USER MANUAL

Portable All-Condition Rugged PTZ Camera

(Thermal Imaging Version)

Safety Notes

Thank You for Choosing Our Portable All-Condition Rugged PTZ Camera!

When you open the box:

1. Check that the packing and the contents are not visibly damaged. Contact the retailer immediately if any parts are either missing or damaged.

2. Make sure if the contents are all included as per the packing list.

3. Do not attempt to use the device with missing or damaged parts. Send the product back in its original packing if it is damaged.

[Note] The information contained in the document is subject to change without notice.

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Safety Notes --- Important!!!

The following important notes must be followed carefully to run the camera and respective accessories in total safety. The camera and relative accessories are called video system in this section.

[Note] Do not point the camera modules to the sunlight. Otherwise, serious damage to the PTZ camera may occur.

- Before installing the camera, please read this manual carefully; when installing please follow instructions of installation indicated in this manual. Please keep this manual for future use.
- The following installation should be performed by qualified service personnel or system installers in accordance with all local rules.
- Before powering on the camera, please check the power voltage carefully. Make sure that you are using the right power source.
- Please put the power cable, video cable and control cable in safe place.
- Do not operate the camera beyond the specified temperature and humidity. The camera's working temperature range is between -45℃~+55℃. The ambient humidity range is less than 95％.
- When transporting, avoid violent shake or force to the camera.
- To prevent electric shock, do not remove screws or covers of the camera. There are no self-serviceable parts inside. Refer to qualified service personnel for servicing.
- Video cable and RS485 cable should be far away from other cables. Shielded and independent wiring is necessary for video and control cables.
- Never aim the lens of the camera at the sun or other extremely bright objects. Otherwise, it may cause damage.
- When cleaning the camera, please use soft cloth. If the camera is very dirty, wipe it off gently with a soft cloth moistened with a weak solution of water and a neutral kitchen detergent. Wring all liquid from the cloth before wiping the camera, then wipe off all remaining dirt with a soft, dry cloth. Use lens cleaning paper to clean the lens.
- Do not move the camera module manually. In doing so would result in malfunction of the camera. Do not hold the camera module when carrying the video camera.
- Make sure the camera is far away from area where radiation, X-rays, strong electric waves, or magnetism is generated.

PATC series Thermal imaging system camera is designed for important video surveillance application such as Police, Rescue, Border Patrol, Marine, etc. (fixed and mobile video surveillance application.) It consists of: thermal imaging sensor, high resolution zoom module, precise PTZ system, optional damping systems. It ensures clear view of details under total dark and/or foggy environment.

Thermal Imaging Sensor

Built-in Un-Cooled αSi thermal imaging sensor, 384×288, provide clear view in total darkness.

Ex-View HAD CCD Modules

The 28X/36X SONY Ex-View HAD CCD modules provide high resolution quality video effect.

Full Aluminum PTZ Case

The case with high strength is full weather proof, suitable for various tough applications such as rugged roads, sea, storm weather etc.

New Drive Mechanism

The PTZ camera employs new drive system with high precision and higher holding torque. It does not generate offset during positioning of Pan and Tilt.

Easy Installation Mounts

The fixed mount can easily fix the PTZ camera firmly onto a metal surface. Meanwhile user can easily carry the PTZ camera with the handle at the back side.

Features

- Built-in 382*288 full time high sensitive thermal imager, provide clear view under total darkness;
- Integrated HAD 28X zoom module, 550 TVL, 0.0015 Lux
- Aluminum PTZ case with high strength, special Fabrication Processing, full weather proof;
- Fully sealed design, IP index up to IP67, built-in surge and lighting strike protection device;
- Built-in integrated heating and defogging device, working temperature range -45℃ ~ +55℃;
- 3 video outputs: thermal video, daylight video and switch video;

- Precise PTZ system with high precision and higher holding torque, PTZ positioning precision up to +/-0.05°;
- Protocol & Baud rate self-adaptive, soft address supported, convenient for use;
- Optional damping system, for tough applications;
- Digital image stabilization;
- Image flip for stand / ceiling mount;
- Video freeze;
- Wide Dynamic Range (WDR);
- Day/night (ICR);
- 10.8~28V voltage input;
- Auto flip;
- Auto power-off with low power supply.

Functions

Soft Address

The camera address can be programmed with built-in OSD menu or a preset command, and the user does not need to dismount the camera from field or do any screw work.

Self-Adaption of Baud Rate and Protocol

The camera can automatically identify the protocol and baud rate of the controller and adapt the camera setting accordingly, with no manual DIP Switch involved.

Day/Night Function

The IR cut filter of camera module inside the camera can be removed by sending special command, so that the camera can change from color to mono. The picture is clear even if the illumination is as low as 0.01Lux.

Save/Call Preset

Preset function is that dome saves current horizontal angle and title angle of pan/tilt, zoom and position parameters into memory. When necessary dome calls these parameters and adjusts

Pan/Tilt and camera to that position. User can save and call presets easily and promptly by using keyboard controller or infrared controller. The camera supports up to 256 presets.

Zoom control

User can adjust zoom wide or tele by controller and get desired image.

IRIS control

System defaults Auto IRIS. Camera can adjust immediately according to the alteration of back ground illumination so that a lightness steady image can be achieved.

You may adjust IRIS by controller to get required image brightness, and call back Auto IRIS by controlling the joystick.

Auto White Balance

Camera can automatically adjust white balance (WB) according to the alteration of background lightness to give a true color image.

Back Light Compensation (BLC)

If a bright backlight presents, the subjects in the picture may appear dark or as a silhouette. Backlight compensation enhances objects in the center of the picture. The camera uses the center of the picture to adjust the IRIS. If there is a bright light source outside this area, it will wash out to white. The camera will adjust the IRIS so that the object in the sensitive area is properly exposed.

Auto Cruise

The preset position is programmed to be recalled in sequence. This feature is called auto cruise.

Auto, Random and Frame Scan

Auto Scan: Make the camera scan 360° ranging from the current position.

Random Scan: Make the camera scan 360º ranging from the current position, pause at every 108 º.

Frame Scan: Make the camera scan between two set positions.

[Note] For Frame Scan: The zoom at two limits shall be programmed the same.

Image Flip

Enable you to view image easily when PTZ is either installed on roof of a car or is mounted on the ceiling.

Auto Flip

When the camera tilts downward and goes just beyond the vertical angle, the camera rotates 180º. When the camera rotates (flips), the camera starts moving upward as you continue to hold joystick in the down position. Once you let go of the joystick after the dome rotates, joystick control returns to normal operation. The auto-flip feature is useful for following a person who passes directly beneath the camera.

Technical Data

Model	PATC-G4028
Thermal Imaging Camera	
Sensor Type	Un-Cooled αSi
Resolutions	384X288
Sensor Size	25μm×25μm
Focal	40mm
Focus	Electronic
IRIS	1.0
FOV	13.7°x10.3°
Detecting Range	2000m (Vehicle) 800m (Man)
Recognition Range	800m (Vehicle) 400m (Man)
Digital Zoom	1X, 2X, 4X
Video Display	White / Black
Daylight Imaging Camera	
Video Sensor	1/4" SONY EX-View HAD CCD
Effective Pixel	PAL:752(H)×582(V);NTSC:768(H)×494(V)
Resolution	550 TVL
Video System	PAL/NTSC
Optical Zoom	36x
Digital Zoom	12X
Lens	f=3.4mm(wide)-122.4mm(tele) F1.6-4.5
View Angle	57.8°(wide)–1.7°(tele)
Min Illumination	0.01lux
WDR	No
WB	Auto
Focus	Auto / Manual
IRIS	Auto / Manual
S/N Ratio	Not less than 50 dB
BLC	On/Off
Digital Image Stabilization	On/Off
DNR	1-5 Steps / Off
Day / Night	Auto / Manual
PTZ	
Pan Range	360° Continuous
Pan Speed	Control speed: 0.04° ~90°/s; Preset speed: 120°/s
Tilt Range	-15°~90°(Auto Flip)

Video System	PAL / NTSC
Tilt Speed	Control speed:0.3° ~60°/s, adjustable; Preset speed:90°/s
Preset	256
Preset Precision	±0.05°
PTZ stability	Two Degrees of Freedom gyroscope PTZ stability control system (Optional)
General	
Video Output	1Channel Thermal Imaging Video; 1Channel Daylight Video; 1Channel Switch Video;
Address	0~255
Power	35W/50W (Heater On)
Working Tem.	-45℃~+55℃
IP Index	IP67
Anti-Vibration	Pan 9g, Tilt 15g
Wind Resistance	180 km/h
Dimension	Φ190(mm)×275(mm) w/o damper Φ190(mm)×300(mm) with damper (optional)
Weight	6KGS w/o damper 7 KGS with damper (optional)

Table 1: Technical Data

[Note] The specifications are subject to change without notice.

This section contains detailed instructions for installing the camera. These instructions assume that the installer has a good knowledge of installation techniques and is capable of adopting safe installation methods.

Dip Switch

The factory default is:

Camera Address	Protocol	Baud Rate
1	Pelco D	2400bps

The camera can detect and auto program its protocol (Pelco D, Pelco P) as well as baud rate (2400bps, 4800bps, 9600bps, 19200bps) as per the whole video system.

Only the camera address setting is necessary. There are two ways to program camera address:

- Soft address: via special preset functions (see Section 5.1 Special Control Panel Commands)
- DIP Switch: The switches to configure these settings are located on the main board inside the camera. See Fig. 1: DIP Switch.

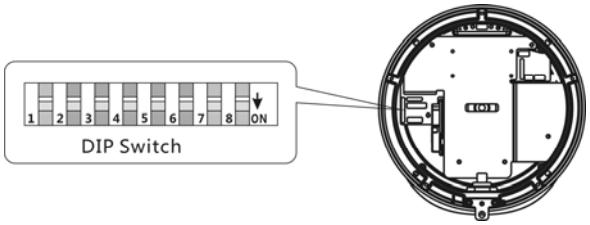


Fig. 1: DIP Switch

The setting list of the camera address is enclosed in **Annex.**.

[Note] The camera shall be rebooted after the switches are programmed.

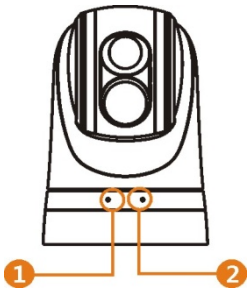
Initial Power On Test

To ensure the camera works well after installation, please power on it for an initial test with the following steps:

1. Connect the camera with correct power supply;
2. Connect control cable, video cable;
3. Power on the camera;

When the camera is powered on, the LED indicators at the front will be on.

> **[Note]** When Preset 0 is programmed, the PTZ will go to preset 0 on power up. If Preset 0 is not programmed, the PTZ will go to Home position, i.e. the degrees of Pan/Tilt are 0.



1	Power (Constantly On)
2	Data (Flashing)

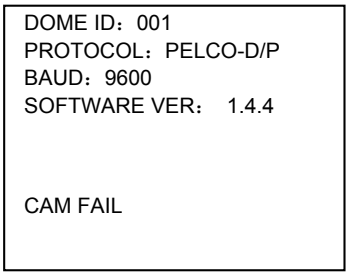
Fig. 2: LED Indicators

The camera will run a calibration procedure on power up and show the following messages on screen.

```
DOME  ID：001
PROTOCOL：PELCO-D/P
BAUD：9600
SOFTWARE  VER：  1.4.4
```

Fig. 3: On Screen Messages at Power Up

If the camera fails at initialization, the following message will show on screen.



Please refer to the following code to check the failures:

PAN FAIL	Failure of pan initialization
TILT FAIL	Failure of tilt initialization
CAM FAIL	Failure of zoom camera initialization
P/T FAIL	Failure of pan and tilt initializations
T/Z FAIL	Failure of tilt and zoom camera initializations
P/T/Z FAIL	Failure of pan, tilt and zoom camera initializations

[Note] In case of P/T failure:

If the ambient temperature is below 5℃, the heater will be turned on and the PTZ camera will do the initialization again.

If the ambient temperature is above 5℃, please reboot the PTZ camera.

Installation Place

Make sure the installation place has enough space, support strength to install the whole PTZ camera and its accessories.

Mounts

The PTZ camera provides fixed mounts as standard, and damping system as optional.

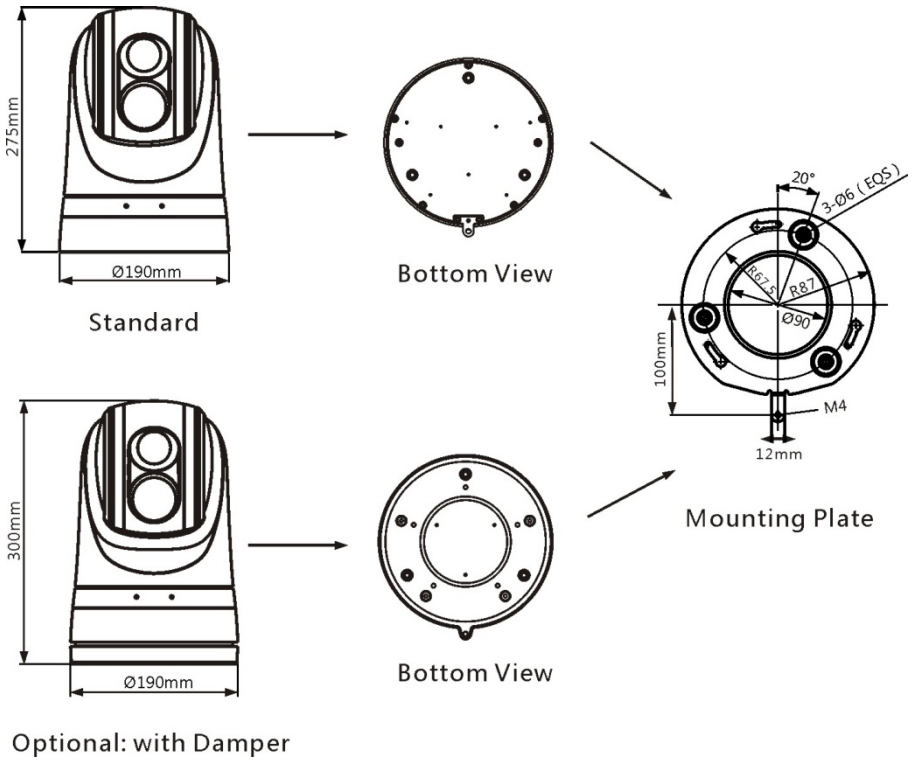


Fig. 4: Fixed Mounts (with and w/o damping system)

Installation

To set the baud rate, protocol and camera hard address:

1. Remove the PTZ bottom plate;
2. Set DIP Switch for baud rate, protocol and camera address;
3. Fix the bottom plate. Make sure the sealing is well installed.

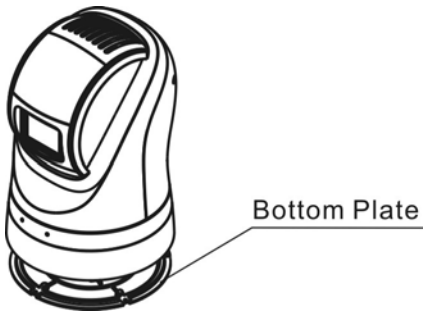


Fig. 5: Bottom Plate

4. Take the installation plate out of packing and fix it to the target place as per the plate dimensions with correct screws.

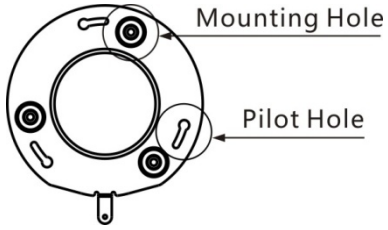


Fig. 6: Installation Plate

5. Put the camera onto the installation plate. Make sure three installation bolts are in position with the fixing holes on the plate. Rotate the camera clockwise.

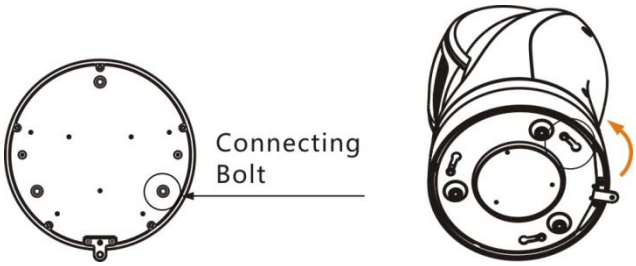


Fig. 7: Mount the Installation Plate

6. Fix the camera to the installation plate with a screw.

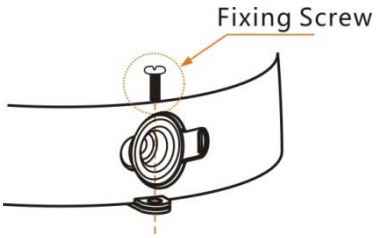


Fig. 8: Fix the Installation Plate

Camera Cable Package

Connect the cable with the right pins as per following pictures.

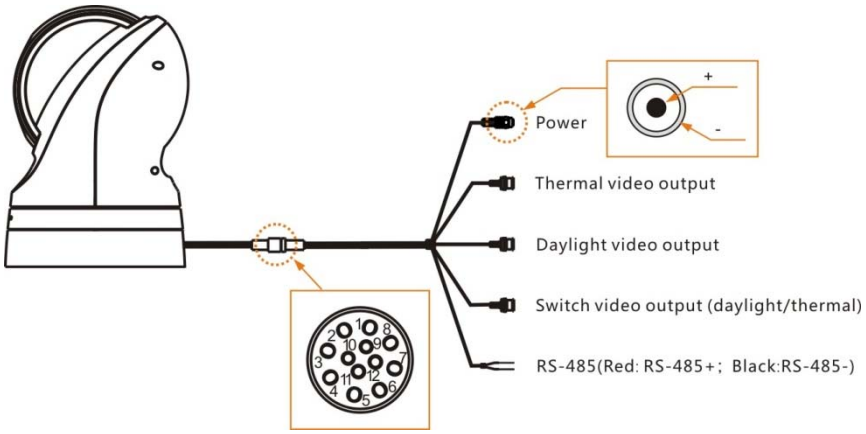


Fig. 9: Cable Package

12Pin Cable: Pin Definition			
1	Daylight Video -	7	RS485 +
2	Daylight Video +	8	RS485 -
3	DC12V	9	Thermal Video -
4	DC12V	10	Thermal Video +
5	Switch Video -	11	GND
6	Switch Video +	12	GND

[Note] Please make sure the camera is working with a right power supply. Wrong cable connection may cause damage to the device.

Special Control Panel Commands

The camera can be programmed and operated by using various quick control panel commands.

Preset Number	Function	Default Value
≤20 ~ ≥80	General preset positions	***
GO TO 21	Manual switch between daylight video and thermal video.	***
GO TO 22	Auto switch between daylight video and thermal video.	√
GO TO 23	Turn on/off Wide Dynamic Range (WDR).	Off
GO TO 24	Auto WDR.	Off
GO TO 25	Turn on/off Back Light Compensation (BLC).	Off
GO TO 26	Turn on/off Image Flip;	Off
GO TO 27	Turn on/off Digital Noise Reduction (DNR).	Off
GO TO 28	Turn on/off video freeze.	Off
GO TO 29	Turn on/off Digital Image Stabilization (DIS).	Off
GO TO 37	Turn on Defogger	***
GO TO 38	Turn off Defogger	√
GO TO 39	Turn on/off Digital Zoom	Off
GO TO 40	Turn on/off OSD	On
GO TO 42	Set Left Boundary Of Frame Scan	***
GO TO 43	Set Right Boundary Of Frame Scan	***
GO TO 48	Turn on Random Scan (360° Scan, pause at every 108°)	***
GO TO 49	Turn on Frame Scan between two set presets.	***
GO TO 50	Turn on Cruise	***
GO TO 51	Turn on Auto Scan(360° Scan)	***
GO TO 52	Clear All Presets	***
GO TO 53	Restore factory default	***
GO TO 54	Switch between Black Hot and White Hot	***
GO TO 56	Autocorrect thermal video	***
GO TO 57	Turn on Screen Tips / Page Down Of Screen Tips	***
GO TO 58	Turn off Screen Tips	***
GO TO 59	PTZ Speed - Fast	***
GO TO 60	PTZ Speed - Normal	√
GO TO 61	PTZ Speed - Slow	***
GO TO 62	Decrease The Camera Address By -1	***
GO TO 63	Increase The Camera Address By +1	***
GO TO 65	Move the thermal camera to safe position	***
GO TO 66	Move the thermal camera out of safe position	***
GO TO 76	Daylight video and thermal video zoom separated	√
GO TO 77	Daylight video zoom along with thermal video	***

Table 2 Special Commands

means the function is not on or programmed; √ means the function is set as default;

On means the function is on as default; Off means the function is off as default.

[Note] The camera can automatically detect and set protocol and baud rate as per the whole system. There may be no response to the first several operations after the power on as it is detecting the setting.

Operation

Video Switch (Daylight Video and Thermal Video)

Auto Mode:

The default mode is auto. The PTZ will switch between daylight video and thermal video as per the lighting conditions. Auto mode can also be activated via preset 22. At this mode, the commands of preset 23~29, 39, 40, 57, 58 are disabled.

Manual Mode:

Call Preset 21 to turn on the manual mode. The PTZ will switch between daylight video and thermal video manually.

Soft Address

The camera address can be changed via presets 62 and 63. The new address will take effect after the camera is rebooted.

Digital Image Stabilization (DIS)

The function is off as default. It can be turned on/off by calling preset 29.

It is used when the camera is used in a vibration environment, to compensate the vibration in video.

Digital Noise Reduction

The function is off as default.

When the camera is in color mode, it is recommended to turn off the function, or there will be video trails.

When the camera is in mono mode, call preset 27 to turn on/off the function. There are 1~5 steps from low to high. The higher the level is, the more video trails there are.

Manual Focus of Thermal Camera

If the video is still not properly focused, repeat the above or press NEAR/FAR buttons on the controller for a manual focus.

Image Freeze

Call Preset 28 to turn on/off the function. When it is on, during a regular preset call (see following picture), the video will be frozen at point A till Point B. At Point B, the video will be displayed normally.

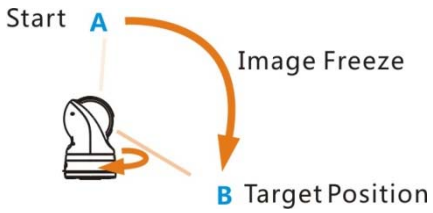


Fig. 10: Image Freeze

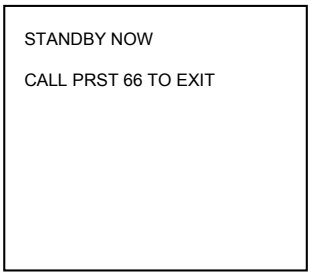
Defogging

Call Preset 37 to turn on the function. There will be “DEFOGGING” flashing at top of the screen. When the fog is cleared, turn off the function in time in case the camera temperature is getting too high.

Call Preset 38 to turn off the function. The “DEFOGGING” at top of the screen will disappear from the screen.

Safe Position of Thermal Camera

When the PTZ camera is stand by, call preset 65 and the PTZ camera will tilt to -90Deg and hide the thermal camera to a safe position. The PTZ camera does not respond to any command until preset 66 is called and the thermal camera moves away from the position.



Trouble Shooting

Problems	Possible Causes	Solutions
No action when powered on	Power supply failure	Replace power supply
	Wrong connection of the power	Check & reconnect the cables
Abnormal self-test with motor noise	Mechanical failure	Repair
	Camera inclined	Reinstall the camera
	Inadequate power supply	Replace the power supply
Normal self-test but no images	Video signal failure	Reinstall camera
	Wrong connection of the video	Check & reconnect the cables
	Camera damaged	Replace the camera
Normal self-test but out of control	Wrong connection of RS485 cable	Check and reconnect the cable
	Wrong camera address set	Check and reset the Switches
Vague image	Bad connection of the video	Check and reconnect the cables
	Inadequate power supply	Replace the power supply
PTZ camera out of control	Self test error	Restart the camera
	Wrong connection of RS485 cable	Check and reconnect the cables

Table 3 Trouble Shooting

Annex: Dip Switch – Camera Address

ADDRESS	1	2	3	4	5	6	7	8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
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
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF

39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
61	ON	OFF	ON	ON	ON	ON	OFF	OFF
62	OFF	ON	ON	ON	ON	ON	OFF	OFF
63	ON	ON	ON	ON	ON	ON	OFF	OFF
64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
71	ON	ON	ON	OFF	OFF	OFF	ON	OFF
72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
75	ON	ON	OFF	ON	OFF	OFF	ON	OFF
76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
77	ON	OFF	ON	ON	OFF	OFF	ON	OFF
78	OFF	ON	ON	ON	OFF	OFF	ON	OFF

79	ON	ON	ON	ON	OFF	OFF	ON	OFF
80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
83	ON	ON	OFF	OFF	ON	OFF	ON	OFF
84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
85	ON	OFF	ON	OFF	ON	OFF	ON	OFF
86	OFF	ON	ON	OFF	ON	OFF	ON	OFF
87	ON	ON	ON	OFF	ON	OFF	ON	OFF
88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
89	ON	OFF	OFF	ON	ON	OFF	ON	OFF
90	OFF	ON	OFF	ON	ON	OFF	ON	OFF
91	ON	ON	OFF	ON	ON	OFF	ON	OFF
92	OFF	OFF	ON	ON	ON	OFF	ON	OFF
93	ON	OFF	ON	ON	ON	OFF	ON	OFF
94	OFF	ON	ON	ON	ON	OFF	ON	OFF
95	ON	ON	ON	ON	ON	OFF	ON	OFF
96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
99	ON	ON	OFF	OFF	OFF	ON	ON	OFF
100	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
101	ON	OFF	ON	OFF	OFF	ON	ON	OFF
102	OFF	ON	ON	OFF	OFF	ON	ON	OFF
103	ON	ON	ON	OFF	OFF	ON	ON	OFF
104	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
105	ON	OFF	OFF	ON	OFF	ON	ON	OFF
106	OFF	ON	OFF	ON	OFF	ON	ON	OFF
107	ON	ON	OFF	ON	OFF	ON	ON	OFF
108	OFF	OFF	ON	ON	OFF	ON	ON	OFF
109	ON	OFF	ON	ON	OFF	ON	ON	OFF
110	OFF	ON	ON	ON	OFF	ON	ON	OFF
111	ON	ON	ON	ON	OFF	ON	ON	OFF
112	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
114	OFF	ON	OFF	OFF	ON	ON	ON	OFF
115	ON	ON	OFF	OFF	ON	ON	ON	OFF
116	OFF	OFF	ON	OFF	ON	ON	ON	OFF
117	ON	OFF	ON	OFF	ON	ON	ON	OFF
118	OFF	ON	ON	OFF	ON	ON	ON	OFF

119	ON	ON	ON	OFF	ON	ON	ON	OFF
120	OFF	OFF	OFF	ON	ON	ON	ON	OFF
121	ON	OFF	OFF	ON	ON	ON	ON	OFF
122	OFF	ON	OFF	ON	ON	ON	ON	OFF
123	ON	ON	OFF	ON	ON	ON	ON	OFF
124	OFF	OFF	ON	ON	ON	ON	ON	OFF
125	ON	OFF	ON	ON	ON	ON	ON	OFF
126	OFF	ON	ON	ON	ON	ON	ON	OFF
127	ON	ON	ON	ON	ON	ON	ON	OFF
128	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
129	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
130	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
131	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
132	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON
134	OFF	ON	ON	OFF	OFF	OFF	OFF	ON
135	ON	ON	ON	OFF	OFF	OFF	OFF	ON
136	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
137	ON	OFF	OFF	ON	OFF	OFF	OFF	ON
138	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
139	ON	ON	OFF	ON	OFF	OFF	OFF	ON
140	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
141	ON	OFF	ON	ON	OFF	OFF	OFF	ON
142	OFF	ON	ON	ON	OFF	OFF	OFF	ON
143	ON	ON	ON	ON	OFF	OFF	OFF	ON
144	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON
146	OFF	ON	OFF	OFF	ON	OFF	OFF	ON
147	ON	ON	OFF	OFF	ON	OFF	OFF	ON
148	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
149	ON	OFF	ON	OFF	ON	OFF	OFF	ON
150	OFF	ON	ON	OFF	ON	OFF	OFF	ON
151	ON	ON	ON	OFF	ON	OFF	OFF	ON
152	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
153	ON	OFF	OFF	ON	ON	OFF	OFF	ON
154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
155	ON	ON	OFF	ON	ON	OFF	OFF	ON
156	OFF	OFF	ON	ON	ON	OFF	OFF	ON
157	ON	OFF	ON	ON	ON	OFF	OFF	ON
158	OFF	ON	ON	ON	ON	OFF	OFF	ON

159	ON	ON	ON	ON	ON	OFF	OFF	ON
160	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
161	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
162	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
163	ON	ON	OFF	OFF	OFF	ON	OFF	ON
164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
165	ON	OFF	ON	OFF	OFF	ON	OFF	ON
166	OFF	ON	ON	OFF	OFF	ON	OFF	ON
167	ON	ON	ON	OFF	OFF	ON	OFF	ON
168	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
169	ON	OFF	OFF	ON	OFF	ON	OFF	ON
170	OFF	ON	OFF	ON	OFF	ON	OFF	ON
171	ON	ON	OFF	ON	OFF	ON	OFF	ON
172	OFF	OFF	ON	ON	OFF	ON	OFF	ON
173	ON	OFF	ON	ON	OFF	ON	OFF	ON
174	OFF	ON	ON	ON	OFF	ON	OFF	ON
175	ON	ON	ON	ON	OFF	ON	OFF	ON
176	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
177	ON	OFF	OFF	OFF	ON	ON	OFF	ON
178	OFF	ON	OFF	OFF	ON	ON	OFF	ON
179	ON	ON	OFF	OFF	ON	ON	OFF	ON
180	OFF	OFF	ON	OFF	ON	ON	OFF	ON
181	ON	OFF	ON	OFF	ON	ON	OFF	ON
182	OFF	ON	ON	OFF	ON	ON	OFF	ON
183	ON	ON	ON	OFF	ON	ON	OFF	ON
184	OFF	OFF	OFF	ON	ON	ON	OFF	ON
185	ON	OFF	OFF	ON	ON	ON	OFF	ON
186	OFF	ON	OFF	ON	ON	ON	OFF	ON
187	ON	ON	OFF	ON	ON	ON	OFF	ON
188	OFF	OFF	ON	ON	ON	ON	OFF	ON
189	ON	OFF	ON	ON	ON	ON	OFF	ON
190	OFF	ON	ON	ON	ON	ON	OFF	ON
191	ON	ON	ON	ON	ON	ON	OFF	ON
192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
195	ON	ON	OFF	OFF	OFF	OFF	ON	ON
196	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
197	ON	OFF	ON	OFF	OFF	OFF	ON	ON
198	OFF	ON	ON	OFF	OFF	OFF	ON	ON

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

239	ON	ON	ON	ON	OFF	ON	ON	ON
240	OFF	OFF	OFF	OFF	ON	ON	ON	ON
241	ON	OFF	OFF	OFF	ON	ON	ON	ON
242	OFF	ON	OFF	OFF	ON	ON	ON	ON
243	ON	ON	OFF	OFF	ON	ON	ON	ON
244	OFF	OFF	ON	OFF	ON	ON	ON	ON
245	ON	OFF	ON	OFF	ON	ON	ON	ON
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

Table 4: DIP Switch – Camera Address

Modification History

Revision	Date of Release	Modified Contents
Ver 1.0	July 1st 2012	Official release of first version
Ver 1.1	October 31 2012	Official release of second version
Ver 1.2	Jan 5th 2013	Official release of third version
Ver 1.3	Feb 18 2014	Official release of fourth version