MINI HIGH SPEED DOME CAMERA

User Manual

Power Supply DC 12V

Factory Configuration: PELCO-D protocol, Baud rate 2400, Address code 1

※Please read carefully before using this manual

Catalogue

Chapter 1 Product Summarize

1.1 Technical Parameters (standard)

Model number	4 INCH MINI HIGH SPEED DOME CAMERA
Optical focus	10X
Image sensor	1/3"CCD
Signal mode	PAL / NTSC
Resolution	480TVL / 540TVL / 650TVL/ 700TVL
Optical focus	Manual/Auto, adapt high performance DSP to realize full digital high continuous focusing function.
Presets	256
Pattern scan	4 groups, each can record 100 actions
Cruise scan	30 presets can join cruise, can setting the presets' residence time.
Other scan	Support Horizontal scan, deuce area scan, scan random
Rotation range	Horizontal 360°unlimted rotation, Vertical 180°, auto reversal
Rotation speed	Horizontal & Vertical Min 0.01° Max 300°/s.
Communications	PELCO-D and PELCO-P
OSD	Full screen menu
Temperature control system	Optional
Power supply	DC12V

Ball cover dimension	4 inch optical glass cover
Material	Aluminum shell, waterproof IP66
Work environment	-20℃~+50℃(select temperature control accessories), <95%RH

1.2 Function description

1. Set address coding, baud rate, control protocol

Any operation commands the camera has its own objectives address coding, baud rate, control protocol, a single camera only to respond with its own address coding, baud rate, control agreement under the operation of the command. Camera address coding, baud rate, control protocol specific settings please refer to the DIP settings.

2. Target tracking

Users can use the controls on the keyboard joystick control of the upper and lower turning left and right cameras can be used to track moving targets or moving horizon, while the focal length can be adjusted to change the perspective of the size or the target image size. In the auto-focus of the state, with the lens rotation, the camera will automatically adjust according to a rapid scene changes, instantly get a clear picture.

3. Focal length / speed automatic matching technique

Manual adjustment, the longer the focal length of the case, a reflection of high-speed ball machine makes a slight touch screen joystick may move back, resulting in data loss. Based on user-friendly design, intelligent ball according to the proximity of the focal length of the camera automatically adjusts the horizontal and vertical speed, so that manual operation is more simple and easy to track targets.

4. Auto turn over

The operator will pull the bottom of the lens (vertical) after it is still holding down the joystick, this time the level of the lens auto-rotated 180 ° turning up immediately after the 90 °, can directly watch the back of the scene in order to

achieve the full 180 ° continuous vertical surveillance.

5. Set and call preset position

Preset function is the current state of the ball under the PTZ function of the horizontal angle, tilt angle and camera lens focal length, etc. position parameters stored in memory, you need to call these parameters can be quickly and PTZ cameras will be adjusted to that location. The operator can quickly and easily by controlling the keyboard, infrared controller, control equipment such as storage and call the preset point, the ball machine to support 256 preset points.

6. Lens Control

(1) Zoom control

Users can control the keyboard or through the ball machine to adjust the focus of the distance matrix of the host, receive the necessary panoramic images, or is a fine view.

(2) Focus Control

System default auto-focus, zoom, the camera lens will be the center of the screen features auto-focus, to maintain a clear picture; in exceptional circumstances, the user can manually focus, achieve the desired image effect.

When in manual focus state, to restore the auto-focus, as long as the sway bar can be restored remotely auto-focus. There is also a dedicated control commands can be issued or to call an arbitrary way of restoring a preset bit auto-focus.

The camera lens in the following situations will not autofocus on the camera objectives:

a. Target is not to screen center;

b. Targets the same time in the far and near the place;

c. Target light objects, such as neon lighting, spotlights and other luminous objects;

d. Target with droplets or dust behind the glass;

e. Targets moving too fast;

f. Large area targets, such as walls;

g. Objectives are too dark or inherently ambiguous.

7. Aperture Control

Users can control the keyboard to manually adjust the aperture size to get the required picture brightness.

8. Auto Backlight Compensation

When the backlight compensation function is open, the camera lens in the light background can be automatically targets the more the dark luminance compensation. On the bright background light adjustment, to avoid the background brightness caused by a mass of light throughout the picture, goals and not identifiable because of the darkness to gain a clear image.

9. Auto White Balance

According to the changes in ambient light, automatic adjustment, the true color reproduction.

10. Night vision function (color / monochrome conversion)

Cameras with night vision function, automatic color / monochrome conversion mode, in accordance with changes in ambient light automatic conversion CCD illumination. Such as: adequate lighting during the day due to the use of general illumination to ensure colorful images. In the night illumination can be automatically changed to black and white images show a clear interest.

11. Cruise

Can be pre-set cruise preset point, certain preset points, organized in the order required to auto-cruise in the queue, only an external command can be in an indoor speed ball set automatically according to preset points in order to provide the time interval constant movement back and forth.

12. Pattern scanning

Pattern scanning machines to run the ball through the menu, the trajectory is stored down by power-on action, free movement, alarm linkage, etc. to call the stored scan line.

13. Continuous scan

Just an external command or through a power-on action, free movement, alarm linkage, etc. to call, can make the ball machine horizontal direction to a certain speed the cycle of continuous scanning.

14. Batch Scanning

Just an external command or through a power-on action, free movement, alarm linkage, etc. to call, can make the horizontal direction the ball machine cycle of a certain speed intermittent scan.

15. Area scan

Just an external command or through a power-on action, free movement, alarm linkage, etc. to call, can make the ball machine horizontal direction to a certain speed, within the limits set by the community and from scanning.

Chapter 2 Equipment installation

2.1 DIP switch setting

Four DIP switch is the baud rate and the control protocol switch.

Eight DIP switch is the address code setting switch

DIP switch to “ON” means to “1”, DIP switch to "OFF" means "0".

The baud rate and control protocol as the following table:

NO.	1	2	3	4	
Baud rate	OFF	OFF			PELCO-P

Control protocol	ON	OFF			PELCO-D
	OFF	ON			PELCO-D/P
	ON	ON			PELCO-D/P
(BPS)			OFF	OFF	9600
			ON	ON	9600
			OFF	ON	4800
			ON	OFF	2400

8-bit DIP switch is used to set the dome camera address coding. Address set binary mode can be set to a total of 256 different dome camera address coding, see coding table address.

Camera address	Camera address coding form							
	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
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF

10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
…	…	…	…	…	…	…	…	…
246	OFF	ON	ON	OFF	ON	ON	ON	ON
247	ON	ON	ON	OFF	ON	ON	ON	ON
248	OFF	OFF	OFF	ON	ON	ON	ON	ON
249	ON	OFF	OFF	ON	ON	ON	ON	ON
250	OFF	ON	OFF	ON	ON	ON	ON	ON
251	ON	ON	OFF	ON	ON	ON	ON	ON
252	OFF	OFF	ON	ON	ON	ON	ON	ON
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

2.2 Dome camera structure diagram

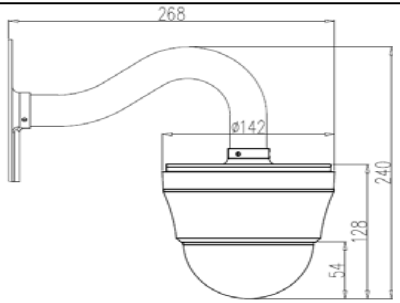


Figure 1

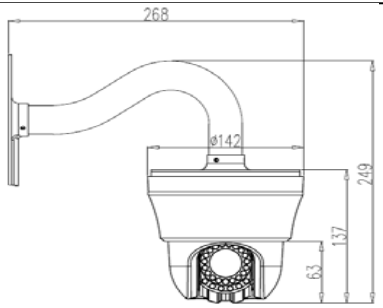


Figure 2

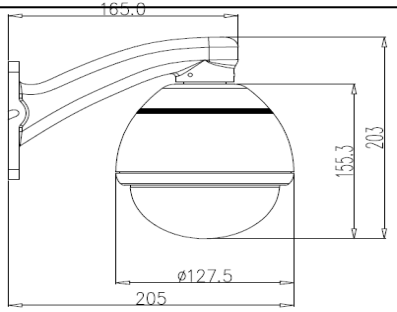


Figure 3

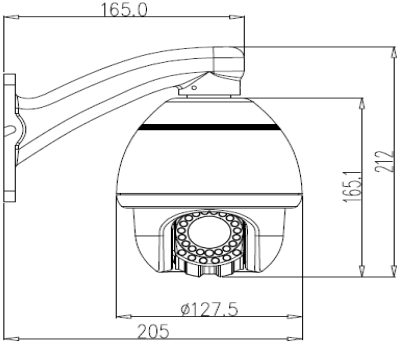


Figure 4

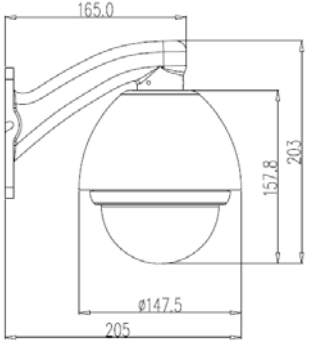


Figure 5

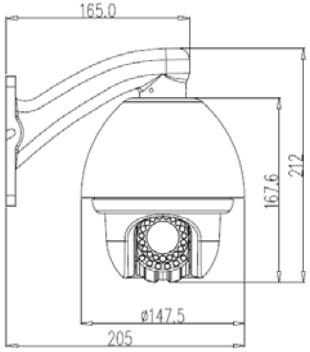


Figure 6

2.3 Bracket installation diagram

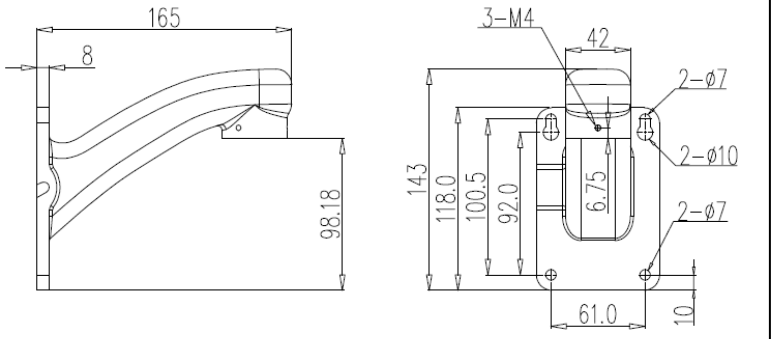


Figure 7

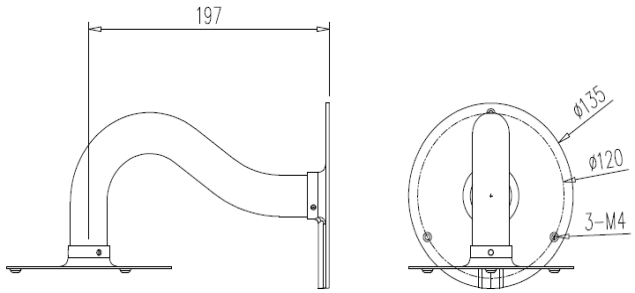


Figure 8

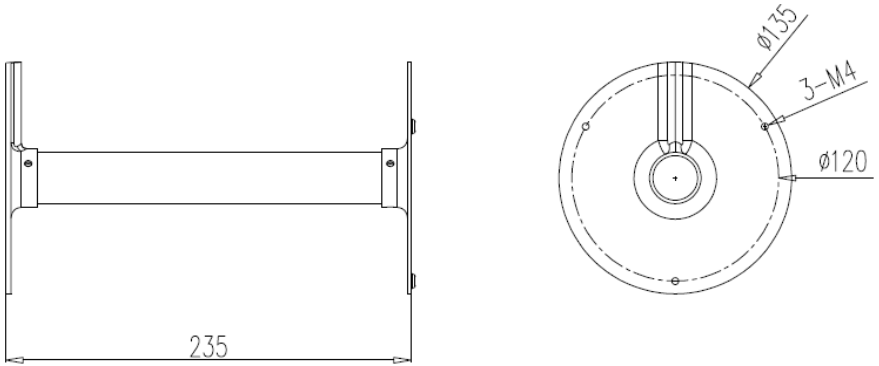
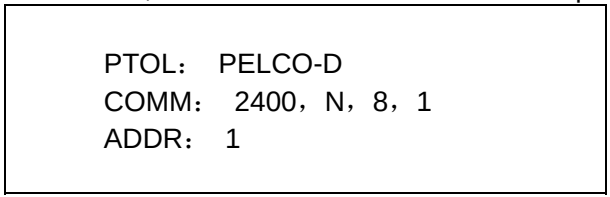


Figure 9

Chapter 3 System OSD menu settings

3.1 Power-On Self-Test

When power is connected to the dome camera, the camera in horizontal and vertical direction movement, the screen will appear system-related information, the dome camera self-test to complete the following diagram.



Display: PELCO-D protocol、Baud Rate 2400、Address code 1

3.2 Preset point setting and calling

3.2.1 Set Preset points:

(1) selected camera (see manual control of the keyboard);

(2) operation Rocker, zoom button, focus button, buttons adjust the camera aperture screen;

(3) Press the number keys + PRESET (input designated preset) to preserve the scene preset parameters.

3.2.2 Call preset points:

(1) Selected camera;

(2) Press the number keys (inputs the designated preset) + PREVIEW button, the camera immediately move to the preset position, the lens zoom, focus and Iris is also automatically change to the preset parameters; if the input is a special function preset point (see "Preset Point menu"), the dome camera will perform with special features preset point of the corresponding functions (such as: Enter the 80th presets, the camera will perform auto-tracking feature).

3.3 Preset point function table:

Dial the 95th Presets	Enter Main menu.
Dial the 82nd Presets	Auto Cruise
Dial the 83th Presets	clear all presets
Dial the 84th Presets	use Pattern scan 1
Dial the 85th Presets	use Pattern scan 2
Dial the 86thPresets	use Pattern scan 3
Dial the 87th Presets	use Pattern scan 4
Dial the 96th Presets	360-degree gap scan
Dial the 97th Presets	scan between two presets
Dial the 98th Presets	presets cruise
Dial the 99th Presets	360 degree continuing scan

3.4 <MAIN MENU>

The dome camera power on and working properly, call the 95 preset points into the main menu, screen display as shown in the Table 3-1.(Note:<IR SETTING> is for intelligent infrared dome camera special function)

MAINMENU	Menu function descriptions
SYSTEM INFORMATION	Displays camera basic information. In the table 3-2.
ADDR SETTING	Used to set the camera address. In the table 3-3.
MOTION	“PTZ” setup menu. In the table 3-4.
PATTERNS	Fancy scan setting; In the table 3-5.
CAMERA	Lens setting; In the table 3-6.

CRUISE SETTING	Preset point cruise setting; In the table 3-7.
IR SETTING	Infrared light setting; In the table 3-8.
DISPLAY SETUP	Screen display setting. In the table 3-9.
RESTORE FACTORY DEFAULT	Restore the factory default setting.
REBOOT SYSTEM	System restart, the dome camera to power on reset.
EXIT	Exit the OSD menu setting.

TABLE 3-1 MAINMENU

3.5 <SYSTEM INFORMATION>

SYSTEM INFORMATION	**Menu function descriptions**
COM 2400,N,8,1	Serial information, display the dome camera serial port baud rate, parity, data bits, stop bits of information.
ADDRESS 1	Display the current dome camera address code.
PROTOCOL PELCO-D	Display the current dome camera communication protocol.
PRESETS 256	Display the current dome camera preset number.
SOFTWARE VERSION V5.2	Display the current software version.
BACK	Return to main menu.
EXIT	Exit the menu setting.
Note: The system information menu items under this menu cannot be changed.	

TABLE 3-2 SYSTEM INFORMATION

3.6 <ADDR SETTING>

ADDR SETTING	Menu function descriptions
ADDR TYPE HARD	Divides HARD and SOFT; select the SOFT can directly determine the dome camera address.
ADDR SOFT 1	Within 1~254.
ADDR HARD 1	
BACK	Returns to main menu.
RESET	To restore the default.
EXIT	Exit the menu setting.
Note: Can't mix up the soft and hard address settings, would create the dome camera out of control, setting reboot to be valid.	

TABLE 3-3 ADDR SETTING

3.7 <MOTION> (PTZ settings)

Menu is used to set PTZ parameters such as movement and orientation angles. As shown in the following table:

MOTION	Menu function descriptions
SET FRAME SCAN	Set the area scan to the left and right limit. In the table 3-4-1.
POWER UP NONE	Power on setting menu. In the table 3-4-5.
PARK TIME 15S	How long to perform an action when the dome camera is idle.
PARK ACTION NONE	Perform an action when the dome camera is idle. In the Table 3-4-6.
FRAME SCAN SPEED 16	Set the area scan speed of the dome camera. Within 1 (Slowest) ~32 (Fastest).

RANDOM SCAN SPEED 16	Set the intermittent scan speed of the dome camera. Within 1 (Slowest) ~32 (Fastest).
BACK	Return to the main menu.
EXIT	Exit the menu setting.

TABLE 3-4<MOTION>

3.7.1 <SET FRAME SCAN> (setting area scan)

Setting area scanning range, specific operations as shown in the following table:

FRAME SCAN	Menu function descriptions
SET SCAN POSITION	Set area scan position. In the table 3-4-2.
CLEAR FRAME SCAN	Clear area scanning setting. (Clear left and right limit position). In the table 3-4-4.
BACK	Return to the previous menu.
EXIT	Exit the menu setting.

TABLE 3-4-1 SCAN SETTING AREA SCAN

3.7.2 SET SCAN POSITION

SET FRAME SCAN	Menu function descriptions
LEFT LIMIT POSITION IRIS OPEN TO CONTINUE	Shake the joystick to select the left limit position; Press IRIS+ button to confirm the current position of the left limit position, and enter the following table 3-4-3.

TABLE 3-4-2 SET THE LEFT LIMIT POSITION

SET FRAME SCAN	Menu function descriptions

RIGHT LIMIT POSITION IRIS OPEN TO CONTINUE	Shake the joystick to select the right limit position; Press IRIS+ button to confirm and return to the table 3-4.

TABLE 3-4-3 SET THE RIGHT LIMIT POSITION

3.7.3 CLEAR FRAME SCAN (Clear area scan location)

CLEAR FRAME SCAN IRIS OPEN TO CONTINUE	Press IRIS+ to clear the left and right limit position and return to the table 3-4.

TABLE 3-4-4 CAMERA SETTINGS MENU

3.7.4 <POWER UP>

The dome camera is powered on, didn't receive any instructions to perform action. Parameters in the following table:

POWER UP	Menu function descriptions
NONE	Don't perform any actions.
AUTO SCAN	Perform continuous scanning action.
RANDOM SCAN	Perform intermittent scanning action.
FRAME SCAN	Perform area scanning action.
PRESET 1	To reach the NO.1 preset point.
PRESET 8	To reach the NO.8 preset point.
PATTERN 1	Perform the pattern scan line 1
PATTERN 2	Perform the pattern scan line 2
PATTERN 3	Perform the pattern scan line 3
PATTERN 4	Perform the pattern scan line 4
CRUISE	Perform the cruise action of preset point.

TABLE 3-4-5 POWER UP MENU

3.7.5 <PARK ACTION>

In the idle time, the dome camera doesn't receive any instructions to perform an action. Idle movement parameters as shown in the following table:

PARK ACTION	Menu function descriptions
NONE	Do not perform any action.
AUTO SCAN	Perform continuous scanning action.
RANDOM SCAN	Perform intermittent scanning action.
FRAME SCAN	Perform area scanning action. (It will come into effect after the SET FRAME SCAN is set).
FRESET 1	Arrive the First preset point.
PRESET 8	Arrive the Eighth preset point.
PATTERN 1	Perform the pattern scan line 1
PATTERN 2	Perform the pattern scan line 2
PATTERN 3	Perform the pattern scan line 3
PATTERN 4	Perform the pattern scan line 4
REAPEAT LAST	Automatic recovery to the previous action.
CRUISE	Perform the cruise scanning action.

TABLE 3-4-6 PARK ACTION

3.8 <PATTERNS>

PATTERNS	Menu function descriptions

PATTERN NUMBER 1	Select pattern number, within 1~4.
PROGRAM PATTERN	To select pattern scan line; Operations shown in the table 3-5-1.
CLEAR CURRENT PATTERN	Clear current pattern scan line.
CLEAR ALL PATTERN	Clear all the pattern line.
BACK	Return to the previous menu.
EXIT	Exit the menu setting.

TABLE 3-5 PATTERNS

3.8.1 <PROGRAM PATTERN>

PROGRAM PATTERN	Menu function descriptions
USE THE JOYSTICK OR KEYBOARD TO MOVE THE CAMERA TO THE STARTING POSITION IRIS OPEN TO CONTINUE	Use the joystick or keyboard to move the camera to the starting position, and press the IRIS+ key to continue, and go to the table 3-5-2.

TABLE 3-5-1 PROGRAM PATTERN SCAN SETTINGS

PATTERN	Menu function descriptions
STORAGE USED 1	Shake the joystick to editing the scanning line and action, from the movement 1 began to record, up to 100 movements. Press IRIS+ key to save the settings and return to table 3-5.

TABLE 3-5-2 PATTERN SCAN SETTINGS

3.9 <CAMERA> (Lens settings)

Languages	Chinese/English
Multiples Display	ON/OFF
AGC	180
Backlight compensation	ON/OFF
Shutter setting	AUTO
Focus setting	AUTO
Brightness setting	110
Sharpness Setting	013
Day& night switch	AUTO
Negative Set	OFF
Lens Set	OFF
Default setting	OFF

TABLE 3-6 CAMERA SETTINGS

3.10 <CRUISE> (Preset points, cruise settings)

CRUISE	Menu function descriptions
DWELL TIME[SECS] 6	Cruise waiting time between preset points.
PRESET LIST 1	Cruise list of preset points. Total 3 pages, each page can be selected 10 preset points.
1 ON 0 OFF 1234567890 PRESET 1111111111 [1-10]	Select preset points need to be involved in cruise scan. The corresponding parameter is 0 and 1. Press IRIS+ key to change, 1 is selected, 0 is skipped.

BACK	Return to the previous menu.
EXIT	Exit the menu setting.

TABLE 3-7 CRUISE SETTING MENU

3.11 <IR SETTING> (IR speed dome Special function)

IR SETTING	Menu function descriptions
IR MODE AUTO	ON: IR light is forced to open; OFF: Infrared light is forced to close; AUTO: IR light is switch automatically.
IR ON SENS 250	Light intensity of IR light is open, within 81~254.
IR OFF SENS 230	Light intensity of IR light is close, within 81~254.
BACK	Return to the previous menu.
EXIT	Exit the menu setting.

TABLE 3-8 IR SETTING MENU

3.12 <DISPLAY SETUP>

DISPLAY SETUP	Menu function descriptions
ZOOM ON/OFF	Zoom display ON/OFF.
P/T DEG ON/OFF	Horizontal/Vertical angular coordinate display ON/OFF.
BRIGHT DATA ON/OFF	Light source data display ON/OFF.
IR DATA ON/OFF	IR light data display ON/OFF.
BACK	Return to the previous menu.
EXIT	Exit the menu setting.

TABLE 3-9 SCREEN DISPLAY SETTINGS

Chapter 4 Simple troubleshooting and maintenance

4.1 Simple Troubleshooting Table

Failure	Possible Cause	Solutions
Electricity without action, no images, light does not shine.	Connected the wrong power cord	Corrections
	Power supply is damaged	replace
	Bad fuse	replace
	Power cord connection is bad	Exclusion
Power are self-test, there are images, not control	IR uniform dome camera address code, the baud rate setting does not	To re-set the high-speed dome address code and baud rate
	Wrong protocol	corrections
	RS485 line reversed or open	Check wiring RS485 control line
Unable to complete self-test, there are images associated with motor tweet sound	Mechanical failure	Maintenance
	Camera Tilt	Straightened
	Power is not enough	Replacement to meet the requirements of the power supply, it is best to power the camera on the near-infrared uniform
Image instability	Video line connection is bad	Exclusion

	Power is not enough	Replace
Blur	Manual focus on the state	Operation of any infrared high speed dome camera or call a preset point
IR control of a high-speed dome camera non-stop or delay	Power is not enough high-speed Dome	Replacement to meet the requirements of the power supply, it is best to power on the high-speed dome camera in the vicinity
	Check control of the most distant high-speed dome camera match whether to join the resistance	The most far away from the control of the ball-type cameras by adding matching resistor
	Far from 485 the signal attenuation	Bold Line of Control
	Converter 485 is not enough driving force	Replacement of a source converter

4.2 After Service

Dear users, in order to ensure the full enjoyment of your camera services, please read the following products and services charter.

(A): IR dome camera company limited warranty and lifetime maintenance services

1. The limited warranty period from the date of sale for 12 months, in the limited warranty period, you will enjoy the products fault free service, delivered or sent by the user's maintenance (improper use of man-made causes of failure or an irresistible. The fault does not belong to the scope of the warranty).

2. In more than 12 months limited warranty from the date of the product life-long failure of the implementation of

paid maintenance services.

(B): The dome camera repair response time

1. Users will be sent to the company from the date of product, 24-hour response service.

2. Customers return products to our company, please advance with my company-related contact, and then returned to our company products. Otherwise, the situation appears not timely maintenance by the user themselves.

Product Warranty Cards

Under this warranty cards note that every case of normal use the product itself due to quality problems caused by failures in the warranty period will be given free maintenance.

Warranty Description:

1. This product is free of charge warranty period of one year, during the warranty period any product quality problems occur, so doing the warranty card for free (non-human damage), life-long maintenance.
2. A result of improper use or other reasons as well as the failure of products outside the warranty period can be so doing card repair, free of maintenance, only the income component costs.
3. Product required maintenance should be a copy of this card and the invoice with the product delivery of the Company or the local special maintenance department.
4. Secretly open the dome camera casing, tearing up letters labeling, according to the provisions of collecting maintenance fees and components and other expenses.
5. Does not accept any modification or installation of other functions due to failure after the dome camera.

The following conditions will not be free of charge Warranty:

1. Due to normal wear and tear caused by periodic inspection, maintenance, repair or replacement parts.
2. As the fall, extrusion, soaking, damp, and other man-made damage.
3. Because of flood, fire, lightning and other natural disasters or force majeure of the factors that damage.
4. By non-authorized repair centers repair the machine off.
5. Listed above, if changes to the relevant provisions shall prevail.

Model Number			
Factory Number			
Date of manufacture			
Customer Unit			
Name			
Address			
Telephone			
Maintenance date	Failure condition	Maintenance site	Maintenance result

Remark: _____

_____