1	Camera (	other statements	Local	N/A	Enabli
A2	Camera (	)2	Local	N/A	Enabli_
A3	Camera (	03	Local	N/A	Enabli-
A4	Camera (	04	Local	N/A	Enabl
A5	Camera (	05	Local	N/A	Enable
AG	Camera (	06	Local	N/A	Enable
A7	Camera (	07	Local	N/A	Enabl
A8	Camera (	08	Local	N/A	Enabli
A9	Camera (	9	Local	N/A	Enabli
A10	Camera 1	10	Local	N/A	Enable
A11	Camora 1	11	Local	NIIA	Enable
S	et IP	Add	Set	Status	ОК

		P Chann	el Setti	ngs	
No.	IP Address	Channe	Туре	Serial No.	Subr
1	172.8.114.123	1	IPC	200091083	255.
<	1.1.1				>
IP	Channel No.	6	21	-	
IP .	Address	1	72.8	.114 .123	
Ma	anage Port	8	123		
Channel Port					
Us	er Name	a	dmin		
Ра	ssword	1	****		
			Refres	sh OK	Cancel

Figure 4.3.1 Camera Management

Figure 4.3.2 IP Channel Settings

If the network speed dome and DVR are in the same segment, select the device from the list to be added and then input the user name and password in the lower dialog box, and finally click *OK* to add the device. Refer to Figure 4.3.2.

If the network speed dome is offline or not in the same segment with DVR, manually input the parameters of the device, including IP address, manage port, channel port, user name and password, and finally click *OK* to add the device. The connection between dome and DVR will be automatically established when the dome is online or the device is successfully added.

mera Name mera 08 mera 09 mera 10 mera 11 mera 12	EDCAI Local Local Local Local Local Local	N/A N/A N/A N/A N/A N/A	Status Enable Enable Enable Enable Enable
mera 09 mera 10 mera 11	Local Local Local	N/A N/A N/A	Enablı Enablı Enablı
mera 10 mera 11	Local Local	N/A N/A	Enablı Enablı
mera 11	Local	N/A	Enable
CALIFORNIA CONTRACTOR	- Harrison Comment		Contraction of the local data
mera 12	Local	N/A	Enable
mera 13	Local	N/A	Enable
mera 14	Local	N/A	Enabli
mera 15	Local	N/A	Enable
mera 16	Local	N/A	Enable
amera 01	172.8.114.	12.8123	Conne
	mera 16	mera 16 Local	mera 16 Local N/A

Figure 4.3.3 IP Channel Settings

Edit and view the connection status. Refer to Figure 4.3.3. If the *Status* displays *Connect*, it indicates the device has been successfully added.

# 4.4 Search and Modify IP by SADP

SADP (Search Active Devices Protocol) is a kind of software which can automatically search network speed dome in LAN. User can modify the IP address, subnet mask and port of the device without visiting IP address of the device. Additionally, password of the super user in this device can be recovered as default.

SADP software needs to support SADP, so we should install WinPcap at first, which is placed at the directory of SADP software.

### 4.4.1 Search active devices online

After installing WinPcap, double click sadpdlg.exe. The software will start to search active devices in LAN, and device type, IP

01         SERIES         192.0.0.64         8000         DS6104HC10020071224           02         SERIES         192.0.7.15         8000         DS7104H0120071224           03         SERIES         192.0.7.15         8000         DS7204H0120071224           04         SERIES         192.0.2.57         8000         DS7204H0120070825           06         SERIES         192.0.7.202         8000         DS2DF1-6130020070           06         SERIES         192.0.7.23         8000         DS5104HC002007072           07         SERIES         192.0.7.23         8000         DS5104HC002007072           08         SERIES         192.0.7.23         8000         DS5104HC002007082           11         SERIES         192.0.7.23         8000         DS6102HF002007082           11         SERIES         192.0.7.24         8000         DS6102HF00200701           12         SERIES         192.0.7.243         8000         DS6101HF-A0020070           14         SERIES         192.0.3.214         8000         DS2CD652F00200701           15         SERIES         192.0.6.220         8000         DS6104HC020207032           17         SERIES         192.0.7.135         8000 <td< th=""><th></th><th>Device type</th><th>IP address</th><th>Port number</th><th>Device Serial No.</th><th>Device Serial Number</th></td<>		Device type	IP address	Port number	Device Serial No.	Device Serial Number
02       SERIES       132.0.7.15       8000       DS/T04H0120071224         03       SERIES       132.0.7.51       8000       DS/204H0120071134         04       SERIES       132.0.7.51       8000       DS/204H0120070824         05       SERIES       132.0.2.57       8000       DS/204H0120070824         06       SERIES       132.0.7.202       8000       DS/204H0120070824         07       SERIES       132.0.7.202       8000       DS/204H0120070824         08       SERIES       132.0.7.23       8000       DS/204H0120070905         10       SERIES       132.0.7.23       8000       DS/204H0120070905         11       SERIES       132.0.7.23       8000       DS/204H0120070905         12       SERIES       132.0.7.24       8000       DS/204H0120070905         13       SERIES       132.0.7.23       8000       DS/201HF-A00200701         14       SERIES       132.0.3.59       8000       DS/201HF-A00200701         15       SERIES       132.0.3.214       8000       DS/201BS/2F00200701         16       SERIES       132.0.1.101       8000       DS/201BS/2F00200701         17       SERIES       132.0.7.132       80000<	01	SERIES	192.0.0.64	8000	DS6104HCI00200707	and the second se
N4       SERIES       192.0.3.58       8000       DS6104HC-A0020070         005       SERIES       192.0.2.57       8000       DS7204H0120070825         006       SERIES       192.0.7.202       8000       DS2:DF1-61300200707         007       SERIES       192.0.7.23       8000       DS5104H020070825         100       SERIES       192.0.7.23       8000       DS5104H020070305         101       SERIES       192.0.7.23       8000       DS5104H020070305         101       SERIES       192.0.7.23       8000       DS6104HC00200701         12       SERIES       192.0.7.24       8000       DS6104HC00200701         13       SERIES       192.0.7.243       8000       DS6101HF-A0020070         14       SERIES       192.0.3.214       8000       DS20D1652600200701         15       SERIES       192.0.3.214       8000       DS20D852600200701         17       SERIES       192.0.6220       8000       DS6104HC020207032         18       SERIES       192.0.7.19       8000       DS6104HC020207032         192       SERIES       192.0.7.19       8000       DS20D1652600200701         192       SERIES       192.0.7.19       8000<	102	SERIES	192.0.7.15	8000	DS7104H0120071224	D S6104PIC0020070824DCCPT
104       SERIES       192.0.358       8000       DS104HC.40020070826         105       SERIES       192.0.257       8000       DS7204H0120070826         106       SERIES       192.0.7.202       8000       DS20F1-6130020077         107       SERIES       192.0.7.23       8000       DS20F1-6130020077         108       SERIES       192.0.7.23       8000       DS2040120070826         109       SERIES       192.0.7.23       8000       DS5104HC0020070826         101       SERIES       192.0.7.23       8000       DS5102HF002007016         111       SERIES       192.0.7.24       8000       DS6102HF00200710         113       SERIES       192.0.3214       8000       DS6102HF00200710         114       SERIES       192.0.3214       8000       DS20565700200711         115       SERIES       192.0.3214       8000       DS20565700200712         119       SERIES       192.0.6220       8000       DS104HC020007032         118       SERIES       192.0.6220       8000       DS20565700200712         117       SERIES       192.0.7135       8000       DS2067161300200713         118       SERIES       192.0.7135       8000 </td <td>003</td> <td>SERIES</td> <td>192.0.7.51</td> <td>8000</td> <td>DS7204H0120071130</td> <td>version</td>	003	SERIES	192.0.7.51	8000	DS7204H0120071130	version
105       SERIES       192.0.2.57       8000       DS72024H07200702077         106       SERIES       192.0.7.202       8000       DS2-DF1-61300200707         107       SERIES       192.0.1.179       8000       DS2-DF1-61300200707         108       SERIES       192.0.7.23       8000       DS2-DF1-61300200707         109       SERIES       192.0.7.23       8000       DS5104H/D020070050         101       SERIES       192.0.7.23       8000       DS5104H/D020070050         111       SERIES       192.0.7.24       8000       DS6104H/D020070050         112       SERIES       192.0.7.24       8000       DS6104H/D02007007         113       SERIES       192.0.7.243       8000       DS20F1-6130020071         114       SERIES       192.0.3.214       8000       DS20F1-6130020070         115       SERIES       192.0.3.211       8000       DS20E952F00200707         118       SERIES       192.0.7.20       8000       DS6104H/C02007032         119       SERIES       192.0.7.192       8000       DS6104H/C02007032         118       SERIES       192.0.7.192       8000       DS20F1-6130020071         119       SERIES       192.0.7.1	004	SERIES	192.0.3.58	8000	DS6104HC-A0020070	preserve and a second
007         SERIES         192.0.4.85         8000         DS6101HF002007072           008         SERIES         192.0.1.179         8000         DS20F1-6130020070           009         SERIES         192.0.7.23         8000         DS7204H012007032           010         SERIES         192.0.7.23         8000         DS5102HE002007032           011         SERIES         192.0.7.23         8000         DS5102HE002007032           011         SERIES         192.0.7.24         8000         DS6102HE00200710           013         SERIES         192.0.7.24         8000         DS6102HF00200710           014         SERIES         192.0.7.243         8000         DS6102HF00200710           015         SERIES         192.0.3.214         8000         DS20D852F0020071           017         SERIES         192.0.3.214         8000         DS20D852F0020071           018         SERIES         192.0.6.220         8000         DS6104HC0200703           012         SERIES         192.0.7.101         8000         DS2052F0020071           013         SERIES         192.0.7.200         8000         DS2052F0020071           013         SERIES         192.0.7.135         8000	005	SERIES	192.0.2.57	8000	DS7204H012007082E	Terrorort.
008         SERIES         192.0.1.179         8000         DS2-DF1-613002007t           009         SERIES         192.0.7.23         8000         DS7204H0120070902           010         SERIES         192.0.7.23         8000         DS102HF-A002007t           011         SERIES         192.0.7.23         8000         DS102HF-A002007t           012         SERIES         192.0.7.23         8000         DS102HF-A002007t           013         SERIES         192.0.7.243         8000         DS102HF-A002007t           014         SERIES         192.0.3.214         8000         DS20D852F002007t           015         SERIES         192.0.3.211         8000         DS104HF-A002007t           016         SERIES         192.0.3.211         8000         DS20D852F002007t           017         SERIES         192.0.3.27         8000         DS104HF-A002007t           017         SERIES         192.0.3.211         8000         DS20D852F002007t           018         SERIES         192.0.3.27         8000         DS20F164D4002007t22E           017         SERIES         192.0.7.200         8000         DS20F164D4002007t22E           102         SERIES         192.0.7.135         8000 </td <td>306</td> <td>SERIES</td> <td>192.0.7.202</td> <td>8000</td> <td>DS2-DF1-6130020070</td> <td>subnet mask</td>	306	SERIES	192.0.7.202	8000	DS2-DF1-6130020070	subnet mask
008       SERIES       192.0.1.179       8000       DS2.0F1-6130020070         009       SERIES       192.0.7.23       8000       DS7204H0120070000         010       SERIES       192.0.7.23       8000       DS5104H0020070000         011       SERIES       192.0.7.23       8000       DS5104H0020070000         011       SERIES       192.0.7.2       8000       DS6102HF00200710         012       SERIES       192.0.7.2       8000       DS6102HF00200710         013       SERIES       192.0.7.24       8000       DS6102HF00200710         014       SERIES       192.0.3.59       8000       DS20F1-61300200710         015       SERIES       192.0.3.59       8000       DS20F1-61300200710         016       SERIES       192.0.3.214       8000       DS20E952F00200707         017       SERIES       192.0.6220       8000       DS20E952F00200707         018       SERIES       192.0.7.20       8000       DS6104HC020200703         012       SERIES       192.0.7.192       8000       DS20E952F00200771         012       SERIES       192.0.7.192       8000       DS20F1-6130020071         012       SERIES       192.0.7.192 <t< td=""><td>007</td><td>SERIES</td><td>192.0.4.85</td><td>8000</td><td>DS6101HF002007072</td><td>255 255 248 0</td></t<>	007	SERIES	192.0.4.85	8000	DS6101HF002007072	255 255 248 0
Inc         Isc.07/33         6000         DS5104HE00200708           011         SERIES         192.0.4.237         8000         DS6102HF.400200710           012         SERIES         192.0.4.237         8000         DS6102HF.400200710           013         SERIES         192.0.7.2         8000         DS6102HF.400200710           014         SERIES         192.0.7.243         8000         DS6102HF.00200710           015         SERIES         192.0.3.59         8000         DS6102HF.00200710           016         SERIES         192.0.3.214         8000         DS20582F00200712           017         SERIES         192.0.6.4         8000         DS210852F00200712           018         SERIES         192.0.6.20         8000         DS104HC02007022E           019         SERIES         192.0.7.20         8000         DS104HC02007012E           0120         SERIES         192.0.6.220         8000         DS104HC02007012E           0121         SERIES         192.0.7.135         8000         DS201614HC02007012E           0122         SERIES         192.0.7.135         8000         DS201614HC02007121           024         SERIES         192.0.7.135         8000         DS201	800	SERIES	192.0.1.179	8000	DS2-DF1-6130020070	1
DT1         SERIES         192.0.4.237         8000         DS6102HF-A0020071           D12         SERIES         192.0.7.2         8000         DS6804HC-A00200710           D13         SERIES         192.0.7.2         8000         DS6102HFA00200710           D14         SERIES         192.0.7.243         8000         DS20F1-61300200710           D15         SERIES         192.0.3.59         8000         DS20F1-61300200710           D15         SERIES         192.0.3.214         8000         DS20F3E700200706           D16         SERIES         192.0.3.214         8000         DS20E952700200706           D17         SERIES         192.0.3.214         8000         DS20E952700200706           D18         SERIES         192.0.3.211         8000         DS20E9527002007076           D18         SERIES         192.0.64         8000         DS20E9527002007076           D19         SERIES         192.0.7.200         8000         DS6104HC02007035           D20         SERIES         192.0.7.135         8000         DS20F54200200705           D22         SERIES         192.0.7.135         8000         DS20F1-6130020071           D23         SERIES         192.0.7.135         8000	009					IP address
012         SERIES         192.0.7.2         8000         DS6804HC-A0020070           013         SERIES         192.0.1.89         8000         DS6102HF002007101           014         SERIES         192.0.7.243         8000         DS20F1-61300200701           015         SERIES         192.0.7.243         8000         DS20F1-61300200701           015         SERIES         192.0.3.214         8000         DS20D852F0020071;           016         SERIES         192.0.0.64         8000         DS20D852F0020070;           017         SERIES         192.0.0.64         8000         DS20D852F0020070;           018         SERIES         192.0.6.20         8000         DS6101HF.40020070226           020         SERIES         192.0.3.57         8000         DS6104HC00200703;           021         SERIES         192.0.3.57         8000         DS210847020070;           022         SERIES         192.0.3.57         8000         DS20716410120071226           023         SERIES         192.0.7.135         8000         DS2071-6130020071           024         SERIES         192.0.7.135         8000         DS2087F00200712           025         SERIES         192.0.7.33         8000<					HURALAN MARKANA ANA ANA ANA ANA ANA ANA ANA ANA ANA	192 0 7 39
D13         SERIES         192.0.1.89         8000         DS6102HF00200710           D14         SERIES         192.0.7.243         8000         DS20F1-61300200710           D15         SERIES         192.0.3.259         8000         DS6101HF-A00200710           D15         SERIES         192.0.3.214         8000         DS20D852F00200712           D17         SERIES         192.0.3.211         8000         DS20D852F00200712           D17         SERIES         192.0.0.64         8000         DS20D852F00200712           D18         SERIES         192.0.62         8000         DS104H02007122E           D19         SERIES         192.0.62         8000         DS104H020070725           D21         SERIES         192.0.7.200         8000         DS20D852F00200705           D22         SERIES         192.0.3.57         8000         DS20F1-613002007           D23         SERIES         192.0.7.135         8000         DS20F1-61300200711           D24         SERIES         192.0.7.135         8000         DS20F1-61300200711           D25         SERIES         192.0.7.253         8000         DS2010HF002007111           D26         SERIES         192.0.4.98         8000						U 1997 11 16 1 17 17 18
014         SERIES         192.0.7.243         8000         DS2:DF1-6130020071           015         SERIES         192.0.3.59         8000         DS6101HF-A00200710           016         SERIES         192.0.3.214         8000         DS2D852F00200711           017         SERIES         192.0.3.214         8000         DS2D852F00200712           018         SERIES         192.0.6.64         8000         DS2D852F00200703           019         SERIES         192.0.6.20         8000         DS104HC02007033           020         SERIES         192.0.6.20         8000         DS104HC05200703           021         SERIES         192.0.3.57         8000         DS2D852F00200705           022         SERIES         192.0.3.57         8000         DS2D852F00200705           023         SERIES         192.0.7.135         8000         DS2D71-61300200715           024         SERIES         192.0.7.135         8000         DS2D87-6130020075           025         SERIES         192.0.4.98         8000         DS8016HC02200712           026         SERIES         192.0.4.98         8000         DS8016HC02200712           029         SERIES         192.0.7.155         8000						device port
174       SERIES       192.0.7.243       8000       DS20P1-6130020071         175       SERIES       192.0.3.29       8000       DS6101HF-A0020071         176       SERIES       192.0.3.214       8000       DS20D852F0020071         177       SERIES       192.0.3.211       8000       DS20D852F0020070         178       SERIES       192.0.0.64       8000       DS20D852F0020070         179       SERIES       192.0.0.64       8000       DS210852F0020070         170       SERIES       192.0.1101       8000       DS6104HC020070226         170       SERIES       192.0.3.57       8000       DS6104HC020070207         172       SERIES       192.0.3.57       8000       DS20D852F00200705         172       SERIES       192.0.3.718       8000       DS20F1641020071226         172       SERIES       192.0.7.135       8000       DS20F161300200716         1724       SERIES       192.0.7.135       8000       DS20F1613002007111         1725       SERIES       192.0.7.253       8000       DS20F104102007121         1726       SERIES       192.0.7.458       8000       DS20104022007121         1727       SERIES       192.0.7.458						9000
D16         SERIES         192.0.3.214         8000         DS2CD852F0020071:         00-40-36-35-d3-5b           D17         SERIES         192.0.3.211         8000         DS2CD852F0020070;         00-40-36-35-d3-5b           D18         SERIES         192.0.0.64         8000         DS2CD852F0020070;         00-40-36-35-d3-5b           D19         SERIES         192.0.1.101         8000         DS6104HC00200703;         -please input password           D20         SERIES         192.0.7.200         8000         DS6104HC0020070;         modfy         cencel         sey           D21         SERIES         192.0.3.57         8000         DS2CD852F0020070;         modfy         cencel         sey           D22         SERIES         192.0.7.135         8000         DS2CD852F0020070;         modfy         cencel         sey           D24         SERIES         192.0.7.135         8000         DS2CD812F002007111         Resume default password-         02           D25         SERIES         192.0.7.253         8000         DS2010HF0022007121         0           D26         SERIES         192.0.7.35         8000         DS2010HF0022007121         0           D27         SERIES         192.0.7.35 <td< td=""><td></td><td>and the second sec</td><td>a second second second second</td><td></td><td></td><td>10000</td></td<>		and the second sec	a second second second second			10000
D17         SERIES         192.0.3.211         8000         DS2CD852F00200707           D18         SERIES         192.0.0.64         8000         DS2CD952F00200707           D19         SERIES         192.0.0.64         8000         DS2CD952F00200707           D19         SERIES         192.0.0.64         8000         DS2CD952F00200707           D19         SERIES         192.0.6.20         8000         DS108H0120071226           D21         SERIES         192.0.3.57         8000         DS108H0120071226           D21         SERIES         192.0.3.57         8000         DS2CD852F00200705           D22         SERIES         192.0.3.206         8000         DS2CD852F00200705           D23         SERIES         192.0.7.135         8000         DS2CD812F00200711           D26         SERIES         192.0.7.135         8000         DS2010HF002007111           D26         SERIES         192.0.7.253         8000         DS20104F002007124           D27         SERIES         192.0.7.488         8000         DS20104F002007124           D28         SERIES         192.0.7.155         8000         DS20104F002007124						MAC Address
017       SERIES       192.0.3.211       8000       DS2CD85240020070;         018       SERIES       192.0.0.64       8000       DS2CD85240020070;         019       SERIES       192.0.1101       8000       DS20065270020070;         020       SERIES       192.0.7200       8000       DS4104HC08200703;         021       SERIES       192.0.7200       8000       DS6104HC08200709;         022       SERIES       192.0.3270       8000       DS6104HC08200709;         023       SERIES       192.0.7192       8000       DS20565260020070;         024       SERIES       192.0.7135       8000       DS205101HF00200711         025       SERIES       192.0.7.35       8000       DS205101HF00200711         1026       SERIES       192.0.7.53       8000       DS201040220070244         027       SERIES       192.0.7.53       8000       NVEC04022007121         028       SERIES       192.0.7.155       8000       DS2010402207121         029       SERIES       192.0.7.155       8000       DS7104H0120071217						00.40.35.35.42.85
D19         SERIES         192.0.1.101         8000         D S6104HC00200703.           J20         SERIES         192.0.6.220         8000         D S7108H012007122E           J21         SERIES         192.0.6.220         8000         D S6104HC0-SD00200703.           J22         SERIES         192.0.3.57         8000         D S6104HC1-SD00200709.           J23         SERIES         192.0.3.206         8000         D S20D852F00200705.           J24         SERIES         192.0.7.192         8000         D S20D852F00200705.           J24         SERIES         192.0.7.135         8000         D S20D852F00200701.           J25         SERIES         192.0.7.35         8000         D S20D822F00200701.           J26         SERIES         192.0.7.38         8000         D S2011HF00200711.           J27         SERIES         192.0.7.53         8000         NVEC0402200708244           J28         SERIES         192.0.7.155         8000         D S8016HC022007121           J29         SERIES         192.0.7.155         8000         D S7104H012007121.7.*						004050500500
079       SERIES       132.0.1.101       8000       DS104HC0200703         020       SERIES       132.0.7.200       8000       DS104HC02007122E         021       SERIES       132.0.7.200       8000       DS104HC02007022E         023       SERIES       132.0.3.57       8000       DS104HC02007075         023       SERIES       132.0.7.192       8000       DS20F16-1630020071         024       SERIES       132.0.7.135       8000       DS20F16-1630020071         025       SERIES       132.0.7.135       8000       DS20F16-16300200711         026       SERIES       132.0.7.253       8000       DS20706220070244         027       SERIES       132.0.4.98       8000       DS8016HC022007121         028       SERIES       132.0.7.155       8000       DS7104H0120071217						-olassa innut nassuund
D21         SERIES         192.0.7.200         8000         DS6104HCI-SD00200           D22         SERIES         192.0.3.57         8000         DS6104HC0200705           D23         SERIES         192.0.3.57         8000         DS20D852F00200705           D24         SERIES         192.0.7.192         8000         DS20F16-130020071           D25         SERIES         192.0.7.135         8000         DS20F16-130020071           D25         SERIES         192.0.7.135         8000         DS20F16-1300200711           D26         SERIES         192.0.7.253         8000         DS200708244           D27         SERIES         192.0.4.98         8000         DS8016HC022007121           D28         SERIES         192.0.7.155         8000         DS7104H012007117			A DECEMBER OF			-piease s for passion
122         SERIES         192.0.3.57         8000         DS6104HC002007095         modity         cancel         ss           123         SERIES         192.0.3.206         8000         DS2DB82F0020076         modity         cancel         ss           124         SERIES         192.0.7.192         8000         DS2DF16130020076         modity         cancel         ss           125         SERIES         192.0.7.135         8000         DS6101HF002007111         Resume default password-           126         SERIES         192.0.68.6.29         8000         DS20D1802F0020070         Resume default password-           127         SERIES         192.0.4.98         8000         DS8016HF002200712         modity         cancel         ss           128         SERIES         192.0.7.155         8000         DS8016HF002200712         modity         cancel         ss           129         SERIES         192.0.7.155         8000         DS7104H0120071217         modity         cancel         ss						
D23         SERIES         192.0.3.206         8000         DS2CD852F00200705           D24         SERIES         192.0.7.192         8000         DS2DF1-61300200716           D25         SERIES         192.0.7.192         8000         DS2DF1-61300200716           D25         SERIES         192.0.7.135         8000         DS2DF1-6130020071           D26         SERIES         192.0.7.253         8000         DS2CD802PF0020071           D27         SERIES         192.0.7.253         8000         NVEC0402200708244           D28         SERIES         192.0.4.98         8000         DS8016HC022007121           D29         SERIES         192.0.7.155         8000         DS7104H0120071217						
024         SERIES         192.0.7.192         8000         DS2-DF1-6130020071           025         SERIES         192.0.7.135         8000         DS6101HF002007111           026         SERIES         192.0.7.253         8000         DS2CD802PF0020071           027         SERIES         192.0.7.53         8000         NVEC0402200708244           028         SERIES         192.0.4.98         8000         DS8016HC022007121           029         SERIES         192.0.7.155         8000         DS7104H0120071217		and the second sec				modify cancel save
125         SERIES         192.07.135         8000         DS6101HF002007111         Resume default password           126         SERIES         192.07.253         8000         DS2CD802PF0020070         Resume default password           127         SERIES         192.07.253         8000         NVEC0402200708244         0K           128         SERIES         192.0.4.98         8000         DS8016HC022007121         0K           129         SERIES         192.0.7.155         8000         DS7104H0120071217.2						
D26         SERIES         192.168.6.29         8000         DS2CD802PF002007I         Resume default password           D27         SERIES         192.0.7.253         8000         NVEC0402200708244						
126 SERIES 192.168.6.29 8000 DS2.008/24/00/00/1 127 SERIES 192.07.253 8000 NVEC0402200708244 228 SERIES 192.0.4.98 8000 DS8016HC022007121 129 SERIES 192.0.7.155 8000 DS7104H0120071217.		and the second s			and the second se	-Returne default nationard-
028 SERIES 192.0.4.98 8000 DS8016HC022007121 029 SERIES 192.0.7.155 8000 DS7104H0120071217.▼						
129 SERIES 192.0.7.155 8000 DS7104H0120071217		and the second se				OK
		SERIES	192.0.7.155	8000		
T Ext	•				<u>&gt;</u>	

Figure 4.4.1 Search Online Devices

## 4.4.2 Modify device information

Select the device that needs modification in the device list, then basic information of the device will be demonstrated in the information column on the right. Click 'modify' button to activate IP address, subnet mask, device port editing and password validating box, as following:

	Device type	IP address	Port number	Device Serial No. 🔺	Device Serial Number
017	SERIES	192.0.3.57	8000	DS6104HC002007093	DS2CD852F0020070925AAWR
018	SERIES	192.0.7.51	8000	DS7204H0120071130	D320003210020070323AAWH
019	SERIES	192.0.1.179	8000	DS2-DF1-6130020070	version
020	SERIES	192.0.6.220	8000	DS7108H0120071226	VERSION
021	SERIES	192.168.6.29	8000	DS2CD802PF002007(	JACH SIGN
022	SERIES	192.0.7.243	8000	DS2-DF1-6130020071	subnet mask
023	SERIES	192.0.7.155	8000	DS7104H0120071217	255 . 255 . 248 . 0
024	SERIES	192.0.7.81	8000	DS2CD802PF002007*	1
025	SERIES	192.0.3.214	8000	DS2CD852F00200712	IP address
026	SERIES	192.0.7.44	8000	DS2-DF1-6130020071	192 . 0 . 2 . 232
027	SERIES	192.0.7.192	8000	DS2-DF1-6130020071	1
028	SERIES	192.0.2.57	8000	DS7204H0120070828	device port
029	SERIES	192.0.0.64	8000	DS2CD852F00200712	8000
031	SERIES	192.0.7.253	8000	NVEC0402200708244	Journ
033	SERIES	192.0.7.244	8000	DS2-DF1-6130020071	MAC Address
034	SERIES	192.0.4.98	8000	DS8016HC022007121	00-40-3f-bf-06-6d
036	SERIES	192.0.3.58	8000	DS6104HC-A0020070	00-40-31-01-06-60
037	SERIES	192.0.6.208	8000	DS6104HC-A0020070	
038	SERIES	192.0.7.45	8000	DS7108HI012007111:	
043	SERIES	192.0.2.232	8000	DS2CD852F00200705	
047	SERIES	192.0.6.252	8000	DS6001HC002007121	
050	SERIES	192.0.1.30	8000	DS8002AHL02200711	modify cancel save
053	SERIES	192.0.7.32	8000	DS6101HF002007111	
060	SERIES	192.0.7.2	8000	DS6804HC-A0020070	
061	SERIES	192.0.4.68	8000	DS8016HF-S0220071	-Resume default password-
063	SERIES	192.0.0.64	8000	DS8016HF-S0220071	-resume deradit passwolld-
065	SERIES	192.0.7.33	8000	DS6101HC002007100	ОК
066	SERIES	192.0.0.64	8000	DS8008HC-S0220070	
067	SERIES	192.0.1.99	8000	DS8016HF-S0220070	
▲				▶	

Figure 4.4.2 Modify Device Information

Input new IP address, subnet mask, and port number, and click 'save' button. If a dialog pops up, showing 'saved successfully', that means you have modified the configuration information; if 'saving failed' turns up, click the 'cancel' button to quit it.

### 4.4.3 Resume default password

You can reset the password of the super user as *12345* in case of having forgotten administrator's password. Input certain validate code into *Resume default password* text box, and click *OK* to finish the administrator's password initialization.

# 4.5 Access by WAN

Note: The following settings are for TP-LINK router, which is maybe different from other router's settings.

Step1: Firstly, select the router's WAN connection type. As shown in Figure 4.5.1:

108M Wireless Router Model No.: TL-WR641G / TL-WR642G	WAN	
<ul> <li>Status</li> <li>Quick Setup</li> <li>Basic Settings</li> <li>Network</li> <li>LAN</li> <li>WAN</li> <li>MAC Clone</li> </ul>	WAN Connection Type: User Name: Password:	PPPoE ▼ Dynamic IP Static IP PPPoE 802.1X + Dynamic IP 802.1X + Static IP BigPond Cable L2TP

#### Figure 4.5.1 Select WAN Connection Type

Step2: Set the network parameters of the router as shown in Figure 4.5.2. The settings include IP address and subnet mask.

108M Wireless Router Model No.: TL-WR641G / TL-WR642G	LAN	
Status     Quick Setup     Basic Settings     Network     LAN	MAC Address: IP Address: Subnet Mask:	00-14-78-6A-DB-0C 192.168.10.1 255.255.255.0
WAN     MAC Clone		Save

Figure 4.5.2 Set Network Parameters

**Step 3:** Set the port map in the virtual severs of Forwarding. For example, one speed dome's ports are 80 and 8000 and its IP address is 192.168.1.23. Another speed dome's ports are 81 and 8001 and IP is 192.168.1.24. Then, enable all or TCP protocols. Enable the port map after pressing *Save*.

108M Wireless Router Model No.: TL-WR641G / TL-WR642G	Virtu	al Server	S		
Status	ID	Service Port	IP Address	Protocol	Enable
Quick Setup	1	80	<b>192.168.10</b> . 23	ALL 🖌	~
Basic Settings + Network	2	8000	192.168.10. 23	ALL 🔽	~
+ Wireless Advanced Settings	3	81	<b>192.168.10</b> . 24	ALL 🗸	~
+ DHCP	4	8001	192.168.10. 24	ALL 🗸	~
<ul> <li>Forwarding</li> <li>Virtual Servers</li> </ul>	5		192.168.10.	ALL 🗸	
Port Triggering	6		192.168.10.	ALL 🗸	
• DMZ • UPnP	7		192.168.10.	ALL 🔽	
+ Security	8		192.168.10.	ALL 🗸	
Static Routing     Dynamic DNS     Maintenance     System Tools	Common Service Port: DNS(53) Copy to ID 1				
			Previous Next	Clear All S	ave

As the settings mentioned above, map the router's port 80 and 8000 to the network speed dome at 192.168.1.23; and port 81 and 8001 to the network speed dome at 192.168.1.24. In this way, user can access the 192.168.1.23 through accessing the router's port 80 and 8000.

Note: The port of the network speed dome cannot conflict with other ports.

## **Appendix 1 Network Cable Connection**

#### **Materials and Tools Required**

Use an 8-pin twisted pair (within the effective transmission distance of 100m), two standard RJ45 plugs and a RJ45 special tool to process the network cable.

Note: A network cable tester is recommended to prepare for testing the produced network cable.

#### **Pin Definitions**

(1) Pin definitions of the straight network cable used for connecting dome and HUB, switch or other network devices:



Crossover Network Cable

# **Appendix 2 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.

1. The distance between signal transmission line and High-voltage equipment or high-voltage cable is at least 50m.

2. Outdoor wiring should better be along the eaves as much as possible.

3. 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.

4. 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.

5. 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.

6. 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  $4\Omega$ , the section al area of the grounding cable should be no less than  $25\text{mm}^2$ . For grounding instructions, please refer to the *Installation Manual of Speed Dome*.



# **Appendix 3 RS485 Bus Connection**

#### 1. General Property of RS485 Bus

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

#### 2. RS485 Bus Transmission Distance

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

Baud Rate	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.

#### 3. Connection Method and Terminal Resistance

 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.



#### 2) Connection of $120\Omega$ terminal resistor

The  $120\Omega$  terminal resistor can be connected through the DIP switch on the communications board, as shown in Figure 3. For a new dome, the  $120\Omega$  matching resistor is defaulted as unconnected, switch on the eighth bit of SW2, it will be connected. Conversely, switch off the eighth bit of SW2, it will be unconnected.





#### 4. 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 4

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.





#### 4. FAQ of RS485 Bus

T 1			٦
Fault			ŀ
Phenomenon	Probable Cause 🖉	Solutions.	
The speed	1. The address or Baud Rate is not matched	1. Adjust the address or Baud Rate of Host or Speed	4
dome do the	between Host and the Speed Dome.↔	Dome to make a match.	
self-check but	2. RS485+,- are connected incorrectly. 40	2. Change the RS485+ and RS485- wires.	4
can not be	<ol> <li>Wiring drops,<sup>42</sup></li> </ol>	3.fastening the wire↔	
controlled.₽	4. RS485 wire broke; 🖉	4. Change RS485 wire.₽	
The speed	1. loose contact of RS485¢	1. fastening RS485 wire; 🕫	,
dome can be	2. one RS485 wire broke; 🛷	2. Change RS485 wire.↔	1
controlled but	3. Host and speed dome are too far away- $\!\!\!\!^{\scriptscriptstyle 0}$	3. Add terminal matched resistance	
not smoothly₽	4. Too many speed domes are connected₽	4. Add RS485 distributor	

# Appendix 4 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 Distance mm 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 5 Table of Wire Gauge Standards**

Bare Wire Gauge (mm)	American Wire Gage AWG	(British)StandardWireGauge SWG	Cross-sectional Area ofBare Wire mm
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