HD-AHD Intelligent High Speed Dome

User Manual

Thank you for purchasing our produdts . Please do not hesitate to contact us if there is any question.

Please read this manual careful before instation or application

(Note：This manual is subject to change without notice)

Contents

Chapter 6 OSD Menu Operation

Note 1: The key "IRIS+" mentioned in this manual is equal to "OPEN", and "IRIS-" is equal to "CLOSE"; "PRESET" is equal to "SET" (i.e., to edit preshot), while" PREVIEW" is equal to "ACK" (i.e., call preshot); "**FOCUS-" is equal to " FAR".**

Safeguards:

This is to assure the right application of this product and to avoid danger or property loss.The precaution measures are divided into "Warnings" and "Cautions", as shown in the following picture;

Warnings: Ignorance of Warings may cause serious injury or death

Cautions: Ingnorance of Cautions may cause injury or property loss.

⚠ Warning Follow this safe guard to avoid serious injury or death	⚠ Caution Follwing this precaution to avoid potential injury or property loss

⚠ Warning

1、 All the national and regional electrical safety regulations must be strictly followed during the installation and application of this product.

2、 Please use standard power adapter   DC12V/2A

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

4、 Please disconnect power during wiring and disassembling. Operation is not allowed when connected to power.

5、 When the product is installed on wall or ceiling, the devices should be firmly fixed.

6. If there is smoke, severe smell or noise in the dome, turn off the power and disconnect the cable immediately, then contact our after-sales staff.

7. If the product does not work properly, please contact your dealer of our after-sale sevice center。Never attempt to disassemble the camera yourself.

（We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.）

Cautions

1、 Do not drop the dome or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the equipment installation on viberating surface or shocking places(ignorance can demage the equipment).

2、 Do not install the dome in extremely hot(onver 60℃)or cold(below-40℃) or damp locations.

3、 Indoor domes should be kept away from rain and moisture.

Chapter 1 Introduction

1.1 Product Introduction

For this series of dome cameras, the 32-bit ARM processor, built-in zoom lens and the decoder controller are used together. It's driven by precise stepper motor, and thus responsive, stable, and trembling-free at any speed.The excellent performance and complete functions has made it a high-tech security product.

1.2 Appearance

Bracket

Connector

Top extemal Housing

Down extamal Housing

Side cover

Infrared light

Camera Module

Light sensor
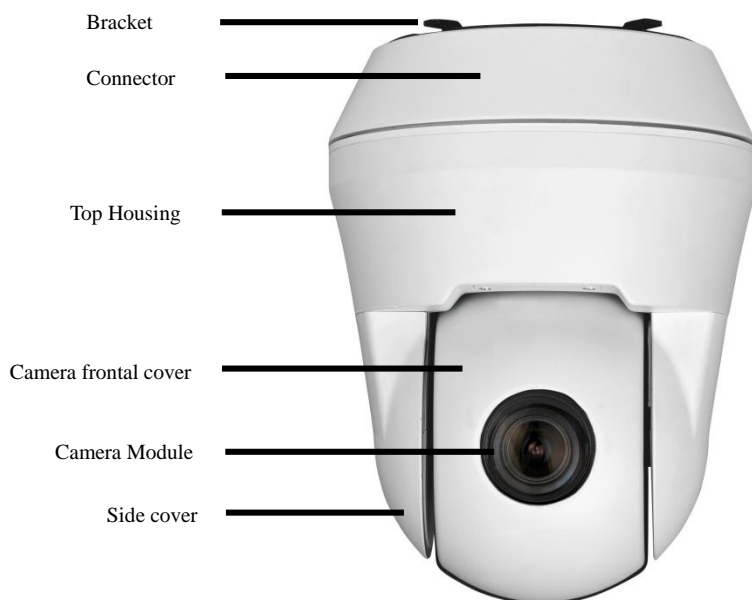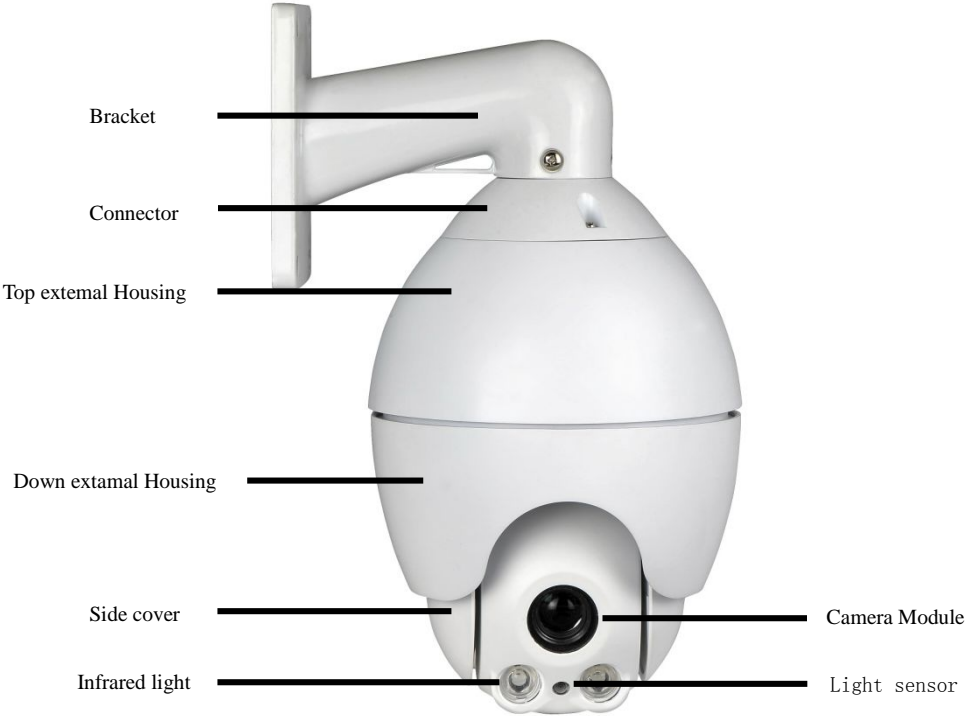
RPTZ1080-10X-427 Dome

RPTZ1080-10X-428 Dome

1.3 Functions

- Aluminum-alloy housing, 4-inch dome cover, black rotating dome, integrated design

- Ceiling-mount, wall mount, pending (indoor/outdoor) bracket available

- Precise stepper motor driven, smooth and tremble-free rotation, noise-free

- 32-bit ARM processor, large storage capacity, higher speed, better performance, higher integration, lower consumption

- Soft address and hard address optional

- Can restore factory default settings

- Simutaneous zoom and speed limit

- Auto restore――in the menu,User can set how the camera rotates after start

- Color/ B/W can be set to be Color, B/W, or Auto

- 6 PTZ Pattern：can record all P/T/Z tour

- Automatic changing of P/T speed: the P/T speed reduces proportionally according to zoom times.

- 128 presets, accuracy less than 0.1° （the dome targets a specific location, can be set and changed

- Flexible and resettable auto-scan speed　 (1-9 degree optional)

- 16 presets in each tour: dwell time 1-99 seconds at each preset position settable in OSD menu

- Pan 360°endless， Tilt 0---90°

- Pan manual speed: 0.1°～180°/S, Tilt manual speed：0.1°～100°/S

- 3 degress of lightning and surge protection

- Video Transmitting Distance 400 m

- Support coaxitron function

- With CE, FCC and ROHS

1.4 Technical Data

Items	Model Name	
	RPTZ1080-10X	
Camera	CTU10AH72	CTU10AH108
Sensor	1/2.8 IMX238" CMOS	1/2.8 IMX322 CMOS
Effective Pixels	1.3MP	2.0MP
Resolution	720P/30fps， 720P/25 fps	1080P/30 fps，1080P/25 fps，720P/30 fps，720P/25 fps
Min. Illumination	0. 1 Lux	
Optical Zoom	10 X f=5mm～50mm	
White Balance	Auto	
D/N	ICR	
IR light Source	Varical focal IR-Ⅲ generation	
IR Wave Length	850nm	
IR Control	Auto/Manual	
IR life	more than 20,000 hours	
IR LED QTY	2 X ∮18	
Infrared Distance	50 M	
IR Angle	30°，45°	
Proccessor	32-bit ARM	
Address	0----255（Compatible with hard address and soft address）	
Pan Range	360°Endless	
Pan Speed	0.1°/S－240°/S（1-64 degree optional）	
Tilt Range	0-----90°	
Tilt Speed	0.1°/S－100°/S	
2-Poin Auto Scan	Yes	
Horizontal 360 °Scan	Yes	
Preshot	128	
Preshot Speed	240°/S	
Dwell Time at Preshot	1----99 S	

Pattern	6 Groups
Tour	7Groups
Temperature	-10℃-+60℃
Humidity	≤80% No condensation
Communication	RS485 BUS ，Coaxitron control
Baud Rate	2400／4800／9600 /19200bps Optional
Input Power	DC12V/2A
Consumption	15W
Video Out	AHD-BNC
Video Transmitting Distance	400 m
Weight	1.2Kg
Installation	L type bracket and Ceiling Mount forRPTZ1080-10X-427 Wall-mount bracket and Pendent bracket for RPTZ1080-10X-428
Certificates	**ROHS， CE，FCC**

1.5 Short-cut Commands

PREVIEW/ PRESET	No	Functions	Remark
PREVIEW	65	Camera Power ON	NA
PRESET		Camera Power OFF	NA
PREVIEW	66	BLC ON	
PRESET		BLC OFF	
PREVIEW	67	ICR Auto	
PRESET		ICR Color	
PREVIEW	68	ICR B/W	
PRESET		Home Position	
PREVIEW	69	OSD ON/OFF	
PRESET		Screen ON/OFF	
PREVIEW	70	Digital Zoom ON	NA
PRESET		Digital Zoom OFF	NA
PREVIEW	71	Auto Focus	
PRESET		Manual Focus	
PREVIEW	72	Auto Iris	NA
PRESET		Manual Iris	NA
PREVIEW	73	White Balance Auto	
PRESET		White Balance Manual	NA
PREVIEW	74	Indoor Mode	NA
PRESET		Outdoor Mode	NA
PREVIEW	75	ATW	NA
PRESET		one push WB	NA
PREVIEW	76	Image Freeze ON	NA
PRESET		Image Freeze OFF	NA
PREVIEW	77		Reserved
PRESET			Reserved
PREVIEW	78		Reserved

PRESET			Reserved
PREVIEW	79	1080P/30 fps	
PRESET		720P/30 fps	
PREVIEW	80	1080P/25 fps	
PRESET		720P/25fps	
PREVIEW	81	Home Position in 1 Minute	
PRESET		Home Position in 2 Minute	
PREVIEW	82	Home Position in 4 Minute	
PRESET		Home Position in 8 Minute	
PREVIEW	83	Home Position in 10 Minute	
PRESET		Home Position OFF	
PREVIEW	84	Run 1st 2-Point Scan	
PRESET			
PREVIEW	85	Run 2nd 2-Point Scan	Default is 1st one
PRESET		Set 2nd 2-Point Scan	Reserved
PREVIEW	86	Run 3rd 2-Point Scan	Reserved
PRESET		Set 3rd 2-Point Scan	Reserved
PREVIEW	87	2-point scan at low speed	When speed is 64 degree, this command is to record the speed
PRESET		Set start position of 2-point scan	
PREVIEW	88	2-point scan at medium speed	Reserved

PRESET		Set end position of 2-point scan	
PREVIEW	89	2-point scan at high speed	Reserved
PRESET			Reserved
PREVIEW	90	2-point scan big circle mode(> 180°	
PRESET		2-point scan big circle mode(< 180°)	
PREVIEW	91	Administrator logo in	Reserved
PRESET		User log in	Reserved
PREVIEW	92	Run Pan Scan	
PRESET		Dome information dispaly	Will disappear in 3 S or when joystick moved
PREVIEW	93	Run 16 preshots	
PRESET		Restart	Press PRESET 93 three times continually
PREVIEW	94		
PRESET			
PREVIEW	95	Open OSD Menu	
PRESET			
PREVIEW	96		
PRESET			
PREVIEW	97	Run 1nd Pattern	
PRESET			
PREVIEW	98	Run 2rd Pattern	
PRESET			
PREVIEW	99		
PRESET			
PREVIEW	100	Run 1st Tour	
PRESET		Run 2nd Tour	
PREVIEW	101	Run 3rd Tour	

PRESET		Run 4th Tour	
PREVIEW	102	Run 5th Tour	
PRESET		Run 6th Tour	
PREVIEW	103	IR Auto	
PRESET		IR ON	
PREVIEW	104	IR OFF	
PRESET			Reserved
PREVIEW	105		Reserved
PRESET			Reserved
PREVIEW	106		Reserved
PRESET			Reserved
PREVIEW	107		Reserved
PRESET			Reserved
PREVIEW	108		Reserved
PRESET			Reserved
PREVIEW	109		Reserved
PRESET			Reserved
PREVIEW	110	Return to factory setting	Press PREVIEW 110 once，then press PRESET 110 twice，and press PREVIEW 110 once
PRESET			

1.6 Glossary

Soft Address

User can set soft address in this dome, thus make it easier in installation and application.

General Address

Address 0 is the general address, which menas the controlling devices can control any dome in a system by this address, no matter what the current dome address is.

OSD Menu

The dome provides OSD menu for display of system information and information and setting of dome parameters.

Proportional Pan/Tilt Speed

Proportional pan/tilt automatically reduces or increases the pan and tilt speeds in proportion to the amount of zoom. The dome slows down at a larger amout of zoom, and it speeds up at a small amount of zoom.

AUTO Pan SCAN

The dome rotates horizontally 360º continually at a set speed in the set direction . User can also set the starting and ending position,between which the camera can move back and forth**.**

Two-point PAN SCAN

The domes moves horizontally from the starting point to the ending point at a set speed in the set direction.

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.。

PRESET (PRESHOT)

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.

PRESET TOUR (Vector Scan)

The dome will moves the continually from the 1st preset to the 16th. If one preset is not set, it skips and moves directly to the next preset.

PATTERN (PTZ Tour)

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.

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(depends on the camera).

Auto Focus

The auto focus enables the camera to focus automatically to maintain clear video images

User can also press FAR and NEAR to focus. It will resume auto focus when user do P/T/Z controlling.

Auto Iris

The auto iris enables the camera to iris automatically to maintain clear video images

User can also press OPEN and CLOSE to focus. It will resume auto iris when user do P/T/Z controlling.

Backlight Compensation

When there is bright light source in the background, the subject will be dark, like a blackshadow. Backlight compensation video gain done either manually or automatically to correct the exposure of subjects that are in front of a bright light source, avoid unclearness of the target in bright background.

Chapter 2 Precautions to installation

    2.1 Preparation

    2.2 Precautions to installation

2.1 Preparation

1.Regulations

1）All electrical safety and fire regulations should be strictly followed.

2）Please check if your camera and accessories are all included in the product package, make sure the location is suitable for installation and application of the dome,as specified in the manual.

2. Location checking

Make sure there is enough space for the dome and accessories in the chose location.

3. Check the supporting strength of the chose location

Make sure the ceiling or wall where the dome will be installed is strong enough to support 4 times of the weight of domes and its accessories.

4. Preparing of cables

Select video cable according to required transmitting distance. Basic requirements of coaxial cable:

1）75Ω；

2）Brass cable；

3）95% copper braid, tinned

2.2 Precautions to installation

1． Read the this manual carefully before installation.

2． The power supply and the voltage should be the same as indicated on the cable. Standard voltage is DC12V, the voltage should be within DC12V±10%。Long-time working of dome under too low or too high voltage will cause unnormal working. Keep the power consumption above 40W, otherwise, the restart or controlling of dome will be unnormal.

3． Continuing exposure of camera to strong light will damage CCD and result in bad image or no display.

4． The outdoor dome is water-proof as well as moisture resistant (IP66). If the dome is wired improperly, the rain will enter the dome along the cable, thus damaging the circuit board and even the camera. The right and wrong wiring are shown in the following pictures:
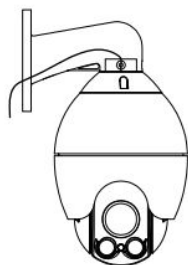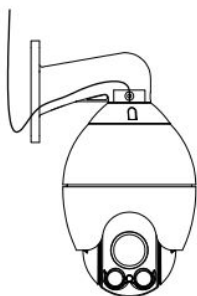
Right Wiring
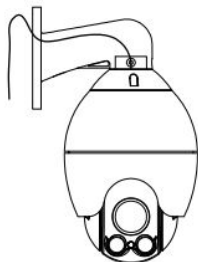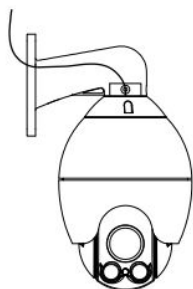
Wrong Wiring

Chapter 3 Installation
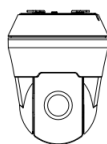
3.1 Package Checking

3.2 Installation

3.3 Dip Switches(Dome Address, Protocol and Baud Rate)
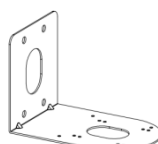
3.1 Package Checking

Please check if your camera and accessories are all included in the product package:

3.1.1 Packing list of indoor:

1. Integrated Camera
2. L Bracket
3. Power Sypply
4. User Manual
5. Quality Certificate
6. Warranty Card
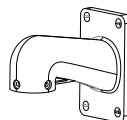
Integrated Camera   L Bracket

Power Supply（Optional）   User Manual

3.1.2 Packing list of outdoor:

1. Integrated　Camera
2. Bracket
3. Power Sypply
4. BNC Cable
5. Screw Pack
6. User Manual
7. Quality Certificate
8. Warranty Card

Integrated　Camera   Bracket（Optional）

Power Supply（Optional）   BNC Cable

Screw Pack   User Manual

Note：non-original packing material may cause damage in transportation and cost extra charge.
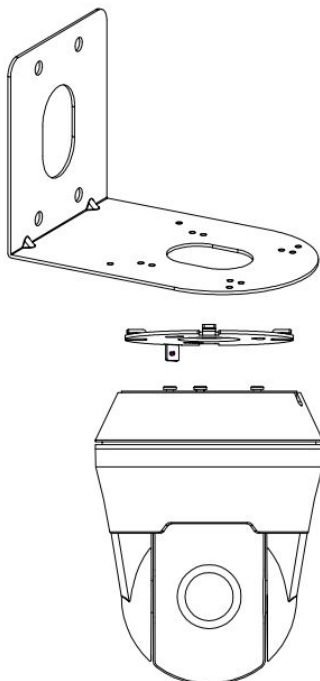
3.2 Installation

3.2.1 Installation for Indoor Dome

3.2.1.1 Fix L-bracket on the wall
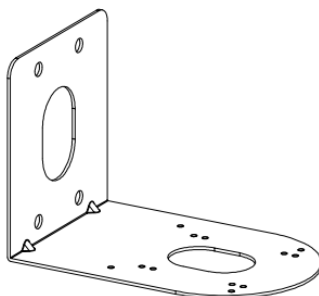
3.2.1.2 Take down the ceiling plate from dome, assemble it into L-Bracket, then install dome into celling plate, put it into slot, rotate from the right side, then fasten the ceiling plate by PM2.5*8 screws from side of speed dome. as shown in picture.

3.2.1.3 Wire of camera is shown as follows：

3.2.1.3.1 One-dome divice connection

The one-dome device connection allows the user learn the wiring quickly, and also makes the installation, adjusting, testing ,and exhibition easier. Read the below chart carefully for connection when you use the apparatus for the first time. Any worng wiring may cause permanent damage or damage to other equipments.
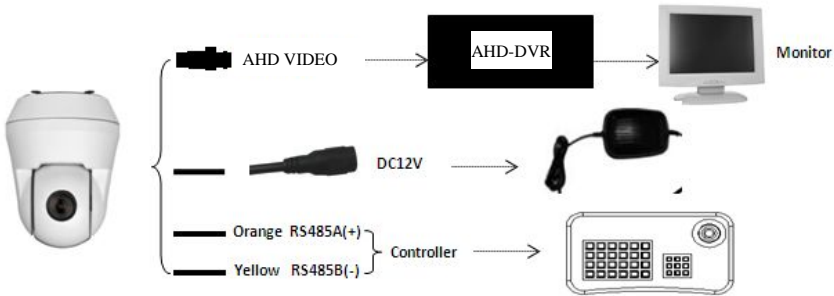


Caution: No operation is allowed when dome is powered-up.

3.2.3.2 Multi-dome device connection.

When connecting many dome devices together, the user can embed multi-device system with auxiliaries such as arrester device, video matrix, DVR and alarm box for system integration.

DC12V: Power supply of dome device, which will convert 110V/60H$_z$ to 220V/50H$_z$ input to DC12V output and supply to the dome device.

RS-485 Bus: It is for the control signal（RS-485 signal） output of controller, connecting to the communication input terminals of control cable of each dome device.

Video: It is for image signal output of dome device, (can directly output to video equipment such as monitor or video matrix. Take care of the match up of impedance.）
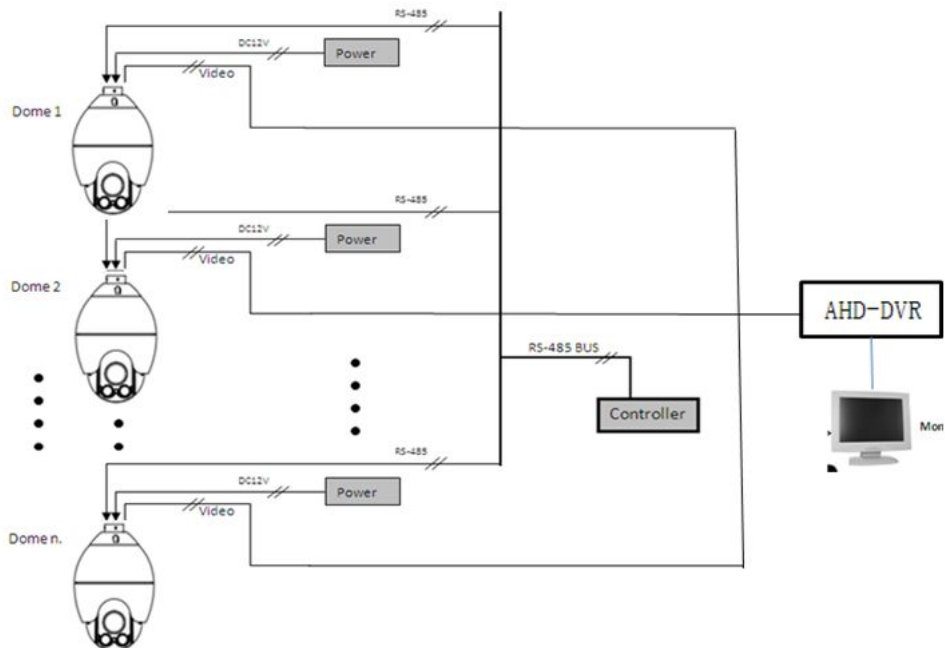
3.2.2 Installation for Outdoor Dome

3.2.2.1 Install the bracket: Run the BNC cable through the bracket (see following picture). Please refer to Chapter 4 for installation of different brackets.
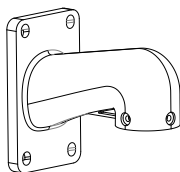

3.2.2.2 For wall mount bracket, get out the upper housing from from the carton and install it with the bracket. Please wrap the connecting part between the upper housing and the bracket with teflo tapes (see following picture) to make it water proof if it's an outddor camera.
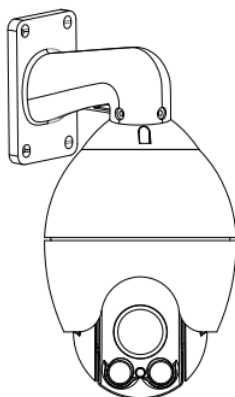
3.2.2.3 Wire of camera is shown as follows：

3.2.2.3.1 One-dome divice connection

The one-dome device connection allows the user learn the wiring quickly, and also makes the installation, adjusting, testing ,and exhibition easier. Read the below chart carefully for connection when you use the apparatus for the first time. Any worng wiring may cause permanent damage or damage to other equipments.
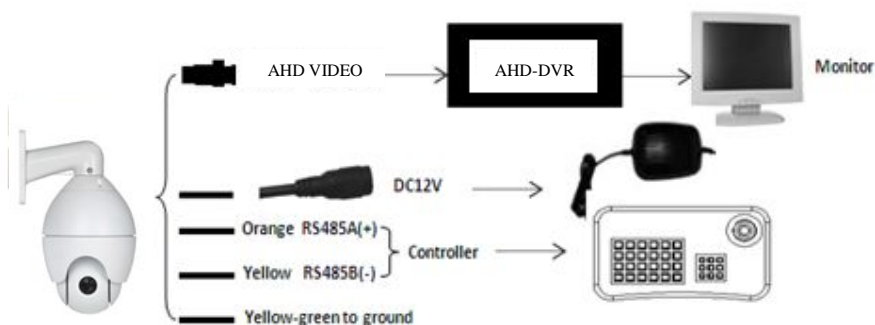
BNC Cable   Connector of BNC Cable

1.DC connect to power supply (DC12V input);

2.Video oupout connect to monitor;

3.Orange wire connect to 485+,

   Yellow wire connect to 485-;

4. Yellow-green wire connect to ground,can ignoreduring testing.

Caution: No operation is allowed when dome is powered-up.

3.2.2.3.2 Multi-dome device connection.

When connecting many dome devices together, the user can embed multi-device system with auxiliaries such as arrester device, video matrix, DVR and alarm box for system integration.

DC12V: Power supply of dome device, which will convert 110V/60H$_Z$ or 220V/50H$_Z$ input to DC12V output and supply to the dome device.

RS-485 Bus: It is for the control signal（RS-485 signal） output of controller, connecting to the communication input terminals of control cable of each dome device.

Video: It is for image signal output of dome device, (can directly output to video equipment such as monitor or video matrix. Take care of the match up of impedance.）
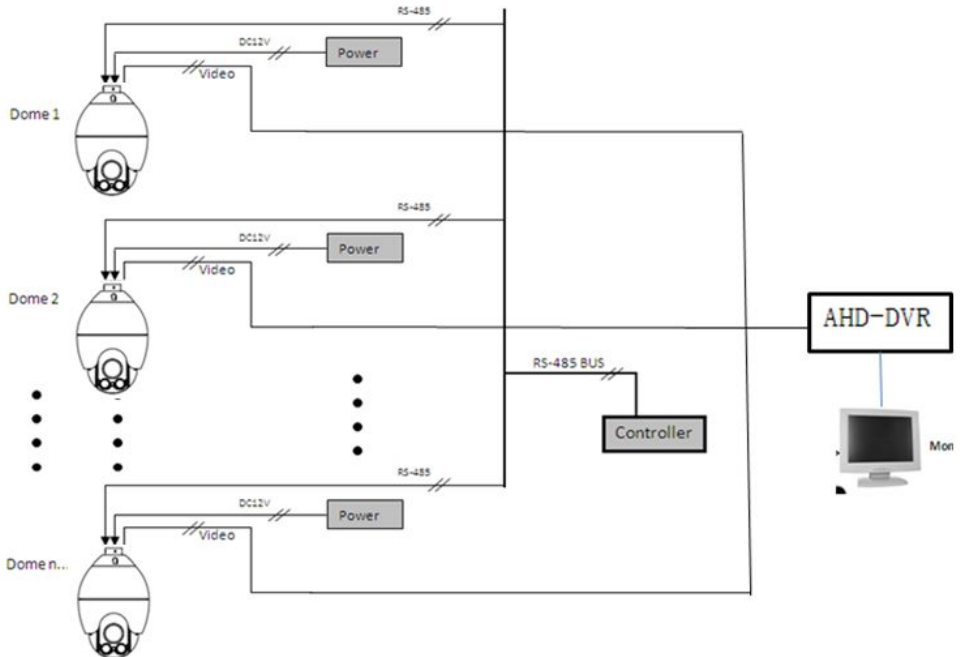
3.2.3Place the dome upside down, remove the cover of Dip switches board near camera, set dome address and baud rate. There are two dip switch SW1 & SW2 on master board,, which used for setting dome address, baud rate and Protocol, see 3.3 dip switches setting.
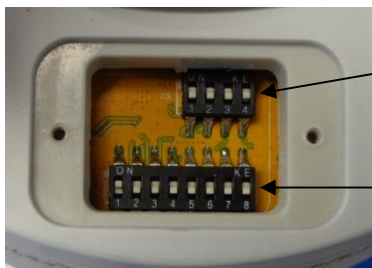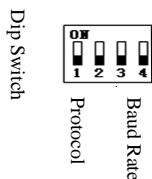

SW1: Protocol and baud rate setting
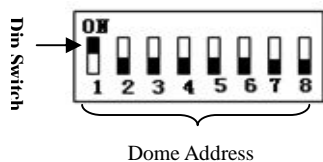
SW2: Dome address setting

3.3 Dip Switches(Dome Address, Protocol and Baud Rate)

    3.3.1   Protocol and baud rate(as shown in SW1)

Note: If you choose "Auto" in protocol, the dome can automatically recognize PELCO-D，PELCO-P，ULTRACK，VICON, etc. Make sure the dome and controller have the same protocol and baud rate, otherwise the dome cann't be controllered. The dome camera should be restarted if there is any change in the dip switches
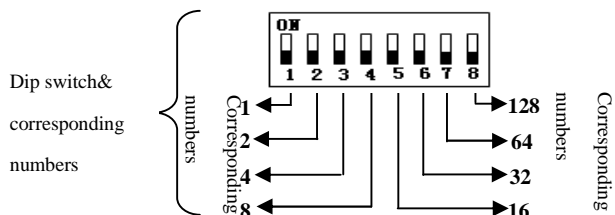
    3.3.2.Dome address (as shown in SW2)

Dome Address

(This is Dome address of Dome 1)

Dip Switch / Baud rate	3rd Dip	4th Dip
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON

Dip Switch / Protocol	1st Dip	2nd Dip
Auto	OFF	OFF
DYNACOLOR	ON	OFF

Setting:to add together the corresponding numbers of those DIP at"ON", and you get the dome address.

Dip switch& corresponding numbers

Dome Address counting example：
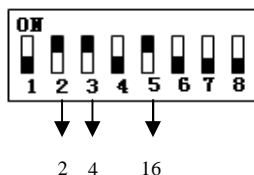
2   4   16

(2+4+16=22) Dome address is **22**.

Dome adress：0～255

Note：The default factory setting is Auto (protocol), 2400bps(baud rate) and 1(dome address).

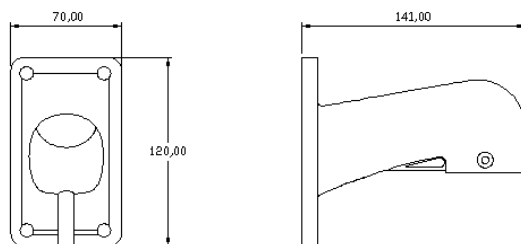**Chapter 4 Installation of Different Brackets**

4.1 Dimensions

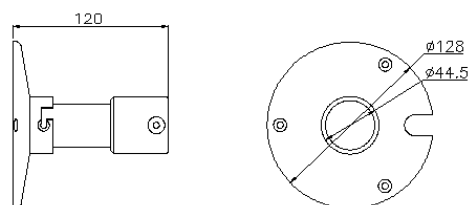**4.2 Wall Mount**

4.3 Pending Mount

4.4 Corner Adapter
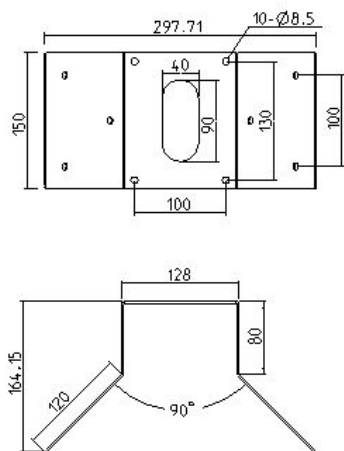
4.1 Dimensions

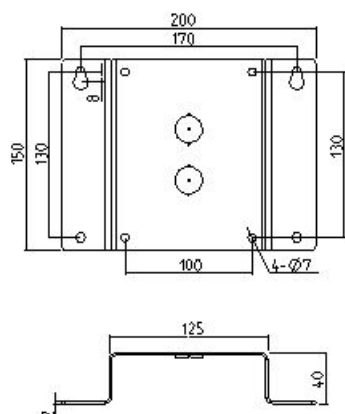4.1.1   Wall Mount Bracket

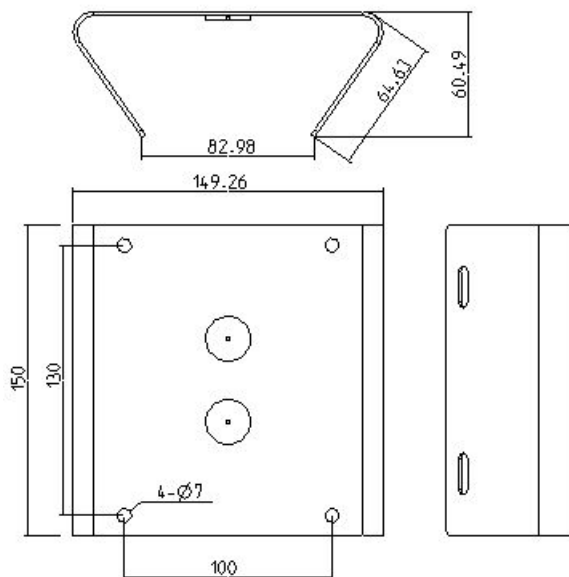4.1.2   Pendant Bracket

4.1.3   Corner Adapter

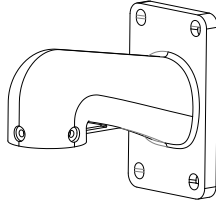4.1.4   Wall Mount Adapter

4.1.5 Pole Mount Adapter

4.2 Wall Mount Installation

4.2.1Accessories

（1）Wall Mount Bracket

To use with indoor and outdoor dome

Picture:

（2）Accessories

Bolts, Spring Washers and Plain Washers, Water-proof Washers（Prepared by user）

4.2.2Installing Procedures

Wall Mount is applicable of indoor and outdoor hard walls. Installtion requirements:

（1）The wall is thick enough to support the Bolts, Washers.

（2）The wall can endure at least 8 times of the weight of dome and all the accessories.

Procedure 1：Make a Hole and Fix the Anchor Bolts

Drill 4 holes on the wall according the dimension of wall mount bracket, and insert the M8 anchor bolts(Prepared by the user) into the holes.

Procedure 2：Run the BNC cable through the wall mount bracket.

Procedure 3：Fix the Wall Mount Bracket on the Wall

Fix the 4 M8 screw caps with plain washers, and then screw them with the corresponding anchor bolts on the wall (through the wall mount bracket and rubber washer).

Procedure 4：Dome Installation

Connect the BNC cable with dome, then fix the dome to the wall mount bracket with M4 screws.Then install the speed dome according to Chapter 3
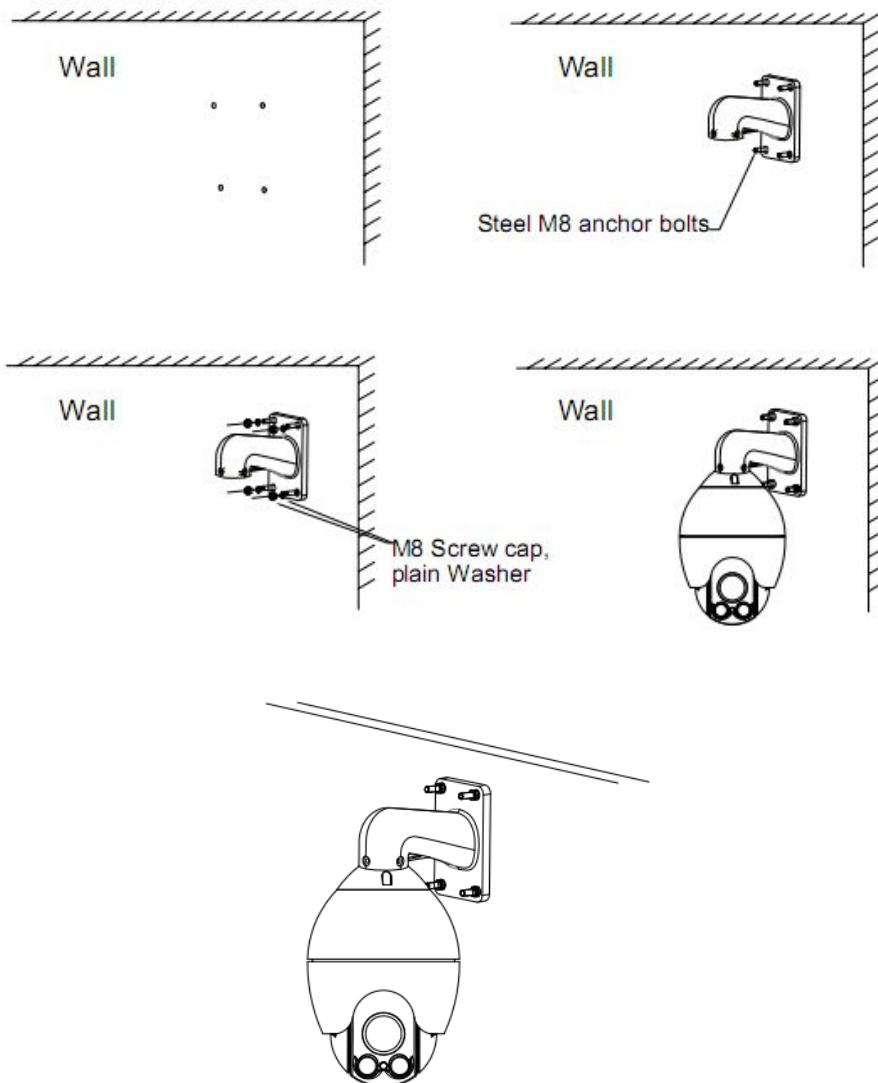
4.3 Pending Mount Installaiton

4.3.1Accessories

（1）Pending Pan

Used for pending mount installation, should be used together with pipe and connector.

Picture：
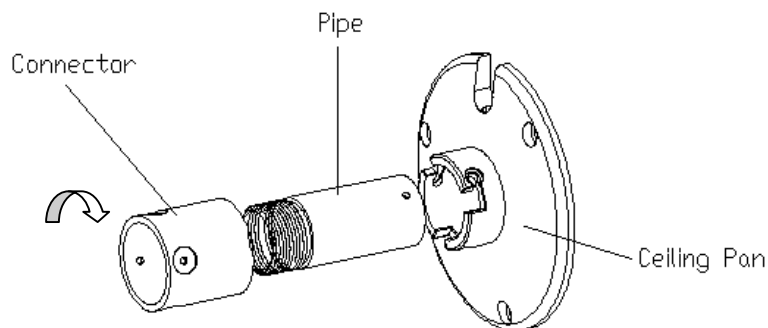
（2）Pipe
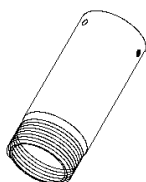
4.3.2 Penant Mount Installation

Pendant mount is applied for hard ceiling. Installation Requirements:

（1）The wall is thick enough to support the Bolts, Washers.

（2）The wall can endure at least 5 times of the weight of dome and all the accessories.

Procedure 1：Install the Ceiling Pan

Make 4 holes on the ceiling (accordingly with the holes on the ceiling pan), insert the anchor botls, then run the BNC cable throughthe ceiling pan.Then aim the 3 holes on the ceiling pan to the inserted anchor bolts, and fix with M5 screw.

Note：The length of BNC cable outside ceiling pan should be similar to length of pipe.

Picture：
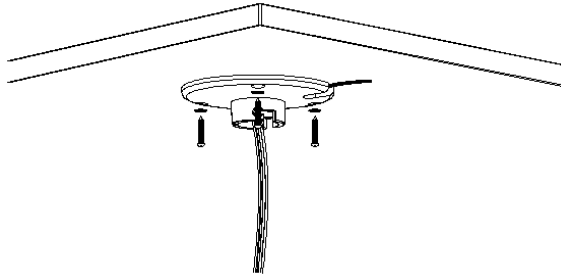
Procedure 2：Pipe Installation

Screw the pipe with the connector, then run the BNC cable through the pipe and connector.Thenfix the pipe with the ceiling pan by M4 Screw。

Picture：
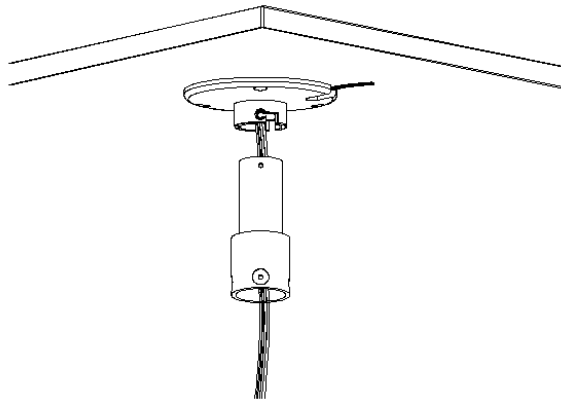
Procedure 3：Dome Installation

Insert BNC cable to connector on top of the dome housing, and then connect the top of domehousing with pendant bracket (connector) and fix by M4 screw. Then install the dome according to Chapter 3.
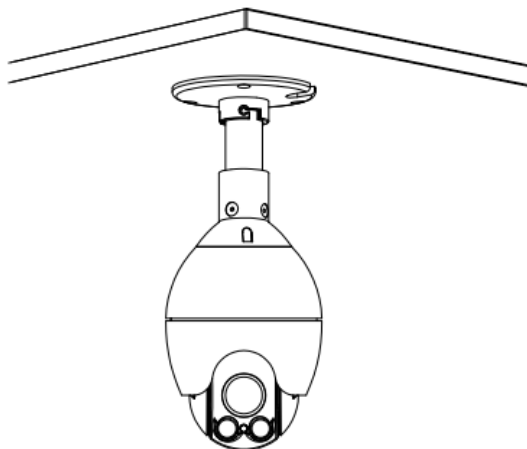
4.4 Corner Adapter Installation

4.4.1Accessories

（1） Wall Mount Bracket

Applcable for indoor and outddor dome.

（2） Corner Adapter

Should be used together with wall mount bracket.
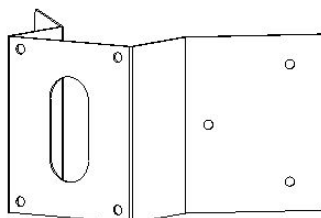
（3） Accessories

Screws, Hexagon　Bolts M8, Spring Washers and Plain Washers（Prepared by user）

4.4.2 Installation Procedures

This is applicable for indoor and outdoor hard walls with 90-degree corner. Installation requirments:

（1）The wall should be thick enough to support the anchor bolts.

（2）The wall can endure at least 8 times the weigh of the dome and all the accessories.

Procedure 1：Install Corner Adapter

Picture:
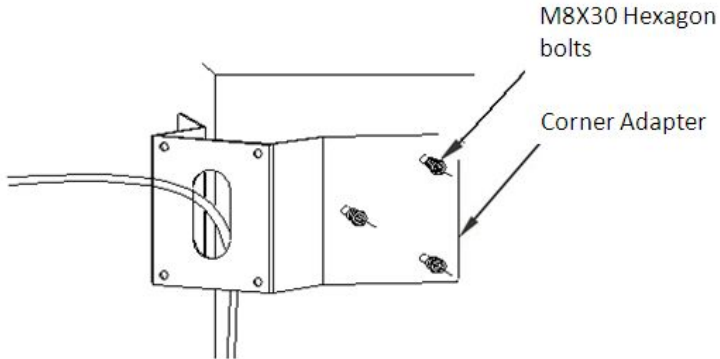
Mark and drill 6 holes on the wall accordingly with the holes of the corner adapter, andinsertthe M8 anchor bolts.Run the BNC cable through the center hole, then fix the corner adapter to the znchor bolts by screw caps and washers.

Precaution：The Anchor Bolts are prepared by the user. Assure the cable is long enough.If the dome is used outdoor, put glass glue to make it water proof.

Procedure 2：Install wall mount bracket to corner bracket.

Use the provided Bolts, Spring Washers and Plain Washers to mount the Wall Mount Adaptor onto the product (refer to following picture)

Note：when fastening the bolts, first press the washer firmly, then twist about half a circle. Thus can make it water-proof and also would not damage the bolts because of exceeded sgtrength.
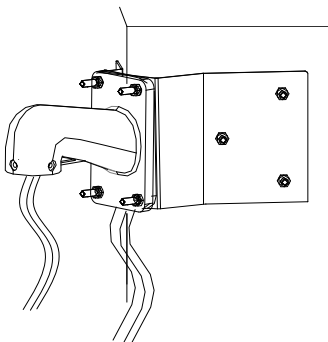
Picture：

Procedure 3:Install the speed dome

Insert the BNC cable through the wall mount bracket, then screw the bracket with the dome, and fasten with anchor bolts(M4), then install the speed dome according to Chapter 3.

Picture：
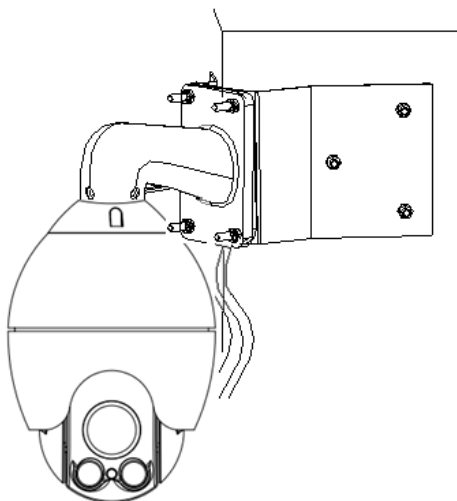
Chater 5 Operation Guidance

    5.1 Wiring

    5.2 Protocol and Baud Rate Setting

    5.3 Dome Address Setting

    5.4 Install the Camera Module

    5.5 Connect to Power

    5.6 Controller Setting

    5.7 Testing

    5.8 Finish Testing

5.1 Wiring(Do not connect to power)

5.1.1 Wiring for indoor dome
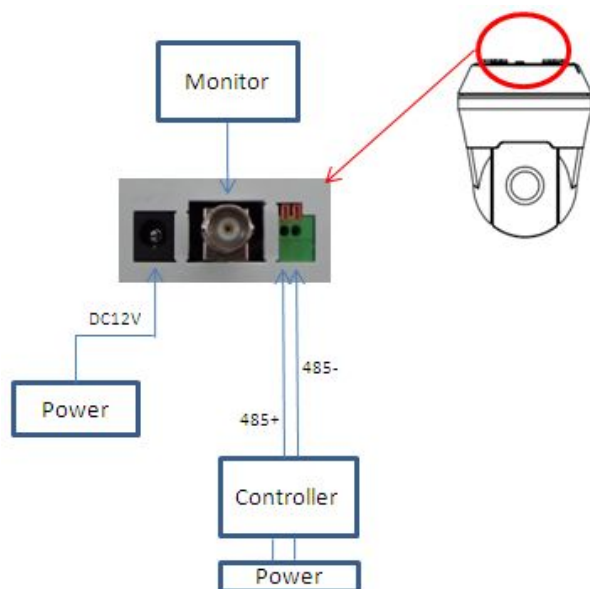
5.1.2 Wiring forRPTZ1080-10X-428, dome
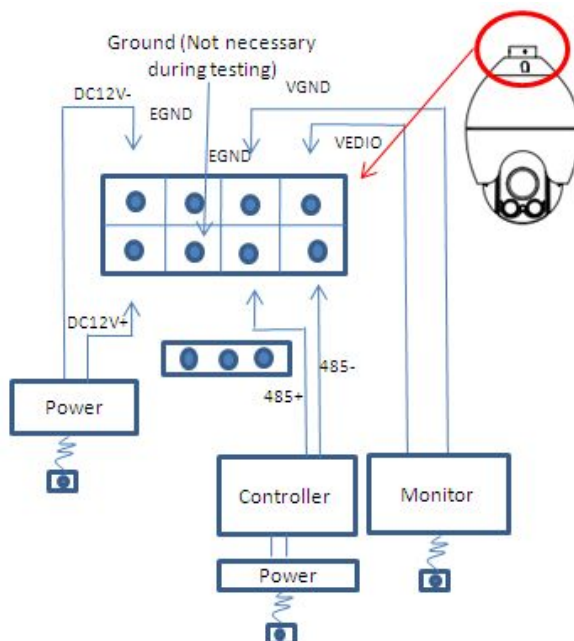
5.2 Protocol and Baud Rate Setting (Do not set when dome is connected to power; dome should be restarted if there is any change in the setting) (Please refer to 3.3.1)

The Dip Swich is on PCB Board inside the dome.

5.3 Dome Address Setting (Do not set when dome is connected to power; dome should be restarted if there is any change in the setting.)

Dome Address Setting

In left picture:Dome address is:1

(Please refer to 3.3.2)

The Dip Swich is on PCB Board inside the dome.

5.4 Install the Camera Module(Please refer to " Camera Module Installation").

1.Connect camera module to FPC cable：

CTU10AH108

2. Connectors for convert board and master board:

Ear board（6PIN）cable inserting

4PIN，8PIN cable inserting

Camera FPC
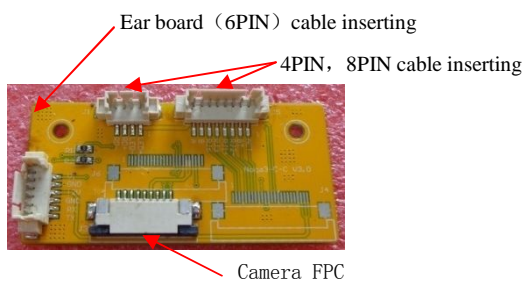
3. Connectors for convert board and camera holes, FPC connector

4. Installation finished：
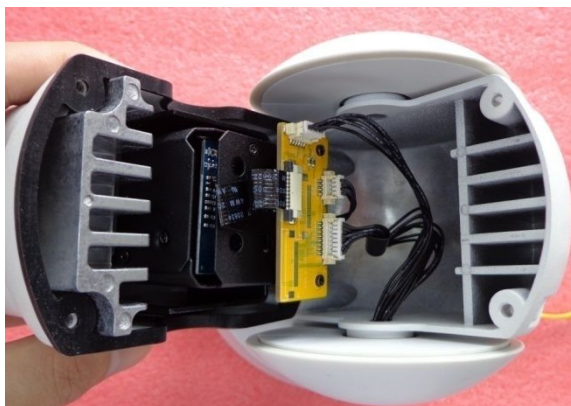
4PIN、6PIN、8PIN connect cable

Precautions: 1.Connect the FPC cable with camera module in the right way.

2.Different holes (on the main control board) are used for different module.

5.5 Connect to Power.

Now user can see self-checking of both dome (rotating) and camera module(you can see imageonmonitor)

5.6 Controller Setting

For the controller, the protocol, baud rate and address should be the same as the dome(pleaserefer to the user manual of cotronller for the detailed setting)

Precaution: If the protocol of dome is "Auto", then protocol of controller can be PELCO-D,PELCO-P,ULTRACK, VICON, etc, but baud rate and address should be the same as dome, otherwise the dome cann't be controlled.

5.7 Testing

Now user can start testing the dome if all the above is done.

1.Pan/Tilt Move Testing
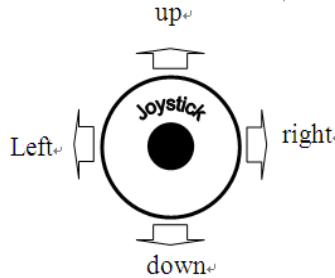
Can be realized by moving joystick left/right or up/down, as shown in following picture:

This means the dome works well.

2.Zoom Testing
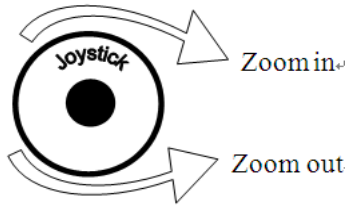
User can rotate joystick to zoom in and zoom out or to press the key TELE(Zoom In)and WIDE(Zoom Out) on the controller.

This means the communication of dome and camera module is good.

（For operations, please refer to the next Chapter for details.）

5.8 Finish Testing(Summary).

1.If everything normal in 5.7, it means the system works well. Please don't change the wiring or any setting, to avoid failure in system.

2.If there is any problem in 5/7, please check the wiring (5.1 and 5.4) and setting (5.2, 5.3 and 5.6) carefully.

Chapter 6 Operation in OSD Menu

6.1 The English OSD Menu

6.1.1 Main Menu

6.1.2 Menu Tree(Submenu)

6.1 Operations in the OSD Menu

6.1.1 Main OSD Display

<1>. Press **95+PREVIEW** in the keybarod to enter the OSD Display.

<2>. **Move joystick up and down to choose**, the item aimed by the arrow is the one been chosen.Press **IRIS+** or **move joystick left and right to enter** the chosen item andor to change setting.

<3>. Press **IRIS-** to exit or return to previous item menu.

```
┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
|          RPTZ1080-10X        |
|                              |
| 1.Language      English      | <<Language Option
|                              |
| 2.Display       Setting      | <<Display Setting
|                              |
| 3.Control       Setting      | <<Control Setting
|                              |
| 4.System        Setting      | <<System Setting
|                              |
| 5.Camera        Setting      | << Camera Setting
|                              |
| 6.Function      Setting      | << Function Setting
|                              |
| 7.Exit                       |
└ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
```

```
┌──────────────────────────────┐
|  Note:the  following  icons   |
|  means                        |
|  there is drop-down menu.     |
|                               |
|     ⤜⤜→         ⤛⤛→          |
|                               |
|     up           down         |
└──────────────────────────────┘
```
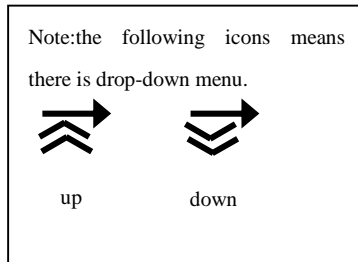
6.1.2 Menu Tree (Submenu).

All the submenus are clearly shown in this menu tree.

1. LANGUAGE   ENGLISH   << Language Option **ONLY ENGLISH**

2. DISPLAY SETTING   << Display Setting

 1. COORDINATES OFF/ON   <<   Move joystick left&right to choose

 2. ZOOM MAG   ON/OFF   <<   Move joystick left&right to choose

 3. INIT-INFO DISP ON/OFF   <<   Move joystick left&right to enter

 4. SYSTEM INFORMATION   <<

```
┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
        SYSTEM INFORMATION

   CAMEAR    :      CTU10AH108

   PROCOTOL :          AUTO

   BAUDRATE :          2400

   ADDRESS   :           1

   RESOLUTION:       1080P25

   SN        :        0989694

   VERSION    :        IAP1.0

   IRIS   OPEN   TO   RETURN

└ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
```

 5.RETURN   <<   Move joystick left &right to Exit

3. CONTROL SETTING   <<Control Setting Move joystick left &right to enter

 1. ADDR AND BAUDRATE <<Dome Addr Setup Move joystick left &right to enter

  1. ID TYPE   HARD/BROADCAST/SOFT Move joystick left &right to choose

  2. INPUT SOFT ID 1/   0/255---0 Move joystick left &right to choose

  3. INPUT S/N

  4. S/N :   0989694

  5. SOFT BAUD OFF/2400/4800/9600/19200 Move joystick left &right to choose

  6. RETUTN   Move joystick left &right to Exit

 2. PAN AND TILT SETUP <<Set Pan And Tilt Move joystick left &right to enter

  1. PAN REVERSE OFF/ON << Move joystick left &right to choose

  2. TILT REVERSE OFF/ON << Move joystick left &right to choose

  3. -5 TILT LIMIT OFF /ON << Move joystick left &right to choose

  4. RETURN   << Move joystick left &right to Exit

 3. AUTO FLIP   ON/OFF << Move joystick left &right to choose

4. SPEED LIMIT	ON/OFF	<<	Move joystick left &right to choose
5. VECTORSCAN AF	OFF/ON	<<	Move joystick left &right to choose
6. V-SCAN STILL	NA	<<	Move joystick left &right to choose
7. AUTO FOCUS	PTZ/OFF/Z	<<	Move joystick left &right to choose
8. AUTO AE	PTZ/OFF/Z	<<	Move joystick left &right to choose
9. HALF SPEED	ON/OFF	<<	Move joystick left &right to choose
10. RETURE		<<	Move joystick left &right to Exit

4. SYSTEM SETTING   <<System Setting   Move joystick left &right to enter

   1. RESOLUTION   720P25   <<   Move joystick left &right to choose

       NOTE: RESOLUTION settable   720P25, 1080P30, 1080P25,720P30

   2. CLEAR MEMORY   << Clear Memory   Move joystick left &right to enter

```
IRIS OPEN TO BEGIN
IRIS CLOSE TO EXIT
```

```
INITIALIZING……
```

   3. RESTORE DEFAULT   << Restore Def Setting   Move joystick left &right to enter

```
IRIS OPEN TO BEGIN
IRIS CLOSE TO EXIT
```

```
PLEASE WAIT……
```

   4. CAMERA RESET   N/A

   5. RETURN   <<   Move joystick left &right to Exit

5. CAMERA SETTING   <<   Move joystick left &right to enter

   1. SHARPNESS   9   <<   Move joystick left &right to choose

     NOTE: SHARPNESS   0---15

   2. CAMERA EXPOSURE   <<   Move joystick left &right to enter

    1. MODE   AUTO   <<   Move Joystick left &right to choose

     NOTE: MODE:AUTO, MANUAL, SHUTTER PRIOR, IRIS PRIOR, BRIGHT PRIOR

    2. IRIS   AUTO   <<   Move Joystick left &right to choose

     NOTE: IRIS :AUTO ,F14,F11,F.6.9,F8,F6.8,F5.6,F4.8,F4,F3.4,F2.8,F2.4,F2,F1.6,CLOSE

    3. GAIN   AUTO   <<   Move Joystick left &right to choose

     NOTE: 06DB,08DB,10DB,12DB,14DB,16DB,18DB,20DB,22DB,24DB,26DB,28DB

4. SHUTTER AUTO   <<   Move Joystick left &right to choose

     NOTE: SHUTTER:1/25,1/50,1/75,1/100,1/120,1/150,1/215,1/300,1/425,1/600,1/1000,1/1250,

               1/1750,1/2500,,1/3500,1/6000,,1/10000,1/1,1/2,1/3,1/6,1/12

5. BRIGHT   AUTO   <<   Move Joystick left &right to choose

        NOTE: BRIGHT:AUTO, 0---31

6. SLOW-SHUTTER   OFF/ON   <<   Move Joystick left &right to choose

7. EX-COMP   LV   15   <<   Move Joystick left &right to choose

      NOTE: EX-COMP   LV   0----15

8.RETURN   <<   Move joystick left &right to exit

3. PICTURE FLIP   OFF/ON   <<   Move Joystick left &right to choose

4. LR-REVERSE   OFF/ON   <<   Move Joystick left &right to choose

5. RESOLUTION MODDE   H/L   <<   Move Joystick left &right to choose

6. NR LEVEL   3   <<   Move Joystick left &right to choose

        NOTE: NR LEVEL   0---5

7. WDR   OFF/ON   <<   Move Joystick left &right to choose

8. D/N MODE   COLOR   <<   Move Joystick left &right to choose

      NOTE: D/N MODE: COLOR, B/W, AUTO

9. RETURN   <<   Move joystick left &right to exit

6. FUNCTION SETTING   <<Function Setting   Move joystick left &right to enter

   1. PRESET   << Preset Setup   Move joystick left &right to enter

     1. NUMBER   1---64   <<   Move Joystick left &right to choose

     2. SET PRESET   <<   Move joystick left &right to enter

```
          STORED

     IRIS CLOSE WHEN DONE
```

   NOTE：Move joystick to position you want to set, press CLOSE to save and exit

     3. CALL PRESET   <<   Move joystick left &right to enter

     4. DELETE PRESET   <<   Move joystick left &right to enter

     5. NAME: _ _ _ _ _ _ _ _ _ _ _ _ _   << Name Setting   Move joystick left &right to enter

       NAME: _ _ _ _ _ _ _ _ _ _ _ _ _

           I

```
   IRIS OPEN WHEN DONE
```

   NOTE：Move joystick up &down to choose font, left &right to choose the position

   6. NAME DISPLAY   OFF/ON   << Preset Name Display   Move joystick left &right to choose

7. RETURN	<<	Move joystick left &right to choose
2. PATTERN	<< Pattern Setup	Move joystick left &right to enter
1. NUMBER　（1～ 6）	<< Tour Number	Move joystick left& right to choose
2. PROGRAM	<< EDIT	Move joystick left &right to enter

```
IRIS OPEN TO BEGIN
IRIS CLOSE TO EXIT
```

3. RUN	<<	Move joystick left &right to enter
4. DELETE	<<	Move joystick left &right to enter

```
IRIS OPEN TO BEGIN
IRIS CLOSE TO EXIT
```
```
PLEASE WAIT……
```

5. NAME: _ _ _ _ _ _ _ _ _ _ _ _	<< Name Setting	Move joystick left &right to enter

NAME: _ _ _ _ _ _ _ _ _ _ _ _

I
```
IRIS OPEN WHEN DONE
```

NOTE：Move joystick up &down to choose font, left &right to choose the position

6. NAME DISPLAY　OFF/ON	<<	Move joystick left &right to choose
7. RETURN	<<	Move joystick left &right to Exit
3. VECTORSCAN	<<	Move joystick left &right to exit
1. NUMBER　1----7	<<	Move joystick left &right to choose
2. PROGRAM VECTORSCAN	<<	Move joystick left &right to enter
1. SEQUENCE　1----16	<<	Move joystick left &right to enter
2. ELEMENT　0	<<	Move joystick left &right to choose

NOTE: ELEMENT: PRESET/VECTORSCAN/TOUR

3. ELEMENT　NO.　0	<<	Move joystick left &right to enter

NOTE: ELEMENT NO. :PRESET :1----64/ VECTORSCAN:1----7/ TOUR:1----6

4. SPEED　0	<<	Move joystick left &right to choose

NOTE: SPEED: 1----9

5. DEWELL　0	<<	Move joystick left &right to choose

NOTE: DEWELL: 1----99

6. RETURN   <<   Move joystick left &right to Exit

3. RUN VECTORSCAN   <<   Move joystick left &right to choose

4. DELETE VECTORSCAN   <<   Move joystick left &right to enter

```
IRIS OPEN TO BEGIN
IRIS CLOSE TO EXIT
```

5. RETURN   <<   Move joystick left &right to Exit

4. HOME FUNCTION   <<   Move joystick left &right to enter

1. DEFAULT FUNCTION   P/ V/T   << Set Home Function   Move joystick left &right to choose

(P：Preset/ V：Vector Scan (Preset Tour)/ T：Tour(Pattern)

2. NUMBER   1   <<   Move joystick left &right to choose

NOTE: NUMBER: P: 1----64/V: 1----7/T: 1----6

3. DELAY   60   <<   Move joystick left &right to choose

NOTE: DELAY   1----255

4. OPERATION   ON/OFF   <<   Move joystick left &right to choose

5. RETURN   <<   Move joystick left &right to Exit

5. PAN SCAN SETUP   <<   Move joystick left &right to enter

1. START POINTER   <<   Move joystick left &right to enter

```
STORED
IRIS CLOSE WHEN DONE
```

2. END POINTER   <<   Move joystick left &right to enter

```
STORED
IRIS CLOSE WHEN DONE
```

3. SCAN SPEED   3   <<   Move joystick left &right to choose

NOTE: SCAN SPEED   1----7

4. DIRECTION   S-CIRCLE/ L-CIRCLE   <<   Move joystick left &right to choose

5. RUN   <<   Move joystick left &right to choose

6. RETURN   <<   Move joystick left &right to Exit

6. AUTO SCAN SETUP	<<	Move joystick left &right to choose
1. AUTO SCAN POS SET	<<	Move joystick left &right to choose

```
STORED
IRIS CLOSE WHEN DONE
```

2. SCAN SPEED 3	<<	Move joystick left &right to choose
NOTE: SCAN SPEED 1----7		
3. DIRECTION LEFT/RIGHT	<<	Move joystick left &right to choose
4. RUN	<<	Move joystick left &right to enter
5. RETIRN	<<	Move joystick left &right Exit
7. IRLED CONTROL	<<	Move joystick left &right to enter
1. IRLED MODE AUTO /OFF/ON	<<	Move joystick left &right to choose
2. THRESHOLD 10 Time Delay (Seconds) <<		Move joystick left &right to enter
NOTE: 3---60S		
3. SENSITVITY 5	<<	Move joystick left &right to choose
NOTE: SENSITVITY 1----8		
4. RETURN	<<	Move joystick left &right to Exit
8. RETURN	<<	Move joystick left &right to Exit
7. EXIT	<<	Move joystick left &right to Exit

Note: This Privacy Mask in only avaible for Samsung camera module.

Appendix 1   Lightning and surge protection

Appendix 2   RS485 Bus Connection

Appendix 3   FAQs and solutions

Appendix 1   Lighting and 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 4Ω, the section al area of the grounding cable should be no less than 25mm^2.

Appendix 2   RS485 Bus Connection

1. General Property of RS485 Bus

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

2. RS485 Bus Transmission Distance

When using 0.75mm (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

1) RS485 industry bus standard require daisy-chain connection method between any devices, both sides have to connect a 120Ω terminal resistance

2) Connection of 120Ω terminal resistor

The 120Ω terminal resistor can be connected through the DIP switch on the communications board

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. 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.

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.

Appendix 3   FAQ and solutions

No	Phenomenon	Possible causes	Solutions	Remark
1	No response after power-up, motors no locked, no display，	Not connected do power	Check power connection DC12V	Please strictly follow the conection method of one-dome wiring
		Problem with power board	Change power board	
		Slipping cable was disconnected	Change slipping	
		Problem with master control board	Change master control board	
2	Dome rotates normally when start, without word or no image	Swith of word display was OFF	Turn on the Swith of word display	Within 45 seconds after restart
		Bad connection between camera module and dome	Change a new FPC cable(between camera module and dome) or a camera module	
3	OSD menu can display after self-check	Wrong operation	95+ PREVIEW to display OSD menu	After self-check, OSD menu can only display when there is image
		Problem with main control board	Change main control board	
4	Text or image distorted, flopping or garbled	Signal was interferced, or the camera was targeting at electronic image	Connect dome to ground or turn off surrounding electronic equipment (electrical, high-frequent equipment, signal generator),rotate the camera module	There must be shielding line on the video line
		Confusion in system	Restard the dome	
5	No self-chek after start, but motors can be locked	System is set to do self-checking after getting commucation signal	Connect keyboard controller, set the right protocol, baud rate and dome address	There will be text dislayif it's normal
6	Mistake in pan rotatin during self-checking	Pan baffle not in right position	Adjust position of photoelectricity switch	The pan baffle should be in the 2/3 of the central trough of Photoelectric switch
		Pan belt is not tight enough	Adjust position of pan motor	

7	After dome works normally, dome will rotate 360 degree when controlled,	Dome is doing self-correcting	Normal	It's innormal if it happens very often,adjust the pan baffle or check if the mechanical parts are too tight
8	Tilt isnot within 0 degree---90 degree	Mistake in tilt positioning, camera may be baffled by something and thus start position too early	Check and readjust mechanical installation	
9	Normal seld-cheking,can be controlled	Wrong setting	Reset protocol, baud rate, address	
		RS485 not connect well	Check connection	
10	Dome not respond good to keyboard	Communicate distance too long	Add driver	Usually it's the problem with the coonection
		RS485 not connect well	Check wring	
		Slipping damaged	Change slipping	
		RS-485 protecting pipe damaged	RS-485 protecting pipe	
11	Dome run the wrong function when it's called	Mistake or disturbution in system	Restart dome	
12	Dome work automcially after a certain period of time	Dome is set to call a function when there is no communication	Cancel this setting	
13	Same operation works for one dome, but not work with the other	Problem in setting or connection	re-est or check connection	

Note: The cables may differ by different manufacture even with same model name, the above table is for reference of common cable.

RPTZ1080-10X-E-0-001