High Speed
Micro Dome Camera

Instruction Manual

（English Version）

Indoor Version

Outdoor Version

Please read this manual thoroughly before use or installation and keep it handy for future reference.

WARNINGS AND CAUTIONS

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH VENTILATION GRILLS OR OPENINGS ON THE EQUIPMENT.

CAUTION

EXPLANATION OF GRAPHICAL SYMBOLS

The lighting flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user the presence of non-insulated “dangerous voltage” within the product’s enclosure that maybe of sufficient magnitude to constitute a risk of electric shock to different persons.

The exclamation point within an equilateral triangle, is intended to alert the user the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product

PRECAUTIONS:

1. Persons without technical qualifications should not attempt to operate this dome device before reading this manual thoroughly.
2. Remove any power to the dome before attempting any operations or adjustments inside the dome cover to avoid potential damage to the mechanism.
3. Inside the dome cover there are precision optical and electrical devices. Heavy pressure, shock and other sudden adjustments or operations should be avoided. Otherwise, you may cause irreparable damage to the product.
4. Please DO NOT remove or disassemble any internal parts of the video camera to avoid normal operation and possibly void the warranty. There are no serviceable parts inside the camera.
5. All electrical connections to the dome should be made in strict accordance with the attached labels and wiring instructions in this manual. Failure to do so may damage the dome beyond repair and void the warranty.
6. For outdoor installation especially in high places or poles, it is highly recommended that the proper lightning arrestors and surge suppressors are installed before the dome is entered into service.
7. Please do not use the product under circumstances where the limits exceed the maximum specified temperature, humidity or power supply specifications.

FCC COMPLIANCE STATEMENT

FCC INFORMATION: THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS OF A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

CAUTION: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.
CET APPAREUIL NUMERIQUE DE LA CLASSE A EST CONFORME A LA NORME NMB-003 DU CANADA

THIS IS A CLASS A PRODUCT, IN A DOMESTIC ENVIRONMENT THIS PRODUCT MAY CAUSE RADIO INTERFERENCE IN WHICH CASE THE USER MAY BE REQUIRED TO TAKE ADEQUATE MEASURES.

CE COMPLIANCE STATEMENT

IMPORTANT SAFEGUARDS

1. Read these instructions before attempting installation or operation of dome device
2. Keep these instructions for future reference
3. Heed all warnings and adhere to electrical specifications
4. Follow all instructions
5. Clean only with non abrasive dry cotton cloth, lint free and approved acrylic cleaners
6. Should the lens of the camera become dirty, use special lens cleaning cloth and solution to properly clean it.
7. Do not block any ventilation openings.
8. Install in accordance with manufacturer's instructions
9. Use only attachments or accessories specified by the manufacturer
10. Verify that the surface you are planning to use for attaching the dome can adequately support the weight of the device and mounting hardware
11. Protect this devices against lighting storms with proper power supplies
12. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, when liquid traces are present, or the presence of loose objects is evident or if the device does not function properly, or has received sever impact or has been dropped accidentally.
13. Indoor dome is for indoor use only and not suitable for outdoor or high humidity locations. Do not use this product under circumstances exceeding specified temperature and humidity ratings.
14. Avoid pointing the camera directly to the sun or other extremely bright objects for prolonged period of time avoiding the risk of permanent damages to the imaging sensor.
15. The attached instructions are for use by qualified personnel only. To reduce the risks of electric shock do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.
16. During usage, user should abide by all electrical safety standards and adhere to electrical specifications for the operation of the dome. The control cable for RS485 communications as well as the video signal cables should be isolated from high voltage equipment and or high voltage cables.
17. Use supplied or Certified / Listed Class 2, 24 VAC power supply transformer only.

Table of Contents

1. Introduction

The Speed domes and a series of compatible keyboard controllers make up the building blocks for any size video surveillance system. Using multiple keyboard controllers and multiple high speed dome camera units, one can monitor a variety of environments from small to very large. Extensive and flexible architecture facilitates remote control functions for a variety of external switching devices such as multiplexers and DVRs.

1.1 Performance Characteristics

- Built-in 10x (times) Optical power zoom camera with true day night capability
- 1～255 individually addressed units. The dome address is defined using a dip switch with 8 positions (Binary addressing scheme)
- Integrated multi-protocol selected via Dip Switch settings for Pelco D and Pelco P.
  Note: The dome can auto differentiate the protocol of the controller only on power up.
- Continuous Pan 360 degree rotation (slip ring).
- 90 degree Tilt action plus 2 degree angle adjustment (the view angle can be 90 or 92 degrees).
- Pan speed in manual operation is variable from 0.1 up to 240 degrees per second
- Tilt speed in manual operation is variable from 0.1 to 100 degrees per second
- 128 preset positions. (A preset position is defined as a user definable setting for precise coordinates , pan, tilt and zoom on all 3 axis)
- The maximum speed when a preset position is called can reach 300 degrees per second with positioning accuracy of ±0.1 degree.
- Compatible with a variety Camera Modules (Hitachi, Samsung)
- Input power supply: 24 VAC – 0.5Amp (indoor or outdoor model)
- User friendly on screen camera menu interface for ease of installation.
- Environmental protection conforming to IP66 standards (outdoor model)
- RS-485 (long distance) communications mode.
- Selectable transmission speed, (i.e. Baud rate). User definable via dip switch settings from 2400bps~19200bps

1.2 Model Numbers

Model No: 1 Dome Indoor High Speed Housing with OSD
Model No: 2 Dome Outdoor High Speed Housing with OSD

1.3 Features and Functions

- Multi-language on screen menu for operation and function settings.
- On screen Camera title with exact x/y coordinates. (The camera title is user definable as well as the ability to display or not the camera coordinates)
- Six user definable vector scans (including scan speed, dwell time, preset and dwell time between tours)
- Auto flip function with + 10 degree positioning
- Six sectors of user programmable privacy zones (sectional mask). User can mask part of the camera sectors which differs between different models of installed cameras.
- Six sectors of user programmable sectional display. User can define and display the name and position of the camera, which differs between different models of installed cameras.
- Resume automatic operation after initial self-test of the dome as well as resume automatic operation when there is no transmission from a keyboard controller. (Dwell time can be set from 1 to 999 seconds)
- Freeze frame function.
- Resume operation function. (Dome unit will return to the previous operation after the execution of an operation using the on screen menu)
- Intelligent manual scan function.（By executing this function in manual pan operation, you can adjust the manual pan behavior of the dome）
- Intelligent power off real time memory.（Should power fail while the dome was in operation , the dome will resume its preprogrammed function upon power restore)
- Zoom and dome speed correlation function. (When the camera is zoomed in close, the dome speed is reduced to allow for precise operation control)

2.0 Installation & Configuration

2.1 Package Contents

The dome carton contains the following:

Description	Qty
High Speed Dome mechanism	1
Camera Module	1
(Samsung 10x or Hitachi 10x)	
Clear Acrylic dome cover	1
Camera shroud (black)	1
Plastic bag W/ Screws	
(Secret Screw)	
+ Mini Screwdriver	
O-ring + Adapter for wall or ceiling bracket	
6 conductor Control/Power/Video harness	1
24VAC transformer 1500 mA	1
Wall bracket	1
Suspend bracket 4”	1
Instruction manual	1

Figure 1. Illustrates the upper layer of the packing material (top half)
Figure 2. Illustrates the lower layer of the carton (bottom half).

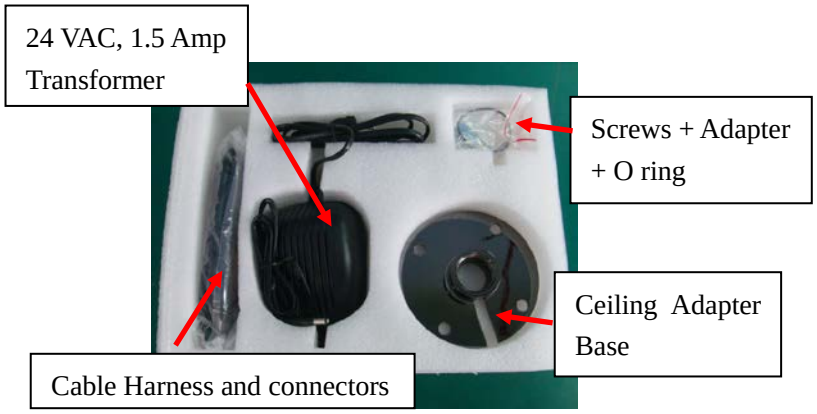


Fig.1

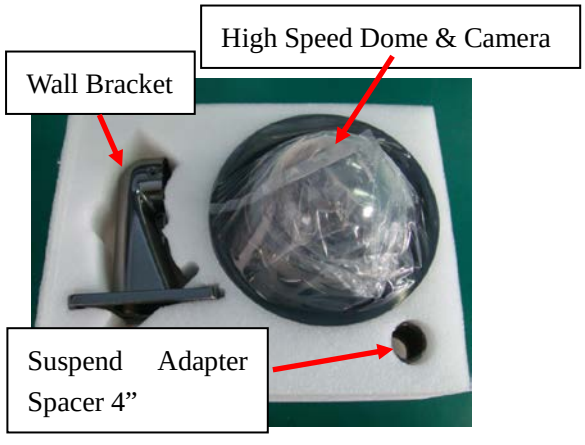


Fig. 2

Manual and Quality certificate, placed on top (not illustrated)

2.2 Camera Shroud removal / installation.

Figure 10. Illustrates the camera shroud in position over the camera module
Figure 11. Illustrates the location of the tab for the camera shroud in close position (twist On/Off)

Fig. 10

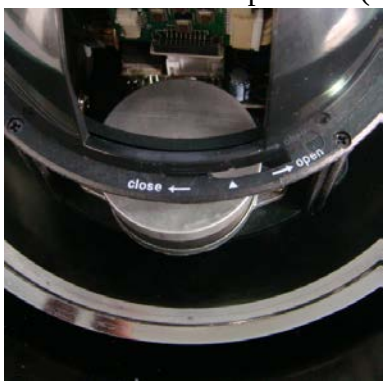


Fig. 11

The dome is equipped with a quick release camera liner supported by 3 tabs attached to a ring affixed on the PTZ mechanism. The liner needs to be removed in order to reach the dip switch settings of the dome for proper addressing and selection of the communication protocol / baud rate.

Step 1: Restrict the movement of the dome mechanism and rotate the camera liner counterclockwise from “close” to “open” position as illustrated.

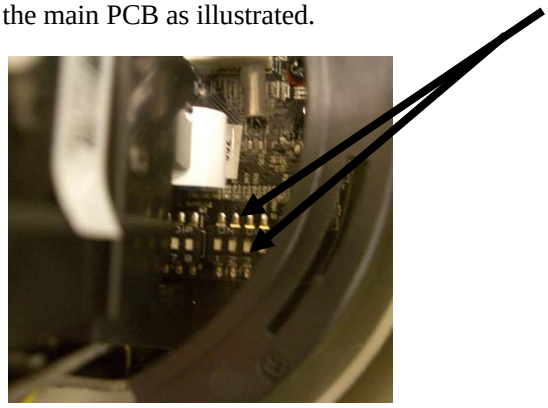
Step 2: Remove the camera liner to gain access to the dip switch settings located on the PC-Board underneath the camera.

Note: Illustrations are for reference purposes only and may vary from actual package contents depending selected installation options at time of order.

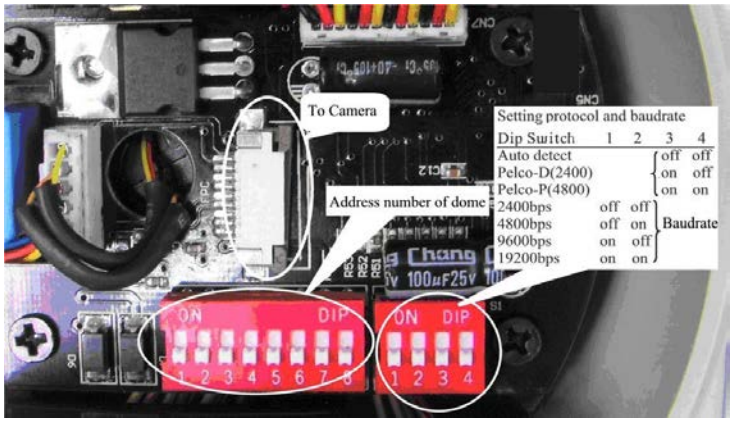
2.3 Communication Settings

2.3.1 Dip Switch Location.

Before installation and use, the unique address for each dome and the communication protocol including transmission speed (baudrate) should be set to correspond with the chosen control system. In order to set the corresponding dip-switches remove the camera liner as previously illustrated and locate the two Dip-Switch rows (8 & 4) behind the camera module on the main PCB as illustrated.



2.3.2 Setting the address, protocol and baud rate for each dome device.



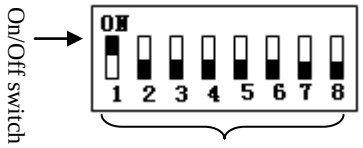
Note: The illustration shows the two Dip-Switches. The switch on the left (8 position) is for the dome address while the switch on the right is for the protocol and baudrate settings.

The Table in the illustration provides the settings for the two protocols supported, Pelco -D and Pelco -P as well as the baudrate settings.

This illustration demonstrates the settings for Dome Address 1, with Protocol Pelco -P at a baud -rate of 4800 setting.

CAUTION: The protocol and baudrte of dome device should match the settings of the controller.
In order for the settings to take effect the dome must be power cycled after each change.

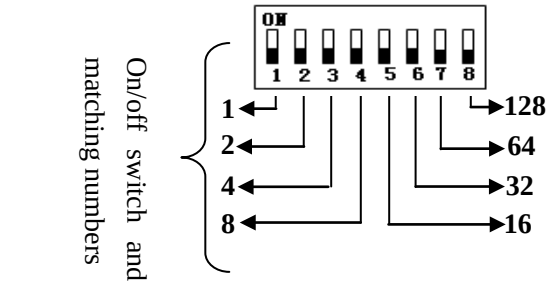
2.3.3 Address setting of each dome. To prevent damage, each dome must have a unique address (ID).

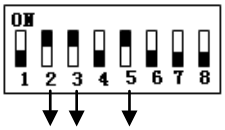


Setting address for dome device (this figure shows the address of dome device No 1).

Dome device range: 1~255.

Example: The sum of switch numbers in the ON position is the address of the dome device. (Binary Method)





Calculation example of dome device address:

（**2+4+16=22**）the dome address is: **22**

2.3.4 Addressing Examples 1-15

Address	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
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**

2.4 Wall bracket installation.

Step 1: Feed the supplied wiring harness through the channel inside the wall bracket as illustrated in Fig. 13. Verify that the 6 pin connector is remaining outside the opening of the bracket as illustrated in Fig. 14.

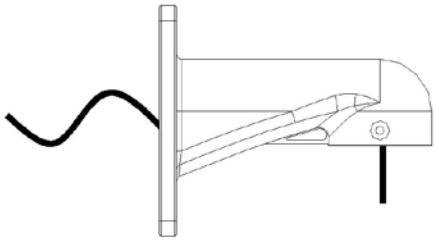


Fig. 13

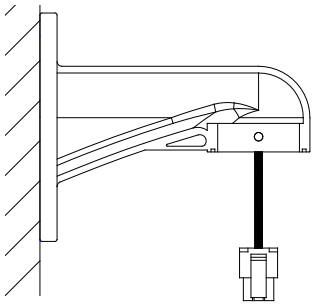


Fig. 14

Step 2: Affix the wall bracket to the wall as illustrated in Figure 15 verifying that the surface you are attaching to can support the weight of the dome using either expanding anchors or butterfly fasteners.

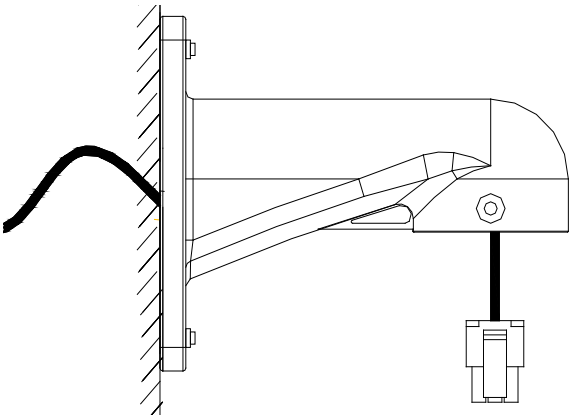


Fig. 15

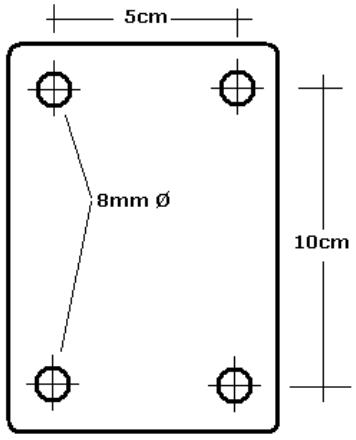


Fig. 16

Note: Different bracket options may be available. Illustrations are for reference purposes only and may vary from actual package contents depending selected installation options at time of order.

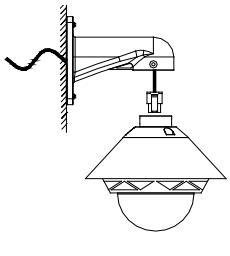
2.5 Attaching the dome to the bracket

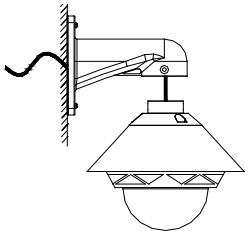
Step 1: Locate the small plastic bag containing the O-ring, adapter, screws, and small screwdriver as illustrated.

Step 2: Install the O-ring onto the wall bracket as illustrated.

Step 3: Install the adapter onto the top of the dome as illustrated.

Step 4: Suspend the dome to the bracket using the stainless hook as illustrated.





Step 5: Connect the end of the wiring harness protruding out of the bracket to the mating connector on the dome unit. Observe proper orientation of the connectors as illustrated.

Step 6: Push the dome into the bracket and align the holes. Using the supplied screws (with the two rubber O-rings) secure the dome in place as illustrated.

When finished the dome should look like the illustration on the right ready to be powered up.

Note: It is important that you set the dip switch settings for the dome address and communication parameters and protocol BEFORE you install the dome in its physical location of operation.

2.6 Installation of the acrylic dome cover

The dome cover has two parts, a metal aluminum ring and a clear acrylic dome. The metal ring has male fine threads that will allow it to mate with the aluminum cover of the dome mechanism. **Caution** should be exercised when handling the clear dome preventing any abrasions or scratches to the surface as this will affect the optical performance of the camera.

Step 1: Carefully align the two parts as illustrated in Figure 17.

Slowly rotate counterclockwise until a small click is felt indicating the beginning of the threads.

Fig. 17 Align the two parts

Step 2: Slowly start rotating the bottom part (clear acrylic) in a clockwise direction without forcing the threads as illustrated in Figure 18. It takes approximately three (3) complete rotations to have a complete seal.

Fig. 18 Rotate clockwise as indicated

Step 3: The dome arrives with a protective film. The illustrations above are shown for clarity without the film in place.

When finished with the installation remove the plastic protective film avoiding any contact if possible with the lens. Should you need to clean it use only lens cleaning solution and a soft non abrasive cloth.

Fig. 19 Protection film of acrylic shield

2.7 Wiring Specifications

The wiring Harness has a label affixed indicating the Power, Video and Communication conductors. Do not remove this label as it may be a useful future reference.

Figure 20 is the illustration of the wiring diagram for the electrical connections to the dome unit.

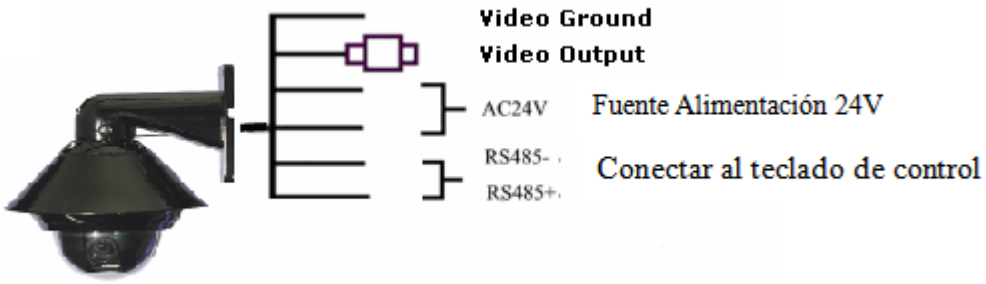
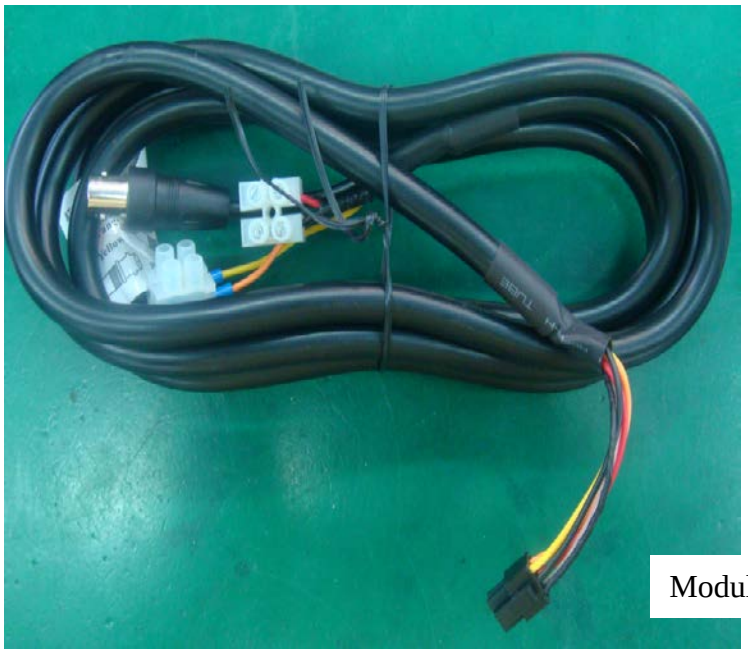


Fig. 20

Figure 21 illustrates the wiring harness included with the dome.



Red: 24VAC power supply
Black: 24VAC power supply
Orange: RS485+
Yellow: RS485-

Video output, BNC Connector

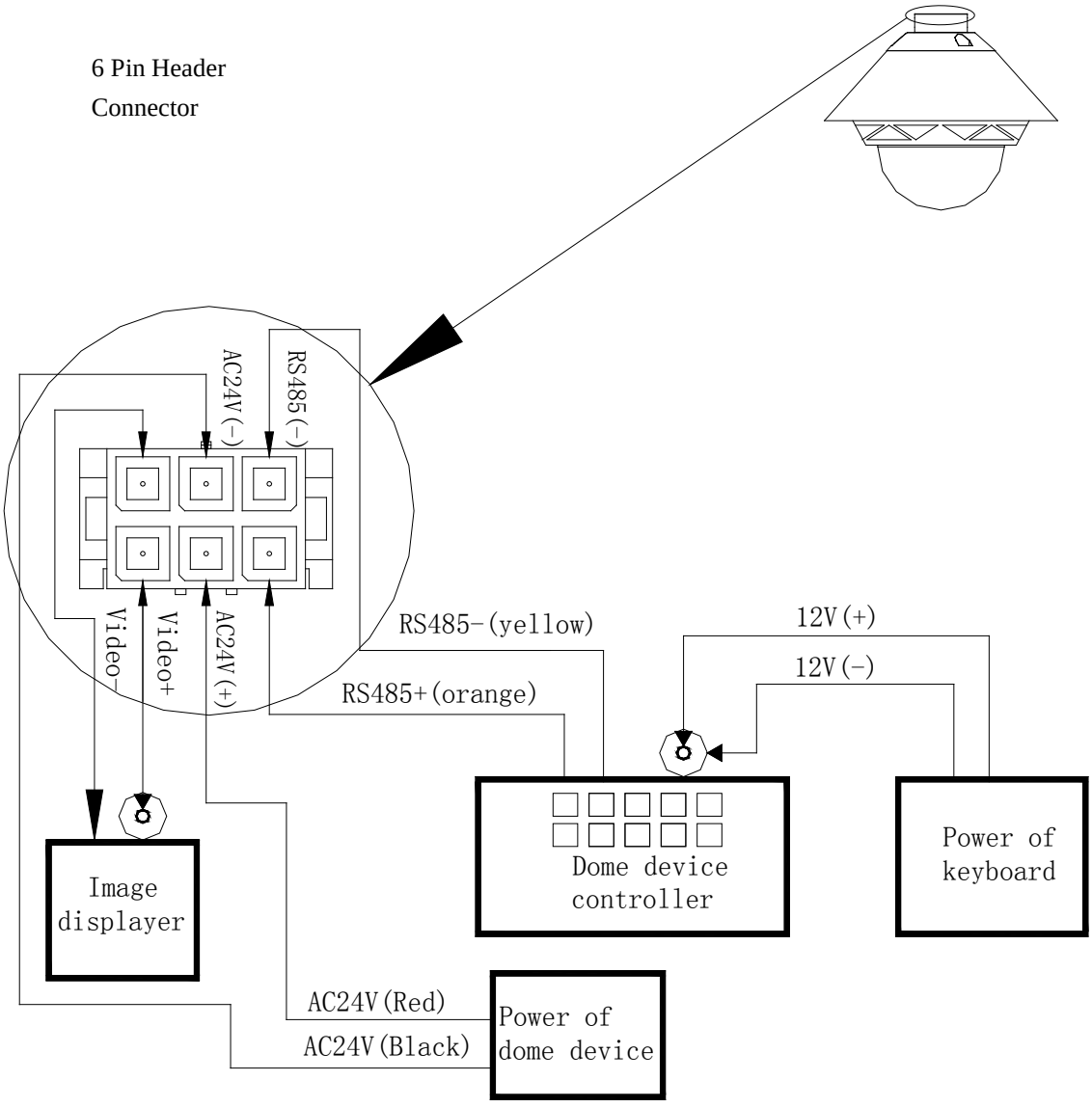
Modular Plug, Connect to the dome

Fig. 21

Chapter 3: Wiring and Setup

3.1 Basic Configuration

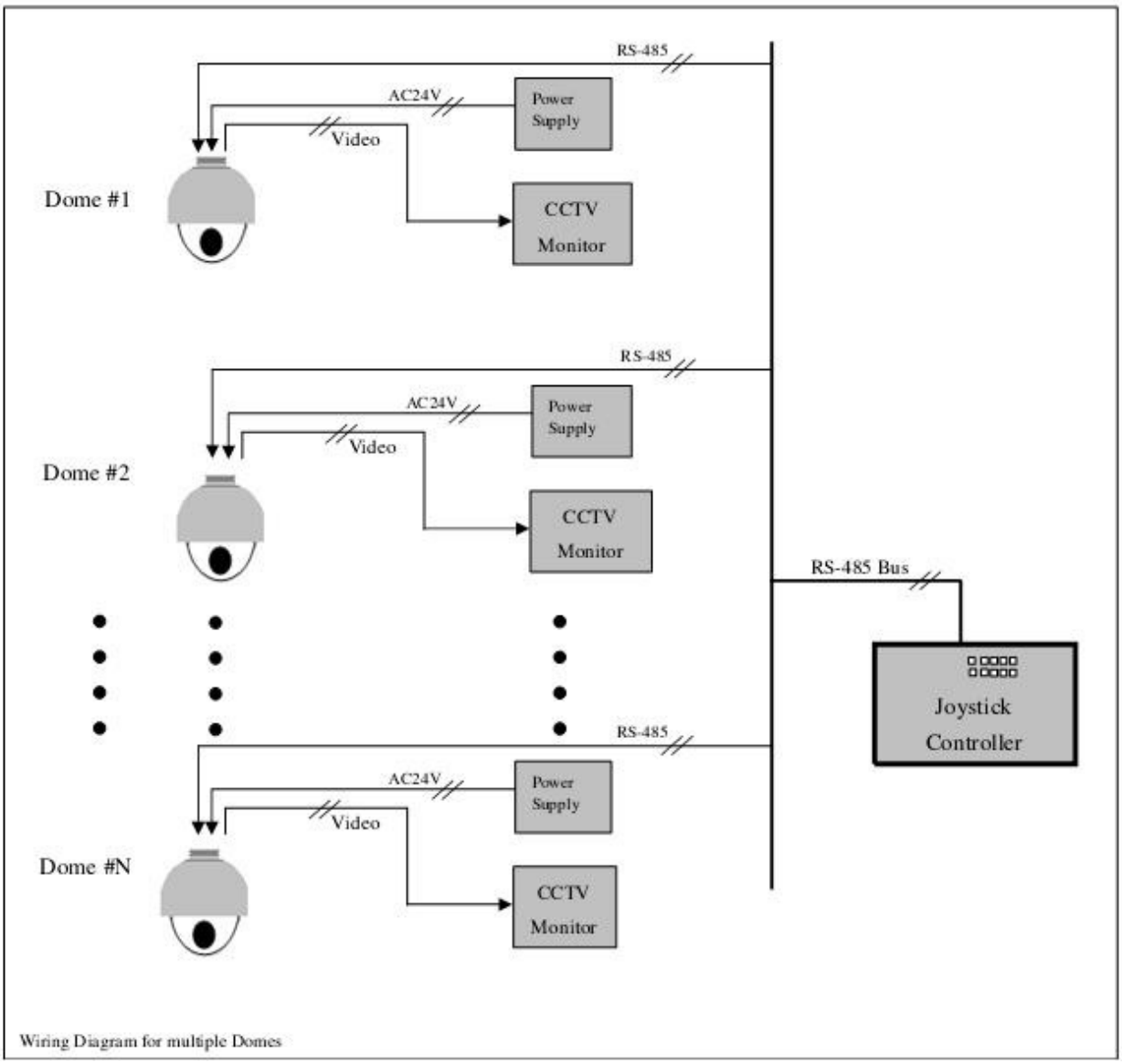
The illustration below provides the basic electrical wiring configuration for connecting and testing a single dome to a test monitor and a joystick / keyboard controller. When installing the product for the first times please read the installation instructions carefully and become familiar with the electrical connections and setup options. Incorrect wiring may result to permanent damage of the equipment.



Caution: Connections to the dome should be performed with the power removed (Power OFF).

3.2 Connecting Multiple Domes

When connecting multiple domes together, the user has the option to connect video and control terminals to a video matrix switcher or a DVR multiplexer creating an integrated system.
AC24V: Power supply Primary220V/110V/60H_Z input to AC 24V output.
RS-485 Bus: Control signal output from joystick controller, connected in a bus configuration to the RS485 communication terminals of the control cable for each dome.
Video: Signal output from the dome camera connected to a monitor, DVR, or video matrix. Take into consideration impedance matching and or termination.



Wiring Diagram for multiple Domes

4. Quick Start Operation Guide

CAUTION: Do not turn the power ON until you have finished all connections and communication settings).

4.1 Connect the power to the dome.

As soon as the power is turned ON, the dome initiates a self test which includes a rotation of the dome on both axis and the camera will display a brief menu followed by a live image on the monitor.

Note: During self-testing, it is normal to hear a clicking sound caused by the camera module for about 2~5 seconds of vertical movement, as a result of the vertical self alignment.

4.2 Joystick controller setting.

Set the protocol, baud rate, and address of the keyboard controller to match the settings on the dome

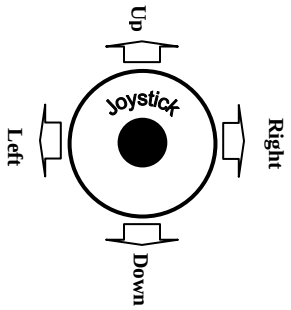
(For instructions of how to set the keyboard communication settings please refer to keyboard controller manual).

Attention: If the protocol setting of the dome is set to auto detection, the protocol of keyboard controller can be set arbitrarily. But its baud rate should be set identical with that of the dome device.

4.3 Start testing.

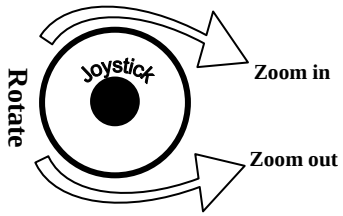
When all of the above settings are completed you can start testing the dome functionality.

1. Direction control test of dome device



The operation of the dome and the direction (up, down, left and right) of the camera can be controlled using the joystick of the keyboard controller, as illustrated above.

2. Zooming control test of camera



Zoom control of the camera can be achieved by rotating the knob on the joystick or by using TELE (zoom in) and WIDE (zoon out) functions on the keyboard controller as illustrated above.

（Please refer to the next section for demonstration of menu operation and control of dome device.）

4.4 Complete the test. (Summary).

If you have achieved control of the dome device as described in section 4.6 above, the system is basically normal. Do not change the wiring or the applied settings.

If the dome does not respond to the commands or only partial functionality is achieved, verify the wiring connections (section3.1 and 3.2) and communication parameter settings (sections 2.4, and 2.5) carefully.

4.5 Direct Input Commands for Dome Operation

The following preset position addresses are reference to the direct memory location of the dome controller. They do not correspond to memory preset positions in the keyboard controller or software applications that support PTZ preset functions. Please consult the manual of the chosen keyboard controller for correct operation.
Dome preset memory locations: No. 1～50, 64 ~77 and 102~165
Special Function memory preset location: No.51～63, No.78～101.

The following commands are examples of direct Keyboard Entry from **the keyboard controlle**r

Select Dome ID 01:	[1] + [ENTER]	Keyboard Display: Dome ID:0001
Save preset position 01:	[1] + [SHOT] + [ON]	On Screen Display: Stored
Recall preset position 01:	[1] + [SHOT] + [ACK]	
Clear preset position 01:	[2] + [SHOT] + [OFF]	
	[1]+ [SHOT] + [OFF]	

Setting Auto Pan scanning between two points: The dome can conduct an auto Pan Scan between two user preset points. You can operate the Tilt and Zoom controls at the same time without interrupting the Auto Scan Motion.

Set Start Pan Position:	[52] + [SHOT] + [ON]
Set End Pan Position:	[53] + [SHOT] + [ON]

Setting the Pan speed: user needs to maintain a fixed manual scan speed for more than 3 seconds and then press [51] + [SHOT] + [ACK] to save this speed as default Pan scan speed.
The dwell time of “starting point” and “ending point” of Pan scan is 2 seconds.

Start Auto Pan: [52] + [SHOT] + [ACK]

To Stop the Auto Scan move Joystick left or right.
You can resume Auto Scan by pressing again [52] + [SHOT] + [ACK]

Operating a preset tour: Auto point by point scan from preset point 1 to preset 16; (if a certain point is not set or has been cleared, that point will not observed when “tour scan” is in progress.
The dwell time of each preset point in tour is 4 seconds.

Start Default Preset Tour : [51] + [SHOT] + [ON]

Please refer to the operation manual of keyboard control for the operation of the other six tour tracks.
To Stop the tour move the joystick of the controller in any direction “Pan” or “Tilt”.

Setting the Home position: This means the time duration before the dome positions itself to Preset No.1 during a period of inactivity. (No keyboard control)

Start this function by pressing: [100] + [SHOT] + [ACK]
The time interval for returning to Home (preset 1) can be set from 1-2-4-8-10 minutes by pressing:
[95] + [SHOT] + [ACK] = 1 minute
[96] + [SHOT] + [ACK] = 2 minute
[97] + [SHOT] + [ACK] = 4 minute
[98] + [SHOT] + [ACK] = 8 minute
[99] + [SHOT] + [ACK] = 10 minutes

To disable the return to Home Position function press: [100] + [SHOT] + [ON]

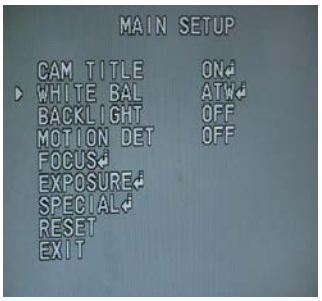
Intelligent three-dimension tour scan setting: If a user wishes to monitor an area in continuous Pan Scan Mode at a specific speed, they only need to maintain the scan speed steady for more than 3 seconds in a continuous pan direction and then press [101] + [SHOT] + [ACK] to continue auto panning at the same speed.
At the same time, the user can operate the tilt and zoom movements independently.

4.7 CAMERA OSD MENU

The following section is specific to the Camera module installed in the **Dome with OSD** . The available options (menus and sub menus) can be accessed directly from the keyboard by entering 57+SHOT+ACK or 57 + PRESET depending the model and type of the selected keyboard controller.

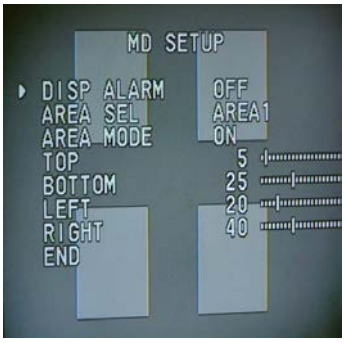
Main Camera Menu

Cam Title Sub Menu



Whitek Bal Sub menu

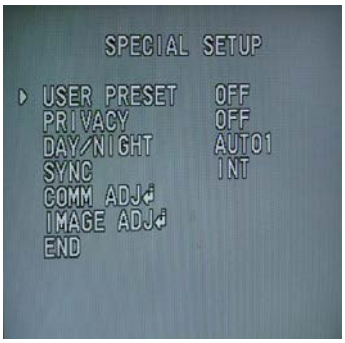
Backlight Sub Menu



Motion Det Sub Menu

Focus Sub Menu

Exposure Sub Menu



Special Sub Menu

Communication Sub Menu

Image Sub Menu

5. Program and Operation

NOTE: The following instructions apply only to the dome(On Screen Display) functions.

5.1 Main menu

The following commands are references to the keyboard controlling the dome. Depending the make and model of the controller these commands may vary slightly. For reference

SHOT = PRESET or PRST - ACK = ENTER - OPEN =Iris + - CLOSE = Iris -

purposes the following key labels / acronyms are used:

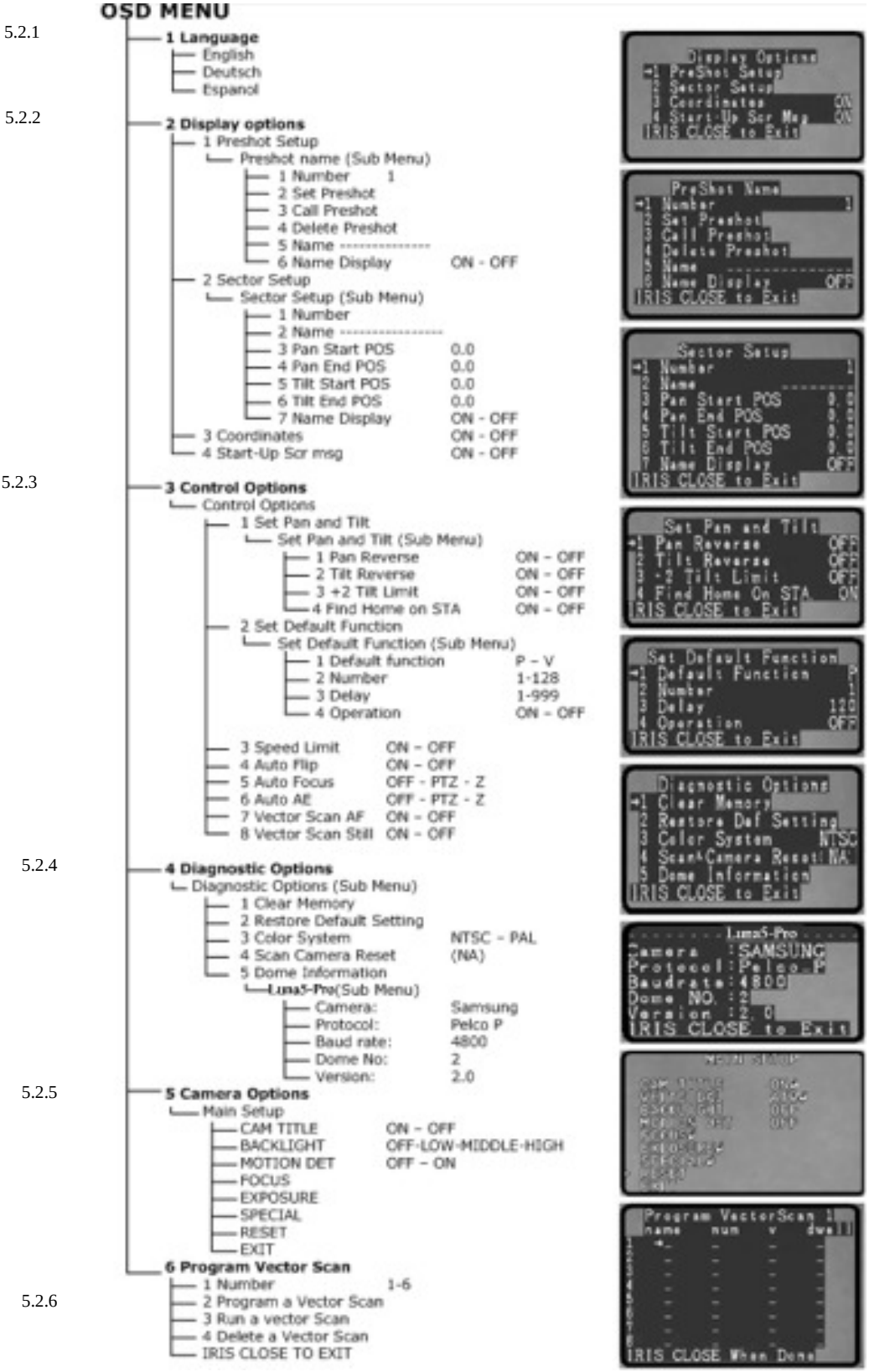
1. **Press 90+SHOT+ACK** on the keyboard to enter the OSD main configuration menu for the dome.
2. To make a selection move the joystick in the **Up or Down** direction. The on-screen arrow points to the selected option. Using the joystick to the **Left or Right** position you can change the value of your selection or access the submenu for the selected option.
3. Press the button **IRIS OPEN** on the keyboard controller to confirm your selection or data entry.
4. Press the button **IRIS CLOSE** on the keyboard controller to exit menu or return to the previous menu (one layer up).

HOW TO CONTROL THE ON-SCREEN MENU UTILITY

Action	Function
90 + PRESET	Call the On-screen menu utility
Joystick up or down	Navigate through the menu items.
Joystick left or right	Go into the sub-menu items. Execute the command(exit) Change value. Navigate through the menu items.
IRIS OPEN button	Confirm selection.
IRIS CLOSE button	Exit Menu or Return to previous menu layer.

5.2.1

5.2. A detailed tree of the OSD menu and sub menus is illustrated below.



5.2.1

5.2.2

5.2.3

5.2.4

5.2.5

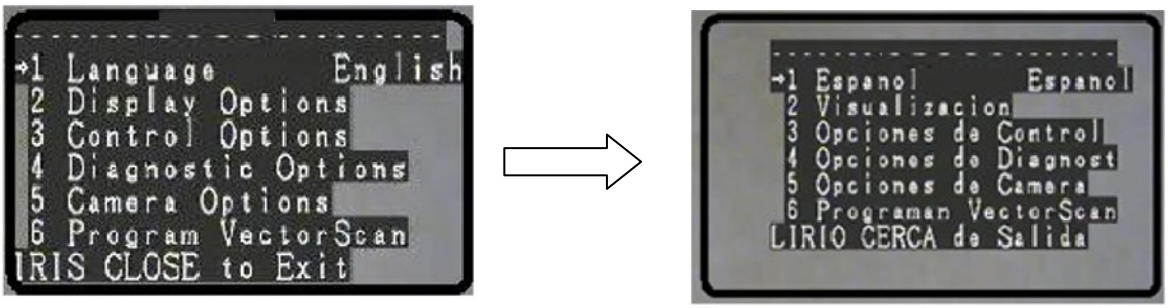
5.2.6

Note: Due to space limitations not all screen shots are displayed on this page. Additional information is displayed in

subsequent chapters in this instruction manual.

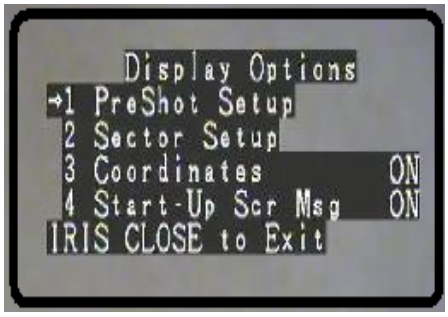
5.2.1. Language Selection

The default is English; Depending the country of sale different options are available.
Moving the joystick right allows the user to select different language menus.
As an example the screens below illustrate the transition from English menu to Spanish.



Press IRIS CLOSE button to exit OSD menu

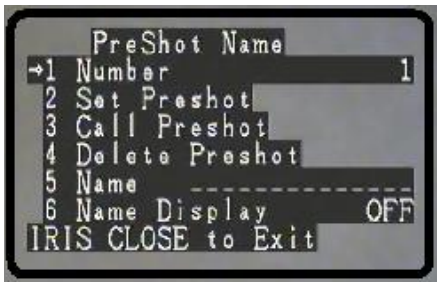
5.2.2. Display Options



1. Preset position setup options menu
2. Sector setup options menu
3. On Screen display of X,Y camera position
4. On Screen display of dome information on startup

Press IRIS CLOSE button to return to previous menu

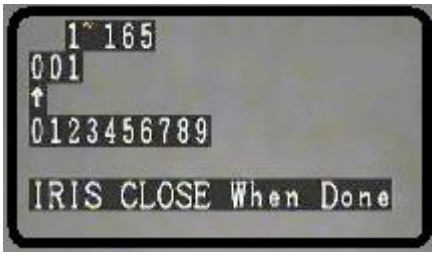
5.2.2.1 PreShot Setup



1. Select a preset position from 1-165
2. Move the PTZ to desired location “Iris Close” to set it
   On Screen message displays “Stored” for verification
3. User can recall the selected preset for position validation
4. User can delete the selected preset position
5. User can assign a name to this preset position (14Chr. Max)
6. User can select to display the name for the preset position

Press IRIS CLOSE button to return to previous menu

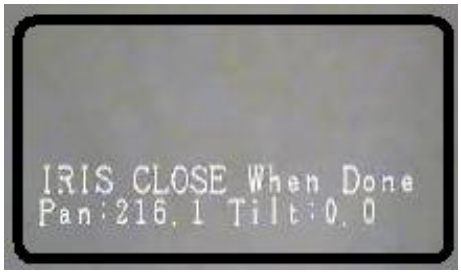
5.2.2.1.1 Number



The default number is 001. Move the joystick left or right to position the cursor under the desired numeral and press **IRIS OPEN** button to move the cursor on the second numeral line (0~9). Move the Joystick left or right again under the desired numeral and press **IRIS OPEN** button again to select the desired number (0~9). Press **IRIS OPEN** button again to

confirm the selection. Press **IRIS CLOSE** button to finalize your selection and return to the previous menu level.

5.2.2.1.2 Set Preshot



Move the Dome camera to the desired position on all 3 axis (P,T,Z) and then press **IRIS CLOSE** button to confirm the preset position location and return to the previous menu.

The menu will display “Stored” confirming that the position has been set in the dome memory. If you do not see the confirmation repeat the process as there may be a latency of communications depending the wiring method and the number of devices connected on the RS485 Loop.

5.2.2.1.3 Call Preshot

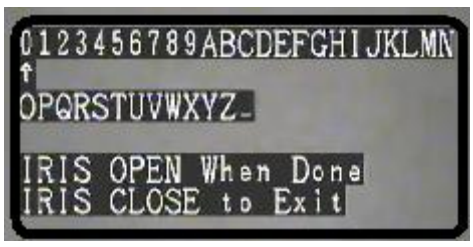
Based on the displayed/selected preset position on line 1 of this menu, the dome will respond upon moving the joystick to the Right position and position itself to the corresponding coordinates (X,Y, Z) of the selected preset position.

5.2.2.1.4 Delete Preshot

Caution: Are you sure you want to delete this preset?
Press **IRIS OPEN** button to confirm
Press **IRIS CLOSE** button to exit and return to the previous menu level.

5.2.2.1.5 Name _ _ _ _ _ _ _ _

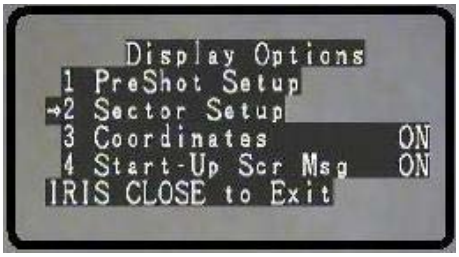
User can edit the name of a preset position. Move the Joystick Left or Right to select desired character position and press **IRIS OPEN** button to display the character selection sub menu.



Move the joystick Left or Right to select desired character (0~~9 or A~~Z). Press **IRIS OPEN** button to confirm selection and move to the next character of choice.

Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

5.2.2.2 Sector Setup



On the Display Option menu move the joystick to select the Sector Setup Menu. Confirm your selection by moving the Joystick to the right or,

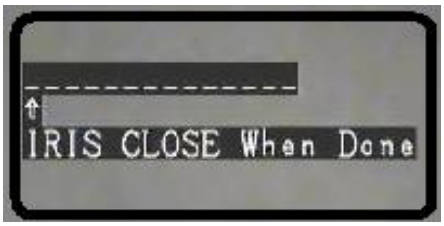
Press **IRIS CLOSE** button to exit and return to the previous menu level.

5.2.2.2.1 Number

A sector is defined as a general area bound by user set coordinates on both axis (X, Y) Example: you can define North as an area bound by an arc between North-West and North-East. When the PTZ is pointed in this general area, the name North, will appear on the screen.
Move the joystick right to select a sector position (1-8)
Press IRIS CLOSE button to return to previous menu

5.2.2.2.2 Name _ _ _ _ _ _ _ _

User can subsequently name the sector by moving the joystick down to the name field.
Move the Joystick right to display name submenu as illustrated below.



User can edit the name of a Sector position. Move the Joystick Left or Right to select desired character position and press **IRIS OPEN** button to display the character selection sub menu.

Move the joystick Left or Right to select desired character (0~~9 or A~~Z). Press **IRIS OPEN** button to confirm selection and move to the next character of choice. Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

Press **IRIS OPEN** button to confirm

Press **IRIS CLOSE** button to exit and return to the previous menu level.

5.2.2.2.3 Pan Start POSITION

Move the joystick up or down to the desired selection.

Move the joystick right to make your selection and display the on screen coordinates. Using the joystick move the pan & tilt to the desired Pan Start coordinates for the selected sector.

Press **IRIS CLOSE** button to set the starting pan position coordinates and return to the previous menu level.

5.2.2.2.4 Pan End POSITION

Move the joystick up or down to the desired selection.

Move the joystick right to make your selection and display the on screen coordinates. Using the joystick move the pan & tilt to the desired Pan End coordinates for the selected sector.

Press **IRIS CLOSE** button to set the ending pan position coordinates and return to the previous menu level.

5.2.2.2.5 Tilt Start POSITION

Move the joystick up or down to the desired selection.

Move the joystick right to make your selection and display the on screen coordinates. Using the joystick move the pan & tilt to the desired Tilt Start coordinates for the selected sector.

Press **IRIS CLOSE** button to set the Tilt Start position coordinates and return to the previous menu level.

5.2.2.2.6 Tilt End POSITION

Move the joystick up or down to the desired selection.

Move the joystick right to make your selection and display the on screen coordinates. Using the joystick move the pan & tilt to the desired Tilt End coordinates for the selected sector.

Press **IRIS CLOSE** button to set the Tilt End position coordinates and return to the previous menu level.

5.2.2.2.7 Name Display

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to select ON or OFF
Based on your selection the name you have entered for this sector will be displayed (or not) on the screen when the PTZ positions itself within the set of coordinates you have selected.

Press **IRIS CLOSE** button to exit and return to the previous menu level.

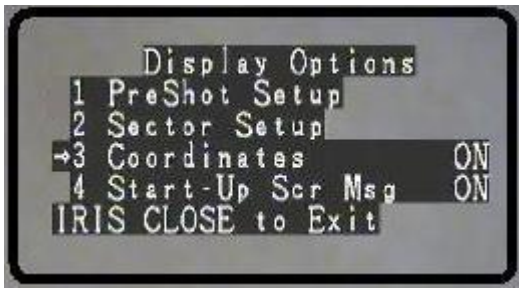
5.2.2.2.8 Name Display

Move the joystick Left or Right to select ON or OFF
Based on your selection the name you have entered for this preset position will be displayed (or not) on the screen

when the PTZ positions itself to this preset position.

Press **IRIS CLOSE** button to exit and return to the previous menu level.

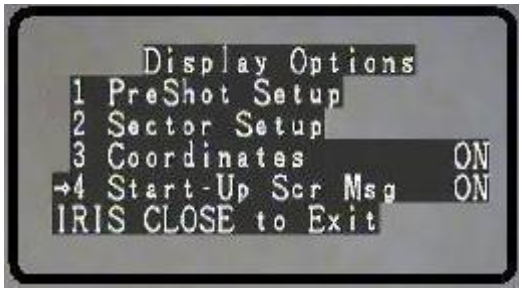
5.2.2.3 Coordinates



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to select ON or OFF
Based on your selection the On-Screen X-Y position coordinates will be displayed at the bottom of your screen.

Press **IRIS CLOSE** button to exit and return to the previous menu level.

5.2.2.4 Start Up Message



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to select ON or OFF
Based on your selection the startup message (see below) will be displayed on Power Up.
This is particularly useful when you do not know what is the address or communication setting of this dome.

Press **IRIS CLOSE** button to exit and return to the previous menu level.

The Startup message screen displays the following information:

- model name
- Installed camera module
- Protocol of Communication
- Dome ID No:-
- Firmware version

This concludes the Display Options Setup menu.

The following section describes Control options for the PTZ functions.

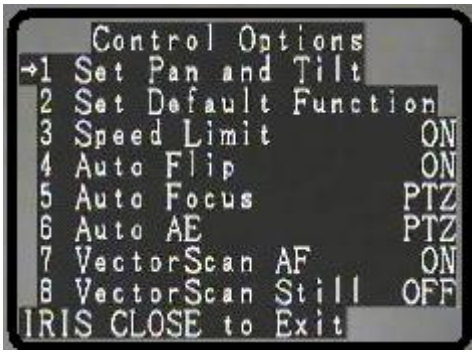
5.2.3. Control Options

Move the joystick up or down to the desired selection.

Move the joystick right to make your selection and display the Control Options sub-menu or

Press **IRIS CLOSE button to return to previous menu**

5.2.3.1 Set Pan & Tilt



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
Different options are possible based on the function you selected including sub- menus with additional options.

Press **IRIS CLOSE** button to exit and return to the previous menu level.

5.2.3.1.1 Pan Reverse

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose ON or OFF
This allows the user to change the direction the pan motor.
It is useful under certain conditions based on the physical installation of the PTZ (Example: Upside-Down)

Press IRIS CLOSE button to exit OSD menu

5.2.3.1.2 Tilt Reverse

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose ON or OFF
This allows the user to change the direction the tilt motor.
It is useful under certain conditions based on the physical installation of the PTZ (Example: Upside-Down)

Press IRIS CLOSE button to exit OSD menu

5.2.3.1.3 Tilt Limit

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose ON or OFF
This allows the user to control the horizon of the tilt axis.
It is useful under certain conditions based on the physical installation of the PTZ (Example: Low Vertical Height)

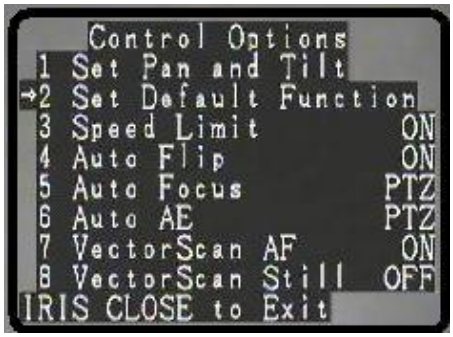
Press IRIS CLOSE button to exit OSD menu

5.2.3.1.4 Find Home On STA

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose ON or OFF
This allows the user to control the standby position of the PTZ. When turned ON, the PTZ will return to Home Position when it remains idle for more than 5 minutes.

Press IRIS CLOSE button to exit OSD menu

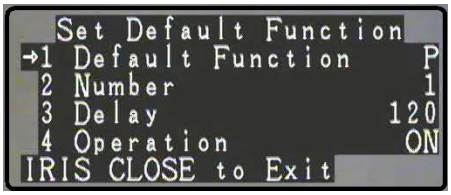
5.2.3.2 Set Default Function



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
Different options are possible based on the function you selected including sub- menus with additional options.

Press **IRIS CLOSE** button to exit and return to the previous menu level.

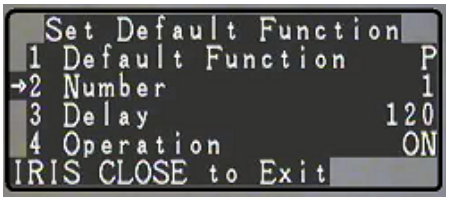
5.2.3.2.1 Default Function

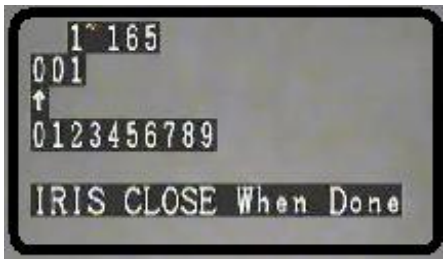


This defines the behavior of the dome to respond to a preset or a vector as the default position.
Move the joystick Left or Right to select
P=preset, V= Vector

Press IRIS CLOSE button to exit OSD menu

5.2.3.2.2 Number

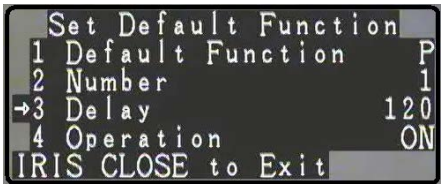


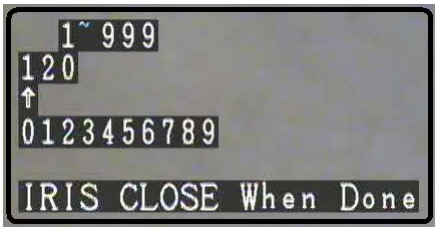


The default number is 001. Move the joystick left or right to position the cursor under the desired numeral and press **IRIS OPEN** button to move the cursor on the second numeral line (0~9). Move the Joystick left or right again under the desired numeral and press **IRIS OPEN** button again to select the desired number (0~9). Press **IRIS OPEN** button again to confirm the selection. Press **IRIS CLOSE** button to finalize your selection and return to the previous menu level.

Press IRIS CLOSE button to exit OSD menu

5.2.3.2.3 Delay

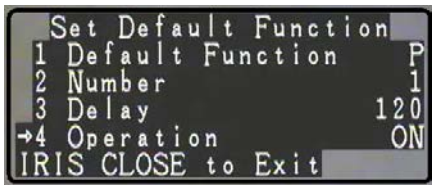




The default number is 120 seconds. This is the time delay before the PTZ returns to the default position after 120 seconds of inactivity.
Move the joystick Left or Right to make selection.
Move the joystick left or right to position the cursor under the desired numeral and press **IRIS OPEN** button to move the cursor on the second numeral line (0~9). Move the Joystick left or right again under the desired numeral and press **IRIS OPEN** button again to select the desired number (0~9). Press **IRIS OPEN** button again to confirm the selection. Press **IRIS CLOSE** button to finalize your selection and return to the previous menu level.

Press IRIS CLOSE button to exit OSD menu

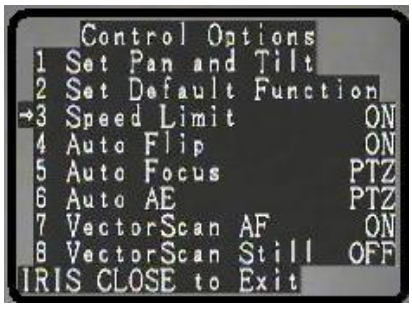
5.2.3.2.4 Operation



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
ON=PTZ will return to default position
OFF= PTZ will remain in last position of operation.

Press IRIS CLOSE button to exit OSD menu

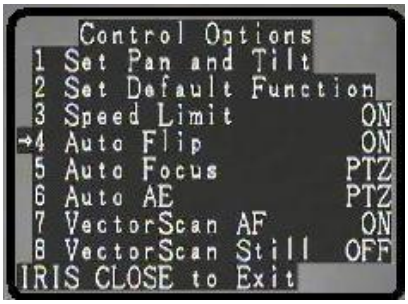
5.2.3.3 Speed Limit



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to turn ON or OFF.
This selection allows the user to control the speed behavior of the dome.

Press **IRIS CLOSE** button to exit and return to the previous menu level.

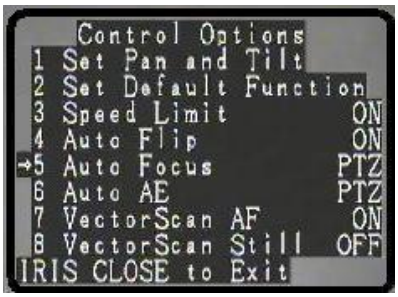
5.2.3.4 Auto Flip



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose ON or OFF
This selection allows the user to control the behavior of the dome when it reaches to lowest tilt position. The Pan motor will change direction and reverse the image allowing you to follow the moving object without screen reversal.

Press IRIS CLOSE button to exit OSD menu

5.2.3.5 Auto Focus



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose PTZ, OFF or Z
These selections allow the user to control the behavior of the auto focus mechanism.
PTZ = Auto Focus. The camera adjusts the focus automatically while monitoring the screen continuously.
OFF = Manual Operation, user must adjust focus manually.
Z = Camera will focus upon operation of the zoom control

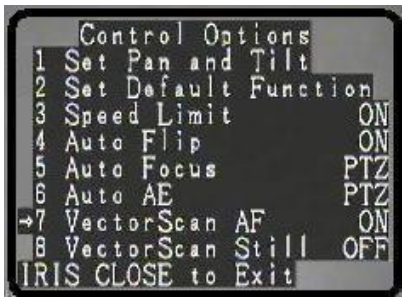
Press IRIS CLOSE button to exit OSD menu

5.2.3.6 Auto AE

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose PTZ, OFF or Z
These selections allows the user to control the behavior of the Auto Exposure camera control.
PTZ = Auto Exposure. The camera adjusts the brightness automatically while monitoring the screen continuously.
OFF = Manual Operation, user must adjust exposure manually.
Z = Camera will adjust upon operation of the zoom control

Press IRIS CLOSE button to exit OSD menu

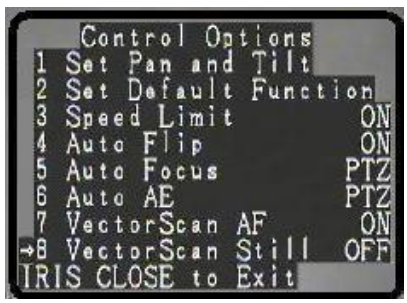
5.2.3.7 Vector Scan AF



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose ON or OFF
This selection allows the user to control the behavior of the automatic focus during vector scanning operation.
ON= Automatic focus is enabled
OFF= User must adjust the focus manually

Press IRIS CLOSE button to exit OSD menu

5.2.3.8 Vector Scan Still



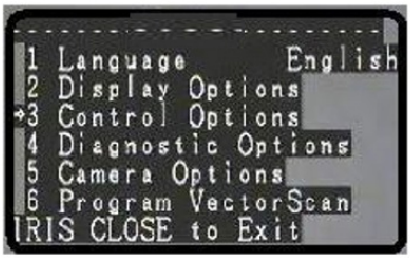
Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose ON or OFF
This selection allows the user to control the behavior of the PTZ during Vector Scan mode.

Press IRIS CLOSE button to exit OSD menu

This concludes the Control Options Setup menu.

The following section describes Diagnostic options for the dome functions.

5.2.4 Diagnostics



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
Different options are possible based on the function you selected including sub- menus with additional options.
Press **IRIS CLOSE** button to exit and return to the previous menu level.

5.2.4.1 Clear Memory

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
This selection allows the user to erase the dome memory from any user settings including presets, tours and any titles entered.
Press IRIS CLOSE button to exit OSD menu
If you wish to clear the memory press **IRIS OPEN** button to confirm your selection or press **IRIS CLOSE** button to exit and return to the previous menu.

5.2.4.2 Restore Default Setting

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
This selection allows the user to restore factory default parameters into the memory of the dome.
Press IRIS CLOSE button to exit OSD menu

If you wish to clear the memory press **IRIS OPEN** button to confirm your selection or press **IRIS CLOSE** button to exit and return to the previous menu.

5.2.4.3 Color System

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose NTSC or PAL selecting the video standard format for the camera operation.
The standard format for North America is NTSC.
Press IRIS CLOSE button to exit OSD menu

5.2.4.4 Scan Camera Reset

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
This selection is reserved for future use and it is currently not applicable. (N/A)
Press IRIS CLOSE button to exit OSD menu

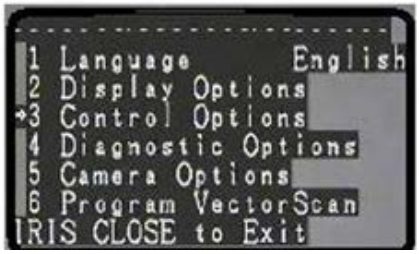
Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
This selection allows the user to display the dome information regarding Dome ID number, selected communication protocol and baud rate as well as the installed firmware version.

A sample of the default screen is illustrated below.
These options may vary according the dome model and the installed camera module.

Press IRIS CLOSE button to exit OSD menu

This concludes the Control Options Setup menu.
The following section describes Camera options for the installed module.
NOTE: The Camera options are explained in detail in a separate section of this manual

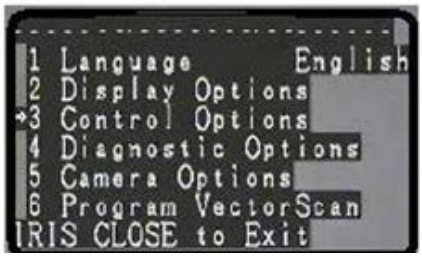
5.2.5 Camera Options



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
Different options are possible based on the function you selected including sub- menus with additional options.

Press IRIS CLOSE button

5.2.6 Program Vector Scan



Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
Different options are possible based on the function you selected including sub- menus with additional options.

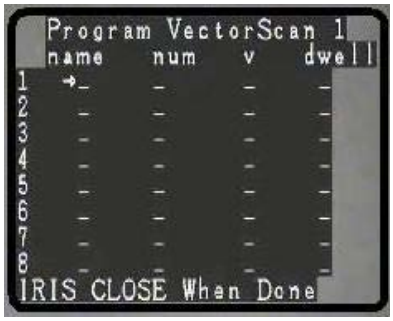
Press IRIS CLOSE butt

5.2.6.1 Number

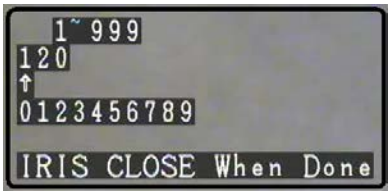
The default number is 1. Move the joystick left or right to select 1 through 6 Vectors (or tours) available. Each tour can be programmed for up to 16 preset positions with individual speed and dwell settings for each preset.
Press **IRIS CLOSE** button to finalize your selection and return to the previous menu level.

5.2.6.2 Program a Vector Scan

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make your selection.
The submenu displayed below allows the user to select up to 16 preset positions 1- 8 on the first page and 9-16 on the second page (move joystick down to access the second page)



Under “name” you can select “P” or “V” indicating a preset or a vector as your selection
Under “num” you can select any of the 128 preset positions available as you selection.
Under “V” you can select a speed for the PTZ motion 1 - 9
Under “dwell” you can select a time delay from 1 – 99



Move the joystick Left or Right to make selection.
Move the joystick left or right to position the cursor under the desired numeral and press **IRIS OPEN** button to move the cursor on the second numeral line (0~9). Move the Joystick left or right again under the desired numeral and press **IRIS OPEN** button again to select the desired number (0~9). Press **IRIS OPEN** button again to confirm the selection. Press **IRIS CLOSE** button to finalize your selection and return to the previous menu level.

5.2.6.3 Run a Vector Scan

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to execute the command and run the selected tour.
Move the joystick in any direction to cancel the tour and display the menu again.

Press IRIS CLOSE button to exit OSD menu

5.2.6.4 Delete a Vector Scan

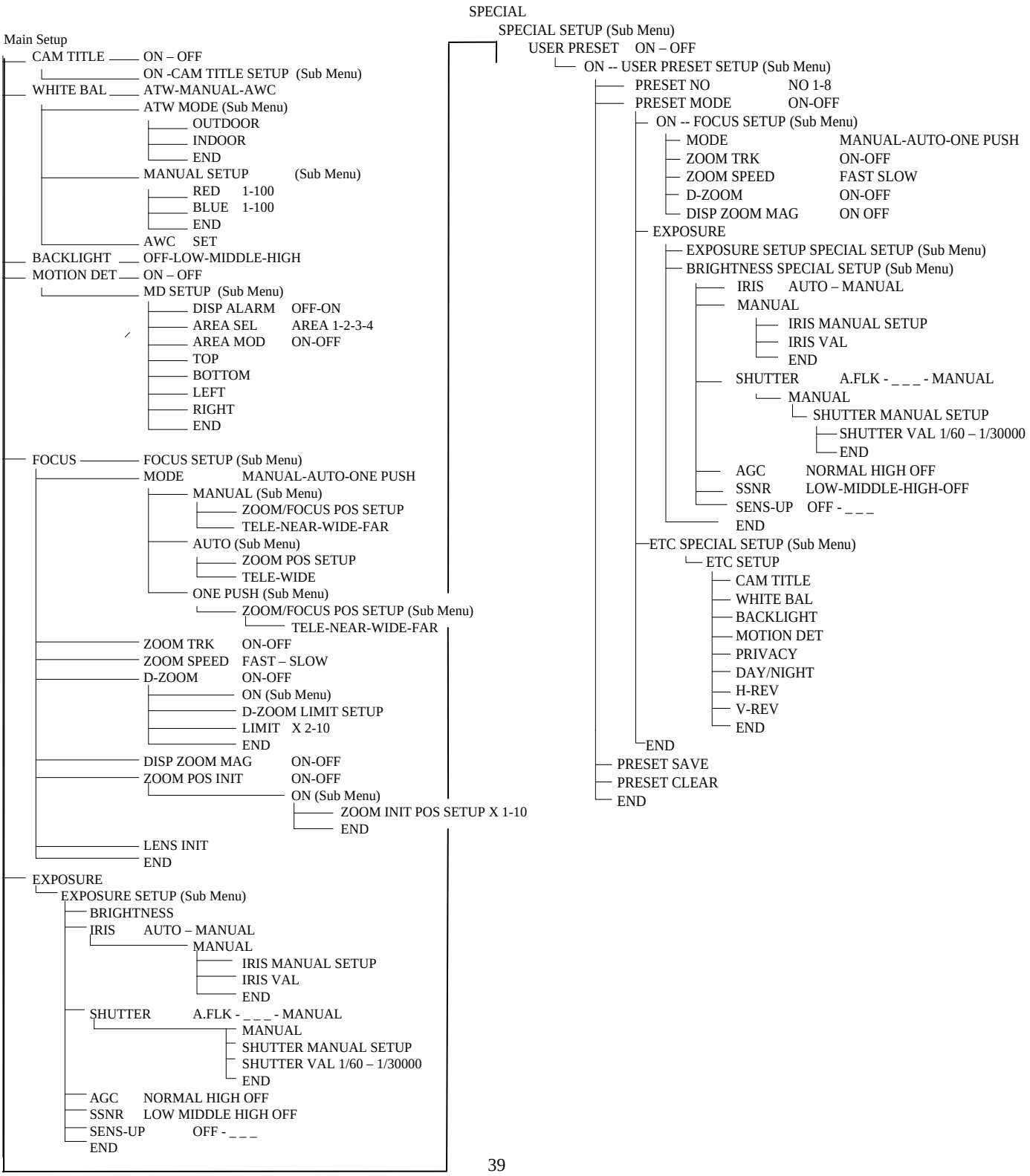
Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make your selection.
A confirmation dialog appears confirming your selection.

Press **IRIS OPEN** button again to confirm the selection. Press **IRIS CLOSE** button to finalize your selection and return to the previous menu level.

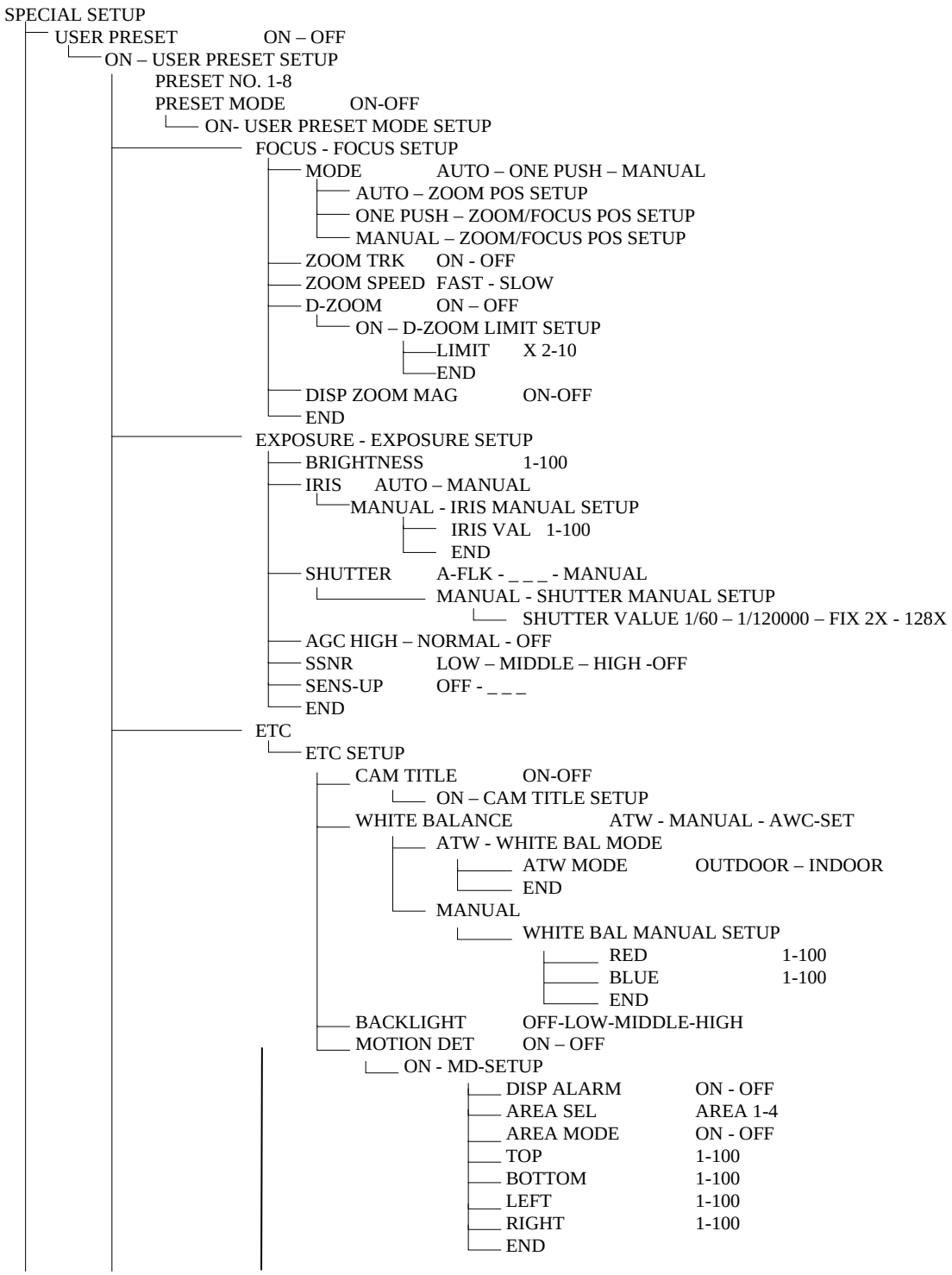
This concludes the available selections (menus and sub menus) under the keyboard command 90+SHOT+ACK or 90 + PRESET for the OSD main configuration menu of the dome.

5.2.5 Continued from Previous Section

The following section is specific to the Camera module available options (menus and sub menus) that can also be accessed directly from the keyboard by entering 57+SHOT+ACK or 57 + PRESET depending the model and type of the selected keyboard controller.

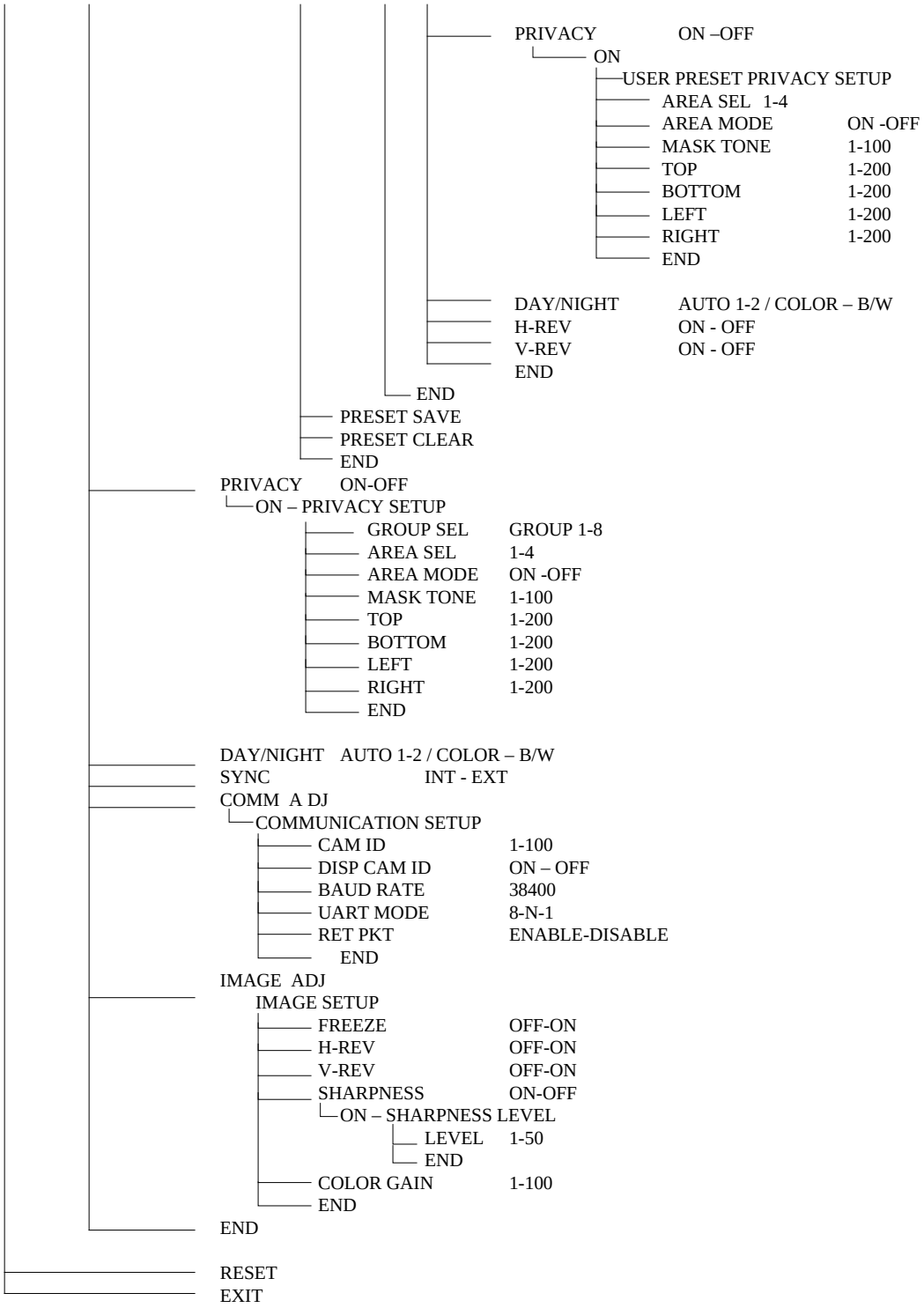


The following section is specific to the Special Setup Sub Menu for the SAMSUNG Camera module.

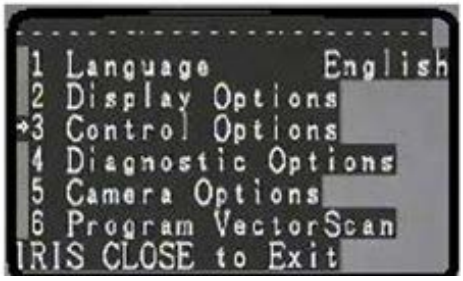


SPECIAL SETUP (Cont'd on next page)

SPECIAL SETUP (Cont'd)



5.2.5 Camera Options menu



Main Camera menu.
Move the joystick up or down to the desired selection.
Move the joystick Left or Right to make selection.
Different options are possible based on the function you selected including sub- menus with additional options.

Press IRIS CLOSE button to exit OSD menu

5.2.5.1 CAM TITLE

The camera title options can be turned On or OFF. In the ON position it allows the user to select a title for the camera as well as select the position on the screen where the title will be displayed.

Press **IRIS CLOSE** button to finalize your selection and return to the previous menu level.

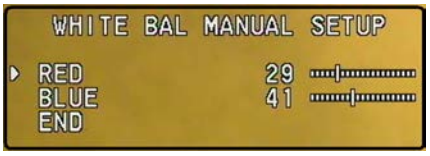
5.2.5.1.1 CAMERA TITLE SETUP

Move the joystick up or down to the desired selection.
Move the joystick Left or Right to select desired character (0~9 or A~Z). Press **IRIS OPEN** button to confirm selection and move to the next character of choice.
Move the cursor to Clear to delete an entry, End to finish then Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

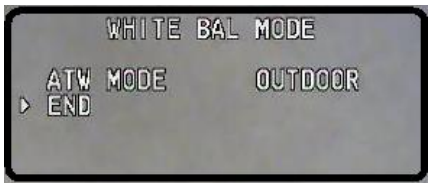
5.2.5.2 WHITE BALANCE

The White Balance function corrects the abnormal white color into the normal white color under any color temperature.
The User can select from ATW , Manual or AWC settings.
ATW: Balances the color automatically depending on the source of light from 1,800 – 10,500 K color temperature.
ATW-OUTDOOR: Use this mode under broad color temperature
ATW-INDOOR: Use this mode under limited color

temperature



MANUAL: Fine tuning is possible trough this manual control mode. Select the color temperature and increase or decrease the Red and Blue values to shift the color of the object.
AWC: Set up the lighting to the objects and correct the color temperature to that of a white object. Camera will work under the selected parameters.). Press **IRIS OPEN** button to set the AWC. If the conditions change adjust and set the AWC again.



Move the joystick up or down to the desired selection.
Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

5.2.5.3 BACKLIGHT

Unlike other cameras, Samsung unique DSP offers a clear image of the subject even with bright backlight. Move the joystick Left or Right to choose.
There are several settings available:

HIGH:	Gain increased from 6dB up to 34dB
MIDDLE:	Gain increased from 6dB up to 30dB
LOW:	Gain increased from 6dB up to 18dB
OFF:	BLC function is disabled

5.2.5.4 MOTION DETECTION

The camera is equipped with a motion detection feature. This feature can be turned ON or OFF. In addition there are a total of 4 detection Areas that can be turned ON or OFF individually under Area Mode.

Move the joystick up or down to the desired selection.

5.2.5.4.1 MOTION DETECTION SETUP

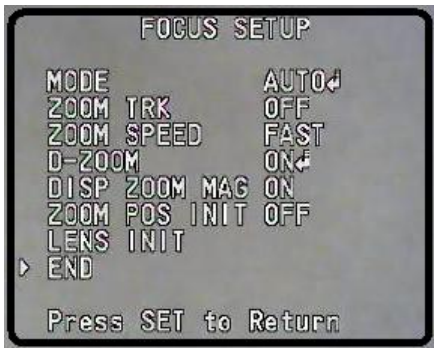
The position of the detection area can be adjusted using directional controls as illustrated. Move the joystick up or down to the desired selection.
Move the joystick Left or Right to change the position.
Move the joystick to the END selection

Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

5.2.5.5 FOCUS

In this section you can set the focus mode. Available options are:
AUTO: The camera adjusts the focus automatically while monitoring the screen continuously in the auto mode. In this mode the zoom key operation is not recognized as the input of the focus key.
MANUAL: The user can adjust the focus manually
ONE PUSH: Only if the camera is not moving, it turns into the manual mode. Same controls as manual

5.2.5.5.1 FOCUS SETUP

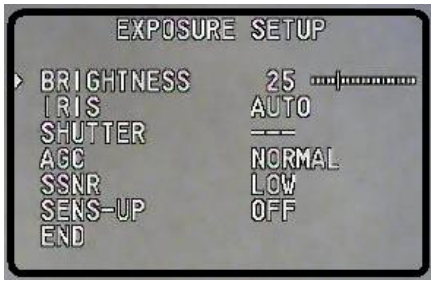


ZOOM TRACK: When it is turned ON the focus function is executed when the zoom function is ON. SPEED-FAST will speed up the ZOOM, Slow has the opposite effect.
D-ZOOM: Magnification of the Digital Zoom can be selected from OFF-2X-10X.
Additional options are available such initial position and magnification including Lens Initialization.
NOTE: It is recommended that you set digital zoom before setting preset positions. As magnification increases, picture quality decreases.

5.2.5.6 EXPOSURE

Camera Exposure can be controlled.
Brightness: The brightness of the screen can be adjusted
Iris: Auto or manual mode can be selected
Auto: The image signal can be adjusted relevant to the amount of available light.
Manual: User can adjust the level
Shutter: Electronic shutter is enabled. The shutter speed is controlled automatically according to screen brightness.
AFLK: Use this mode when the screen flickers because of inconsistent frequency of surrounding lights.

5.2.5.6.1 EXPOSURE SETUP



Manual: Shutter speed can be adjusted manually from 1/60 to 1/120000 of a second
SENS UP function can be operated manually from x2-x128

Additional options available:
Move the joystick to the END selection
Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

5.2.5.7 SPECIAL

Under the special menu a plethora of options are available.
We recommend that only experienced users with specific needs attempt to configure these options.

For the majority of applications no additional settings are required from what has been described in the previous sections of this manual.
Move the joystick up or down to the desired selection.
Move the joystick Left or Right to choose.

5.2.5.7.1 SPECIAL SETUP

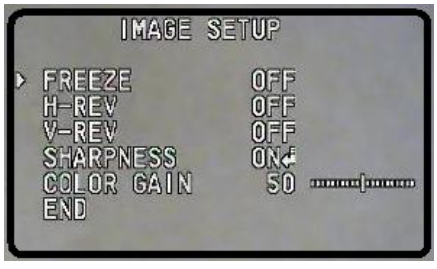
Under USER PRESET the use can select a variety of options related to the specific behavior of the camera regarding Focus, Exposure, White Balance and others features for specific preset settings, There are a total of 8 positions that are user configurable in great detail.
Move the joystick up or down to preset save to save your selection. Move the joystick to preset clear if you wish to delete the desired selection.
Move the joystick to the END selection
Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

5.2.5.7.1.1 COMM ADJUST

The communication parameters of the camera are factory preset and do not require any user configurations.

These options are available only for specific needs and for experienced users.
Move the joystick to the END selection
Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

5.2.5.7.1.2 IMAGE ADJUST



For specific placements of the Dome unit such as upside down or specific circumstances, the user has the ability to adjust the image such as Horizontal and Vertical flip, modify the

Sharpness, and color gain.
Move the joystick to the END selection
Press **IRIS CLOSE** button to exit or return to the previous menu level when programming is done.

5.2.5.8 RESET

As a last measure, and if things get complicated, you can reset the camera to original factory settings.
Move the joystick up or down to the desired selection.
Press **IRIS CLOSE** button to reset the camera.
The screen will turn black momentarily and the camera will be reset to original factory parameters.

5.2.5.9 EXIT

When you have finished all your selections and programming
Move the joystick to the EXIT selection to Save your settings
Press **IRIS CLOSE** button to exit the OSD menu.

6. Direct command entry (Short-cuts)

6.1 Keyboard direct entry command reference table

Number of preset position	Control Object	Definition of Keyboard Operation	
		Call preset position [xx]+[SHOT]+[ACK]	**Save preset position [xx]+[SHOT]+[ON]**
51	Pan-Tilt Control	Save line-scanning speed	Enable system default guard tour
52		Enable Auto Pan scanning	Set Start Pan Position
53		System hold	Set End Pan Position
55	Background Light Compensation	On	Off
58	Digital Zoom *	On	Off
59	Focus	Auto	Manual
60	Iris	Auto	Manual
100	Home position	Enable	Disable
95	Setting the Dwell time interval for the return to Home position function	1 minute	
96		2 minutes	
97		4 minutes	
98		8 minutes	
99		10 minutes	
101	Intelligent manual horizontal continuous scanning	ON	

6.2. Technical Specifications

Electrical / Mechanical Specifications			
Supplied Power Supply	110VACto24VAC-1.5A 220VACto24VAC-1.5A	Power Consumption	250mA-6W (camera inclusive)
Connections	Modular 6 pos Molex	Weight	1.0Kg (Camera exclusive)
Installation method	Wall or Ceiling bracket & optional pole and Corner Mount adapter	Relative humidity relativity temperature	10-75% 30℃-60℃ (without condensation)
Relative humidity	(Normal Range)	Environmental Protection	IP57-Indoor/IP66-OutIndoor
Dome & Camera Specifications			
Address	0-255	Pan Range	360 Continuous
Tilt Range	0-90 Auto Flip	Manual pan speed	0.1-240°
Manual tilt speed	0.1-120° ／s	Speed of preset	300° /s
Preset Accuracy	±0.10° /s	Preset positins	128
Tours (Guard Tour)	6 Programmable	Communication protocol	PELCO—D/P
Communications	RS485	Auto Scan	Yes (Programmable Speed)
Intelligent Power Off memory	Resume operation	Home Position	Yes (Programmable)
Camera module	Samsung 10X	Camera Type	1/4” Interline Transfer HAD CCD
Zoom	10X Optical-10xX Digital	Resolution	500 TVL
Minimum Illumination	0.7 Lux/F1.0	Day/ Night	YES
Sync System	Internal	Shutter Speed	1/60-1/120,000
White Balance	AWC,ATW, Manual	OSD Dome menu	NO
OSD Camera Menu	YES		

Note; Technical specifications may change without prior notice depending on availability of Components from various suppliers and or camera manufacturers.

7. Trouble Shooting

Trouble Shooting (Cont'd)

	Problem Description	Possible Reason	Troubleshooting	Remarks
1	After power is applied, there is no motion (self test) and no video image.	Cable harness is improperly connected or no AC power	Verify that the orientation of the connector and the power supply input	Please follow the supplied basic system wiring instructions to assure proper operation of dome device.
		Power PCB inside the dome is faulted.	Change the power PCB	
		Slip ring power wires disconnected or damaged	Verify connector or Change slip ring	
		Fault of main control board	Change main control board	
2	After power on, the dome device initiates self test but no video image or on screen characters displayed	OSD Character function is turned Off	Turn On the OSD display according to the instructions in the manual	Video will be displayed on the monitor automatically after 45 seconds from power On
		Incorrect Video connection between camera and control board or cable harness is damaged	Replace the FFC ribbon cable (spare supplied) or the camera module	
3	After self-test of the dome device, OSD menu is not displayed	Incorrect command sequence	Enter 90 + SHOT + ACK to display	After self-test, the menu can be displayed only when there is Video image on the monitor
		Fault of OSD control board	Replace OSD board	
4	Distorted Characters or video image	Interference caused by external electronic signals (noise) or the camera video format is set incorrectly (NTSC/PAL)	Ground the dome device or identify and reduce the external interference (electric motors, HF, high power fluorescent lamps) or reposition the camera to a different location	You should use properly shielded video cables.
		Internal System Error	Power cycle the dome.	
5	After power On, no self-test and motor is locked	Obstruction of the motor controls or incorrect cable connection, or temperature below freezing point	Verify that there are no obstructions and that the cable is connected correctly. If this does not solve the issue return the unit for service.	Follow installation instructions
6	Cannot stop pan rotation (rotate and stop alternatively)	OSD board is not properly connected with main control board.	Secure OSD board against the main control board. If the problem still exists, then replace the OSD board.	Rotational tab should be aligned in the center of the photoelectric switch (slot) for proper operation.
		Pan interrupt switch is not properly aligned or photoelectric switch is broken	Adjust the tab to be aligned with the photo electric switch or replace the switch assembly.	

7	Following normal operation, dome will rotate one revolution while being controlled	The system could not verify the start position and initiates a self calibration.	This is a normal self calibration event. No action required.	If this happens frequently, verify the tab alignment with the photoelectric switch
8	Vertical range is not within 90±2 degree with large deviation	Fault occurs when the dome device is in tilt movement. It may be caused by obstruction of camera which leads to early tilt movement	Check and adjust the mechanical installation and remove any obstructions from the camera vertical platform.	
9	Self-test is normal, but cannot control dome	Wrong communication settings	Set the correct protocol, baud rate and address of dome device	Follow installation instructions
		Improper connection of control cable (polarity)	Verify the polarity of the RS485 connection as per the instruction manual	
10	Intermittent control of dome device	Maximum Communication cable run is exceeded	Add amplification circuit for RS485	This situation may occur following intense electric storms or severe lightning.
		Intermittent or incorrect connections	Verify the wiring	
		Slip ring is damaged	Replace the slip ring	
		RS-485 protective discharge arresters are damaged	Replace RS485 protective discharge arresters (qualified service only)	
11	Call out function fails	System failure caused by noise interference	Restart the dome device	
12	Dome operates by itself occasionally	No transmission auto “call back” function is set to the dome device	Verify this setting	
13	One dome works well while other do not under identical operation	Incorrect communication settings or wiring	Verify the communication setting and wiring again	Follow installation instructions

8. Appendix — Glossary

AREAS

Programmed start and end points of the dome's field of view around its pan axis.
Each area is a part of a circular viewing area that extends around the dome. These areas can be different sizes.

AUTOMATIC GAIN CONTROL (AGC)

Allows for the amplification of the video signal in scenes with minimal ambient light. Many low-light scenes result in picture noise. As gain is increased, the picture noise is also amplified. When AGC is enabled, the value of the gain setting is based on feedback from the camera. When AGC is disabled, the camera uses the value set for the manual gain setting. The trade-off between picture level and noise may be adjusted when AGC is disabled.

ON-SCREEN MENU

The text overlay menu system used for setting dome features. The utility is accessed using a keystroke combination. The utility provides settings for camera functions, zoom, alarms, text display, and password protection. (Depending the model).

FLIP

Allows the dome to automatically turn 180 degrees when the camera tilts to its lower limit and stays in that position for a brief delay. When the dome flips (rotates), the camera starts moving upward as long as the tilt control is kept in the down position. Once the control is released, the tilt control returns to its normal operational mode. The flip feature is useful when you need to track someone who walks directly beneath the dome and continues on the other side.

IR MODE

A feature of the camera that permits manual or automatic switching between color and IR (black-and-white) operation. When IR mode is active, clearer images may be obtained under low-light conditions. (Depending the camera model).

LINE LOCK

Allows you to phase lock the video with the AC power line. When line lock is enabled, it prevents vertical video rolling when switching multiple cameras to a single monitor. If text appears slightly tinted on color monitors, disabling the line lock may prevent this problem. (Depending the camera model).

NAME INFORMATION

Relates to the display the dome name, the area where the dome is pointing, the name of the preset or pattern that is running, and alarm names. The display of each type of name setting can be enabled or disabled. When the display of camera or area title(name) is enabled, the information appears on the screen continuously. Preset, tour and pattern titles(names) appear only while they are active. (Depending the model).

LOW SHUTTER

Setting used to improve the quality of video obtained in extreme low-light situations. When the Low Shutter setting is enabled, low-light information is collected over multiple fields based on the Shutter Limit setting. As a result, video may appear blurred or choppy in extreme low-light situations. This setting does not effect camera operation in normal lighting situations. See also Automatic Gain Control (AGC).

PATTERN

A series of pan, tilt, zoom and focus movements from a single programmable dome. Up to 6 patterns may be programmed for the dome camera. (Depending the model).

PRESET - PRESHOT

Programmed video scene, based on a specific pan, tilt, zoom, and focus settings. Up to 128 presets may be programmed for the dome camera. (Depending the model)

PRIVACY ZONES

Masked areas of the dome camera's viewing area. These masks prevent operators of the surveillance system from viewing these designated zones. The Privacy Zones move in relation to the dome camera’s pan/tilt position. In addition, the apparent size of the Privacy Zone adjusts automatically as the lens zooms in or out. Up to 6 Privacy Zones may be established for a dome camera. (Depending the model).

SHUTTER LIMIT

Setting used to define the maximum exposure time for the Open Shutter setting. The values for the setting range from 1/2 to 1/60. The default setting is 1/4.

VECTOR SCAN

Move from start point to end point including tilt and zoom simultaneously and linearly.

WDR

Wide Dynamic Range Technology uses two shutter speeds in alternative video fields-high and normal- every 60th (or 50th) of a second and combines two fields into one progressive scan frame. It allows every detail to be captured accurately even if one portion of an image is brilliantly. Whether at the high shutter speed or normal shutter speed, the progressive scan CCD provides a horizontal resolution of 470 lines. As a result, combined fields yield a frame of high-quality images.

WHITE BALANCE

Adjustments in the color hue(red and blue) gains for a camera so that true white appears white in the image. It is normally compensated for by the automatic gain control. In some lighting conditions, you may need to manually adjust the red and blue settings for optimal viewing. When Automatic White Balance is enabled, the camera measures the image and automatically adjusts the red and blue settings to balance white. When Automatic White Balance is disabled, the camera uses the values set for the red and blue settings to balance white.

Note: Specifications subject to change without notice.