# **USER'S MANUAL**

## **Table of Contents**

1 Precautions	2
2 Features	3
2.1 Built-in Decoder 2.2 Integrated Universal Speed Change Rotator 2.3 Built-in High Definition Color Camera 2.4 All-weather Outdoor Design	3 .3 3 3
3 Technical Data	4
3.1 Technical Parameters of the High-speed Dome	4
4 Installation Guide	5
4.1 Installation Preparation	5
4.2 Structure	5
4.3 Installation Size	6
4.4 Installation Procedures	6
5 Settings	8
5.1 Interface	8
5.2 Dome Address, Transmission Speed, Protocol Setting	9
6 The OSD Menu Setting	11
6.1 Operations Method of the Menu 6.2 OSD Menu Tree	11 13
7 Trouble Shooting	26

## **1** Precaution

## 1. Transportation Security

No heavy stress, violent vibration or water splash are allowed during transportation, storage. The unit should be transported in separated packing. In shipments of distributor and delivery of maintenance, any damages caused by integral packing are not covered by warranty.

#### 2. Installation

Avoid heavy stress and violent vibration during installation. Don't touch the dome cover directly by hand. When connecting the power source, please follow all electric safety standards and only use the power supply designated for this device. Keep the video and control signal in a decent distance from high voltage devices and cable. Don't apply power to the dome before finishing the installation.

#### 3.Dismantlement

Please don't dismantle the devices in the dome body. Only the professional personnel authorized can operate the maintenance.

#### 4. Internal Environment

Keep metal and inflammable material away from dome body to avoid fire, short circuit and damage. Please prevent all liquids material from entering the dome. If occur this, please shut down the power and pull out the plug. Then inform the technical personnel immediately.

#### 5. Electrical Safety

The video image would be interfered when the dome is installed near television, radio transmitter, voltage changer and audio amplifier.

#### 6. Camera Protection

Avoid shooting very bright objects directly into the camera's CCD (such as the sun or light fittings).

## 7. Cleaning Method

Please don't use abrasive and violent detergent to clean the dome. Please choose dry fabric and neutral detergent. Use lens paper to clean the lens.

## 2 Features

2.1 Built-in Decoder

- Power-off protection, no data loss
- 220 programmable presets
- 8 cruising tracks, each cruising track has 32 preset positions
- 8 pattern tours, each one with 180s memory
- RS-485 bus
- 8 groups of auto scan, the left and right boundary and scan speed can be set
- Pelco\_P and Pelco\_D compatible
- 6 alarm inputs and 2 outputs
- Message display function, lens coordinate value, temperature and alarm information can be showed
- Guard location, the dome can operate preset, auto scan, cruising and pattern tours functions after a short pause
- Alarm triggering, the alarm can trigger preset, auto scan, cruising and pattern tours functions

## 2.2 Integrated Universal Speed Change Rotator

- Delicate stepping motor, stable, sensitive and accurate
- 360° continuous pan without blind area
- Stepless speed change, auto zoom/speed matching
- Auto overturn function
- Manual speed: Pan: 0.01° 300° /S, Tilt: 0.01° 150° /S
- Presets calling speed: 500° /S

## 2.3 Built-in High Definition Day/Night Camera

- Auto iris, auto back light compensation
- Auto/manual white balance
- Auto/manual focus
- Auto/manual brightness control
- 520/530TV line
- Multiple kinds of camera for options

## 2.4 All-weather Outdoor Design

Built-in heater

- Built-in fan, can operate in 60°C
- High Die-cast Aluminum Construction
- IP66 water proof
- 3000V lightning and surge current proof

## **3 Technical Data**

## 3.1 Technical Parameters of the High-speed Dome

Model	
Power Supply	AC24V/2.5A
Operating Temperature	-35 °C—60°C
Operating moisture	< 95%
Power Consumption	50W
Communication	RS-485 bus,
Communication transmission speed	2400/4800/9600BPS
Protocols	Pelco-D, Pelco-P Compatible
Pan Rotation	0.01°-300° /s
Tilt Rotation	0.01° -150° /s
Pan/Tilt Accuracy	+/- 0.07°
Preset Speed	500° /s
Pan Angle	360° Continuously
Tilt Angle	90°
Size	364 x 350 x 202mm
Weight	5.6kg
Preset Positions	220
Auto Scan	8 Groups
Cruise Track	8 Groups
Cruise Points Qty per cruise group	32 Preset Positions
Pattern Tours	8 Groups
Alarm	6 alarm inputs and 2 outputs
Privacy Zone	8 zones (depend on camera module)
Protection	IP66 water proof/3000V lightning proof
Fan, Heater	Fan and heater auto-starts 24VAC

Note:

23x PTZ just can support one privacy zone only.

## **Camera Module Specification**

Items				
Zoom Camera	FCB-EX995E	FCB-EX1020	SCM-2230	CZ36ECM
Imaga Sanaar	1/4" EX View		1/4 inch, Interline	1/4" SONY Suepr HAD II
image Sensor			Transfer CCD	(Double Scan)CCD
Picture Elements	NTSC	:768(H)x494(V)/PAL:752x58	2(V)	
Resolution	550T\	/ Line	560 TV Line(Min)	700 TV Line(Max)
Video Output	1Vp-p Composite Video(75Ω	)		·
SVNC System	Internal/Exter	rnal ()/ Lock)	Internal/Line Lock	Internal/External
STINC System			Internal/Line-Lock	(V-Lock)
Lens	3.5mm~98mm, F1.35~F3.7	3.4mm~122.4mm,	3.5mm~80.9mm,	3.4mm~122.4mm,
		1.6~F4.5	F1.6~F2.4	1.6~F4.5
Zoom	324X, 28X Optical, 12X	432X, 36X Optical, 12X	368X, 23X Optical, 16X	1152X, 36X Optical,32X
20011	Digital	Digital	Digital	Digital
S/N Ratio	500	dB	52dB	50dB
	ICR-ON Mode:	ICR-ON Mode:	0.2Lux/F1.6(50	Color :0.5lux
	0.005 lux/1/4 sec (NTSC),	0.01 lux/1/4 sec (NTSC),	IRE):Color	B/W:0.2lux
Mini. Illumination	1/3 sec (PAL)0.03Lux	1/3 sec (PAL)	0.02Lux/F1.6(50IRE):	Color DSS:0.001lux
			B/W	B/W DSS:0.0004lux
White Balance	ATW/Indoor/Outdoor/Mar	nual/AWB/One Push WB	ATW / AWC / INDOOR /	ATW/Indoor/Outdoor/Ma
			OUTDOOR / Manual	nual/AWB/One Push WB
			OFF, LOW, MIDDLE,	ON/OFF (30dB Max)
Gain	Auto/M	lanual	High, MANUAL	
			Selectable	

## 4 Installation Guide

## 4.1 Installation Preparation

Video Coaxial Cables

Mode	Max Distance
RG59/U	750ft(229m)
RG6/U	1,000ft(305m)
RG11/U	1,500ft(457m)

#### 4.2 Structure



## 4.3 Installation Size



## **4.4 Installation Procedures**

\*Notice: The wall must be thick enough to install the expansion screws and can bear 4 times the weight of the dome camera itself.



- (1) Bore 4 holes by using templates included on the wall.
- (2) Mount 4 expansion screws into the holes.



- (3) Put the cables through the bracket. Fix the dome base and the bracket with M6 screws
- (4) Use M 8 screw-caps and shims to fix the bracket on the wall.



(5) Attach the dome cover to the dome base with rope.



(6) Set the dome address, system baud rate and protocol by configuring DIP switches SW1 and SW3 located on the side of dome body. The Plug-in on the dome body must be seated rightly with the socket on the dome base.



(7) To lock the dome body to the dome base, line up the A and B tabs on the dome body with the A and B label on the dome base. Push in on the tabs. Insert one side and then the other side. Continue pushing one the ends of the tabs until both sides click into place. Make sure the plug-in on the dome body is fully locked by the socket on the dome base. Then press the dome body lightly and check if the dome body is fully locked to avoid shedding and abrasion with the dome cover.



(8) Fix the dome cover with screws.

(9)Cable Connection:



## **5** Settings

## 5.1 Interface



## 5.2 Dome Address, Transmission Speed, Protocol Setting

Before the dome is installed, the communication protocol, baud rate and dome address, should be confirmed. Set the DIP switch, keeping the setting consistent with the control system. The relative DIP switch site and connecting wires are diagramed below for reference.



#### \*Notice: "1" means "on" status and "0" means "off" status.

#### **Protocol Setting**

Protocols	Bit 1	Bit 2	Bit 3
PELCO_P	1	0	0
PELCO_D	0	1	0
PRESET			

\*Notice: The factory default protocol is PELCO\_D

#### Transmission Speed Setting

Baud Rate	4 Bit	5 Bit
9600	0	0
4800	1	0
2400	0	1
PRESET	1	1

#### **Dome Address Setting**

#### PELCO-P:

Address	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7	Bit 8
1	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0
5	0	0	0	1	0	0	0	0
254	1	0	1	1	1	1	1	1
255	0	1	1	1	1	1	1	1

#### PELCO-D:

Address	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7	Bit 8
1	1	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0	0
3	1	1	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0
5	1	0	1	0	0	0	0	0
253	1	0	1	1	1	1	1	1
254	0	1	1	1	1	1	1	1

## 6 The OSD Menu Setting

## 6.1 Operation Method of the Menu

The user can call upon preset position 95 to enter the setting interface of the OSD menu. After entering the setting menu, a row of information will be displayed as follows (the screen can only show a single-step item of the following menu):

The operations will be implemented by commands as "Focus in/out" and "Iris open/close". "Focus in": Up "Focus out": Down "Iris open": Confirm "Iris close": Cancel

Note: While installing COP camera module after exiting the menu, please do not operate with iris open which may caused abnormal video, and it is suggested to adjust manually again or adjust in the camera menu.

The user can also operate the OSD menu by Joystick

"Up": Move the joystick upward to select.

"Down": Move the joystick downward to select.

"Left": Move the joystick leftward to confirm.

"Right": Move the joystick rightward to cancel.

For example:

- 1. In status as the previous picture showed, the user press "Iris open" to enter BACKLIGHT setting:
- 1. BACKLIGHT ON/OFF
- 2. Press "Focus in/out" to select wanted item.

3. And then press "Iris open" to preserve the selected items or press "Iris close" to cancel the selected item and go back to previous Menu. Move the joystick leftward to cancel and move the joystick rightward to confirm.

4. After all the function settings are settled down, switch to the item No.16 and press "Iris open" to quit from the menu. Move the joystick leftward to cancel and move the joystick rightward to confirm.

Note: Samsung and cop camera module can not support privacy mask function.

6.2 OSD Menu Tree



## MOTION



## A1. PRESET NO.

Move the cursor to PRESET NO., press the key IRIS OPEN(key on control keyboard) to enter the edition mode of preset No., move the joystick upward and downward to select number. Then press IRIS OPEN to confirm.

#### **B1. TITLE**

Move the cursor to TITLE and press IRIS OPEN to enter the edition mode of preset title.

C1.CALL

MOVE the cursor to CALL and press IRIS OPEN to call upon the current preset position.

#### D1.SET

Move the cursor to SET and press IRIS OPEN the enter preset setting mode. Then the sentence "PRESS IRIS OPEN TO CONFIRM" will appear on the screen. Move the joystick to do PTZ move and press IRIS OPEN to confirm the preset you want.

#### E1.DELETE

Move the cursor to DELETE and press IRIS OPEN to delete the current preset position.





A1.SCAN NO.

Move the cursor to SCAN NO. and press the key IRIS OPEN(key on control keyboard) to enter the edition mode of scan No., move the joystick upward and downward to select number. Then press IRIS OPEN to confirm.

**B1. TITLE** 

Move the cursor to TITLE and press IRIS OPEN to enter the edition mode of scan title.

C1.START

MOVE the cursor to START and press IRIS OPEN to start the current scan.

D1.<LEFT LIMIT>

Move the cursor to <LEFT LIMIT> and press IRIS OPEN to start setting the left limit of the current scan. Then the sentence "PRESS IRIS OPEN TO " CONFIRM " will appear on the screen. Move the

joystick and press IRIS OPEN to confirm.

E1. <RIGHT LIMIT>

Move the cursor to <RIGHT LIMIT> and press IRIS OPEN to start setting the right limit of the

current scan. Then the sentence "PRESS IRIS OPEN TO " CONFIRM " will appear on the screen.

Move the joystick and press IRIS OPEN to confirm.

F1. SCAN SPEED

Move the cursor to SCAN SPEED and press IRIS OPEN to enter the edition mode of scan speed. Move the joystick upward and downward to select a speed scale, then press IRIS OPEN to confirm. The speed scale ranges from 1~30.

## C.SEQUENCE



#### A1.SEQ NO.

Move the cursor to SEQ NO. and press the key IRIS OPEN(key on control keyboard) to enter the edition mode of sequence No., move the joystick upward and downward to select number. Then press IRIS OPEN to confirm.

**B1. TITLE** 

Move the cursor to TITLE and press IRIS OPEN to enter the edition mode of sequence title.

C1.START

MOVE the cursor to START and press IRIS OPEN to start the current sequence.

## D1.<SEQUENCE SET>

Press IRIS OPEN to enter into the sequence setting



Move the cursor to EDIT and press IRIS OPEN to enter edition mode. Move the joystick rightward and leftward to select item.

a. When the < > is on the item NO., move joystick upward and downward to select the NO.of the

preset in a sequence. There are up to 32 presets in a single sequence.

b. When the <> is on the item PRESET, move the joystick upward and downward to select the

preset NO. you want to add in the sequence.

c.When the <> is on the item INS, move the joystick upward and downward to select edition mode

as "insert", "ok" and "delete".

d. Press IRIS CLOSE to quit the edition.

#### D. PATTERN



#### A1.PATTERN NO.

Move the cursor to PATT and press the key IRIS OPEN(key on control keyboard) to enter the

edition mode of sequence No., move the joystick upward and downward to select number. Then press IRIS OPEN to confirm.

**B1. TITLE** 

Move the cursor to TITLE and press IRIS OPEN to enter the edition mode of sequence title.

C1.START

MOVE the cursor to START and press IRIS OPEN to start the current Pattern.

D1. <SET>

Move the cursor to SET and press IRIS OPEN the enter pattern setting mode. Then the sentence

"PRESS IRIS OPEN TO CONFIRM" will appear on the screen. Move the joystick to do PTZ move

and press IRIS OPEN to confirm.

E1.DELETE

Move the cursor to DELETE and press IRIS OPEN to delete the current pattern.

## E.<ZONES>



#### A1.ZONE INFORMATION

**B1.ZONE NO.** 

Move the cursor to ZONE NO. and press the key IRIS OPEN(key on control keyboard) to enter the edition mode of zone No., move the joystick upward and downward to select number. Then press IRIS OPEN to confirm.

**B1. TITLE** 

Move the cursor to TITLE and press IRIS OPEN to enter the edition mode of zone title.

C1.<LEFT LIMIT>

Move the cursor to <LEFT LIMIT> and press IRIS OPEN to start setting the left limit of the current

zone. Then the sentence "PRESS IRIS OPEN TO CONFIRM" will appear on the screen. Move the

joystick and press IRIS OPEN to confirm.

E1. <RIGHT LIMIT>

Move the cursor to <RIGHT LIMIT> and press IRIS OPEN to start setting the right limit of the

current zone. Then the sentence "PRESS IRIS OPEN TO CONFIRM" will appear on the screen.

Move the joystick and press IRIS OPEN to confirm.

F1.DELETE

Press IRIS OPEN to delete the current zone.

## **F.TIMING ACTION**



A1.SHEDULE NO.

#### **B1.START**

Start time of timing action.

#### C1.STOP

Stop time of timing action.

#### **D1.MOTION**

Timing action modes: PRESET 1-8, SCAN 1-4, SEQUENCE 1-4, PATTERN 1-4

E1: ON/OFF

Press IRIS OPEN to enable or disable the timing action

F1: COPY

User can copy a schedule to other 6 days in a week.

G1. BACK

Go back to upper menu

## **G. AUTO TRACKING**



#### A1.SENSITIVITY

Secitivity of auto tracking funtion. Scale from1 to 15.

## **B1.FRAME RATE**

Setting of the frame inspection rate.

#### C1.ENABLE

Enabel or disable the auto tracking function.

\*Notice: The auto tracking function is only for the speed dome with the camera module which support auto tracking.

## DOME SETTING



## A. IDLE ACTION



#### A1: IDLE ACTION

Move the cursor to TIME, press IRIS OPEN to enter the edition mode of idle action starting time.

The time could be 30seconds, 2 minutes, 5 minutes or 10 minutes. Press IRIS OPEN to confirm.

B1: ACTION

Move the cursor to ACTION and press the key IRIS OPEN to edit the idle action type like preset, scan, sequence or none.

## B. ALARM



#### A1. ALARM NO.

Move the cursor to ALARM NO., press IRIS OPEN to select the channel No. of alarm input. When the channel No. has been changed, the system will update all the relative settings and displayed data.

#### **B1. INPUT STATE**

Move the cursor to INPUT STATE, press IRIS OPEN to set the current state of alarm input as open

or close.

#### C1. ALARM MODE

Move the cursor on ALARM MODE to set the current mode of alarm as ON, OFF and AUTO.

D1. TRIGGER ACTION

Move the cursor on TRIGGER ACTION to set the action type triggered by alarm, such as presets,

sequence, pattern and scan.

E1. ALARM OUT

Move the cursor to ALARM OUT to select the alarm output channel.

#### F1. CANCEL TIME

Move the cursor to CANCEL TIME to set the duration of the alarm state.

#### G1. START TIME

START TIME means the time for opening the alarm when the alarm mode is auto.

## H1. STOP TIME

STOP TIME means the time for closing the alarm when the alarm mode is auto.

C. AUX



Move the cursor to open or close the AUX

## D. PRIVACY MASK



#### Note:

## 23x PTZ just can support one privacy zone only.

#### A1. MASK NO.

Move the cursor to MASK NO. to set the NO. of privacy mask zone.

#### **B1.ENABLE**

Move the cursor to ENABLE to enable or disable the privacy mask zone.

#### C1.<SET>

.Move the cursor to <SET> and press IRIS OPEN to enter the edition mode of privacy mask zone.

Then the sentence "PRESS IRIS OPEN TO CONFIRM" will be displayed on the monitor. Use

joystick to move the dome to the area you want to cover and press IRIS OPEN to confirm. There

will be a privacy zone in the middle of the monitor. Move joystick upward, downward, leftward and

rightward to adjust the size of privacy zone.

#### D1. DELETE

Press IRIS OPEN to delete the current privacy zone.

## E. CLOCK



#### A1: DATE

Move the joystick leftward and rightward to select year, month and day. Move the joystick upward and downward to select the number.

B1: TIME

Move the joystick leftward and rightward to select hour and minute. Move the joystick upward and downward to select the number.

## F. PASSWORD



#### A1.EDIT PASSWORD

The factory default password is 111111. The old password is needed before setting a new one.

#### **B1.ENABLE**

Enable or disable the password protection for OSD menu

## G. DOME TITLE



#### A1. INPUT

Move the cursor to INPUT and press IRIS OPEN to enter the title edition mode.

B1. Move the cursor to CAPS. Press IRIS OPEN and move the joystick upward and downward to select capital and small letters.

#### **C1. ALPHABET**

Move the cursor to alphabet and press IRIS OPEN to select letters.

#### H. OTHERS



#### A1: TEMP CONTROL

Move the cursor to TEMP CONTROL and press IRIS OPEN to select the temperature control mode

#### as: COOL/AUTO/HEAT/OFF

#### B1: PRESET FREEZE

Move the cursor to PRESET FREEZE and press IRIS OPEN to set preset freeze function. When the

dome is shifting from one preset to another, the image on the monitor will not change until the

preset calling is done.

C1: AUTO FLIP

Move the cursor to AUTO FLIP and press IRIS OPEN to enable or disable auto flip function.

#### **D1.AUTO STOP TIME**

The dome will stop PTZ move after a certain period when the stop code is not received by dome.

The period could be 5/15/30/60 seconds.

#### E1.MENU OFF TIME

The OSD menu will be automatically closed when there is not any operations for a certain period.

The period could be 1/2/5/10 minutes.

F1. <NORTH SET>

Move to cursor to NOTTH SET and press IRIS OPEN to set the direction null point.

## CAMERA



#### Note:23x PTZ supports the module OSD menu setting please Do not change Baud Rate and UART Mode or the module will lose control.

#### A.AUTO FOCUS

**B.DIGITAL ZOOM** 

#### C.BACKLIGHT

When the light is dim, please open the backlight compensation to make the image bright

#### D.IMAGE FREEZE

#### E.ZOOM SPEED: LOW/NORMAL/HIGH

#### F.DAY NIGHT: AUTO/BW/COLOR

#### G. <ADVANCED>



#### A1. WHITE BALANCE:AUTO/MANUAL/INDOOR/OUTDOOR

- **B1. RED GAIN**
- C1. BLUE GAIN
- D1.BRIGHT
- E1.EXPOSURE
- F1.WIDE DYNAMIC

\*NOTICE: This item is only for the camera module with WDR function.

## **COMMAND LIST**

NO	Command	Command packet	Comments
	Start Auto Scan	Call_99	
	Start Auto Cruising	Call_98	
1	Start Pattern Tour	Call_97	
	Stop checking/End	Call_96	
	Presettup		
2	Open Menu	Preset_95(or Call_95)	
3	Remote RePreset	Call_94	
1	Start Quick Experience	Preset_85	
4	Stop Quick Experience	Call_85	
	scan and Presetup right	Preset_93	default Presetup No. 1 group;
	margin		qq( speed value): 1-30
5	scan and Presetup left	Preset_92	
	margin		
	scan Presetup speed	Preset_87 + Call_qq	
	Start pattern tour	Preset_86	Default as group 1
6	Presetting		
0	Finish pattern tour	Call_96	
	Presetting		
	Start cruising prePreset	Preset_84 + Call_pp + … (n)Call_pp	Pp: PrePreset number, n is up
	point Presetting		to 32;
7	Finish start pattern tour	Call_96	Qq: dwell time, 1-60
	Presetting		
	Cruising dwell time	Preset_83 + Call_qq	
	Start scan No. N	Call_80 + Call_N + Call_99	N: group number, 1-8,
	Stop scan No. N	Call_96	Qq: speed value,1-30
0	Preset right boundary for	Call_80 + Call_N + Preset_93(or	
0	Scan No. N	Preset_93)	
	Preset left boundary for	Call_80 + Call_N + Preset_92(or	
	Scan No. N	Preset_92)	

	Preset scan speed for scan No. N	Call_80 + Call_N + Preset_87 + Call_qq	
9	Start pattern tour No. N Stop patter tour No. N Start to Preset pattern tour NO. N	Call_80 + Call_N + Call_97 Call_96 Call_80 + Call_N + Preset_86	N: 1-8
	Stop to Preset pattern tour NO. N	Call_96	
	Start cruising No. NStop cruising No. NPresetprePresetposition for cruising No.	Call_80 + Call_N + Call_98 Call_96 Call_80 + Call_N + Preset_84 + Call_pp +(n)Call_pp	N: 1-8 Pp: prePreset number, up to 32 Qq: dwell time,1-60
10	N Preset stop prePreset position for cruising No. N Preset dwell time for	Call_96 Call_80 + Call_N + Preset_83 +	
11	cruising No. N Restore factory Presetting	Call_qq Call_82	
12	Enable auto flip	Call_81 Preset 81	
13	Number Presetting	Call 80	
14	Enable guard location Stop guard location	Call_79 Preset 79	
15	Enable alarm linkage function Close alarm linkage function	Call_78 Preset_78	
16	Preset guard location	Preset_77 + Call_pp	Pp function number: 1-4 1-prePreset position, default
17	Preset alarm linkage function	Preset_76 + Call_pp	<pre>as NO. 1; 2-Auto cruising, default as No.1; 3-curising track, default as No.1; 4-pattern tour, default as No.1.</pre>

18	Preset temperature- controlled mode	Preset_75 + Call_pp	<pre>pp- temperature-controlled: 1-4 1-enable fan , heater temperature-controlled 2-fan temperature-controlled, heater temperature-controlled 3- enable fan , heater temperature-controlled 4-Close fan, close heater</pre>
	Preset focus sensitivity	Call_69	Normal sensitivity (for SONY)
		Preset_69	Lower sensitivity (for SONY)
	For other module	Call_68 + Call_1 + Call_68	
		Call_80 + Call_2 + Preset_67	manual focus
	19	Call_80 + Call_3 + Preset_67	open display function
19		Call_80 + Call_4 + Preset_67 + Call_qq	qq-white balance 1- auto 2- manual 3- indoor 4- outdoor
		Call_80 + Call_1 + Call_67	close digital zoom
		Call_80 + Call_2 + Call_67	auto focus
		Call_80 + Call_3 + Call_67	close display function
		Call_80 + Call_1 + Preset_66 +	Preset y direction angle $1 \sim$
		Call 20 + Call 2 + Dreast 66 +	Duccet maximum around of a in
		Call_oo + Call_2 + Freset_oo +	$12\sim18$
		Call 80 + Call 3 + Preset 66 +	Preset maximum speed of v is
		Call gg	$12{\sim}15$
20	motion parameter	Call_80 + Call_1 + Call_66	Recover start angle default volume of y is 0 degree
		Call_80 + Call_2 + Call_66	recover maximum speed default volume is 18 degree
		Call_80 + Call_3 + Call_66	recover maximum speed default volume is 15 degree

.

\_\_\_\_\_

			1-PTZ coordinate information	
			2-temperature-controlled	
01			information	
21	21 Display information	Preset_74 + Call_pp	3-alarm information	
			4-Preset information display	
			5-version and ID code display	
00	Preset delay time	Preset_73 + Call_pp	1-15 (s) 1-60 (s)	
22	Preset guard location time	Preset_72 + Call_pp	1-4 (min)	
0.0	Preset privacy mask	Call_80 + Call_pp + Preset_71	1.04	
23	Cancel privacy mask	Call_80 + Call_pp +Call_71	1-24	
0.4	open pilot switch	Call_80 + Call_pp + Call_70	$a = a \cdot 1 \cdot$	
24	close pilot switch	Call_80 + Call_pp + Preset_70	pp: pilot switch code (1-8)	

## 7 Trouble Shooting

Problems	Possible Reason	Solution
Power on, no movement, no image, indicator light does not light	Power line connected wrong	Correct it
	Power damaged	Replace
	Blowout	Replace
	Power line be connected bad	Check it
Power on, self check, has image, can't control, indicator light does not flicker	The machine's address code or baud rate is wrong	Reset
	Protocol wrong	Correct it
	RS485 bus be connected wrong	Check it
Image is dim	Focus in manual state	Clean it
	Dome is dirty	Change a certified power supply
Fan does not rotate	Fan is connected wrong	Check it