

AHD HD Camera

(OSD、Day/Night Optional)



USER'S MANUAL


Apply to: Box Camera IR Waterproof Camera Dome Camera


Thank you for purchasing our products, please read the manual carefully before operating

Version: YX-ZXIMX23814V01 54#

Safety Precaution

	Warning Don't dismantle without authority, becareful thunder striking.	
Note: To avoid thunder-strking, please don't open the backcover, the maintenance must be made by our authorized serviceman.		

 This symbol means that there might exist uninsulated dangerous voltage inside the case, be careful of electric shock.

 This symbol reminds you to pay attention to important operation and maintenance instructions in the accompanied information.

Warning

- In order to prevent damage caused by fire or electric shock, please do not put cameras exposed in the moist environment or rainwater.
- Please make sure the adapter is consistent with product specifications, otherwise it might cause fire, electric shock or damage.
- Pay attention to polarity of the adapter, it might cause some accidents like fires.
- Please don't connect multiple cameras with the same adapter at the same time ,overloading of adapter capacity may cause fires.
- Power supply must be firmly fixed so as not to loose to cause fires.
- If the device gets " abnormal smell or smoke", please stop it immediately and contact with our customer service center.
- Please contact our local distributor or our maintenance office authorized by our company, otherwise we won't promise warranty.
- Please do not splash water on the product components when cleaning.

Notes

- Do not make the products under great impact or stay away from strong electromagnetic interference and vibration.
- There are some sophisticated parts inside the camera, therefore, during transportation and installation, please avoid the damage cause by stress or severe vibration. For the sake of safety, please do not switch on power before accomplishing all installation.
- Please comply with all electrical safety standards during operation, camera or signal transmission cable should maintain a sufficient distance (50 meters) with high-voltage equipment or cables, if necessary, lightning and thunder protective measures must be taken.
- Please install the camera in well-ventilated environment.
- Please do not make the camera face sunshine or other strong light directly in case of any damage to the lens and the sensor.
- The temperature and humidity range for cameras work are $-10 \sim 50 \text{ }^{\circ}\text{C}$, less than 95% separately, please do not start cameras beyond this range.
- To avoid lightning strikes, please make sure the installation of power supply ground line in a good condition.
- To prevent the equipment from damage by shower or splash of water, please do not place the device substances such as liquid.

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I、Features

This products use SONY progressive CMOS image sensor, with Nextchip NVP2431H DSP, 720P, high definition, natural and smooth image quality. With standard AHD connector, no compression, no delay; with ICR filter to get Day and Night vision; OSD menu and RS-485 are optional; Camera is widely used in places like Financial Places, Telecom, Supermarket, Hotel, Government, School, Airport, Factory, Police, Judicature places which demand high definition image quality.

1、New generation AHD 720P program

SONY progressive Exmor CMOS image sensor, with Nextchip NVP2431H DSP, 720P, high definition, with standard AHD connector.

2、High-definition resolution

Maximum color resolution output: 1280 (H) x720(V).

3、Day/Night

D/N cameras work just like color cameras during the day and switch to a black and white mode at night, using a removable IR cut filter.

4、WDR

WDR could resolve the image problem when there's dramatic light difference between outdoor and indoor areas so that all the details both in the light zone and dark zone could be seen clearly.

5、3D DNR Digital noise reduction technology

Digital Noise Reduction Technology enhances the ability to handle with signal noise ratio, this technology allows camera to receive more clear and vivid images even under low-light conditions.

6、BLC

BLC function can adjust the surroundings with too weak and strong brightness, to get the clear optimization picture.

7、MD

Motion detection function can trigger alarm or recording when sensing moving objects, users can set the sensitivity and multiple detection zones.

8、PRIVACY

The Privacy Mask can block out sensitive areas from view, covering the areas with a solid block of color, you can adjust the mask position and size.

9、RS-485

All the OSD Menu can be set through RS-485.

10、Smart IR

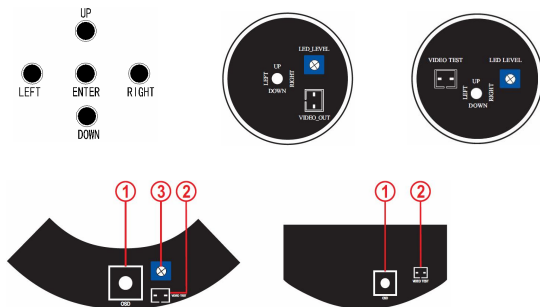
When getting a picture of nearby object, the reflected IR light is too strong to cause the exposure. However, Smart IR Control could sense the IR light and intelligently control it in order to eliminate the exposure and get a perfect image.

11、 OSD

On Screen Display Menu.

II Interface Function Introduction

2.1 Interface Function Description



1	ENTER	Use this button to display the main menu, to confirm and to enter the submenus when they are available.
	UP/DOWN	Use this button to move the cursor upwards/downwards to the desired item
	LEFT/RIGHT	Use this button to move the cursor to the left/right to select or to adjust the parameters of the selected item.
2	VIDEO TEST/VIDEO OUT	No function
3	LED LEVEL	For the customer to customize the IR brightness

III OSD

Press the "Enter" button; the camera will pop up the main menu (as shown in picture 1) :



3.1 Lens mode

2 different modes of LNES, DC and Manual, users can choose the mode according to the using lens.

3.1.1 Manual lens

When using fixed iris or manual iris lens, please choose Manual mode.

3.1.2 DC lens

When using Auto Iris Lens, please choose DC mode.



3.2 Exposure

Move the cursor to the main menu "EXPOSURE", press the "Enter" button to enter the sub-menu.



(1) >Shutter Speed

Select to set the camera shutter speed. The shutter speed can be fast or slow, the value is AUTO, 1/25~1/10000, 2X~30X, users can select the shutter speed value according to the condition. When using Auto Iris Lens, the shutter speed default is “1/25”; When using Manual Iris Lens, the shutter speed default is “AUTO”.

(Suggest X2-X4. if the circumstance with high brightness or the object moving quickly, the shutter speed value can be lower, suggest 1/250).

(2) > AGC Control

AGC: 1~15 adjustable, this function can enhance the camera image brightness, also can enhance the camera image noise, can be adjusted by the user according to the real condition.

(3) >SENS-UP

SENS-UP can enhance the brightness of night vision, “OFF/AUTO” adjustable, the value of SENS-UP cannot too big, or the image will be leaving streaks at night.

(4) >Brightness

Select to set the camera image brightness, 1-100 adjustable. Users can set the brightness according to the condition. The default value is 48.

(5) >DWDR

DWDR is digital wide dynamic range, or software DWDR function, when there is difference between weak and strong light in the surroundings, the strong part will overexposure and the image is white; meanwhile, the weak part will be dark due to the effect of strong light. Turn on DWDR, it can fix this situation. DWDR will reduce the exposure of strong part, and enhance the exposure of weak part; therefore, it can get a clear whole picture.

The DWDR with “Auto/off”, in the “Auto” mode, 0-8 is optional, users

can select to set the value DWDR according to the light in the surroundings, to get the best picture.

(6) >Through-frog function.

“Through-frog function” means when camera works outdoor with bad fog and low visibility. It improves image definition to improve visibility through the adjustment of camera internal software.

“Through-frog function” has two select--Auto/ Off. When it is AUTO, you can set area, size and level. Users can set to reach best result according to the actual situation.

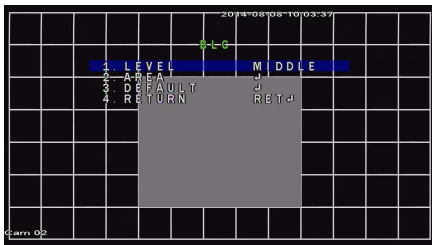
(7) >Return

After finished setting, press ‘up’ ‘down’ key to move cursor to ‘Return’, then use ‘Left’ and ‘Right’ key to select ‘Return’ (Means return to previous menu). Or ‘Save& Exit’ (Means exit menu setting), then press ‘Enter’ to perform the function of return.

3.3 Back light Compensation

(1) >BLC

Press ‘Left’ ‘Right’ at ‘Back Light’ mode menu to select ‘BLC’ and press ‘Enter’ into ‘BLC’ submenu.



(a) >Level. Set the level of BLC. High, middle, low for choose.

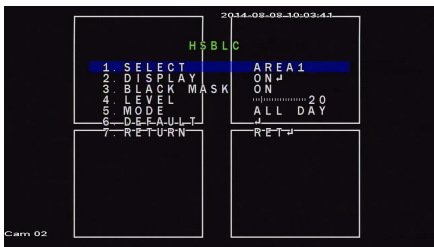
(b) >Area. Set the area, size etc.

(c) >Default. Press ‘Enter’, BLC related setting restore factory settings.

(d) >Return

After finished setting, press ‘up’ ‘down’ key to move cursor to ‘Return’, then use ‘Left’ and ‘Right’ key to select ‘Return’ (Means return to previous menu). Or ‘Save& Exit’ (Means exit menu setting), then press ‘Enter’ to perform the function of return.

(2) >HSBLC



- (a) >Select. There are 4 HSBLC areas for user to choose.
- (b) >Display. Set location, size etc. for selected area.
- (c) >Black Mask. Set whether black mask for HSBLC area. ON/ OFF
- (d) >Level. Set HSBLC level, 0~100 optional.
- (e) >Mode. Set HSBLC mode. 'All day' and 'Night' optional
- (f) >Return

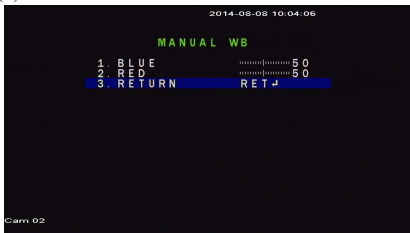
After finished setting, press 'up' 'down' key to move cursor to 'Return', then use 'Left' and 'Right' key to select 'Return' (Means return to previous menu). Or 'Save& Exit' (Means exit menu setting), then press 'Enter' to perform the function of return.

3. 4 White Balance

(1) >Used to restore the authenticity of color when it's affected by the change of color temperature, user can select different WB mode according to actual needs. AWB/ATW/AWC→SET/Indoor mode/Outdoor mode/Manual mode.

Remark: Normally user only needs to use ATW.

(2) >Manual mode



(a) >Red, Blue. User can adjust red/ blue gain according to actual need to reach best image effect.

(b) >Return

After finished setting, press ‘up’ ‘down’ key to move cursor to ‘Return’, then use ‘Left’ and ‘Right’ key to select ‘Return’ (Means return to previous menu). Or ‘Save& Exit’ (Means exit menu setting), then press ‘Enter’ to perform the function of return.

3.5 Day/Night

There are 4 modes of day/night: color mode, black and white mode, Ext mode, and auto mode.

(1) >Color mode

In the ‘Day&Night’ menu, press ‘Left’ ‘Right’ key to select ‘Color Mode’. At the moment image will be enforced to color mode. User can set according to actual need.

(2) >Black and white mode

In the ‘Day&Night’ menu, press ‘Left’ ‘Right’ key to select ‘Black and white Mode’. At the moment image will be enforced to black and white mode. Then press ‘Enter’ key into ‘black and white mode’ submenu, you can set the corresponding parameters.



(a) >Burst

Whether turn off burst signal after setting to B/W. ‘On’/ ‘Off’ for choose.

(b) >Smart IR

When getting a picture of nearby object, the reflected IR light is too strong to cause the exposure. However, Smart IR Control could sense the IR light and intelligently control it in order to eliminate the exposure and get a perfect

image.



(c) >IR PWM

(d) >Return

After finished setting, press 'up' 'down' key to move cursor to 'Return', then use 'Left' and 'Right' key to select 'Return' (Means return to previous menu). Or 'Save& Exit' (Means exit menu setting), then press 'Enter' to perform the function of return.

(3) >D&N EXT

D&N EXT mainly control color switch by EXT TRIG. Through 'D&N EXT' can realize the main board, light board, ICR synchronous switch.



(a) >DN (delay)

It can set the delay time from D to N, 0~60s for choose.

(b) >ND (delay)

It can set the delay time from N to D, 0~60s for choose.

(c) >Return

After finished setting, press 'up' 'down' key to move cursor to 'Return',

then use 'Left' and 'Right' key to select 'Return' (Means return to previous menu). Or 'Save& Exit' (Means exit menu setting), then press 'Enter' to perform the function of return.

(4) >Automatic



(a) >day to night(AGC)

Setting the AGC threshold value of the camera when convert day to night, the greater the threshold value is, the later it converts. Make sure: the day to night (AGC) > night to day (AGC).

(b) >day to night delay

Set the time of day to night.

(c) >night to day(AGC)

Setting the AGC threshold value of the camera when convert night to day, the smaller the threshold value is, the earlier it converts. Make sure: the day to night (AGC) > night to day (AGC).

(d) >night to day delay

Set the time of night to day.

(e) >return

After finished setting, press 'up' 'down' key to move cursor to 'Return', then use 'Left' and 'Right' key to select 'Return' (Means return to previous menu). Or 'Save& Exit' (Means exit menu setting), then press 'Enter' to perform the function of return.

3.6 Noise deduction



(a) >2DNR

The user can select high/medium/low/off.

(b) >3DNR

The user can select high/medium/low/off.

(c) >return

After finished setting, press 'up' 'down' key to move cursor to 'Return', then use 'Left' and 'Right' key to select 'Return' (Means return to previous menu). Or 'Save& Exit' (Means exit menu setting), then press 'Enter' to perform the function of return.

3.7 Function



(1) >camera title

Press "left" and "right" key to choose "on" in the menu of "function CAM TITLE", the image will perform the function of showing the camera title. Then

press “OK” to enter “CAM TITLE” to set the submenu, which can set the camera title.



(a) >the camera title can be set Numbers, uppercase letters and corresponding symbols, the length is 15 characters.

(b) > “← →” are the cursors to set title when move left and right.

(c) > “CLR” is clear the camera title.

(d) > “POS” is the drop location of setting title. Move the location of the title through “up, down, left ,right”, press “OK” to return name edit menu when confirm the location.

(e) > “END” means back to previous menu when finishing name edit.

(2) >DIGITAL EFFECT

User can set image freeze, mirror and negative image function in the submenu of DIGITAL EFFECT.



(3) >motion detection

Press “left” and “right” key to choose “ON” in motion detection menu, the image will open the motion detecting function. Then press “OK” to enter “image detection” to set the submenu, which can be set on detection range,

sensitivity,etc.



(a) >Area selection

Choose the motion detecting area and do set the corresponding area, there are four areas and only one area can be set at a time.

(b) >Display

Setting the related area whether to participate in the motion detection, which is the function button. When it closed, this area doesn't participate in the motion detection. Vice versa.

(c) >Sensitivity

User can set the motion detecting sensitivity of corresponding area through "left" and "right" key. The value is 0~10.

(d) >color mode

Press "left" and "right" key to set the color of the motion detecting area, optional color for white, red green and blue.

(e) >transparency

User can set the transparency of motion detecting area through "left" and "right" key.

(f) >alarm

Setting the corresponding set of alarm output in motion detection.

(g) >default

Press "OK" button. Restore the factory settings of motion detection.

(h) >return

When setting is completed, press the "up" and "down" key to move the cursor to "back", then use the "left" and "right" key to choose "back"(meaning return to previous menu) or "save&quit"(meaning exit menu settings), and last click "OK" to perform corresponding back function.

(4) >privacy block

Press “left” and “right” key to choose “ON” in “privacy block” menu, the image will open the privacy masking function. Then press “OK” to enter “image block” to set the submenu, which can be set on masking range, sensitivity,etc.



(a) >SELECT

Select privacy mask and set related parameters, 4 masks are available for setup.

(b) >DISPLAY

Set the display color of privacy mask, optional modes: color mode, mosaic, negative film, turn off.

(c) >COLOR

When display mode setting is color mode, through this mode you can change the color of privacy mask, optional colors: white, black, red, blue, yellow and green.

(d) >TRANS

Set the transparency of related privacy mask.

(e) >DEFAULT

Press “CONFIRM” button to restore to factory settings.

(f) >RETURN

When the settings are complete, press “UP” or “DOWN” to move the cursor to “RETURN”, then press “LEFT” or “RIGHT” to choose “RETURN”(go back to the previous menu) or “SAVE& END”(exit the menu settings) , finally press “CONFIRM” to perform return function.

(5) >Language

Press “LEFT” or “RIGHT” in “FUNCTION-LANGUAGE” menu to choose the menu language. Optional languages: English, Chinese, German,

French, Italian, Spanish, Polish, Russian, Portuguese and Turkish.

(6) >The dead pixel compensation

The dead pixel compensation is used for compensation the dead CMOS ,including dynamic point compensation ,static point compensation ,static black point compensation. Users can carry out the corresponding compensation according to the needs.

You can select the font color menu in 0-15.



(7) >RS485

RS485 is a form of communication. A camera has RS485 function means user can control this camera by RS485. PELCO D/P protocol is supported. Specific settings would be as follows:



(a) >CAM ID

Set camera ID in order to distinguish different cameras, also ID is the only corresponding number to control. Setting range: 0-255.

(b) >ID DISPLAY

It is a function switch to set that whether the ID would be displayed or not when camera starts. When the option is on, “CAMXXX” (xxx represents

camera ID) will be displayed in the upper left corner. “Off” is the default.

(c) > BAUD RATE

Set communication speed, optional: 2400, 4800, 9600, 19200, 38400.

(d) >RETURN

When the settings are complete, press “UP” or “DOWN” to move the cursor to “RETURN”, then press “LEFT” or “RIGHT” to choose “RETURN”(go back to the previous menu) or “SAVE& END”(exit the menu settings) , finally press “CONFIRM” to perform return function.

(8) >RETURN

When the settings are complete, press “UP” or “DOWN” to move the cursor to “RETURN”, then press “LEFT” or “RIGHT” to choose “RETURN”(go back to the previous menu) or “SAVE& END”(exit the menu settings) , finally press “CONFIRM” to perform return function.

3.8 ADJUST



(1) >Sharpness

Press “LEFT” or “RIGHT” in “ADJUST-SHARPNESS” menu to choose “AUTO”. User can adjust the image sharpness based on the class of 1 to 10.

(2) >MONITOR

Press “LEFT” or “RIGHT” in “ADJUST-MONITOR” menu to choose “CRT” or “LCD” mode, once a mode is chosen, user can set as following:



(a) >Black level

Adjust the black level of image.

(b) > Blue gain

Adjust the blue gain of color saturation in overall image, the value is from 0 to 100, 53 is the default.

(c) >Red gain

Adjust the red gain of color saturation in overall image, the value is from 0 to 100, 53 is the default.

(d) >RETURN

When the settings are complete, press “UP” or “DOWN” to move the cursor to “RETURN”, then press “LEFT” or “RIGHT” to choose “RETURN”(go back to the previous menu) or “SAVE& END”(exit the menu settings), finally press “CONFIRM” to perform return function.

(3) >LSC

Press “LEFT” or “RIGHT” in “ADJUST-LSC” to choose “ON/OFF”, so to turn on or turn off the LSC function.

(4) >NTSC/PAL

Press “LEFT” or “RIGHT” in “ADJUST-NTSC/PAL” menu to choose “NTSC/PAL”, user can choose PAL (25 FPS) or NTSC (30 FPS) output format.

(5) >RETURN

When the settings are complete, press “UP” or “DOWN” to move the cursor to “RETURN”, then press “LEFT” or “RIGHT” to choose “RETURN”(go back to the previous menu) or “SAVE& END”(exit the menu settings), finally press “CONFIRM” to perform return function.

3.9 EXIT

In the “MAIN MENU “of setting, press “UP” or “DOWN” to move the cursor to “EXIT”, then press “LEFT” or “RIGHT” button to choose “ NOT

SAVE” or “SAVE&END” or “RESET”, finally press the “CONFIRM” button to perform the related function.

(1) >NOT SAVE

Means the current menu settings will not be saved when exiting, it will restore to the previous settings.

(2) >SAVE & END

Means the current menu will be saved to EEPROM, even if the camera is in power outage, the related menu settings will not be changed.

(3) >RESET

Restore to the factory settings.

IV. Specification

Image sensor	1/3 inch Sony CMOS Sensor IMX238
Effective pixel	1280(H) * 1024(V)
Resolution	720P
Minimum Illumination	0.05LUX (F1.2 AGC ON) / 0LUX IR ON
S/N Ratio	More than 60 DB (AGC Off)
Video Out	Follow the AHD output level
FPS	25Fps/30Fps
OSD Adjustable	YES
White Balance	AWB/Auto track white balance/AWC-SET/indoor/outdoor/manual adjustable
BLC	BLC/HLC/OFF adjustable
Shutter	1/25s~1/50000s support slow shutter 2X--30X
WDR	On/Off adjustable
Day/Night Switch	Day/B&W/COLOR/external control adjustable
Noise reduction	2D&3D Noise reduction level menu can be adjusted
D-effect	Freeze/Neg image/Mirror adjustable
Privacy zone	Four privacy zone can be set up respectively
RS485 function	Support PELCO D/P
OSD language	English/Chinese/Germany/French/Italian/Spanish/Poland/ Russian/Portuguee/Turkey

DEFECT	Support the white dots (1024) (128) and black spots compensation function, adjustable
Transmission distance	75-5 Transmission distance up to 500m by Coaxial cable, 200m by Cat 5 cable
Operating Humidity	-20°C ~ 50°C less than 95%
Power	DC12V +-10%
Consumption	1W(70MA)
Main board size	38mm * 38mm

V. FAQ

1. No image after installation?

a. Check to connect the power supply correctly, whether the indicating led is always on or not;

b. Check the video cable, make sure it is workable;

c. Check if the monitor has been open.

2. Image interference after installation

a. Check the power quality, if the adapter can't work, please replace another one;

b. Check if electromagnetic interference exists in the surroundings, please use some anti-interference devices.

3. RS485 can't control menu?

a. Please check the controller issued code is correct;

b. Please check if the control circuit is smooth;

c. Please verify the communication address, baud rate well-matched;

d. Please check if the connection interface is loose.

4. Camera image can't switch into B/W at night?

Please open the camera menu to see if "Day/Night Switch" is set as AUTO, if not, please change into AUTO.

5. Noise is very obvious at night with low illumination.

please make sure AGC ON.

6. The image color is abnormal.

a. please make sure if the white balance is correctly set as Auto White Balance;

b. Please enter the menu to restore factory settings.

7. Image appears to be whiter than usual after installation?

a. Please check whether the lens aperture was adjusted too large, so that the image appears whiter;

b. Please verify the camera rear panel, if the regulator potentiometer is adjusted too large;

c. Check if the brightness of the monitor is too large.

8. When installation, image is not clear or exist dark corners?

a. Please adjust focus and zoom of the lens. Make sure the focus should be adjusted in a proper way;

b. check if the lens is clean.