

# INSTALLATION & USER MANUAL



**XL-ICA-H655AT-SM2331**

**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.***

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## 1. SAFETY NOTES --- IMPORTANT!!!

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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 lightning 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

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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

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- ☑ Auto tracking of moving object (auto PTZ) based on our motion tracking technology;
- ☑ Max 36X optical, 0.01Lux of module specifications;
- ☑ 360° horizontal rotation at maximum speed of 240° /sec;
- ☑ Auto cruise function with 256 preset positions;
- ☑ Built-in OSD Menu, to change dome parameter, achieve auto scan, and pattern etc;
- ☑ 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;
- ☑ Auto focus lens and auto white balance, BLC function;
- ☑ Multi protocol compatible (Pelco-P, Pelco-D etc);
- ☑ Alarm input, Alarm output, Alarm action.

### 2.2. FUNCTIONS

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#### **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.

#### **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 function are based on the relative modules. Please refer to technical parameters.*

#### **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 180°. 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 and camera to that position. User can save and call presets easily and promptly by using keyboard controller or infrared controller. The camera supports up to 256 presets.

### **Lens Control**

#### 1) Zoom control

User can adjust zoom wide or tele by controller and 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 360° ranging from the current position.

Random Scan: Make the camera random scan 360° 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 360° 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 <sub>P-P</sub>                |                  |                         |                            |
| P/T Speed                | Pan:0.05°~240°/sec;Tilt:0.03°~160°/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<br>f=3.5-91mm | F 1.6-4.5<br>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 <sub>P-P</sub>                |                           |                           |
| P/T Speed                | Pan:0.05°~240°/sec;Tilt:0.03°~160°/sec |                           |                           |
| S/N Ratio                | ≥50DB                                  |                           |                           |
| AGC                      | Auto/Manual                            |                           |                           |
| BLC                      | Auto/Manual                            |                           |                           |
| Sensitivity              | 0.01Lux                                | 0.001Lux                  |                           |
| IR cut Filter            | Yes                                    |                           |                           |
| Wide Dynamic Range (WDR) | Yes                                    |                           |                           |
| LENS                     | F1.6-F3.7 f=3.6-82.8mm                 | F1.4- F4.6<br>f=3.4-102mm | F1.4- F4.2<br>f=3.4-119mm |
| Optical Zoom             | 23X                                    | 30X                       | 35X                       |
| Digital Zoom             | 8X                                     |                           |                           |

Table 2: Hitachi Modules



*The specifications are subject to change without notice.*



### 3. INSTALLATION

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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.

#### 3.1. DIP SWITCH SETTING

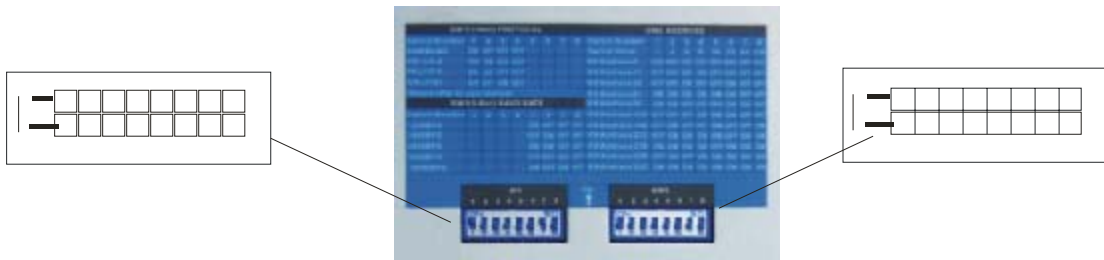
---

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). Refer to Table 3: SWITCH1 SETTING for communication protocol and baud rate settings, 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 29: SWITCH1 SETTING** and **Table 30: 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

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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)

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###### 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.

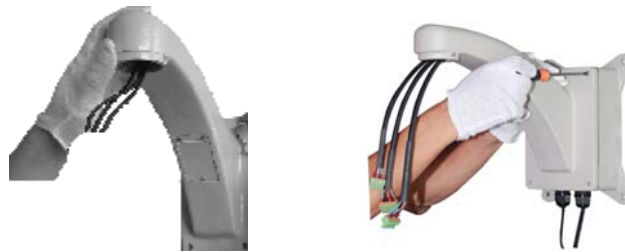


To install the ptz camera with no power box, install the bracket directly onto the wall and then go to Pic 6.



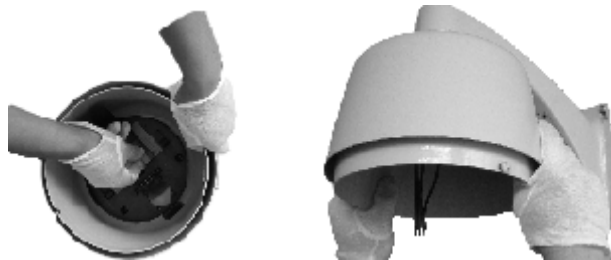
Pic. 4

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.



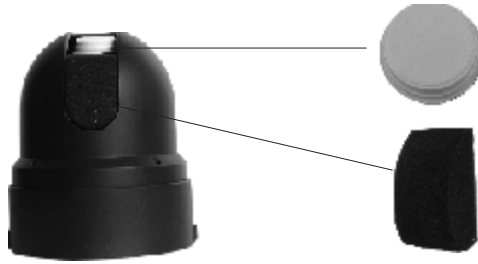
Pic. 7

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. Install dome drive



**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. Install lower dome.**



**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. Prepare In-ceiling**



**Pic. 13**

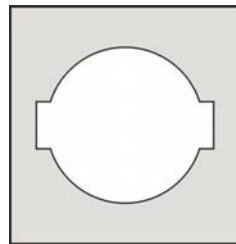
Locate the center point of the in-ceiling mounting location. Insert the compass tool into the hole. Draw a circle on the ceiling using the compass tool and a pencil. See Pic. 14 (Left).

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. Install back box**



**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.



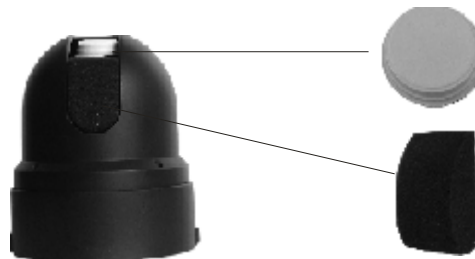
**Pic. 19**

 *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.



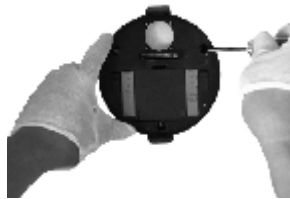
**Pic. 23**

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.



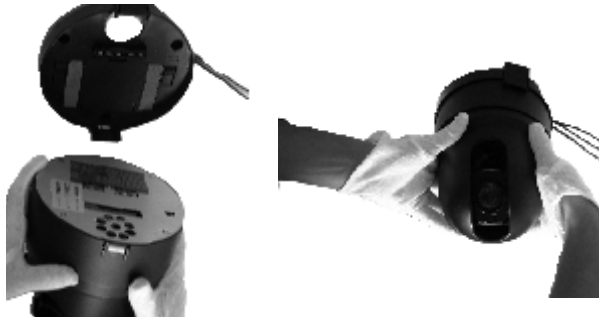
**Pic. 26**

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. Install dome drive

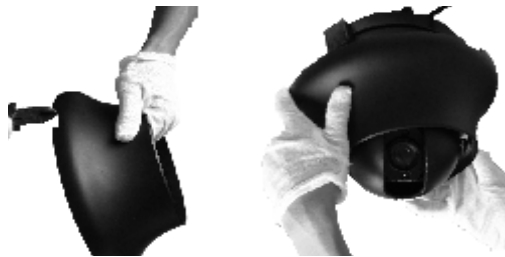
Set the DIP switches for SW1 and SW2 on the bottom of the dome drive for the appropriate receiver address, communication protocol, and baud rate. Refer to the labels on the dome drive or DIP SWITCH SET in this manual.



**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. Install dome flange



**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 clarty flake of the dome drive. See Pic. 29.

### **3.2.4. POLE MOUNT INSTALLATION**

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See [Section 3.2.1 Wall Mount Installation](#).

## 4. OPERATION GUIDE

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### 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, and camera address and software version.

```
PROTOCOL: PELCO-D
COM: 9600, N, 8, 1
ADDR: 1
SOFTWARE VERSION V4.3.3
```

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 **HOME 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

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

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 **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 >  
RESET CAMERA  
REBOOT SYSTEM  
LANGUAGE            ENGLISH  
EXIT

**Screen 1: Main Menu**

Otherwise, if a password is required, the following prompt 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.

| Option             | Value   | Explanation   |
|--------------------|---------|---|
| SYSTEM INFORMATION |         | Product information menu (refer to <b>Section 4.5.1</b> ).  |
| DISPLAY SETUP      |         | Display menu (refer to <b>Section 4.5.2</b> ).  |
| DOMES SETTINGS 1   |         | Main programming menu (refer to <b>Section 4.5.3</b> ).   |
| DOMES SETTINGS 2   |         | Secondary programming menu (refer to <b>Section 4.5.4</b> ).  |
| DOMES LABEL        |         | Menu for associating the text to be associated to the camera (refer <b>Section 4.5.5</b> ).   |
| 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 | Menus in English.   |

**Table 3**

#### 4.5.1. PRODUCT 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. The information in this menu cannot be edited.

|                    |            |
|--------------------|------------|
| SYSTEM INFORMATION |            |
| COM                | 2400,N,8,1 |
| ADDRESS            | 1          |
| PROTOCOL           | PELCO-D    |
| PRESETS            | 256        |
| LANGUAGE           | ENGLISH    |
| TEMPERATURE        | 36°C       |
| SOFTWARE VERSION   | V4.3.3     |
| BACK               |            |
| EXIT               |            |

**Screen 3: System Info**

#### 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  |
| DOMES LABEL      | ON  |
| <LABEL POSITION> |     |
| TEMPERATURE      | OFF |
| BACK             |     |
| EXIT             |     |

**Screen 4: Display Menu**

| 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 labels. The coordinates refer to the monitor centre. |
| DOME LABEL     | ON/OFF | Show or hide dome labels.   |
| LABEL POSITION |        | Label positioning submenu (refer to <b>Section 4.5.2.1</b> )                      |
| 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 |
|         | SAVE  |        |
|         | RESET |        |
| P/T DEG |       | ZOOM   |

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

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>  |     |
| <ADDITIONAL>       |     |
| WIDE DYNAMIC RANGE | OFF |
| BACK               |     |
| EXIT               |     |

Screen 7: Camera (Sub-Menu)

| 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)   |
| ADDITIONAL         |        | Additional settings submenu (see below).   |
| WIDE DYNAMIC RANGE | ON/OFF | Activate WDR feature of the camera. This is only available on related optical modules.   |

Table 6

## PROGRAM AE CONTROL submenu - Automatic Exposure settings

| PROGRAM AE CONTROL |          |
|--------------------|----------|
| AE MODE            | AUTO     |
| LOW LIGHT MODE     | AUTO     |
| LOW LIGHT LIMIT    | 1/50     |
| IRIS LEVEL         | F2.0     |
| AGC LEVEL          | 0DB      |
| BRIGHT LEVEL       | 0DB/F2.0 |
| SPOT AE            | OFF      |
| BACK               |          |
| EXIT               |          |

Screen 8: Program AE Control

| Option  | Value   | Explanation  |
|---------|---------|--|
| AE MODE | AUTO    | In this mode: <ul style="list-style-type: none"> <li>- The shutter opening time cannot be set and is automatically adjusted.</li> <li>- Auto IRIS opening is automatically adjusted.</li> <li>- Gain control is automatic (AGC ON).</li> </ul>               |
|         | SHUTTER | In this mode: <ul style="list-style-type: none"> <li>- The shutter opening time may be varied as programmed in the "LOW LIGHT LIMIT" menu.</li> <li>- Auto IRIS opening is automatically adjusted.</li> <li>- Gain control is automatic (AGC ON).</li> </ul> |

|                        |   |   |
|------------------------|---|---|
|                        | <b>IRIS</b>   | In this mode:<br>- The IRIS opening time is fixed to 1/50 second.<br>- The auto IRIS opening is manually varied in the “ <b>IRIS LEVEL</b> ” menu.<br>- Gain control is automatic ( <b>AGC ON</b> ).  |
|                        | <b>MANUAL</b>   | In this mode:<br>- The shutter opening time may be varied as programmed in the “ <b>LOW LIGHT LIMIT</b> ” menu.<br>- The auto IRIS opening is manually varied in the “ <b>IRIS LEVEL</b> ” menu.<br>- AGC gain control is variable as programmed in the “ <b>AGC LEVEL</b> ” menu. All items may be accessed in this mode.                        |
|                        | <b>BRIGHT</b>   | In this mode:<br>- The IRIS opening time is fixed to 1/50 second.<br>- The auto IRIS opening is manually varied in the “ <b>BRIGHT LEVEL</b> ” menu.<br>- Gain control is off (0 dB).   |
| <b>LOW LIGHT MODE</b>  | <b>AUTO/MANUAL</b>  | This parameter is as follows:<br>- <b>AUTO</b> : uses a fixed maximum IRIS opening (1/50 second).<br>- <b>MANUAL</b> : increases camera sensitivity to the detriment of refreshing frequency (frame rate) using the “ <b>LOW LIGHT LIMIT</b> ” value.<br><br>These adjustments are possible only in “ <b>MANUAL</b> ” or “ <b>SHUTTER</b> ” mode. |
| <b>LOW LIGHT LIMIT</b> | 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.<br><br>These adjustments are possible only in “ <b>MANUAL</b> ” or “ <b>SHUTTER</b> ” mode.   |
| <b>IRIS LEVEL</b>      | 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).<br>It is used to manually set the IRIS opening time.<br><br>These adjustments are possible only in “ <b>MANUAL</b> ” or “ <b>IRIS</b> ” mode.   |
| <b>AGC LEVEL</b>       | -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.<br><br>This selection is used to manually set the video signal gain. These adjustments are possible only in “ <b>MANUAL</b> ” mode.  |
| <b>BRIGHT LEVEL</b>    | 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.<br><br>The function may be used only if “ <b>AE MODE</b> ” is set to “ <b>BRIGHT</b> ”.                   |
| <b>SPOT AE</b>         | ON/OFF  | If this function is on, the adjustments only use the middle part of the image.  |

**Table 7**



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

- LOW LIGHT MODE** (fixed to “**MANUAL**”)
- LOW LIGHT LIMIT**
- IRIS LEVEL**
- AGC LEVEL**
- BRIGHT LEVEL**

**ADDITIONAL sub-menu - Other program settings.**

| ADDITIONAL         |         |
|--------------------|---------|
| IR SW MODE         | AUTO    |
| IR STATUS          | COLOR   |
| AUTO IRIS          | ON      |
| SHARPNESS          | ON      |
| SHARPNESS          | LEVEL 5 |
| AUTO WHITE BALANCE | AUTO    |
| R GAIN             | 214     |
| B GAIN             | 164     |
| BACK               |         |
| EXIT               |         |

Screen 9: Additional Sub-Menu

| 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 <b>MANUAL</b> mode. The <b>MANUAL</b> option enables the possibility to adjust the <b>IR STATUS</b> parameter (color, B/W). In <b>AUTO</b> mode, the switch is automatic according to the lighting. |
| IR STATUS          | COLOR, B/W  | Day & Night camera configuration.  |
| AUTO IRIS          | ON/OFF      | The auto IRIS may operate automatically ( <b>ON</b> ) or at a predetermined level in the "IRIS LEVEL" menu. If enabled manually, this function will remain operative until the camera performs an angular movement of less than 15 degrees. It will switch automatically.  |
| SHARPNESS          | ON/OFF      | The sharpness of the image may be adjusted automatically ( <b>ON</b> ) 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).   |
| 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             | 0 ~ 255     | Adjust the red components using these values.  |
| B GAIN             | 0 ~ 255     | Adjust the blue components using these values.   |

Table 8

#### 4.5.3.2. MOTION



| MOTION               |      |
|----------------------|------|
| AUTO FLIP            | ON   |
| PROPORTIONAL PAN     | ON   |
| PARK TIME            | 15S  |
| PARK ACTION          | NONE |
| SCAN SPEED<DEG/S>    | 1    |
| <SET SCAN>           |      |
| <MANUAL LIMIT>       |      |
| <SET AZIMUTH ZERO>   |      |
| <CLEAR AZIMUTH ZERO> |      |
| BACK                 |      |
| EXIT                 |      |

Screen 10: 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.   |
| 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.<br><br>To set the left and right scanning limit, position the camera at the required pan angle and press <u>OPEN</u> to set.<br><br>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 settings (see below). |
|--------------------|--|---|

**Table 9**

**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**

|                 |      |
|-----------------|------|
| POWER UP        |      |
| POWER UP ACTION | NONE |
| BACK            |      |
| EXIT            |      |

**Screen 11: Power UP Sub-Menu**

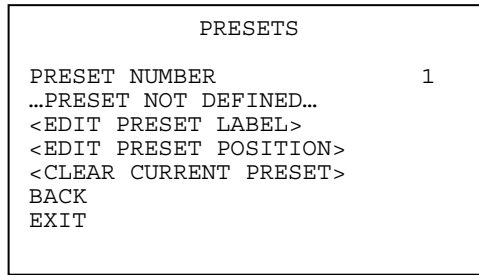
| Option          | Value              | Explanation   |
|-----------------|--------------------|---|
| POWER UP ACTION | NONE               | No action is performed at the end of power up.  |
|                 | AUTO SCAN          | The camera performs an auto scan at the end of power up: the camera 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 10**

**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.*



**Screen 12: Presets**

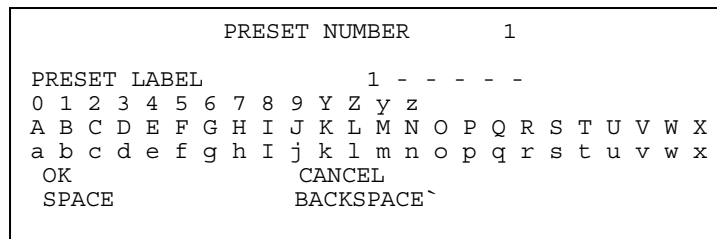
| Option               | Value  | Explanation  |
|----------------------|--------|--|
| PRESET NUMBER        | 1 - 64 | This option is used to select a presetting for entering a descriptive label. This operation is allowed for up to 64 Presets.<br><br>Press the <b>OPEN</b> button and use the joystick to set the number of the presetting to the stored. Press <b>OPEN</b> 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 prest.   |

**Table 11**

**EDIT PRESET LABEL submenu**

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

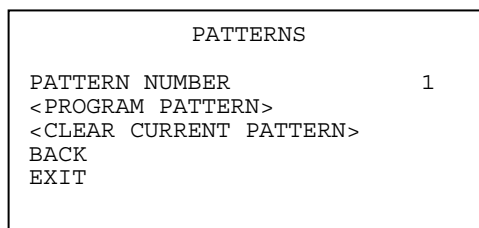
- 1) Use the joystick to point the cursor to "EDIT PRESET LABEL" option.
- 2) Press **OPEN**. The following menu will appear on the display:



**Screen 13: Preset Label Sub-Menu**

- 3) Point the cursor to the first character to the 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**



**Screen 14: 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 12**

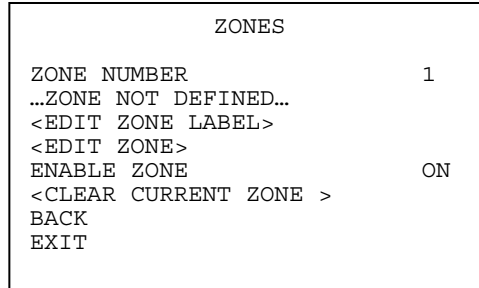
**PROGRAM PATTERN submenu**

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



Screen 15: 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.

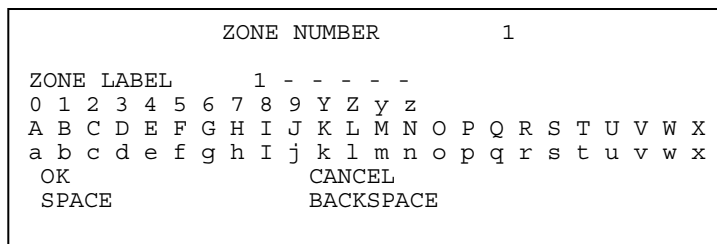
| Option             | Value  | Explanation   |
|--------------------|--------|---|
| ZONE NUMBER        | 1 ~ 8  | This option is used to select a zone.<br><br>Press the <u>OPEN</u> button and use the joystick to set the required zone number. Press <u>OPEN</u> to confirm. |
| EDIT ZONE LABEL    |        | 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 13

#### 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 16: 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

|   |
|---|
| <p>CLEAR SET</p> <p>CLEAR ZONES</p> <p>CLEAR PRESETS</p> <p>CLEAR PATTERNS</p> <p>RESTORE FACTORY DEFAULT</p> <p>BACK</p> <p>EXIT</p> |
|---|

**Screen 17: 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 14**

#### 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.

|  |
|--|
| <p>DOME SETTINGS 2</p> <p>&lt;ALARMS&gt;</p> <p>&lt;ADDR SETTING&gt;</p> <p>&lt;PASSWORD&gt;</p> <p>&lt;WINDOWS BLANKING&gt;</p> <p>&lt;HEATER SETTING&gt;</p> <p>&lt;CRUISE SETTING&gt;</p> <p>&lt;TRACKING SETTING&gt;</p> <p>BACK</p> <p>EXIT</p> |
|--|

**Screen 18: Dome Settings 2**

| Option           | Value | Explanation   |
|------------------|-------|---|
| ALARMS           |       | Alarm submenu (refer to <b>Section 4.5.4.1</b> )              |
| ADDR SETTING     |       | Address setting submenu (refer to <b>Section 4.5.4.2</b> )    |
| PASSWORD         |       | Password submenu (refer to <b>Section 4.5.4.3</b> )           |
| WINDOWS BLANKING |       | Windows blanking submenu (refer to <b>Section 4.5.4.4</b> )   |
| HEATER SETTING   |       | Heater use submenu (refer to <b>Section 4.5.4.5</b> )         |
| CRUISE SETTING   |       | Cruise programming submenu (refer to <b>Section 4.5.4.6</b> ) |
| TRACKING SETTING |       | Automatic tracking submenu (refer to <b>Section 4.5.4.7</b> ) |

**Table 15**

#### 4.5.4.1. ALARMS

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

| ALARMS            |        |
|-------------------|--------|
| ALARM NUMBER      | 1      |
| SEQUENCE (SECS)   | 1      |
| ALARM ACT         | CRUISE |
| ACTIVATE AUX      | OFF    |
| <CLEAR SET>       |        |
| DWELL TIME<SECS>1 | 0      |
| DWELL TIME<SECS>2 | 0      |
| BACK              |        |
| EXIT              |        |

Screen 19: Alarms Sub-Menu

| 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 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  | Output 1 is on.   |
|                   | 2  | Output 2 is on.   |
| CLEAR SETTINGS    |  | 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 16



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 "TRACKING" action, the camera executes the tracking function starting from the preset position that has been associated with the alarm. Once the tracking action has finished, the camera executes the action set in the option **PARK ACTION**.
- 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

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

| ADDR SETTING |      |
|--------------|------|
| ADDR TYPE    | HARD |
| ADDR SOFT    | 255  |
| ADDR HARD    | 0    |
| BACK         |      |
| EXIT         |      |

**Screen 20: Alarm Settings**

| Option    | Value      | Explanation  |
|-----------|------------|--|
| ADDR TYPE | SOFT, HARD | This option is used to program the type of address in current application.<br><br>Press the <b>OPEN</b> button and use the joystick to select the value. Press <b>OPEN</b> to confirm. |
| ADDR SOFT | 0~255      | The option is used to change the soft address.   |
| ADDR HARD |            | This option shows the hard address number. It is the address of the SW2 (Switch Setting 2).  |

**Table 17**



*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 21: Password Sub-Menu**

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

**Table 18**

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 22: 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 23: 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:<br>0 → black<br>1 ~ 6 → grey (1 dark; 6 light)<br>7 → white<br>8 → red<br>9 → green<br>10 → blue<br>11 → cyan<br>12 → yellow<br>13 → magenta        |

**Table 19**



*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               | -5°~10°     | 0               | 5°~92°      |
| 10              | -5°~25°     | 10              | -5°~92°     |



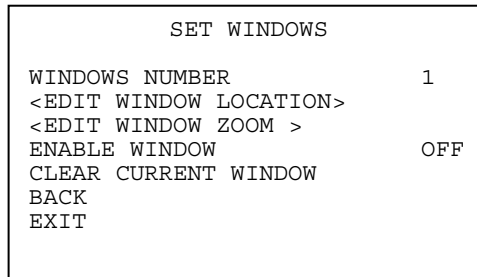
|    |         |    |         |
|----|---------|----|---------|
| 20 | -5°~35° | 20 | 5°~92°  |
| 30 | -5°~45° | 30 | 15°~92° |
| 40 | -5°~55° | 40 | 25°~92° |
| 50 | -5°~65° | 50 | 35°~92° |
| 60 | -5°~75° | 60 | 45°~92° |
| 70 | -5°~85° | 70 | 55°~92° |
| 80 | -5°~95° | 80 | 70°~92° |

**Table 20**

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.



**Screen 24: Set Windows Sub-Menu**

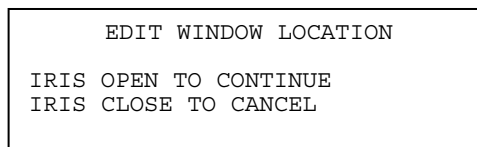
| Option               | Value  | Explanation  |
|----------------------|--------|--|
| WINDOWS NUMBER       | 1~ 8   | This option is used to select one of the 8 privacy zones (WINDOWS).                  |
| EDIT WINDOW LOCATION |        | This option is used to activate the privacy zone positioning 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 21**

**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.



**Screen 25: 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            |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | 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.  |
| <input checked="" type="checkbox"/> | The privacy zone rectangle will move on the screen when panning and tilting. Zooming will expand and contract the rectangle.   |
| <input checked="" type="checkbox"/> | 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.  |
| <input checked="" type="checkbox"/> | 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). |
| <input checked="" type="checkbox"/> | It is advisable to make the privacy areas slightly larger than the area to be concealed.   |
| <input checked="" type="checkbox"/> | 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 26: 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 °C |
| BACK            |       |
| EXIT            |       |

**Screen 27: 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 22**

#### 4.5.4.6. CRUISE SETTING

```

                                CRUISE

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

**Screen 28: 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.  |
| 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.<br><br>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= <b>ON</b> ; 0= <b>OFF</b> ). |

**Table 23**

#### 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 29: 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 <b>LARGE/MEDIUM/SMALL</b> . An object larger than one fourth of the screen is <b>LARGE</b> . An object smaller than one eighth of the screen is <b>SMALL</b> . |
| 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 <b>HOME N TRA</b> option goes to preset 1 and starts tracking.  |
|                 | KEEP TRACK         | The <b>KEEP TRACK</b> option keeps the camera in the position reached and the tracking function is kept on waiting for an object to be intercepted again.   |

|                          |  |  |
|--------------------------|--|--|
|                          | <b>STOP TRACK</b>                            | The <b>STOP TRACK</b> option leaves the camera in the position reached and deactivates the tracking function.  |
| <b>ZOOM SETTING</b>      | <b>OFF, 1 ~ 18</b>                           | This option determines the maximum zoom value that the camera may use for tracking the object.   |
| <b>WAIT TIME</b>         | <b>5, 10, 15, 20, 25, 30, 35, 40 SECONDS</b> | This option determines the time which must elapse before performing <b>LOST ACT</b> .  |
| <b>TRACKING BOUNDARY</b> | <b>UP/DOWN/LEFT/RIGHT</b>                    | This option is used to define the zone in which the camera performs the tracking.  |
| <b>AUX</b>               | <b>OFF, 1, 2</b>                             | This option is used to activate one of the 2 alarm outputs if the tracking function is on ( <b>OFF</b> = no active alarm output).  |
| <b>TRACKING SPEED</b>    | <b>AUTO, 1 ~ 63</b>                          | This option establishes the camera movement speed. If <b>AUTO</b> 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). |
| <b>TRACKING TIME</b>     | <b>AUTO, 1~15 (MINUTES)</b>                  | This option allows setting the max. tracking duration, in minutes, during which the camera automatically tracks moving objects.<br><br>Once the tracking time has expired, the camera exits the tracking mode, waiting for further commands          |

**Table 24**

### TRACKING BOUNDARY submenu

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

| TRACKING BOUNDARY |     |
|-------------------|-----|
| BOUNDARY LIMIT    | OFF |
| CLEAR BOUNDARY    |     |
| LEFT LIMIT        | OFF |
| RIGHT LIMIT       | OFF |
| UP LIMIT          | OFF |
| DOWN LIMIT        | OFF |
| BACK              |     |
| EXIT              |     |

**Screen 30: Tracking Boundary Sub-Menu**

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

**Table 25**



*Tracking during Cruise is now available to all models of tracking ptz. 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 **HOME SETTINGS 1 > MOTION > PARK ACTION**, set it as **REPEAT LAST**
- Go to **HOME SETTINGS 2 > TRACKING SETTING > LOST ACT**, set it as **STOP TRACK**
- Go to **HOME SETTINGS 2 > CRUISE > DWELL TIME**, set it as 8 and program the preset list
- PRESET + 92 + ENTER** to start the function.

## 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 (**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. Excessive detail makes tracking difficult (the movement must be faster and consequently the risk of losing the object is much higher).

**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.

## 4.5.5. DOME LABEL

DOM E LABEL

<EDIT DOM E LABEL>  
 <CLEAR DOM E LABEL>  
 BACK  
 EXIT

**Screen 31: Dome Label Menu**

| Option            | Value | Explanation   |
|-------------------|-------|---|
| EDIT DOM E LABEL  |       | This submenu is used to access writing mode for associating a camera label (see below). |
| CLEAR DOM E LABEL |       | This submenu allows deleting the label associated to the camera (see below).            |

**Table 26**

### EDIT DOM E LABEL submenu

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

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

| EDIT DOME LABEL                                 |           |
|---|-----------|
| DOMELABEL                                       |           |
| 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 32: 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                                      |
|---|---|
| <u>PRESET</u> + <u>95</u> + <u>ENTER</u>  | Access main menu                              |
| <u>PRESET</u> + <u>XXX</u> + <u>ENTER</u> | Store preset position (Preset) xxx.           |
| <u>CALL</u> + <u>XXX</u> + <u>ENTER</u>   | Recall preset position (Preset) xxx.          |
| <u>CALL</u> + <u>80</u> + <u>ENTER</u>    | Start the tracking function                   |
| <u>CALL</u> + <u>82</u> + <u>ENTER</u>    | Start the cruise function                     |
| <u>CALL</u> + <u>83</u> + <u>ENTER</u>    | Delete all Presets                            |
| <u>PRESET</u> + <u>84</u> + <u>ENTER</u>  | Store pattern 1                               |
| <u>PRESET</u> + <u>85</u> + <u>ENTER</u>  | Store pattern 2                               |
| <u>PRESET</u> + <u>86</u> + <u>ENTER</u>  | Store pattern 3                               |
| <u>PRESET</u> + <u>87</u> + <u>ENTER</u>  | Store pattern 4                               |
| <u>CALL</u> + <u>84</u> + <u>ENTER</u>    | Start pattern 1                               |
| <u>CALL</u> + <u>85</u> + <u>ENTER</u>    | Start pattern 2                               |
| <u>CALL</u> + <u>86</u> + <u>ENTER</u>    | Start pattern 3                               |
| <u>CALL</u> + <u>87</u> + <u>ENTER</u>    | Start pattern 4                               |
| <u>CALL</u> + <u>88</u> + <u>ENTER</u>    | Start park action function                    |
| <u>CALL</u> + <u>89</u> + <u>ENTER</u>    | Stop park action function                     |
| <u>CALL</u> + <u>92</u> + <u>ENTER</u>    | Start cruise with tracking function activated |
| <u>CALL</u> + <u>93</u> + <u>ENTER</u>    | Call the menu of boundary setting             |
| <u>CALL</u> + <u>94</u> + <u>ENTER</u>    | Start/Stop wide dynamic range function        |
| <u>CALL</u> + <u>97</u> + <u>ENTER</u>    | Start random scan function                    |
| <u>CALL</u> + <u>98</u> + <u>ENTER</u>    | Start frame scan function                     |
| <u>CALL</u> + <u>99</u> + <u>ENTER</u>    | Start auto scan function                      |

**Table 27**



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 28**

## 6. ANNEX

### 6.1. DIP SWITCH CHART

| POS                   | 1                       | 2   | 3   | 4   | DESCRIPTION |     |     |     |
|-----------------------|-------------------------|-----|-----|-----|-------------|-----|-----|-----|
| COMM<br>PTOL          | ON                      | OFF | OFF | OFF | USER        |     |     |     |
|                       | OFF                     | ON  | OFF | OFF | PELCO-P     |     |     |     |
|                       | ON                      | ON  | OFF | OFF | PELCO-D     |     |     |     |
|                       | OFF                     | OFF | ON  | OFF | DAHUA       |     |     |     |
| POS                   | DESCRIPTION             |     |     |     | 5           | 6   | 7   | 8   |
| BAUD<br>RATE<br>(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 29: 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 |
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| 74 | OFF | ON  | OFF | ON  | OFF | OFF | ON  | OFF |
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| 89  | ON  | OFF | OFF | ON  | ON  | OFF | ON  | OFF |
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| 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 |
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| 122 | OFF | ON  | OFF | ON  | ON  | ON  | ON  | OFF |
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| 124 | OFF | OFF | ON  | ON  | ON  | ON  | ON  | OFF |
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| 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  |

|     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|----|
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| 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 |
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| 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 30: SWITCH2 SETTING**

## **6.2. OSD MENU DIAGRAM**

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Please see the next two pages.



