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MINI ULTRA-Z
PROFESSIONAL MINI PTZ IR CAMERA

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User Manual

Z-10AHD-2(IR)+

Package Contents:

Item	Qty.
Z-10AHD-2(IR)+ PTZ	1
DC12V/3A power supply	1
Wall Screws	4

Table of Contents:

1 General Instructions:

1.1 Safety Instructions:

◆ Make sure to read the user manual before using the camera.

◆ Always follow national and local safety codes during the installation.

◆ Only qualified and experienced person can carry the installation and maintenance for this camera.

◆ Use reliable tools.

◆ Make sure that the environmental conditions meets the installation requirements for this product.

◆ Please check the space and toughness of the installation surface before installation. It should be able to bear 4 times the weight of the camera and its accessories.

1.2 Warnings:

◆ Do not install this speed dome in hazardous places where combustible or explosive materials are stored or used.

◆ Do not install on platform that suffers from constant vibrations.

◆ Make sure no object or fluid substances get inside the unit.

◆ This speed dome runs on DC 12V, do not connect it to different voltage.

◆ Do not turn power on before installation is complete.

◆ Do not disassemble any part of the camera.

◆ Use soft towel to clean the down the lenses when necessary, do not use caustic detergent.

◆ To protect the image sensor, avoid facing the camera directly into strong light.

◆ To prevent damage, do not drop the unit or expose to strong shocks or vibrations.

◆ Make sure no object is blocking the unit's full range of motion.

2 Features:

2.1 Product Picture:

2.2 Product Features

◆ CoC Support

◆ Adaptive PELCO-P/D protocol.

◆ Adjustable IR illumination.

◆ Memory recall.

◆ Real-Time-Control: call any functions at any time.

◆ Support 128 preset positions.

◆ English OSD menu.

◆ Proportional zoom.

◆ Auto flip function.

◆ Advanced step motor for smoother movement.

◆ Support 4 groups cruise scan, 4 patterns, one scan and 360°continuous scan and 360° intermittent scan.

◆ IR lights automatically adjust the light intensity according to the zoom ratio to reduce the dark angle and flashlight effect.

◆ The underpart dome adopts full metal class points bin type design for fast heat dissipation and anti-mist, non-interference light source images and long life span IR light.

2.3 Specifications:

Power Supply	Input：AC100～240V 50/60Hz
	Output：DC12V±5%，3A
Max. Power Consumption	IR off：~7.2W
	IR on：~19.8W
Sync system	Internal Sync
Language	English
Signal Output	3in1 AHD/TVI/CVBS + PAL/NTSC
Pan Speed	0.08°～240°/S (Max. Preset Speed)
Tilt Speed	0.08°～240°/S (Max. Preset Speed)
Pan Range	0°～360°(Continuous)
Tilt Range	0°～90°（180° auto flip）
Presets	128
Preset Accuracy	<±0.1°
Tour	4 Groups
Pattern	4
Zone	1
Protocol	CoC / RS-485
Communication	CoC / PELCO-D/P
Baud Rate	2400bps、4800bps、9600bps、19200bps
Address	1-255 (By DIP Switch or Software)
IR Light switch	Superpower LED：Default: Zoom x1~5: open the near-distance IR lights; Zoom x6~10: keep the near IR on and opens far-distance IR lights.
Work Temperature	Indoor：0℃～+50℃；
	Outdoor ：-20℃～+50℃ (with heater)
Work Humidity	<90%

3 Installation Site Preparations:

3.1 Tool List:

(1) Screws*   (2) Monkey wrench

(3) Philips screwdriver   (4) Straight Screwdriver

(5) Wire stripper   (6) Socket head wrench

(7) Electric drill   (8) Hammer

(9) BNC connector   (10) BNC Clamp

*Included in the kit

3.2 Installation Preparation:

(1) Check the space and toughness of the site and make sure that the

environmental conditions meet the installation requirements for this product.

(2) The installation surface should be able to bear 4 times the weight of the

PTZ and its accessories.

3.3 DIP Switch Setting:

(1) Default Settings: Pelco P/D (auto-detected), baud rate: 2400, address: 1.

Use Philips screwdriver to remove the DIP switch cover (see location below)

(2) Baud Rate Setup

Decoder Switch: 9~10 (1=ON, 0=OFF)

Switch 9-10 setting		Baud Rate	Max transmission
9	10		distance(M)
0	0	2400BPS	1800
1	0	4800BPS	1200
0	1	9600BPS	800
1	1	Auto detected 2400、4800、9600、19200BPS	600-1800

(3) When the DIP Switch 9th and 10th are ON, the PTZ can automatically detected the baud rate 2400, 4800,9600,19200

(4) Hardware Address Setup*: Please refer to Appendix I.

*Please note that the address setting can also be configured via the software using the camera OSD (Page 11).

3.4 Output Mode Setting:

(1) Default Settings: AHD + PAL/NTSC

This output can be changed via the controller (Even if the user cannot gain a video output from the unit due to output incompatibility)

(2) Set your controller/DVR PTZ Settings to the Camera's Default Communication Settings: **Protocol: CoC / PELCO-D, address: 1 (Unless user changed it by the DIP switch configuration), baud rate: 2400.**

(3) In order to change the output type follow the instructions below:

1. Set Preset 85
2. Call the following preset according to your specification:

   a. Call Preset 1 for AHD + PAL

   b. Call Preset 2 for AHD + NTSC

   c. Call Preset 3 for TVI + PAL

   d. Call Preset 4 for TVI + NTSC

   e. Call Preset 13 for CVBS + PAL

   f. Call Preset 14 for CVBS + NTSC

4 Setup of the OSD Menu:

4.1 Display Boot-UP Info.

Before installation please check the protocol, baud rate, address and RS485 data cable. **Default Settings: Protocol: PELCO-D, address: 1, baud rate: 2400.**

```
PROTOCOL: PELCO P D
BAUD RATE: 2400BPS
CAMERA ID: 001
CAMERA S/N: 0000000001
MODEL:    -----------------
VERSION: V3.23
```

When starting, the PTZ will display the following information:

```
Level self-check: Success
Vertical self-check: Success


Success
```

Once done, the above information will disappear and the user will gain control over the camera.

4.2 Enter the OSD Menu:

While the camera is in standby condition, call preset 95 ("Call" + 95 + "Enter") in order to display the main menu. Use the Up/Down direction to select item or start the configuration. Use the Right key to confirm and left key for exit the current setting.

The Main menu as follows:

```
                    SYSTEM
                    LENS
                    PAN/TILT
                    AUTO RUNNING
                    ALARM
                    IR SET
                    EXIT
```

4.3 SYSTEM Menu:

<Main Menu> → <SYSTEM>

```
                    SITE INFO
                    DISPLAY SETUP
                    BOOTUP SCREEN
                    SET DEFAULT
                    SYSTEM REBOOT
                    BACK
                    EXIT
```

System info includes following settings.

- < SITE INFO>: In this menu the user can setup the dome's name, View the Hardware address, change the camera software address and choose the leading command (Hardware or Software).

- < DISPLAY SETUP >: In this menu the user can choose which details will display on the camera Screen. The available options are: Site name, Preset title, Pattern name, Zoom, Orientation, Temperature, Zone name and RTC time.

- <DISPLAY BOOT-UP INFO>: User can view the boot information.

- <SET DEFAULT>: All settings will go back to factory default. Preset

positions will be retained.

● <SYSTEM REBOOT>: After change dome ID or adjust deviation between two preset positions, user this to remotely reboot the system.

4.3.1 SITE INFO

DOME ID OPT:	HARD
SOFTWARE ID:	001
HARDWARE ID:	001
BROADCAST ID:	255
BACK	
EXIT	

<Main Menu> → <SYSTEM> → <SITE INFO >

● <DOME ID OPT>: Setting the address method that controls the dome, user can choose from SOFT (Software – As defined below in the OSD menu) and HARD (Hardware – As defined by the DIP switch prior to the installation).

[SOFT]: when choose this, the SOFTWARE ID is effective while the HARDWARE ID is ineffective.

[HARD]: when choose this, the HARDWARE ID is effective while the SOFTWARE ID is ineffective.

● <SOFTWARE ID>: shows the current software ID, user can modify and choose address in the range of 001~254

● <HARDWARE ID>: shows the current physical ID, it is decided by the DIP Switch only: user cannot modify via the OSD.

- <BROADCAST ID>: shows the current ID, The ID functions the same as dome's <SORTWARE/ HARDWARE ID>, The dome works when receives any of those ID. The dome's broadcast ID is 255 and cannot be modified.
- <BACK>: return to upper menu.
- <EXIT>: exit the menu

4.3.2 DISPLAY SET UP

< Main Menu>→<SYSTEM>→<DISPLAY SETUP>

```
PRESET TITLE:      OFF
PATTERN NAME:   OFF
ORIENATATION:   OFF
TEMPRETURE:       OFF
BACK
EXIT
```

- <PRESET TITLE>：Choose to display preset position or not.
- <PATTERN NAME>：Choose to display pattern name or not
- <ORIENTATION>：Choose to display the current lens direction or not.
- <TEMPRETURE>：Choose to display the current temperature or not.

4.3.3 DISPLAY BOOT-UP INFO

```
PROTOCOL: PELCO   P   D
BAUD RATE: AUTO
CAMERA ID: 001
CAMERA S/N: 0000000001
MODEL:    ----------------
VERSION: V3.23


CALL PRESET 1 BACK
```

<Main Menu>→<SYSTEM>→<DISPLAY BOOT-UP INFO>

Enter into Boot-up info displays to check current setup, call preset 1 to return to upper menu

4.3.5 SET DEFAULT

<Main Menu>→<SYSTEM>→<SET DEFAULT>

Select <SET DEFAULT> to restore factory default setting.

Please note: there is no confirmation prompt! Once entering the camera will immediately restore itself.

4.3.6 SYSTEM REBOOT

<Main Menu>→<SYSTEM>→<SYSTEM REBOOT>

Select **<SYSTEM REBOOT>** to reboot the dome.

4.4 LENS

<Main Menu>→<LENS>

```
ZOOM SPEED:      HIGH
DIGITAL ZOOM:    OFF
AF/AI SET:       BOTH
AF RESUME TIME:  005
AI RESUME TIME:  005
DAY/NIGHT:       IR-CTR
BACK
EXIT
```

- **<ZOOM SPEED>:** Set the zoom speed level to HIGH or LOW
- **<DIGITAL ZOOM>:** Turn On/Off the Digital Zoom.
- **<AF/AI SET**>: Set up Auto Focus (AF), Auto Iris (AI) or Both

<BOTH**>:** Joystick movement triggers both auto focus and auto iris

<FOCUS**>：** Joystick movement triggers auto focus only

<IRIS**>:** Joystick movement triggers auto iris only.

<NONE**>:** Joystick movement triggers none of the functions.。

- **<AF RESUME TIME>:** This item sets the time to restore auto focus after focus is manually changed. The default setting is 005, options are:

[OFF] Never restore auto focus after switch to manual.

[001-255]The dome will start auto focus that number of seconds after user manually adjusts focus.

- **<AI RESUME TIME>:** This item sets the time to restore auto iris after iris is manually changed. The default setting is 005 seconds, options are:

[OFF]: Never restore auto iris after switch to manual.

[001-255]: The dome will start auto iris that number of seconds after user manually adjust iris.

- **<DAY/NIGHT>:** Set the dome color/ black & white mode. Color mode is suitable to work in daytime because it needs higher illumination. Light

sensitivity of black & white mode is much higher. It is suitable to work

at night without illumination but the video is black and white.

There are 4 options:

[AUTO]: The dome will automatically change modes according to the environment illumination.

[COLOR]: The dome is always in color mode.

[NIGHT]: The dome is always in Black and White mode.

[IR-CTL]: The dome is controlled by the IR lights sensor, when the IR lights opened, the mode auto change to Black and White.

4.5 Advanced Camera Menu:

For advanced Menu, Call preset #69.

<u>PLEASE NOTE:</u> Scrolling and changing values in the advanced menu is done with different controls:

1) The controller joystick has effect.
2) Scrolling up and down is done by pressing IRIS+/IRIS-
3) Changing Values of the selected feature is done by pressing ZOOM+/ZOOM-

IMPORTANT!!! Changing any values the advanced menu might result in the camera malfunctioning

OSD-DISP	ON
D&N	COL
MIRROR	OFF
AGC	15
BRIGHT	15
CONTRAST	15
SHARPNESS	19
SAT	20
WDR	OFF
2D-NR	00
3D-NR	02
BLC	OFF
WB	AUTO
RGAIN	00
BGAIN	00
DE-FOG	00
OUTPUT	AHD
FORMAT	720/25
FOCUS	AF
F-RANGE	→1.3M
RESET	
SAVE-EXIT	

- **<OSD-DISP >:** Do Not Change
- **<ADDR-DISP>:** Do Not Change
- **<D&N>:** Do Not Change
- **<MIRROR>:** Turning Mirror effect ON/OFF
- <**AGC**>: changing the value of AGC
- <**BRIGHT**>: Changing the brightness value.
- <**CONTRAST**>: Changing the contrast value.
- <**SHARPNESS**>: Changing the sharpness value.
- <**SAT**>: Changing the saturation value.
- **<WDR>:** Turning Digital WDR effect ON/OFF
- **<2D-NR>:** Adjusting the level of 2D-NR noise reduction
- **<3D-NR>:** Adjusting the level of 3D-NR noise reduction
- <**BLC**>: switching OFF/ON.
- <**WB**>: White Balance is normally compensated for by the automatic white balance gain control. In some lighting conditions, user may want to manually adjust the red and blue settings for optimal viewing. There are 6 options:
- [**AUTO**]: Auto White Balance (default setting).
- [**ATW**]: Auto track White Balance.
- [**PUSH**]: Once touch White Balance
- [**OUTDOOR**]: Suitable for outdoor use.
- [**INDOOR**]: Suitable for indoor use.
- [**MANUAL**]: Manually set the red and blue values
- <**BGAIN**>: Set the blue value (Only effective if WB is set to Manual)
- <**RGAIN**>: Set the red and value (Only effective if WB is set to Manual)
- <**DE-FOG**>: Change level of defog effect**.**
- **<OUTPUT>:** Manually set the output between AHD / TVI / CVBS
- <**FORMAT**>: Manually set the output between 25&30 (PAL/NTSC)

- <ZOOM>: Do Not Change.
- <FOCUS>: Do Not Change
- <F-RANGE >: Do Not Change
- <RESET >: Reset All settings to factory Default

4.6 PAN/TILT

<Main Menu>→ <PAN/TILT>

```
AUTO STOP TIME:        OFF
SPEED AMPLIFY:         OFF
RATIO PAN/TILT:         ON
SET NORTH
BACK
EXIT
```

- <AUTO STOP TIME>:

For some particular protocols, the dome will not stop moving even there is
no operation by the controller. This menu sets the time duration before
stopping after which the dome receives last control command.

[Off]: Disable this function

[001~255]: The time (second) that dome will stop moving without receiving
any commands.

- <SPEED AMPLIFY>:

Some protocols' controlling speed is much lower, set <SPEED AMPLIFY> to
accelerate domes movement. Options are as below:

[Off]: Disable this function

[01×~ 32×]: Speed amplify from 01~32x

Notice: The above two functions is not available at present

- **<PROPORTIONAL P/T>**:

The dome moves at a certain speed (degree per second). While zoomed in, the default movement speed may become too fast. This function decreases the dome movement speed while zoomed in for easier control on the dome.

- **<SET NORTH>**:

User can set orientation by using joystick to position north.

When select <SET NORTH>, following menu will pop-up.

```
CALL PRESET 1 TO RETURN
CONFIRM.  .  .  .  .  .
```

Adjust the lens to desired position and call preset 1 to confirm and return.

4.7 AUTO RUNNING

<Main Menu>→<AUTO RUNNING>

```
PRESET
TOUR
PATTERN
360 SCAN
ZONE
PARK TIME:     0S
PARK ACTION: DIS. FUN
BACK
EXIT
```

4.7.1 PRESET

<Main Menu>→<AUTO RUNNING>→<PRESET>

```
PRESET NUMBER :    001
SET CURRNET
REMOVE CURRENT
BACK
EXIT
```

In this function, the values of the pan/tilt positions will be stored in the desired memory slot so that you will be able to call it when in need. 128 presets can be saved. It could also setup by shortcuts of control system.

● <PRESET NUMBER>

Display current preset number, the value ranges from 001to 064 (Except preset 33 and 34) and 101 to 164

Note: Presets 33/34 has other functions in PELCO protocols, so the user cannot save any information on it.

● <SET CURRENT>

Select this item to set the preset position and zoom. The following menu will pop-up when < Set Current> is selected.

```
CALL PRESET 1 TO BACK
CONFIRM … …
```

Move to the desired position and zoom to a suitable level, call preset 1 to save the current preset and return.

● < REMOVE CURRENT>: Delete the preset with the number and title display above.

4.7.2 TOUR

<Main Menu> ➔ <AUTO RUNNING> ➔ <TOUR>

```
TOUR NUMBER : 001
DWELL: 003
EDIT
RUN
BACK
EXIT
```

The dome camera will run repeatedly as the given sequence of presets at certain dwell time by one command. Max. 4 tours available (27preset/tour).

- <**TOUR NUMBER**>: Set current tour number from 001~004.
- <**DWELL**>: Set the default dwell time from 000~255 seconds for each preset. User can still set independent dwell time for each preset when editing the tour.
- <**EDIT**>: Edit presets and corresponding dwell time in a tour as follows.

```
PRESET–DWELL

000-003     000-003
000-003     000-003
000-003     000-003
000-003     000-003
000-003     000-003
000-003     000-003
000-003     000-003


SAVE AND BACK
CANCEL AND BACK
```

There are three group numbers, the left side is preset number, the right side is dwell time; tour from left to right, up to down in the order to run preset; when the preset number is set to < 000>, the current preset is skipped;

- <**SAVE AND BACK**>: Save the tour and back.
- <**CANCEL AND BACK**>: Quit without saving and then exit to the upper menu.

4.7.3 PATTERN

<Main Menu> → <AUTO RUNNING> → <PATTERN>

```
PATTERN NUMBER : 001
RECORD
RUN
BACK
EXIT
```

There are max 4 patterns, and the dome camera can record all regular operation in 3 minutes at least. The command will drive the speed dome runs as given route repeatedly.

- <**PATTERN NUMBER**>: Set current pattern number from 001～004.
- <**RECORD**>: Edit the current pattern's running route and record all operation in 3 minutes at least.

```
SET START POINT…
CALL PRE 1 CONFIRM
AND BEGIN RECORDING
CALL PRE 2 CANCEL
```

Notice: If any of the time/space is finished, the recording will saved and exit even without calling preset 1.

- <**RUN**>: Run current pattern repeatedly until other command received.

4.7.4 360° SCAN

<Main Menu> → <AUTO RUNNING> → <360° scan>

```
360° SCAN DWELL: 0S
PAN SPEED:          HIGH
RUN
BACK
EXIT
```

<360° SCAN DWELL>:

[0S]: 360 continuous scan

[5S]: 90 intermittent scan, then dwell on 5s, the dome will continuously run
at the given route repeatedly until receiving new command.

[10S]: 90 intermittent scan, then dwell on 10s, the dome will continuously
run at the given route repeatedly until receiving new command.

- <**PAN SPEED**>

    High：20/S

    Middle：15/S

    Low：6/S

    Auto：Do as the camera's proportional P/T speed.

- <**RUN**>

The dome will continuously run at the given route repeatedly until receiving
new command.

4.7.5 ZONE

<Main Menu> → <AUTO RUNNING> → <ZONE>

```
LEFT LIMIT
RIGHT LIMIT
PAN SPEED：LOW
REMOVE CURRENT
RUN
BACK
EXIT
```

● **<LEFT LIMIT>**: Set the right edge of region <A>

```
CALL PRESET 1 TO BACK
CONFIRM.  .  .  .  .
```

Move the camera left limit position to confirm and return. The position of the left limit position will now be marked on the menu screen.

● **<RIGHT LIMIT>:** Set the right edge of region (B)

```
CALL PRESET 1 TO BACK
CONFIRM.  .  .  .  .
```

Move the camera right limit position to confirm and return. The position of the right limit position will now be marked on the menu screen.

● **<PAN SPEED>**

    High：20/S

    Middle：15/S

    Low：6/S

    Auto：Do as the camera's proportional P/T speed.

- **<REMOVE CURRENT>**: Delete current zone
- **<RUN>**: Start current zone scan repeatedly before receiving new command.

Note:

PTZ default tour scan direction is clockwise starting from the left limit. If the user finds out the route is wrong, he should call preset 82 preset again and PTZ will scan in the reverse direction.

4.7.6 <PARK TIME>

The camera will run certain function automatically if the dome is not receiving any command for the specified time.

0S：PARK TIME OFF

60S：PARK TIME ON, 60 Seconds wait

120S：PARK TIME ON, 120 Seconds wait

4.7.7 <RUNNING TYPE>

Choose the type of action that will take place on activation of Park: users can choose between: Preset, Tour or Pattern**.**

Note: Time running available only if <IDLE TIME> and <RUNNING TYPE> are both ON state.

4.9 IR SET

<Main Menu> → <IR SET>

```
IR MODE SET:    AUTO
IR ZOOM SET 2: 010
PRESENT LUX: 010
IR START SET: 006
IR CLOSE SET: 012
BACK
EXIT
```

- **<**IR MODE **>**: AUTO/OPEN/CLOSE

   <AUTO>: Default. When the detected signal value from the IR sensitive below the value of IR Start, the IR dome automatically open the IR lights.

   <OPEN>: Open the IR lights forcibly (No influence from the detected signal value).

   <CLOSE>: Close the IR lights forcibly (No influence from the detected signal value).

N**otice: The function only effective in <LENS> → <DAY/NIGHT> → <IR CHANGE> mode.**

- **<**IR ZOOM SET 2**>**: The Zoom factor that will activate the second set of IR LEDs
- **<**PRESENT LUX**>:** Display the current illumination value (Unit: Lux) (cannot be edited)
- **<**IR START SET**>:** 006 (Default Open IR light illumination value), Range: 0-8 Unit: Lux

   <IR CLOSE SET**>:** 012 (Close IR light illumination value) Range: 12-20 Unit: Lux

APPENDIX I: DIP SWITCH SETTING:

DIP Switch consists of 8 numbers from 1-8, use 8421 binary cod, max 255 address. When the switch is in the "ON" position, the number from 1-8 corresponding to 1, 2, 4, 8, 32, 64, 128. For example, if you set 1, 3, 5, 7 switch to the "ON" position, the corresponding address will be 1+4+16+64=85, please refer to the blow details.

Sheet 1（1=ON,　0=OFF）

DIP switch / Address	K1 ID Switch(number 1-number 8) 1 2 3 4 5 6 7 8	DIP switch / Address	K1 ID Switch(number 1-number 8) 1 2 3 4 5 6 7 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	6	0 1 1 0 0 0 0 0
7	1 1 1 0 0 0 0 0	8	0 0 0 1 0 0 0 0
9	1 0 0 1 0 0 0 0	10	0 1 0 1 0 0 0 0
11	1 1 0 1 0 0 0 0	12	0 0 1 1 0 0 0 0
13	1 0 1 1 0 0 0 0	14	0 1 1 1 0 0 0 0
15	1 1 1 1 0 0 0 0	16	0 0 0 0 1 0 0 0
17	1 0 0 0 1 0 0 0	18	0 1 0 0 1 0 0 0
19	1 1 0 0 1 0 0 0	20	0 0 1 0 1 0 0 0
21	1 0 1 0 1 0 0 0	22	0 1 1 0 1 0 0 0
23	1 1 1 0 1 0 0 0	24	0 0 0 1 1 0 0 0
25	1 0 0 1 1 0 0 0	26	0 1 0 1 1 0 0 0
27	1 1 0 1 1 0 0 0	28	0 0 1 1 1 0 0 0
29	1 0 1 1 1 0 0 0	30	0 1 1 1 1 0 0 0
31	1 1 1 1 1 0 0 0	32	0 0 0 0 0 1 0 0
33	1 0 0 0 0 1 0 0	34	0 1 0 0 0 1 0 0

35	1 1 0 0 0 1 0 0	36	0 0 1 0 0 1 0 0
37	1 0 1 0 0 1 0 0	38	0 1 1 0 0 1 0 0
39	1 1 1 0 0 1 0 0	40	0 0 0 1 0 1 0 0
41	1 0 0 1 0 1 0 0	42	0 1 0 1 0 1 0 0
43	1 1 0 1 0 1 0 0	44	0 0 1 1 0 1 0 0
45	1 0 1 1 0 1 0 0	46	0 1 1 1 0 1 0 0
47	1 1 1 1 0 1 0 0	48	0 0 0 0 1 1 0 0
49	1 0 0 0 1 1 0 0	50	0 1 0 0 1 1 0 0
51	1 1 0 0 1 1 0 0	52	0 0 1 0 1 1 0 0
53	1 0 1 0 1 1 0 0	54	0 1 1 0 1 1 0 0
55	1 1 1 0 1 1 0 0	56	0 0 0 1 1 1 0 0
57	1 0 0 1 1 1 0 0	58	0 1 0 1 1 1 0 0
59	1 1 0 1 1 1 0 0	60	0 0 1 1 1 1 0 0
61	1 0 1 1 1 1 0 0	62	0 1 1 1 1 1 0 0
63	1 1 1 1 1 1 0 0	64	0 0 0 0 0 0 1 0
65	1 0 0 0 0 0 1 0	66	0 1 0 0 0 0 1 0
67	1 1 0 0 0 0 1 0	68	0 0 1 0 0 0 1 0
69	1 0 1 0 0 0 1 0	70	0 1 1 0 0 0 1 0
71	1 1 1 0 0 0 1 0	72	0 0 0 1 0 0 1 0
73	1 0 0 1 0 0 1 0	74	0 1 0 1 0 0 1 0
75	1 1 0 1 0 0 1 0	76	0 0 1 1 0 0 1 0
77	1 0 1 1 0 0 1 0	78	0 1 1 1 0 0 1 0
79	1 1 1 1 0 0 1 0	95	1 1 1 1 1 0 1 0
81	1 0 0 0 1 0 1 0	82	0 1 0 0 1 0 1 0
83	1 1 0 0 1 0 1 0	84	0 0 1 0 1 0 1 0
85	1 0 1 0 1 0 1 0	86	0 1 1 0 1 0 1 0
87	1 1 1 0 1 0 1 0	88	0 0 0 1 1 0 1 0

89	1 0 0 1 1 0 1 0	90	0 1 0 1 1 0 1 0
91	0 0 1 1 1 0 1 0	92	0 0 1 1 1 0 1 0
93	1 0 1 1 1 0 1 0	94	0 1 1 1 1 0 1 0
95	1 1 1 1 1 0 1 0	96	0 0 0 0 0 1 1 0
97	1 0 0 0 0 1 1 0	98	0 1 0 0 0 1 1 0
99	1 1 0 0 0 1 1 0	100	0 0 1 0 0 1 1 0
101	1 0 1 0 0 1 1 0	102	0 1 1 0 0 1 1 0
103	1 1 1 0 0 1 1 0	104	0 0 0 1 0 1 1 0
105	1 0 0 1 0 1 1 0	106	0 1 0 1 0 1 1 0
107	1 1 0 1 0 1 1 0	108	0 0 1 1 0 1 1 0
109	1 0 1 1 0 1 1 0	110	0 1 1 1 0 1 1 0
111	1 1 1 1 0 1 1 0	112	0 0 0 0 1 1 1 0
113	1 0 0 0 1 1 1 0	114	0 1 0 0 1 1 1 0
115	1 1 0 0 1 1 1 0	116	0 0 1 0 1 1 1 0
117	1 0 1 0 1 1 1 0	118	0 1 1 0 1 1 1 0
119	1 1 1 0 1 1 1 0	120	0 0 0 1 1 1 1 0
121	1 0 0 1 1 1 1 0	122	0 1 0 1 1 1 1 0
123	1 1 0 1 1 1 1 0	124	0 0 1 1 1 1 1 0
125	1 0 1 1 1 1 1 0	126	0 1 1 1 1 1 1 0
127	1 1 1 1 1 1 1 0	128	0 0 0 0 0 0 0 1
129	1 0 0 0 0 0 0 1	130	0 1 0 0 0 0 0 1
131	1 1 0 0 0 0 0 1	132	0 0 1 0 0 0 0 1
133	1 0 1 0 0 0 0 1	134	0 1 1 0 0 0 0 1
135	1 1 1 0 0 0 0 1	136	0 0 0 1 0 0 0 1
137	1 0 0 1 0 0 0 1	138	0 1 0 1 0 0 0 1
139	1 1 0 1 0 0 0 1	140	0 0 1 1 0 0 0 1
141	1 0 1 1 0 0 0 1	142	0 1 1 1 0 0 0 1

143	1 1 1 1 0 0 0 1	144	0 0 0 0 1 0 0 1
145	1 0 0 0 1 0 0 1	146	0 1 0 0 1 0 0 1
147	1 1 0 0 1 0 0 1	148	0 0 1 0 1 0 0 1
149	1 0 1 0 1 0 0 1	150	0 1 1 0 1 0 0 1
151	1 1 1 0 1 0 0 1	152	0 0 0 1 1 0 0 1
153	1 0 0 1 1 0 0 1	154	0 1 0 1 1 0 0 1
155	1 1 0 1 1 0 0 1	156	0 0 1 1 1 0 0 1
157	1 0 1 1 1 0 0 1	158	0 1 1 1 1 0 0 1
159	1 1 1 1 1 0 0 1	160	0 0 0 0 0 1 0 1
161	1 0 0 0 0 1 0 1	162	0 1 0 0 0 1 0 1
163	1 1 0 0 0 1 0 1	164	0 0 1 0 0 1 0 1
165	1 0 1 0 0 1 0 1	166	0 1 1 0 0 1 0 1
167	1 1 1 0 0 1 0 1	168	0 0 0 1 0 1 0 1
169	1 0 0 1 0 1 0 1	170	0 1 0 1 0 1 0 1
171	1 1 0 1 0 1 0 1	172	0 0 1 1 0 1 0 1
173	1 0 1 1 0 1 0 1	174	0 1 1 1 0 1 0 1
175	1 1 1 1 0 1 0 1	176	0 0 0 0 1 1 0 1
177	1 0 0 0 1 1 0 1	178	0 1 0 0 1 1 0 1
179	1 1 0 0 1 1 0 1	180	0 0 1 0 1 1 0 1
181	1 0 1 0 1 1 0 1	182	0 1 1 0 1 1 0 1
183	1 1 1 0 1 1 0 1	184	0 0 0 1 1 1 0 1
185	1 0 0 1 1 1 0 1	186	0 1 0 1 1 1 0 1
187	1 1 0 1 1 1 0 1	188	0 0 1 1 1 1 0 1
189	1 0 1 1 1 1 0 1	190	0 1 1 1 1 1 0 1
191	1 1 1 1 1 1 0 1	192	0 0 0 0 0 0 1 1
193	1 0 0 0 0 0 1 1	194	0 1 0 0 0 0 1 1
195	1 1 0 0 0 0 1 1	196	0 0 1 0 0 0 1 1

197	1 0 1 0 0 0 1 1	198	0 1 1 0 0 0 1 1
199	1 1 1 0 0 0 1 1	200	0 0 0 1 0 0 1 1
201	1 0 0 1 0 0 1 1	202	0 1 0 1 0 0 1 1
203	1 1 0 1 0 0 1 1	204	0 0 1 1 0 0 1 1
205	1 0 1 1 0 0 1 1	206	0 1 1 1 0 0 1 1
207	1 1 1 1 0 0 1 1	208	0 0 0 0 1 0 1 1
209	1 0 0 0 1 0 1 1	210	0 1 0 0 1 0 1 1
211	1 1 0 0 1 0 1 1	212	0 0 1 0 1 0 1 1
213	1 0 1 0 1 0 1 1	214	0 1 1 0 1 0 1 1
215	1 1 1 0 1 0 1 1	216	0 0 0 1 1 0 1 1
217	1 0 0 1 1 0 1 1	218	0 1 0 1 1 0 1 1
219	1 1 0 1 1 0 1 1	220	0 0 1 1 1 0 1 1
221	1 0 1 1 1 0 1 1	222	0 1 1 1 1 0 1 1
223	1 1 1 1 1 0 1 1	224	0 0 0 0 0 1 1 1
225	1 0 0 0 0 1 1 1	226	0 1 0 0 0 1 1 1
227	1 1 0 0 0 1 1 1	228	0 0 1 0 0 1 1 1
229	1 0 1 0 0 1 1 1	230	0 1 1 0 0 1 1 1
231	1 1 1 0 0 1 1 1	232	0 0 0 1 0 1 1 1
233	1 0 0 1 0 1 1 1	234	0 1 0 1 0 1 1 1
235	1 1 0 1 0 1 1 1	236	0 0 1 1 0 1 1 1
237	1 0 1 1 0 1 1 1	238	0 1 1 1 0 1 1 1
239		240	0 0 0 0 1 1 1 1

APPENDIX II Shortcuts Key Chart:

Shortcut Key	Function (call Preset)				
Set #85 preset, Call N	Call the preset number of the desired video type signal: e.g. "14" for CVBS/NTSC	N=1	AHD	PAL	1080P
Please note: we will have to delete #85 (if exist) & recreate again, whenever we will ask to change the video signal type – **AS it is "set" action**.		N=2	AHD	NTSC	1080P
		N=3	TVI	PAL	1080P
		N=4	TVI	NTSC	1080P
		N=13	CVBS	PAL	960H
		N=14	CVBS	NTSC	960H
Set # 89preset	Delete all presets				
Set #90 preset	Set left limit Position				
Set #91preset	Set right limit Position				
Set #92 preset	Delete left/right limit				
Set #93preset	Dome restart				
Set #94 preset	Restore Factory Setting				
Set #95preset	Open main menu				
Set #96 preset	0S Park time ON				
Set #97 preset	60S Park time ON				
Set #98preset	120S Park time ON				
Set #99 preset	scan and tour scan speed is automatic				
Set #100 preset	scan and tour scan speed is high, 15°/sec				
Set #101preset	scan and tour scan speed is middle, 10°/sec				
Set #102preset	scan and tour scan speed is low, 5°/sec				
Set #103 preset	Record Pattern scan 1				

Set #104 preset	Record Pattern scan 2
Set #105 preset	Record Pattern scan 3
Set #106 preset	Record Pattern scan 4
Set #107 preset	Set cruise 1
Set #108 preset	Set cruise 2
Set #109 preset	Set cruise 3
Set #110 preset	Set cruise 4
Set #111 preset	Set color-to-black function
Set #112 preset	the preset-dwell: 0S
Set #113preset	the preset-dwell: 5S
Set #114preset	the preset-dwell: 10S
Shortcut Key	**Function (Call Preset)**
Call #69 preset	Open Advanced Settings menu
Call #70 preset	Preset Error Correction
Call #71 preset	Proportional P/T ON
Call #72 preset	Start Cruise scan and switch the cruise scan direction
Call #73 preset	Start Pattern 1
Call #74 preset	Start Pattern 2
Call #75 preset	Start Pattern 3
Call #76 preset	Start Pattern 4
Call #77 preset	Call cruise 1 (default number 1~16 preset)
Call #78 preset	Call cruise 2 (default number 17~32 preset)
Call #79 preset	Call cruise 3 (default number 33~48 preset)
Call #80preset	Call cruise 4 (default number 49~64 preset)
Call #81 preset	Camera IR-CUT switch
Call #82 preset	Call all valid presets cruise
Call #83 preset	Call 250° scan

Call #95preset	Open main menu (Same response as "Set")

APPENDIX III Trouble Shooting

Troubles	Reason	Solution
No action when power on	1. The power supply is not connected correctly. 2. The fuse is broken.	1. Correct the connection. 2. Check the power supply LED power indicator. 3. Replace the fuse.
Self-testing and image are normal but the dome is out of control	1. The dome DIP switch setting is incorrect. 2. RS485 cable is disconnected or reversed. 3. Control device is not properly configured.	1. Confirm DIP settings on camera power up screen. 2. Reset the DIP Switch according to the DIP switch chart. 3. Check the wiring. 4. Check the control device settings
Some function is out of control	1. RS485 communication signal is not balance. 2. Control protocol is not compatible.	1. Connect 120Ω resistor to the RS485 line. 2. Change protocol type.
Unclear image	1. Focus is in manual state. 2. Digital Zoom is on and in full ratio (If applicable) 3. Dome cover is dirty.	1. Reset the focus mode to Auto. 2. Cancel/reduce digital zoom. 3. Clean the dome cover.
No night vision	1. Camera is in Color mode. 2. backlight on the top or back of the dome camera	1. Reset the day/night function to Auto. 2. Remove the direct light source.

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Faster movements, higher accuracy, HD video performance, and easier installation.