Full HD 1080P
OSD User Manual

Thanks for purchasing our product. Before operating the unit, please read the instructions carefully and keep this manual for future reference.

Safety Warning

1. Read this manual carefully before installing the unit
Please read this manual first for correct installation and operation.

2. Never install the camera on a ceiling that cannot hold its weight
The product may fall down and cause damages.

3. Never install the camera near electric or magnetic fields
Install the camera away from TV, radio transmitter, magnet, electric motor, transformer, audio speakers since the magnetic fields generate from above devices would distort the video image.

4. Never install or use the camera in areas exposed to water, oil or gas
The water, oil or gas may result in operation failure, electric shock or fire. Do not use this unit near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.

5. Never face the camera toward the sun
Direct sunlight or severe ray may cause fatal damage to sensor and internal circuit.

6. Power Cord Protection
Touching the wet power cord with hands or touching the power cord with wet hands may result in electric shock. Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, playing particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

7. Attachments
Do not use attachment not recommended by the product manufacturer as they may cause hazards.

8. Object and Liquid Entry
Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind onto the product.

9. Do not operate the camera in environments where the temperature, humidity or power source is beyond the specified ones
Use the camera in suitable environments where the temperature is within -10°C~50°C and humidity below 80%. Use the input power source as this instruction indicated.

10. Cleaning
Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

11. Never disassemble the camera nor put impurities in it
Disassembly or impurities may result in trouble or fire.

12. Stop using when the product emits smoke or abnormal heat

13. Servicing
Do not attempt to repair this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

14. Retain Instructions
THE SAFETY AND OPERATING INSTRUCTIONS SHOULD BE RETAINED FOR FUTURE REFERENCE.
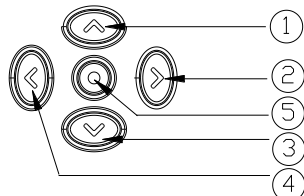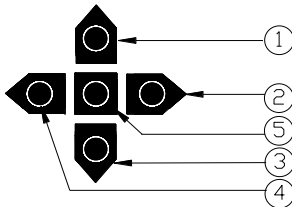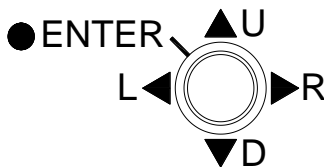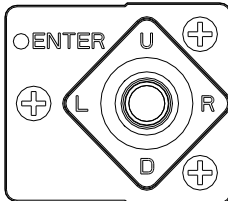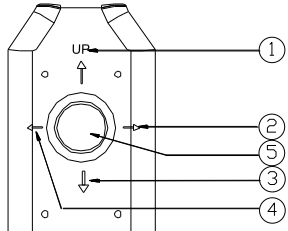
NOTE:
The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

Table of Contents

1. <u>OSD Operation</u>

1.1　OSD Control Buttons

Box Camera 1: Side Panel	Box Camera 2: Back Panel
Dome Camera 1	**Dome Camera 2 / Bullet Camera**
Bullet Camera	
	Note: The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

① **UP**
Use this button to move the cursor upwards to the desired item.

② **RIGHT**
Use this button to move the cursor to the right to select or to adjust the parameters of the selected item. The parameter increases when the right button is pressed.

③ **DOWN**
Use this button to move the cursor downwards to the desired item.

④ **LEFT**
Use this button to move the cursor to the left to select or to adjust the parameters of the selected item. The parameter decreases when the left button is pressed.
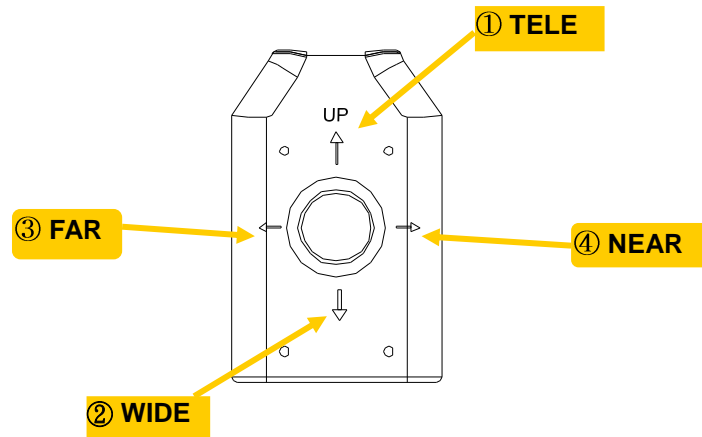
⑤ **ENTER**
Use this button to display the main menu, to confirm and to enter the submenus when they're available. Items with the symbol "<┘" in the end contain sub-menus. For further settings of those items, select the desired item with the button ▲ or ▼ and press the ENTER button to bring up the sub-menu and edit.

1.2   Motorized Zoom Operation

*To Use Motorized Zoom via OSD Control Buttons: (For MV models only)

Please **DO NOT Enter OSD**. If you have accessed the OSD menu, please **EXIT before using** the motorized zoom function. Zoom and Focus functions can be operated either by **clicking** or **long pressing** the corresponding buttons.

① **TELE**
   Use this button to **Zoom IN**.

② **WIDE**
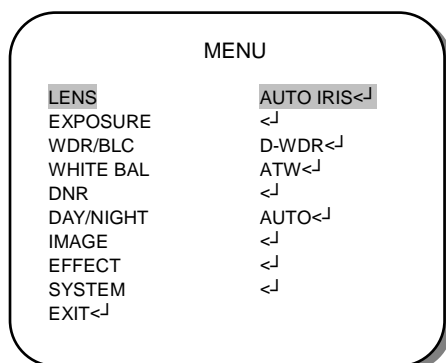   Use this button to **Zoom OUT**.

③ **FAR**
   Use this button for **Manual Focus "FAR"**.

④ **NEAR**
   Use this button for **Manual Focus "NEAR"**.

1.3 OSD Operation

```
            MENU

LENS            AUTO IRIS↵
EXPOSURE        ↵
WDR/BLC         D-WDR↵
WHITE BAL       ATW↵
DNR             ↵
DAY/NIGHT       AUTO↵
IMAGE           ↵
EFFECT          ↵
SYSTEM          ↵
EXIT↵
```
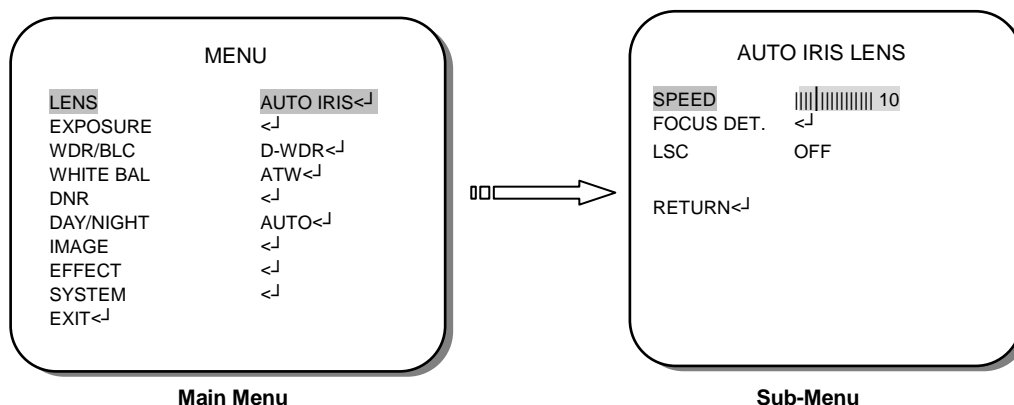
1. **Start to operate the OSD menu**

   Press the **ENTER** button to bring up the OSD main menu to start operating OSD menus.

2. **Select items with the cursor buttons**

   - Use buttons ▲ and ▼ to move the cursor up and down.
   - Use buttons ◄ and ► to switch the modes or to adjust the parameters or the values of the settings.

3. **Switch to the sub-menu**

   Items with the symbol "↵" in the end contain sub-menus. For further settings of those items, select the desired item with the button ▲ or ▼ and press the **ENTER** button to bring up the sub-menu and edit.

```
            MENU                          AUTO IRIS LENS

LENS            AUTO IRIS↵        SPEED        ||||||||||||||| 10
EXPOSURE        ↵                 FOCUS DET.   ↵
WDR/BLC         D-WDR↵            LSC          OFF
WHITE BAL       ATW↵
DNR             ↵                 RETURN↵
DAY/NIGHT       AUTO↵
IMAGE           ↵
EFFECT          ↵
SYSTEM          ↵
EXIT↵
```
Main Menu   **Sub-Menu**

4. **Return to the previous page**

   Select **RETURN** and press the **ENTER** button to return to the previous page.

5. **Exit the OSD menu**

   Select **EXIT** and press the **ENTER** button to save the settings and exit the OSD menu.

2. <u>Camera OSD</u>

To operate the camera OSD setting, use the control key pad to control it. For some models, you might need to open the control panel case to access the control key panel. Press the **Enter** button which in the center of the control panel to bring up the "**MENU**" on the TV/Monitor screen as below. Please check the OSD content tables to find out the function you need.
*Note: Function Names and Default Values may vary depending on models.**
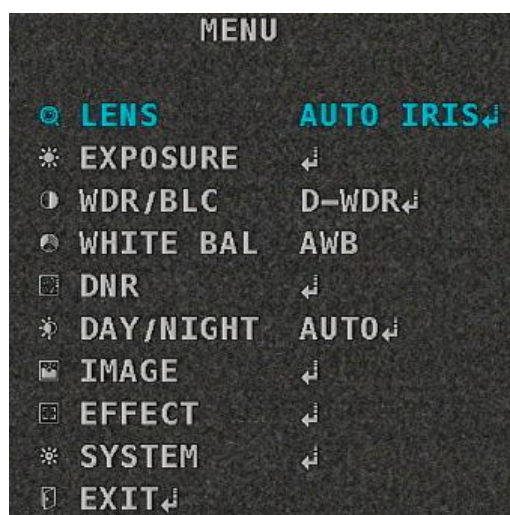
■ **Menu**

MENU	Default Value	Alternative Options
LENS	AUTO IRIS↵	MANUAL↵
EXPOSURE	↵	See **Exposure** Table
WDR/BLC	D-WDR↵	OFF, HLC↵ , BLC↵
WHITE BAL	AWB or ATW	PUSHLOCK↵ , MANUAL↵ , ATW or AWB
DNR	↵	See **DNR** Table
DAY/NIGHT	AUTO ↵ or IR SYNC↵	B/W↵ , COLOR
IMAGE	↵	See **Image** Table
EFFECT	↵	See **Effect** Table
SYSTEM	↵	See **System** Table
EXIT	↵	

■ **Exposure**

EXPOSURE	Default Value
MODE	INDOOR
BRIGHTNESS	8
FLICKER	ON
SHUTTER	---↵
AGC MAX	18
SENS-UP	OFF
RETURN	↵

■ **DNR**

DNR	Default Value
SMART DNR	ON
2DNR	MIDDLE
3DNR	MIDDLE
RETURN	↵

■ **Image**

IMAGE	Default Value
SHARPNESS	3
SATURATION	10

GAMMA	0.5
MIRROR	OFF
FLIP	OFF
BLACK LEVEL	15
RETURN	↵

■ Effect

EFFECT	Default Value
MOTION	ON
PRIVACY	OFF
D-ZOOM	1.0X
DEFOG	OFF
RETURN	↵

■ System

SYSTEM	Default Value
DIGITAL OUT	1080P
FRAME RATE	30 FPS
ANALOG OUT	NTSC
DVR	↵
CABLE LENGTH	0-200M
COLORBAR	OFF
LANGUAGE	ENGLISH
FW 4.0 AH120	160907107NBXJC04
RESTORE	NO
RETURN	↵

2.1 Menu

In the "**MENU**" of camera OSD, there are several sub-menus and items can be selected to modify the settings.
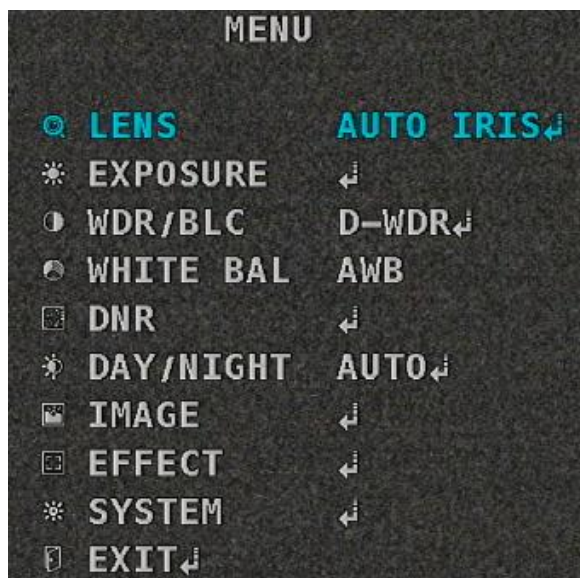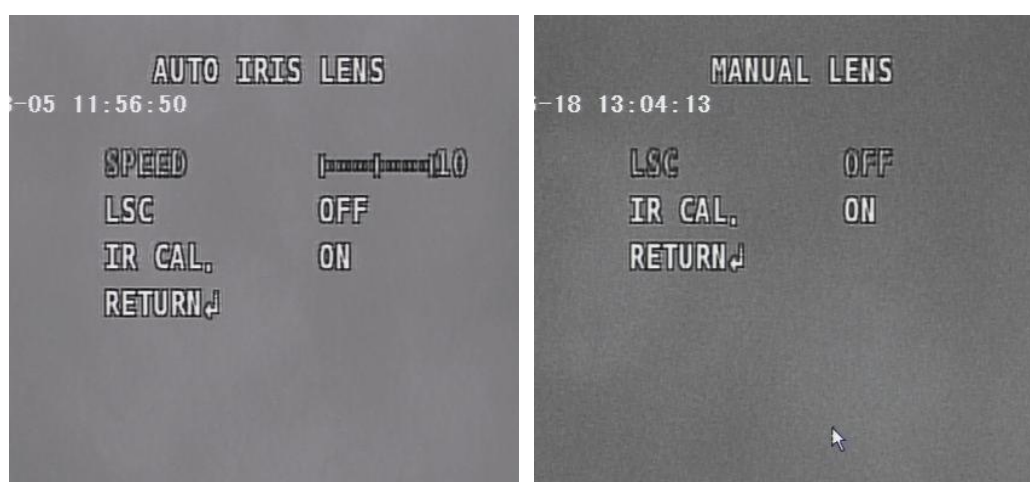

■ **LENS:**
To select the lens is on AUTO IRIS or on MANUAL. Models with **Motorized lens** have **IR Calibration** function enabled.

■ **EXPOSURE:**
This is a sub-menu for exposure setting. Please check the details in its section.

■ **WDR/BLC:**
To select the mode of WDR/BLC. Models with **PoC** function have **no WDR option**.

■ **WHITE BAL:**
To select the mode of white balance.

■ **DNR:**
To adjust the mode of DNR. **2DNR/3DNR** can be set among **OFF/LOW/MIDDLE/HIGH** options and the default is MIDDLE.

■ **DAY/NIGHT:**
To select the mode of day/night. Keep camera display in color, monochromic (B/W), or synchronized with IR.

■ **IMAGE:**
This is a sub-menu for image setting. Please check the details in its section.

■ **EFFECT:**
This is a sub-menu for effect setting. Please check the details in its section.

■ **SYSTEM:**
This is a sub-menu for system setting. Please check the details in its section.

■ **EXIT:**
After you finished all the settings, to exit the OSD, please select the "**EXIT**" on the "**MENU**". Just push the "**Enter**" button, and then it will quit the setting menu.

2.2   LENS

In the "**LENS**" of camera OSD, there are some items can be selected to modify the settings. Users can switch lens mode between AUTO IRIS and MANUAL and adjust the optical settings accordingly.


For non-motorized lens models

For motorized lens models

■ **SPEED:**
To modify the value of lens speed accordingly.

■ **FOCUS DET. Or IR CAL.:**
To enter the advanced setting for assisting the **Focus Detection**. Optimal focus adjustment can be achieved easily with built-in Focus Detection.

Models with **Motorized Lens** have **IR CAL. (Calibration)** function enabled (ON) instead.

■ **LSC:**
To enable or disable the function of Lens Shading Compensation.

■ **RETURN:**
Return to upper level of OSD menu.

2.3 Exposure

In the "**EXPOSURE**" of camera OSD, there are some items can be selected to modify the settings. The main function of this page is about the optical settings.

AUTO IRIS LENS

MANUAL LENS
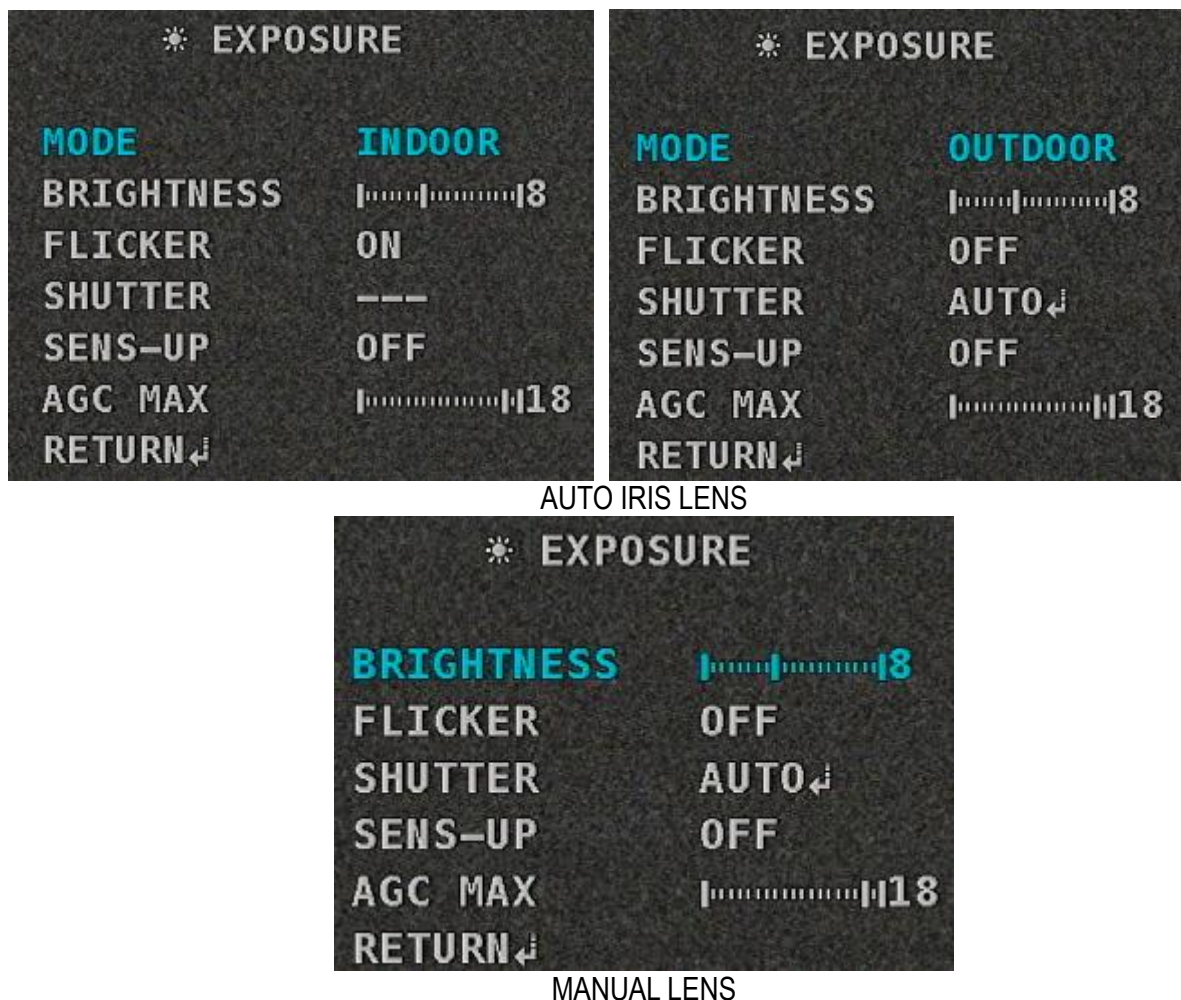
■ **MODE:**
INDOOR is recommended for BOX type models. **OUTDOOR** is recommended for other models with either AUTO IRIS or AUTO IRIS plus IR function.

■ **BRIGHTNESS:**
To modify the value of brightness.

■ **FLICKER:**
To enable or disable FLICKER function. The default is OFF.

■ **SHUTTER: (AUTO IRIS LENS)**
AUTO, MANUAL, 2 options available. The value of **SHUTTER MIN/MAX** speed for **AUTO and MANUAL** modes can be further adjusted as shown in the screenshots below.
The defaults of SHTTER MIN/MAX are **1/30 and 1/120** under INDOOR mode; while they are **1/30 and 1/500** under OUTDOOR mode. There is no default SPEED difference between the two modes if MANUAL SHUTTER is chosen. Please refer to the screenshots below.

AUTO SHUTTER (INDOOR)


AUTO SHUTTER (OUTDOOR)

MANUAL SHUTTER

■ **SHUTTER: (MANUAL LENS)**
AUTO, MANUAL, 2 options available. The value of **SHUTTER MIN/MAX** speed for **AUTO and MANUAL** modes can be further adjusted as shown in the screenshots below.
The defaults of SHTTER MIN/MAX are **1/30 and 1/30000** for AUTO SHUTTER; while the default MANUAL SHUTTER SPEED has no change (1/30). Please refer to the screenshots below.
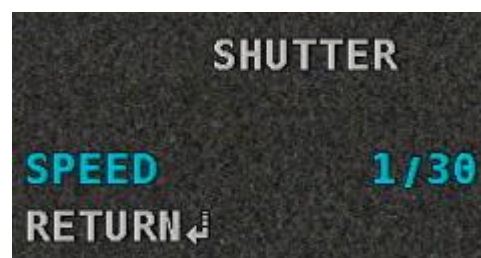
AUTO SHUTTER

MANUAL SHUTTER

■ **SENSE-UP:**
To modify the "sense up" speed setting from 2 to 32x.

■ **AGC MAX:**
To modify the value of AGC (Automatic Gain Control). The bigger the number, the brighter the screen can be. Note that the noise will increase as well.

■ **RETURN:**
Return to upper level of OSD menu.

2.4 WDR/BLC

In the "**WDR/BLC**" of camera OSD, total 4 options are available and 3 of which have advanced settings menu for adjustment. Please see details below.

■ **D-WDR:**
LEVEL can be adjusted, but it's disabled under Factory Default (Restore setting).

■ **HLC:**
LEVEL: To adjust the value from 0 to 10. Default is 10.
MODE: To select the mode between ALL DAY and NIGHT ONLY.

■ **BLC:**
To adjust the Horizontal/Vertical value for BLC (inner frame in the screenshot) position and size separately.

■ **OFF:**
To disable WDR/BLC function.

■ **RETURN:**
Return to upper level of OSD menu.

2.5   WHITE BAL

In the "**WHITE BAL**" of camera OSD, total 4 options are available and 2 of which have advanced settings menu for adjustment. Please see details below.
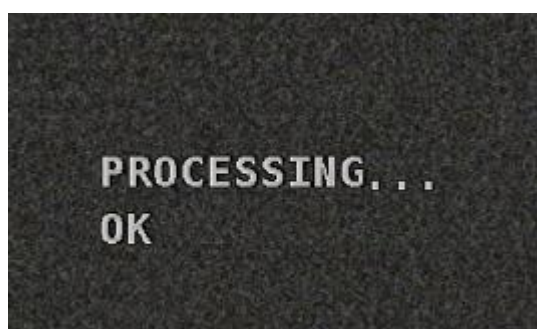

■ **MANUAL:**

KELVIN: To adjust the KELVIN (Color temperature) value among LOW/MIDDLE/HIGH.
R-GAIN: To adjust the R-GAIN (RED GAIN) value from 0 to 20.
B-GAIN: To adjust the B-GAIN (BLUE GAIN) value from 0 to 20

■ **PUSH LOCK:**
Press ENTER to lock white balance according to the current display (e.g. point the camera towards a sheet of white paper). The camera will start processing as shown in the screenshot above.

■ **AWB:**
Auto White Balance.

■ **ATW:**
Auto Tracking White balance.

■ **RETURN:**
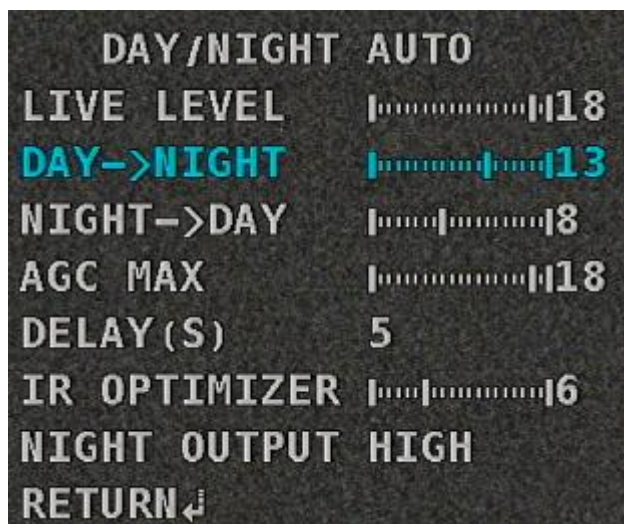Return to upper level of OSD menu.

2.6 DNR

In the "**DNR**" of camera OSD, there are some items can be selected to modify the settings. The main function of this page is to adjust the digital noise reduction.


■ **SMART DNR:**
To enable or disable SMART DNR mode. Default setting is ON as of recommended use.

■ **2DNR:**
To modify the value among OFF/LOW/MIDDLE/HIGH. Default setting is MIDDLE for enhancing image quality under low light.

■ **3DNR:**
To modify the value among OFF/LOW/MIDDLE/HIGH. Default setting is MIDDLE for enhancing image quality under low light.

■ **RETURN:**
Return to upper level of OSD menu.

2.7   DAY/NIGHT

In the "**DAY/NIGHT**" of camera OSD, **AUTO, IR SYNC, and B/W,** can be selected to modify the settings. Selecting COLOR will keep the camera in color display and B/W is on the contrary. IR SYNC makes the camera view synchronize with IR LED to switch COLOR or B/W based on the brightness of the environment.

```
        DAY/NIGHT AUTO
LIVE LEVEL      |···········|·|18
DAY->NIGHT      |·······|···|13
NIGHT->DAY      |·····|·······|8
AGC MAX         |···········|·|18
DELAY(S)        5
IR OPTIMIZER    |···|·········|6
NIGHT OUTPUT HIGH
RETURN↵
```

◼ **LIVE LEVEL:**
The camera will automatically detect the lighting condition of the current environment and show the number. Bigger number means brighter environment.

◼ **DAY->NIGHT :**
In collaboration with LIVE LEVEL function, set the value for the camera to switch from DAY to NIGHT display.

◼ **NIGHT->DAY:**
In collaboration with LIVE LEVEL function, set the value for the camera to switch from NIGHT to DAY display.

◼ **AGC MAX:**
To modify the value of AGC (Automatic Gain Control). The bigger the number, the brighter the screen can be. Note that the noise will increase as well.

◼ **DELAY (S):**
To modify the delay time value from 0-255.

◼ **IR OPTIMIZER:**
To adjust the IR Optimizer value to improve the image exposure issue when IR is turned on. The dark side of the image will also be optimized in terms of even brightness to enhance the effect as a whole.

◼ **NIGHT OUTPUT:**
To adjust the setting value between HIGH and LOW under NIGHT OUTPUT. This option will not be shown for models with FIXED IRIS plus IR or AUTO IRIS plus IR to avoid IR switching errors.
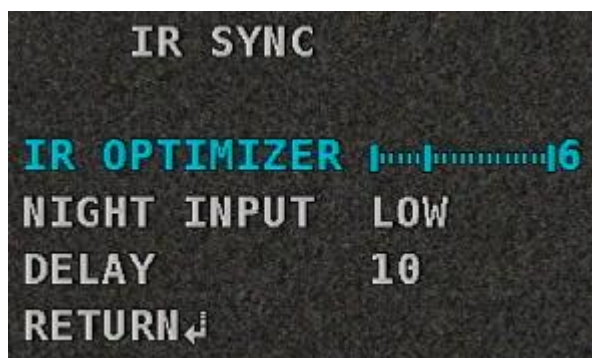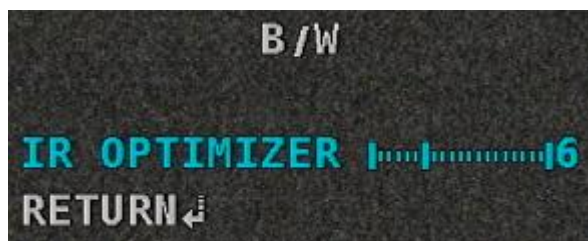
■ **IR OPTIMIZER:**
To adjust the IR Optimizer value to improve the image exposure issue when IR is turned on. The dark side of the image will also be optimized in terms of even brightness to enhance the effect as a whole.

■ **NIGHT INPUT:**
To adjust the setting value between HIGH and LOW under NIGHT INPUT. Camera display in COLOR or B/W depends on the HIGH/LOW input on the DNI port of the rear panel. This function works only for box models when syncing with IR illuminators. No adjustment is needed for DOME and BULLET models.

■ **DELAY:**
To modify the delay time value from 0-255.

■ **IR OPTIMIZER:**
To adjust the IR Optimizer value to improve the image exposure issue when IR is turned on. The dark side of the image will also be optimized in terms of even brightness to enhance the effect as a whole.

■ **RETURN:**
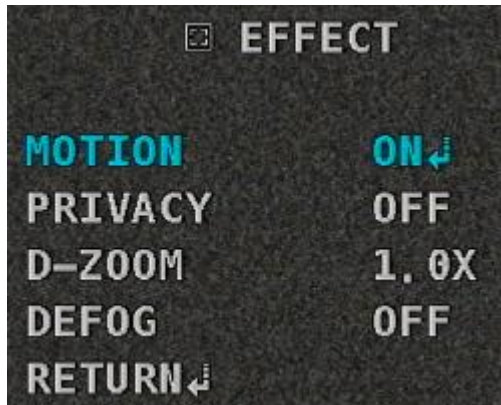Return to upper level of OSD menu.

2.8   Image

In the "**IMAGE**" of camera OSD, there are some items can be selected to modify the settings. The main function of this page is about the image settings.

■ **SHARPNESS:**
To modify the value of sharpness.

■ **SATURATION:**
To modify the value of saturation.

■ **GAMMA:**
To modify the value of gamma.

■ **MIRROR:**
To enable or disable the mode of image mirror.

■ **FLIP:**
To enable or disable the mode of image flip.

■ **BLACK LEVEL:**
To adjust the value of black level.

■ **RETURN:**
Return to upper level of OSD menu.

2.9 Effect

In the "**EFFECT**" of camera OSD, there are some items can be selected to modify the settings.
The main function of this page is about the camera effects.

■ **MOTION:**
To enable the "motion" effect or not. Enable this will go its sub-menu for motion setting. Please check the details in its section.

■ **PRIVACY:**
To enable the "privacy" effect or not. Enable this will go its sub-menu for privacy setting. Please check the details in its section.

■ **D-ZOOM:**
To modify the value of Digital-zoom.

■ **DEFOG:**
To enable the "defog" effect or not. Enable this will go its sub-menu for defog setting. Please check the details in its section.

■ **RETURN:**
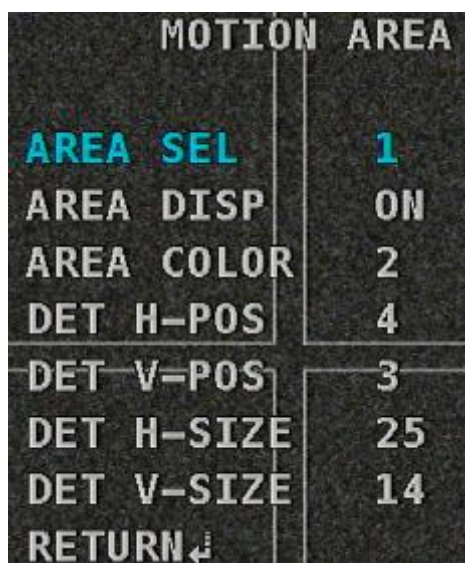Return to upper level of OSD menu.

2.10   Motion

In the "**MOTION**" of camera OSD, there are some items can be selected to modify the settings. The main function of this page is about the motion detection.

■ **DET DISP:**
To enable or disable the detection display function. Please see below for advanced settings.

DET DISP ON

■ **AREA SEL:**
4 areas are available as shown in the screenshot above. 1 refers to the upper left one, 2 is the upper right, 3 is the lower left and 4 is the lower right.

■ **AREA DISP:**
To enable or disable the area display.

■ **AREA COLOR:**
To select the area color from 0 to 6.

■ **DET H-POS:**
To adjust the horizontal position value of the selected area.

■ **DET V-POS:**
To adjust the vertical position value of the selected area.

■ **DET H-SIZE:**
To adjust the width (horizontal size value) of the selected area.

■ **DET V-SIZE:**
To adjust the height (vertical size value) of the selected area.

■ **SENSITIVITY:**
To adjust the sensitivity value for detection from 0 to 20.

■ **ALARM:**
To enable or disable the alarm function.
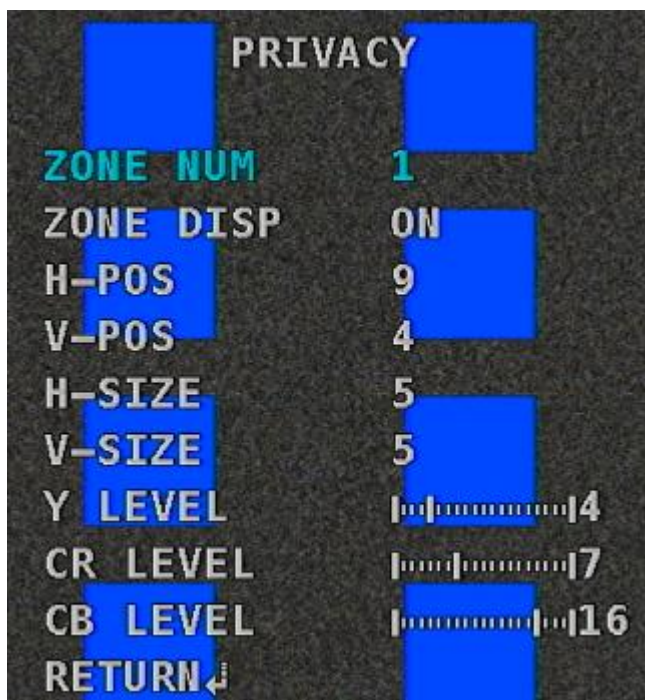
■ **ALARM TIME:**
To adjust the alarm time value from 0 to 20.

■ **RETURN:**
Return to upper level of OSD menu.

2.11   Privacy

In the "**PRIVACY**" of camera OSD, there are some items can be selected to modify the settings.
The main function of this page is about the privacy mask size and position.

■ **ZONE NUM:**
To select number of zone for privacy mask from 1 to 16.

■ **ZONE DISP:**
To enable or disable the zone display.

■ **H-POS:**
To adjust the horizontal position value for privacy mask from 0 to 60.

■ **V-POS:**
To adjust the vertical position value for privacy mask from 0 to 40.

■ **H-SIZE:**
To adjust the horizontal size value for privacy mask from 0 to 40.

■ **V-SIZE:**
To adjust the vertical size value for privacy mask from 0 to 40.

■ **Y-LEVEL:**
To adjust the luminance level for privacy mask from 0 to 20.

■ **CR LEVEL:**
To adjust the color red level for privacy mask from 0 to 20.

■ **CB LEVEL:**
To adjust the color blue level for privacy mask from 0 to 20.

■ **RETURN:**
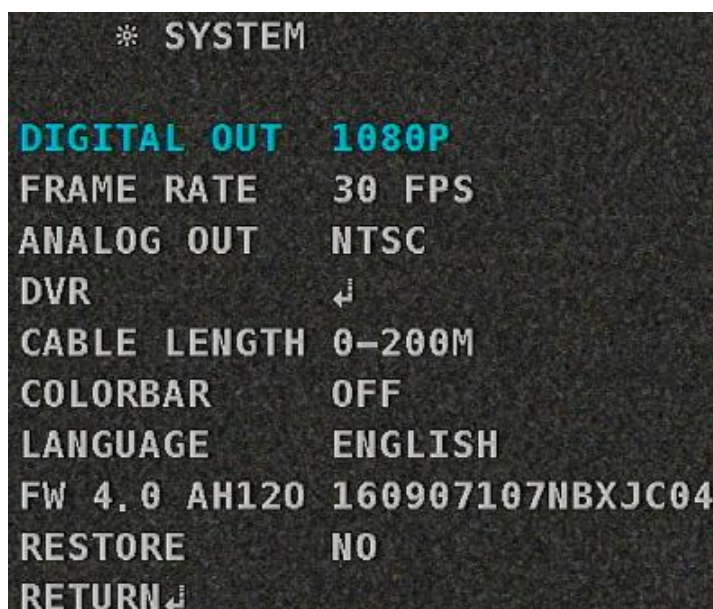Return to upper level of OSD menu.

2.12   Defog

In the "**DEFOG**" of camera OSD, there are some items can be selected to modify the settings. The main function of this page is about the fog reduction effects.
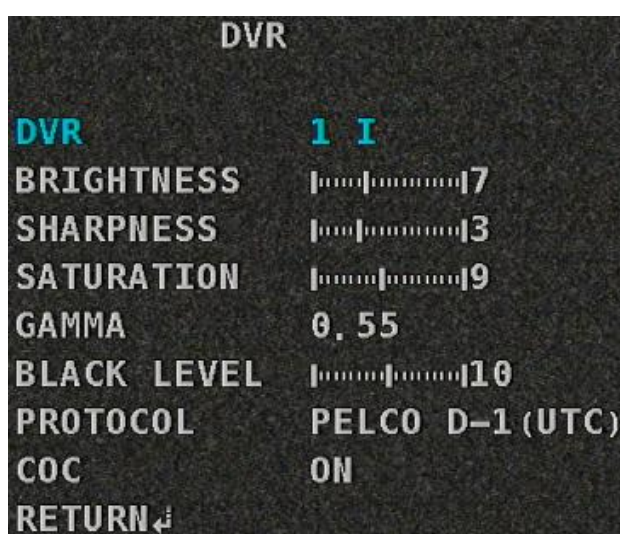

- ■ **MODE:**
  To select the mode of fog reduction.

- ■ **LEVEL:**
  To adjust the level of fog reduction.

- ■ **RETURN:**
  Return to upper level of OSD menu.

2.13 System

In the "**SYSTEM**" of camera OSD, there are several sub-menus and items can be selected to modify the settings. The main function of this page is about the video format information and OSD firmware version.

```
      ☀ SYSTEM

DIGITAL OUT   1080P
FRAME RATE    30 FPS
ANALOG OUT    NTSC
DVR           ↵
CABLE LENGTH  0-200M
COLORBAR      OFF
LANGUAGE      ENGLISH
FW 4.0 AH120  160907107NBXJC04
RESTORE       NO
RETURN↵
```

■ **DIGITAL OUT:**
   To select the digital output setting between 1080P and 720P.

■ **FRAME RATE:**
   To select the frame rate setting between 30FPS and 25FPS.

■ **ANALOG OUT:**
   To select the analog output setting between NTSC and PAL.

```
          DVR

DVR             1 I
BRIGHTNESS      |┅┅|┅┅┅┅|7
SHARPNESS       |┅┅|┅┅┅┅|3
SATURATION      |┅┅┅┅|┅┅┅┅|9
GAMMA           0.55
BLACK LEVEL     |┅┅┅┅|┅┅┅┅|10
PROTOCOL        PELCO D-1(UTC)
COC             ON
RETURN↵
```

■ **DVR:**
   To select the DVR model by brands and adjust its corresponding image related settings.

   PROTOCOL:
   PELCO D-1, PELCO D-2 and SH-C three protocols to cooperate with the selected DVR.

COC:
To enable or disable the function of **Control over Coaxial cable**.

■ **CABLE LENGTH:**
To select the Transmission Distance from 0-200M or over 200M supported by the camera with **Distance Compensation Setting**.

■ **COLORBAR:**
To enable or disable the mode of COLORBAR.

■ **LANGUAGE:**
To select the OSD language among ENGLISH, TRADITION CHINESE, SIMPILIFIED CHINESE, and JAPANESE.

■ **FW 4.0 AH120:**
The firmware version number of this camera. (Version may vary depending on production)

■ **RESTORE:**
To restore all settings to the default value.

■ **RETURN:**
Return to upper level of OSD menu.

6633A00091