INSTALLATION & USER MANUAL

IP Auto Tracking / High Speed PTZ Camera

Thank You for Choosing Our PTZ Camera!

When you open the box:

- ☑ Check that the packing and the contents are not visibly damaged. Contact the retailer immediately if any parts are either missing or damaged.
- ☑ Make sure if the contents are all included as per the packing list.
- ☑ Do not attempt to use the device with missing or damaged parts. Send the product back in its original packing if it is damaged.

🕮 ***The information contained in the document is subject to change without notice.***

Table of Contents

1. SAFETY NOTES --- IMPORTANT!!!

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

Use the instructions correctly and fully
Read all safety rules and instructions carefully before starting to run the video system.

Follow the instructions in the instruction manual. Pay attention to all warnings on the camera and in the instruction manual. Keep the safety notes and instructions for future reference.

Attachments & Accessories
Do not use attachments other than those recommended in the instruction manual because this could cause risks to the products. Only use the recommended accessories for the camera for installation and operation.

Protect the video system
To protect the camera, avoid installing and using it in direct sunlight or any source of bright light. Bright light, like that from a spotlight, can cause dimming and blurs. A vertical line may appear on the screen. This does not indicate a problem.

Keep it away from rain and dust. Do not touch the zoom lens with your fingers. If needed, use a soft cloth and methylated spirit to remove traces of dust. Apply a specific cap to protect the zoom lens when the camera is not in use.

Install the camera away from video interference. The pictures could present interference if the leads are arranged near a TV set or other device. Either move the leads or re-install the device to solve the problem.

Do not use any part of the video system near water, i.e. bathtubs, wash basins, sinks, tubs, on damp surfaces, near swimming pools, etc. Do not insert objects of any kind through the camera openings to avoid touch live parts: fire and electrocution risk. Do not pour any kind of liquid on the device.

A switch for performing maintenance operations on the camera must be included. Connect the camera only to the electrical power supply shown on the ratings plate. Contact your retailer if in doubt.

Lay the power wires keeping them from being trodden on or squeezed by objects placed on top of them. Pay particular attention to leads near plugs, screws and the product outlet.

Disconnect the power lead and the wiring to protect the camera during electrical storms or when it is left unattended and not used for a long time. This will prevent damage to the video system in the event of lightening or electrical line overload.

Do not overload the electrical power and the extensions to prevent the risk of fire or electrocution.

Do not place the camera near or over radiators or sources of heat. Check that the area is suitably ventilated before installing the camera inside partially closed areas (such as recesses, bookshelves and shelves).

Do not position the camera on unsteady trolleys, stands, brackets or tables. The camera could fall and severely injury adults and children in addition to seriously damaging the product.

Maintenance & Repairs
Always contact a qualified service technician to repair the camera (or any other part of the video system). Unauthorized opening or removing the lids may cause fire and electrocution risk and other dangers.

Disconnect all electrical parts from the mains before cleaning.

Uses spare parts specified by the manufacturer or spare parts with equivalent characteristics when replacements required. Unauthorized replacements can cause fires, electrical shocks and other dangers.

After any servicing intervention or repair to the video system, ask the technician to run a safety check to ensure that everything is working safely.

Damage requiring professional assistance
Disconnect the video system from the power mains and call qualified service personnel in the following cases:

- ☑ If the power lead or plug is damaged.
- ☑ If liquid or foreign objects accidentally penetrate inside the device.
- ☑ If the device was exposed to rain or water.
- ☑ If the device was dropped, subjected to heavy shocks or if the camera packaging was damaged.
- ☑ If the device performance changes considerably.

2. ABOUT THE PRODUCT

The tracking PTZ is based on our unique motion tracking technology with high position resolution, high speed, low price and selectable communication protocols. It is widely used in surveillance system as unattended CCTV device.

2.1. FEATURES

- ☑ H.264, ONVIF, Dual Stream, RTSP;
- ☑ UDP/IP, TCP/IP, DNS, PPPoE, DDNS protocols
- ☑ Max 30fps speed;
- ☑ Dual Video Output: Remote and Local;
- ☑ SD card recording supported;
- ☑ Auto tracking of moving object (auto PTZ) based on our motion tracking technology;
- ☑ Event feature: the PTZ camera automatically executes different actions on different time of weekdays and holidays;
- ☑ 360º horizontal rotation at maximum speed of 240º /sec;
- ☑ Auto cruise function with 256 preset positions;
- ☑ Built-in OSD Menu, to change dome parameter, achieve auto scan, and pattern etc;
- ☑ Camera address programmable by OSD menu;
- ☑ Features password protection to prevent unauthorized changes to the dome setting;
- ☑ Windows blanking and tracking boundary for privacy purpose;
- ☑ EasyClip installation features;
- ☑ The feature of defining specific activity when the dome parks;
- ☑ Auto-flip to follow object and surveillance of any subject that is constant and continuous;
- ☑ The speed can be adjusted automatically according to zooming times;
- ☑ Multi protocol compatible (Pelco-P, Pelco-D extended etc);
- ☑ Prime direction: the ptz can remember the current camera direction (north, south, east, west etc.);
- ☑ Resume and memory of camera position at power off;
- ☑ Alarm input, Alarm output, Alarm action.

2.2. FUNCTIONS

Object Tracking
In auto tracking mode, the camera can track a moving object in the target area with auto pan, tilt and zoom which realizes smart unattended surveillance.

Tracking Cruise
The tracking function can be activated during cruise. At a preset of the cruise list, the camera can track moving objects automatically.

Time & Event
Event is a whole set of commands for various dates. The camera automatically executes different actions on different time of weekdays, weekends and holidays. This is very practical for some routine surveillance works with different applications.

H.264
It is a standard for video compression, and is currently one of the most commonly used formats for the recording, compression, and distribution of high definition video, capable of providing good video quality at substantially lower bit rates than previous standards (i.e., half or less the bit rate of MPEG-2, H.263, or MPEG-4 Part 2), without increasing the complexity of design so much that it would be impractical or excessively expensive to implement, providing enough flexibility to allow the standard to be applied to a wide variety of applications on a wide variety of networks and systems, including low and high bit rates, low and high resolution video, broadcast, DVD storage, RTP/IP packet networks, and ITU-T multimedia telephony systems.

ONVIF
ONVIF is a global and open industry forum with the goal to facilitate the development and use of a global open standard for the interface of physical IP-based security products.

The benefits of an open standard for network video should include:

- ☑ Interoperability – products from various manufacturers can be used in the same systems;
- ☑ Flexibility – end-users and integrators are not locked within proprietary solutions based on technology choices of individual manufacturers.
- ☑ Future-proof – standards ensure that there are interoperable products on the market, no matter what happens to individual companies.
- ☑ Quality – when a product conforms to a standard, the market knows what to expect from that product.

Dual Stream
Dual stream uses the high bit-rate stream local high-definition storage, and low bit rate stream for network transmission. It can achieve different needs of video quality under different network conditions with good balance of high local video quality and efficient network transmission.

SD Card
SD card is a local recording function supported by the IP module. It provides a simple and flexible way of local storage with no DVR/NVR involved. It also supports recording on motion detection.

Pelco D Extended
It is a protocol more powerful than regular Pelco D. It gives two-way communication between the controller and the PTZ: the controller sends commands to the PTZ and also the PTZ sends back the current device status. In this case, the control is more precise and efficient.

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

Wide Dynamic Range (WDR)
A camera is intended to provide clear images even under back light circumstances where intensity of illumination can vary excessively, when there are both vary bright and vary dark areas simultaneously in the field of view. WDR enables the capture and display of both bright areas and dark areas in the same frame, in a way that there are details in both areas, i.e. bright areas are not saturated, and dark areas are not too dark.

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.

🕮 *Wide Dynamic Range (WDR) and Day/Night are based on the relative modules. Please refer to technical data.*

Proportional Pan
Proportional pan automatically reduces or increases the pan and tilt speeds in proportion to the zooming times. At telephoto zoom settings, the pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image from moving too fast on the monitor when there is a large amount of zoom.

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.

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/Zoom 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.

Lens Control
1) Zoom control
User can adjust zoom wide or tele by controller to get desired image.

2) Focus control
System defaults Auto Focus mode, that is, the lens and camera will automatically adjust the focus to get the best image.

Focus can also be controlled manually from the controller if required. Press Focus Near or Focus Far key to manually focus. Focus can be manual via keyboard or matrix, please refer to control keyboard or matrix operation manual for detailed operation. When adjusting position is set with focus status, it goes back to auto focus.

The camera will NOT auto focus in the following status.

- ☑ Target is not in the center of image.

- ☑ Targets are in near and far at the same time.
- ☑ Target is of strong light object. Such as spotlight etc.
- ☑ Target is behind the glass with water drop or dust.
- ☑ Target moves too fast.
- ☑ Large area target such as wall.
- ☑ Target is too dark or vague.

3) 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. Up to 30 presets can be saved in each cruise tour.

Patterns
A pattern is a saved, repeating, series of pan, tilt, zoom and preset functions that can be recalled with a command from a controller or automatically by a programmed function (alarm action or park action or power-up action).

Auto, Random and Frame Scan
Auto Scan: Make the camera scan 360º ranging from the current position.
Random Scan: Make the camera random scan 360º ranging from the current position.
Frame Scan: This feature freezes the scene on the monitor when going to a preset. This allows for smooth transition from one preset scene to another.

Zones Setting
A zone is a pan area, defined by a left and right limit, on the 360º pan plane. The camera has eight zones, each with a 6-character label.

Alarms Input
The camera has four alarm inputs, which can be programmed as high, medium or low priority. When an alarm is received, an input signal to the camera triggers the user-defined action (go to preset, run pattern, etc.) programmed for the alarm.

Auxiliary Output
An auxiliary output is a programmable signal from the camera back box that can trigger another device to operate. An auxiliary output is programmable to trigger from an alarm or from a controller.

Password Protection
The camera features password protection to prevent unauthorized changes to the camera settings. You can open the System Information and Display Setup Screens, but cannot access any of the camera Settings menus.

Windows Blanking
A set window can be saved so that it is the only blanked tilt area of the scene. All other parts of the tilt area of the scene will be visible.

🕮 *Windows blanking is only available for Sony Modules at present.*

2.3. TECHNICAL PARAMETERS

2.3.1. SONY MODULES

Model	FCB-EX45C (18X)	FCB-EX480C (18X)	FCB-EX980 (26X)	FCB-EX1010 (36X)
Function	Object auto tracking			

Signal Format	PAL/NTSC			
Image Sensor	¼ inch color CCD			
H. Resolution	480 TVL			530TVL
Video Out	1.0±0.2V_{P-P}			
P/T Speed	Pan:0.05º～240º/sec;Tilt:0.03º～160º/sec			
S/N Ratio	≥50DB			
AGC	Auto/Manual			
BLC	Auto/Manual			
Sensitivity	1Lux	0.01Lux		
IR cut Filter	No	Yes		
Wide Dynamic Range (WDR)	No			Yes
LENS	F1.4-F3.0 f=4.1-73.8mm		F1.6-F3.8 f=3.5-91mm	F 1.6-4.5 f=3.4-122.4mm
Optical Zoom	18X		26X	36X
Digital Zoom	12X			

Table 1: Sony Modules

2.3.2. HITACHI MODULES

Model	**VK-S858 (23X)**	**VK-S634 (30X)**	**VK-S654 (35X)**
Function	Object auto tracking		
Signal Format	PAL/NTSC(selectable)		
Image Sensor	¼ inch color CCD		
H. Resolution	540TVL		
Video Out	1.0±0.2V_{P-P}		
P/T Speed	Pan:0.05º～240º/sec;Ttil:0.03º～160º/sec		
S/N Ratio	≥50DB		
AGC	Auto/Manual		
BLC	Auto/Manual		
Sensitivity	0.01Lux	0.01Lux	
IR cut Filter	Yes		
Wide Dynamic Range (WDR)	Yes		
LENS	F1.6-F3.7 f=3.6-82.8mm	F1.4- F4.6 f=3.4-102mm	F1.4- F4.2 f=3.4-119mm
Optical Zoom	23X	30X	35X
Digital Zoom	8X		

Table 2: Hitachi Modules

🕮 *Other branded modules like Samsung, LG, CNB, Yoko etc are supported.*

🕮 *The specifications are subject to change without notice.*

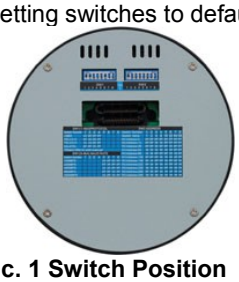
3. INSTALLATION

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.

This manual of IP part is included in the disc attached. Please refer to the disc manual regarding client software and other IP-related operation.

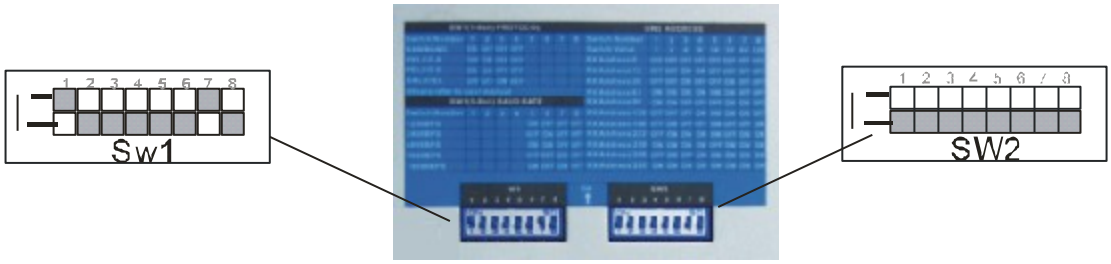
3.1. DIP SWITCH SETTING

Before installing the camera drive, check the DIP switches; configure the receiver address, communication protocol, and baud rate setting. Pic. 1 shows switches position and default settings. SW1 switches (1bit) and SW2 switches (1, 2, and 7 bit) are set to the ON position. For normal user, setting switches to default position is enough.



Pic. 1 Switch Position

The camera can be controlled via various communication protocols by setting SW1 switches(1, 2, 3,and 4) and operate at 1200bps, 2400bps, 4800bps, 9600bps and 19200bps baud rate by setting SW1 switches(5, 6, 7, and 8). Do not set the switches to reserved position. Pic. 2 shows the default settings for the DIP switches.



Pic. 2 Default settings of DIP switches

Please refer to **Table 39: SWITCH1 SETTING** and **Table 40: SWITCH2 SETTING** in **Section 6.1** to set baud rate, and communication protocol type and camera address.

Always use the "PELCO P" or "PELCO D" protocols.

Do not use address "0" with the "PELCO P" or "PELCO D" protocols.

3.2. INSTALLATION

The camera has four types of mountings: wall mount, in-ceiling mount, surface mount, and pole mount. Please make sure which type you are installing.

3.2.1. WALL MOUNT INSTALLATION (WITH POWER BOX)

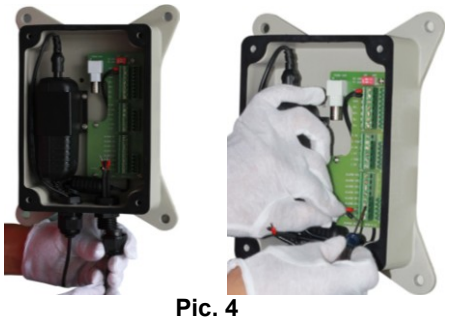
Step 1. **Install the power box on wall**

Pic. 3

Install the power box to the wall with 4 screws.

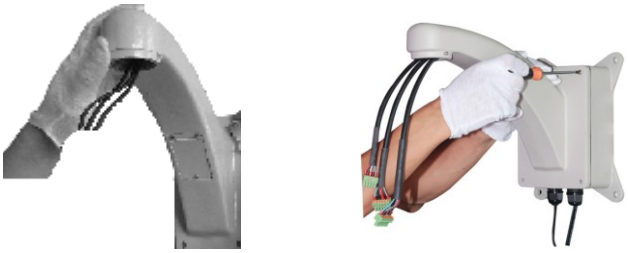
When installing outdoors, make sure installation is properly sealed to keep moisture out.

To install the ptz camera with no power box, install the bracket directly onto the wall and then go to Pic 6.



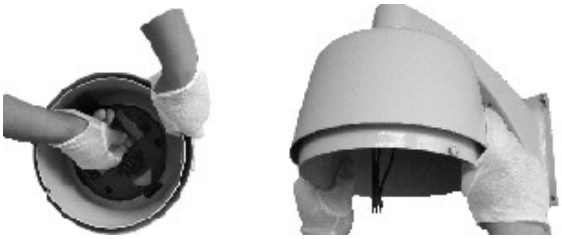
Pic. 4

Pull the cables (of video, alarm, control etc.) through the cable hole of the power box and do necessary connections. The cables are supplied by user.



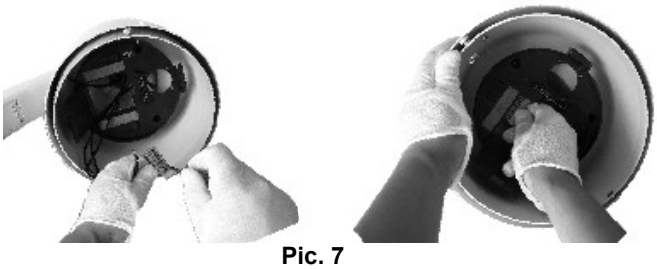
Pic. 5

Refer to the instructions supplied with the bracket. Take out cables for the dome through the bracket. And install the bracket to the power box. See Pic. 5



Pic. 6

Press the thumb fastener and open the hinged door to the back box. Take out hole of pin. Screw the metal cover into the bracket. See Pic. 6.

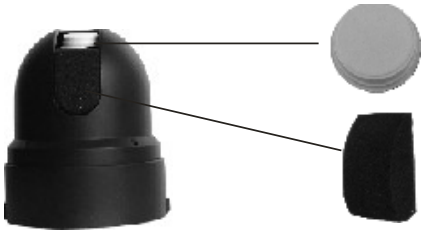


Pic. 7

Connect cables to hole of pin. Insert the pin inside the back box. When finished, close the door to the back box and turn on the power. The LED will light up. See Pic. 7.

If the LED does not light up, refer to Section 5: Trouble Shooting.

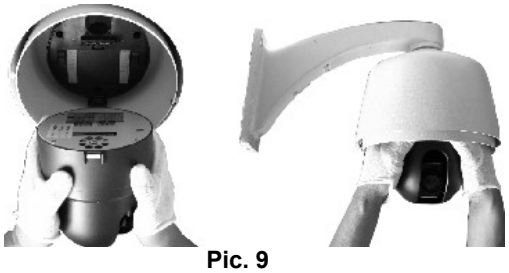
Step 2. <u>Install dome drive</u>



Pic. 8

Set the DIP switches for SW1 and SW2 at the bottom of the dome drive for the appropriate receiver address, communication protocol, and baud rate. Refer to the labels on the dome drive or DIP SWITCH SET at the beginning of this manual.

Remove cover of camera and sponge. See Pic. 8.



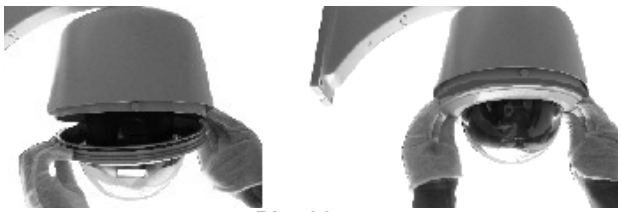
Pic. 9

Line up link card and faucet of the back board of the dome. Push the dome drive in. See Pic. 9.

Step 3. <u>Install lower dome.</u>

Pic. 10

Take out a screw from lower dome. Link cables, screw, and lower dome. See Pic. 10.



Pic. 11

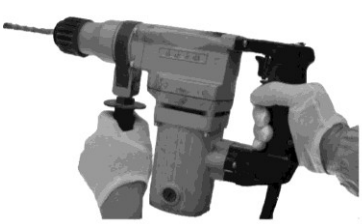
Line up the mounting screw holes, and install the two mounting screws. Push the lower dome inside the back box. See Pic. 11.

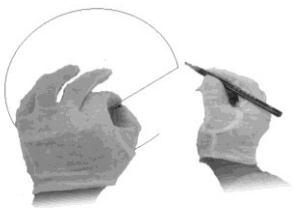
Pic. 12

Screw the two mounting screws, and screws in the bracket. See Pic. 12.

3.2.2. IN-CEILING MOUNT INSTALLATION

Step 1. <u>Prepare In-ceiling</u>





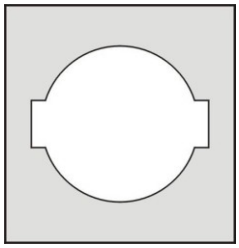
Pic. 13

Locate the center point of the in-ceiling mounting location. Insert the compass tool into the hole. Draw a circle on the ceiling using the compass tool and a pencil. See Pic. 14 (Left).

Cut the circle out of the ceiling tile. See Pic. 14 (Right).

Pic. 14

Put the reinforcing metal plate (see following pic.) on top of the ceiling (behind the ceiling) with the two circles aligned vertically.



Pic. 15

Step 2. **<u>Install back box</u>**

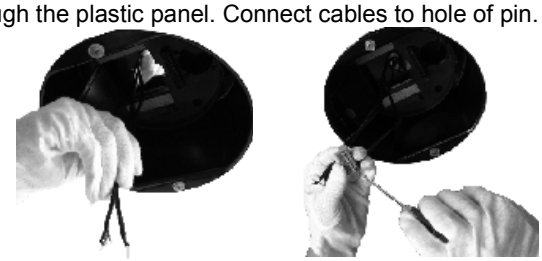
Pic. 16

Take out bracket from back box. Insert the back box into ceiling. See Pic. 16.

Install a safety chain/cable (not supplied) that can stand up to 32 pounds (14.6kg). Press the thumb fastener and open the hinged door to the back box. Take out hole of pin. See Pic. 17

Pic. 17

Pull cables into the back box through the plastic panel. Connect cables to hole of pin. See Pic. 18



Pic. 18

Insert the hole of pin inside the back box. When finished, close the door to the back box and turn on the power. The LED will light up. See Pic. 19.

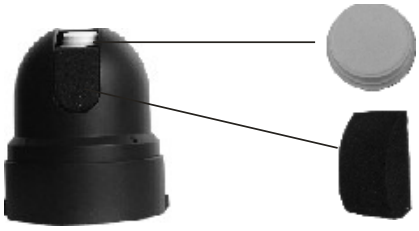
Pic. 19

If the LED does not light up, refer to Section 5: Trouble Shooting.

Step 3. Install dome drive

Set the DIP switches for SW1 and SW2 at the bottom of the camera drive for the appropriate receiver address, communication protocol, and baud rate. Refer to the labels on the camera drive or DIP SWITCH SET in this manual.

Remove cover of camera and sponge. See Pic. 20



Pic. 20

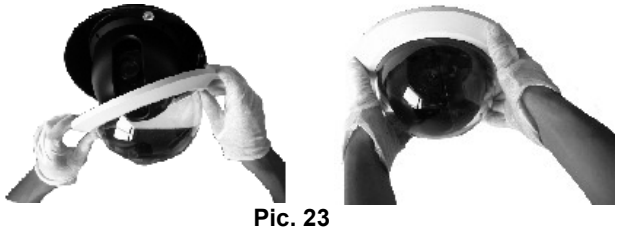
Line up link card and faucet of the back board of the dome. Push the dome drive in. See Pic. 21

Pic. 21

Step 4. Install lower dome

Pic. 22

Take out a screw from lower dome. Link cables, screw, and lower dome. See Pic. 22.

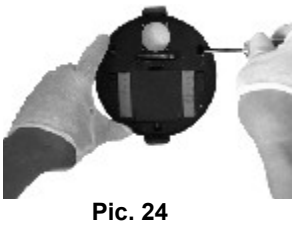


Pic. 23

Line up the snaps on trim ring with the mounting screws on the back box. Snap the trim ring into the plastic snap washers on the mounting screws. See Pic. 23.

3.2.3. SURFACE MOUNT INSTALLATION

Step 1. Install back board of surface mount

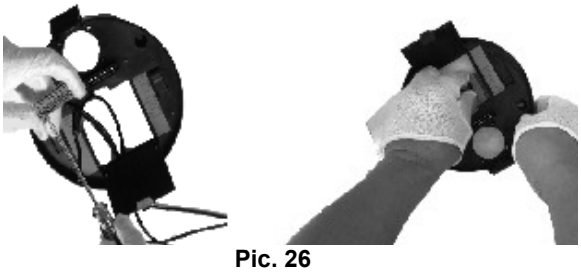


Pic. 24

Locate the back board of the camera location. Drill a hole in the ceiling using a drill. Insert the screw and back board into the hole. See Pic. 24

Pic. 25

Press the thumb fastener and open the hinged door to the back box. Take out hole of pin. See Pic. 26.



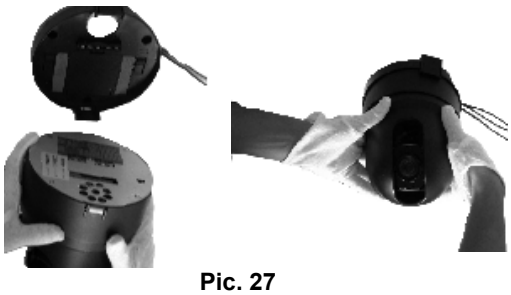
Pic. 26

Pull cables into the back box into the plastic panel. Connect cables to hole of pin. Insert the hole of pin inside the back board. When finished, close the door to the back board and turn on the power. The LED will light up. See Pic. 26.

🕮 *If the LED does not light up, refer to Section 5: Trouble Shooting.*

Step 2. <u>Install dome drive</u>

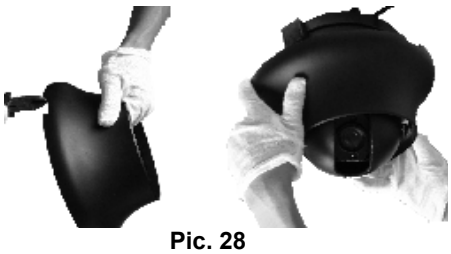
Set the DIP switches for SW1 and SW2 on the bottom of the dome drive for the appropriate receiver address, communication protocol, and baud rate. Refer to the labels on the dome drive or DIP SWITCH SET in this manual.



Pic. 27

Line up link card and faucet of the back board of the dome. Push the dome drive in. See Pic. 27.

Step 3. <u>Install dome flange</u>



Pic. 28

Snip a flake piece. Keep three flanges away from two clamps on the back board. See Pic. 28.

Pic. 29

Push the flange of dome into the back board. Take out the membrane on the clarity flake of the dome drive. See Pic. 29.

3.2.4. POLE MOUNT INSTALLATION

See Section 3.2.1 Wall Mount Installation.

4. OPERATION GUIDE

4.1. OPERATION AT POWER UP

The camera employs the default settings the first time it is switched on. Changes to the settings will be permanently stored and will be made available the next time the camera is switched on. You can return to the default settings by means of the appropriate menu option at any time.

The camera will work as follows when it is switched on.

The camera will run a calibration procedure and a message showing the following information will appear on the video output OSD (On Screen Display): protocol, communication parameters, camera address and software version.

```
PTOL: PELCO-D
COMM: 2400, N, 8, 1
ADDR: 1
SOFTWARE VERSION   V5.3
```

Check that the data are suitable for operation. Otherwise, refer to the section in this document that shows how to install the camera correctly.

At the end of the calibration step, the camera will switch to stand-by as programmed (**POWER UP ACTION** in **DOME SETTINGS1 > POWER UP**). The camera will continue working this way until any command is received from the keypad. The camera during this phase can be pointed to a fixed point or pan across the field. Refer to the detailed described in the **POWER UP ACTION** menu section for more details.

4.2. HOW TO USE OUR CONTROL KEYBOARD

The camera is ready to receive commands from our control keyboard (see figure below) after connecting.

4.2.1. CONTROL KEYPAD PASSWORD AND ACCESS

The system will wait for the password to be entered after being switched on.
The control panel requires a 6-digit password.
The entered digits will be replaced by a "*" symbol on the screen for privacy.
Access to the menu is gained after entering all the digits correctly.
Refer to the corresponding manual for using the control panel.

📖 *The default user password is "000000".*
📖 *It is advisable to change the default password to prevent intrusions.*
📖 *Do not lose or forget the programmed password.*
📖 *Take note of the new password and keep it in a safe place.*

4.2.2. CONTROL KEYPAD COMMAND SYNTAX

Controls can use the joystick, single keys or key combinations. The key command syntax is shown below.

Key command syntax
The syntax used in this manual for controls using keys consists of various elements (words and three digit numbers). Each command is always in braces and each element is separated by commas. Each word or decimal digit used in the syntax is identified by a corresponding key on our control panel. Words can be enclosed in round brackets, square brackets or no brackets. Three digit decimals are never enclosed in brackets.

The following words only can be used: **PRESET**, **CALL**, **ESC**, **OPEN**, **CLOSE**, **NEAR**, **FAR**, **ZOOM OUT**, **ZOOM IN**, **CAM**, **MON**, **SCAN**, **ENTER**. The decimal digits are: **0**, **1**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, and **9**.

Some application examples of controls are shown in detail below.

Using the joystick
A command can also be given simply by moving the joystick because this generates actions on the camera or OSD (On Screen Display) menu.

Using a single key
Pressing a single key can cause camera action. For example, the following command will zoom out of the frame. Underling indicates the key is in use.

ZOOM OUT

Key combinations
Pressing a key combination in rapid sequence extents the command set. For example, the following command (select camera address 1) is performed by pressing the following keys:

CAM + **1** + **ENTER**

4.2.3. CONTROL KEYPAD COMMAND TYPES

There are four command types:

- ☑ Select camera,
- ☑ Move camera (tilt and pan, zoom, adjust focus and IRIS opening, go to preset positions),
- ☑ Adjust camera operation mode using menus,
- ☑ Various quick controls operable from the control panel.

The method for accessing these controls will be shown in detail in the following paragraphs.

4.3. SELECT A CAMERA

The camera to be controlled must be selected first. For example, the following command selects camera 1:

CAM + **1** + **ENTER**

After this operation, the message **CAM 1** will appear on the control panel display.

4.4. CAMERA MOTIONS

After selecting a camera, it can be moved either directly using the control panel as described below:

- ☑ Panning (horizontal) and tilting (vertical).
- ☑ Zooming, focusing and IRIS opening.
- ☑ Preset positions programming and recalling.

These functions can be directly accessed using a single key or joystick or a simple key combination.

4.4.1. PAN AND TILT

The camera may be moved using our keyboard controller. Move the joystick vertically to tilt the camera and horizontally to pan it.

The maximum pan span is from 0º to 360º with continuous rotation. The maximum tilt span is from -5º (camera in vertical position) and 92º.

The panning and tilting speed can be modulated by operating the joystick appropriately.

Note that the maximum speed that can be obtained by operating the joystick is not always equal to that programmed in the working settings. This in fact depends on the value of the **PROPORTIONAL PAN** setting in the **MOTION** menu and the zoom. If the option is ON, the maximum rotation speed which can be obtained using the joystick is proportional to the magnification used to obtain the best frame.

Panning (horizontal)
Tip the joystick rightwards to turn the camera horizontally clockwise and tip it leftwards to turn it anticlockwise.

If no advanced options are set (e.g. range limits set enabled), the camera can be turned continuously without interruptions.

The pan span may be limited between two angles in **DOME SETTING1** > **MOTION** > **MANUAL LIMIT**.

Tilting (vertical)
Tip the joystick upwards to turn the camera vertically upwards and tip it downwards to turn the camera downwards. The camera rotation is limited upwards by the horizontal plane or downwards by the vertical axis.

Performance will change considerably near the vertical axis according to whether the **AUTO FLIP** is on or not (default setting is on).

- ☑ With **AUTO FLIP** off, the camera will stop in perfectly vertical position and will stop turning when the joystick is tipped downwards.
- ☑ With **AUTO FLIP** on, the camera will proceed over the vertical axis when the joystick is tipped downwards. This is because, when the vertical axis is reached, the camera flips automatically by 180 degrees and resumes the initial trajectory.

The **AUTO FLIP** function can be used to follow a subject arriving in a certain direction passes under the camera and continues in a straight line. To do this, hold the joystick tipped downwards following the movement of the subject. Observe that in this case the joystick performance after the camera passes over the vertical axis opposite to the normal axis because tipping the joystick downwards will turn the camera upwards.

Normal operation of the joystick will be resumed as soon as the downward tip is interrupted (also only for an instant). At this point, to follow the subject in the same direction, you will need to tip the joystick upwards, as you would normally.

4.4.2. ZOOM

The camera frame may be adjusted by using the **ZOOM IN** and **ZOOM OUT** commands. Use **ZOOM IN** to zoom into the detail; use **ZOOM OUT** to zoom out.

Zoom can be set as per the zoom specifications of relative modules, combined between optical zoom and digital zoom. Refer to the specific section for programming the function.

4.4.3. FOCUS

The camera focus may be adjusted manually using the **NEAR** and **FAR** controls.

As the auto focus function is always on, a manual setting made using **NEAR** and **FAR** will be kept only until a pan, tilt or zoom command is used. In this case, auto focus will adjust focus automatically again.

Refer to the specific section for additional details on focusing and on the various options.

🕮 *The auto focus function cannot work correctly in the following cases:*

- ☑ *The object to be focused on is not in the middle of the image.*
- ☑ *There are far and near objects in the frame.*
- ☑ *Bright light is shining on the subject.*
- ☑ *The subject is behind a glass pane covered in drops or dust.*
- ☑ *The subject is moving very quickly.*
- ☑ *The subject is not well lit.*
- ☑ *The subject is too big.*

4.4.4. IRIS OPENING

The IRIS opening may be controlled manually using the **OPEN** and **CLOSE** commands.

The manual setting made using **OPEN** and **CLOSE** will be kept only until a pan, tilt or zoom command is used if the automatic IRIS opening option is enabled (the default setting is on). In this case, the opening will be controlling automatically again.

Refer to the specific section for additional details on IRIS opening adjustment

4.4.5. PRESET POSITIONS PROGRAMMING AND RECALLING

The camera can store up to 256 panning, tilting and zooming configurations (called preset positions) which can be recalled at any time. The manual focusing and IRIS opening settings cannot be stored.

🕮 *When storing presets, it is important to remember that some are reserved and cannot be either stored or used for positioning the camera. Presets from 80 to 99, Presets from 100 to 103, 170 to 173*

The following examples show how to program the free Presets and recall them.

Example: programming preset number 32

1) Position the camera in a certain pan, tilt and zoom configuration.
2) Enter the command **PRESET** + **32** + **ENTER**.

From this moment on, simply enter the command **CALL** + **32** + **ENTER** to move the camera to the preset position.

🕮 *The saved value will be written over if the setting is reprogrammed.*

🕮 *The Presets are saved in a permanent memory area of the camera where they are maintained also when power is disconnected. However,* **RESTORE FACTORY DEFAULT** *will delete all preset values.*

🕮 *Press* **PRESET** + **83** + **ENTER** *to delete all the saved presets.*

🕮 *The Presets store the coordinates according to an angular reference system. Therefore, the reference system zero point may become misaligned with the camera mechanics after prolonged use of the tilting and panning functions. Minor inaccuracies in preset positions may occur. In this case, calibrate the angular coordinate system using the* **REBOOT SYSTEM** *command. This calibration is automatically run when the camera is switched on.*

4.5. FUNCTION PROGRAM MENU

Use the following control panel command to access the function programming menu.

PRESET + **95** + **ENTER**

At this point, if no password is required for access, the following first level menu will appear on the screen:

```
           MAIN MENU

<SYSTEM INFORMATION>
<DISPLAY SETUP>
<DOME SETTINGS 1>
<DOME SETTINGS 2>
<DOME LABEL>
RESTORE FACTORY DEFAULT
RESET CAMERA
REBOOT SYSTEM
LANGUAGE            ENGLISH
PRIME DIRECTION     N
POWER DOWN MEMORY   OFF
EXIT
```

Screen 1: Main Menu

Otherwise, if a password is required, the following screen will appear.

```
PLEASE INPUT PASSWORD

PASSWORD
1 2 3 4 5 6 7 8 9 0
▲
CLEAR
ENTER
EXIT
```

Screen 2: Password Protection

The password is a numeric combination (max. 4 digits).
Select the password digits by moving the joystick in the horizontal direction. Symbol "▲" indicates the digit which will be entered.

Press **OPEN** to enter the selected digit.
The entered numbers will be replaced by a "*" symbol on the screen for privacy.
Select **ENTER** and press **OPEN** to access the first level menu after entering all the digits correctly.

📖 *The default password is "0000".*
📖 *It is advisable to change the default password to prevent intrusions.*
📖 *Do not lose or forget the programmed password.*
📖 *Take note of the new password and keep it in a safe place.*

Simply move the joystick vertically to scroll the menu and point the cursor to the menu item to be selected: at this point, select **OPEN** to access the selected second level.

Simply press **BACK** and use **OPEN** to go back to the previous level menu.

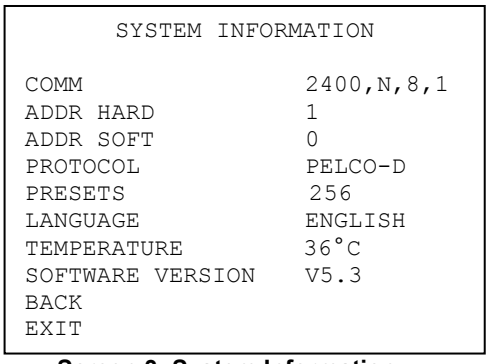
To completely exit a menu on any level, simply select **EXIT** and use the **OPEN** command or just press **CLOSE** .

Option	Value	Explanation
SYSTEM INFORMATION		Product information menu (refer to **Section 4.5.1**).
DISPLAY SETUP		Display menu (refer to **Section 4.5.2**).
DOME SETTINGS 1		Main programming menu (refer to **Section 4.5.3**).
DOME SETTINGS 2		Secondary programming menu (refer to **Section 4.5.4**).
DOME LABEL		Menu for associating the text to be associated to the camera (refer to **Section 4.5.5**).
RESTORE FACTORY DEFAULT		This performs a total reset and loads the default settings. The operations may take a few seconds (approximately 20 seconds): the message "**WAIT**" will appear on the monitor.
RESET CAMERA		This function reset the device without clearing the settings performed by the user. Resets the camera menu settings, except for the password.
REBOOT SYSTEM		This function restarts the device without clearing the settings performed by the user. The camera is repositioned.
LANGUAGE	**ENGLISH**	Menu in English.
PRIME DIRECTION	**N,NW,W,SW,S, SE, E, NE**	It tells the direction of the current camera position. With this function, the camera will display the reference direction during pan/tilt.
POWER DOWN MEMORY	**ON, OFF**	This enables/disables the memory of camera position before the last power-off.

Table 3

4.5.1. SYSTEM INFORMATION

In the first level menu, select **SYSTEM INFORMATION** to display information concerning the protocol, the camera address, the presetting number, the language of use and the measured temperature.



Screen 3: System Information

📖 *The information in this menu cannot be edited.*

4.5.2. DISPLAY SETUP

The **DISPLAY SETUP** menu is used to enable the labels to be displayed for the various camera functions.

```
          DISPLAY SETUP

PRESET LABEL                 ON
ZONE LABEL                   ON
ZOOM                         ON
P/T DEG                      ON
DOME LABEL                   ON
CRUISE TRACKING              OFF
EVENT LABEL                  ON
TIME                         ON
DATE                         ON
COMPASS                      OFF
<LABEL POSITION>
TEMPERATURE                  OFF
BACK
EXIT
```

Screen 4: Display Setup

Option	Value	Explanation
PRESET LABEL	**ON/OFF**	Show or hide presetting labels (max. 64).
ZONE LABEL	**ON/OFF**	Show or hide zone labels.
ZOOM	**ON/OFF**	Show or hide zoom labels.
P/T DEG	**ON/OFF**	Show or hide camera pan/tilt degrees. The coordinates refer to the monitor centre.
DOME LABEL	**ON/OFF**	Show or hide dome labels.
LABEL POSITION		Label positioning submenu (refer to **Section 4.5.2.1**)
TEMPERATURE	**ON/FF**	Show or high the camera temperature.

Table 4

4.5.2.1. LABEL POSITION

The labels may be positioned where required on the screen.

```
ZONE        DOME        PRESET
                        EVENT
                        CRUISE
              SAVE
              RESET
P/T DEG                   ZOOM
TIME        DATE
```

Screen 5: Label Position

To establish a position:
1) Point the cursor to the label to be moved by moving the joystick vertically.
2) Press **OPEN**
3) Symbol "■" will appear.
4) Position the entire label in the chosen position using the joystick.
5) Press **OPEN**.
6) Repeat this operation for each label.
7) Point the cursor "►" to **SAVE** and press **OPEN**.

4.5.3. MAIN PROGRAMMING MENU (DOME SETTINGS 1)

In the first level menu, select **<DOME SETTINGS 1>** and the corresponding submenus to access the main menus.

```
        DOME SETTINGS1

<CAMERA>
<MOTION>
<POWER UP>
<PRESETS>
<PATTERNS>
<ZONES>
<CLEAR SET>
TOTAL PRESETS NUMBER   256
BACK
EXIT
```

Screen 6: Dome Settings 1

Option	Value	Explanation
CAMERA		Camera parameter programming submenu (refer to **Section 4.5.3.1**)
MOTION		Camera motion parameter programming submenu (refer to **Section 4.5.3.2**)
POWER UP		Power up parameter submenu (refer to **Section 4.5.3.3**)
PRESETS		Preset parameter submenu (refer to **Section 4.5.3.4**)
PATTERNS		Pattern parameter submenu (refer to **Section 4.5.3.5**)
ZONES		Zone parameter programming submenu (refer to **Section 4.5.3.6**)
CLEAR SET		Clear settings submenu (refer to **Section 4.5.3.7**)
TOTAL PRESET NUMBER	**40/64/256**	Maximum number of Presets. Always enter 256 (refer to **Section 4.5.3.8**)

Table 5

4.5.3.1. CAMERA

The first level of this menu contains the following options grouped as shown in the following table.

To edit the value, simply select the required menu item using the joystick with vertical movements and the **OPEN** button. Then edit as required. Select **BACK/EXIT** to close the item.

```
              CAMERA

DIGITAL ZOOM                OFF
BACKLIGHT COMP              OFF
<PROGRAM AE MODE>
<WHITE BALANCE>
<DAY/NIGHT>
<ADDITIONAL>
BACK
EXIT
```

Screen 7: Camera

Option	Value	Explanation
DIGITAL ZOOM	**ON/OFF**	Switch digital zoom **ON** or **OFF**.
BACK LIGHT COMP	**ON/OFF**	Switch back light compensation **ON** and **OFF**. The **BACK LIGHT COMPENSATION** function is useful for improving visibility when the background light is very bright.
PROGRAM AE MODE		Automatic exposure submenu (see below)
WHITE BALANCE		White balance submenu (see below)
DAY/NIGHT		Day/Night submenu (see below)
ADDITIONAL		Additional settings submenu (see below).

Table 6

PROGRAM AE CONTROL submenu - Automatic Exposure settings

```
        PROGRAM AE CONTROL

AE MODE              AUTO
 LOW LIGHT LIMIT     1/50
 IRIS LEVEL          F2.0
 AGC LEVEL           0DB
 BRIGHT LEVEL        0DB/F2.0
EXPCOM               OFF
EXPOSURE LEVEL       -10.5DB
BACK
EXIT
```

Screen 8: Program AE Control

Option	Value	Explanation
AE MODE	**AUTO**	In this mode: - The shutter opening time cannot be set and is automatically adjusted. - Auto IRIS opening is automatically adjusted. - Gain control is automatic (**AGC ON**).
	SHUTTER	In this mode: - The shutter opening time may be varied as programmed in the "**LOW LIGHT LIMIT**" menu. - Auto IRIS opening is automatically adjusted. - Gain control is automatic (**AGC ON**).
	IRIS	In this mode: - The IRIS opening time is fixed to 1/50 second. - The auto IRIS opening is manually varied in the "**IRIS LEVEL**" menu. - Gain control is automatic (**AGC ON**).
	MANUAL	In this mode: - The shutter opening time may be varied as programmed in the "**LOW LIGHT LIMIT**" menu. - The auto IRIS opening is manually varied in the "**IRIS LEVEL**" menu. - AGC gain control is variable as programmed in the "**AGC LEVEL**" menu. All items may be accessed in this mode.
	BRIGHT	In this mode: - The IRIS opening time is fixed to 1/50 second. - The auto IRIS opening is manually varied in the "**BRIGHT LEVEL**" menu. - Gain control is off (0 dB).
LOW LIGHT LIMIT	**1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000 OF SECOND**	This selects the maximum opening of the IRIS. It is used to manually set the IRIS opening time. These adjustments are possible only in "**MANUAL**" or "**SHUTTER**" mode.
IRIS LEVEL	**F2.0, F1.6, F1.4, OFF, F22, F19, F16, F14, F11, F 9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4**	Manual IRIS adjustment (parameter F). It is used to manually set the IRIS opening time. These adjustments are possible only in "**MANUAL**" or "**IRIS**" mode.
AGC LEVEL	**-3DB, 0DB, 2 DB, 4 DB, 6DB, 8 DB, 10 DB, 12 DB, 14 DB, 16 DB, 18 DB, 20 DB, 22 DB, 24 DB, 26 DB, 28 DB**	It is possible to automatically control gain (AGC) to one of the indicated values. This selection is used to manually set the video signal gain. These adjustments are possible only in "**MANUAL**" mode.
BRIGHT LEVEL	**0DB ~ 28DB**	This function adjusts the camera gain and the IRIS opening using a special algorithm which may be programmed by the user. Exposure is controlled by the gain in low light condition

		and by the IRIS opening in bright light conditions. The function may be used only if "**AE MODE**" is set to "**BRIGHT**".
EXPCOM	**ON/OFF**	Enables/Disables exposure compensation.
EXPOSURE LEVEL	**-10.5DB ~ +10.5DB**	Program the exposure compensation amount. This is only accessible when **EXPCOM** is **ON**.

Table 7

*The following items cannot be accessed in if "**AE MODE**" is set to "**AUTO**":*

- ☑ *LOW LIGHT LIMIT*
- ☑ *IRIS LEVEL*
- ☑ *AGC LEVEL*
- ☑ *BRIGHT LEVEL*

WHITE BALANCE sub-menu
The **WHITE BALANCE MENU** is used to set the parameters of white balance.

```
          WHITE BALANCE

WHITE BALANCE        ATW
  R GAIN             214
  B GAIN             164
BACK
EXIT
```

Screen 9: White Balance

Option	Value	Explanation
AUTO WHITE BALANCE	**ATW**	White Balance (WB) is performed in auto tracking mode (Auto Tracking White). This mode automatically balances the white level by analyzing a wide range of colors, i.e. all those with temperatures comprised in the range between 2000K and 10000K.
	AUTO	This mode automatically adjusts the white balance by analyzing a more restricted range with respect to the previous option i.e. those with temperatures in the range from 3000K and 7500K.
	OUT	This function automatically balances the whites for outdoor use.
	IN	This function automatically balances the whites for indoor use.
	MAN	In this mode, white balancing may be performed by manually selecting the amount of red (R GAIN) and blue (B GAIN).
R GAIN	**1 ~ 255**	Adjust the red components using these values. This is adjustable only when **AUTO WHITE BALANCE** is set **MAN**.
B GAIN	**1 ~ 255**	Adjust the blue components using these values. This is adjustable only when **AUTO WHITE BALANCE** is set **MAN**.

Table 8

DAY/NIGHT sub-menu
The **DAY/NIGHT** menu is used to set the parameters of day/night switch.

```
            DAY/NIGHT

IR SW MODE           AUTO
  IR STATUS           20
BACK
EXIT
```

Screen 10: Day/Night

Option	Value	Explanation
IR SW MODE	**AUTO/MANUAL**	The opening and closing of the IR filter which adjusts the Day & Night vision of the camera may be controlled in **MANUAL** mode. The **MANUAL** option enables the possibility to adjust the IR STATUS parameter (color, B/W). In **AUTO** mode, the switch is automatic according to the lighting.

IR STATUS	**COLOR, B/W**	Day & Night camera configuration.

Table 9

ADDITIONAL sub-menu - Other program settings.

```
          ADDITIONAL

SHARPNESS               ON
  SHARPNESS LEVEL       5
E-FLIP                  OFF
WDR                     OFF
VR                      OFF
FREEZE FRAME            OFF
AUTO ICR                OFF
BACK
EXIT
```

Screen 11: Additional

Option	Value	Explanation
SHARPNESS	**ON/OFF**	The sharpness of the image may be adjusted automatically (**ON**) or to a level defined in the "**SHARPNESS LEVEL**" menu.
SHARPNESS LEVEL	**0 ~ 15**	Sharpness can be programmed in the range from 1 to 15 (15 corresponds to maximum sharpness).
E-FLIP	**ON, OFF**	This function turns the video output from the camera upside down.
WDR	**ON, OFF**	This entry enables/disables wide dynamic range function. It is only available when the camera module support this function.
VR	**ON, OFF**	VR (Vibration Reduction) is very practical with some random vibrations from outside.
FREEZE FRAME	**ON, OFF**	Enable/Disable still image function.
AUTO ICR	**ON, OFF**	An infrared (IR) Cut-Filter can be disengaged from the image path for increased sensitivity in low light environments.

Table 10

📖 *The above screens and settings of* **CAMERA** *is based on SONY camera modules. They will be different with HITACHI modules. Please refer to the following:*

```
             CAMERA

ZOOM LIMIT                  X44
BACKLIGHT COMP              OFF
<PROGRAM AE MODE>
<WHITE BALANCE>
<ADDITIONAL>
BACK
EXIT
```

Screen 12: Camera

Option	Value	Explanation
ZOOM LIMIT	**X22 ~ X176**	Limit the zoom to a certain level.
BACK LIGHT COMP	**ON/OFF**	Switch back light compensation **ON** and **OFF**. The **BACK LIGHT COMPENSATION** function is useful for improving visibility when the background light is very bright.
PROGRAM AE MODE		Automatic exposure submenu (see below)
WHITE BALANCE		White balance submenu (see below)
ADDITIONAL		Additional settings submenu (see below).

Table 11

PROGRAM AE CONTROL submenu - Automatic Exposure settings

```
        PROGRAM AE CONTROL

AE MODE              AUTO
 LOW LIGHT LIMIT     1/50
BACK
EXIT
```

Screen 13: Program AE Control

Option	Value	Explanation
AE MODE	**AU+DSS+IR1, AU+DSS+IR2, AU+DSS+IR3**	DSS: Digital slow shutter, it will give low frame rate to increase the video effect. IR1: High sensitivity, IR2: Mid sensitivity, IR3: low sensitivity. These options give different video effect on various light environments.
	SHUTTER PR	Shutter Priority mode.
	IRIS PRIO	IRIS priority mode.
	AGC PRIORI	AGC: auto gain compensation.
	AUTO	The camera will determine the AE mode automatically.
	AU+IR1, AU+IR2	IR1: High sensitivity, IR2: Mid sensitivity, IR3: low sensitivity. These options give different video effect on various light environments.
	AU+DSS	This option enables digital slow shutter with auto mode.
LOW LIGHT LIMIT	**1/1.5, 1/3, 1/6, 1/12, 1/25, 1/50,**	This selects the maximum opening of the IRIS. It is used to manually set the IRIS opening time.
IR CUT FILTER	**IN, OUT,**	This function automatically balances the whites for indoor or outdoor use.
AGC	**0DB ~ 30DB**	It is possible to automatically control gain (AGC) to one of the indicated values. This selection is used to manually set the video signal gain.
IRIS	**F1.6~F34**	Manual IRIS adjustment (parameter F). It is used to manually set the IRIS opening time.

Table 12

WHITE BALANCE sub-menu

The **WHITE BALANCE MENU** is used to set the parameters of white balance.

```
          WHITE BALANCE

WHITE BALANCE      ATW
  R GAIN           214
  B GAIN           164
BACK
EXIT
```

Screen 14: White Balance Sub-Menu

Option	Value	Explanation
WHITE BALANCE	**OFF**	White Balance (WB) is in manual mode. R Gain and B Gain level can be adjusted.
	ON	This mode automatically adjusts the white balance by analyzing a more restricted range with respect to the previous option i.e. those with temperatures in the range from 3000K and 7500K.
R GAIN	**1 ~ 255**	Adjust the red components using these values. This is adjustable only when **WHITE BALANCE** is set **OFF**.
B GAIN	**1 ~ 255**	Adjust the blue components using these values. This is adjustable only when **WHITE BALANCE** is set **OFF**.

Table 13

ADDITIONAL sub-menu - Other program settings.

```
          ADDITIONAL

SHARPNESS               ON
  SHARPNESS LEVEL       5
E-FLIP                  OFF
WDR                     OFF
VR                      OFF
FREEZE FRAME            OFF
AUTO ICR                OFF
BACK
EXIT
```

Screen 15: Additional Sub-Menu

Option	Value	Explanation
SHARPNESS	**ON/OFF**	The sharpness of the image may be adjusted automatically (**ON**) or to a level defined in the "**SHARPNESS LEVEL**" menu.
SHARPNESS LEVEL	**0 ~ 64**	Sharpness can be programmed in the range from 1 to 15 (15 corresponds to maximum sharpness).
WDR	**ON, OFF**	This entry enables/disables wide dynamic range function. It is only available when the camera module support this function.

Table 14

4.5.3.2. MOTION

```
             MOTION

AUTO FLIP               ON
PROPORTIONAL PAN        ON
PARK TIME               15S
PARK ACTION             NONE
SCAN SPEED<DEG/S>       1
PAN SPEED               150°/S
TILT SPEED              90°/S
<SET SCAN>
<MANUAL LIMIT>
<SET AZIMUTH ZERO>
<CLEAR AZIMUTH ZERO>
BACK
EXIT
```

Screen 16: Motion Sub-Menu

Option	Value	Explanation
AUTO FLIP	**ON/OFF**	When this option is on, the movements of a subject moving underneath the camera can be followed by moving the joystick vertically only. This is possible because after reaching vertical position, the camera will automatically pan by 180 degrees to be repositioned and resume the tilt stroke.
PROPORTIONAL PAN	**ON/OFF**	If this mode is active, the pan and tilt speed applied by the keypad is proportional to the set zoom so that the movement speed decreases when the zoom increases.
PARK TIME	**15 S ~ 12 H**	With this function, the camera will resume the function defined in "**PARK ACTION**" by specifying a value (in 1s, 1m, 1h steps) following a stop or interruption of the performed function after the programmed time.
PARK ACTION	**NONE**	No action is performed at the end of the park time.
	AUTO SCAN	The camera performs an auto scan at the end of the park time: the camera performs a 360 horizontal scan operation.
	RANDOM SCAN	The camera performs a random scan at the end of the park time: the camera performs a random 360 degree scan pausing for approximately 2" every 142°.
	FRAME SCAN	The camera performs a frame scan at the end of the park time: the horizontal scan is performed in the **SET SCAN** limits.

	PRESET 1/PRESET 8	The camera goes to preset 1 or preset 8 at the end of the park time.
	PATTERN 1 ~ 4	The camera performs one of the 4 patterns at the end of the park time (command sequence continuously performed).
	CRUISE	The camera performs a cruise (preset sequence) at the end of the park time: the camera runs a cycle of up to 30 preset positions.
	REPEAT LAST	The camera simply resumes the operation it was performing before being interrupted at the end of the park time.
	HOME N TRA	The camera goes to preset 1 and starts tracking at the end of the park time.
	CRUISE TRA	The camera performs a cruise with tracking on at the end of park time.
SCAN SPEED <DEG/S>	**1 ~ 32 DEG./S**	This will specify the rotation speed for automatic horizontal scans.
PAN SPEED	**50 ~ 250 DEG/S**	This is to set the pan speed of the PTZ. Value changes every 20 degree.
TILT SPEED	**50 ~ 250 DEG/S**	This is to set the tilt speed of the PTZ. Value changes every 20 degree.
SET SCAN		This submenu set the limits for horizontal pan movements of the camera. The limits are long applicable in **FRAME SCAN** mode (see below).
MANUAL LIMIT	**ON/OFF**	If this option is ON, horizontal automatically scanning is performed within the right and left scanning limits open. To set the left and right scanning limit, position the camera at the required pan angle and press **OPEN** to set. A preset position may be called up outside these scanning limits.
SET AZIMUTH ZERO		This sets the pan zero position (see below).
CLEAR AZIMUTH ZERO		This is used to delete the zero position settings (see below).

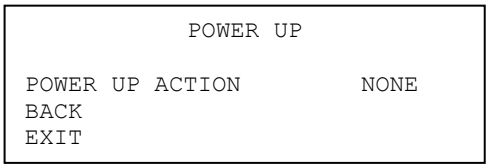
Table 15

SET SCAN submenu
This includes a number of settings related to the programming of horizontal **FRAME SCAN** limits.
1) Press "►" on "**SET SCAN STOPS**".
2) Press **OPEN** to confirm.
3) Go to the required position with the joystick to set the left scanning limit.
4) Press **OPEN** to confirm.
5) Go to the required position with the joystick to set the right scanning limit.
6) Press **OPEN** to confirm, Press **CLOSE** to cancel the operation.
7) Point the cursor "►" to "**CLEAR SCAN STOPS**" and press **OPEN** to delete the programmed positions.

SET AZIMUTH ZERO submenu
This includes the settings related to programming of the pan zero position.
1) Go to the required position with the joystick to set zero position.
2) Press **OPEN** to confirm; Press **CLOSE** to cancel the operation.

CLEAR AZIMUTH ZERO submenu
This includes the settings related to deleting the pan zero position.
1) Press **OPEN** to confirm.
2) Press **CLOSE** to cancel the operation.

4.5.3.3. POWER UP



Screen 17: Power UP Sub-Menu

Option	Value	Explanation

POWER UP ACTION	**NONE**	No action is performed at the end of power up.
	AUTO SCAN	The camera performs an auto scan at the end of power up: the camera performs a 360 horizontal scan operation.
	RANDOM SCAN	The camera performs a random scan at the end of power up: the camera performs a random 360° scan pausing for approximately 2" every 142°.
	FRAME SCAN	The camera performs a frame scan at the end of power up: the horizontal scan is performed in the **SET SCAN** limits.
	PRESET 1/ PRESET 8	The camera goes to preset 1 or 8 at the end of power up.
	PATTERN 1 ~ 4	The camera performs one of the 4 patterns at the end of power up.
	CRUISE	The camera performs a cruise at the end of power up: the camera runs a cycle consisting of up to 30 preset positions.
	HOME N TRA	The camera goes to preset 1 and starts tracking at the end of power up.
	CRUISE TRA	The camera performs a cruise with tracking on at the end of power up.

Table 16

4.5.3.4. PRESETS

The camera will start a scanning cycle when a presetting or pattern is recalled. This scanning cycle may be interrupted simply by moving the joystick.

```
                PRESETS

PRESET NUMBER                  1
**PRESET NOT DEFINED**
<EDIT PRESET LABEL>
<EDIT PRESET POSITION>
<CLEAR CURRENT PRESET>
BACK
EXIT
```

Screen 18: Presets

Option	Value	Explanation
PRESET NUMBER	**1-64**	This option is used to select a presetting for entering a descriptive label. This operation is allowed for up to 64 presets. Press the **OPEN** button and use the joystick to set the number of the presetting to be stored. Press **OPEN** to confirm.
EDIT PRESET LABEL		This submenu is used to access writing mode for associating a label to a presetting (see below).
EDIT PRESET POSITION		This submenu is used to position and save the current position.
CLEAR CURRENT PRESET		The submenu is used to delete the current preset.

Table 17

EDIT PRESET LABEL submenu

This includes the operations needed for associating a label to a presetting.

1) Use the joystick to point the cursor to "**EDIT PRESET LABEL**" option.
2) Press **OPEN**. The following menu will appear on the display:

```
              PRESET NUMBER      1

PRESET LABEL           1 - - - - -
0 1 2 3 4 5 6 7 8 9 Y Z y z
A B C D E F G H I J K L M N O P Q R S T U V W X
a b c d e f g h I j k l m n o p q r s t u v w x
 OK                CANCEL
 SPACE             BACKSPACE
```

Screen 19: Preset Label Sub-Menu

3) Point the cursor to the first character to use and press **OPEN**. Point the cursor to "**BACKSPACE**" to delete it.
4) After writing the text, point the cursor to **OK** and press **OPEN** to save and go back to the main screen.

4.5.3.5. PATTERNS

```
            PATTERNS

PATTERN NUMBER              1
<PROGRAM PATTERN>
<CLEAR CURRENT PATTERN>
BACK
EXIT
```

Screen 20: Patterns Sub-Menu

A pattern is a sequence of movements and functions which may be stored and repeated manually or automatically.

Option	Value	Explanation
PATTERN NUMBER	**1 ~ 4**	This option is used to select a pattern.
PROGRAM PATTERN		This submenu is used to program a pattern (see below)
CLEAR CURRENT PATTERN		This submenu is used to delete current pattern.

Table 18

PROGRAM PATTERN submenu
This includes all the operations needed to program a pattern.
1) Use the joystick to point the cursor to the "**PATTERN NUMBER**" option.
2) Select the required pattern and press **OPEN**.
3) Position the cursor under "**PROGRAM PATTERN**" option and press the **OPEN** button.

The number of actions available (including zoom operations) for programming the Pattern is shown in percentage form on the screen while they are each being programmed. 100 operations are available for each pattern.

4.5.3.6. ZONES

```
              ZONES

ZONE NUMBER                 1
**ZONE NOT DEFINED**
<EDIT ZONE LABEL>
<EDIT ZONE>
ENABLE ZONE                 ON
<CLEAR CURRENT ZONE >
BACK
EXIT
```

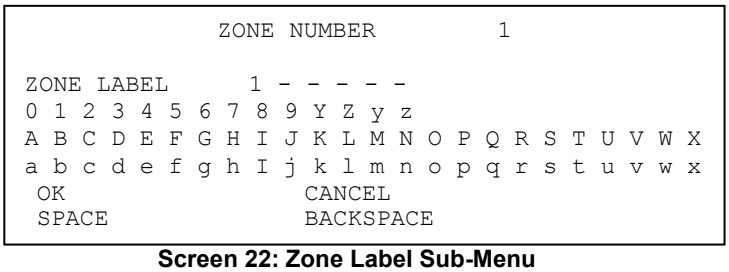
Screen 21: ZONES Sub-Menu

A zone is a space defined on the display by the user. It may be associated to a label. Up to 8 zones may be defined.

Option	Value	Explanation
ZONE NUMBER	**1 ~ 8**	This option is used to select a zone. Press the **OPEN** button and use the joystick to set the required zone number. Press **OPEN** to confirm.
EDIT ZONE LABEL		This submenu is used to associate a label to a zone (see below).
EDIT ZONE		This submenu is used to create a zone (see below).
ENABLE ZONE	**ON/OFF**	This is used to enable/disable each zone selected in the "**ZONE NUMBER**" field.
CLEAR CURRENT ZONE		This submenu is used to delete the zone selected in the "**ZONE NUMBER**" field (see below).

Table 19

EDIT ZONE LABEL submenu
This includes the operations needed to enter labels to be associated to zones.
1) Use the joystick to point the cursor to the "**EDIT ZONE LABEL**" option.
2) Press **OPEN**. The following menu will appear on the display:

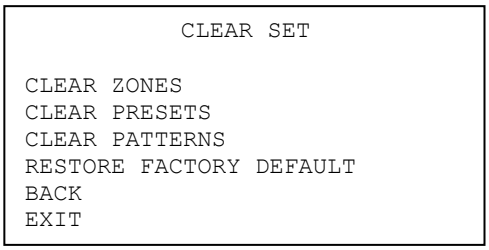


Screen 22: Zone Label Sub-Menu

3) Point the cursor to the first character to be used and press **OPEN**. Point the cursor to "**BACKSPACE**" to delete it.
4) After writing the text, point the cursor to **OK** and press **OPEN** to save and go back to the main screen.

EDIT ZONE submenu
This includes all the operations needed to program a zone.
1) Press "►" on "**EDIT ZONE**".
2) Press **OPEN** to confirm.
3) Use the joystick to point to the required position to define the left limit of the zone to be created.
4) Press **OPEN** to confirm. Press **CLOSE** to cancel the operation.
5) Use the joystick to point to the required position to define the right limit of the zone to be created.
6) Press **OPEN** to confirm. Press **CLOSE** to cancel the operation.
7) Press **CLOSE** to cancel the operation.

4.5.3.7. CLEAR SET



Screen 23: Clear Set Sub-Menu

This menu is used to delete the settings of several elements at one time.

Option	Value	Explanation
CLEAR ZONES		This option is used to delete all the zone settings.
CLEAR PRESETS		This is used to delete all the Presets.
CLEAR PATTERNS		This is used to delete all the pattern settings.
RESTORE FACTORY DEFAULT		This performs a total reset and loads the default settings. The operations may take a few seconds (approximately 20 seconds): the message "**WAIT**" will appear on the monitor.

Table 20

4.5.3.8. PRESET NUMBER

This option can be used to set the number of Presets which may be used.
1) Point the cursor to "►" "**PRESET NUMBER**".
2) Press **ENTER**.
3) Move the joystick vertically and select "**256**".
4) Press **ENTER** to confirm.

🕮 *Do not change the setting ("256").*

4.5.4. SECONDARY PROGRAMMING MENU (DOME SETTINGS 2)

In the first level menu, select **<DOME SETTINGS 2>** and the corresponding submenus to access the other menus.

```
        DOME SETTINGS 2

<ALARMS>
<ADDR SETTING>
<PASSWORD>
<WINDOWS BLANKING>
<HEATER SETTING>
<CRUISE SETTING>
<TRACKING SETTING>
<TIME>
<EVENT>
BACK
EXIT
```

Screen 24: Dome Settings 2

Option	Value	Explanation
ALARMS		Alarm submenu (refer to **Section 4.5.4.1**)
ADDR SETTING		Address setting submenu (refer to **Section 4.5.4.2**)
PASSWORD		Password submenu (refer to **Section 4.5.4.3**)
WINDOWS BLANKING		Windows blanking submenu (refer to **Section 4.5.4.4**)
HEATER SETTING		Heater use submenu (refer to **Section 4.5.4.5**)
CRUISE SETTING		Cruise programming submenu (refer to **Section 4.5.4.6**)
TRACKING SETTING		Automatic tracking submenu (refer to **Section 4.5.4.7**)
TIME		Set the clock of the ptz camera ((refer to **Section 4.5.4.8**)
EVENT		Set the event of the ptz camera ((refer to **Section 4.5.4.8**)

Table 21

4.5.4.1. ALARMS

```
              ALARMS

ALARM NUMBER              1
SEQUENCE(SECS)            1
<ALARM SETTINGS>
<CLEAR SET>
DWELL TIME<SECS>1         0
DWELL TIME<SECS>2         0
BACK
EXIT
```

Screen 25: Alarms

The camera has 4 alarm inputs and 2 alarm outputs. The actions defined by the user may be associated to an alarm.

Option	Value	Explanation
ALARM NUMBER	**1 ~ 4**	This option allows selecting one of the 4 alarm inputs.
SEQUENCE (SECS)	**1 ~ 250**	Duration time (in seconds) of the action related to each alarm when several alarms occur at the same time.
<ALARM SETTINGS>		This shows detailed setting of the current alarm.
CLEAR SET		This submenu is used to delete the alarm programming (see below).
DWELL TIME<SECS>1	**0 ~ 255**	The duration of related alarm output
DWELL TIME<SECS>2	**0 ~ 255**	The duration of related alarm output

Table 22

Alarm Settings Submenu
This shows detailed setting of the current alarm.

```
        ALARM NUMBER   1

ALARM ACT               NONE
ACTIVATE AUX            OFF
ALARM CONTACT           OFF
BACK
EXIT
```

Screen 26: Alarm Settings

Option	Value	Explanation
ALARM ACT	**NONE**	No action is performed on alarm.
	AUTO SCAN	The camera performs an auto scan on alarm: the camera performs a 360 horizontal scan operation.
	RANDOM SCAN	The camera performs a random scan on alarm: the camera performs a random 360° scan pausing for approximately 2" every 142°.
	FRAME SCAN	The camera performs a frame scan on alarm: the horizontal scan is performed in the SET SCAN limits.
	PRESET	The camera goes to related preset on alarm.
	PATTERN 1	The camera performs pattern action 1 on alarm.
	PATTERN 2	The camera performs pattern action 2 on alarm.
	PATTERN 3	The camera performs pattern action 3 on alarm.
	PATTERN 4	The camera performs pattern action 4 on alarm.
	CRUISE	The camera performs a cruise on alarm: the camera runs a cycle consisting of up to 30 preset positions.
	TRACKING	The camera performs tracking action on alarm.
	PRESET N TRA	The camera goes to related preset and starts tracking function.
	CRUISE TRA	The camera performs a cruise with tracking on alarm.
ACTIVATE AUX	**OFF**	No action occurs after the alarm.
	1&2	Both outputs 1 and 2 is ON.
	1	Output 1 is on.
	2	Output 2 is on.
ALARM CONTACT	**ON, OFF**	This determines the current AUX gives output actions or not. It is related to the above setting **ACTIVATE AUX**.

Table 23

📖 *If an alarm is triggered during any automatic operation of the camera (Pattern, Auto Tracking, etc.), the operation in progress is stopped and the camera executes the action that has been set in the* **ALARM ACT** *menu:*

- ☑ *In the event of Preset action, the camera moves to the preset position. Then, if the option* **PARK ACTION** *is set to execute an action, the action will be executed after the* **PARK TIME** *period has expired.*
- ☑ *In the event of "***PATTERN, AUTO SCAN, RANDOM SCAN, FRAME SCAN, CRUISE***" actions, the action is executed by the camera permanently and can only be stopped by one of the following actions: any command sent by a controller or any alarm event.*

4.5.4.2. ADDR SETTING

```
          ADDR SETTING

ADDR TYPE               HARD
ADDR HARD               255
ADDR SOFT               0
<EDIT ADDR SOFT>
BACK
EXIT
```

Screen 27: Address Setting

The soft address is the address programmed by built-in software. The hard address is the address programmed by the hardware SWITCH 2.

Option	Value	Explanation
ADDR TYPE	**SOFT, HARD**	This option is used to program the type of address in current application. Press the **OPEN** button and use the joystick to select the value. Press **OPEN** to confirm.
ADDR HARD		This option shows the hard address number. It is the address of the SW2 (Switch Setting 2).
ADDR SOFT		The option shows the soft address number. It is not editable.
<EDIT ADDR SOFT>		This submenu is to edit the soft address.

Table 24

Edit Addr Soft Submenu
This shows how to program a soft address.
1) The cursor "▲" is below "1" initially. Move it to the digit and press **OPEN** to enter. Repeat this till the whole address number is entered.
2) To confirm the address, move the cursor to **ENTER** and press **OPEN**
3) To confirm the address, move the cursor to **CLEAR** and press **OPEN**

```
     PLEASE INPUT SOFT ADDR

ADDR SOFT
1 2 3 4 5 6 7 8 9 0

CLEAR
BACK
EXIT
```

Screen 28: Edit Soft Address

📖 *The camera needs a reboot for the new address to take effect. When the hard address is different from that of last power up, the hard address will be applicable and the camera address will be hard type.*

4.5.4.3. PASSWORD

```
              PASSWORD

ENABLE PASSWORD              OFF
<EDIT PASSWORD>
BACK
EXIT
```

Screen 29: Password Sub-Menu

Option	Value	Explanation
ENABLE PASSWORD	**ON/OFF**	This enables the password.
EDIT PASSWORD		This is the password entry procedure.

Table 25

The password is a numeric combination (max. 10 digits).

📖 *The default password is "0000".*
📖 *It is advisable to change the default password to prevent intrusions.*
📖 *Do not lose or forget the programmed password.*
📖 *Take note of the new password and keep it in a safe place.*

```
        INPUT OLD PASSWORD

PASSWORD
1 2 3 4 5 6 7 8 9 0

CLEAR
ENTER
BACK
```

Screen 30: Edit Password

1) Select the password digits by moving the joystick in the horizontal direction. Symbol "▲" indicates the digit which will be entered.
2) Press **OPEN** to enter the selected digit.
3) The entered numbers will be replaced by a "*" symbol on the screen for privacy.
4) Enter all the digits correctly and select **ENTER** to confirm.
5) During the password change procedure you will be asked to enter the old password. Enter the new password and enter it again for confirmation.

4.5.4.4. WINDOWS BLANKING

Windows blanking is only available for Sony Modules at present.

The camera can be used to define up to eight privacy zones which blank out certain areas of the screen concealing them from the operator's sight.

A privacy zone appears as a grey or black rectangle associated to a certain pan, tilt and zoom position of a camera. This association is used to move, expand and compress the rectangle according to how the pan, tilt or zoom settings are changed.

```
          WINDOWS BLANKING

STYLE                     GRAY
BLANK ALL ABOVE           OFF
BLANK ALL BELOW           OFF
<SET WINDOWS>
SET MASK COLOR            4
BACK
EXIT
```

Screen 31: Windows Blanking

Option	Value	Explanation
STYLE	**GRAY/SMEAR**	There are two ways to blank out the zone to be masked: either using a grey window which entirely conceals the area or by using a semi-transparent smear window which shows the scene without details.
BLANK ALL ABOVE	**OFF, 0~80**	Blanks out the upper part of the frame shown on the monitor. The value means the beginning degree of the vertical position.
BLANK ALL BELOW	**OFF, 0~80**	Blanks out the lower part of the frame shown on the monitor. The value means the beginning degree of the vertical position.
SET WINDOWS		The submenu is used to position and configure the privacy zones (see below).
SET MASK COLOR	**0 ~ 13**	This is used to select the blanking window color: 0 → black 1 ~ 6 → grey (1 dark; 6 light) 7 → white 8 → red 9 → green 10 → blue 11 → cyan 12 → yellow 13 → magenta

Table 26

The two blanking bands (upper & lower) may coexist at the same time.

The two blanking bands (upper & lower) cannot coexist at the same time in presence of a privacy zone.

🕮 *A band will automatically be removed if both bands are enabled and a privacy zone is activated.*

🕮 *If an attempt to activate a blanking band is attempted with a privacy zone active, the privacy zone will remain active to the detriment of the blank.*

Blanking parameters

BLANK ALL ABOVE		BLANK ALL BELOW	
OFF	No blanking	OFF	No blanking
0	-5º~10º	0	5º~92º
10	-5º~25º	10	-5º~92º
20	-5º~35º	20	5º~92º
30	-5º~45º	30	15º~92º
40	-5º~55º	40	25º~92º
50	-5º~65º	50	35º~92º
60	-5º~75º	60	45º~92º
70	-5º~85º	70	55º~92º
80	-5º~95º	80	70º~92º

Table 27

The coordinates shown on the monitor refer to the central point of the monitor (where the diagonals meet).

SET WINDOWS submenu
This includes the operations needed to position and configure the privacy zones.

```
          SET WINDOWS

WINDOWS NUMBER              1
<EDIT WINDOW LOCATION>
<EDIT WINDOW ZOOM >
ENABLE WINDOW               OFF
CLEAR CURRENT WINDOW
BACK
EXIT
```

Screen 32: Set Windows Sub-Menu

Option	Value	Explanation
WINDOWS NUMBER	**1~ 8**	This option is used to select one of the 8 privacy zones (**WINDOWS**).
EDIT WINDOW LOCATION		This option is used to activate the privacy zone positioning procedure (see below).
EDIT WINDOW ZOOM		This option sets the zoom level over which the created privacy zone will be visible.
ENABLE WINDOW	**ON/OFF**	This switches the privacy zone selected in **WINDOW NUMBER** on and off.
CLEAR CURRENT WINDOW		This deletes the privacy zone selected in **WINDOW NUMBER**.

Table 28

EDIT WINDOW LOCATION submenu
This menu may be used to define the position of the privacy zones to be created.
1) Press "►" on "**EDIT WINDOW LOCATION**".
2) Press **OPEN**. The following screen will appear.

```
      EDIT WINDOW LOCATION

IRIS OPEN TO CONTINUE
IRIS CLOSE TO CANCEL
```

Screen 33: Edit Window Location Sub-Menu

3) A cross-shaped pointer will appear on the monitor: this pointer will correspond to the middle of the privacy zones being created.

4) Point the cross-shaped cursor to the required position by moving the joystick in the vertical and horizontal directions.
5) Press **OPEN**. A square will appear on the monitor (with the previously defined features).
6) Use the joystick to obtain the required dimensions of the privacy zone:
   a) Move leftwards to increase the left and right edges of the blanking zone
   b) Move rightwards to decrease the left and right edges of the blanking zone
   c) Move upwards to increase the upper and lower edges of the blanking zone
   d) Move downwards to decrease the upper and lower edges of the blanking zone
7) Press **OPEN** to confirm after reaching the required dimensions.
8) At this point, either select a new privacy zone or select **CLOSE** to quit the menu.

🕮 *It is preferable to set the privacy zones with a zoom level of 1x.*

Remarks on Privacy Zones
☑ Privacy zones can be programmed (and therefore the menu can be opened) in optical zoom situations only. The privacy zone works also in digital zoom conditions.
☑ The privacy zone rectangle will move on the screen when panning and tilting. Zooming will expand and contract the rectangle.
☑ The rectangle will expand twice in the vertical direction and four times in the horizontal position to avoid viewing protected areas when panning, tilting and zooming.
☑ After panning and tilting, the privacy zone rectangle will shift and return to the correct dimensions. After zooming, the rectangle will remain either contracted or expanded according to the applied zoom (regardless of the x2 or x4 factor applied while zooming).
☑ It is advisable to make the privacy areas slightly larger than the area to be concealed.
☑ Privacy zones can only be rectangular or squares, but several rectangles can be placed to mask the area as required.

EDIT WINDOW ZOOM submenu
This menu item is used to define the zoom level at which the privacy zone becomes visible after defining the color and the position of the privacy zone.

1) Press "►" on "**EDIT WINDOW ZOOM**".
2) Press **OPEN**, the following screen will appear.

```
        EDIT WINDOW ZOOM

IRIS OPEN TO CONTINUE
IRIS CLOSE TO CANCEL
```

Screen 34: Edit Window Zoom

3) Press **OPEN** and start the zoom setting procedure. The newly created privacy zone will appear on the monitor.
4) Use the joystick to obtain the required zoom level over which the privacy zone will become visible:
   a) Turn clockwise to increase the zoom level
   b) Turn anticlockwise to decrease the zoom level
5) Press **OPEN** to confirm.

4.5.4.5. HEATER SETTING

```
         HEATER SETTING

HEATER DISPLAY          ON
HEATER MODE             AUTO
TEMPERATURE SET         33℃
BACK
EXIT
```

Screen 35: Heater Setting

Option	Value	Explanation
HEATER DISPLAY	**ON/OFF**	This switches the heater status display on and off. The message "**HEATER**" will appear when the heater is on.

HEATER MODE	**AUTO**	Heater operating mode: when set to ”AUTO”, the heater is operated when the outside temperature is lower than the setting made in the following menu.
	OFF	The heater is always off.
	ON	The heater is always on.
TEMPERATURE SET	**-99 ~ +99**	Temperature threshold in °C under which the heater is activated. Recommended values 18 - 20 °C

Table 29

4.5.4.6. CRUISE SETTING

```
              CRUISE

DWELL TIME<SECS>            7
CRUISE TRACKING             ON
PRESET LIST                 1
    1 ON            0 OFF
1234567890 <PRESET 1-10>
0110010111
BACK
EXIT
```

Screen 36: Cruise

The **CRUISE** function is used to make the camera run a cycle consisting of up to 30 preset positions.
This menu item is used to enable each of the preset positions used in the cruise cycle.

For the cruise cycle to be effective, the preset positions must be actually stored.

Option	Value	Explanation
DWELL TIME <SECS>	**5 ~ 250**	Duration (in seconds) of the dwelling time on each presetting.
CRUISE TRACKING	**ON, OFF**	This is to enable or disable tracking function during cruise.
PRESET LIST	**1 ~ 3**	Value 1 selects the first group of Presets from 1 to 10, value 2 selects the second group from 11 to 20, value 3 the third group from 21 to 30. The following 10 digits (1/10) are used to switch the corresponding preset in the corresponding ten (1-10, 11-20, 21-30) either on or off (1=**ON**; 0=**OFF**).

Table 30

4.5.4.7. TRACKING SETTING

```
        TRACKING SETTING

DEFAULT SETTING
SIZE SENS               MEDIUM
GRAY SENS               MEDIUM
LOST ACT            STOP TRACK
ZOOM SETTING                ON
WAIT TIME<S>                40
<TRACKING BOUNDARY>
AUX                        OFF
TRACKING SPEED            AUTO
TRACKING TIME<M>          AUTO
BACK
EXIT
```

Screen 37: Tracking Setting Sub-Menu

The auto tracking function is used to automatically track moving objects by detecting grayscale variations in the frame.

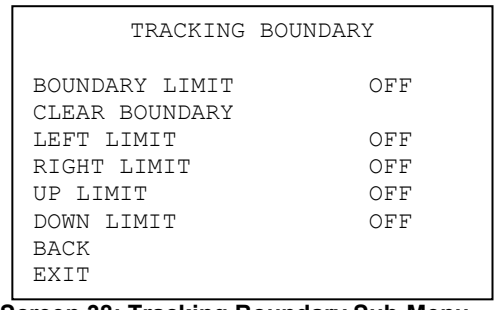
Option	Value	Explanation
DEFAULT SETTING		This function is used to load the auto tracking default settings.

SIZE SENS	**LARGE/MEDIUM/SMALL**	This option defines the total dimensions of the object to be tracked. The parameters are **LARGE/MEDIUM/SMALL**. An object larger than one fourth of the screen is **LARGE**. An object smaller than one eighth of the screen is **SMALL**.
GRAY SENS	**HIGH/MEDIUM/LOW**	This option determines the auto tracking sensitivity. The sensitivity measures the grey scale variations of a certain point in the frame in the unit of time.
LOST ACT	**HOME N TRA**	This option is used to establish the action to be performed if the camera loses the tracked object: the **HOME N TRA** option goes to preset 1 and starts tracking.
	KEEP TRACK	The **KEEP TRACK** option keeps the camera in the position reached and the tracking function is kept on waiting for an object to be intercepted again.
	STOP TRACK	The **STOP TRACK** option leaves the camera in the position reached and deactivates the tracking function.
ZOOM SETTING	**OFF, 1 ~ 18**	This option determines the maximum zoom value that the camera may use for tracking the object.
WAIT TIME	**5, 10, 15, 20, 25, 30, 35, 40 SECONDS**	This option determines the time which must elapse before performing **Lost Ac**t after losing a motion in frame.
TRACKING BOUNDARY	**UP/DOWN/LEFT/RIGHT**	This option is used to define the zone in which the camera performs the tracking.
AUX	**OFF, 1, 2**	This option is used to activate one of the 2 alarm outputs if the tracking function is on (**OFF** = no active alarm output).
TRACKING SPEED	**AUTO, 1 ~ 63**	This option establishes the camera movement speed. If **AUTO** is selected, the camera is automatically "adapted" to the motion of the target. The **1~63** options allow selecting the expected speed of the object to be tracked (1 slow, 63 fast).
TRACKING TIME	**AUTO,1~15 (MINUTES)**	This option allows setting the max. tracking duration, in minutes, during which the camera automatically tracks moving objects. Once the tracking time has expired, the camera exits the tracking mode, waiting for further commands

Table 31

TRACKING BOUNDARY submenu

Operations needed to establish an intervention zone for the tracking function.



Screen 38: Tracking Boundary Sub-Menu

Option	Value	Explanation
BOUNDARY LIMIT	**ON/OFF**	This switches tracking function intervention zone on and off.
CLEAR BOUNDARY		This deletes the intervention area.
LEFT LIMIT	**ON/OFF**	Left limit of the intervention zone.
RIGHT LIMIT	**ON/OFF**	Right limit of the intervention zone.
UP LIMIT	**ON/OFF**	Up limit of the intervention zone.
DOWN LIMIT	**ON/OFF**	Low limit of the intervention zone.

Table 32

Advice for Correct Auto Tracking Use

General warnings

- ☑ The tracking function should mainly be used in indoor environments.
- ☑ Provide the best lighting possible in the detection zone: in poor lighting conditions, the inevitable presence of noise on the image makes grayscale variations extremely critical. In poor lighting conditions, the camera may easily lose the tracked object.
- ☑ If IR illuminators are used, remember that:
  - The camera must be programmed to operate in B/W only (**DOME SETTINGS 1 > CAMERA > ADDITIONAL** menu) because the Slow Shutter will make tracking unreliable in color mode
  - The lighting entirely covers the frame where motion is tracked, possibly by restricting the range of action of the camera in tracking mode (using the **TRACKING BOUNDARY** option).
- ☑ Avoid background objects in the frame which could trick the motion detector, such as for example Venetian blinds, gates, doors with grid and objects with very marked, contrasting contours. A chequerboard background is certainly the worst condition for satisfactory operation.
- ☑ Do not use the privacy zone function in frames where auto tracking is used: the privacy zone can trick the auto tracking function.
- ☑ Do not use the auto tracking function if the object to be tracked and/or monitored moves too fast.

Recommended control parameters

SIZE SENS: select **SMALL** particularly in poor lighting conditions to improve performance.

GRAY SENS: most false alarms are caused by the tracking of unexpected objects. For this reason, it is preferable to select low sensitivity.

ZOOM SETTING: it is advisable to use the lowest possible zoom values.

WAIT TIME: particularly, in the case of poor lighting conditions or frames with interference, it is preferable to set the lowest possible time to prevent the camera from constantly tracking unexpected objects (e.g. “video noise” in the frame).

TRACKING SPEED: the **AUTO** setting should always be preferred, unless the object to be tracked does not always move at low, constant speed.

TRACKING BOUNDARY: it is strongly advised to delimit the tracking zone, avoiding including unnecessary parts in the frame.

Tracking during cruise is available. When the camera is cruising among saved presets, it will detect and follow moving object automatically when it stops at a specific preset. When the moving object gets out of view for pre-defined interval, the camera will go back to its previously stopped preset and cruise to the next preset again.

- ☑ Enter **DOME SETTINGS 1** > **MOTION** > **PARK ACTION**, set it as **REPEAT LAST**
- ☑ Go to **DOME SETTINGS 2** > **TRACKING SETTING** > **LOST ACT**, set it as **STOP TRACK**
- ☑ Go to **DOME SETTINGS 2** > **CRUISE** > **DWELL TIME**, set it as **8** and program the preset list
- ☑ **PRESET** + **90** + **ENTER** to start the function.

4.5.4.8. TIME

```
                TIME

TIME FORMAT          24H
SET TIME             04:03
DATE FORMAT          M/D/Y
SET DATE             19/01/2010
SAVE
CANCEL
EXIT
```

Screen 39: Time

Option	Value	Explanation
TIME FORMAT	**12H, 24H**	This entry is to set the time format in 12H or 24H.
SET TIME		This entry is to set the time of the ptz clock.
DATE FORMAT	**Y/M/D, D/M/Y**	This entry is to set the date format.
SET DATE		This entry is to set the date of the ptz.

Table 33

4.5.4.9. EVENT

```
                EVENT

EVENT NUMBER              1
<EDIT EVENT LABEL>
<EDIT EVENT>
<CLEAR EVENT>
<LIST EVENT>
HOLIDAY                   3
<EDIT HOLIDAY>
<CLEAR HOLIDAY>
<LIST HOLIDAY>
BACK
EXIT
```

Screen 40: Event

Option	Value	Explanation
EDIT EVENT LABEL		This entry is to edit the event label.
EDIT EVENT		This entry is to edit event: action, start time and stop time etc.
CLEAR EVENT		Clear the current event.
LIST EVENT		The entry shows the full list of events.
EDIT HOLIDAY		The entry is to define the current holiday.
CLEAR HOLIDAY		Clear the current holiday.
LIST HOLIDAY		The entry shows the full list of holidays.

Table 34

Edit Event Label Submenu

This includes the operations needed to enter labels to be associated to events.

1) Use the joystick to point the cursor to the "**EDIT EVENT LABEL**" option.
2) Press **OPEN**. The following menu will appear on the display:
3) Point the cursor to the first character to be used and press **OPEN**. Point the cursor to "**BACKSPACE**" to delete it.
4) After writing the text, point the cursor to **OK** and press **OPEN** to save and go back to the main screen.

```
              EVENT NUMBER        1

EVENT LABEL          1 - - - - -
0 1 2 3 4 5 6 7 8 9 Y Z y z
A B C D E F G H I J K L M N O P Q R S T U V W X
a b c d e f g h I j k l m n o p q r s t u v w x

 OK                  CANCEL
 SPACE               BACKSPACE
```

Screen 41: Event Label Sub-Menu

Edit Event Submenu

This includes the operations needed to program the current event.

```
          EDIT EVENT

EVENT LABEL             1
EVENT ACTIVE            OFF
START TIME              00:00
STOP TIME               00:00
EVENT OCCURS
    SUNDAY              OFF
    MONDAY              OFF
    TUESDAY             OFF
    WEDNSDAY            OFF
    THURSDAY            OFF
    SATURDAY            OFF
    HOLIDAY             OFF
EVENT TYPE              CRUISE
NUMBER                  4
SAVE
CANCEL
EXIT
```

Screen 42: Event Label Sub-Menu

Option	Value	Explanation
EVENT ACTIVE	**ON, OFF**	This entry enables or disables the current event.
START TIME	**00:00 ~ 23:59**	Program the start time of the current event.
STOP TIME	**00:00 ~ 23:59**	Program the start time of the current event.
EVENT OCCURS SUNDAY, MONDAY, TUESDAY, WEDNSDAY, THURSDAY, FRIDAY, HOLIDAY	**ON, OFF**	The entries programs which day(s) the event shall be executed.
EVENT TYPE	**TRACKING**	The camera performs tracking action on alarm.
	AUTO SCAN	The camera performs an auto scan on alarm: the camera performs a 360 horizontal scan operation.
	RANDOM SCAN	The camera performs a random scan on alarm: the camera performs a random 360° scan pausing for approximately 2" every 142°.
	FRAME SCAN	The camera performs a frame scan on alarm: the horizontal scan is performed in the SET SCAN limits.
	PRESET 1/PRESET 8	The camera goes to preset 1 or preset 8 at the end of the park time.
	PATTERN 1	The camera performs pattern action 1 on alarm.
	PATTERN 2	The camera performs pattern action 2 on alarm.
	PATTERN 3	The camera performs pattern action 3 on alarm.
	PATTERN 4	The camera performs pattern action 4 on alarm.
	CRUISE	The camera performs a cruise on alarm: the camera runs a cycle consisting of up to 30 preset positions.
	CRUISE TRA	The camera performs a cruise with tracking on alarm.
	DAY/NIGHT	The camera will start day/night function. It is available only on camera modules that have day/night function.

Table 35

4.5.5. DOME LABEL

```
          DOME LABEL

<EDIT DOME LABEL>
<CLEAR DOME LABEL>
BACK
EXIT
```

Screen 43: Dome Label Menu

Option	Value	Explanation

EDIT DOME LABEL		This submenu is used to access writing mode for associating a camera label (see below).
CLEAR DOME LABEL		This submenu allows deleting the label associated to the camera (see below).

Table 36

EDIT DOME LABEL submenu

The operations needed to associate a label to a camera are:

1) Use the joystick to point the cursor to the "**EDIT DOME LABEL**" option.
2) Press **OPEN**. The following menu will appear on the display:

```
                EDIT DOME LABEL
DOME LABEL
0 1 2 3 4 5 6 7 8 9 Y Z y z
A B C D E F G H I J K L M N O P Q R S T U V W X
a b c d e f g h I j k l m n o p q r s t u v w x
 OK                  CANCEL
 SPACE               BACKSPACE
```

Screen 44: Edit Dome Label

3) Point the cursor to the first character to be used and press **OPEN**. Point the cursor to "**BACKSPACE**" to delete it.
4) After writing the text, point the cursor to **OK** and press **OPEN** to save and go back to the main screen.

4.6. SPECIAL CONTROL PANEL COMMANDS

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

Control panel command	Function
PRESET + **95** + **ENTER**	Access main menu
PRESET + **XXX** + **ENTER**	Store preset position (Preset) xxx.
CALL + **XXX** + **ENTER**	Recall preset position (Preset) xxx.
CALL + **80** + **ENTER**	Start the tracking function
CALL + **82** + **ENTER**	Start the cruise function
CALL + **83** + **ENTER**	Delete all Presets
PRESET + **84** + **ENTER**	Store pattern 1
PRESET + **85** + **ENTER**	Store pattern 2
PRESET + **86** + **ENTER**	Store pattern 3
PRESET + **87** + **ENTER**	Store pattern 4
CALL + **84** + **ENTER**	Start pattern 1
CALL + **85** + **ENTER**	Start pattern 2
CALL + **86** + **ENTER**	Start pattern 3
CALL + **87** + **ENTER**	Start pattern 4
CALL + **88** + **ENTER**	Start park action function
CALL + **89** + **ENTER**	Stop park action function
CALL + **90** + **ENTER**	Start cruise with tracking function
CALL + **91** + **ENTER**	Start vibration correction (only for relative modules)
PRESET + **92** + **ENTER**	Set the left limit of the boundary
PRESET + **93** + **ENTER**	Set the right limit of the boundary
CALL + **92** + **ENTER**	Call the left limit of the boundary
CALL + **93** + **ENTER**	Call the right limit of the boundary
CALL + **94** + **ENTER**	Start/Stop wide dynamic range function (only for relative modules)
CALL + **97** + **ENTER**	Start random scan function
CALL + **98** + **ENTER**	Start frame scan function
CALL + **99** + **ENTER**	Start auto scan function

Table 37

When storing Presets, it is important to remember that some are reserved and cannot be either stored or used for positioning the camera. Presets from 80 to 99, Presets from 100 to 103, 170 to 173.

5. TROUBLE SHOOTING

Problem	*Possible Reason*	*Solution*
Power on normally but no video signal	*Wrong wire connections*	*Check and reconnect wires*
	Wrong or bad power source	*Change power source*
	Fuse broken.	*Change fuse*
	Power cable is disconnected	*Reconnect power wiring*
Pan/Tilt not initializing when power on	*Address, protocol, and baud rate is not correctly set*	*Check and set the parameters again.*
	RS485 cable is not correctly connected	*Check and reconnect RS485 cable*
Video is not stable	*Video cable is wrong*	*Check and reconnect video*
	Power source is wrong	*Change the power source*
Control center is not stable	*RS485 wiring error*	*Check and reconnect the RS485*

Table 38

6. ANNEX

6.1. DIP SWITCH CHART

POS	1	2	3	4	DESCRIPTION			
COMM PTOL	ON	OFF	OFF	OFF	USER			
	OFF	ON	OFF	OFF	PELCO-P			
	ON	ON	OFF	OFF	PELCO-D			
	OFF	OFF	ON	OFF	RESERVED			
POS	**DESCRIPTION**				**5**	**6**	**7**	**8**
BAUD RATE (BPS)	1200				ON	OFF	OFF	OFF
	2400				OFF	ON	OFF	OFF
	4800				ON	ON	OFF	OFF
	9600				OFF	OFF	ON	OFF
	19200				ON	OFF	ON	OFF
	Reserved for future use				…			

Table 39: SWITCH1 SETTING

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

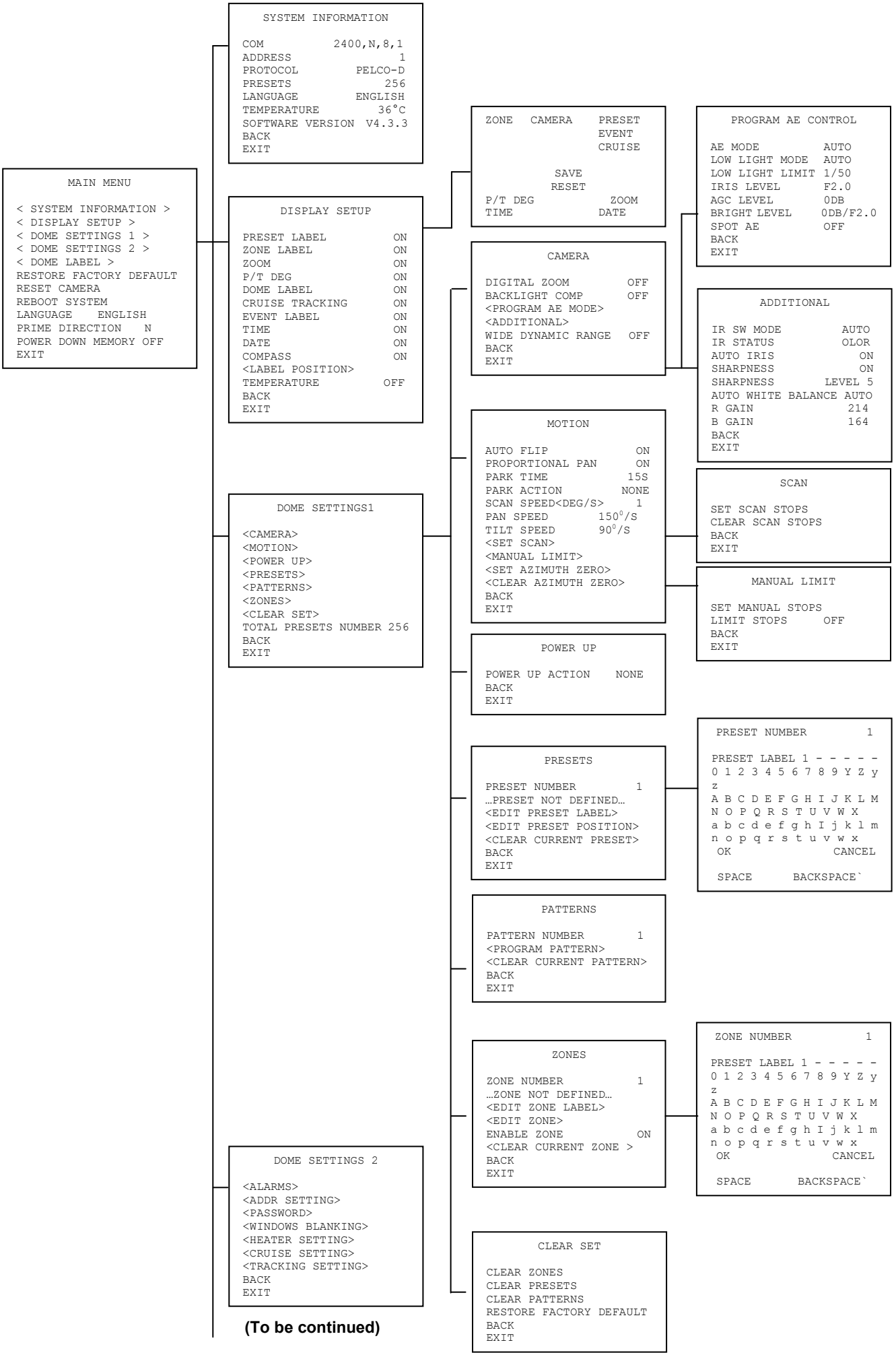
186	OFF	ON	OFF	ON	ON	ON	OFF	ON
187	ON	ON	OFF	ON	ON	ON	OFF	ON
188	OFF	OFF	ON	ON	ON	ON	OFF	ON
189	ON	OFF	ON	ON	ON	ON	OFF	ON
190	OFF	ON	ON	ON	ON	ON	OFF	ON
191	ON	ON	ON	ON	ON	ON	OFF	ON
192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
195	ON	ON	OFF	OFF	OFF	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

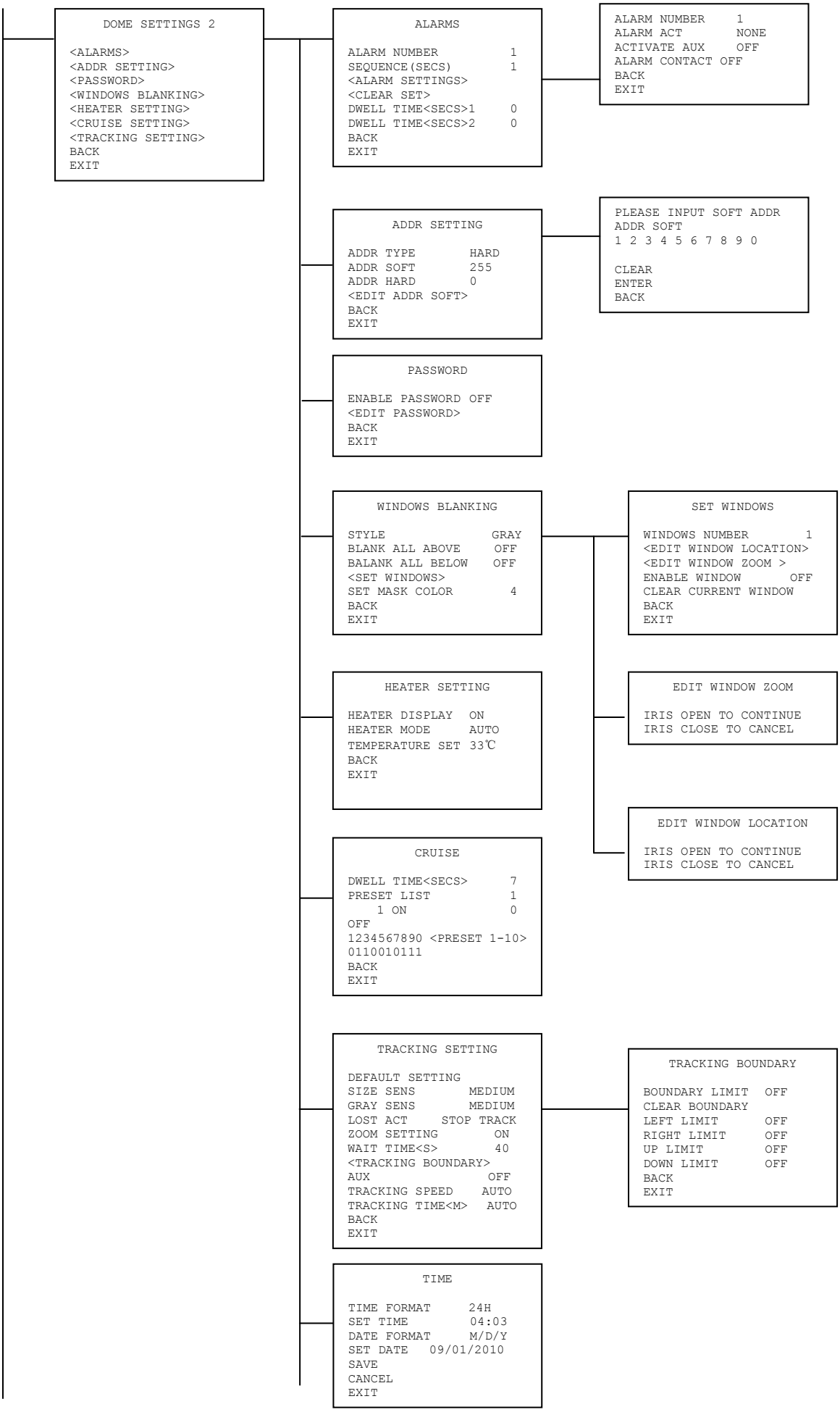
Table 40: SWITCH2 SETTING

6.2. OSD MENU DIAGRAM

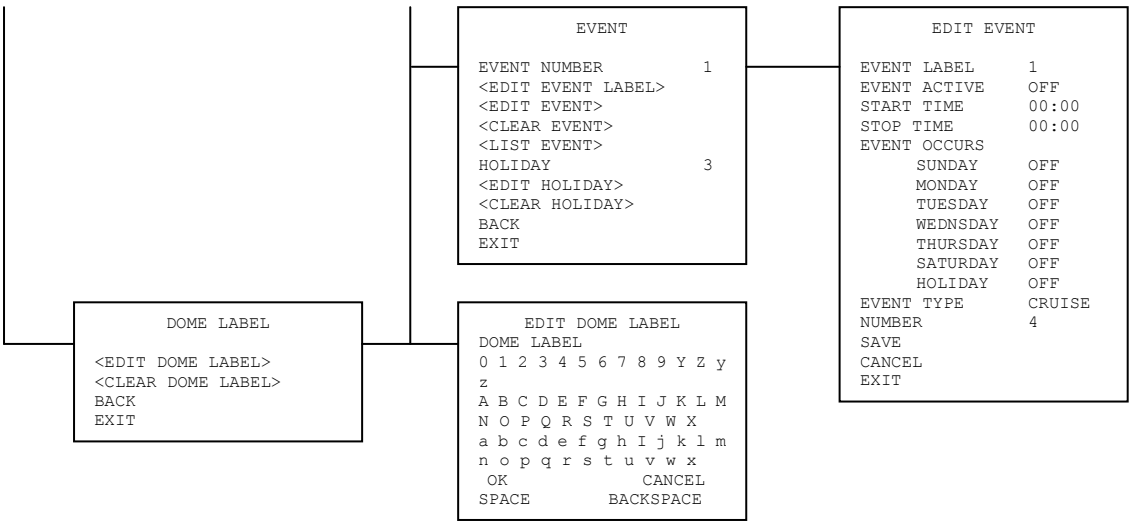
Please see the next two pages.



(To be continued)



(To be continued)


DOME LABEL
<EDIT DOME LABEL>
<CLEAR DOME LABEL>
BACK
EXIT
EVENT
EVENT NUMBER 1
<EDIT EVENT LABEL>
<EDIT EVENT>
<CLEAR EVENT>
<LIST EVENT>
HOLIDAY 3
<EDIT HOLIDAY>
<CLEAR HOLIDAY>
BACK
EXIT
EDIT DOME LABEL
DOME LABEL
0 1 2 3 4 5 6 7 8 9 Y Z y z
A B C D E F G H I J K L M N O P Q R S T U V W X
a b c d e f g h I j k l m n o p q r s t u v w x
OK CANCEL
SPACE BACKSPACE
EDIT EVENT
EVENT LABEL 1
EVENT ACTIVE OFF
START TIME 00:00
STOP TIME 00:00
EVENT OCCURS
SUNDAY OFF
MONDAY OFF
TUESDAY OFF
WEDNSDAY OFF
THURSDAY OFF
SATURDAY OFF
HOLIDAY OFF
EVENT TYPE CRUISE
NUMBER 4
SAVE
CANCEL
EXIT