



## **SUPER HI-RES. FAST DOME CAMERA**

**SP2034/2038/2124/2128 Series**

## **SUPER HI-RES. FAST DOME IP CAMERA**

**IPS2034/2038/2124/2128 Series**

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# PREFACE

SP2034/8 & SP2124/8 series fast dome cameras with High resolution of 540TV lines offer significant enhancement and refinements to bring you the most innovative surveillance solutions. SP2034/8 & SP2124/8 series are the leading product in the industry offering the most advanced features such as 2.6X / 12X optical zoom lens, Auto White Balance mode selection, Auto Focus Control, Auto Iris Control, Day & Night Control, Infrared LED Control ... Etc.

LILIN's Fast Dome series measure only 135mm in diameter and is capable of making 360 degrees continuous rotation with a speed range of 0.5 to 120 degrees per second, ensures direct and accurate target positioning. When required the dome can be quickly spun through 180 degrees, an important feature when something passes directly under the camera.

Up to 128 preset positions can be programmed and recalled with an accuracy of 0.25 degrees. First 16 presets can be divided into 4 groups for auto touring with individual setting for speed and dwell time.

RS-485 control interface makes our mini fast dome cameras easy to fit into our exist systems and compatible with other manufacturer's control systems.

LILIN's Fast Dome series are fully-functional and user-friendly. It will meet your need for a wide range of surveillance applications.

Fast Dome IP Camera H.264 AVC (Advanced Video Coding) video compression engine provides high video quality, full D1 resolution, bandwidth efficiency, and real-time streaming.

The cutting edge of H.264 AVC main profile encoding technology can provide better compression rate and superior video quality at 56 Kbps to 3 Mbps bit rate. Dual streaming design, JPEG and H.264 AVC allow to stream video at low bandwidth (Internet) and high bandwidth (LAN) for optimizing video quality. Low latency design for both Intranet and Internet is a key factor of operating PTZ. Four PTZ web interfaces including lens absolute positioning are designed for easy-to-use purpose.

# FEATURES

- 2.6X Auto Focus Zoom Lens(SP2034/2038&IPS2034/2038)  
Build-in 2.6X optical zoom lens with focal length 2.8 ~ 7.3mm
- 12X Auto Focus Zoom Lens(SP2124/2128&IPS2124/2128)  
Build-in 12X optical zoom lens with focal length 3.8 ~ 45.6mm
- 540 Horizontal TV lines
- Automatic Iris Control (2.6X Lens), Automatic / Manual Iris Control (12X Lens)
- Preset ID / Name
- Private Mask
- 360° continuous rotation
- Up to 128 programmable preset positions
- Preset positions auto scanning
- High speed rotation and tilt, speed range varies from 0.5°/sec ~ 120°/sec
- 180° Horizontal Instant Flip
- Build in 1/4" CCD high resolution DSP colour camera:
  1. Color / Mono Switch  
Day → Color  
Night → Mono  
Auto → Switch from color to mono when light drops below 3 lux  
Schedule → Switch from color to mono by time of setup
  2. 540 TV Lines (Color) ; 600 TV Lines (Mono)
  3. Color: 0.5Lux at F1.9, Mono: 0Lux [IR ON] (2.6X Lens)  
Color: 0.3Lux at F1.6, Mono: 0Lux [IR ON] (12X Lens)
  4. On-Screen Setup Menu
  5. White Balance Control: Auto Tracking , Manual
  6. Back Light Compensation : On/Off
  7. Auto Gain Control : 0dB ~ 36dB
  8. 8 levels Brightness Adjustment
  9. 16 levels Pedestal Adjustment
  10. Aperture Correction Adjustment
- High efficiency infrared LED 850nm, radiant distance - 16 meters
- RS-485 control interface
- Up to 256 Mini Fast Dome configuration
- Compatible with PC control (protocol required)
- Power supply options : 100 ~ 240VAC or 24VAC
- True H.264 AVC/MPEG-4 part 10 real-time video compression [IPS2034/2038/2124/2128]
- Full D1 resolution at 720x480(NTSC)/720x576(PAL) in live monitoring  
IPS2034/2038/2124/2128]
- Full duplex H.264 AVC and JPEG streaming [IPS2034/2038/2124/2128]

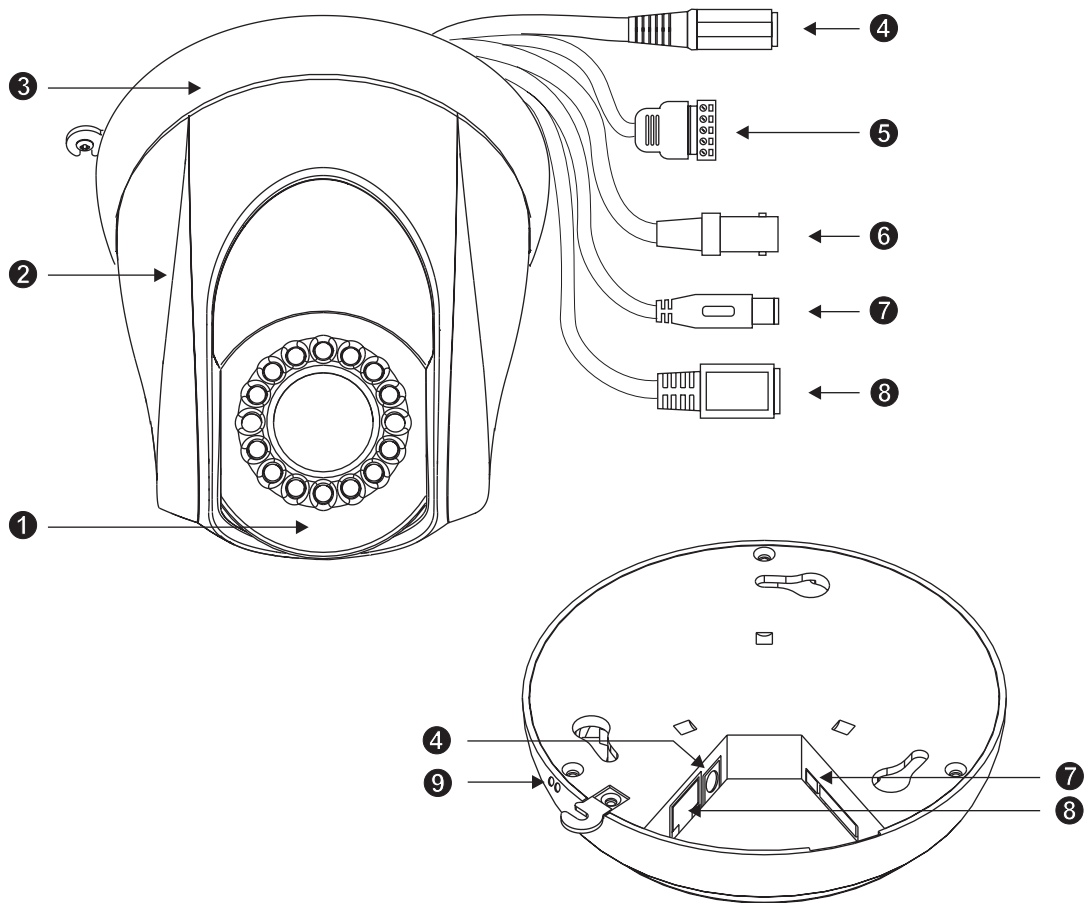
# WARNINGS & CAUTIONS

**Please read the manual before attempting installation or operation**

1. Please be aware to the warnings and cautions notice.
2. Don't use any chemical detergent to clean the machine surface, use a damp cotton cloth only.  
Regularly clean the dome cover to assure proper focus ability.
3. Please install the Fast Dome in a dry area, water and high humidity may cause damage on internal parts. External housing should be used for outdoor installation.
4. Please use parts supplied by the manufacturer only, any unqualified part using in the equipment may violate the warranty.
5. Avoid installing the equipment in an unstable area. Make sure the area is firm and stable.  
Falling equipment may injure personnel and damage the equipment.
6. Do not install the equipment near any flammable gas. Violation may cause fire or injury.
7. Avoid running video cable and signal cable through or passing interference sources such as video waves, broadcast station, power generator, elevator motor or high voltage area ..... etc.  
Violation may cause interference.
8. Make sure the power cable is properly fixed. Un-suitably fixed cable may cause serious short circuit or fire.
9. Correct cable connection is important. Do not place any object on the connection cable and change the cable if there is damage on cable. Violation may cause short circuit, fire and injury.
10. Make sure ground is well connected to avoid damage caused by lightning.
11. Do not put any foreign objects inside the equipment and do not spray any liquid on equipment.  
This will avoid short circuit damage.
12. Do not touch power connection with wet hands to avoid short circuit or electricity shock.
13. Do not apply smash-force on the equipment. Violation may cause damage.
14. Do not install the equipment in a location that may expose the equipment directly to sunlight.  
Violation may cause colour fading or damage.
15. Do not install the equipment in high temperature or low temperature environment to avoid damage. The normal operational temperature is between  $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$ .
16. Fast Dome contains high sensitive electric parts inside. Do not try to repair them without qualified personnel.
17. Turn off the power immediately and contact the technician when the following occurs:
  - A. Damage on power cable or plug.
  - B. Water leak into the equipment.
  - C. Fast Dome can not be operated normally.
  - D. Equipment falling on ground or damage on external case.
  - E. Unusual occurrence.
18. Warning: Do not try to repair the equipment. Only a qualified technician may disassemble and repair the equipment. Shut off the power before disassemble the equipment and don't put power on unless the case is completely assembled.



# STRUCTURAL ELEMENT

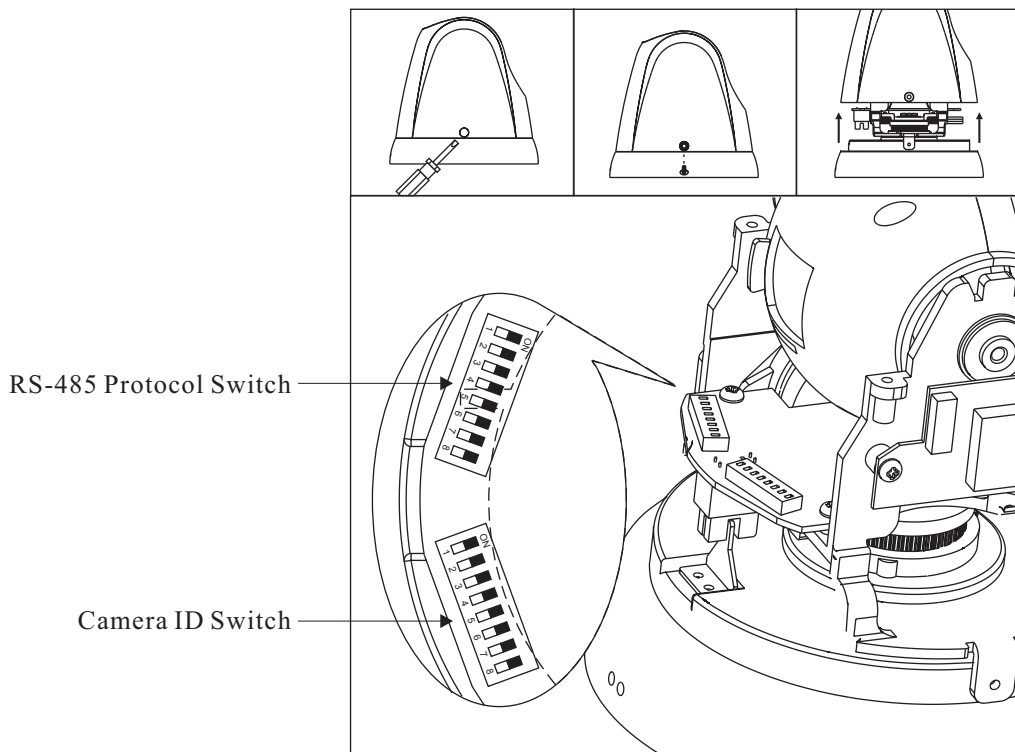


[IPS2034/2038/2124/2128]

- ① Camera Body
- ② Camera Case
- ③ Bottom Chassis
- ④ Power In DC Jack (DC12V In DC Jack)
- ⑤ RS-485 In/Out Terminal
- ⑥ Video Out BNC Jack
- ⑦ Audio In/Out Jack [IPS2034/2038/2124/2128]
- ⑧ RJ45 Jack [IPS2034/2038/2124/2128]
- ⑨ LED Status [IPS2034/2038/2124/2128]

# FAST DOME CAMERA SET UP

## DIP Switch Setting



## RS-485 Protocol Switch Setting

Explanation of DIP Switch Setting :

1. RS-485 IN-TML RES. : RS-485 IN Terminal Resistor ON/OFF
2. RS-485 OUT-TML RES. : RS-485 OUT Terminal Resistor ON/OFF
3. HALF / FULL : 2 wiring system (HALF duplex) or 4 wiring system (Full duplex)
4. BAUD SEL 1 : Transmission speed selection 1
5. BAUD SEL 2 : Transmission speed selection 2
6. PROTOCOL SEL 1 : Protocol selection 1
7. PROTOCOL SEL 2 : Protocol selection 2
8. PROTOCOL SEL 3 : Protocol selection 3

### ● RS-485 In/Out Terminal Resistor Setting

- ☞ Daisy Connection: Set RS-485 In and Out terminal resistor as ON (Factory Initialize).
- ☞ Parallel Connection: Set the front and last equipments terminal resistor as ON. The parallel connection equipment in the middle set as OFF to keep the best transmitted status.

● RS-485 Communication Mode Selection

|                               |     |
|-------------------------------|-----|
| DIP SWITCH                    | 3   |
| 2 wiring system (HALF duplex) | OFF |
| 4 wiring system (FULL duplex) | ON  |

☞ Communication Mode of HALF: Most of systems use this mode because of low-cost and easy setup, but this mode can't receive and transmit data simultaneously.

☞ Communication Mode of FULL: This Mode can receive and transmit data simultaneously.

● Transmission Speed Setting

| BAUD RATE SELECTION |     |     |
|---------------------|-----|-----|
| DIP SWITCH          | 4   | 5   |
| 2400 bps            | ON  | ON  |
| 4800 bps            | OFF | ON  |
| 9600 bps            | ON  | OFF |
| 19200 bps           | OFF | OFF |

Remark: LILIN Protocol control mode is N, 8, 1 Baud Rate: 9600bps

● Protocol Setting

| PROTOCOL SELECTION                    |     |    |    |
|---------------------------------------|-----|----|----|
| DIP SWITCH                            | 6   | 7  | 8  |
| MLP2 (MERIT LILIN PROTOCOL 2) VERSION | ON  | ON | ON |
| MLP1 (MERIT LILIN PROTOCOL 1) VERSION | OFF | ON | ON |

Remark: LILIN MLP1 (MERIT LILIN PROTOCOL 1) is same as PIH-717 Fast Dome Protocol

MLP2 (MERITLILIN PROTOCOL 2) is the new protocol for controlling fast dome cameras. The protocol contains 7 bytes which include a check-sum byte and extra control codes. The check-sum byte, for example, can prevent RS-485 interference affecting a protocol. The extra control codes, for example, can provide the feature of controlling absolute position of a fast dome camera.

● RS-485 Protocol DIP Switch of LILIN SP2034/2038/2124/2128 & IPS2034/2038/2124/2128 Series Setting

| RS-485 Protocol DIP Switch Setting |    |    |     |    |     |     |    |    |
|------------------------------------|----|----|-----|----|-----|-----|----|----|
| DIP SWITCH                         | 1  | 2  | 3   | 4  | 5   | 6   | 7  | 8  |
| MLP2 Version                       | ON | ON | OFF | ON | OFF | ON  | ON | ON |
| MLP1 Version                       | ON | ON | OFF | ON | OFF | OFF | ON | ON |

## Fast Dome ID Address Setting Refer Chart

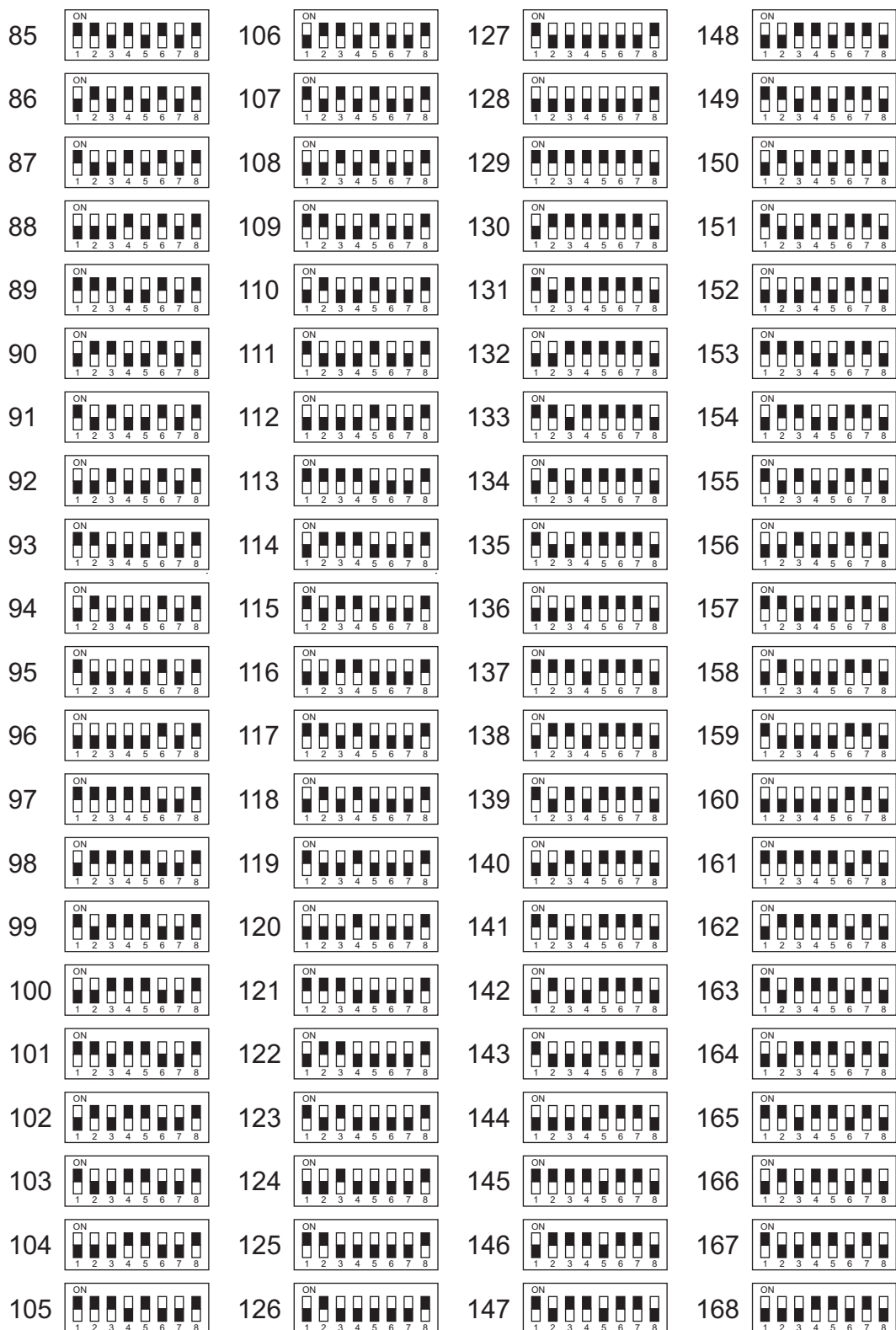
Fast Dome Camera can be serial linking in one system.  
Therefore each dome is addressing by ID switch located.

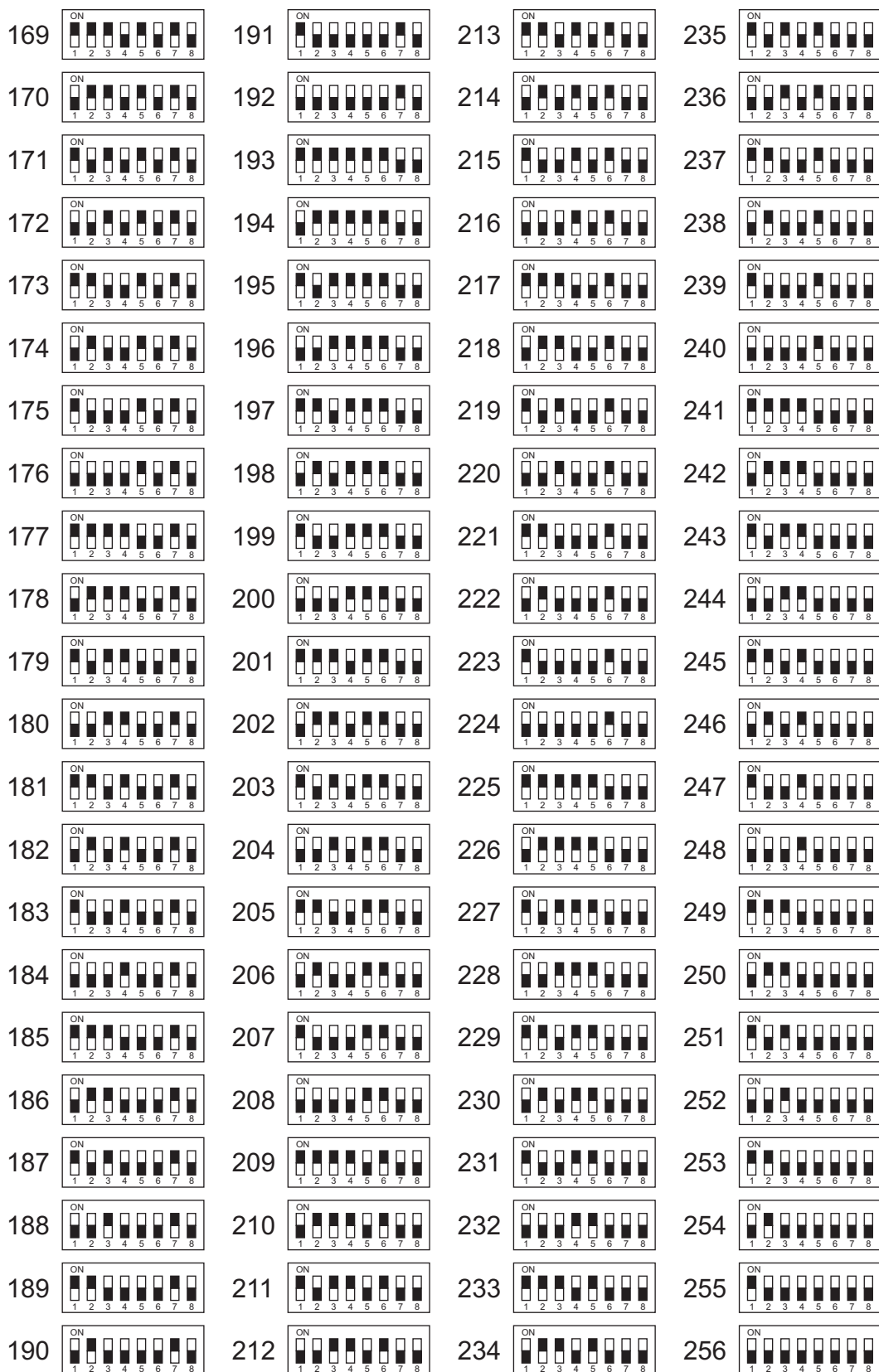
● When select MLP1 (MERIT LILIN PROTOCOL 1), Camera ID setting as followings:

|    |  |    |  |    |  |    |  |
|----|--|----|--|----|--|----|--|
| 1  |  | 17 |  | 33 |  | 49 |  |
| 2  |  | 18 |  | 34 |  | 50 |  |
| 3  |  | 19 |  | 35 |  | 51 |  |
| 4  |  | 20 |  | 36 |  | 52 |  |
| 5  |  | 21 |  | 37 |  | 53 |  |
| 6  |  | 22 |  | 38 |  | 54 |  |
| 7  |  | 23 |  | 39 |  | 55 |  |
| 8  |  | 24 |  | 40 |  | 56 |  |
| 9  |  | 25 |  | 41 |  | 57 |  |
| 10 |  | 26 |  | 42 |  | 58 |  |
| 11 |  | 27 |  | 43 |  | 59 |  |
| 12 |  | 28 |  | 44 |  | 60 |  |
| 13 |  | 29 |  | 45 |  | 61 |  |
| 14 |  | 30 |  | 46 |  | 62 |  |
| 15 |  | 31 |  | 47 |  | 63 |  |
| 16 |  | 32 |  | 48 |  | 64 |  |

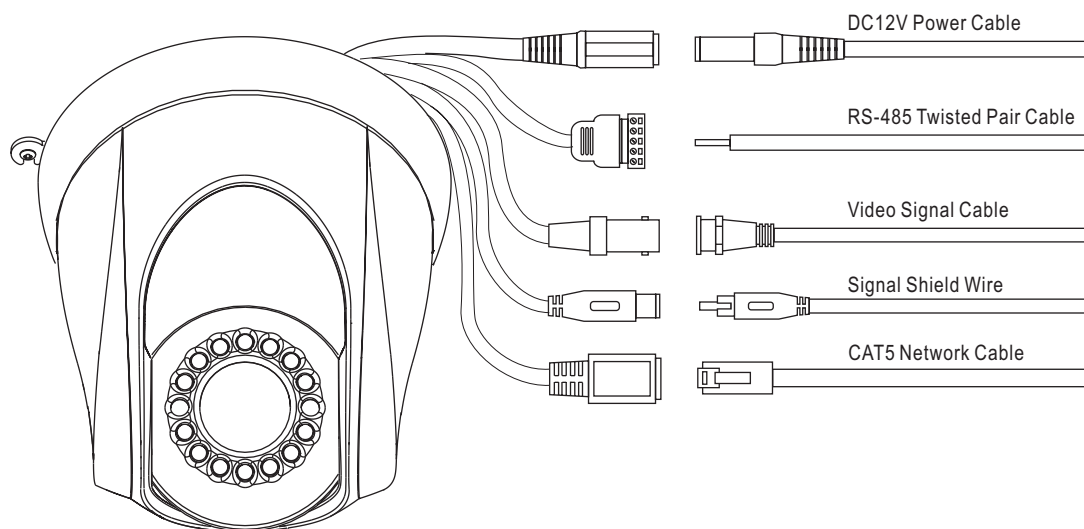
● When select MLP2 (MERIT LILIN PROTOCOL 2), Camera ID setting as followings:

|    |  |    |  |    |  |    |  |
|----|--|----|--|----|--|----|--|
| 1  |  | 22 |  | 43 |  | 64 |  |
| 2  |  | 23 |  | 44 |  | 65 |  |
| 3  |  | 24 |  | 45 |  | 66 |  |
| 4  |  | 25 |  | 46 |  | 67 |  |
| 5  |  | 26 |  | 47 |  | 68 |  |
| 6  |  | 27 |  | 48 |  | 69 |  |
| 7  |  | 28 |  | 49 |  | 70 |  |
| 8  |  | 29 |  | 50 |  | 71 |  |
| 9  |  | 30 |  | 51 |  | 72 |  |
| 10 |  | 31 |  | 52 |  | 73 |  |
| 11 |  | 32 |  | 53 |  | 74 |  |
| 12 |  | 33 |  | 54 |  | 75 |  |
| 13 |  | 34 |  | 55 |  | 76 |  |
| 14 |  | 35 |  | 56 |  | 77 |  |
| 15 |  | 36 |  | 57 |  | 78 |  |
| 16 |  | 37 |  | 58 |  | 79 |  |
| 17 |  | 38 |  | 59 |  | 80 |  |
| 18 |  | 39 |  | 60 |  | 81 |  |
| 19 |  | 40 |  | 61 |  | 82 |  |
| 20 |  | 41 |  | 62 |  | 83 |  |
| 21 |  | 42 |  | 63 |  | 84 |  |





## Fast Dome Connection Jack and Cable Requirement



### 1. DC Input Jack

DC Input: DC 12V  $\pm 10\%$

### 2. RS-485 In/Out Terminal

RS-485 Input (TXDI+,TXDI-) to receiver signal from keyboard, matrix, DVR or multiplexer through twisted pair cable.

RS-485 Output (TXDO+,TXDO-) sending out signal to next fast dome through twisted pair cable.

Recommend Data Cable: 2547 VW-ISC UL 24AWGx2C

Transmission Distance: Max. 1kilometer

### 3. Video Out BNC Jack

Video Signal Output CVBS 1.0Vp-p 75  $\Omega$  BNC

Recommend Signal Cable: 5C2V

### 4. RJ45 Jack [IPS2034/2038/2124/2128]

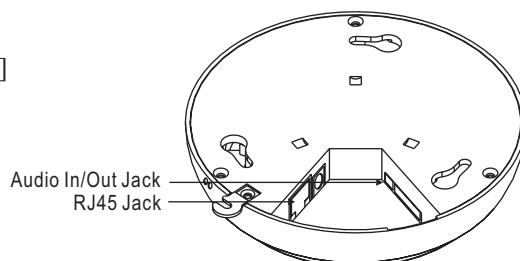
LAN : 10/100Mbps

Recommend Signal Cable : CAT5

### 5. Audio In/Out RCA Jack [IPS2034/2038/2124/2128]

Audio :1.4Vp-p (1 Vrms)

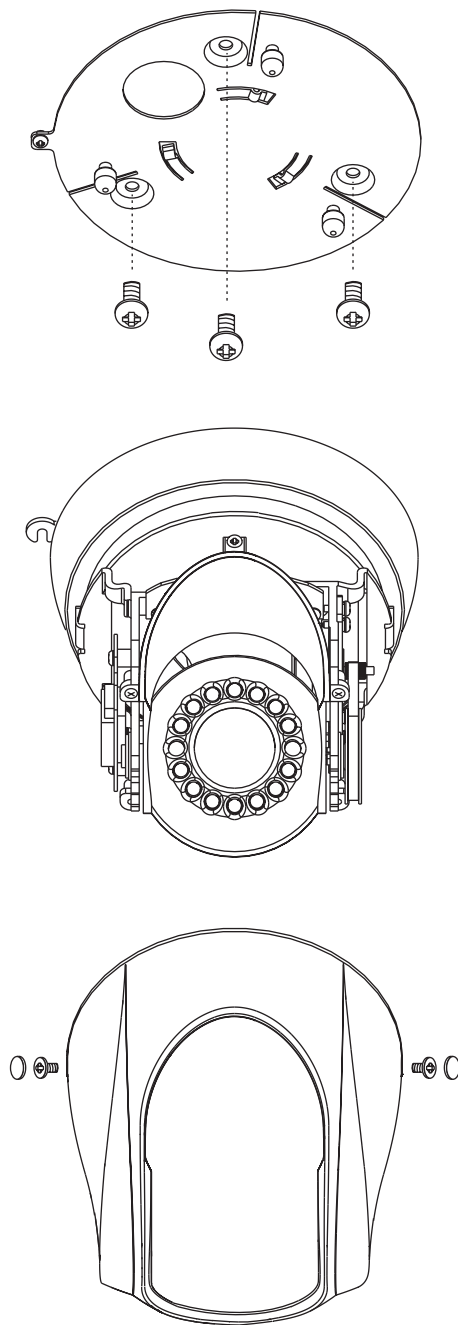
Recommend Signal Cable : Signal shield wire



# INSTALLATION

## Indoor Installation Structural Drawing

### Attached Mounting



## Attached Mounting (Fixed Ceiling)

### ● Step 1 Fix The Metal Clips of ceiling

|                                                            |                                                    |                                                                         |                               |
|------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------|-------------------------------|
|                                                            |                                                    |                                                                         |                               |
| Put fixed metal clips on installation position of ceiling. | Tighten the three tapping screws into the ceiling. | Loose the screw of bottom chassis.<br>(Don't need taking out the screw) | Base size and screw location. |

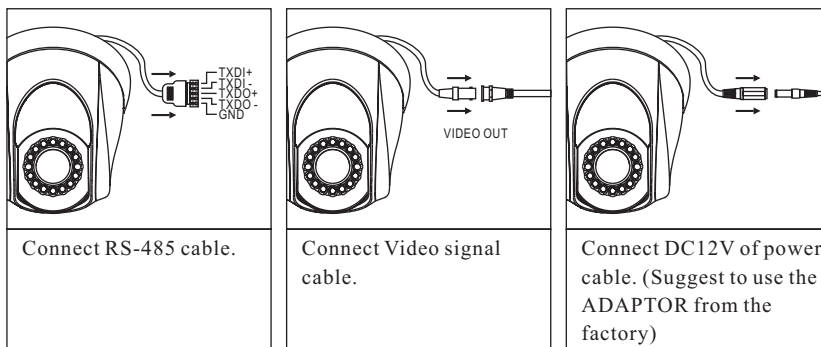
### ● Step 2 Setting Fast Dome Camera

|                                                                  |                       |                                              |                                           |
|------------------------------------------------------------------|-----------------------|----------------------------------------------|-------------------------------------------|
|                                                                  |                       |                                              |                                           |
| Take out the screw cover s on right and left side of dome cover. | Untighten the screws. | Take out dome cover from top of dome camera. | Setting Fast Dome ID and RS-485 Protocol. |

### ● Step 3 Attach the Camera and Metal Clips

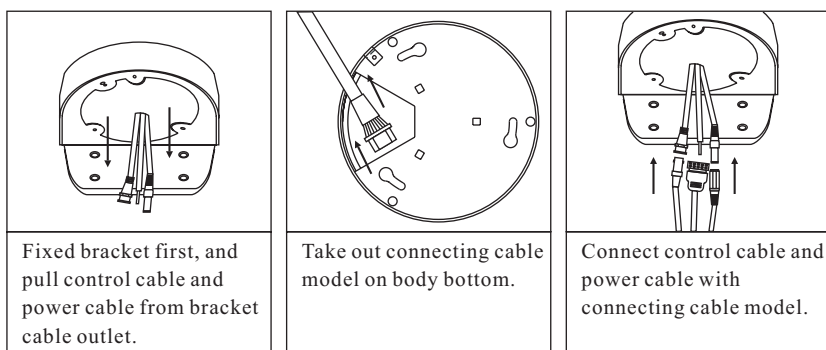
|                                         |                                                       |                                       |                                                                             |
|-----------------------------------------|-------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------|
|                                         |                                                       |                                       |                                                                             |
| Put on dome cover to dome camera.       | Tighten the screws on right and left side dome cover. | Put in screw covers.                  | Set all of control cable on middle position and through the hole of ceiling |
|                                         |                                                       |                                       |                                                                             |
| Attach dome camera body to metal clips. | Turn camera body counter clockwise to tight position. | Tighten the screw to fix camera body. |                                                                             |

## ● Step 4 Connection

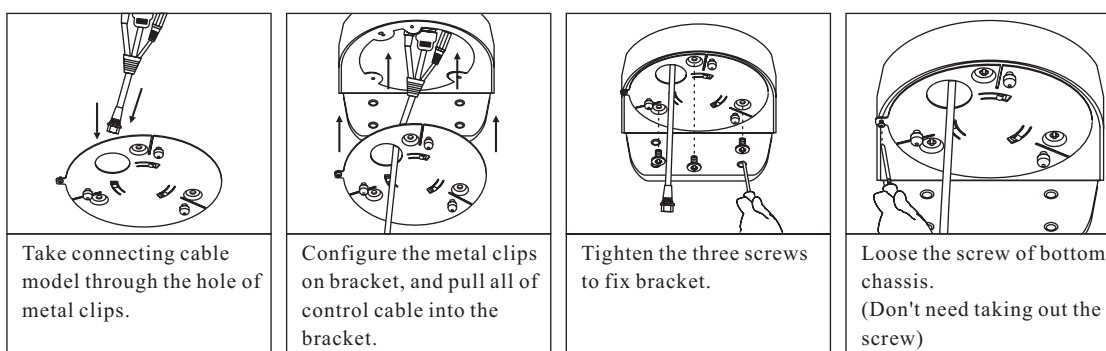


## Wall Mounting (Fixed Bracket)

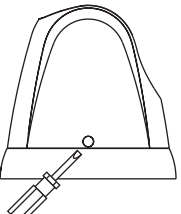
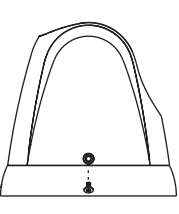
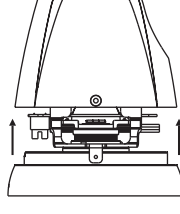
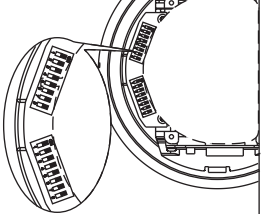
### ● Step 1 Fix The Bracket



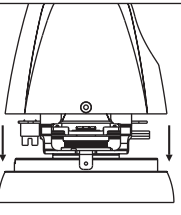
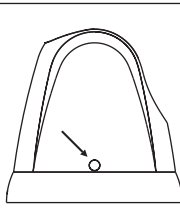
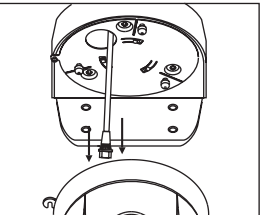
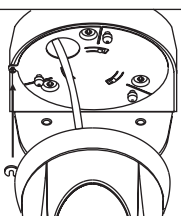
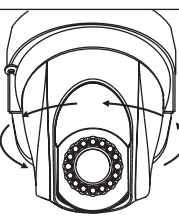
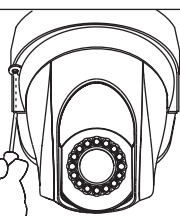
### ● Step 2 Fix The Metal Clips of Bracket



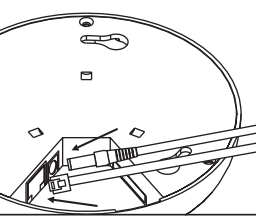
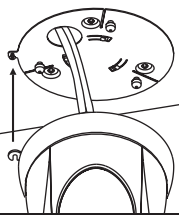
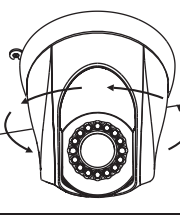
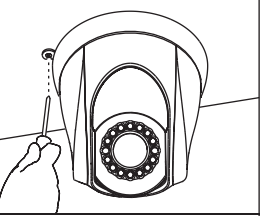
### ● Step 3 Setting Fast Dome Camera

|                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |  |  |
| Take out the screw covers on right and left side of dome cover.                   | Untighten the screws.                                                             | Take out dome cover from top of dome camera.                                      | Setting Fast Dome ID and RS-485 Protocol.                                          |

### ● Step 4 Attach the Camera and Metal Clips

|                                                                                    |                                                                                    |                                                                                    |                                                                                    |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|   |   |   |  |
| Put on dome cover to dome camera.                                                  | Tighten the screws on right and left side dome cover.                              | Put in screw covers.                                                               | Connect the connecting cable model on body bottom.                                 |
|  |  |  |                                                                                    |
| Attach dome camera body to metal clips.                                            | Turn camera body counter clockwise to tight position.                              | Tighten the screw to fix camera body.                                              |                                                                                    |

### IP Camera

|                                                                                                |                                                                                     |                                                                                     |                                                                                      |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|             |  |  |  |
| Connect Ethernet cable and DC12V of Power cable. (Suggest to use the ADAPTOR from the factory) | Attach dome camera body to metal clips.                                             | Turn camera body counter clockwise to tight position.                               | Tighten the screw to fix camera body.                                                |

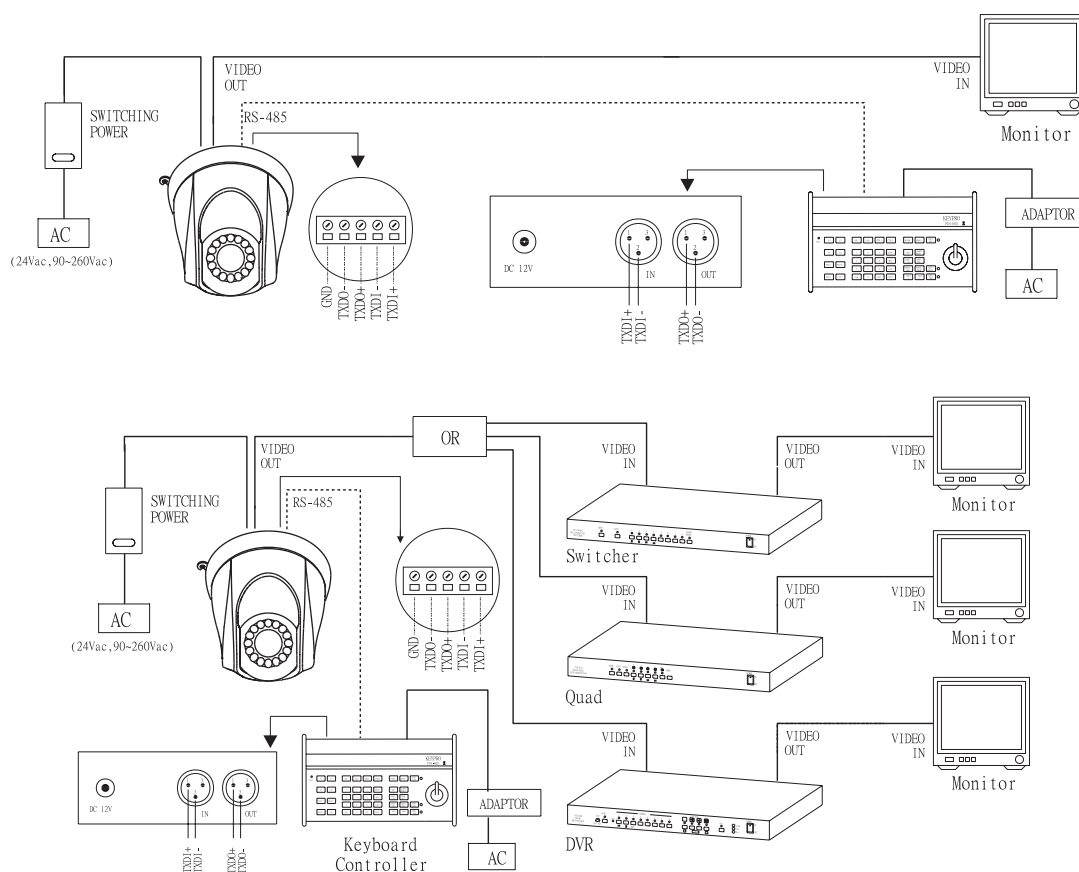
# SYSTEM CONFIGURATION

LILIN's integrated Fast Dome Surveillance System is suitable for a wide range of surveillance applications. The system can be as single fast dome with one keyboard or encompassing as 64 domes with comprehensive matrix switching, PC control and even Digital Video Recording. Such flexibility means future expansion is easily facilitated.

## Fast Dome and Keyboard

Single dome configuration: One Fast Dome Camera connects to one PIH-800II or PIH-931D/932T. Telemetry control is sent via twisted pair between Dome and Keyboard.

Video signal from the dome is sent to monitor or multiplexer or quad or switcher.

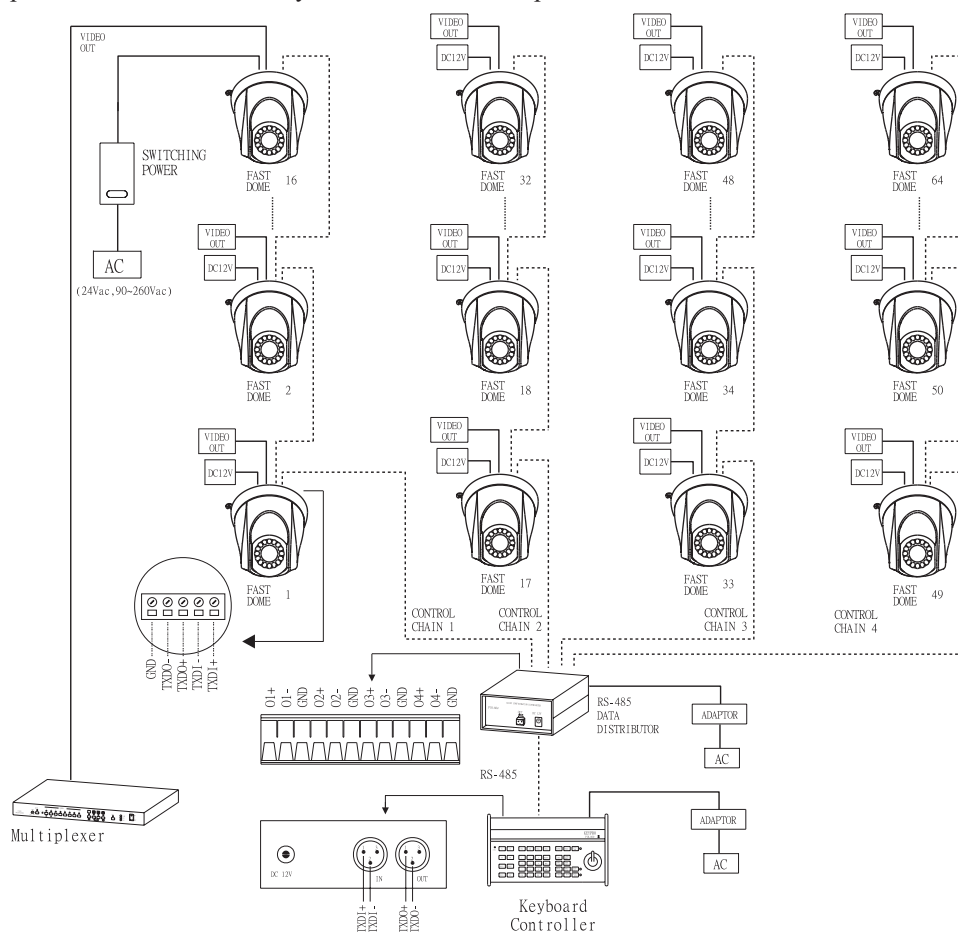


## RS-485 Connection

1st pin TXDI+ of RS-485 jack at back of the keyboard connects to TXDI+ of RS-485 jack on fast dome.

2nd pin TXDI- of RS-485 jack at back of the keyboard connects to TXDI- of RS-485 jack on fast dome.

Multiple Domes means that more than one fast dome is linked in the system. Each dome connects to next dome forming a serial linking. Each dome has an individual ID dip switch, which allows the keyboard to identify each fast dome and make command. Sometimes it is more convenient to wire a telemetry system in star configuration rather than daisy chain. To do this a PIH-804Ⅲ data distributor is necessary. It takes an output from a keyboard or a matrix and splits the single data line into 4 separate data lines. One keyboard can control up to 64 camera.



### RS-485 Connection Between PIH-804Ⅲ Data Distributor and Fast Dome

1st output TXDI1+ of PIH-804Ⅲ connects to TXDI+ of 1st fast dome and TXDI1- of PIH-804Ⅲ to TXDI- of 1st fast dome.

Linking 2nd Fast Dome

TXDO+ of 1st fast dome connects to TXDI+ of 2nd dome and TXDO- of 1st dome to TXDI- of 2nd dome.

### RS-485 Connection Between PIH-804Ⅲ Data Distributor and Keyboard

1st pin TXDI+ on RS-485 IN jack of keyboard connects to TXDO+ on RS-485 OUT jack of PIH-804Ⅲ

2nd pin TXDI- on RS-485 IN jack of keyboard connects to TXDO- on RS-485 OUT jack of PIH-804Ⅲ

## Fast Dome, Matrix and Keyboard

Matrix System is designed to process multiple video systems and video switching.

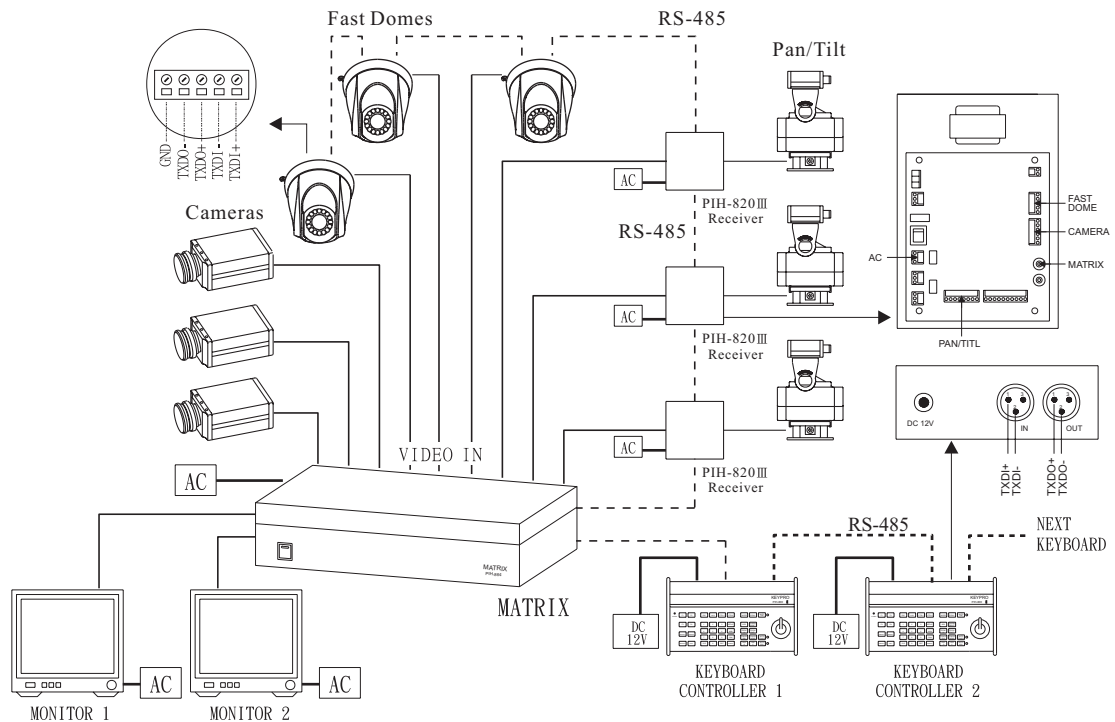
Its central process unit (CPU) can manage multiple video signals simultaneously and control other linking system, such as fast dome or PIH-820Ⅲ telemetry receiver.

All telemetry remote control and signal transmissions are through twisted pair. One matrix can manage up to 64 fast domes.

Multiple keyboards can be used for matrix control. 1st keyboard is the master and rests are slaves.

Up to 8 keyboards can be used in one system. Each keyboard has a Dip Switch for ID setting.

(Please refer to keyboard's manual for detail)



### RS-485 Connection Between Matrix and Fast Dome

TXD+ of receiver jack on matrix connects to TXDI+ of 1st fast dome and TXD- of matrix to TXDI- of 1st fast dome.

Linking 2nd Fast Dome

TXDO+ of 1st dome connects to TXDI+ of 2nd dome and TXDO- of 1st dome to TXDI- of 2nd dome. 64 fast dome can be linked through the connection as shown.

### RS-485 Connection Between Keyboards

TXDO+ of 1st keyboard RS-485 OUT connects to TXDI+ of 2nd keyboard RS-485 IN.

TXDO- of 1st keyboard RS-485 OUT connects to TXDI- of 2nd keyboard RS-485 IN.

### RS-485 Connection Between Keyboard and Matrix

TXDI+ of 1st keyboard RS-485 IN connects to 1st pin TXD+ of matrix's keyboard jack.

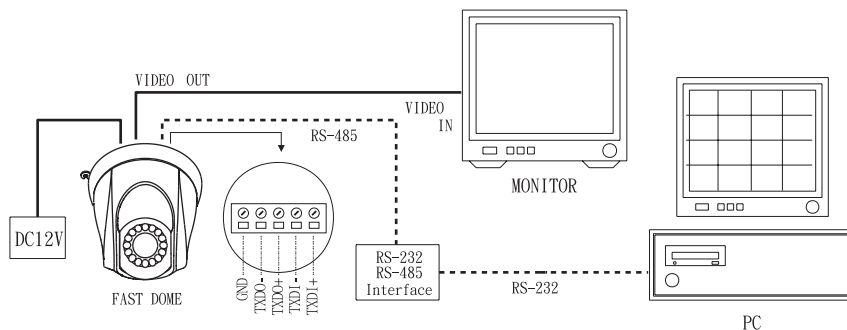
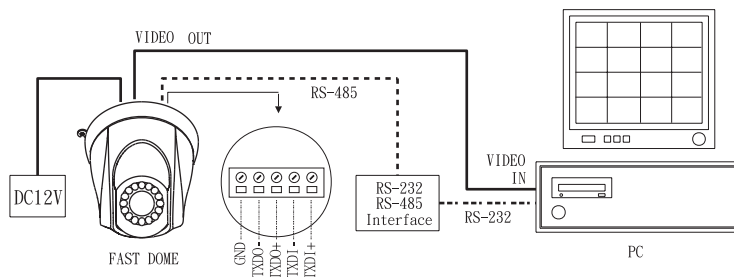
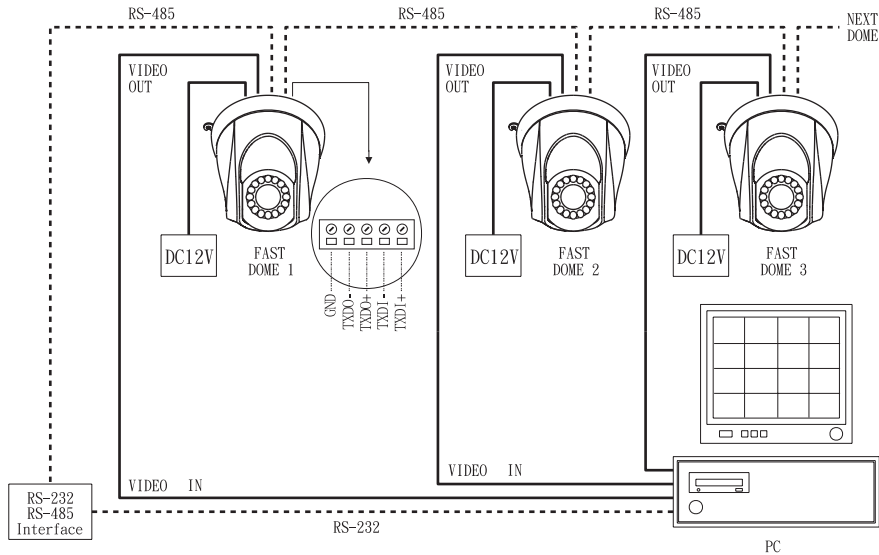
TXDI- of 1st keyboard RS-485 IN connects to 2nd pin TXD- of matrix's keyboard jack.

## Fast Dome with PC Control

PC telemetry remote controls fast dome with standard RS-485 data format (format: N, 8, 1 Baud Rate 9600 bps). The PC control port RS-232 is converted to RS-485 format by interface.

User may use their own software (protocol) or software provided by LILIN to control the dome.

In this system up to 64 fast domes can be linked.



### RS-485 Connection Between Fast Dome and Conversion Interface

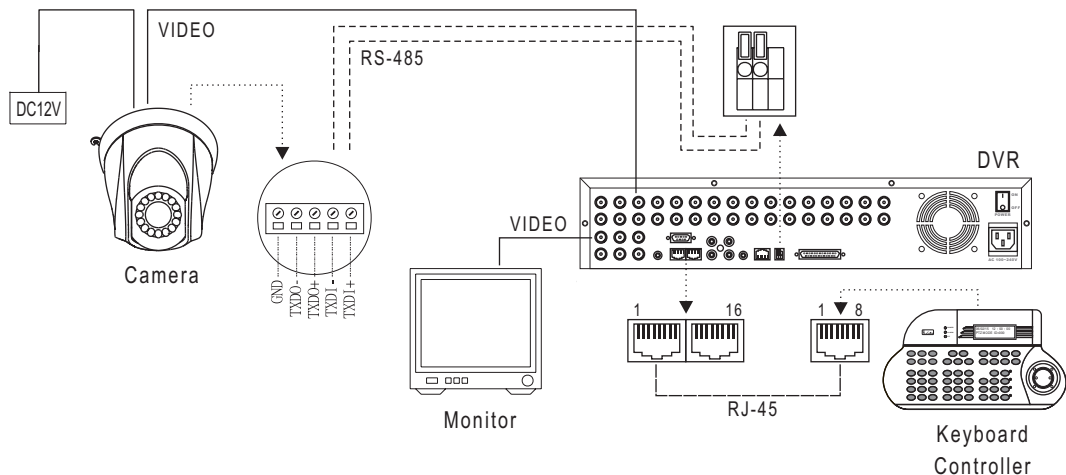
TXD+ of conversion interface RS-485 jack connects to TXDI+ of 1st fast dome and connect TXD- to TXDI-.

Linking 2nd FastDome

TXDO+ of 1st dome RS-485 jack connects to TXDI+ of 2nd dome to TXDO- of 1st dome to TXDI- of 2nd dome. 64 fast domes can be linked through the connection as shown.

## Fast Dome, DVR and Keyboard

The DVR System is an advanced digital recording product, with long recording time and easy searching features. Telemetry remote control is twisted pair for data transmission to the fast dome. Fast Dome can be controlled directly from the control panel of the DVR, or from keyboard. Each DVR (Digital Video Recorder) can manage 16 video signals and via RS-485 or daisy connection 16 sets of fast dome camera.



### RS-485 Connection Between Fast Dome and DVR

TXD+ of DVR RS-485 jack connects to TXDI+ of 1st fast dome and TXD- of DVR to TXDI- of 1st fast dome.

Linking 2nd FastDome

TXD0+ of 1st dome RS-485 jack connects to TXDI+ of 2nd dome to TXD0- of 1st dome to TXDI- of 2nd dome.

### RJ-45 Connection Between DVRs

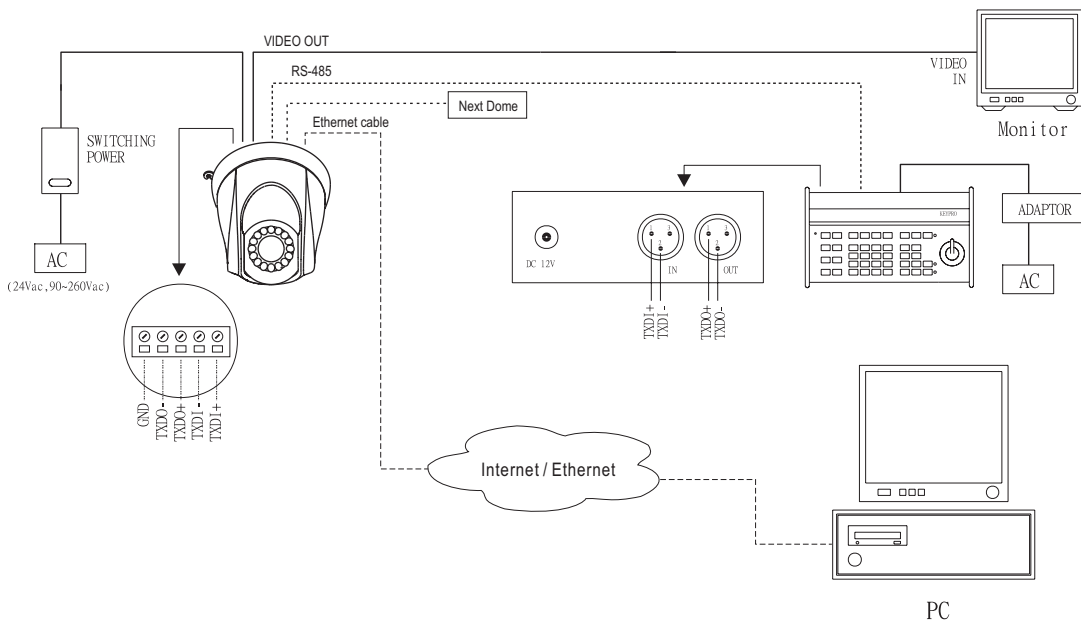
"Keyboard Out" of 1st DVR pass out RJ-45 jack connects to "Keyboard In" of 2nd DVR's RJ-45 jack.

### RJ-45 Connection Between DVR and Keyboard

"Keyboard In" of 1st DVR's RJ-45 jack connects to RJ-45 jack of keyboard.

## Fast Dome IP Camera with PC Control

The Fast Dome IP Camera can be connected via RJ-45 cable that provides both Internet and/or Intranet access. Multiple Fast Dome IP Cameras can be connected with in a Hub or multiple Hubs. Please consult your network administrator for network architecture and software settings.



### RS-485 Connection

1st pin TXDI+ of RS-485 jack at back of the keyboard connects to TXDI+ of RS-485 jack on fast dome.

2nd pin TXDI- of RS-485 jack at back of the keyboard connects to TXDI- of RS-485 jack on fast dome.

### RJ-45 Connection

Ethernet cable to Fast Dome IP Camera and attach it to the network.

# OPERATION

## Initial Power Up Inspection

After the power is first applied to a dome it will perform a self-test procedure. This calibrates and checks the basic functions of the dome, control is not possible during this self-test period. Once the camera has stopped moving, it will then be ready to control. If preset positions and tours have been programmed into a dome and the power is turned off, the dome will enter the Auto Scan mode once the power is turned on again (after self-test period). The dome will remain in Auto Scan until an operator cancels it. (For setting Fast Dome IP Camera other features or functions, please refer to H.264 IP instruction manual.)

## Manual Operation (Pan / Tilt Control)

To control the pan and tilt movement of the dome simply use the joystick on the keyboard; to pan the camera left push the joystick to the left, to tilt down pull the joystick down (towards you). To move the dome faster push the joystick further in the that direction, the joystick is proportional to the speed of the dome; a small movement will move the dome slower.

- ① UP  
Push the joystick forward, the camera tilt up.
- ② DOWN  
Push the joystick down (towards you), the camera tilt down.
- ③ LEFT  
Push the joystick left, the camera pan left.
- ④ RIGHT  
Push the joystick right, the camera pan right.
- ⑤ DIAGONAL  
Push the joystick diagonally, the camera moves to that direction (direction ⑤ on figure 1)

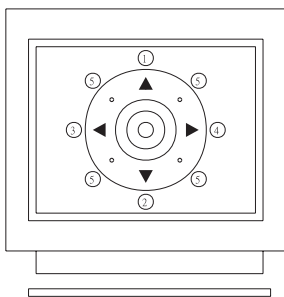


Figure 1

Relationship Between Joystick and Direction

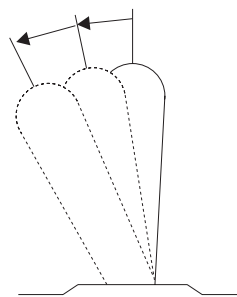


Figure 2

Relationship Between Joystick and Rotation Speed

## Fast Dome Selection

To call out a dome controlling or setting

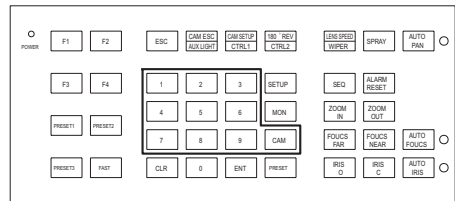
### ☛ To select 1st Fast Dome

Push key **1** followed by **CAM** key.

### ☛ To select 64th Fast Dome

Push key **6** then **4** followed by **CAM** key.

- \* When matrix system is used, select monitor before camera selection. Please refer to matrix system user manual.



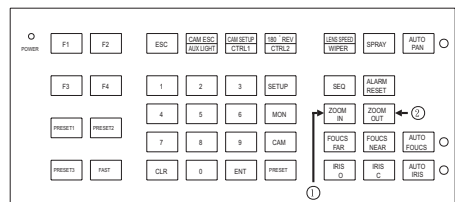
## Zoom Lens Control

### ☛ To Zoom In

Push **ZOOM IN** key. The viewing angle becomes narrower and target will become enlarged on the screen. Zooming will stop when the key is released.

### ☛ To Zoom Out

Push **ZOOM OUT** key. The viewing angle becomes wider and target will become smaller on the screen. Zooming will stop when the key is released.



## Focus Control (12X)

The focus function on Fast Dome can be set as Auto Focus or Manual Focus.

### ☛ Manual focus far

Push **FOCUS FAR** key.

The target will become farther. Focusing will stop when the key is released.

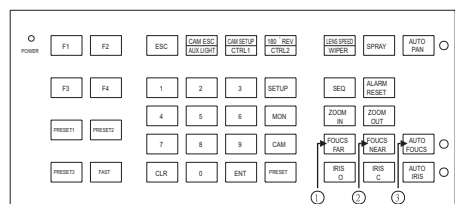
### ☛ Manual focus near

Push **FOCUS NEAR** key.

The target will become nearer. Focusing will stop when the key is released.

### ☛ Auto Focus

Push **AUTO FOCUS** key. The lens will automatically adjust itself for optimum focus.



## Iris Control

The purpose of iris control is to adjust brightness on target. It can be set as Auto Iris or Manual Iris.

### ☛ Iris Open (12X)

Push **IRIS O** key, to open the iris and brighten the picture.

Iris will stop when the key is released.

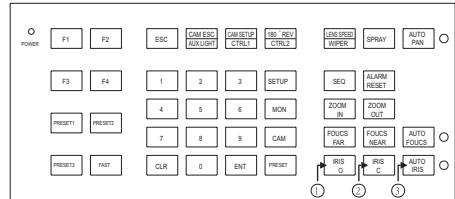
### ☛ Iris Close (12X)

Push **IRIS C** key, to open the iris and reduce glare.

Iris will stop when the key is released.

### ☛ Auto Iris

Push **AUTO IRIS** key, to select the Auto Iris mode.

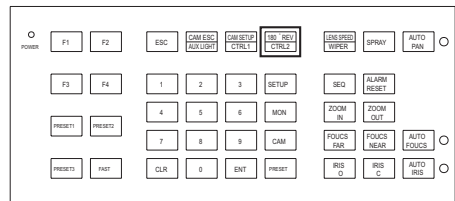


## Horizontal 180° Instant Flip

Some times it is hard to use the joystick to control the camera tracking the target directly under the camera. The instant flip key can rotate the camera 180° instantly. This allows the camera continue to track the target passing directly under the camera.

Two ways to operate 180° instant flip:

- ❶ Push **180° REV CTRL 2** key on keyboard to flip the camera 180° horizontally.
- ❷ Push joystick down to bring the camera down to the end, release the joystick and quickly push joystick down twice to flip the camera 180° horizontally.



## Preset Positions Setting

Each dome can have 128 individual preset positions. Each preset stores the exact position of the camera and automatic pan, tilt, zoom, focus and iris setting. Once the data is set, the preset can be recalled for viewing, or the presets can be set for auto pan.

\* Only the first 16 preset positions of fast dome can be set to auto pan mode.

### ❶ Selecting Fast Dome

Push key **1** followed by **CAM** key, confirming that first camera is selected.

Ex. To select 1st fast dome : **1****CAM** keys

To select 64th fast dome : **6****4****CAM** keys

### ❷ Selecting Preset Position

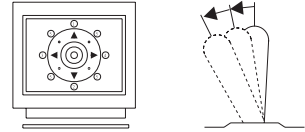
Push key **1** followed by **CAM** key, confirming that first preset position selected.

Ex. To select the 1st preset position : **1****PRESET** keys

To select the 128th preset position : **1****2****8****PRESET** keys

### 3 Joystick Control

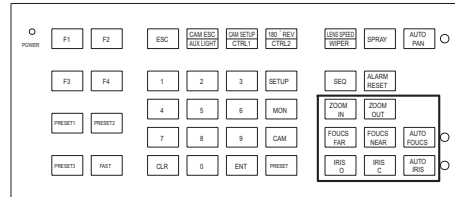
Move the Joystick to bring the camera to the desired view position.



### 4 Adjusting Lens

ZOOM IN / OUT, FOCUS NEAR / FAR / AUTO and IRIS O / C / AUTO keys.

When set up preset point, using manual focus will provide both clarity and stability of image.

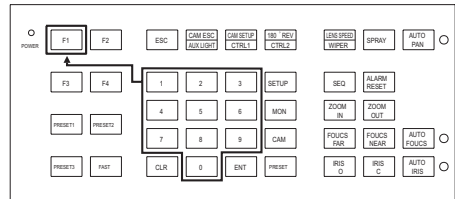


### 5 Setting Preset Speed

The speed the dome travels to that preset position can be adjusted between  $1^{\circ}$  to  $120^{\circ}$  per second (the factory default is  $120^{\circ}/\text{sec}$ ).

To set speed as  $10^{\circ}/\text{sec}$ : Push key **110** followed by **F1** key, two beeps will be heard confirming that speed is set.

Note: Push **F1** key again to confirm speed entered.



### 6 Setting Preset Dwell Time

The dwell time means the time user wants to view on certain preset position under Auto Pan.

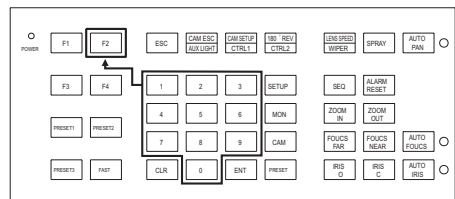
The Preset Dwell Time can be set between 0 ~ 255 seconds. (The factory default is 0 second)

\* If the dwell is set to 0 second then that position will be omitted from the Auto Scan Tour.

To set dwell to 5 seconds: Push key **5** followed by **F2** key.

Ex. To set dwell to 5 second : **5F2** keys

To set dwell to 10 second : **10F2** keys



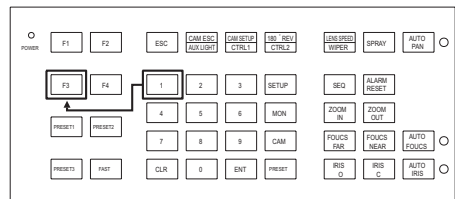
### 7 Storing Preset Data

Once the above steps have been completed, the information must be stored or it will not be memorized by the system.

Push key **1** followed by **F3** key, two beeps will be heard confirming that data is stored.

Note : For the first 16 presets on each dome, the above steps must be repeated. For presets

17~128 there is a default speed and dwell setting so steps 5 and 6 are not required.



## Recalling Preset Positions

Once the required preset positions have been stored in a dome, they may be quickly recalled, returning the dome to exact position.

➤ To recall 1st Preset Position: Push key **1** followed by **PRESET** key.

The dome will move to that position in speed of  $360^{\circ}$ /sec.

Ex. To recall 1st preset position : **1 PRESET** keys

To recall 128th preset position : **1 2 8 PRESET** keys

## Setting Preset Group

The purpose of setting preset group allows the management of the 16 preset positions before Auto Scanning. The first 16 preset positions of each dome are separated into 4 groups. Preset group must be set for the auto pan reference.

Group 1 includes: 1st 2nd 3rd and 4th preset positions.

Group 2 includes: 5th 6th 7th and 8th preset positions.

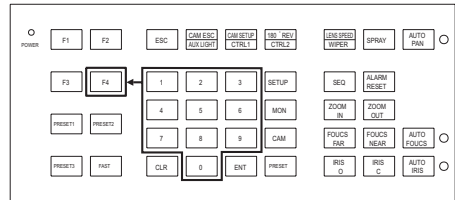
Group 3 includes: 9th 10th 11th and 12th preset positions.

Group 4 includes: 13th 14th 15th and 16th preset positions.

➤ To set up group 1: Push key **1** followed by **F4** key.

Ex.

To set Group 1            **1 F4**  
To set Group 2,3        **1 2 F4**  
To set Group 3,4        **3 4 F4**  
To set Group 1,2,3      **1 2 3 F4**  
To set Group 2,3,4      **2 3 4 F4**  
To set Group 1,2,3,4    **1 2 3 4 F4**



## Changing Preset Data

In order to change any preset position from the one stored, the dome must first be sent to that preset position.

To change the 4th preset position of the Dome number 3, perform the following steps:

- ➊ Push **3 CAM** to select Dome 3
- ➋ Push **4 PRESET** to go to 4th preset position
- ➌ Move joystick to bring camera to the desired view position.
- ➍ Adjusting lens
- ➎ Setting preset speed
- ➏ Setting dwell time
- ➐ Store Data

(Please refer to preset position setting for step ➋ ~ ➐ )

## Activating Auto Pan

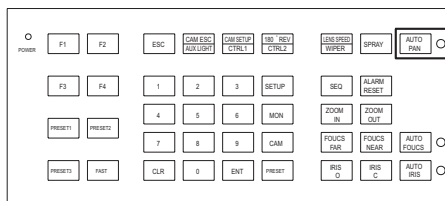
When the Auto Pan function is activated, the fast dome will auto touring the preset groups entered.

### ☛ To activate Auto Pan:

Push **AUTO PAN** key, confirming the activation of autopan. (Auto Pan Led will be lit.)

### ☛ To stop Auto Pan:

Push **AUTO PAN** key again, confirming the stop of autopan. (Auto Pan Led will be Off.)



\* If the AUTO PAN is activated, no other commands can be sent to that dome, but other dome can still be selected and operated manually.

### To select (call out) another dome while it is under Auto Pan mode:

Simply push the numeric key followed by the **CAM** key.

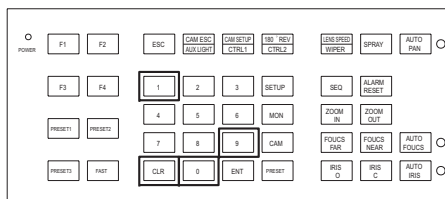
Push key **2** followed by **CAM** key, confirming the 2nd camera is selected.

## Deleting Preset Data

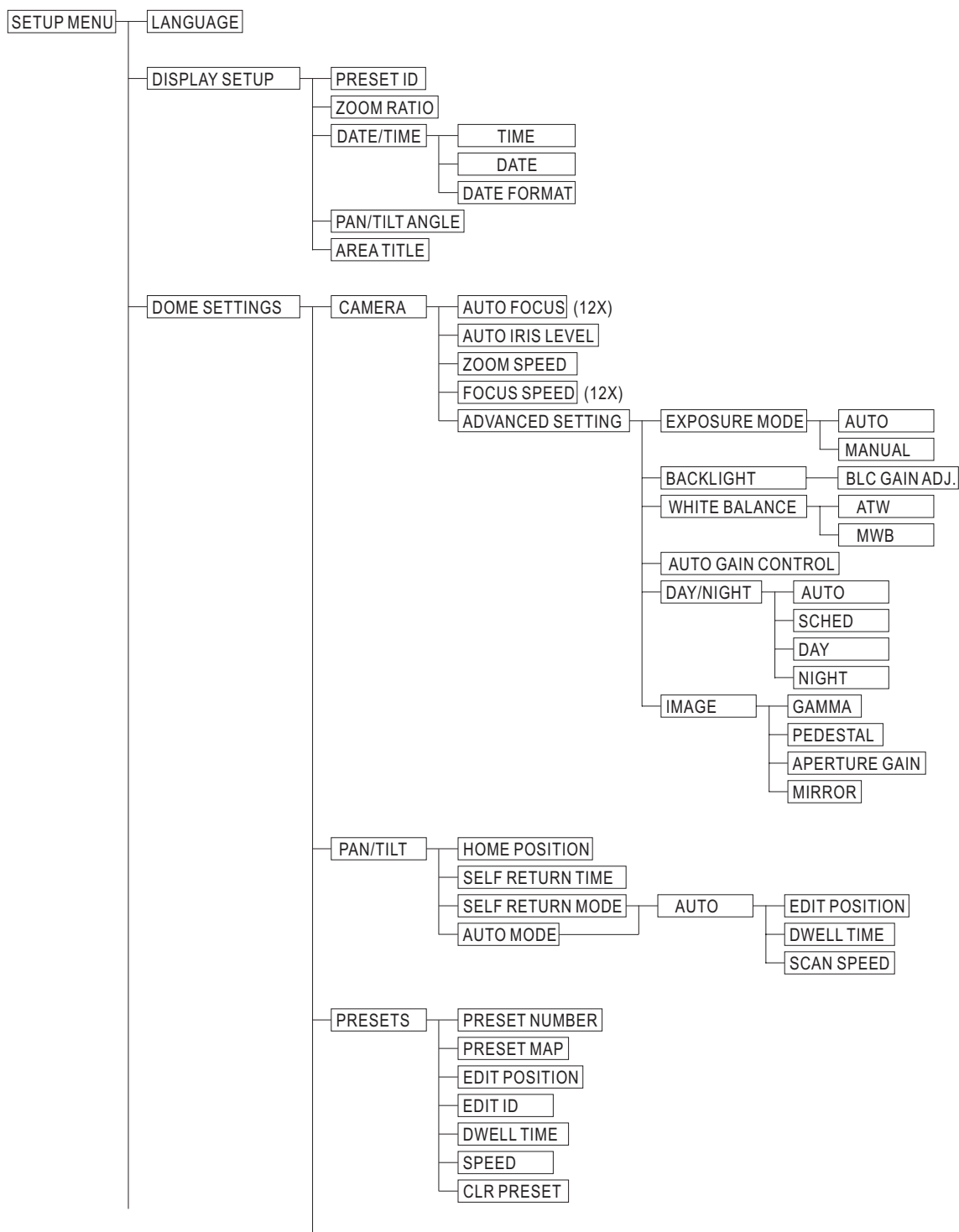
Sometimes it is necessary to delete the stored data. All the data can be cleared from a dome by pressing key **9011**, followed by the **CLR** key.

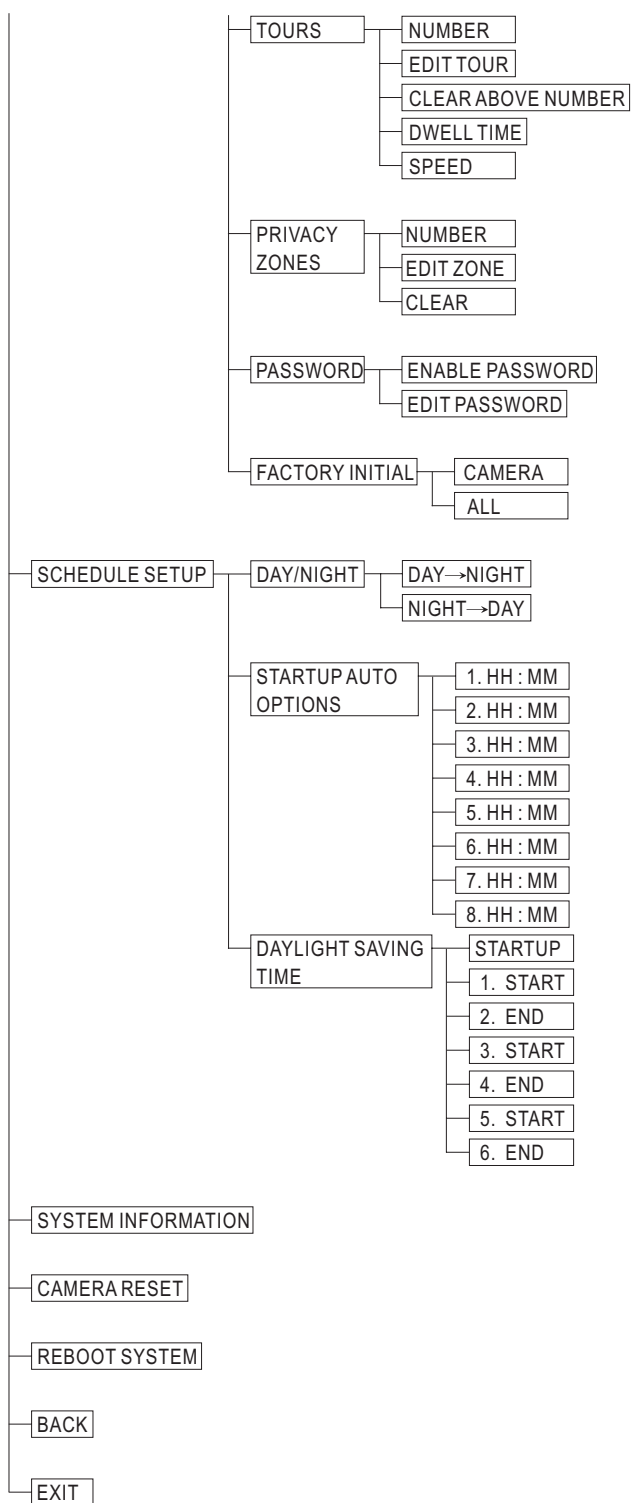
\* All 128 preset data will be erased.

☛ Push **9011**, followed by **CLR** key.



# SETUP MENU TREE



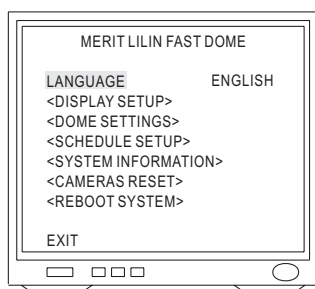


# Fast Dome Camera Function Setup

Fast Dome Camera/Fast Dome IP Camera (build-in 2.6X/12X optical zoom lens) series provide on-screen display (OSD) setup menu, all functions can be selected and set via OSD Setup Menu.

## Setup Menu Display

- Press **CAM SETUP CTRL 1** key on the keyboard to recall Setup Menu.
- Press **ESC** key to exit setup menu or push joystick down to select <EXIT>, and then press **CAM SETUP CTRL 1** key to exit setup menu.



| NOTE                |               |                         |                      |
|---------------------|---------------|-------------------------|----------------------|
| Buttons Description |               | Enter Setup Menu        | Exit Setup Menu      |
| MLP1                | PIH-931D/932T | <b>C. SET CTRL 1</b>    | <b>C. ESC LIGHT</b>  |
|                     | PIH-800III    | <b>CAM SETUP CTRL 1</b> | <b>CAM ESC LIGHT</b> |
| MLP2                | PIH-931D/932T | <b>SET</b>              | <b>ESC</b>           |
|                     | PIH-800III    | <b>SETUP</b>            | <b>ESC</b>           |

## Language Selection

- Press **CAM SETUP CTRL 1** key into Setup Menu.
- Push joystick down to select <LANGUAGE>, and then push joystick left or right to make selection.
- Press **ESC** key to exit setup menu or push joystick down to select <EXIT>, and then press **CAM SETUP CTRL 1** key to exit setup menu.

## Camera Reset

Restart camera module to perform initial setting of camera.

- Press **CAM SETUP CTRL 1** key into Setup Menu.
- Push joystick down to select <CAMERA RESET>, and then press **CAM SETUP CTRL 1** key to restart camera.
- Press **ESC** key to exit setup menu or push joystick down to select <EXIT>, and then press **CAM SETUP CTRL 1** key to exit setup menu.

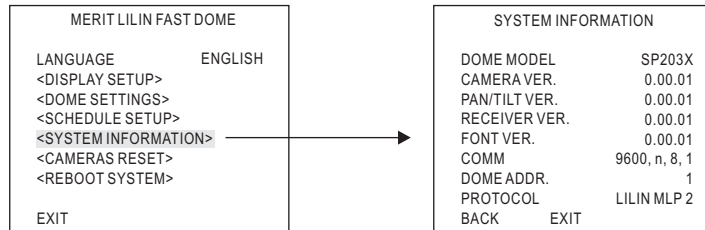
## Reboot System

Restart the fast dome system to perform initial setting and behavior.

- Press **CAM SETUP CTRL 1** key into Setup Menu.
- Push joystick down to select <REBOOT SYSTEM>, and then press **CAM SETUP CTRL 1** key to restart the fast dome system.
- Press **ESC** key to exit setup menu or push joystick down to select <EXIT>, and then press **CAM SETUP CTRL 1** key to exit setup menu.

## Display System Information

- Press **CAM SETUP** **CTRL 1** key into Setup Menu.
- Push joystick down to select <SYSTEM INFORMATION>, and then press **CAM SETUP** **CTRL 1** key to display current system information.
- Push joystick down to select <BACK>, and then press **CAM SETUP** **CTRL 1** key to go back or push joystick down to select <EXIT>, and then press **CAM SETUP** **CTRL 1** key to exit setup menu.



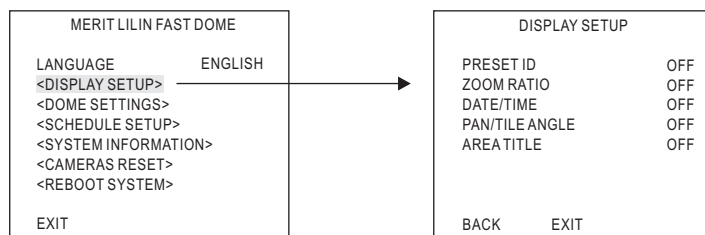
Display system information:

1. Fast dome model number
2. Camera, Pan/Tilt, Receiver version
3. Font of OSD version
4. Protocol rate and format
5. Fast dome ID number
6. Protocol version, LILIN717 (LILIN MLP1), LILIN MLP2

## Display Character Setup Menu

### 1. Display Character Setup Menu

- Press **CAM SETUP** **CTRL 1** key into Setup Menu.
- Push joystick down to select <DISPLAY SETUP>, and then press **CAM SETUP** **CTRL 1** key to display character setup menu.
- Push joystick down to select <BACK>, and then press **CAM SETUP** **CTRL 1** key to go back or push joystick down to select <EXIT>, and then press **CAM SETUP** **CTRL 1** key to exit setup menu.



### 2. Preset ID setting

- Push joystick down to select <PRESET ID>, and then push joystick left or right to make selection:
  - OFF : No Preset ID on the monitor screen.
  - 1~255 sec : Display elapsed time. Preset ID will have been displayed on the monitor screen until elapsed time stops, when Preset ID is recalled.

### 3. Zoom Ratio Setting

- Push joystick down to select <ZOOM RATIO>, and then push joystick left or right to make selection:

OFF : No Zoom Ratio on the monitor screen.

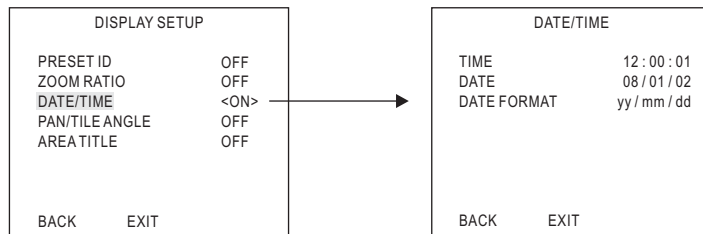
1~255 sec : Display elapsed time. Zoom Ratio will have been displayed on the monitor screen until elapsed time stops, when Zoom Ratio is operated.

### 4. Date and Time Setting

- Push joystick down to select <DATE/TIME>, and then push joystick left or right to make selection:

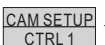
OFF : No Date/Time on the monitor screen.

ON : Display Date/Time on the monitor screen. When selection is open, and then press  key, date/time will be set.



#### (1) Time Adjustment

- Push joystick down to select <TIME>, and then press  key to setup time.
- Push joystick left or right to adjust time, and then press  key to next item of time.

12 : 00 : 01 →  → 12 : 00 : 01 →  → 12 : 00 : 01 →  → 12 : 00 : 01

#### (2) Date Adjustment

- Push joystick down to select <DATE>, and then press  key to setup date.
- Push joystick left or right to adjust date, and then press  key to next item of date.

08 : 01 : 02 →  → 08 : 01 : 02 →  → 08 : 01 : 02 →  → 08 : 01 : 02

#### (3) Date Format Setting

- Push joystick down to select <DATE FORMAT>, and then push joystick left or right to adjust format of date.

→ yy / mm / dd → mm / dd / yy → dd / mm / yy →

### 5. Pan/Tilt Angle Setting

- Push joystick down to select <PAN/TILT ANGLE>, and then push joystick left or right to select pan/tilt setup:

OFF : No Pan/Tilt Angle on the monitor screen.

ON : Pan/Tilt Angle on the monitor screen.

## 6. Area Title Setting

The area title function lets you display a direction indicator that appears in the picture to indicate the direction of the location being shown on the screen. Text can also be displayed in the place of the direction indicators, if desired. The direction indicators are N(north), NE(northeast), E(east), SE(south east), S(south), SW(southwest), W(west) and NW(northwest).

- Push joystick down to select <AREA TITLE>, and then push joystick left or right to select area title setup.

OFF : Turn off display of area title direction indicators and text.

NESW : Displays direction indicators. Select(NESW) and pressing the  button will display the position(NESW) setting menu. Which you can use for configuring detailed settings.

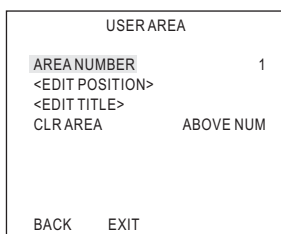
USER : Display user input text. Selecting(USER) and pressing the  button will display the area title(USER) selection menu, which you can use for configuring detailed settings.

### (1) When NESW is selected

After selecting NESW, you can use the joystick to configure detailed setting. Once you set the northerly(N) direction for camera, all other directions are displayed automatically.

### (2) When USER is selected

After selecting USER, you can use the area title USER setting menu to configure detailed settings. You can use following procedure to configure direction settings, and to input text associated with a particular direction indicator.

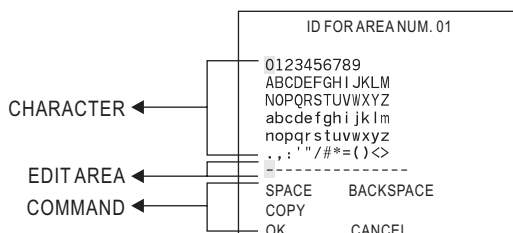


1. Push joystick down to select <AREA NUMBER>, and then push joystick left or right to select area number. (1~6)

2. Push joystick down to select <EDIT POSITION>, and then press  key into Area Position setting.

Push joystick left, right, up or down to start position, and  ,  to adjust zoom, then press  key to confirm.

3. Push joystick down to select <EDIT TITLE>, and then press  key into title setup.



#### (1) New Area Title Editing

- Push joystick down to select character, and press **CAM SETUP** **CTRL 1** key to confirm. The character selected will be showed in edit area. If you need space, push joystick down to select <SPACE> and press **CAM SETUP** **CTRL 1** key to confirm.
- Press **IRIS O** or **IRIS C** to switch to next character list.
- Repeat all steps to complete Area Title.

#### (2) Copy Area Title to Another Area

- Push joystick down to select <EDIT AREA>, and push joystick left or right to select first copy of characters.
- Push joystick down to <COPY>, and press **CAM SETUP** **CTRL 1** key to confirm. At this time first character of Area ID will be copy to first character position of another Area Title, and press **CAM SETUP** **CTRL 1** key to do next copy.
- Push joystick down to <OK>, and press **CAM SETUP** **CTRL 1** key for exit. Select another area on the area menu, and get into area title setting. Then push joystick down to "EDIT AREA" and press **CAM SETUP** **CTRL 1** key for copy. At this time edit area will show area title that was copied.

#### (3) Modify Area title

- Push joystick down to select <EDIT AREA> on the area title setting, and push joystick right to select modifiable characters.
- Push joystick down to select new characters, and press **CAM SETUP** **CTRL 1** key to chose.

#### (4) Cancel Area Title

- Push joystick down to <CANCEL>, and then press **CAM SETUP** **CTRL 1** key to cancel area title.

#### (5) Return Preset Menu

- Push joystick down to "OK", and then press **CAM SETUP** **CTRL 1** key to back to user area menu.

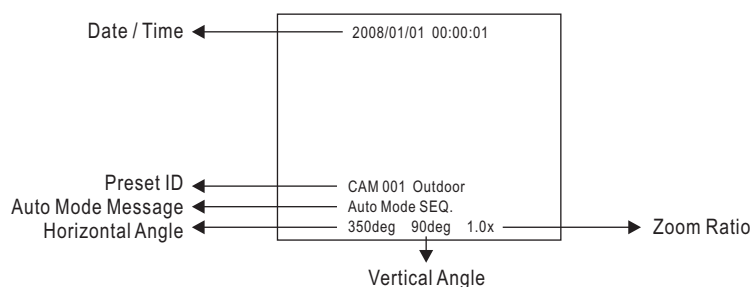
### 4. Clear Area Title

Push joystick down to select <CLR AREA>, and then push joystick left or right to select <ABOVE NUM> or <ALL>. Then press **CAM SETUP** **CTRL 1** key to confirm.

ABOVE NUM : Only clear character of allotted area.

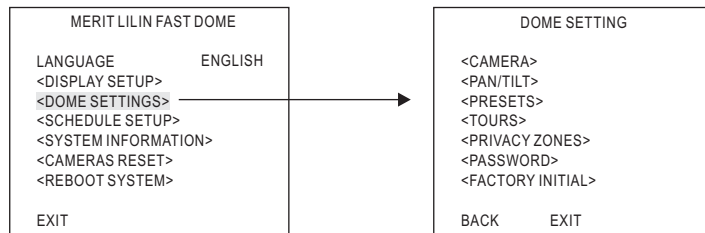
ALL : Clear character off all area.

## 7. Character Location



## Display Dome Function Setup Menu

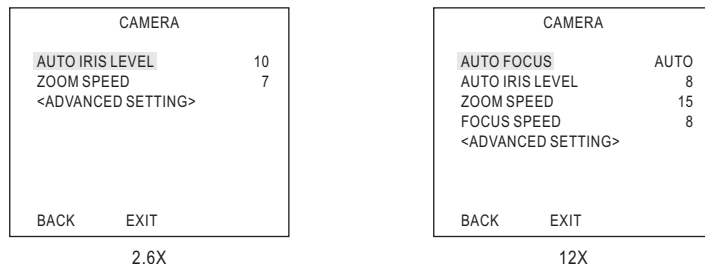
- Press **CAM SETUP** **CTRL 1** key into Setup Menu.
- Push joystick down to select <DOME SETTINGS>, and then press **CAM SETUP** **CTRL 1** key into dome setting menu.



## Camera Setting Menu Display

### 1. Display the Camera Setting Menu

- After getting in dome setting menu, push joystick down to select <CAMERA>, and then press **CAM SETUP** **CTRL 1** key into camera setting menu.



#### (1) Auto Focus Setting

- Push joystick down to select <AUTO FOCUS>, and then push joystick left or right to select auto focus mode:  
Auto : Keep performing auto focus function for object.  
One push : Fast Dome will only auto "one push" focus on object under Auto panning or Manual Zoom In / Zoom Out.

#### (2) Auto Iris Setting

- Push joystick down to select <AUTO IRIS LEVEL>, and then push joystick left or right to adjust auto iris level.  
Auto iris levels are 0 ~ 15.

#### (3) Zoom Speed Setting

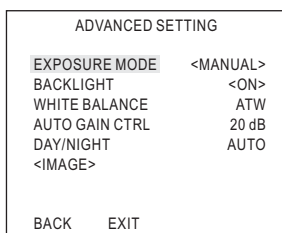
- Push joystick down to select <ZOOM SPEED>, and then push joystick left or right to adjust zoom speed setting.  
[2.6X] Zoom speed ranges are 1 ~ 8.  
[12X] Zoom speed ranges are 1 ~ 15.

#### (4) Focus Speed Setting

- Push joystick down to select <FOCUS SPEED>, and then push joystick left or right to adjust focus speed setting.  
Focus speed ranges are 1 ~ 15.

## 2. Advanced Setting

- After getting in camera setting menu, push joystick down to select <ADVANCED SETTING>, and then press  key into advanced setting.



#### (1) Exposure Mode Setting

- Push joystick down to select <EXPOSURE MODE>, and then push joystick left or right to setup auto mode or manual mode.

##### ➤ AUTO EXPOSURE :

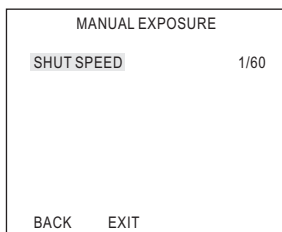
This mode will automate to select shutter speed by brightness variation to exhibit image effect of high brightness area.

##### ➤ MANUAL EXPOSURE :

This mode can set a fixed shutter speed with iris to exhibit image effect.

- Press  key into Manual Exposure Setting, and then push joystick left or right to made selection.

➤ 1/60(50) → 1/100(120) → 1/250 → 1/500  
1/1000000 ← 1/10000 ← 1/5000 ← 1/2000 ←

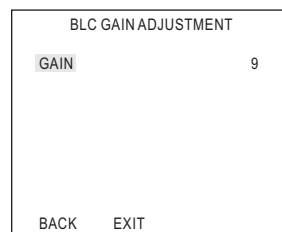


## (2) Backlight Compensation Setting

- Push joystick down to select <BACKLIGHT>, and then push joystick left or right to select "ON" or "OFF".

☞ ON : The brightness gain is automatically controlled for backlight compensation in response to the light intensity detection window.

- When selection is "ON", press **CAM.SETUP** **CTRL 1** key into BLC setting menu.
- Push joystick down to select <GAIN>, and then push joystick left or right to select gain steps. (0 ~ 10)



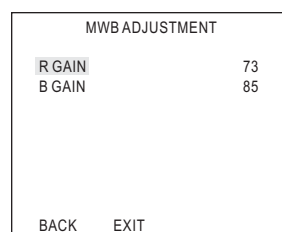
## (3) White Balance Setting

- Push joystick down to select <WHITE BALANCE>, and then push joystick left or right to select white balance mode.

☞ ATW: Auto Tracing White Balance, suitable for 2500~9500K color temperature environment.

☞ MWB: Manual White Balance, suitable for 2500~9500K color temperature environment.

- Select <MWB>, and press **CAM.SETUP** **CTRL 1** key into MWB adjustment image.
- Push joystick down to select <R GAIN>, and then push joystick left or right to adjust the low color temperature.
- Push joystick down to select <B GAIN>, and then push joystick left or right to adjust the high color temperature.



## (4) Auto Gain Control Setting

- Push joystick down to select <AUTO GAIN CTRL>, and then push joystick left or right to make selection.

Auto Gain Control ranges are 0dB ~ 36dB.

## (5) Day/Night Control Setting

- Push joystick down to select <DAY/NIGHT>, and then push joystick left or right to select mode.

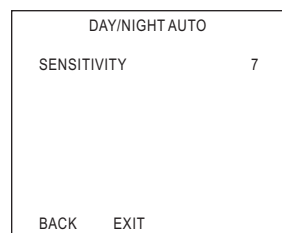
☞ AUTO → SCHED. → DAY → NIGHT

☞ AUTO :

[2.6X] When light level is over 3 lux, camera switches DAY automatically to produce color image. When light drops below 3 lux, camera switches NIGHT automatically to produce monochrome image.

[12X] When light level is over 10 lux, camera switches DAY automatically to produce color image. When light drops below 3 lux, camera switches NIGHT automatically to produce monochrome image.

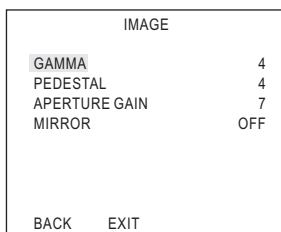
- When selection is "AUTO", press **CAM SETUP** **CTRL 1** key into DAY/NIGHT AUTO setting menu.
- Push joystick down to select <SENSITIVITY>, and then push joystick left or right to select sensitivity steps. (1 ~ 15)



- ☞ SCHED. : DAY/NIGHT switch automatically between Day mode and Night mode by schedule of time setting.
- ☞ DAY : Set to DAY mode and always produce constant color image.
- ☞ NIGHT : Set to NIGHT mode and always produce constant monochrome image.

### 3. Image Setting

- After getting in advanced setting menu, push joystick down to select <IMAGE>, and then press **CAM SETUP** **CTRL 1** key into image setting menu.



#### (1) Gamma Setting

- Push joystick down to select <GAMMA>, and then push joystick left or right to make selection. (0 ~ 7)

#### (2) Pedestal Setting

- Push joystick down to select <PEDESTAL>, and then push joystick left or right to make selection. (0 ~ 15)

#### (3) Aperture Gain Setting

- Push joystick down to select <APERTURE GAIN>, and then push joystick left or right to make selection. (0 ~ 15)

#### (4) Mirror Setting

- Push joystick down to select <MIRROR>, and then push joystick left or right to make selection. ("OFF" or "ON")

Note: Image will be Left/Right reverse.

## Pan/Tilt Setting Menu

### 1. Display the Pan/Tilt Setting Menu

- After getting in dome setting menu, push joystick down to select <PAN/TILT>, and then press **CAM SETUP** **CTRL 1** key into pan/tilt setting menu.

| PAN/TILT         |      |
|------------------|------|
| HOME POSITION    | OFF  |
| SELF RETURN TIME | OFF  |
| SELF RETURN MODE | OFF  |
| AUTO MODE        | SEQ. |
| BACK    EXIT     |      |

## 2. Home Position Setting

- Push joystick down to select <HOME POSITION>, and then push joystick left or right to select home position.

OFF: NO action.

1 ~ 128: Home positions are preset position from fast dome.

Note: When keyboard control isn't used, "Return Mode" is set for "HOME" and "Return Time" is over, "Return Mode" function will be started.

## 3. Self Return Time Setting

- Push joystick down to select <SELF RETURN TIME>, and then push joystick left or right to select return time.

OFF: NO action.

1 ~ 90: Delay time of return time setting is 1~90 min.

Note: When keyboard control isn't used, "Return Time" is also over, "Return Mode" function will be started.

## 4. Self Return Mode Setting

- Push joystick down to select <SELF RETURN MODE>, and then push joystick left or right to select return mode.

→ OFF → HOME → AUTO → SEQ. → TOUR1 → TOUR2 →

OFF: NO action.

HOME: Perform return home position mode.

AUTO: Perform auto scan mode.

SEQ.: Perform preset group mode.

TOUR1: Perform tour1 list mode.

TOUR2: Perform tour2 list mode

Note: When keyboard control isn't used and "Return Time" is also over, "Return Mode" function will be started.

## 5. Auto Mode Setting

- Push joystick down to select <AUTO MODE>, and then push joystick left or right to select mode.

→ OFF → AUTO → SEQ. → TOUR1 → TOUR2 →

OFF: NO action.

AUTO: Perform auto scan mode.

SEQ.: Perform preset group mode.

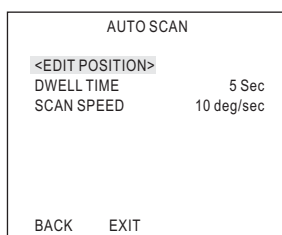
TOUR1: Perform tour1 list mode.

TOUR2: Perform tour2 list mode

Note: Press  key on the keyboard to perform Auto mode function.

## 6. Auto Scan Mode Setting

- Push joystick down to select <AUTO MODE> or <SELF RETURN MODE>, and then push joystick left or right to select <AUTO>, then press  key into auto scan mode setting.



### (1) Position of Auto Pan Setting

- Push joystick down to select <EDIT POSITION>, and then press  key into setting menu.
- Push joystick left, right, up or down to select start position, and then press , , , , ,  to adjust zoom, focus, iris, then press  key to confirm.
- Push joystick left, or right to select end position, and then press  key to confirm.

### (2) Dwell Time Setting

- Push joystick down to select <DWELL TIME>, and then push joystick left or right to select dwell time. (1 ~ 255 sec)

### (3) Scan Speed Setting

- Push joystick down to select <SCAN SPEED>, and then push joystick left or right to select scan speed. (1 ~ 40 deg/sec)

## Preset Function Setting Menu

### 1. Display the Preset Setting Menu

- After getting in dome setting menu, push joystick down to select <PRESETS>, and then press  key into presets setting menu.

| PRESETS         |             |
|-----------------|-------------|
| PRESET NUMBER   | 1           |
| <PRESET MAP>    |             |
| <EDIT POSITION> |             |
| <EDIT ID>       |             |
| DWELL TIME      | 3 sec       |
| SPEED           | 120 deg/sec |
| CLR PRESET      | ABOVE NUM.  |
| BACK            | EXIT        |

## 2. Select Preset Numbers

### (1) Select number by PRESET NUMBER

- Push joystick down to select <PRESET NUMBER>, and then push joystick left or right to select preset number. (1 ~ 128)

### (2) Select number by PRESET MAP

- Push joystick down to select <PRESET MAP>, and then press **CAM SETUP CTRL 1** key into preset map.
- Push joystick left, right, up or down to select preset number, and then press **CAM SETUP CTRL 1** key into preset setting menu.
- If need to select preset numbers 33~64, push joystick down to <33~64>, and then press **CAM SETUP CTRL 1** key into preset numbers 33~64.

| PRESET POSITION |      |         |    |
|-----------------|------|---------|----|
| 1               | 2    | 3       | 4  |
| 5               | 6    | 7       | 8  |
| 9               | 10   | 11      | 12 |
| 13              | 14   | 15      | 16 |
| 17              | 18   | 19      | 20 |
| 21              | 22   | 23      | 24 |
| 25              | 26   | 27      | 28 |
| 29              | 30   | 31      | 32 |
| <33-64>         |      | <65-96> |    |
| <97-128>        |      |         |    |
| BACK            | EXIT |         |    |

→

| PRESETS         |             |
|-----------------|-------------|
| PRESET NUMBER   | 2           |
| <PRESET MAP>    |             |
| <EDIT POSITION> |             |
| <EDIT ID>       |             |
| DWELL TIME      | 3 sec       |
| SPEED           | 120 deg/sec |
| CLR PRESET      | ABOVE NUM.  |
| BACK            | EXIT        |

## 3. Preset Position Setting

- Push joystick down to select <EDIT POSITION>, and then press **CAM SETUP CTRL 1** key into preset position setting.
- Push joystick left, right, up, or down to select preset position
- Push joystick left, right, up, or down to select start position, and then press **ZOOM IN**, **ZOOM OUT**, **FOCUS FAR**, **FOCUS NEAR**, **IRIS O**, **IRIS C** to adjust zoom, focus, iris, then press **CAM SETUP CTRL 1** key to confirm.

## 4. Preset ID Setting

- Push joystick down to select <EDIT ID>, and then press **CAM SETUP CTRL 1** key into preset ID setup.

| ID FOR PRESET NUM. 01 |                                                                                                       |
|-----------------------|-------------------------------------------------------------------------------------------------------|
| CHARACTER             | 0123456789<br>ABCDEFGHIJKLM<br>NOPQRSTUVWXYZ<br>abcdefghijklmnopqrstuvwxyz<br>.,: ' " / # * = ( ) < > |
| EDIT AREA             | -----                                                                                                 |
| COMMAND               | SPACE    BACKSPACE<br>POS1    COPY<br>OK    CANCEL                                                    |

#### (1) New Preset ID Editing

- Push joystick down to select character, and press  key to confirm. The character selected will be showed in edit area. If you need space, push joystick down to select <SPACE> and press  key to confirm.
- Press  or  to switch to next character list.
- Repeat all steps to complete preset ID.

#### (2) Copy preset ID to Another Preset

- Push joystick down to select <EDIT AREA>, and push joystick left or right to select first copy of characters.
- Push joystick down to <COPY>, and press  key to confirm. At this time first character of preset ID will be copy to first character position of another preset ID, and press  key to do next copy.
- Push joystick down to <OK>, and press  key for exit. Select another preset on the preset menu, and get into preset ID setting. Then push joystick down to "EDIT AREA" and press  key for copy. At this time edit area will show preset ID that was copied.

#### (3) Modify Preset ID

- Push joystick down to select <EDIT AREA> on the preset ID setting, and push joystick right to select modifiable characters.
- Push joystick down to select new characters, and press  key to chose.

#### (4) Cancel Preset ID

- Push joystick down to <CANCEL>, and then press  key to cancel preset ID.

#### (5) Preset ID Position Setting

- Push joystick down to "POSI", and then press  key to get in.
- Push joystick to move preset ID to needful position of frame, and then push  key to confirm.

#### (6) Return Preset Menu

- Push joystick down to "OK", and then press  key to back to preset menu.

### 5. Dwell Time Setting

- Push joystick down to select <DWELL TIME>, and then push joystick left or right to select needful dwell time. (1 ~ 255 sec)

Note: Only preset No.1~16 can set dwell time, because group of auto pan can only edit preset No.1~16. Other preset numbers can't set dwell time.

## 6. Speed Setting

- Push joystick down to select <SPEED>, and then push joystick left or right to select speed of preset. (1 ~ 120 deg/sec)

Note: Only preset No.1~16 can set speed, because group of auto pan can only edit preset No. 1~16. Other preset numbers can't set speed.

## 7. Cancel Preset

- Push joystick down to select <CLR PRESET>, and then push joystick left or right to select <ABOVE NUM> or <ALL>. Then press  key to confirm.

ABOVE NUM.: Only cancel parameter of allotted preset

ALL: Cancel parameters of all presets (1~128)

## Tour Function Setting Menu

### 1. Display the Tour Setting Menu

- After getting in dome setting menu, push joystick down to select <TOURS>, and then press  key into tours setting menu.

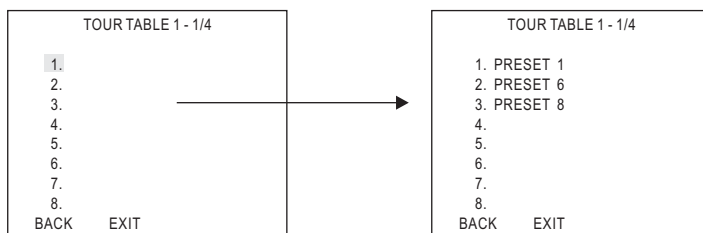
| TOURS                |             |
|----------------------|-------------|
| NUMBER               | 1           |
| <EDIT TOUR>          |             |
| <CLEAR ABOVE NUMBER> |             |
| DWELL TIME           | 5 sec       |
| SPEED                | 120 deg/sec |
| BACK EXIT            |             |

### 2. Tour Number Selection

- Push joystick down to select <NUMBER>, and then push joystick left or right to select Tour1 or 2.

### 3. Edit Tour

- Push joystick down to select <EDIT TOUR>, and then press  key into edit tour setting.
- Push joystick up or down to select number. When joystick down to last line, push joystick down again to get in next table of page. Each tour table can edit 32 presets.
- Push joystick left or right to select preset. (1~128)
- Press  key to confirm, and push joystick to select <BACK>, then press  key again to back to tours setting, or push joystick to select <EXIT>, and press  key to exit setting menu.



#### 4. Cancel Tour

- Push joystick down to select <CLEAR ABOVE NUMBER>, and then press **CAM SETUP CTRL1** key to cancel tour.

#### 5. Dwell Time Setting

- Push joystick down to select <DWELL TIME>, and then push joystick left or right to select dwell time of tour. (1~255 sec)

Note: When Self Return Mode or Auto Mode is Tour, dwell time of Auto Pan will be dwell time setting of tour.

#### 6. Speed Setting

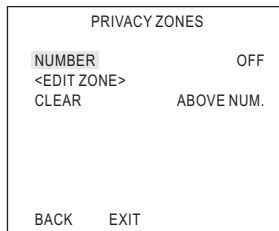
- Push joystick down to select <SPEED>, and then push joystick left or right to select preset speed. (1~120 deg/sec)

Note: When Self Return Mode or Auto Mode is Tour, speed of Auto Pan will be speed setting of tour.

### Privacy Zones Setting Menu

#### 1. Display the Privacy Zones Setting Menu

- After getting in dome setting menu, push joystick down to select <PRIVACY ZONES>, and then press **CAM SETUP CTRL1** key into privacy zones setting menu.



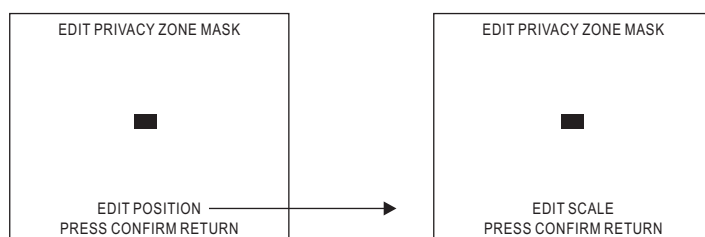
#### 2. Privacy Zones Number Setting

- Push joystick down to select <NUMBER>, and then push joystick left or right to select number. (1~4)

Note: If privacy zones is "OFF", privacy zones setting won't be edited.

#### 3. Edit Privacy Zones

- Push joystick down to select <EDIT ZONE>, and then press **CAM SETUP CTRL1** key into Edit Zone mode. Also middle of monitor will display privacy zone mask area.
- Push joystick left or right to adjust privacy mask position.
- Adjust optical zoom lens and auto focus lens, and then press **CAM SETUP CTRL1** key to confirm and get into privacy zone mask area for editing.
- Press **IRIS O** key, and then push joystick left, right, up, or down to extend privacy zone mask area.
- Press **IRIS C** key, and then push joystick left, right, up, or down to reduce privacy zone mask area.
- After completing setting, press **CAM SETUP CTRL1** key to confirm and back to privacy zones setting menu.



#### 4. Cancel Privacy Zone Mask

- Push joystick down to select <CLEAR>, and then push joystick left or right to select <ABOVE NUM.> or <ALL>. Then press **CAM SETUP CTRL 1** key to confirm.

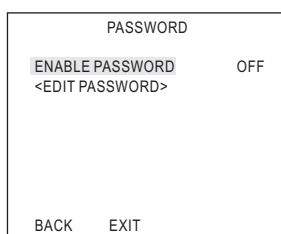
ABOVE NUM.: Only cancel parameter of allotted privacy zone.

ALL: Cancel parameters of all privacy zone. (1~4)

### Password Function Menu

#### 1. Display the Password Setting Menu

- After getting in dome setting menu, push joystick down to select <PASSWORD>, and then press **CAM SETUP CTRL 1** key into password function menu.



#### 2. Password Setting

- Push joystick down to select <ENABLE PASSWORD>, and then push joystick left or right to select <ON> or <OFF>.

#### 3. Edit Password Setting

- Push joystick down to select <EDIT PASSWORD>, and then press **CAM SETUP CTRL 1** key into edit password setting.
- Push joystick left or right to select number 1~9, and then press **CAM SETUP CTRL 1** key to confirm. The number that is selected will be displayed on the edit column.
- Repeat above steps until password setting has been completed.
- Push joystick down to select <OK>, and then press **CAM SETUP CTRL 1** key to confirm and back to password function menu, or push joystick down to select <CANCEL>, and then press **CAM SETUP CTRL 1** key to cancel password. These numbers of Edit column will be reset to "1111".



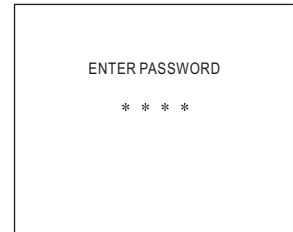
Note: When edit password setting and camera recording function are simultaneously performed, please stop recording function first; otherwise frame of password setting will be recorded, too.

#### 4. Modify Password

- To modify password after editing password completed, please get in <EDIT PASSWORD> again to edit.
- If password function is ON, previous passwords have to enter on the setting menu first, and then do modifying password.

#### 5. Input Password

- After password function is ON, press **CAM SETUP CTRL 1** key to display frame of input password on the screen.
- When protocol is MLP1, push joystick up or down to select number 0~9 and press **IRIS O** key to confirm. Select numbers will become to " \* ".
- Repeat above steps until passwords have been completed. If password is correct, setting menu will be displayed.
- When protocol is MLP2, press number **0~9** key on the keyboard to input, and then press **ENT** key to confirm. If password is correct, setting menu will be displayed.

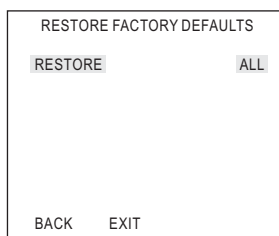


Note: If not enter password within 10 sec or input password is wrong, "Invalid password" will be show on the screen. Primary password is "1111".

### Restore Factory Defaults

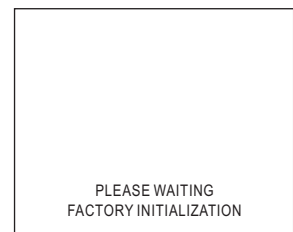
#### 1. Display the Restore Function Initialization Menu

- After getting in dome setting menu, push joystick down to select <FACTORY INITIAL>, and then press **CAM SETUP CTRL 1** key into factory initial setting.



#### 2. Factory Initial for All

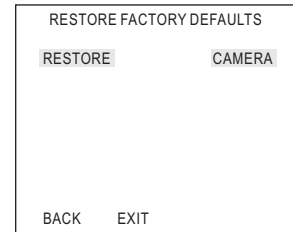
- Push joystick down to select <RESTORE>, and then push joystick left or right to select <ALL>.
- Press **CAM SETUP CTRL 1** key to confirm, and "Are you sure continue" will be displayed on the screen.
- Press **CAM SETUP CTRL 1** key again, and then to do factory initialization for all.



Note: "PLEASE WAITING FACTORY INITIALIZATION" will show on the screen after confirmation.

### 3. Factory Initial for Camera

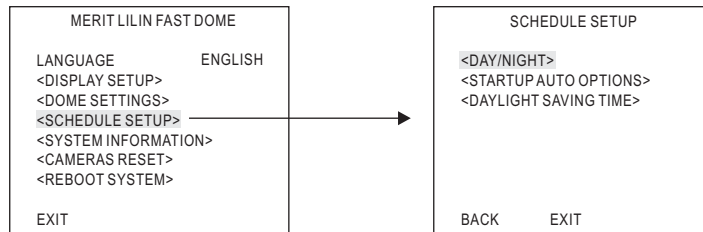
- Push joystick down to select <RESTORE>, and then push joystick left or right to select <CAMERA>.
- Press **CAM SETUP** **CTRL 1** key to confirm, and "Are you sure continue" will display on the screen.
- Press **CAM SETUP** **CTRL 1** key again, and then to do factory initialization for camera.



Note: Check again. If not press **CAM SETUP** **CTRL 1** key to confirm within 3 sec, this command will be canceled.

### Schedule Setup Menu

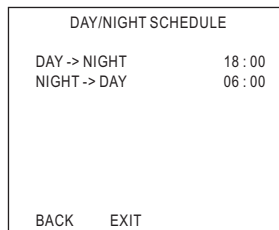
- Press **CAM SETUP** **CTRL 1** key into setup menu.
- Push joystick down to select <SCHEDULE SETUP>, and then press **CAM SETUP** **CTRL 1** key into schedule setting.



### Day/Night Schedule Setting Menu

#### 1. Display the Day/Night Schedule Setting Menu

- After getting into schedule setting menu, push joystick down to select <DAY/NIGHT>, and then press **CAM SETUP** **CTRL 1** key into day/night schedule setting menu.



#### 2. Day/Night Schedule Time Setting

- Push joystick down to select <DAY->NIGHT>, and then press **CAM SETUP** **CTRL 1** key into time setting. Push joystick left or right to select time of DAY->NIGHT. Then press **CAM SETUP** **CTRL 1** key again to next item.

18 : 00 → **CAM SETUP** **CTRL 1** → 18 : 00 → **CAM SETUP** **CTRL 1** → 18 : 00

- Push joystick down to select <NIGHT->DAY>, and then press  key into time setting. Push joystick left or right to select time of NIGHT->DAY. Then press  key again to next item.

06:00 →  → 06:00 →  → 06:00

## Startup Auto Options Menu

### 1. Display the Startup Auto Options Setting Menu

- After getting into schedule setting menu, push joystick down to select <STARTUP AUTO OPTIONS>, and then press  key into startup auto options setting menu.

| STARTUP AUTO OPTIONS |       |      |
|----------------------|-------|------|
| 1.                   | 00:00 | OFF  |
| 2.                   | 00:00 | OFF  |
| 3.                   | 00:00 | OFF  |
| 4.                   | 00:00 | OFF  |
| 5.                   | 00:00 | OFF  |
| 6.                   | 00:00 | OFF  |
| 7.                   | 00:00 | OFF  |
| 8.                   | 00:00 | OFF  |
| BACK                 |       | EXIT |

### 2. Schedule Time Setting

- Push joystick down to item 1 to 8, and then press  key into time setting and push joystick left or right to select time. Then press  key to next item.

01:00 →  → 01:00 →  → 01:00

### 3. Auto Options Setting

- Push joystick down to items 1 to 8 and complete time setting, and then get into auto setting. Then push joystick left or right to select auto mode and press  key to confirm.

→ OFF → STOP → AUTO → SEQ. → TOUR1 → TOUR2 →

OFF: NO action

STOP: Stop the auto mode.

AUTO: Perform auto scan mode.

SEQ.: Perform preset group mode.

TOUR1: Perform tour1 list mode.

TOUR2: Perform tour2 list mode

Note: 1. When start time is beginning, auto setting mode will be start.

2. While schedule is performing, if power supply occurs that power is failed and then restored, schedule won't be continue to perform until next schedule time starts.

3. While schedule is STOP mode, if camera is set for "self return mode" and "self return time is also arrived, camera will be performed "self return mode" until next schedule time starts.

Example:

1. 12:00, perform SEQ. Mode
2. 13:00, STOP (If "self return mode" is home, "home position setting" is 1, and "self return time" is 10 min, camera will be performed "self return mode" function and recall preset position 1 by 13:10.)
3. 20:00, perform TOUR1 mode
4. 09:00, STOP (perform "self return mode" at 09:10)

| STARTUP AUTO OPTIONS |       |
|----------------------|-------|
| 1. 12:00             | SEQ.  |
| 2. 13:00             | STOP  |
| 3. 20:00             | TOUR1 |
| 4. 09:00             | STOP  |
| 5. 00:00             | OFF   |
| 6. 00:00             | OFF   |
| 7. 00:00             | OFF   |
| 8. 00:00             | OFF   |
| BACK                 | EXIT  |

## Daylight Saving Time Menu

### 1. Display the Daylight Saving Time Setting Menu

- After getting into schedule setting menu, push joystick down to select <DAYLIGHT SAVING TIME>, and then press **CAM SETUP CTRL 1** key into daylight saving time setting menu.

| DAY/NIGHT SCHEDULE |                |
|--------------------|----------------|
| STARTUP            | OFF            |
| 1. START           | 07/03/01 14:00 |
| 2. END             | 08/03/01 14:00 |
| 3. START           | 09/03/01 14:00 |
| 4. END             | 10/03/01 14:00 |
| 5. START           | 11/03/01 14:00 |
| 6. END             | 12/03/01 14:00 |
| BACK               | EXIT           |

### 2. Start Daylight Saving Time Function Setting

- Push joystick down to select <STARTUP>, and then push joystick left or right to select <ON> or <OFF>.

### 3. Start Time Setting

- Push joystick down to select <START>, and press **CAM SETUP CTRL 1** key into setting mode, and then push joystick left or right to select start time. Then press **CAM SETUP CTRL 1** key for next item.

07 / 03 / 31 → **CAM SETUP CTRL 1** → 07 / 03 / 31 → **CAM SETUP CTRL 1** → 07 / 03 / 31 → **CAM SETUP CTRL 1** → 14 : 00 → **CAM SETUP CTRL 1**  
 → 14 : 00 → **CAM SETUP CTRL 1** → 07 / 03 / 31 14 : 00

### 4. End Time Setting

- Push joystick down to select <END>, and press **CAM SETUP CTRL 1** key into setting mode, and then push joystick left or right to select end time. Then press **CAM SETUP CTRL 1** key for next item.

08 / 03 / 31 → **CAM SETUP CTRL 1** → 08 / 03 / 31 → **CAM SETUP CTRL 1** → 08 / 03 / 31 → **CAM SETUP CTRL 1** → 14 : 00 → **CAM SETUP CTRL 1**  
 → 14 : 00 → **CAM SETUP CTRL 1** → 08 / 03 / 31 14 : 00

# SPECIFICATION

## Operational

|                                               |                                       |
|-----------------------------------------------|---------------------------------------|
| Manual Pan / Tilt Speed .....                 | 0.5° ~ 90°/sec (8 stages)             |
| Preset Position Pan / Tilt Speed .....        | 1° ~ 120°/sec                         |
| Preset Position Dwell Time .....              | 1 ~ 255 sec                           |
| Recall Preset Position Pan / Tilt Speed ..... | 120°/sec                              |
| 180° Instant Flip Rotation Speed .....        | 120°/sec                              |
| Pan Rotation .....                            | 360° Continuous                       |
| Tilt Rotation .....                           | 0° ~ +90°                             |
| Pan / Tilt Accuracy .....                     | ±0.25                                 |
| Preset Position .....                         | 128 preset positions (memory)         |
| Preset Group .....                            | 4 Group                               |
|                                               | (Corresponding with first 16 presets) |
| Address Setting .....                         | 1 ~ 64 ID setting (Protocol is MLP1)  |
|                                               | 1 ~ 256 ID setting (Protocol is MLP2) |

## Camera

|                                             |                                 |
|---------------------------------------------|---------------------------------|
| Image Device .....                          | 1/4 Inch Interline Transfer CCD |
| Horizontal & Vertical Pixel.....            | 768 x 494 (NTSC)                |
|                                             | 752 x 582 (PAL)                 |
| Scanning System .....                       | 2:1 Interlace                   |
| Horizontal Resolution .....                 | 600 TV Lines (Monochrome)       |
|                                             | 540 TV Lines (Color)            |
| Minimum Illumination .....                  | 0Lux, Monochrome (IR ON)        |
|                                             | 0.5Lux at F1.9, Color [2.6X]    |
|                                             | 0.3Lux at F1.6, Color [12X]     |
| S / N Ratio .....                           | >50dB (AGC OFF)                 |
| Synchronization .....                       | Internal                        |
| Horizontal & Vertical Synchronization ..... | 15.734KHz/59.94Hz (NTSC)        |
|                                             | 15.625KHz/50Hz (PAL)            |
| Auto Gain Control .....                     | 0 ~ 36 dB                       |
| Back Light Compensation .....               | ON / OFF                        |
| White Balance .....                         | ATW / Manual                    |
| Video Output .....                          | CVBS 1.0Vp-p / 75Ω BNC          |
| Infrared LED                                |                                 |
| Peak Wavelength .....                       | 850nm                           |
| Beam Spread .....                           | 30°                             |
| Radiant Distance .....                      | 16M                             |

## Optical Lens

### 2.6X Optical Lens

|                     |                                                                             |
|---------------------|-----------------------------------------------------------------------------|
| Focal Length .....  | f = 2.8 ~ 7.3mm                                                             |
| Aperture Max .....  | F1.9 (wide) ~ F3.1 (telephoto)                                              |
| Angle of View ..... | Wide: 92.2° (D) 73.4° (H) 54.7° (V)<br>Tele : 35.8° (D) 28.7° (H) 21.6° (V) |
| Focus Control ..... | Pan-Focus Zoom                                                              |
| Iris Control .....  | Auto                                                                        |
| Zoom In / Out ..... | Manual control                                                              |

### 12X Optical Lens

|                              |                                                                             |
|------------------------------|-----------------------------------------------------------------------------|
| Focal Length .....           | f = 3.8 ~ 45.6mm                                                            |
| Aperture Max .....           | F1.6 (wide) ~ F2.7 (telephoto)                                              |
| Angle of View .....          | Wide: 65.4° (D) 52.8° (H) 39.7° (V)<br>Tele : 5.54° (D) 4.49° (H) 3.40° (V) |
| Focus Control .....          | 2 Auto mode / Manual                                                        |
| Iris Control .....           | Auto / Manual                                                               |
| Zoom In / Out .....          | Manual Control                                                              |
| Zoom In / Out Accuracy ..... | ± 5%                                                                        |

## Electrical

|                         |                                                             |
|-------------------------|-------------------------------------------------------------|
| Power Supply .....      | 24VAC or 100VAC~240VAC (Option)                             |
| Power Consumption ..... | 10W [SP2034/2038/2124/2128]<br>13W [IPS2034/2038/2124/2128] |
| Control Interface ..... | RS-485 (1 Input / 1 Output)                                 |
| RS-485 Voltage .....    | 5.6V                                                        |

## Environmental

|                             |                 |
|-----------------------------|-----------------|
| Operation Temperature ..... | -10° C ~ +50° C |
| Operation Humidity .....    | 0% ~ 90%        |

## Mechanical

|                |                                                                 |
|----------------|-----------------------------------------------------------------|
| Height .....   | 142mm (5.59")                                                   |
| Diameter ..... | 135mm (5.31")                                                   |
| Weight .....   | 1000g [SP2034/2038/2124/2128]<br>1100g [IPS2034/2038/2124/2128] |

# APPENDIX A

## Quick Reference Table

| Function                          |              | Operation                                                       |
|-----------------------------------|--------------|-----------------------------------------------------------------|
| Pan / Tilt Control                | To Tilt Up   | Push Joystick Forward                                           |
|                                   | To Tilt Down | Push Joystick Down                                              |
|                                   | To Pan Left  | Push Joystick Left                                              |
|                                   | To Pan Right | Push Joystick Right                                             |
| Dome Selection                    |              | <b>Numeric Key</b> + <b>CAM</b>                                 |
| Zoom In                           |              | <b>ZOOM IN</b>                                                  |
| Zoom Out                          |              | <b>ZOOM OUT</b>                                                 |
| Manually Bring The Object Farther |              | <b>FOCUS FAR</b> (Auto Focus LED off)                           |
| Manually Bring The Object Closer  |              | <b>FOCUS NEAR</b> (Auto Focus LED off)                          |
| Auto Focus                        |              | <b>AUTO FOCUS</b> (Auto Focus LED on)                           |
| Open Iris                         |              | <b>IRIS O</b> (Auto Iris LED off)                               |
| Close Iris                        |              | <b>IRIS C</b> (Auto Iris LED off)                               |
| Auto Iris                         |              | <b>AUTO IRIS</b> (Auto Iris LED on)                             |
| 180° Horizontal Instant Flip      |              | <b>180° REV</b>                                                 |
| Set or Recall Preset Position     |              | <b>Numeric Key</b> + <b>PRESET</b> (128 preset position)        |
| Set Preset Speed                  |              | <b>Numeric Key</b> + <b>F1</b> (1° ~ 120°/sec)                  |
| Set Preset Dwell                  |              | <b>Numeric Key</b> + <b>F2</b> (0 ~ 255 sec)                    |
| Store Preset Data                 |              | <b>1</b> + <b>F3</b>                                            |
| Set Preset Group                  |              | <b>Numeric 1,2,3,4</b> + <b>F4</b> (4 Group)                    |
| Activate Auto Pan                 |              | <b>AUTO PAN</b> (Auto Pan LED on)                               |
| Stop Auto Pan                     |              | <b>AUTO PAN</b> (Auto Pan LED off)                              |
| Delete 128 Preset position Data   |              | <b>9 0 1 1</b> + <b>CLR</b>                                     |
| Reset Alarm                       |              | <b>ALARM RESET</b>                                              |
| Select Return Time                |              | <b>5 1</b> + <b>F4</b>                                          |
| Select Return Mode                |              | <b>5 2</b> + <b>F4</b>                                          |
| Select Auto Mode                  |              | <b>5 3</b> + <b>F4</b>                                          |
| <b>MLP 2 New Function</b>         |              |                                                                 |
| Reboot System                     |              | <b>9 0 1 3</b> + <b>CLR</b>                                     |
| Reset Camera                      |              | <b>9 0 1 5</b> + <b>CLR</b>                                     |
| Stop Password                     |              | <b>1</b> + <b>KEY LOCK</b>                                      |
| Activate Password                 |              | <b>2</b> + <b>KEY LOCK</b>                                      |
| Edit Password                     |              | <b>3</b> + <b>KEY LOCK</b>                                      |
| Single Preset Position Saving     |              | <b>SHIFT</b> + <b>Numeric Keys</b> + <b>PRESET</b> + <b>ENT</b> |
| Single Preset Position Delete     |              | <b>SHIFT</b> + <b>Numeric Keys</b> + <b>PRESET</b> + <b>CLR</b> |

# APPENDIX B

## Trouble Shooting

### 1. No Power

- 1-1. Check power input connection
- 1-2. Check cable connection on camera bottom chassis

### 2. No Video

- 2-1. Check camera video output on camera
- 2-2. Check cable (damaged cable)
- 2-3. Check video input connection on monitor
- 2-4. Check cable connection on camera bottom chassis

### 3. No Telemetry

- 3-1. Check camera ID switch setting
- 3-2. Check RS-485 cable IN / OUT connection on camera
- 3-3. Check RS-485 cable IN / OUT connection on keyboard
- 3-4. Check if the fast dome is under Auto Pan mode Please deactivate the Auto Pan

### 4. Poor Focusing

- 4-1. Dusts on dome cover or housing cover. Clean the cover with cotton cloth

## Installation Kit

| Item                            | Unit |
|---------------------------------|------|
| Power Adaptor                   | 1    |
| Power, Video, RS-485 Cable      | 1    |
| Metal Clips of base             | 1    |
| M4 x 25 Tapping Screw-flat head | 3    |
| Screw Nut                       | 3    |
| Screw Cover of dome case        | 2    |
| M3 x 4 Machine Screw-flat head  | 2    |
| Sub-Fixed Steel                 | 1    |

# APPENDIX C

## Preset ID Characters Table

| Page 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|
| 1      | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |   |   |   |  |  |
| 2      | A | B | C | D | E | F | G | H | I | J | K | L | M |  |  |
| 3      | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |  |  |
| 4      | a | b | c | d | e | f | g | h | i | j | k | l | m |  |  |
| 5      | n | o | p | q | r | s | t | u | v | w | x | y | z |  |  |
| 6      | . | , | : | ' | " | / | # | * | = | ( | ) | < | > |  |  |

| Page 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1      | À | Á | Â | Ã | Ä | Å | Ç | È | É | Ê | Ë | Ì | Í | Î | Ï |
| 2      | Ñ | Ò | Ó | Ô | Õ | Ö | Ù | Ú | Û | Ü | Ý | ÿ | ß |   |   |
| 3      | à | á | â | ã | ä | å | ç | è | é | ê | ë | ì | í | î | ï |
| 4      | ñ | ò | ó | ô | õ | ö | ù | ú | û | ü | ý | ÿ |   |   |   |



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