

Marshall Electronics

VS-WM202-HDSDI

Heavy Duty Exterior PTZ Camera
20x Zoom and IR LED



User Manual

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Safety Precaution

**We appreciate your IP Camera Purchase.
Before installing the product, please read the following with care.**

- ✧ Make sure to turn off the power before installing the system.
- ✧ Do not install under the direct sunlight or in dusty areas.
- ✧ Make sure to use the product within the temperature and humidity specified.
- ✧ Do not operate the product in the presence of vibrations or strong magnetic fields.
- ✧ Do not put electrically conducting materials in the ventilation hole.
- ✧ Do not open the top cover of the products. It may cause a failure or electric shock on the components.
- ✧ To prevent from overheating, make sure to keep the distance at least 10 cm from the ventilation hole.
- ✧ Make sure proper voltage before connecting the power.

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1. INFORMATION FOR USER

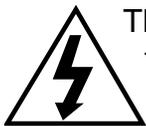
1.1 WARNING

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



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

1.2 EXPLANATION OF GRAPHICAL SYMBOLS



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



The lightning flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

1.3 FCC COMPLIANCE STATEMENT

FCC INFORMATION - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1.4 CE COMPLIANCE STATEMENT

WARNING - This is a CLASS A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CAUTION - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

**This installation should be made by a qualified service person and should conform to all local codes.

2. PRECAUTIONS

- **Do not install the camera in extreme temperature conditions.**

Do use the camera under conditions where temperatures are within -20°C to 60°C (in continuous operation). Under high temperatures, ensure proper ventilation.

- **Do not install or use the camera in an environment where the humidity is high.**

It can cause the image quality to be poor.

- **Do not install the camera under unstable lighting conditions.**

Severe lighting change or flicker can cause the camera to work improperly.

- **Never use the camera close to a gas or oil leak.**

It can cause malfunctions to occur.

- **Do not disassemble the camera.**

There are no user-serviceable parts inside it.

- **Do not drop the camera or subject them to physical shocks.**

It can cause malfunctions to occur.

- **Do not allow direct sunlight into the camera.**

It can damage CCD.

- **Do not expose the camera to rain or spill beverages on it.**

If it gets wet, wipe it dry immediately. Liquids can contain minerals that corrode the electronic components.

- **To prevent electric shock and risk of fire hazards.**

- **Do not use power sources other than that specified.**

Note: If the camera is exposed to spotlight or object reflecting the strong light, smear or blooming may occur. Please check the power whether it satisfies the normal specification before connecting the camera.

3. FEATURES

Outdoor Heavy-Duty PTZ Camera

Heavy-duty aluminum die-cast body makes the VS-WM-202-HDSDI ideal for traffic control, harbor and airport surveillance, oil fields & refineries, the military & police, sport stadiums, town & city centers, bus & rail stations and other high security outdoor installations.

Unobstructed 360° Rotation and 180 ° Flip

Heavy-duty long life slip ring allows for 360°endless panning and unobstructed 180°flip.

Light Function

The built-in 30 pcs Super IR LED(Infra-red or white), provides visible distance up to 200m in the dark. (Osram 870n 1w)

Built-In Fan & Heater

Built-In Wiper System

True Day & Night (ICR Filter Change)

The IR cut filter is when the camera is operating as a color camera for precise color reproduction. With ICR, the filter is removed which allows for much greater light sensitivity in monochrome mode.

Break and Clutch Protected Pan and Tilt

OSD (On Screen Display)

The camera IDs, camera preset numbers, preset names, area names, and camera operation status are displayed on the monitor, allowing set up of various camera functions through the OSD menu screen.

Auto-Focus 20X Optical Zoom

The built-in 20X optical zoom lens with auto-focus is combined with a 12X digital zoom(20x), providing a maximum of 240X zoom.

Wide Range Auto Functions

Preset: Up to 255 programmable presets.

Tour: Up to 8 programmable Tours consisting of presets with individual dwell time.

Scan: Repeatedly pan & tilt operating between two positions. (Max.8)

Pattern: Up to 4 programmable Patterns memorizing the PTZ movement.

Privacy: Up to 8 programmable Privacy masking.

Alarm: Move the camera to programmed Preset position with Alarm trigger.(Max.2)

Area: Up to 16 programmable Area display sets.

WDR (Wide Dynamic Range)

The Camera delivers clear, high quality pictures even in backlight, by increasing exposure in dark areas while decreasing it in bright areas a corrected image with clear details results.

Variable Speed Pan/Tilt Control

In manual mode, sophisticated operating is possible at zoom in state by speed correcting function.

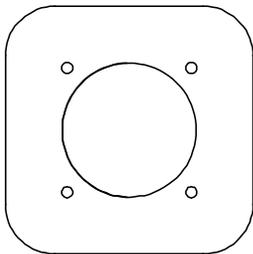
Eco-Friendly Green Energy Product

Minimize power consumption and save the earth by utilizing the VS-WM202 all-in-one camera system.

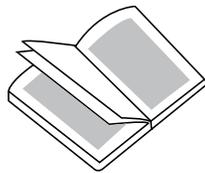
4. SETTINGS & INSTALLATION

4.1 Unpacking

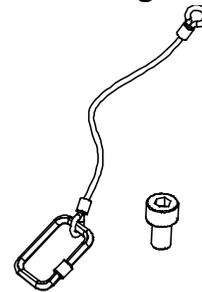
Guiding sticker for installation



Manual

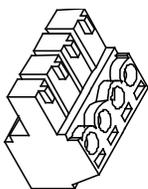


Detaching Hook

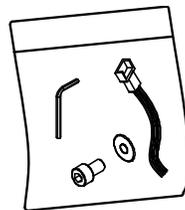


M8 X10 bolts

4PIN Communication Terminal

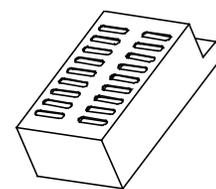


Accessories

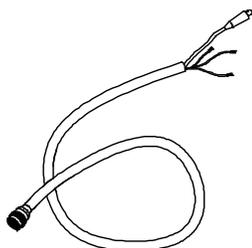


L-wrench, alarm cable
M8 wrench-bolt, M8 nut

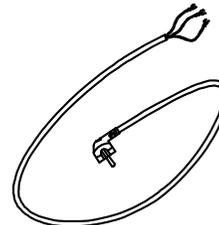
Switched-Mode Power Supply



MAIN CABLE

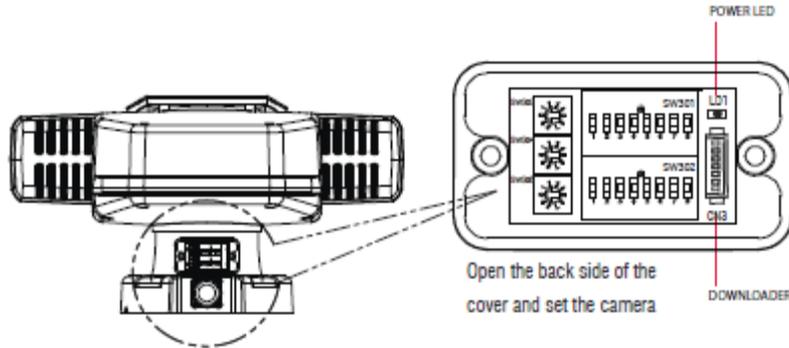


POWER CABLE



4.2 DIP Switch Settings

Before starting up the camera, set the protocol, camera address and details with dip-switches referring to the following.



Camera ID (ADDRESS)

SW303 SW304 SW305

S/W3 : 100 digit of ID
 S/W4 : 10 digit of ID
 S/W5 : 1 digit of ID
 Ex) S/W 3=0, S/W 4=0, S/W 5=1
 Address=001

Each camera must have a unique address (ID). Identical ID's on the same line may damage the control circuit caused by an electric short.

SW 302



PROTOCOL

1	2	3	4	PROTOCOL
0	0	0	0	EZP
0	0	0	1	PELCO D V1.0
0	0	1	0	PELCO P
0	0	1	1	WTX
0	1	0	0	PELCO D V5.0
0	1	0	1	OCP
0	1	1	0	yujin
0	1	1	1	NC
1	0	0	0	sj 1000

SW 301 RS485 LOOP (TERMINATION)



SW 301

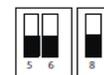
2	3	
0	0	NC
0	1	NC

SW 301 LED TYPE



4	LED TYPE
0	IR
1	WHITE

SW 301 SW 302



SW 301			SW 302	
5	6	Output Format	8	Video Mode
0	0	1920 x 1080p 30	OFF	NTSC
0	1	1920 x 1080i 60		
1	1	1920 x 1080i 59.94		
1	0	1280 x 720p 60	ON	PAL
0	0	1920 x 1080p 25		
0	1	1920 x 1080i 50		
1	0	1280 x 720p 50	-	-
1	1	Reserved	-	-

SW 302



BAUDRATE

5	6	7	BAUDRATE
0	0	0	2400
0	0	1	4800
0	1	0	9600
0	1	1	19200
1	0	0	38400
1	0	1	57600
1	1	0	NC
1	1	1	NC

SW 301 CAMERA SELECTION



7	8	CAM TYPE
0	0	EH-6300
0	1	MM-202
1	0	NC
1	1	NC

4. 3 Cable Connection

4. 3. 1 Basic Diagram of Cable Connection



4. 3. 2 Video Output Connection 2

Connect the video out (BNC) connector to the monitor or HD SDI video input of DVR.

4. 3. 3 RS-485 / RS-422 Communication Connection

It can be remotely controlled by an external device or control system, such as a control keyboard or DVR, using RS-485 half-duplex, RS-422 duplex or simplex serial communication signals. After inserting 4pin communication terminal of accessory package to green port of main cable, connect marked RX+, RX- to TX+ and TX- of the RS-485 control system. If control system is RS-422, connect TX+,TX- of controller to RX+ and RX- of the camera. And also connect the TX+, TX- of camera to RX+, RX- of the control device respectively. Total length of the cable for communication should not exceed 1.2Km.

4. 3. 4 Alarm Connections

It can operate specific motion receiving external Alarm Device (Sensor) signal (Max 2 Alarm.) Connect the alarm cable to external Alarm Device referring to below, directions.

- Green color line: Ground / Brown & Orange color lines: Alarm 1 & 2.

4. 3. 5 Power Connections

- After connecting above 3 connections (Video/Communication/Alarm), Connect the power cable last.

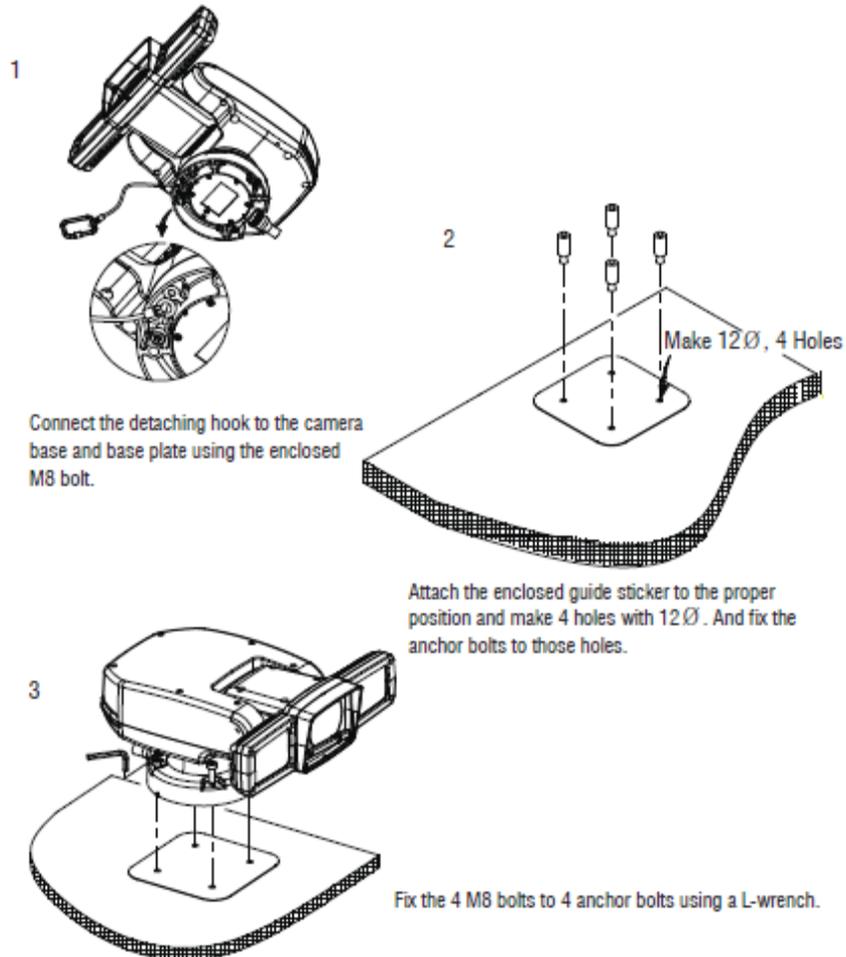
- There are 3 lines: Red, Black, Gray. Connect red and black lines to + and - of power. And connect the gray line for Ground.

- Connect the power of DC 24V, 10A to this camera.

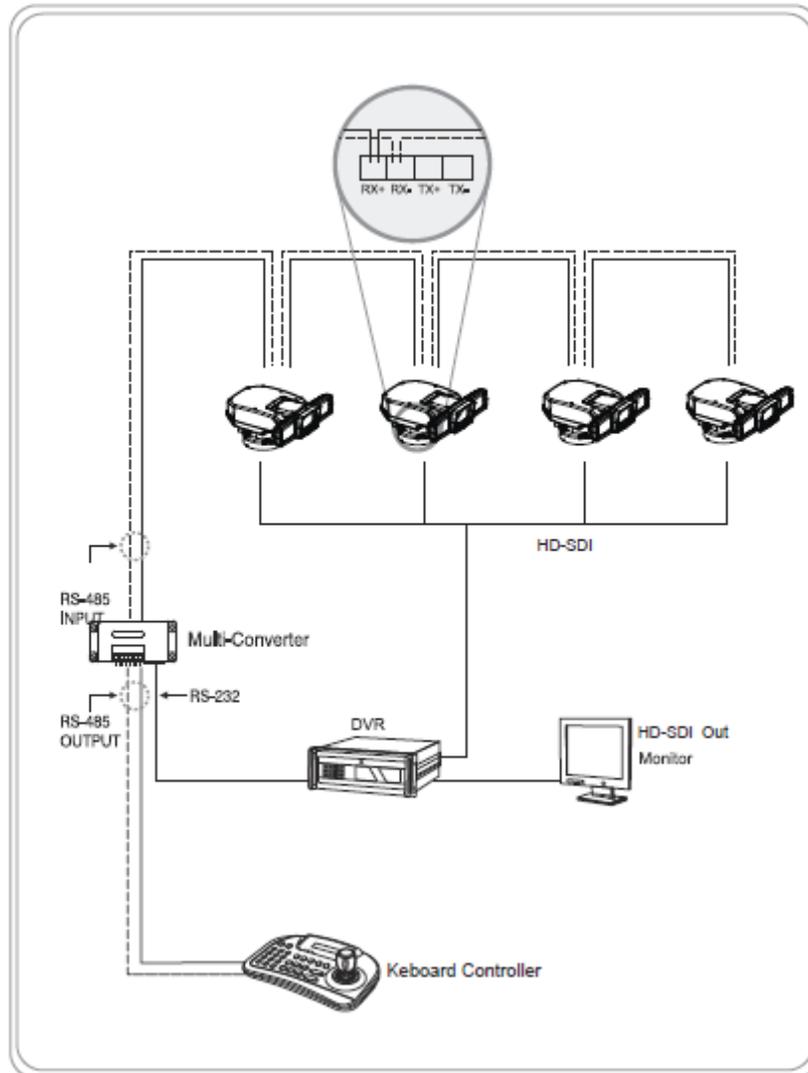
- Use certified Class 2 power supply transformers only.

4. 4 Installation

- The following steps of installation and connection work should only be done by qualified service personnel or system installers and should conform to all local codes.
- Be sure to switch the camera off before installation is completed.
- Do not install the camera near the air outlet of an air conditioner.
- Before installation, set camera system with Dip-switches on the 7~8 pages.



4.5 Basic Configuration



5. MAIN SETUP MENU

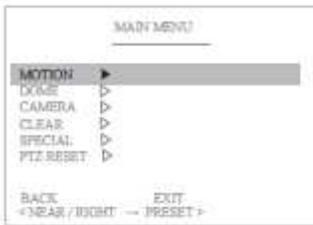
5.1 Initialize

When the device is powered on, you can check the address, version, protocol and video setting values.

INITIALIZE	
ADDRESS	001
INSTALL TYPE	TOP
VERSION	0.10
DROPTAL OUT	1080i60
CNVS OUT	NTSC
PROTOCOL	Pal/1
BAUDRATE	2400, N, 1
CAMERA	EH
PAN OFFSET	-
TILT OFFSET	-

5.2 Motion Setting

5.2.1 Preset



Preset Quick Operating Guide

Set Preset : 1~255 + 3sec.

Go to Preset : 1~255 +

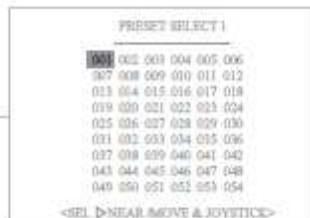
The preset function is that the camera memorizes positions of the pan/tilt and zoom. This function is a representative function of the speed dome which can find memorized preset positions just by selecting the preset No. A Maximum of 255 Preset positions are toured in order.



(1) Select the Preset number

P01 : Defined Preset number / 01 : Undefined Preset number

Move : Select :



(2) Set the Preset Label

Move : Select : or Delete : or

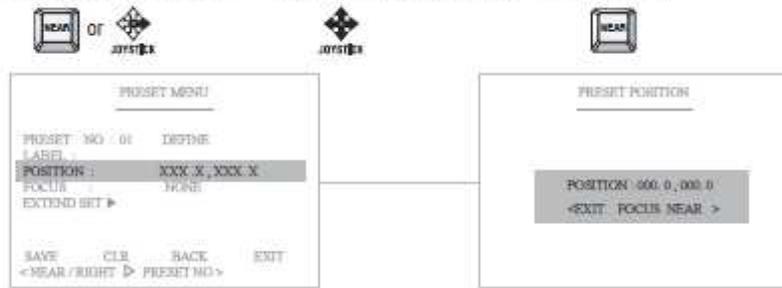
It's available to set the desired label, displayed on the executing screen of Preset.



After the label is set, push the NEAR button to exit.

(3) Define the Preset position

- ① Select the Position menu
- ② Move and set the position
- ③ Set & Back



(4) Select the focus mode for Preset

- ① Select the Focus menu
- ② Move and set the Focus Menu



On focus menu, there are 4 modes : None, Auto, Manual, On Shot. It allows detailed settings for the preset.

(5) EXTEND SET



Set the additional preset functions.

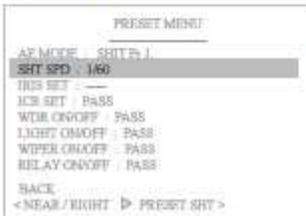
AE MODE



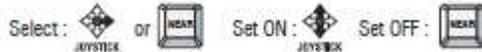
Select AUTO, SHUTTER, IRIS and PASS MODE.



SHUTTER SPD



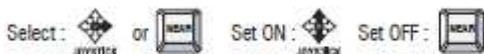
Set shutter speed in the AE MODE.



IRIS SETTING



Set IRIS value in the AE MODE.



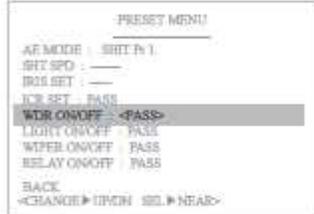
ICR SETTING



Select PASS, DAY, NIGHT and AUTO in the IR LED.



WDR ON/OFF

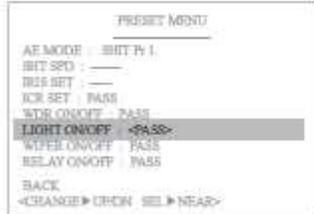


Set WDR function.

Select PASS, ON and OFF.

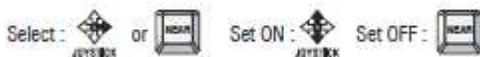


LIGHT ON/OFF



Select PASS, ON and OFF.

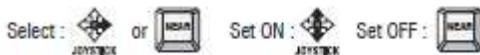
: Select NIGHT in the ICR MODE and set ON.



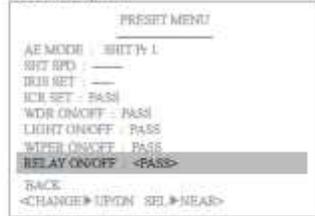
WIPER ON/OFF



Select PASS, ON and OFF.



RELAY ON/OFF



Select PASS, ON and OFF.



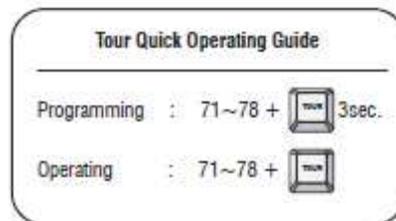
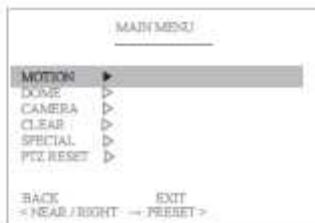
(6) "Save" above setting Pattern data to the memory.

(7) "CLR" means above setting Pattern data will not be saved and be cleared.

(8) "BACK" means it goes back to the previous menu .Motion.

(9) "EXIT" means it goes out of MENU.

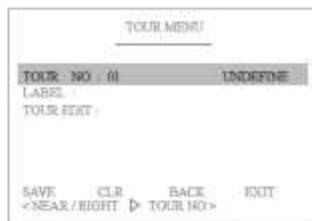
5. 2. 2 Tour



The Tour function consists of several presets run by turn. It is also adjusts the moving speed (1~63 step) and dwell time (1~99secs). Maximum of 8 Tour functions are toured in order. (※ 1 Tour can be set for 15 presets.)

(1) Select the Tour number

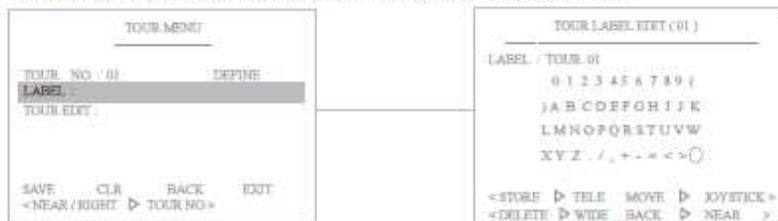
T01 : Defined Tour number / 01 : Undefined Tour number



(2) Set the Tour Label

Move : Select : or Delete : or

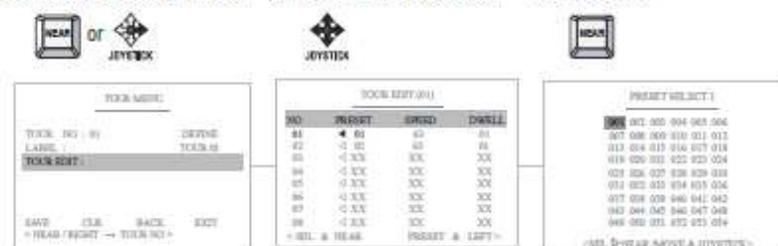
It's available to set the desired label, displayed on the executing screen of Tour.



After the label is set, push the NEAR button to exit.

(3) Define the Preset position

- ① Move to the set-up window
- ② Move and set the position
- ③ Set & Back



- (4) "Save" above setting Pattern data to the memory.
- (5) "CLR" means above setting Pattern data will not be saved and be cleared.
- (6) "BACK" means it goes back to the previous menu :Motion.
- (7) "EXIT" means it goes out of MENU.

5. 2. 3 Scan



Scan Quick Operating Guide

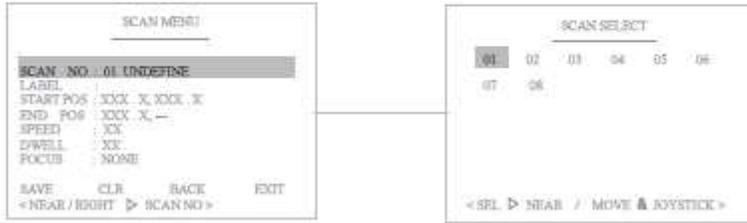
Programming : 81~88 + 3sec.

Operating : 81~88 +

The Scan function means that the camera keeps panning between two programmed pan positions. It is also adjusts the moving speed(1~63 step). Maximum 8 Scan functions are toured in order.

- (1) Select the Scan number
 S01 : Defined Scan number / 01 : Undefined Scan number

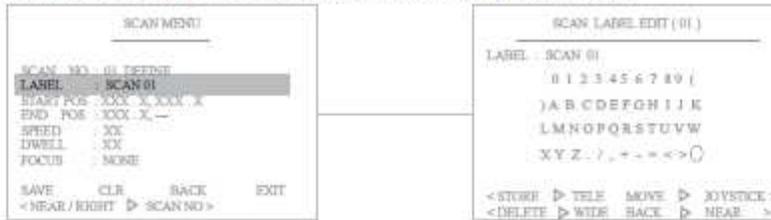
Move :  Select : 



- (2) Set the Scan Label

Move :  Select :  or  Delete :  or 

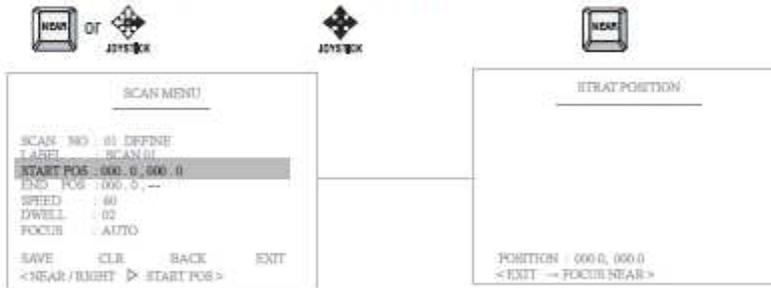
It's available to set the desired label, displayed on the executing screen of Scan.



After the label is set, push NEAR button to go out.

- (3) Define the Start pan position

- ① Select Start Pos menu ② Move and set the position ③ Go back



- (4) Define the End pan position

- ① Select End Pos menu ② Move and set the position ③ Go back

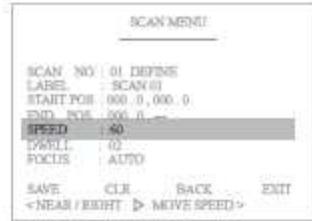


(5) Set the Scan speed

Increase :  or 

Decrease :  or 

It adjusts the moving speed from 1~63 steps.

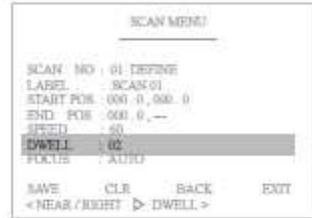


(6) Set the Dwell Time

Increase :  or 

Decrease :  or 

Dwell time means the time that the camera stay at the start & end pan positions.
It's adjustable from 1~99 seconds.



(7) Set the Focus

Focus can be set Auto or Manual.



- (5) "Save" above setting Pattern data to the memory.
- (6) "CLR" means above setting Pattern data will not be saved and be cleared.
- (7) "BACK" means it goes back to the previous menu :Motion.
- (8) "EXIT" means it goes out of MENU.



5. 2. 4 Pattern



Tour Quick Operating Guide

Programming : 91~94 +  3sec.

Operating : 91~94 + 

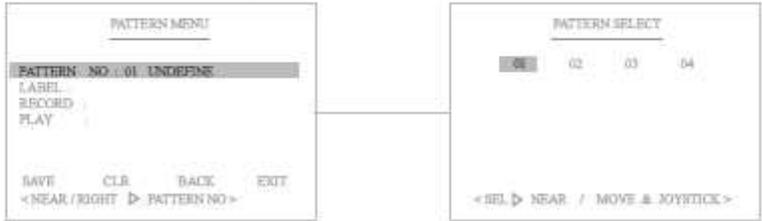


The Pattern function memorizes User's random moving path and zoom ratio. Total recording time limit is 90secs and maximum 4 Pattern functions are toured in order.

(1) Select the Pattern number

PAT01 : Defined Pattern number / 01 : Undefined Pattern number

Move :  Select : 



(2) Set the Pattern Label

Move :  Select :  or  Delete :  or 

It's available to set the desired label, displayed on the executing screen of Pattern.



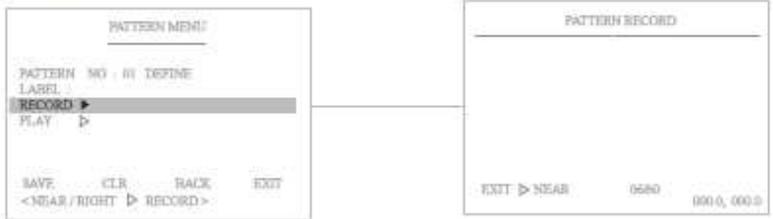
After the label set, push NEAR button to go out.

(3) Record and Save the User's random Pattern data

- ① Select the "Record" Menu
- ② Move and record the pattern
- ③ Set & Back

 OR  





(4) Play back the recorded Pattern data



(5) "Save" above setting Pattern data to the memory.

(6) "CLR" means above setting Pattern data will not be saved and be cleared.

(7) "BACK" means it goes back to the previous menu :Motion.

(8) "EXIT" means it goes out of MENU.



5. 2. 5 Area

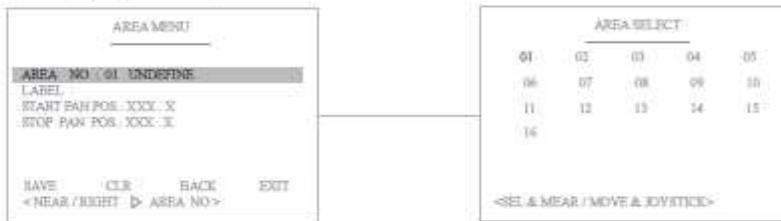


The Area function means that it displays the Area name between two programmed pan positions. Maximum 16 Area functions are toured in order.

(1) Select the Area number

AR 01 : Defined Area number / 01 : Undefined Area number

Move : Select :



(2) Set the Area Label

Move : Select : or Delete : or

It's available to set the desired label, displayed on the executing screen of Area.

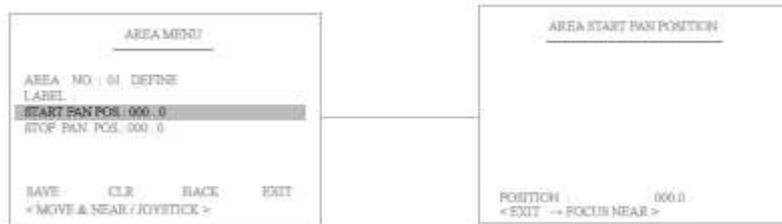


After the label set, push NEAR button to go out.

(3) Define the Start pan position

① Select the "Start Pan Pos" menu ② Move and set the position ③ Set & Back

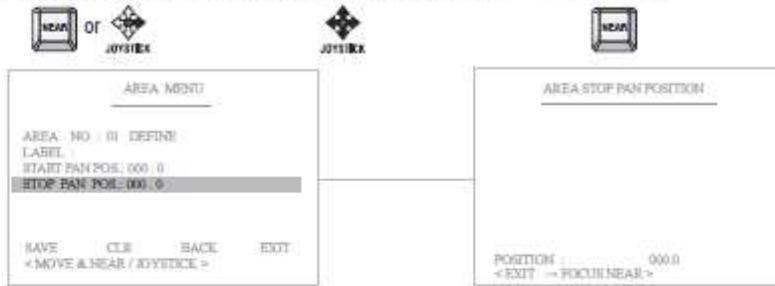
or



* Camera will move to clockwise direction only when START setting.

(4) Define the Stop pan position

- ① Select the "Start Pan Pos" Menu ② Move and set the position ③ Set & Back



** Only pan position is adjustable, because tilt position is fixed when "Start Pan Position" is set.

(5) "Save" above setting Area data to the memory.

(6) "CLR" means above setting Area data will not be saved and be cleared.

(7) "BACK" means it goes back to the previous menu ;Motion.

(8) "EXIT" means it goes out of MENU



5. 2. 6 Alarm

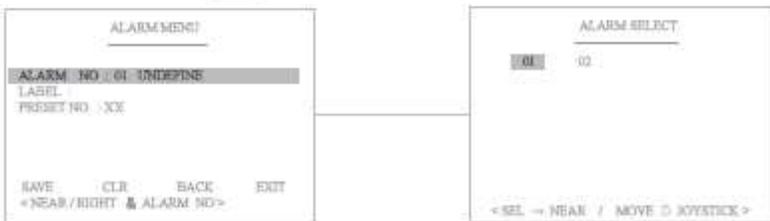


The Alarm function means that the camera moves to the programmed Preset position by the Alarm trigger. Maximum 2 Alarm functions are toured in order.

(1) Select the Alarm number

Alarm 01 : Defined Alarm number / 01 : Undefined Alarm number

Move : Select :



(2) Set the Alarm Label

Move : Select : or Delete : or

It's available to set the desired label, displayed on the executing screen of Alarm.

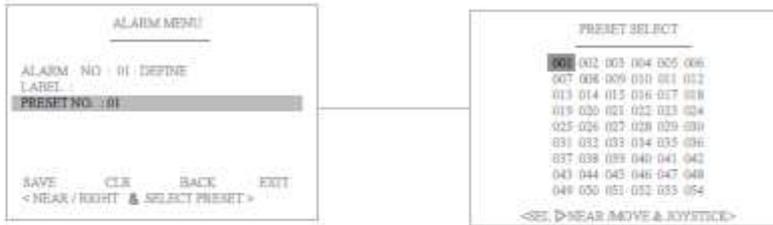


After the label is set, push the NEAR button to exit.

(3) Define the Preset position with Alarm trigger

- ① Select the "Preset No"
- ② Move and set the position
- ③ Set & Back

or



(4) "Save" above setting Alarm data to the memory.

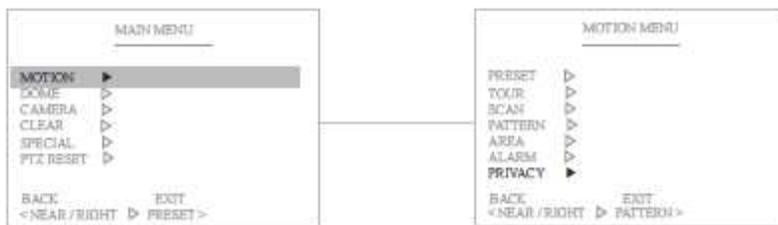
(5) "CLR" means above setting Alarm data will not be saved and be cleared.

(6) "BACK" means it goes back to the previous menu :Motion.

(7) "EXIT" means it goes out of MENU



5. 2. 7 Privacy Zone Masking

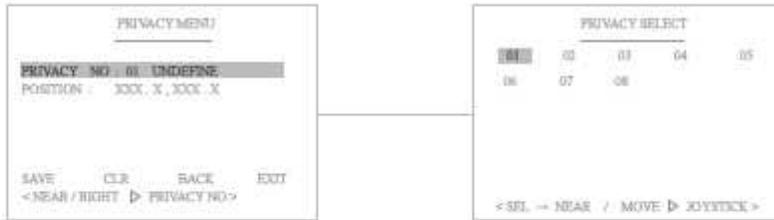


The Privacy Zone Masking function means that it sets the blocking territories to prevent camera functions for the privacy of personal reasons. Maximum of 8 Privacy Zone Masking functions are toured in order.

(1) Select the Privacy Zone number

Privacy 01 : Defined Alarm number / 01 : Undefined Alarm number

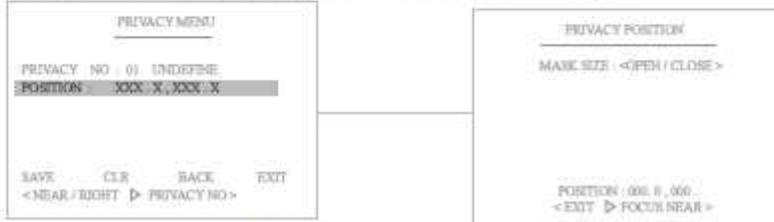
Move :  Select : 



(2) Set the Privacy Zone Position

Move :  Select :  or  Delete :  or 

It's available to set the desired position and size of the blocking territories freely.



After the Privacy Zone is set, push the NEAR button to go out.

(3) "Save" above settings of Privacy Zone data to the memory.

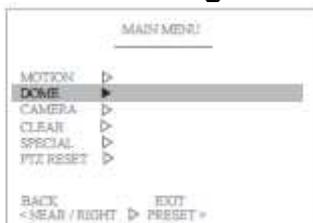
(4) "CLR" means above setting of Privacy Zone data will not be saved and be cleared.

(5) "BACK" means it goes back to the previous menu :Motion.

(6) "EXIT" means it goes out of MENU.



5. 3 Dome Setting



Pan, Tilt, Zoom motion is adjustable in the "Dome Setting" Menu.

5. 3. 1 Set the Dome Camera Title

Move :  or  Select :  or  Delete :  or 

It's available to set the desired camera title.

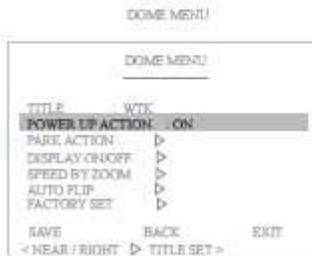


After the label is set, push NEAR button to exit.

5. 3. 2 Set the Power Up Action

When this function is ON, the camera memorizes the latest action and restores, it from sudden power failure.

select :  or  Set ON :  Set OFF : 



5. 3. 2 Park Action

This function enables to locate the camera to specific position automatically if operator doesn't operate the controller for a while.

 or 



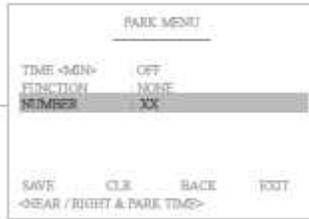
(1) Set the park Time (OFF, 01~60 min)



(2) Select the function which will be back after the above set time.



(3) Select the appointed function's Number



(4) "Save" above setting data to the memory.

(5) "CLR" means above setting Pattern data will not be saved and be cleared.

(6) "BACK" means it goes back to the previous menu.

(7) "EXIT" means it goes out of the MENU



5. 3. 4 Display ON/OFF Set

You can select the OSD ON to shown on the screen or clear by selecting OFF in this function.

select : or Set ON : Set OFF :

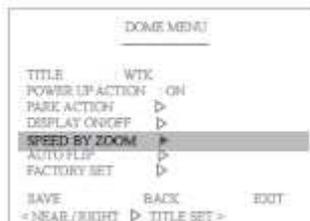


5. 3. 5 Speed by Zoom ON/OFF Set

When this function is ON, the pan/tilt speed is inversely adjusted to the zoom ratio.

select : or Set ON :

Set OFF :



5. 3. 6 Auto Flip ON/OFF Set

You can observe the moving object without reversing of the screen, by using this AUTO FLIP function.

ON: If this function is set to ON, camera will be automatically flipped in tilt 90°

OFF: If this function is set to OFF, tilt movement range is 0~90°

select :  or  Set ON : 

Set OFF : 



5. 3. 7 Factory Set

Restore setting values to the factory default.



All existing setting value will be erased.



5. 4 Camera Settings

5. 4. 1 CAMERA MENU (EH-6300)



CAMERA MENU

- Functions can be set-up using the Camera menu.

In this menu, user can set the zoom, focus, white balance, auto exposure...etc functions.

① ZOOM MODE



Decide using of digital zoom function and select zoom speed.

- * ZOOM SPD : 1 ~ 7steps, USER(standard)
- * D-ZOOM : ON / OFF

- ZOOM SPD



ZOOM SPD : Select from 1sept to 7 steps, USER (Standard speed)

Select : or Set ON : Set OFF :

- D-ZOOM



Decide using of digital zoom function.
D-ZOOM: ON/ OFF

Select : or Set ON : Set OFF :

② FOCUS MODE



In Focus menu, you can set up the focus speed, focus mode, near limit, AF mode and sensitivity.

- FOCUS SPD



Set the speed for camera focusing.

Select : or Set ON : Set OFF :

- FOCUS MODE



AUTO: The camera adjusts the focus automatically while monitoring the screen continuously in the auto mode. In the auto focusing mode, zoom key operation is not recognized as the input of the focus key.

Manual: In the manual mode, users can adjust the camera focus manually.

One Push: It will be focused in about 5 seconds after zooming, panning, and return to MANUAL mode automatically. This is for focusing accurately after zooming.

Infinity: infinity focus is the state where a lens forms an image of an object an infinite distance away. This corresponds to the point of focus for parallel rays.

Select : or Set ON : Set OFF :

- NEAR LIMIT



Infinity focus is the state where a lens forms an image of an object an infinite distance away. This corresponds to the point of focus for parallel rays.
(Over Infinity~ 1.0CM)

Select : or Set ON : Set OFF :

- AF MODE



Set the AUTO FOCUS MODE position

Select : or Set ON : Set OFF :

- SENSITIVITY



Set the sensitivity of focus.

Select : or Set ON : Set OFF :

- IR SELECTION



Correct the IR conversion data.

Select : or Set ON : Set OFF :

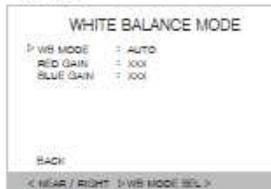
③ WHITE BALANCE Set the white balance of camera.



White balance setting is a function revising color temperature to resolve the problem that screen's colors change by the color temperature's difference according to time.
RED GAIN: Adjust red color level from 0~255.
BLUE GAIN: Adjust blue color level from 0~255.

Select : or Set ON : Set OFF :

- WB MODE



WB MODE: Set the color depend on white balance.
WB MODE : Select AUTO, INDOOR, OUTDOOR ONEPUSH, ATW or MANUAL.

Select : or Set ON : Set OFF :

- RED, BLUE MODE



Adjust color level (RED, BLUE : 001~ 255)
Standard level : RED -> 208 BLUE->162

Select : or Set ON : Set OFF :

④ AUTO EXPO



AE setting is a function adjusting shutter speed according to subject's brightness to get standard amount of exposed light.

AE MODE: Select AUTO, MANUAL, SHUTTER, IRIS or BRIGHT.

EXPOSURE : 10.5dB ~ -10.5dB (Standard 0dB)

SLOW SHUTTER: Select AUTO, MANUAL

SHUTTER: Set the shutter speed.

IRIS LEVEL: If you set IRIS in AE mode, you can control the level value (CLOSE ~F1.6)

BRIGHT LEVEL: If you set BRIGHT in AE mode, you can control level value (00~31)

Gain: Control the brightness (-3dB ~ 28dB)

- AE MODE



Select AUTO, MANUAL, SHUTTER, IRIS or BRIGHT.



- EXPO MODE



Set the exposure.



- SLOW SHUTTER



Select AUTO or MANUAL.



- SHUTTER



If you set SHUTTER in the AE MODE, you can control shutter speed.

(1/50, 1/80, 1/120, 1/150, 1/250, 1/500, 1/1000, 1/1500, 1/2000, 1/5000, 1/10000, 1/20000, 1/50000, 1/100000)



- IRIS LEVEL



If you set IRIS in the AE MODE, you can set the IRIS level from 00 to 17.



- BRIGHT LEVEL

AUTO EXPO. MENU	
AE MODE	: BRIGHT
EXPOSURE	: 0dB
SLOW SHUTTER	: AUTO
SHUTTER	: AUTO
IRIS LEVEL	: AUTO
BRIGHT LEVEL	: 27
GAIN	: XX
GAIN LIMIT	: 5dB
BACK	
◀ NEAR / RIGHT ▶ AE MODE SEL ▶	

If you set BRIGHT in AE mode, you can control level value.

Select :  or  Set ON :  Set OFF : 

- GAIN

AUTO EXPO. MENU	
AE MODE	: AUTO
EXPOSURE	: 0dB
SLOW SHUTTER	: AUTO
SHUTTER	: AUTO
IRIS LEVEL	: AUTO
BRIGHT LEVEL	: XX
GAIN	: XX
GAIN LIMIT	: 5dB
BACK	
◀ NEAR / RIGHT ▶ GAIN SEL ▶	

If you set MEMUAL in AE mode, you can control Gain.

Select :  or  Set ON :  Set OFF : 

- GAIN LIMIT

AUTO EXPO. MENU	
AE MODE	: AUTO
EXPOSURE	: 0dB
SLOW SHUTTER	: AUTO
SHUTTER	: AUTO
IRIS LEVEL	: AUTO
BRIGHT LEVEL	: XX
GAIN	: XX
GAIN LIMIT	: 5dB
BACK	
◀ NEAR / RIGHT ▶ GAIN LIMIT ▶	

Change the GAIN LIMIT. (0~30dB) -changed by 2dB

Select :  or  Set ON :  Set OFF : 

⑤ WDR MODE



Select WDR(Wide Dynamic Range)



- WDR MODE



Select ON or OFF and set the LEVEL and the LIMIT value, (OFF, LEV1 ~ LEV7)



- SCREEN DISP



Select WDR changing time. (LONG, SHORT)



- DETECTION SENSITIVITY



Change the WDR level



- BLOCKED UP LEVEL



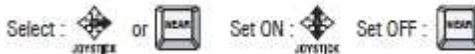
Select blocked up level (LOW,MID,HIGH)



- BLOWN-OUT LEVEL



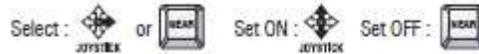
Select blown-out level



- EXPOSURE RATIO



Select exposure ratio



- LONG EXPOSURE



Select long exposure



- SHORT EXPOSURE



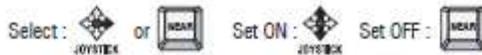
Select short exposure



⑥ SPECIAL



In the Special menu, it's available to set special function of the camera



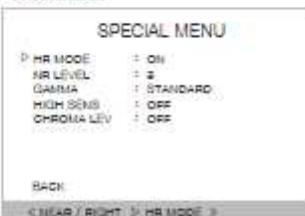
- ENHANCE



Enhance the video color.

- * HR MODE : Select HIGH-Resolution
- * NR LEVEL : Select NOISE-Reduction level
- * GAMMA : Select light and shade level
- * HIGH SENSITIVITY : Select High sensitivity
- * CHROMA LEVEL : Select chroma level

- HR MODE



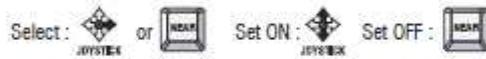
Select HIGH-Resolution



- NR LEVEL



Select NOISE-Reduction level



- GAMMA



GAMMA ; Select light and shade level



- HIGH SENSITIVITY



HIGH SENSITIVITY : Select High sensitivity



- CHROMA LEVEL



CHROMA LEVEL : Select chroma level



- APERTURE GAIN



APERTURE GAIN: Select aperture gain



- BACK LIGHT



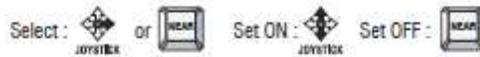
Select ON/OFF in the BACK LIGHT function.



- DAY/NIGHT



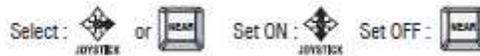
Select the BACK LIGHT function manually.
 DAY: IR function OFF NIGHT: IR function ON



- DAY/NIGHT LEVEL



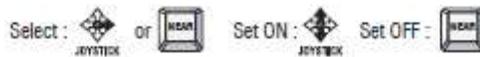
Select the darkness level



⑦ CAMERA RESET



Make initialize the setting value which is set in CAMERA MENU.



5. 4. 1 CAMERA MENU (EH-6300)



CAMERA MENU

- Functions can be set-up using the Camera menu.
 In this menu, user can set the zoom, focus, white balance, auto exposure...etc functions.

① ZOOM MODE



Decide using of digital zoom function and select zoom speed.

- * ZOOM SPD : 1 ~ 7steps, USER(standard)
- * D-ZOOM : ON / OFF

- ZOOM SPD



ZOOM SPD : Select from 1sept to 7 steps, USER (Standard speed)

Select : or Set ON : Set OFF :

- D-ZOOM



Decide using of digital zoom function.
 D-ZOOM: ON/ OFF

Select : or Set ON : Set OFF :

② FOCUS MODE



In Focus menu, you can set up the focus speed, focus mode, near limit, AF mode and sensitivity.

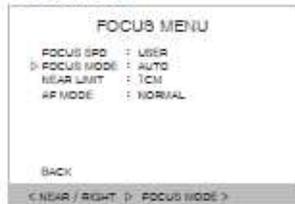
- FOCUS SPD



Set the speed for camera focusing.

Select : or Set ON : Set OFF :

- FOCUS MODE



AUTO: The camera adjusts the focus automatically while monitoring the screen continuously in the auto mode. In the auto focusing mode, zoom key operation is not recognized as the input of the focus key.

Manual: In the manual mode, users can adjust the camera focus manually.

One Push: It will be focused in about 5 seconds after zooming, panning, and return to MANUAL mode automatically. This is for focusing accurately after zooming.

Infinity: infinity focus is the state where a lens forms an image of an object an infinite distance away. This corresponds to the point of focus for parallel rays.

Select : or Set ON : Set OFF :

- NEAR LIMIT



Infinity focus is the state where a lens forms an image of an object an infinite distance away. This corresponds to the point of focus for parallel rays.
 (Over Infinity~ 1.0CM)

Select : or Set ON : Set OFF :

- AF MODE



Set the AUTO FOCUS MODE position

Select : or Set ON : Set OFF :

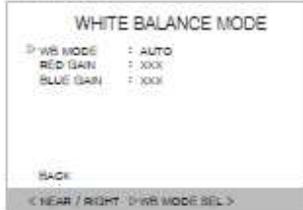
③ WHITE BALANCE Set the white balance of camera.



White balance setting is a function revising color temperature to resolve the problem that screen's colors change by the color temperature's difference according to time.
 RED GAIN: Adjust red color level from 0~20.
 BLUE GAIN: Adjust blue color level from 0~20.

Select : or Set ON : Set OFF :

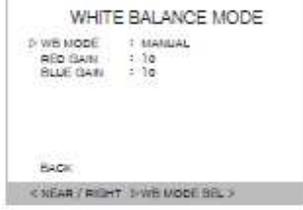
- WB MODE



WB MODE: Set the color depend on white balance.
 WB MODE : Select AUTO, INDOOR, OUTDOOR ONEPUSH, ATW or MANUAL.

Select : or Set ON : Set OFF :

- RED, BLUE MODE



Adjust color lever (RED, BLUE : 01 ~ 20)
 Standard level : RED -> 10 BLUE->110

Select : or Set ON : Set OFF :

④ AUTO EXPO



AE setting is a function adjusting shutter speed according to subject's brightness to get standard amount of exposed light.

AE MODE: Select AUTO, MANUAL, SHUTTER, IRIS.
 EXPOSURE : 00 ~ 20 (Standard 00)
 SLOW SHUTTER: Select AUTO, MANUAL
 SHUTTER: If you set SHUTTER in AE mode, you can control the level value
 IRIS LEVEL: If you set IRIS in AE mode, you can control the level value (00~20)
 DGS LEVEL: Control digital show shutter speed.

- AE MODE



Select AUTO, MANUAL, SHUTTER, IRIS or BRIGHT.

Select : or Set ON : Set OFF :

- EXPO MODE



Set the exposure. (00 ~ 20)

Select : or Set ON : Set OFF :

- SLOW SHUTTER



Select AUTO or MANUAL .

Select : or Set ON : Set OFF :

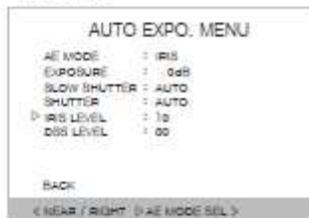
- SHUTTER



If you set SHUTTER in the AE MODE, you can control shutter speed.
(1/30, 1/60, 1/120, 1/240, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/16000, 1/30000, 1/60000, X4, X3, X2)

Select : or Set ON : Set OFF :

- IRIS LEVEL



If you set IRIS in the AE MODE, you can set the IRIS level from 00 to 20

Select : or Set ON : Set OFF :

- DSS LEVEL



Digital Slow Shutter: Control digital show shutter speed.
(00, 01, 02, 03 설정)

Select : or Set ON : Set OFF :

⑤ WDR MODE



Set WDR function
WDR(Wide Dynamic Range)

- WDR MODE



Select ON or OFF.

Select : or Set ON : Set OFF :

- WDR LEVEL



Select from 00 to 03.

Select : or Set ON : Set OFF :

- ATR LEVEL



Select ON or OFF.

Select : or Set ON : Set OFF :

⑥ SPECIAL



In the Special menu, it's available to set special function of the camera

select : or Set ON : Set OFF :

- ICR MODE



Control DAY & NIGHT function.

- ICR MODE



Select AUTO, DAY and NIGHT.

select : or Set ON : Set OFF :

- ICR AUTO THRESHOLD



Set the ICR THRESHOLD

select :  or  Set ON :  Set OFF : 

- ICR AUTO GAP



Select the ICR level.

select :  or  Set ON :  Set OFF : 

- ICR AUTO DELAY



Set ICR auto delay.

select :  or  Set ON :  Set OFF : 

- APERTURE GAIN



APERTURE GAIN: Select aperture gain

select :  or  Set ON :  Set OFF : 

- BACK LIGHT



Select ON/OFF in the BACK LIGHT function.

select :  or  Set ON :  Set OFF : 

- DNR LEVEL



Select the DNR level from AUTO, LEV1, LEV2, LEV3 and OFF.

select :  or  Set ON :  Set OFF : 

⑦ CAMERA RESET

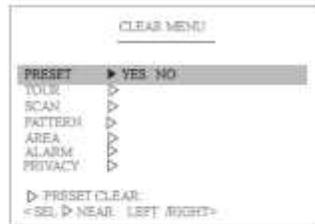
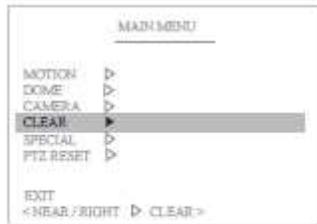


Make initialize the setting value which is set in CAMERA MENU.

select : or Set ON : Set OFF :

5. 5 Clear Settings

Clears the PTZ position and function value. With this function the camera keeps the accuracy of the PTZ position value.



select : or Set ON :

Set OFF :

5. 6 Special Settings

In the PIP menu, it's available to set the details for PIP function.



- PIP CAM DISABLE

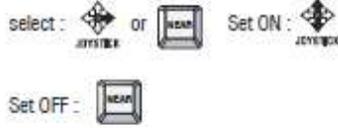


* PIP is not supported.
(Support ANALOG product only)

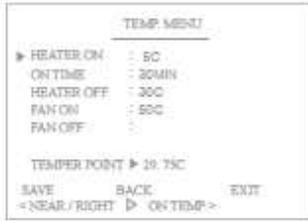
- TEMP SETTING



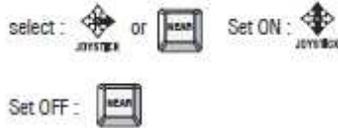
* Set the operating temperature of Fan&Heater in the camera. It shows you the current temperature and you can also set the value manually. The compulsory Fan & Heater operation is a useful function to remove humidity. (Select the operating time of Heater from 10 to 60 min.)



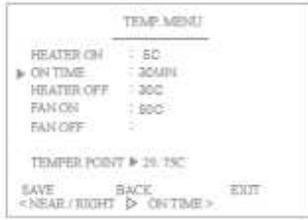
- HEATER ON



* Set the operating temperature of the heater.



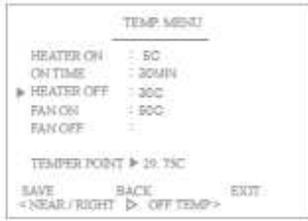
- ON TIME



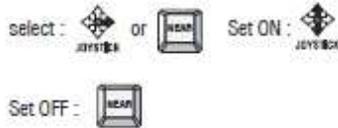
* Set the operating time of the heater.



- HEATER OFF



* Set the temperature of heater OFF.



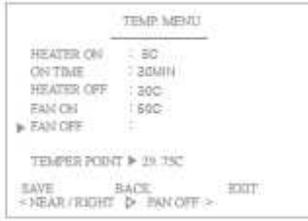
- FAN ON



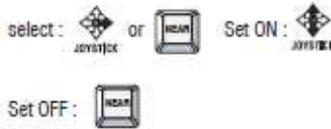
* Set the operating temperature of the fan.



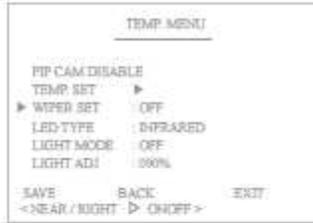
- FAN OFF



* Set the temperature of Fan OFF.



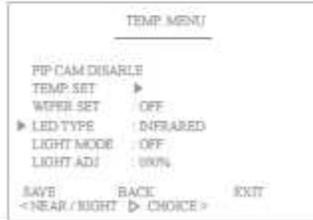
- WIPER SETTING



* Set the wiper function of the camera.(ON/OFF)



- LED TYPE



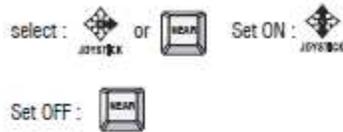
* Select LED type.



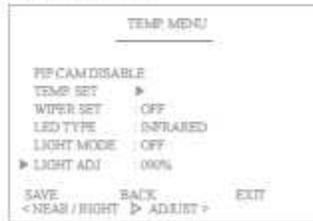
- LIGHT MODE



* Select LIGHT MODE. (DAY / NIGHT)



- LIGHT ADJUSTABLE



* Adjusts the light value.



5. 7 PTZ Reset

It is a reset function and is useful when you change the dipswitches for address, protocol and baud rate.



5. 8 Other Quick Operation Guide

240 + set preset (3sec) = night mode
241 + set preset (3sec)= day mode
242 + set preset (3sec)= auto mode
244 + set preset (3sec)= wiper on
245 + set preset (3sec)= wiper off
246 + set preset (3sec)= heater on
247 + set preset (3sec)= heater off
250 + set preset (3sec)= camera reset
251 + set preset (3sec)= camera refresh
252 + set preset (3sec)= IR on (dip s/w in IR LED mode)
253 + set preset (3sec)= IR off (dip s/w in IR LED led mode)
255 + set preset (3sec)= ptz info

6. SPECIFICATIONS

6. 1 Mechanical Specifications

6. 1. 1 MECHANICAL

Pan	: 360° Continuous Pan, 0.1° to 90°/sec.
Pan Preset Speed	: Max. 150°/sec, ± 0.1° Accuracy
Tilt	: -90° to 90° tilt angle
Tilt Preset Speed	: Max.150°/sec, ± 0.1° Accuracy
Weight	: Approx. 12 Kg/ Packing 15 Kg

6. 1. 2 ENVIRONMENTAL

Construction	: Die-casing Aluminum & *O* Ring sealed : All internal parts are corrosion protected epoxy powder coating
Ingress Protection	: IP66 Outdoor Application
Color	: Black and Ivory
Operating Temp	: -20°C to 50°C (In continuous operation with Fan & Heater)
Storage Temp	: -20°C to 60°C
Humidity	: 0% to 90%

6. 1. 3 FUNCTIONS

Preset	: 255 points, less than 0.1° accuracy
Tour	: 8 programmable
Pattern	: 4 patterns
Scan	: 8 scans
Area	: 4 Area
Alarm	: 2 alarms
Flip	: Auto Flip On/Off
Address	: Up to 255 selectable ID (setting with Dip-switches)
Data Communication Control	: RS-485/ RS-422
Protocol	: Multiple Protocol
Baud rate	: 2400, 4800, 9600, 19200, 38400, 57600 bps selectable

6. 1. 4 ELECTRICAL

Power	: DC 24V Power adaptor included
Consumption	: Operating(3A), Max(4.0A, IR light on, Heater on)
Fan & Heater	: 10W / 3.4W

6. 1. 5 CERTIFICATES

CE EMC, FCC CLASS A, RoHS, e-Mark

6. 2 Camera Specifications

6. 2. 1 Zoom Camera

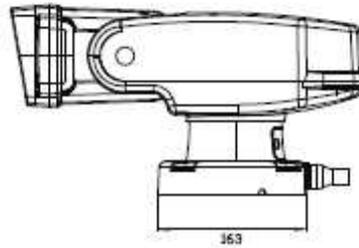
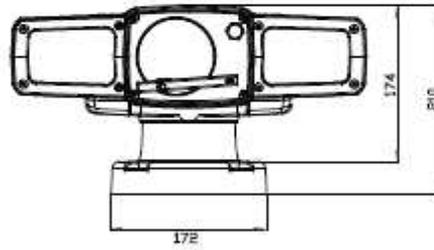
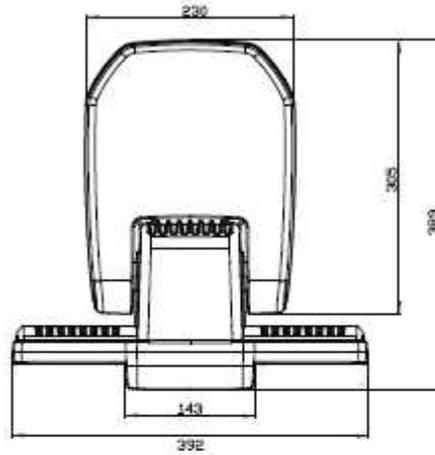
EH-6300

Imager	1/3 Type Exmor CMOS Sensor
Picture elements	2000K pixels
Lens	20x zoom F= 4.7 mm (WIDE) to 94.0 mm(TELE), F1.6 to F3.5
Digital zoom	12x (240x with optical zoom)
Angle of view (H)	Approx. 55.4 degrees (WIDE end), approx. 2.9 degrees (TELE end) (1080i mode) Approx. 37.6 degrees (WIDE end), approx. 2.0 degrees (TELE end) (720p mode)
Min. working distance	10 mm (WIDE end), 1000 mm (TELE end)
Sync system	Internal
Min. illumination (Typical value)	0.5 lx (1/30 sec, 50%, High Sensitivity mode ON) 1.7 lx (1/30 sec, 50%, High Sensitivity mode OFF) ICR-ON Mode 0.095 lx (1/30 sec, 50%, High Sensitivity mode ON) 0.3 lx (1/30 sec, 50%, High Sensitivity mode OFF)
S/N ratio	50 dB (Weight ON)
Wide dynamic range	ON/OFF/AUTO
Noise reduction	ON/OFF (level 5 to 1 / OFF, 6 steps)
Color Enhancement	ON/OFF
Aperture control	16 steps
Preset	6-POSITIONS
Video Output	HD: Analog component (Y/Pb/Pr) Digital (LVDS) Analog SD: VBS

6. 2. 2 LED Specification

	Infra Red LED	White LED
Light Distance	200 m(Manual focusing)	
LED	Super IR LED 30 EA (OSRAM 870n) with Lens 12°	Super White LED 30EA (OSRAM 870n) with Lens 12°

7. DIMENSIONS (mm)



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