HD-TVI Speed Dome

Quick Start Guide

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About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the company website

Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to

radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

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

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

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

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements

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: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

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

Warnings

● All the electronic operation should be strictly compliance with the electrical safety regulations, fire prevention regulations and other related regulations in your local region.

● Please use the power adapter, which is provided by normal company. The standard of the power adapter is 24 VAC ±10% or 12 VDC ±10% (depending on models). The power consumption cannot be less than the required value.

● Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.

● Please make sure that the power has been disconnected before you wire, install or dismantle the speed dome.

● When the product is installed on wall or ceiling, the device shall be firmly fixed.

● If smoke, odors or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

● If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the speed dome yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

Cautions

● Improper use or replacement of the battery may result in explosion hazard. Replace with the same or equivalent type only. Dispose of used batteries in conformance with the local codes.

L'utilisation ou le remplacement inadéquats de la pile peuvent entraîner un risque d'explosion. Remplacez-la par le même type ou l'équivalent du même type seulement. Jetez les piles usagées conformément aux directives fournies par le fabricant de la pile.

● Do not drop the dome or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the equipment installation on vibrations surface or places subject to shock (ignorance can cause equipment damage).

● Do not place the dome in extremely hot, cold, dusty or damp locations, otherwise fire or electrical shock will occur. The operating temperature should be -30°C to 65°C (outdoor speed dome) and -10°C to 50°C (indoor speed dome).

- The dome cover for indoor use shall be kept from rain and moisture.

- Exposing the equipment to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).

- Do not aim the speed dome 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 sensor at the same time.

- Please use the provided glove when open up the dome cover, avoid direct contact with the dome cover, because the acidic sweat of the fingers may erode the surface coating of the dome cover.

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

- Please keep all wrappers after unpack them for future use. In case of any failure occurred, you need to return the speed dome to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the speed dome and lead to additional costs.

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Table of Contents

1 Installation

Before you start:

Check the package contents and make sure that the device in the package is in good condition and all the assembly parts are included.

There are several ways to install the analog speed dome. The wall mounting is taken as an example below.

1.1 Connecting the Cables

Turn the power off before connecting the cables.

The cable interfaces of speed dome are shown in following figure. The cables are distinguished by different colors. The labels attached on the cables are for identification.

NOTE

> The Figure 1-1 contains all the possible cables, and they may vary according to different camera models. Refer to the actual device for the specific cables.
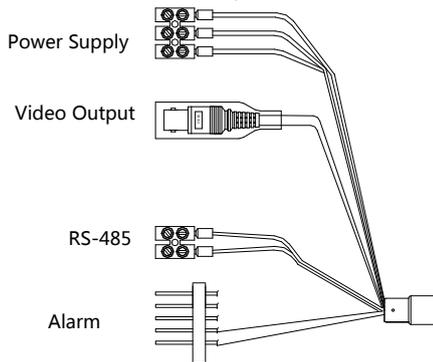

Figure 1-1 Cables

Table 1-1 Cables Description

Name	Description
Power Supply	24 VAC/12 VDC
Video Output	Coaxial video output
RS-485	485 control
Alarm	Alarm input and alarm output

1.2 DIP Switch Settings

1.2.1 Mini Speed Dome Settings

The DIP switch is for setting the speed dome address, baud rate, protocol, video output mode, and terminal resistor, with value OFF=0. The mini speed dome's DIP switch is shown in Figure1-2.
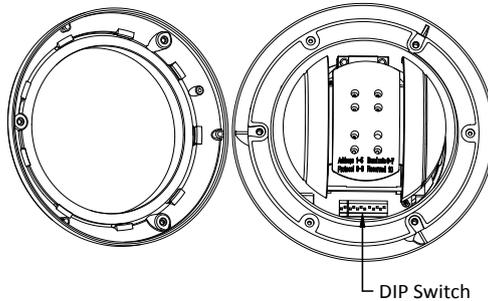

DIP Switch

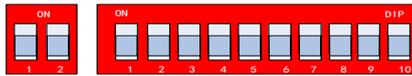Figure 1-2 DIP Switch of Mini Analog Speed Dome

Figure 1-3 Enlarged View of DIP Switch

NOTE

- For some certain models, the two individual DIP switches are at the left side of the Figure1-3 for turning on/off the terminal resistor.
- The default address is 0, the default baud rate is 2400, and the default terminal resistor is OFF.

Table 1-2 Switch Functions

Switch No.	Function
1 to 2 (SW2)	Set the terminal resistor
1 to 5 (SW1)	Set the address for the speed dome
6 to 7 (SW1)	Set the baud rate for the speed dome
8 (SW1)	Set the protocol for the speed dome
9 to 10 (SW1)	Set the video output mode for the speed dome

- **Address Settings**

The No.1 to No.5 DIP switches are for setting the address of speed dome, with value ON=1, 2, 3, 4, 5 standing respectively for 1, 2, 4, 8, 16, and OFF=0. You can refer to Table 1-3 for setting the address.

Table 1-3 Set Dome Address

Switch / Dome Address	1	2	3	4	5
0	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF
…	…	…	…	…	…
31	ON	ON	ON	ON	ON

● **Baud rate Settings**

The No.6 and No.7 DIP switches are for setting the baud rate. You can refer to Table 1-4 for setting the baud rate.

Table 1-4 Set Baud rate

Switch No. / Baud rate	6	7
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON

● **Protocol Settings**

The No.8 DIP switch are for setting the protocol of the speed dome. You can refer to Table 1-5 for setting the protocol.

Table 1-5 Set Protocol

Switch No. / Protocol	8
Self-adaptive	OFF
MAN_AD	ON

NOTE

The speed dome is self-adaptive to private protocol when the No.8 switch is OFF.

● **Video Output Settings**

The No.10 DIP switch is for setting the video output mode of the speed dome. You can refer to Table 1-6 for setting the video output.

Table 1-6 Set Video Output

Switch No. Video Output	9	10
TVI	OFF	OFF
AHD	ON	OFF
CVI	OFF	ON
CVBS	ON	ON

● **Terminal Resistor Settings**

The two individual DIP switches, No.1 and No.2, are used for turning on/off the 120Ω terminal resistor. You can refer to Table 1-7 for setting the terminal resistor.

Table 1-7 Set Terminal Resistor

Switch No.	1	2
Turn on the Resistor	ON	ON
Turn off the Resistor	OFF	OFF

1.2.2 5-inch Speed Dome Settings

The DIP switch is used for setting the address, protocol, video output mode, and baud rate for the speed dome, with value OFF=0. The 5-inch speed domes' DIP switches are shown in Figure 1-4 and Figure 1-5.
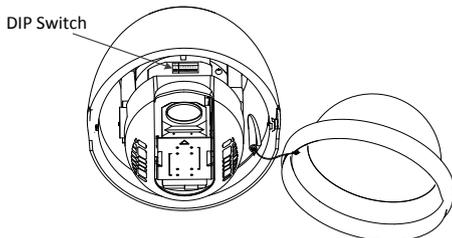

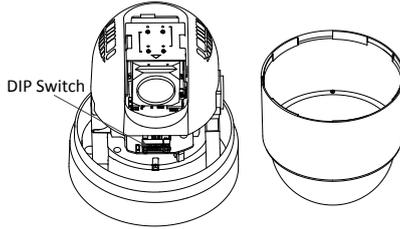Figure 1-4 DIP Switch for 5-inch Outdoor Speed Dome

Figure 1-5 DIP Switch for 5-inch Indoor Speed Dome

Figure 1-6 Enlarged View of DIP Switch

NOTE

The default address is 0. The default baud rate is 2400.

Table 1-8 Switch Functions

Switch No.	Function
1 to 5	Set the address for the speed dome
6 to 7	Set the baud rate for the speed dome
8	Set the protocol for the speed dome
1 to 2 (Right)	Set the video output mode for the speed dome

● **Address Settings**

The No.1 to No.5 DIP switches are for setting the address of speed dome, with value ON=1, 2, 3, 4, 5 standing respectively for 1, 2, 4, 8, 16, and OFF=0. You can refer to Table 1-9 for setting the address.

Table 1-9 Set Dome Address

Switch No. Dome Address	1	2	3	4	5
0	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF

Switch No. Dome Address	1	2	3	4	5
4	OFF	OFF	ON	OFF	OFF
…	…	…	…	…	…
31	ON	ON	ON	ON	ON

● **Baud rate Settings**

The No.6 and No.7 DIP switches are for setting the baud rate of the speed dome. The baud rate can be 2400bps, 4800bps, 9600bps, or 19200bps. The baud rate will be set as 2400bps by default when it is out of this range. Refer to the following table for details

Table 1-10 Set Baud rate

Switch No. Baud rate	6	7
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON

● **Protocol Settings**

The No.8 switch is for setting the protocol of the speed dome. You can refer to Table 1-11 for setting the protocol.

Table 1-11 Set Protocol

Switch No. Protocol	8
Self-adaptive	OFF
MAN_AD	ON

● **Video Output Settings**

The individual DIP switches, No. 1 and No.2 are for setting the video output mode of the speed dome. You can refer to Table 1-12 for setting the video output mode.

Table 1-12 Set Video Output

Switch No. Video Output	1	2
TVI	OFF	OFF
AHD	ON	OFF
CVI	OFF	ON
CVBS	ON	ON

1.2.3 Mini IR & 5-inch IR Speed Dome Settings

The DIP switch is used for setting the speed dome address, baud rate, protocol, video output mode, and terminal resistor, with value OFF=0.

DIP switch of mini IR speed dome is shown in figure 1-7, and the DIP switch of 5-inch IR speed dome is shown in figure 1-8.
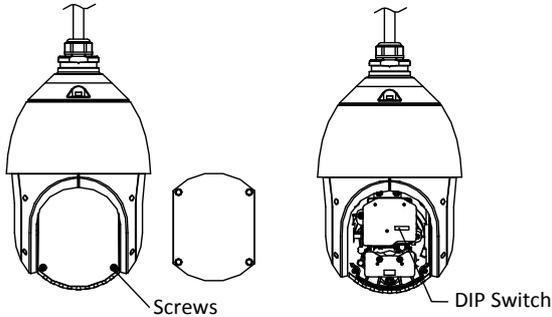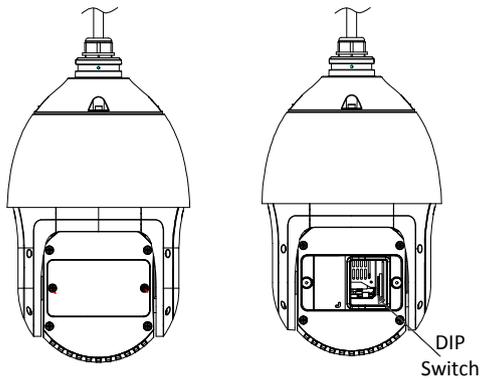
Screws

DIP Switch

Figure 1-7 DIP Switch of Mini IR Speed Dome

DIP Switch

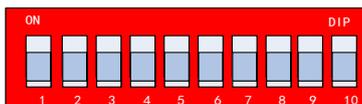Figure 1-8 DIP Switch of 5-inch IR Speed Dome

Figure 1-9 Enlarged View of DIP Switch

NOTE

The default address is 0, the default baud rate is 2400, and the default terminal resistor is OFF.

Table 1-13 Switch Functions

Switch No.	Function
1 to 5	Set the address for the speed dome
6	Set the baud rate for the speed dome
7	Set the protocol for the speed dome
8 to 9	Set the video output mode for the speed dome
10	Set the terminal resistor for the speed dome

- **Address Settings**

The No.1 to No.5 DIP switches are for setting the address of speed dome, with value ON=1, 2, 3, 4, 5 standing respectively for 1, 2, 4, 8, 16, and OFF=0. You can refer to Table 1-14 for setting the address.

Table 1-14 Set Dome Address

Switch No. Dome Address	1	2	3	4	5
0	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF
…	…	…	…	…	…
31	ON	ON	ON	ON	ON

- **Baud rate Settings**

The No.6 DIP switch is for setting the baud rate. The baud rate will be set as 2400bps by default, when it is out of this range. Refer to the following table for setting the baud rate.

Table 1-15 Set Baud rate

Switch No. / Baud rate	6
2400	OFF
9600	ON

● **Protocol Settings**

The No.7 DIP switch is for setting the protocol. Refer to the following table for setting the protocol.

Table 1-16 Set Protocol

Protocol	7
Self-adaptive	OFF
MAN_AD	ON

NOTE

The speed dome is self-adaptive to private protocol when the No.7 switch is OFF.

● **Video Output Settings**

The No.8 and No.9 DIP switches are for setting the video output mode of the speed dome. You can refer to Table 1-17 for setting the video output.

Table 1-17 Set Video Output

Switch No. / Description	8	9
TVI	OFF	OFF
AHD	ON	OFF
CVI	OFF	ON
CVBS	ON	ON

● **Terminal Resistor Settings**

The No. 10 DIP switch is for turning on/off the 120 Ω terminal resistor. You can refer to Table 1-18 for setting the terminal resistor.

Table 1-18 Set Terminal Resistor

Switch No. Description	10
Turn on the resistor	ON
Turn off the resistor	OFF

1.2.4 7-inch IR Speed Dome Settings

Two DIP switches, SW1 and SW2, are for setting the speed dome address, baud rate, protocol, video output mode, and terminal resistor, with value OFF=0. The DIP switch of the speed dome is shown as Figure 1-10.
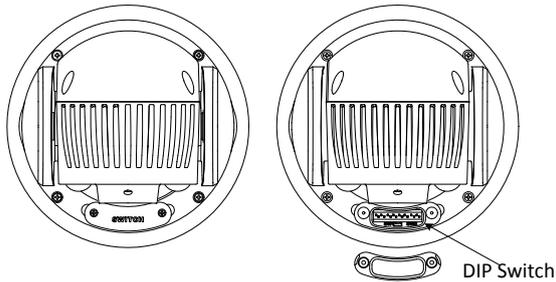

DIP Switch

Figure 1-10 Label of DIP Switch for IR Speed Dome

Figure 1-11 Enlarged View of DIP Switch

NOTE

The default address is 0, the default baud rate is 2400, and the default terminal resister is OFF.

Table 1-19 Switch Functions

Switch No.	Function
1 to 8 (SW1)	Set the address for the speed dome
1 to 2 (SW2)	Set the baud rate for the speed dome
3 to 5 (SW2)	Set the protocol for the speed dome
6 to 7 (SW2)	Set the video output mode for the speed dome
8 (SW2)	Set the terminal resistor for the speed dome

● **Address Settings**

The SW1 switch is used for setting the address of speed dome, with value ON=1, 2, 3, 4, 5, 6, 7 standing respectively for 1, 2, 4, 8, 16, 32, 64, 128, and OFF=0. You can refer to the Table 1-20 for setting the address.

Table 1-20 Set Dome Address

Dome Address	1	2	3	4	5	6	7	8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
...	...	...	...	...	...	...	...	...
255	ON	ON	ON	ON	ON	ON	ON	ON

● **Baud rate Settings**

The No.1 and No.2 SW2 switches are for setting the baud rate of the speed dome. The baud rate can be 2400bps, 4800bps, 9600bps, and 19200bps. The baud rate will be set as 2400bps by default when it is out of this range. Refer to the following table for details.

Table 1-21 Set Baud rate

DIP Switch SW2-Baudrate Settings		
Baud rate	**1**	**2**
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON

● **Protocol Settings**

The No. 3 to No. 5 SW2 switches are for setting the protocol of the speed dome. Refer to the following table for setting the protocol.

Table 1-22   Set Protocol

DIP Switch SW2-Protocol Settings		
Protocol	**3**	**4**	**5**
Self-adaptive	OFF	OFF	OFF
PELCO_P	ON	OFF	OFF
PELCO_D	OFF	ON	OFF

DIP Switch SW2-Protocol Settings			
VICON	OFF	OFF	ON
KALATE	ON	OFF	ON
MAN_BOSCH	OFF	ON	ON
MAN_AD	ON	ON	ON

- **Video Output Settings**

The No.6, No.7 SW2 switches are for setting the video output mode of the speed dome. You can refer to Table 1-23 for setting the video output.

Table 1-23 Set Video Output

Switch No. Description	6	7
TVI	OFF	OFF
AHD	ON	OFF
CVI	OFF	ON
CVBS	ON	ON

- **Terminal Resistor Settings**

The No. 8 SW2 switch is for turning on/off the 120 Ω terminal resistor. You can refer to Table 1-24 for setting the terminal resistor.

Table 1-24 Set Terminal Resistor

Switch No. Description	8
Turn on the resistor	ON
Turn off the resistor	OFF

1.3 Wiring and Installation

There are several ways to install the speed dome. Here we take wall mounting as the example.

1.3.1 Wiring

Check the installation environment and cables before wiring.

- Get familiar with the installation environment before wiring, including the wiring distance, surrounding, electromagnetic interference, etc.
- Choose the cable with nominal voltage higher than the actual voltage to guarantee a normal

running.
- To protect the power cable and the signal transmitting cable from human tampering, you should pay attention to the protection and reinforcement of the cables.
- When wiring, do not tighten the wire or loosen the wire.

The wiring of the speed dome should be performed by professionals.

1.3.2 Installing the Mount

Before you start:

Wall mounting is applicable for the indoor/outdoor solid wall. The followings are the mandatory precondition for wall mounting:
- The wall must be thick enough to install the expansion screws.
- Make sure that the wall is strong enough to withstand more than 8 times the weight of the dome and the mount.

Steps:

1. Make sure that the type of the mount, and the number of accessories are right, as shown in the figure below.
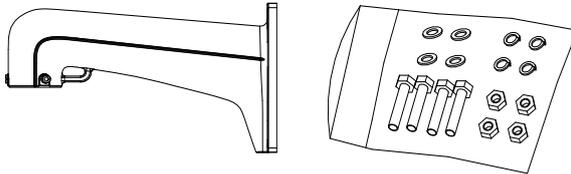
Figure 1-12 Wall Mount, Nuts, and Flat Washers

2. Drill 4 screw holes in the wall according to the holes of the mount, and then insert expansion screws into the screw holes.
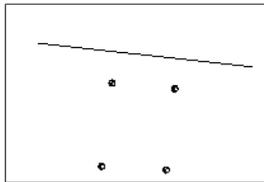
Figure 1-13 Drill Mounting Holes

3. Attach the wall mount to the wall by aligning the 4 screw holes of the mount with expansion screws on the wall.
4. Secure the wall mount with 4 hex nuts and washers.
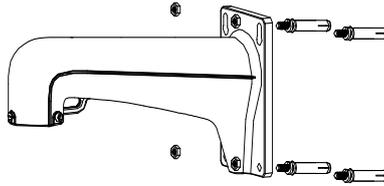
Figure 1-14 Secure the Mount

5.   Install the speed dome to the mount. Refer to *Section 1.3.4 Installing the Speed Dome* for installation details.

NOTE

Follow the same instructions described above for the short-arm wall mount. For outdoor applications, adopt the water-proof measures. The short-arm wall mount is not recommended for outdoor applications.

1.3.3 Setting the DIP Switch

Set the address and baud rate for the speed dome. The default value of DIP switch is shown below:

◆ **Address: 0**
◆ **Baudrate:2400**
◆ **Terminal Resistor: OFF**

Refer to the *Section 1.2 DIP Switch Settings* for DIP switch settings.

1.3.4 Installing the Speed Dome

NOTE

The sketches of installing the speed dome are for reference only.

Steps:

1.   Hang the safety rope to the speed dome, and then hook it to the mount as shown in Figure 1-15 (left).
2.   Route the cables of the speed dome through the wall mount.
3.   Connect the corresponding video/power/RS-485 cables.
4.   Install the speed dome to the mount, and secure the speed dome by rotating the speed dome clockwise.
5.   Fasten the two lock screws with the Allen wrench, as shown in Figure 1-15 (right).
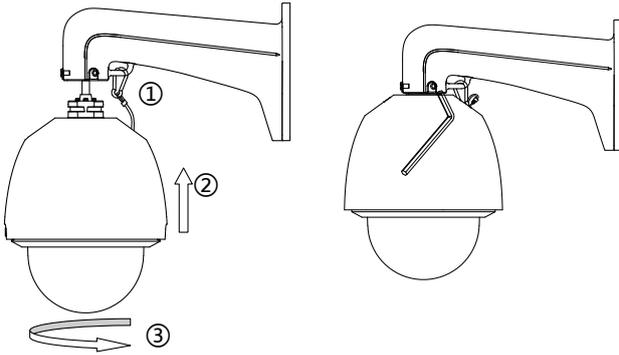
Figure 1-15 Install the Speed Dome

2 In-door Mounting Applications

Before you start:

- For the cement wall, you need to use the expansion screw to fix the mount. The mounting hole of the expansion pipe on the wall should align with the mounting hole on the mount.
- For the wooden wall, you can just use the self-tapping screw to fix the mount.

2.1 5-inch Speed Dome In-ceiling Mounting Applications

Before you start:

The in-ceiling mounting is applicable to the indoor ceiling construction. The followings are the mandatory precondition for mounting:

- The height of the space above the ceiling must be more than 250 mm.
- The thickness of the ceiling should range from 5 to 40 mm.
- The ceiling must be strong enough to withstand more than 4 times the weight of the dome and its accessories.

Steps:

1. Rotate the lower dome counterclockwise to separate it from the back box as shown in Figure 2-1.

2. Remove the protective lens cover, foam, and sticker from the dome drive.

3. Set the address and baud rate for the analog speed dome. Refer to the *Section 1.2.2 5-inch Speed Dome Settings* for DIP switch settings.

4. Attach lower dome to the back box, and rotate clockwise to secure it.
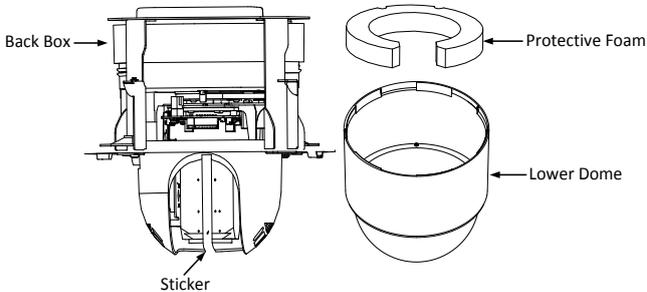
Figure 2-1 Remove the Protective Accessory

5. Drill a hole on the ceiling according to the drill template (supplied).

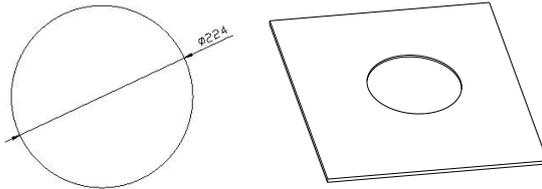NOTE

±2 mm of the diameter of the circle is tolerable.

Figure 2-2 Draw and Cut Hole on the Ceiling

6. Connect the cables.
   (1) Make sure the video cable and control wire have been connected to the corresponding interface.
   (2) Connect the power cable, and the red LED indicator turns on when the power is on.

NOTE

   Turn the power off after checking the speed dome.

7. Install the speed dome.
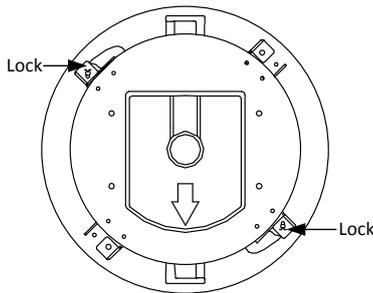   (1) Loosen the two lock screws on both sides of the back box and make the locks in internal position, as shown in the following figure:

Figure 2-3 Locks and Lock Screws

   (2) Push the back box into the mounting hole in the ceiling.
   (3) Tighten the lock screws with the screwdriver and the locks will automatically rotate outwards to secure the in-ceiling mount to the ceiling.
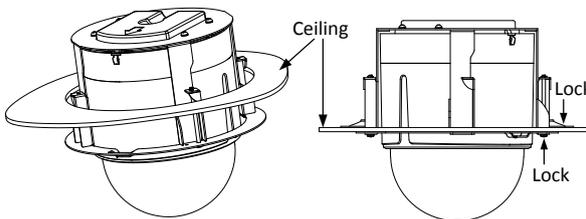
Figure 2-4 Install the back box

8. Install the trim ring.
    (1) Attach the trim ring to the lower dome and align the triangular notch of the trim ring with the arrow label on the in-ceiling mount.
    (2) After having firmly placed the trim ring to the ceiling, rotate the trim ring in the direction of arrow to secure the trim ring in place.

NOTE

● Remove the protective film on the lower dome after the installation is finished.
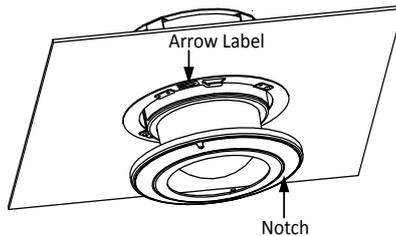● In order to obtain clear video images, wear the anti-static gloves when you install the speed dome.

Figure 2-5 Install the Trim Ring

2.2 5-inch Speed Dome Ceiling Mounting Applications

Before you start:

The ceiling mounting is applicable to the indoor/outdoor solid ceiling construction. The followings are the mandatory precondition for ceiling mounting:

● The thickness of the ceiling should range from 5 to 40 mm.
● The ceiling must be strong enough to withstand more than 4 times the weight of the dome and its accessories.

2.2.1 Removing the Mounting Mount

It is required to modify the external structure of the in-ceiling mounting speed dome before the operation of ceiling mounting.

Steps:

1. Remove the 4 screws on the back box by a Phillips screwdriver.
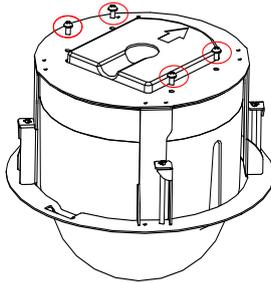
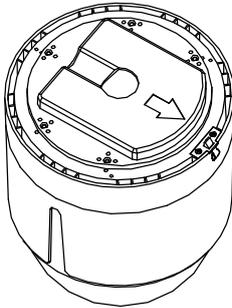Figure 2-6 Remove 4 screws

2. Remove the in-ceiling mount.

Figure 2-7 Remove the in-ceiling mounting mount

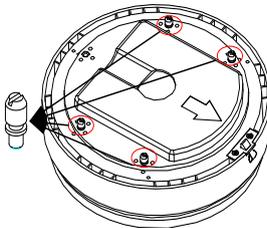3. Screw 4 bolts onto the back box by a Phillips screwdriver.

Figure 2-8 Install the bolts

2.2.2 Wiring

The cables of dome can be routed either from the top or the side of the back box. For the cables routed from the top of the back box, it is required to drill a cable hole in the ceiling.
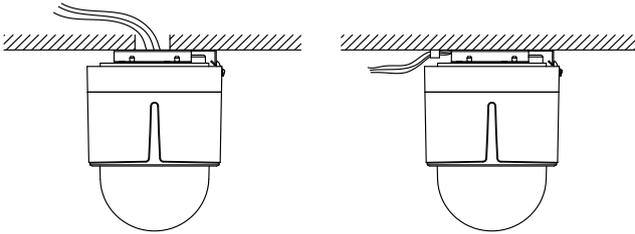
Figure 2-9 Cabling for Ceiling Mounting

2.2.3 Ceiling Mounting

Steps:

1. Rotate the lower dome counterclockwise to separate it from the back box. Refer to the Figure 2-1.
2. Remove the protective lens cover, foam and sticker from the dome drive.
3. Set the address and baud rate for the analog speed dome. Please refer to the *Section 1.2.1 5-inch Speed Dome Settings* for DIP switch settings.
4. Attach lower dome to the back box, and rotate clockwise to secure it.
5. Use the mounting base as a template to mark four screw holes onto the ceiling.
6. If you route cables from the top of the back box, mark the cable hole on the ceiling and drill a hole.
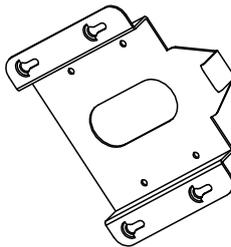

Figure 2-10 Mark the Screw Positions

7. Secure the mounting base to the ceiling with set screws.
   - If the speed dome is installed to the wooden ceiling, use the self-tapping screws to secure the mounting base.
   - If the dome is installed to the cement ceiling, drill three Ø 5 mm mounting holes onto the ceiling according to the hole's locations, and then insert the cement screws into the holes and finally use self-tapping screws to secure the mounting base to the ceiling.
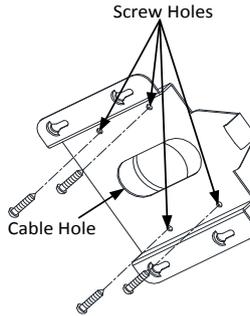
Figure 2-11 Secure the Mounting Base

8. Install the speed dome to the mounting base.
    (1) Route the cables for the speed dome. Align the bottom of the speed dome with the mounting base.
    (2) Line up the direction of arrow with the spring end of the mounting base.
    (3) Push the speed dome upwards and then forwards in the direction of arrow. When the speed dome is placed in position, the spring will automatically snap into the lock clip firmly. Refer to the following figure.
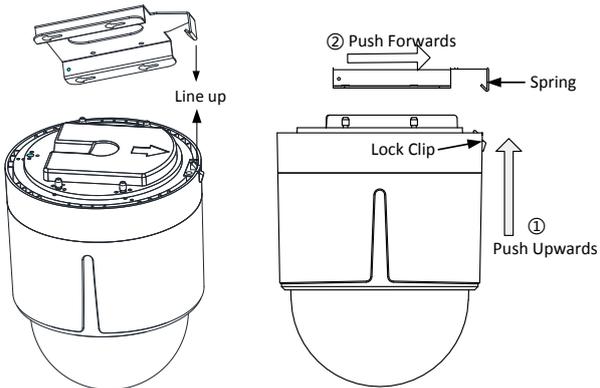

Figure 2-12 Attach the Back Box to the Mounting Base

NOTE

● Remove the protective film on the lower dome after the installation is finished.
● Do not touch the bubble of the lower dome directly by hand for the image may blurs.

2.3 Mini Speed Dome In-ceiling Mounting Applications

Before you start:

The in-ceiling mounting is applicable to the indoor ceiling construction. The followings are the mandatory precondition for mounting:

- The height of the space above the ceiling must be more than 250 mm.
- The ceiling must be with the thickness between 5 to 40 mm.
- The ceiling must be strong enough to withstand more than 4 times the weight of the dome and its accessories.

Steps:

1. Drill holes in the ceiling.
   (1) Attach the drill template to the ceiling where you need to install the speed dome.
   (2) Cut a hole and drill screw holes according to the drill template.

NOTE
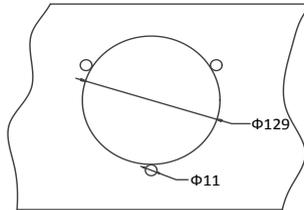
±2 mm of the diameter of the circle is tolerable.

Figure 2-13 Drill Holes

2. Disassemble the speed dome.
   (1) Loosen three screws as shown in the following figure.
   (2) Remove the lower dome.
   (3) Loosen three screws and remove the back box.
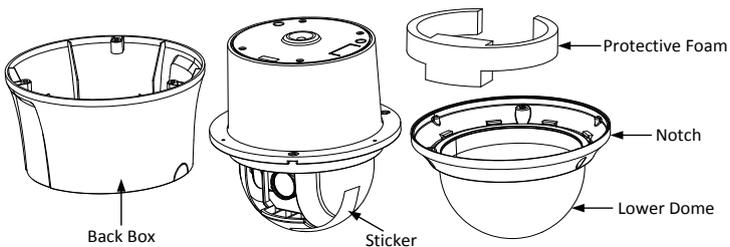   (4) Remove the protective lens cover, foam and sticker from the dome drive.

Figure 2-14 Disassemble the Speed Dome

3. Install the toggle bolts.
   (1) Remove the toggle from the toggle bolt.
   (2) Insert the bolts into the screw holes on the dome.

    (3)   Rotate the bolts through the screw holes.
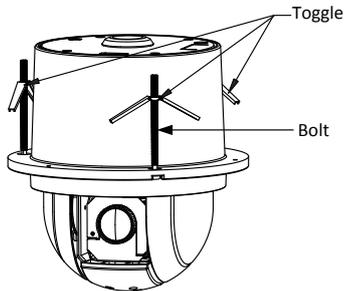   (4)   Reinstall the toggles as shown in Figure 2-15.

Figure 2-15 Install the Toggle Bolts

4.   Align the toggle bolts with the screw holes on the ceiling.
5.   Push the dome to the mounting hole on the ceiling.
6.   Rotate the bolts again. The toggle will automatically rotate down to secure the dome to the ceiling.
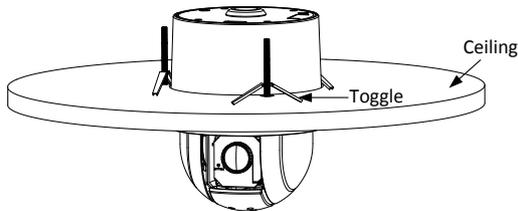

Figure 2-16 Install the Dome to the Ceiling

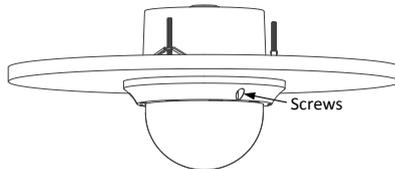7.   Secure the lower dome to the back box with three screws as shown in Figure 2-17.

Figure 2-17 Install the Lower Dome

8.   Route the cables through the ceiling for the speed dome. Refer to the *section 1.1 Connecting the Cables* to connect the cables.

2.4 Mini Speed Dome Ceiling Mounting Applications

Before you start:

The ceiling mounting is applicable to the indoor/outdoor solid ceiling construction. The followings are the mandatory precondition for ceiling mounting:

- The ceiling must be with the thickness between 5 to 40 mm.
- The ceiling must be strong enough to withstand more than 4 times the weight of the dome and its accessories.

2.4.1 Wiring

The cables of dome can be routed either from the top or the side of the back box, as shown in Figure 2-18. For the cables routed from the top of the back box, it is required to drill a cable hole in the ceiling.
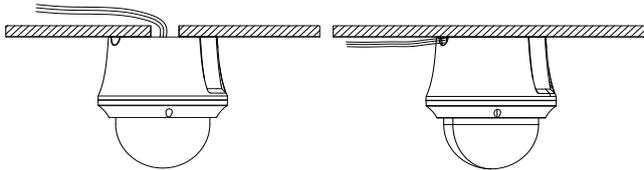

Figure 2-18 Cabling for Ceiling Mounting

2.4.2 Ceiling Mounting

Steps:

1. Drill Screw holes in the ceiling.
    (1) Attach the drill template to the ceiling where you need to install the speed dome.
    (2) Drill screw holes and a cable hole (optional) according to the drill template.
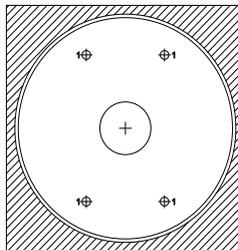

Figure 2-19 Drill Template

2. Disassemble the speed dome.
    (1) Loosen three screws on the notch.
    (2) Remove the lower dome.
    (3) Remove the protective lens cover, foam, and sticker from the dome drive as shown in Figure 2-20.
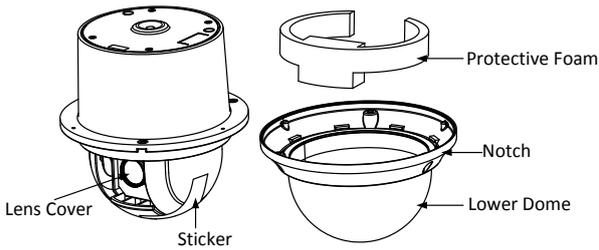
Figure 2-20 Disassemble the Speed Dome

3. Attach lower dome to the back box, and secure it with screws.
4. Align the ceiling mount with the screw holes on the drill template. Secure the ceiling mount to the ceiling with screws (supplied).
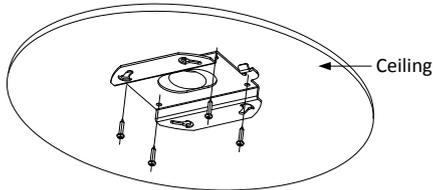
Figure 2-21 Install Ceiling Mount

5. Align the hook of the ceiling with unlock label on the speed dome.
6. Push the speed dome to the ceiling mount and rotate clockwise to secure it.

Figure 2-22 Install Speed Dome

NOTE

● For cement ceiling, use the expansion screw to fix the mount. The mounting hole of the expansion pipe on the wall should align with the mounting hole on the mount.
● For wooden ceiling, use the self-tapping screw to fix the mount.

3 Application and Operations
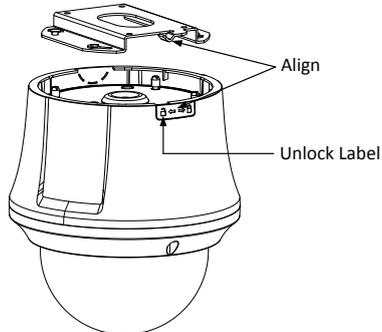
3.1 System Application

The device can be controlled through the back-end device or control software. The back-end device includes control keyboard, DVR (Digital Video Recorder), etc., and the control software includes client software. Here we take the connection of DVR as an example.

SYV

RS485 Cable

Speed Dome   DVR   Monitor

Figure 3-1 System Application

NOTE

- If both the speed dome and the DVR support the coaxial function, the RS-485 cable will not be needed.
- The HD-TVI video output can only be connected to a specific HD-TVI DVR.

3.2 Basic Operations

Make sure the speed dome is connected properly, and the following basic operations are supported:

Panning and tilting:

Click the direction buttons to control the pan and tilt movement of the speed dome.

Zooming:

Click the **ZOOM+** or **ZOOM-** button to control the zooming.

Focusing:

Click the **FOCUS+** or **FOCUS-** button to adjust the focus.

Iris:

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

Preset control:

The speed dome supports the preset function, and the configurable preset range varies according to the control system. The system menu pops up after you call the preset 95.

The main menu interface is shown as follows:

```
            MAIN MENUS
<SYS INFO>
<SYS SETTINGS>
<RESTORE SETTINGS>
<RESTORE CAMERA>
<REBOOT SYS>
<LANGUAGE>       ENGLISH
EXIT
```
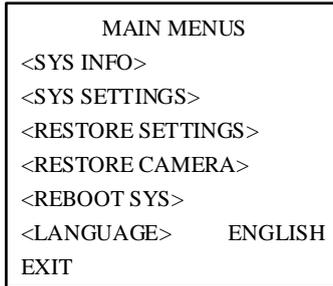
Figure 3-2 Main Menu

NOTE

Refer to the user manual for details to set the speed dome.

3.2.1 Configuring Patrol

You can set the patrol function by operating the DVR and OSD menu, as well as the one-touch patrol can be realized.

● **Configuring Patrol by DVR**

Steps:

1. Enter the PTZ Control interface.

   Menu > Camera > PTZ

Figure 3-3 PTZ Settings

2. Select patrol No. in the drop-down list of patrol.
3. Click the **Set** button to add key points to the patrol.

Figure 3-4 Key point Configuration

4. Configure key point parameters, such as the key point No., duration of staying for one key point and speed of patrol. The key point is corresponding to the preset. The **Key Point No.** determines the order at which the PTZ will follow while c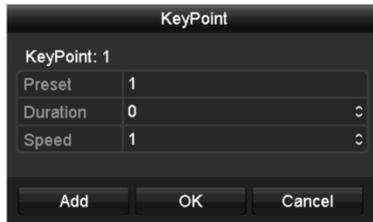ycling through the patrol. The **Duration** refers to the time span to stay at the corresponding key point. The **Speed** defines the speed at which the PTZ will move from one key point to the next.

5. Click the **Add** to add the next key point to the patrol, or you can click the **OK** to save the key point to the patrol.

You can delete all the key points by clicking the **Clear** for the selected patrol, or click the **Clear All** to delete all the key points for all patrols.

● **Configuring Patrol by OSD Menu**

Steps:

1. Call the preset 95 to enter the main menu and move the cursor to enter patrol configuration submenu:

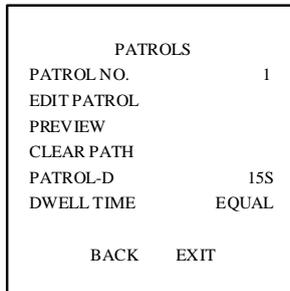   **MAIN MENU > DOME SETTINGS > PATROLS**

Figure 3-5 Patrol Configuration Menu

2. Choose the patrol number.
   (1) Move the cursor to **PATROL NO.** and click **IRIS+** to enter edit mode.
   (2) Click the up and down direction buttons to select the number of the patrol which is to be configured.
   (3) Click **IRIS+** again to confirm the settings and exit editing mode.
3. Set the dwell time.

There are two choices for the dwell time set section. If you select **GRADE**, the actual implement by the dome will be different from the instruction sent by the DVR. For example, you set the DVR to 15s, corresponding to the dome it would be 140s. Refer to the interface for more details. However, if you select **EQUAL**, they will be exactly the same.

4. Edit the patrol.

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

NO.	PST	DWELL	SPD
1	0	20	30
2	0	20	30
3	0	20	30
4	0	20	30
5	0	20	30
6	0	20	30
IRIS+: OK			
IRIS - :CANCEL			

Figure 3-6 Edit the Patrol

    (2) Click up/down direction buttons to choose the number and locate the preset to be edited.

    (3) Click left/right direction buttons to position the cursor to the column of **PRESET**, **DWELL** and **SPEED**. You can click the up/down direction buttons to set the value of preset number, dwell time and patrol speed.

NOTE

The presets you set for a patrol should be the ones that have been pre-defined by users. The dwell time (15 to 800 seconds selectable) is the time that the speed dome stays on a certain preset. The patrol speed (level 1 to 40 selectable) is the scanning speed for the speed dome switching between the presets.

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

5. Call the defined patrol.

    Back to the live view interface after you finish editing the patrol, and call the special presets to call the defined patrol. The presets 35 to 38 stand for patrol 1 to 4 and presets 102 to 105 stand for patrol 5 to 8.

● **Calling Quick Patrol**

The dome starts patrol from the predefined preset 1 to preset 32 in order after the park time. The undefined preset will be skipped.

Steps:

1. Set the preset 1 to 32 by DVR or OSD menu.

2. Call the preset 46 to start the quick patrol.

3.2.2 Configuring Park Actions

Purpose:

For some certain model of the speed dome, it can be configured to start a predefined park action (scan, preset, patrol and etc.) automatically after a period of inactivity (park time).

● **Configuring Park Actions by DVR**

Steps:

1. Click the **PTZ** in the lower-right corner of the PTZ setting interface.

   Menu > Camera > PTZ

2. Click the ▶ button to show the one-touch function of the PTZ control.

Figure 3-7 PTZ Panel - One-touch

3. There are 3 one-touch park types selectable, click the corresponding button to activate the park action.

   Park (Quick Patrol): The dome starts patrol from the predefined preset 1 to preset 32 in order after the park time. The undefined preset will be skipped.

   Park (Patrol 1): The dome starts moving according to the predefined patrol 1 path after the park time.

   Park (Preset 1): The dome moves to the predefined preset 1 location after the park time.

   NOTE

   The park time can only be set through the speed dome configuration interface. By default the value is 5 s.

4. Click the button again to inactivate it.

● **Configuring Park Actions by OSD Menu**

Steps:

1. Call the preset 95 to enter the main menu and move the cursor to enter motion settings submenu:

   MAIN MENU > SYS SETTINGS > MOTION PARAMETER

```
            MOTION
AUTO FLIP              ON
PROPORTIONAL PAN       ON
PARK TIME             5
PARK ACT             NONE
SCAN SPEED           28
IMAGE FREEZE         OFF
MOVE SPEED            5
         BACK     EXIT
```

Figure 3-8 PTZ Configuration

2. Select the **PARK TIME,** and set the value according to your needs.
3. Select the **PARK ACT**, and the action can be set to **NONE**, **PAN SCAN**, **TILT SCAN**, **PANORAMA**, **FRAME SCAN**, **RANDOM SCAN**, **PATROL-D**, **PATROL 1-10**, **PATTERN 1-5**, **PRESET 1-8**, **DAY**, and **NIGHT**.

NOTE

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

4 Troubleshooting

4.1 Device Exceptions

Question

Why does the speed dome fail to start or repeatedly reboot? Why does the speed dome restart intermittently when controlling PTZ, calling presets or turning on the infrared lights of the IR dome at night?

Answer

- Check the supply voltage of the dome. Ensure the supply voltage to meet the power requirements of the speed dome. The nearest power supply is recommended.
- Check whether the diameter of the power wire meet the standards.

4.2 PTZ Control Exceptions

Question

The speed dome cannot do PTZ control but can do zoom control.

Answer

- For the 5-inch speed dome, you need to remove the protective sticker and foam of the camera module by opening the bubble, correctly install the speed dome again and then wire up.
- For IR speed dome, please remove the protective sticker and then wire up.

Question

Neither zoom control nor PTZ control is available for the speed dome.

Answer

- Check the supply voltage of the dome. Ensure the supply voltage to meet the power requirements of the speed dome. The nearest power supply is recommended.
- Check whether the diameter of the power wire meet the standards.

4.3 Other Questions

Question

The preview image of the speed dome is not clear.

Answer

- Please check whether the protective film of the bubble has been removed.
- Please check whether there are foreign objects on the bubble or the lens.
- Please check where there are obstructions such as spider web nearby.
- Open the bubble and check whether the lens cover has been removed.
- Restore the device to the default settings. Call the preset 95 to enter the OSD menu and select the **RESTORE CAMERA**.

Question

For the IR speed dome, the image is abnormal white when the IR light is turned on in the night.

Answer

- Please check whether there are obstructions near the lens, e.g. wall, leaf, spider web, cables, etc., which will cause the over-exposure due to the IR light reflection. Clear the obstructions if necessary.

Question

The speed dome cannot focus when working in the indoor condition.

Answer

- Please restore the device to the default to exclude the factor of incorrect configuration.
- Reduce the minimum focusing distance of the device by configuring the image settings through the OSD menu.