HDCVI & Analog Camera Maintenance Guide

Version 1.0.0

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Preface

Overview

The document is mainly used to introduce the menu function description, professional terms, FAQ and maintenance for HDCVI and analog cameras.

Note:

The guide is for reference only!

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1 Menu Function Description

Note:

All the menu function description in this chapter is for reference only, different products may have slight difference about the menu; please refer to the actual interface for more details.

1.1 Format (Format Switch)

The television system adopts specific system and technical standard.

- PAL: Phase Alternation Line. Currently most of the countries in the world (including most countries in Europe, Africa, Australia and China) adopt this format.
- NTSC: National Television System Committee. The main countries which adopt this format are America, Canada and Japan etc.

1.2 Video Mode

It is the video display format, which includes resolution, scanning mode and frame rate.

- 1080p@25: 1080 scanning lines vertically, progressive scanning, frame rate is 25.
- 1080p@30: 1080 scanning lines vertically, progressive scanning, frame rate is 30.
- 720p@25：720 scanning lines vertically, progressive scanning, frame rate is 25.
- 720p@30：720 scanning lines vertically, progressive scanning, frame rate is 30.
- 720p@50：720 scanning lines vertically, progressive scanning, frame rate is 50.
- 720p@60：720 scanning lines vertically, progressive scanning, frame rate is 60.

1.3 Scene (Scene Mode)

The monitoring scene mode preset by the system.

Users can select the scene mode which is similar to the actual scene to implement quick settings.

- Standard scene (standard mode): it can be applied to the scene mode in common environment.
- WDR scene (ultra WDR): it can be applied to the scene mode in the environment with striking contrast. It is mainly applied in backlight environment, where it needs to consider both target and background image effect.
- Low illuminance scene (ultra low illuminance): it can be applied to the scene mode in the environment with low illuminance.

1.4 Backlight Mode

It is used to implement settings to the camera to guarantee high quality for the image in backlight environment.

1.4.1 Backlight Compensation

It is used to compensate the defect that the main image target is too dark in the backlight environment. In the backlight environment, the main target is the foreground and the brightness is too low, then it can improve image brightness via backlight compensation.

1.4.2 Front Light Compensation

It is used to compensate the defect that the main image target is too bright in the backlight environment. In the backlight environment, the main target is the background and the brightness is too high, then it can lower image brightness via front light compensation.

1.4.3 WDR

The camera can auto adjust when both the high brightness area in powerful light source and low brightness area such as shadow, backlight etc coexist in the image, it can make both the bright area and dark area clear in the image.

- WDR level (intensity): the higher the level (intensity) is, the wider the dynamic range becomes, and it can display richer layers and include wider color space.
- DWDR: the camera can recalculate the image brightness digitally, adjust brightness distribution of the image and improve image quality. Users can enable the function when the monitoring image is located in the area with brightness and darkness contrast, which can effectively improve the visibility of both dark and bright areas.

1.4.4 HLS

It is to adjust brightness to normal range and make the particularly bright area clear in the scene.

- HLS level: the higher the level is, the more obvious the suppression function becomes.

1.5 Image Adjustment

1.5.1 Image Mode

The image display mode preset by the system.

- Standard: the standard mode of image display, each parameter is the system default.
- Soft: compared to standard mode, it mainly lowered saturation and sharpness.
- Flamboyant: compared to standard mode, it mainly enhanced saturation.

1.5.2 Brightness

It is used to adjust the overall brightness of the image. Users can adjust the value when the image becomes too bright or too dark. Both the dark and bright area will be increased or lowered equally at the same time during adjustment.

- The bigger the value is, the brighter the image becomes. The image tends to be foggy or overexposed if the value is set too high.

1.5.3 Contrast

It is used to adjust the image contrast. Users can adjust the value when the overall image brightness is appropriate but the contrast is not enough.

The bigger the value is, the more obvious the contrast becomes. The dark area of the image becomes too dark and the bright area tends to be overexposed when the value is set too high; the image becomes foggy when the value is set too low.

1.5.4 Saturation

It is used to adjust the color purity. The threshold won't cause any effect to the overall brightness of the image.
The bigger the value is, the higher the purity becomes and more flamboyant the color becomes. The image color becomes too strong when the value is set too big; the image color is not flamboyant enough when the value is set too small.

1.5.5 Sharpness

It is used to adjust the image definition and image edge sharpness.
The bigger the value is, the higher the detail contrast of the image plane becomes, and the image becomes clearer. The image tends to generate noise when the value is set too high.

- Detail sharpness: the overall sharpness level becomes higher for the image.
- Edge sharpness: it only sharpens the image edge and keeps overall smoothness.

1.5.6 Sharpness Suppression

It is used to suppress image sharpness during high gain, it will cause no influence to low gain effect when modifying the value.
The bigger the value is, the more obvious it becomes for high gain sharpness suppression, and it is blurrier for object edge.

1.5.7 Chroma Suppression

It is used to suppress image saturation during high gain.
The bigger the value is, the more obvious it becomes for chroma suppression effect during high gain, and the image color is more likely to tend to be black and white.

1.5.8 Hue

It is used to adjust total hue effect of the image.

1.5.9 Gamma

It is used to optimize brightness and contrast and implement subtle adjustment of bright and dark layer. The image becomes foggier and brighter when the value gets bigger; the image becomes sharper and darker when the value gets smaller.

1.5.10 Noise Reduction (NR)

It is used to reduce the image noise.

- Y: change image brightness value when reducing noise.
- C: change image chromatic value when reducing noise.

1.5.11 2DNR

It is used to reduce the image noise.
The bigger the value is, the smaller the noise becomes.

- 2DNR day: users can customize NR mode via adjusting value.
- 2DNR night: users can customize another NR mode via adjusting value.

1.5.12 3DNR

It is used to reduce image noise in low illuminance environment.
Compared to general 2DNR, 3DNR not only realizes noise reduction for brightness and saturation of the video separation signal but also for the original data generated by sensor, which can greatly improve noise reduction capability and make image clearer and brighter, but it is easy to generate smear.
The bigger the value is, the smaller the noise becomes; but it is easier to lose image details and generate smear.

1.6 Exposure

1.6.1 Exposure Mode

Exposure mode means the natural light source mode which is adopted by the camera.

- Auto mode: shutter auto, iris fixed.
  - ✧ Gain upper limit: the maximum of signal zoom rate in the condition where shutter and iris are fixed.
  - ✧ Gain lower limit: the minimum of signal zoom rate in the condition where shutter and iris are fixed.
- Auto iris: shutter manual, iris auto.
- Auto shutter: shutter priority, iris fixed.
- Shutter speed upper limit: the maximum of exposure time.
- Shutter speed lower limit: the minimum of exposure time.
- Slow shutter: the maximum of exposure time realizes double increase (in multiple of 2).
- Low noise: the exposure mode which controls image noise by priority.
  - ✧ Gain upper limit: the bigger the value is, the brighter the image becomes during high gain, but it is easy to cause bigger noise.
- Low motion blur: it is to prevent image smear and blurriness due to lower shutter speed.
  - ✧ Shutter upper limit: it is to set the maximum of shutter
- Manual mode: shutter manual, iris auto.
  - ✧ Shutter; it is to set the fixed value of the shutter.

1.6.2 Exposure Level

It is used to set the exposure level of image.
The bigger the value is, the higher the exposure level becomes.

1.6.3 Exposure Speed

It is used to set the exposure speed of image.
The bigger the value is, the faster the exposure speed becomes.

1.6.4 Anti-flicker

It is used to solve the flicker phenomenon due to the frequency inconformity between camera and light source power supply

- Outdoor: anti-flicker function is off in the natural light environment.
- 50HZ: anti-flicker function is on. The value is the household alternating current domestically. In the condition where the city power is 50HZ, it is to adjust exposure automatically and guarantee no horizontal stripes in the image according to the scene brightness.
- 60HZ: anti-flicker function is on. The value is the household alternating current domestically. In the condition where the city power is 60HZ, it is to adjust exposure automatically and guarantee no horizontal stripes in the image according to the scene brightness.

1.6.5 Exposure Compensation

It is used to set the exposure level of the image.
The bigger the value is, the higher the exposure level becomes.

1.6.6 Low Illuminance Compensation

The camera can increase exposure automatically when the environment light source is dark, it is to make the image brighter but cause no influence to the image effect.

1.7 White Balance (WB)

It is to make the acquired image color conforming to the color seen by human eyes in various light conditions via adjusting image.

- Auto: auto search the WB datum point in the image to achieve the WB adjustment.
  - ✧ Auto 1: advanced white balance.
  - ✧ Auto 2: simple white balance. Calculate white balance referring to all the colors in the image.
- Manual: users can set the datum point of WB manually.
  - ✧ Blue gain: adjust it to blue when the image color tends to be red.
  - ✧ Red gain: adjust is to red when the image color tends to be blue.
- Sunny: white balance mode in high color temperature environment.
- Night: white balance mode in low color temperature environment.
- Indoor: white balance mode in the environment with smaller color temperature range.
- Outdoor: white balance mode in the environment with bigger color temperature range.
- Outdoor auto: the camera can adjust white balance automatically in the environment with bigger color temperature range.
- Single trigger: take the white balance of current image as standard after pressing “OK” button.
- Auto tracking (ATW): you can use the mode when the auto white balance fails to adjust. The mode realizes wider application range, but it is easier to affect white balance speed and accuracy.
- Sodium lamp: white balance mode in the environment with yellow light source.
- Sodium lamp auto: the camera can auto adjust white balance in the environment with yellow light source.

1.8 Day/Night Switch (Day Night Mode)

It is the mutual switch between image black/white and color (day and night).

1.8.1 Auto

The camera can auto switch black & white or color display mode according to the brightness of the environment.

- Color → Black/White: It is the threshold level that the image is switched from color to black/white display mode.
- Black/White → Color: It is the threshold level that the image is switched from black/white to color display mode.

Note:

The color →black threshold has to be bigger than the black → color.

- Wait time: It is the system delay time of setting black/white and color switch.
- Day → Night: It is the wait time level that the image is switched from day to night.
- Night → Day: It is the wait time level that the image is switched from night to day.

Note:

If there is frequent switch between day and night during actual use, then you can make “night → day” big and “day → night” small.

- Pulse: it is to enable or disable color sync signal. The function only works for night.

1.8.2 Color

The image displays color all the time.

1.8.3 Black/White

The image displays black and white all the time.

1.8.4 External trigger high level

It can trigger camera to switch from color to black and white mode via external port.
The trigger will switch when level lowers if users set it as low level trigger.

1.9 IR

The camera can make the target object clear via enabling IR function in a situation where the environmental brightness is much lower.

1.9.1 IR Control

It is used to set IR light enable and disable.

- Auto: It can auto enable IR function according to the environmental brightness.
- IR normally off: IR function is always off.

1.9.2 Smart IR

A kind of control method which combines hardware and software, it can control IR light compensation adjustment via image sensor and realize IR light compensation self adjustment according to environmental light.
Enable smart IR function, and IR light can realize self adjustment according to the current environmental brightness, which will effectively solve the problems such as face overexposure etc.

- Default: The IR light can auto adjust according to the environmental brightness.
- High: It is more suitable for IR level mode of face recognition.
- Medium: IR level mode with relative balance between face effect and background effect.
- Low: IR level mode with relatively low face effect and relatively brighter background.

1.10 Language

The menu interface displays language types.

- Chinese: All the menu items display as simplified Chinese.
- Traditional Chinese: All the menu items display as traditional Chinese.
- English: All the menu items display as English.

1.11 Advanced Functions

1.11.1 Camera Name

It is used to set the camera name.

1.11.2 Mirroring Setting

It can realize the UDLR or center flip for the image.

- Horizontal mirroring: Image horizontal flip.
- Vertical mirroring: Image vertical flip.
- Horizontal + vertical: Image 180° flip.

1.11.3 Digital Zoom

It makes the camera see the distant object clearly by zooming it.
The horizontal and vertical displacement is directly proportional to the zoom rate, which means the bigger zoom rate is, the bigger the adjustable displacement can be.

1.11.4 Digital Dejitter

It can effectively prevent image dejittering and output steady and clear image when the camera is installed in a place where it is easy to generate vibration.

1.11.5 Lens Type

It is used to set the iris mode of the lens. Direct current means DC drive auto iris, video means video drive auto iris. It needs to connect to auto iris interface when selecting auto iris lens.

- Manual: it is divided into two following types of lens.

- ✧ Auto iris lens: the iris doesn't adjust automatically; the program controls the iris to maximum.
- ✧ Manual iris lens: Manually adjust the iris to maximum.
- DC: Iris auto adjustment
- All on: Iris all on.
- All off: Iris all off.

1.11.6 Lens Reset

It is used to restore the lens to factory default.

1.11.7 Video Output

It is to select the video output mode of the camera.
HD priority: It is to ensure HD effect first when HD and SD output at the same time.
SD priority: It is to ensure SD effect first when HD and SD output at the same time.
SDI priority: It is to ensure SDI effect first when HD and SD output at the same time.

1.11.8 ABF

Auto back focus

- Auto focus: it can auto adjust the location of back focus to make the image clear.
- Reset: Reset the back focus to the central location without auto focusing.

1.11.9 Alarm Setting

It can activate motion detection to trigger alarm.

- Alarm type
- ✧ External alarm: After the device is connected to other alarm devices, enable the function to realize alarm effect.
- ✧ Motion detection: It can trigger alarm and other commands when there is moving object in the drawn area.
- Alarm mode
- ✧ NC: It is normally closed when there is no alarm signal; it is normally open when there is alarm signal.
- ✧ NO: it is normally open when there is no alarm signal; it is normally closed when there is alarm signal.
- Alarm interval: it can generate alarm only once during the period you set.

1.11.10 Privacy Mask

It is used to set the privacy mask area. It can mask some certain areas in the device monitoring range to protect privacy; for example, it needs to mask privacy in the ATM where the users need to enter password.

- Area selection (SN): select the area which is to be set.
- Display (on/off): select if the area is masked.
  - ✧ On: The area is enabled to mask.
  - ✧ Off: The area is disabled to mask.

- Area setting: it is to set the location and size of the masked area.
  - ✧ Location (center setting): it is to set the location of masked area.
  - ✧ Size (width and height setting): it is to set the size of masked area.
- The method of setting the area location and size mainly includes the following three types, please select according to the actual interface:

Note:

The chapter only describes three common config methods, there are some slight differences about the parameter name of different menus or operation modes, please implement debugging according to the actual interface.

✧ Steps of method 1:

1. Press left and right button to select the area to be set in “Area Selection”.
2. Press left and right button to select “ON” in “Display” (Please skip the step if the area is already set as ‘ON”).
3. Select “Location↵ ” in “Area Setting”, press OK button to enter the location setting interface. Use the direction button to adjust the up and left line to the location which needs to be masked. Click OK button to return to the previous menu after the setting is completed.
4. Select “Size↵ ” in “Area Setting”, press OK button to enter size setting interface. Use left and right button to adjust the right line of the square area to the location which needs to be masked; Use up and down buttons to adjust the down line of the square area to the location which needs to be masked. Please click OK button to return to the previous menu after the setting is completed.

✧ Steps of method 2:

1. Press left and right buttons to select the serial number of the area which needs to be set in “Area Selection”.
2. Press left and right button to select “ON” in the “Mode” (Please skip the step if the area is already set as “ON”).
3. Press left and right buttons to set the location of the up line box for the area in “Up”; press left and right buttons to set the location of the down line box for the area in “Down”; press left and right buttons to set the location of the left line box for the area in “Left”; press left and right buttons to set the location of the right line box for the area in “Right”.
4. Press OK button in “Previous Page” to complete the setting of area location and size.

✧ Steps of method 3:

1. Press left and right buttons to select the area which is to be set in “Area Selection”.
2. Press left and right buttons to select “ON” in “Mode” (Please skip the step if the area is already set as “ON”).
3. Select “↵ ” in “Location” and press OK button to enter location setting.
4. Press UDLR buttons to adjust each point of the rectangle to the location which needs to be set. Press OK after the setting is completed.
5. Press OK button to complete the settings of location and size.

- Color: It is to set the color which is to be displayed in the masked area.
- Default: It is to restore the system default of the masked area.

1.11.11 Motion Detection

It is used to detect if there is any moving object in the area which has been set. It will trigger alarm when there is moving object in the monitoring area. Users can select different areas and sensitivity levels according to the actual needs.

- Area selection (SN): It is to select the serial number of the motion detection box.
- On/Off: It is to set if it is to enable the function of the current motion detection box.
- Display: It is to set if it is to display the current motion detection box on the image.
- Sensitivity: It is to set the sensitivity.
- Area: It is to set the location and size of the current motion detection box.
- The method of setting the area location and size mainly includes the following three types, please select according to the actual interface:

Note:

The chapter only describes three common config methods, there are some slight differences about the parameter name or operation modes for different menus, please implement debugging according to the actual interface.

✧ Steps of method 1:

1. Press left and right buttons to select the area number which is to be set in 'SN".
2. Press left and right buttons to select "ON" in "ON/OFF" and "Display" (Please skip the step if the area is already set as "ON").
3. Press left and right buttons to select "Location" in Area", press OK button to enter location setting. Use the direction buttons to adjust the up and left line of the detection area to the needed location. Press OK button to return to previous menu after setting is completed.
4. Press left and right buttons to select "Size" in "Area Setting", press OK button to enter size setting. Use left and right buttons to adjust the right line of the square area to the location which needs to be detected. Press OK button to return to previous menu after setting is completed.

✧ Steps of method 2:

1. Press left and right buttons to select the area number which is to be set in "Area Selection".
2. Press left and right buttons to select "ON" in "Mode" (Please skip the step if the area is already set as "ON").
3. Press left and right buttons to set the UDLR line location of the set area in "Up" "Down" "Left" and "Right" respectively.
4. Press OK button in "Previous Page" to complete the location and size setting of the area.

✧ Steps of method 3:

1. Press left and right buttons to select the area number which is to be set in "Area Selection".
2. Press left and right buttons to select "ON" in "ON/OFF" and "Display" (Please skip the step if the area is already set as "ON").
3. Select "Location↵ " in "Area Setting", press OK button to enter location setting. Use direction buttons to adjust the center of square are to location center which needs motion detection. Press OK button to return to the previous menu after the setting is completed.
4. Select "Size↵ " in "Area Setting", press OK button to enter size setting. Use left and right buttons to adjust the right line of the square area to the location which needs motion detection; Use up and down buttons to adjust the down line of the square area to the location which needs motion detection. Press OK button to return to the previous menu after setting is completed.

1.11.12 RS 485

RS 485 is a communication port which is based on coaxial cable. It can control the camera via back-end device when the information of RS 485 is set in accordance with that of the back-end coding device.

- Address: The address of coaxial 485 communication.
  - ✧ The address needs to be set in accordance with that of back-end coding device if it is an analog camera.

- ✧ It doesn't need to set if it is a HDCVI camera.
- Baud rate: The speed of coaxial communication.
- Protocol: It is to select transmission control protocol.
  - ✧ DH-SD: Private transmission protocol
  - ✧ PELCOP/PELCOD: One of PELCO transmission protocol, which is used for the communication between matrix and other devices, the baud rate is 9600.

1.11.13 Image Freeze

The image stays at the current frame after it is enabled.

1.11.14 Sync Mode

It is to select the scanning sync mode of the camera.

- INT: It is to use the internal crystal oscillator to generate sync signal to finish scanning.
- LL: It is to use the AC power which is provided to camera to finish scanning.

1.11.15 Self-adaptive

The camera can self-adapt to back-end storage device of HD or SD mode after it is enabled.

1.11.16 Camera Logo

Users can customize the display content (only limited to numbers from 1 to 254), the new settings will display on the image after it is done.

1.11.17 System Info

It is used to check the hardware version and software version etc of the camera.

- Hardware version: The version number of camera hardware.
- Software version: Version number of software.

1.12 Other Settings

1.12.1 IR Optimization

It is used to select different IR drive mode, IR switch and IR brightness value when getting access to IR light.

1.12.2 Bad Pixel Compensation

It is used to detect the abnormal or damaged pixel in the image sensor caused by external factor and realize auto repair. The effect is optimal in the environment with total darkness. Please turn off the variable iris completely before using auto repair function.

- Auto compensation: Auto repair bad pixel.
- Level: It is to set the level of bad pixel repair.

- Manual compensation: Manually repair bad pixel.
- Register: Manual repair.
- Register point: Manual repair point.
- Register quantity: Bad pixel quantity of manual repair.
- Cursor color: It is the cursor color when setting manual repair of bad pixel.
- Cursor flicker: If the cursor flickers when setting manual repair of bad pixel.

1.12.3 Purple Boundary Suppression

It is used to adjust the suppression level of purple boundary to properly reduce the purple boundary phenomenon caused by strong light.

1.13 Factory Default

Each setting of the menu except language, format and camera name will be restored to factory default.

1.14 Restart Camera

It is to restart the camera.

1.15 Save

It is to select if it is to save the current settings or return to the previous menu.

- Yes: It is to save the current settings and exit the menu interface.
- No: It is not to save the current settings and directly exit the menu interface.
- Cancel: Return to the previous menu.

1.16 Return

Return to the previous menu.

Note:

The “Previous Page” of some menu is the same as the “Return” function.

1.17 Exit

It is to exit the menu setting.

- Save exit: It is to save the current settings, exit the menu interface.
- Cancel exit: It is to directly exit the menu interface, the current settings are invalid.

2 Menu Path

Note:

- All the menu paths in this chapter are for reference only, there is slight difference between different menus, please refer to the actual interface for more details.
- There are mainly 10 kinds of camera menu, please select according to the actual product.
- It is advised to find corresponding menu path type via main menu.

2.1 HDCVI Camera Menu Path 1

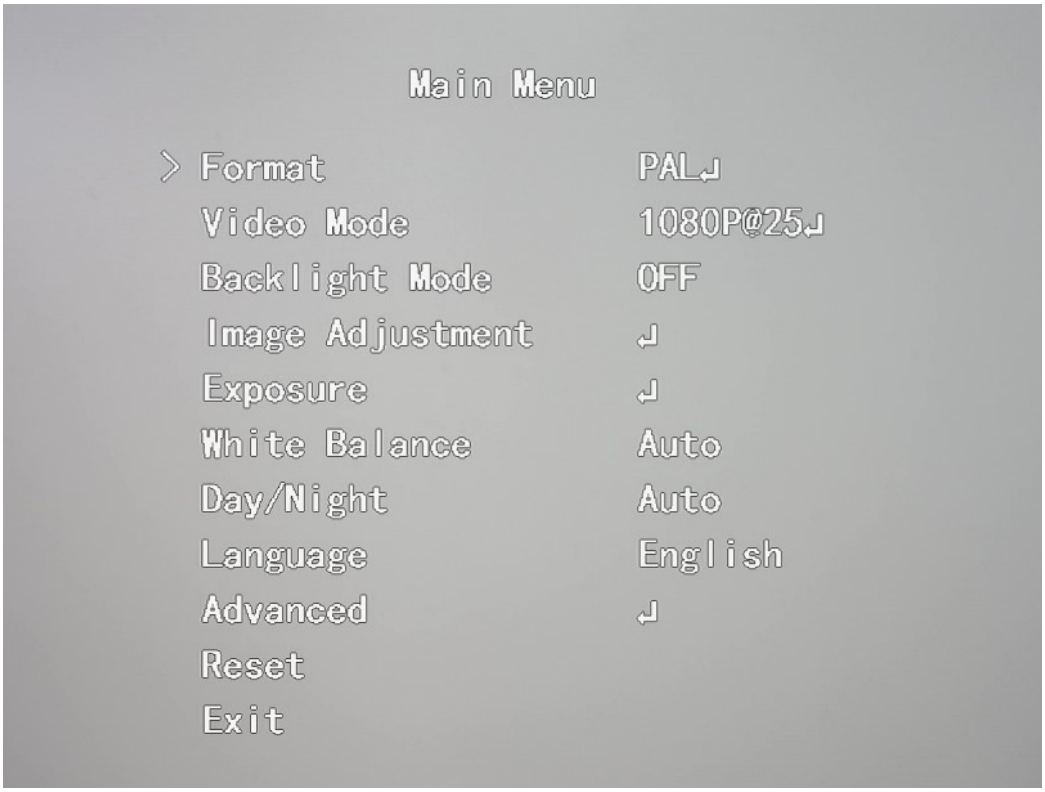

Figure 2-1

1st Menu		2nd Menu		3rd Menu		Remark
Format	PAL□	Confirm, cancel				
	NTSC□					
Video mode	1080P@25□	Confirm, cancel				**Note:** 720P devices don't display.
	1080P@30□					
	720P@25□					
	720P@30□					
	720P@50□					
	720P@60□					
Backlight mode	BLC	BLC	On			
		Return, exit				
	WDR	WDR	0～5			

1st Menu		2nd Menu		3rd Menu		Remark
		Return, exit				
	HLC□	HLC	0～5			**Note:** It can be selected when it meets both auto exposure mode and outdoor anti-flicker mode.
		Return, exit				
	Off					
Image adjust	□	Image mode	Standard			
			Soft			
			Flamboyant			
		Sharpness	0～100			
		Brightness	0～100			
		Contrast	0～100			
		Saturation	0～100			
		Sharpness suppress	0～100			
		Chroma suppress	0～100			
		Gamma	0～15			
		2DNR	0～100			
		3DNR	0～100			
		Return, exit				
Exposure	□	Exposure mode	Auto	Gain upper limit	0～100	**Note:** The “Exit” in 2nd and 3rd menu save the current operations by default and exit.
				Gain lower limit	0～50	
				Return, exit		
			Low noise□	Gain upper limit	0～100	
				Return, exit		
			Low motion blur	Shutter upper limit	PAL：0ms～40ms NTSC：0ms～33ms	
				Return, exit		
			Manual□	Shutter	1/100000～1/4	**Note:** The shutter value is linked to the format.

1st Menu		2nd Menu		3rd Menu			Remark
					Custom range	Shutter upper limit	0～300ms
						Shutter lower limit	0～300ms
						Return/exit	
				Gain upper limit	0～100		
				Gain Lower Limit	0～50		
				Return, exit			
		Exposure level	0～14				
		Exposure Speed	0～7				
		Anti-flicker	Outdoor				
			50Hz				**Note:** The manual exposure time is different under 50HZ and 60HZ mode, besides, there is no low motion blur mode or low noise exposure mode.
			60Hz				
		Return, exit					
WB	Auto						
	Manual □	Blue gain	0～100				
		Red gain	0～100				
		Return, exit					
	Day						
	Night						
	Indoor						
	Outdoor						
Day/night switch	Auto	Waiting time	1～15				**Note:** Only the device with photosensor can display
		Return, exit					
	Black & White						
	Color						
	External trigger high level						**Note:** Only the indoor bullet cameras

1st Menu		2nd Menu		3rd Menu		Remark
	External trigger low level					can display
Language	Chinese, English, Spanish, Japanese, Portuguese, Korean, Russian, German, Polish.					**Note:** Different devices support different languages.
Advanced	□	Camera name	□			
		Mirror	□	Horizontal mirror	On, off	
				Vertical mirror	On, off	
				Return, exit		
		Digital zoom	1～10			
		Lens type	DC			
			Manual			
		Self-adaptive	On			**Note:** Only some devices can display
			Off			
		ABF	□			**Note:** Only motorized vari-focal device can display.
		Smart IR	Auto	Level	0～10	**Note:** Non-IR devices don't display
				Return, exit		
			IR normally closed			
		Privacy mask	On	Area select	0～7	
				Display	On, off	
				Area setting	Location	**Note:** Switch via direction button.
					Size	
				Default		
				Return, exit		
			Off			
		485 Setting	□	Address	1～254	
				Apply		
				Return, exit		
		System info	□	Version number		

1st Menu		2nd Menu		3rd Menu		Remark
				Return, exit		
		Return, exit				
Default						
Exit						

2.2 HDCVI Camera Menu Path 2

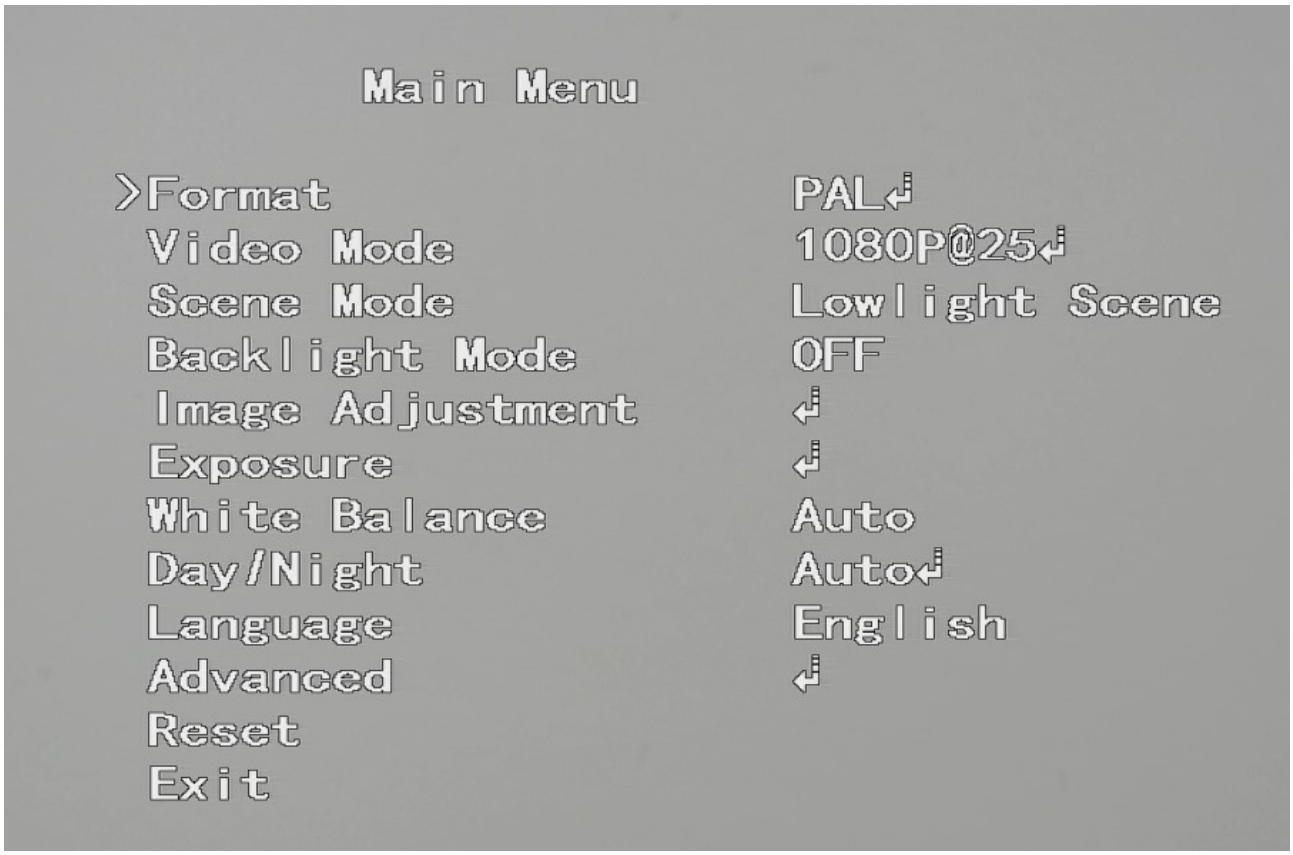

Figure 2-2

1st Menu		2nd Menu		3rd Menu		Remark
Format	PAL□	Confirm, cancel				
	NTSC□					
Video mode	1080P@25□	Confirm, cancel				**Note:** 720P devices don't display
	1080P@30□					
	720P@25□					
	720P@30□					
	720P@50□					
	720P@60□					
Backlight mode	BLC□	Horizontal begin	0～20			
		Vertical begin	0～20			
		Horizontal width	1～20			

1st Menu		2nd Menu		3rd Menu		Remark
		Vertical height	1～20			
		Return				
		Exit		Save	yes, no, cancel	
	WDR	WDR	1～5			
		Return				
		Exit		Save	yes, no, cancel	
	HLC	HLC	1～20			
		Return				
		Exit		Save	yes, no, cancel	
	OFF					
Image adjust	□	Sharpness	0～10			
		Contrast	0～20			
		Saturation	0～15			
		Chroma	0～20			
		Gamma	0～3			
		2DNR	Off, low, medium, high			
		3DNR	Off, low, medium, high			
		Return				
		Exit		Save	yes, no, cancel	
Exposure	□	Exposure mode	Auto □	Mode	Standard	
					Low motion blur	
				Return		
				Exit	Save: yes, no, cancel	
			Manual	Shutter	PAL：1/25～1/30000 NTSC：1/30～1/30000	
				Return		
				Exit	Save: yes, no, cancel	
			Anti-flicker			
		Exposure level	0～20			
		Gain	0～10			
		Slow shutter	Off、X2、X4、X8、X16			
		Return				
		Exit		Save	Yes, no, cancel	
WB	Auto					
	Auto tracking					
	Area WB□	Horizontal begin	0～20			
		Vertical begin	0～20			
		Horizontal width	1～20			

1st Menu		2nd Menu		3rd Menu		Remark
		Vertical height	1～20			
		Return				
		Exit		Save	Yes, no, cancel	
	Manual	Color temperature	Low, medium, high			
		Red gain	0～20			
		Blue gain	0～20			
		Return				
		Exit		Save	Yes, no, cancel	
Day/night switch	Auto	Night/day switch	2～20			
		Day/night switch	1～19			
		Waiting time	1～10			
		Return				
		Exit		Save	Yes, no, cancel	
	Black & White					
	Color					
	External trigger high level					**Note:** Only indoor bullet cameras can display.
	External trigger low level					
Language	Chinese, English, Spanish, Japanese, Portuguese, Korean, Russian, German, Polish.					**Note:** Different devices support different languages.
Advanced	□	Camera name	Off			
			On□			
		Mirror	□	Horizontal mirror	On, off	
				Vertical mirror	On, off	
				Return		
				Exit	Save: yes, no, cancel	
		Digital zoom	1～10			
		Lens reset				
		ABF	Auto focus			
			Lens reset			
		Smart IR	Auto	Level	0～12	
			IR normally closed			
			Return			

1st Menu		2nd Menu		3rd Menu		Remark
			Exit		Save	yes, no, cancel
		Audio mode	Off			
			Built-in audio			**Note:** Only dual audio devices can display, built-in audio by default.
			External audio			
		Video output	HD priority			
			SD priority			
			SDI priority			
		Electronic defog	Off, low, medium, high			
		Motion detection	On	Area select	0～3	
				Display	On, off	
				Sensitivity	0～10	
				Area setting	Location	
					Size	
				Default		
				Return		
				Exit	Save: yes, no, cancel	
			Off			
		Privacy mask	On	Area select	0～7	
				Display	On, off	
				Area setting	Location	
					Size	
				Default		
				Return		
				Exit	Save: yes, no, cancel	
		485 setting	□	Address	1～254	
				Apply		
				Return/ exit	Save: yes, no, cancel	
		System info	□	Version No.		
				Return		
				Exit	Save: yes, no, cancel	
		Next page/NEXT				
		Return				

1st Menu		2nd Menu		3rd Menu		Remark
		Exit		Save	Yes, no, cancel	
Default						
Exit		Save	Yes, no, cancel			

2.3 HDCVI Camera Menu Path 3

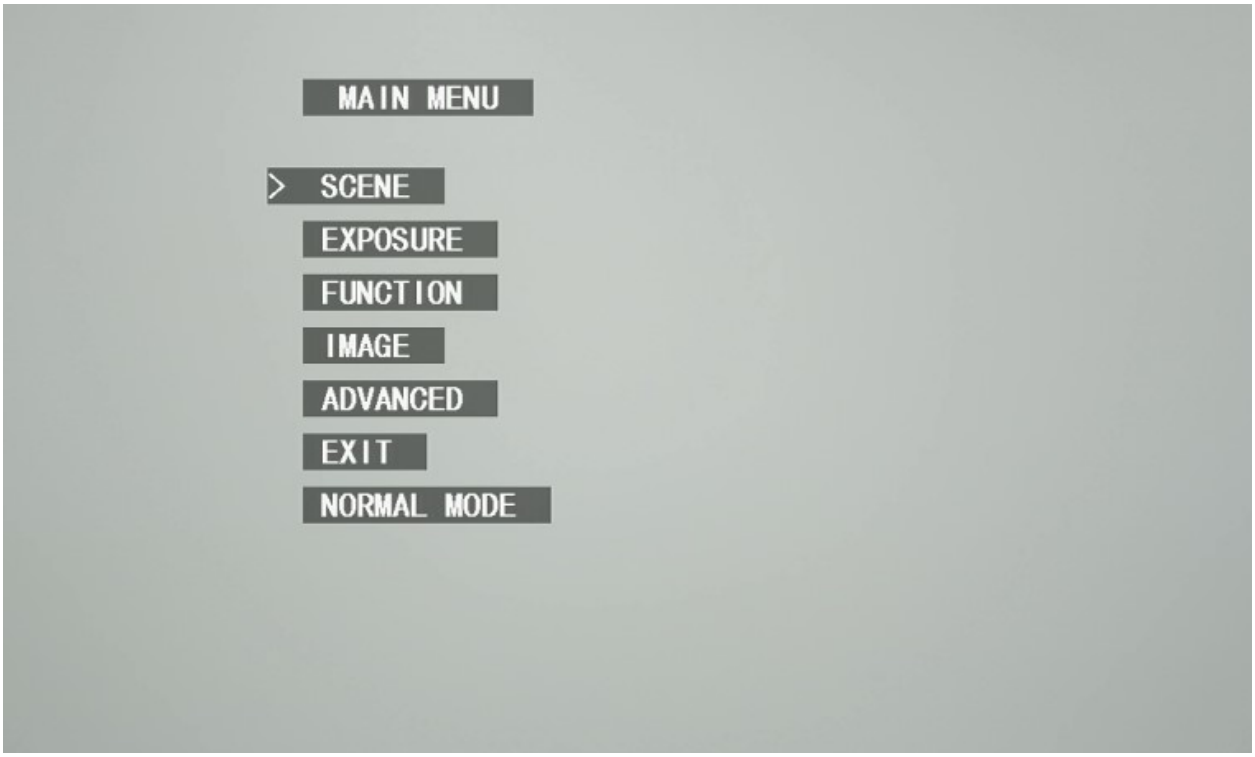

Figure 2-3

1st Menu	2nd Menu		3rd Menu		Remark
Scene recognition	Scene	Standard mode			
		Ultra low illuminance			
		Ultra WDR			
	Return				
Exposure setting	Exposure	Auto mode			
		Auto iris			
		Auto shutter			
		Manual mode			
	Shutter setting	Auto	Shutter speed upper limit	1/25～1/10000	Note: It can be selected only when exposure is “auto mode” or “auto shutter”.
			Shutter speed lower limit	1/25～1/10000	
			Slow shutter	1/1～1/120	
			Return		

1st Menu	2nd Menu		3rd Menu		Remark
		1/25～1/10000			Note: It can be selected only when exposure is “auto iris” or “manual mode”.
	Gain upper limit	-1dB～28dB			
	Exposure compensation	（-7）～（+7）			
		Off			
	Low illuminance compensation	0～100			
	Lens	Manual	Mode	All on	Note: It can be selected only when exposure is “manual mode”.
				All off	
			Return		
	Return				
Function Settings	WB	Auto			
		Indoor			
		Outdoor			
		Single trigger			
		Auto tracking			
		Manual	Red gain	0～255	
			Blue gain	0～255	
			Return		
		Indoor auto			
		Sodium lamp auto			
		Sodium lamp			
	WDR	On	Intensity	1～5	
			Motion compensation		Note: Only supported by some cameras.
			Return		
		Off			
	NR settings	…	2D-NR	Off, 1～5	
			3D-NR	Off, 1～5	
			Return		
	Mirror setting	Vertical			
		Horizontal			
		Vertical + horizontal			
		Off			
	Day/night mode	Auto	Night/day threshold	1～7	**Note:** For some cameras, the option is “Switch Point”, “Switch Tolerance”.
			Day/night threshold	1～6	
			Day→night	2～30	
			Night→Day	2～30	

1st Menu	2nd Menu		3rd Menu		Remark
			Return		
		Color			
		Black & White			
		External trigger high level			
		External trigger low level			
	HLC	Off, 1～9		**Note:** For some cameras, the option is “High Brightness Compensation”, you can select off, 1~2.	**Note:** It can be selected only in non-WDR mode.
	BLC	Off, 1～2			
	Return				
Image Setting	Preset mode	Custom			
		Soft			
		Flamboyant			
	Color suppress	0～15			
	Sharpness	0～15			
	Sharpness suppress	0～15			
	Brightness	0～255			
	Contrast	0～255			
	Saturation	0～255			
	Hue	0～255			
	Gamma setting	0～15			
	Return				
Advanced	Motion detection	…	SN	1、2、3、4	
			On/off	Off, on	
			Display	Off, on	
			Sensitivity	0～99	
			Area	Location	
				Size	
			Return		
	Language	Chinese			
		English			
	Privacy mask	…	SN	0～7	
			On/off	Off, on	
			Center setting	Setting	
			Width and height setting	Setting	
			Color	Blue	
			Return		
	Image freeze	On			
		Off			
	Alarm mode	…	Alarm type	Motion detection	
			Alarm mode	NO, NC	
			Alarm interval	Off, 1S～255S	
			Return		
	Next page				

1st Menu	2nd Menu		3rd Menu		Remark
	RS485 Setting	…	Protocol	DH-SD	
			Baud rate	1200～19200	
			Address	1～254	
			Return		
	Camera symbol	On	Camera symbol	1～254	
			Return		
		Off			
	System info	…	Hardware version		
			Software version		
			Return		
	Previous page				
	Return				
Exit	Standard mode/ultra low illuminance/ultra WDR	Cancel			
		Save			
		Default			
		Factory default			
	Restart camera				
	Format switch	720@25			**Note:** It can be selected only for some devices.
		720@30			
		720@50			
		720@60			
		1080@25			
		1080@30			
	Return				

2.4 HDCVI Camera Menu Path 4

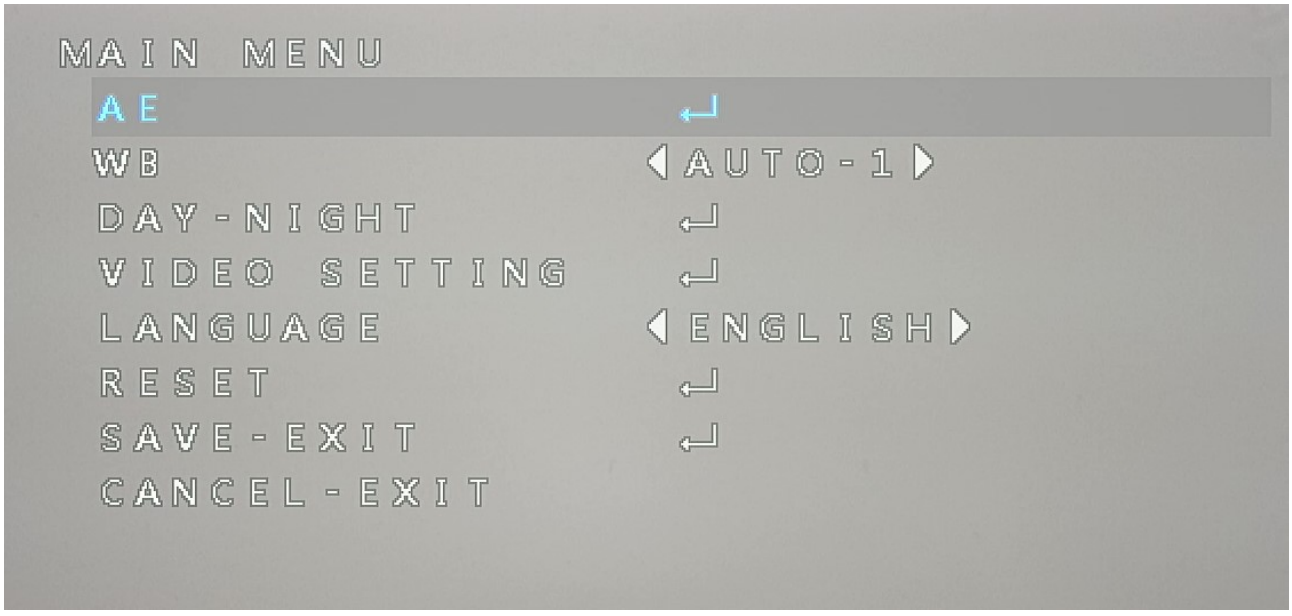

Figure 2-4

1st Menu		2nd Menu		Remark
Exposure	□	Reference brightness	0～128	
		Exposure mode	Standard	
			BLC	

1st Menu		2nd Menu		Remark
			Front light compensation	
		Return	□	
WB	Auto 1			
	Auto 2			
	Indoor			**Note:** Only 720P devices can display.
Day/night switch	□	Day/night mode	Auto	
			Color	
			B&W	
		Day>Night	1～7	**Note:** It can be selected only when the day/night mode is “Auto”.
		Night>Day	2～8	
		Return	□	
Video setting	□	Video format	1080P@25	**Note:** Only 1080P devices can display
			1080P@30	
			720@25	**Note:** Only 720P devices can display.
			720@30	
		2DNR day	0～15	
		2DNR night	0～15	
		IR control	IR NC	
			Auto	
		Smart IR	Default	**Note:** It can be selected only when IR control is “Auto”.
			High	
			Medium	
			Low	
		DWDR	0～4	
		Saturation	0～255	
		Contrast	0～15	
		Return	□	
Self-adaptive	Off			Note: It can be selected only for some devices.
	On			
Language	Chinese			
	English			
Factory default	□			
Save exit	□			
Cancel exit				

3 Configurations and Settings

Note:

- The contents in this chapter for reference only. Slight difference may be found in the user interface.
- Please refer to the actual product for detailed information.
- The functions listed in this chapter are for some series product only.
- The contents in this chapter are not default configurations. Please refer to the actual product for detailed information.

3.1 Advanced Functions

3.1.1 Control HDCVI Device

For HDCVI camera, you can use the coaxial cable to control the OSD menu.

Please follow the steps listed below:

1) Connect the HDCVI camera to the HDCVI DVR and then boot up the DVR.
2) On the preview window, right click mouse and then select PTZ, or on the main menu from Setting->System->PTZ, you can go to the PTZ interface.
3) Select the corresponding channel, and then select the control mode as HDCVI, the protocol shall be HD-CVI (DH-SD1 or private). Please set other parameters according to your actual situation.

Figure 3-1

Note:

For some series camera, the protocol is“DH-SD1”.

Figure 3-2

4) Click Save to complete the HDCVI setup.

3.1.2 Audio Settings

You can control the audio of the HDCVI camera via the coaxial cable.

Please refer to the steps listed below:

1) Connect the HDCVI camera to the HDCVI DVR, and then boot up the HDCVI DVR.
2) On the preview window, right click mouse and then select main menu, from Setting->Camera->Encode->, you can go to the encode interface.
3) Select the corresponding channel from the dropdown list, select the audio format as G711a, select audio source as HDCVI.

Figure 3-3

4) Click Save button to complete the setup.

3.1.3 Menu Operation

You can use the PTZ menu of the HDCVI DVR to control the HDCVI camera.

Please refer to the steps listed below:

1) On the preview window, right click mouse and then select PTZ.

2) The PTZ menu is shown as below.

Figure 3-4

Figure 3-5

3) Click , you can go to the OSD main menu.

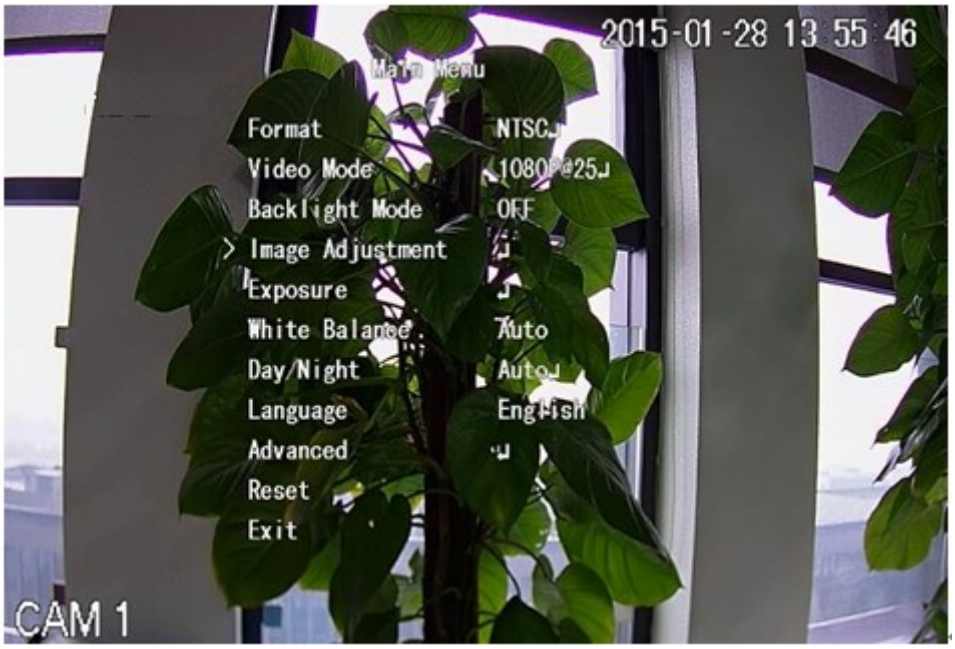

Figure 3-6

4) Please refer to the following sheet for detailed information.

For the parameters with "↵", click the "+" of the IRIS or the Enter button of the menu operation interface, you can go to the next-level menu to operate. Click the Exit button to go back to the previous-level menu.

Button	Function	
	Open menu	
▲、▼	Select menu item	
◀、▶	Select menu value	
Zoom	Adjust lens zoom rate and auto trigger focus.	Note: The functions listed here for some motorized zoom lens camera only.
Focus	Adjust lens focus.	
Iris	Auto focus at current zoom rate.	
◀	Reset camera	

Sheet 3-1

3.1.4 Alarm Activation

Note:

In this chapter, we are using the bullet camera as an example. For different camera series products, the installation and debug mode may vary. Please refer to your actual product for detailed information.

The bullet camera has one-channel alarm input and one-channel alarm output port. It can connect to the alarm device or buzzer.

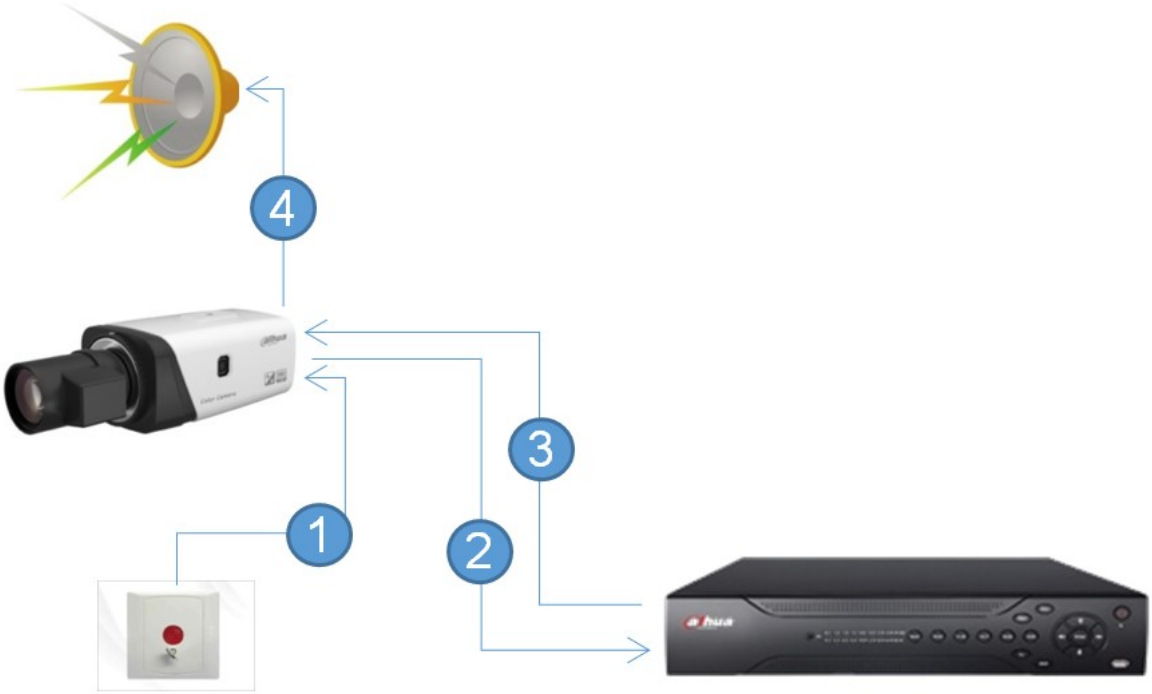

Figure 3-7

SN	Note
1	The input alarm signal from the alarm button or other alarm device.
2	The camera receives the alarm signal and then can transmit it to the HDCVI DVR via the coaxial cable; the HDCVI DVR can begin record, pop up alarm prompt window, enable buzzer to beep and etc to remind you.
3	After the HDCVI DVR receives the alarm signal, it can output the alarm to the camera after the verification.
4	After the camera receives the triggered alarm signal, it can output the alarm signal to other sensor via the alarm output port.

Sheet 3-2

Connect the alarm input cable to the alarm input port of the rear panel of the camera.

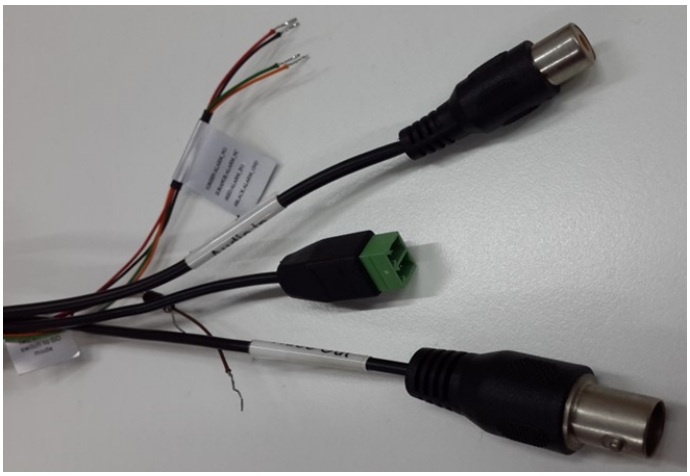

Figure 3-8

Figure 3-9

3.2 Proportional Pan and Tilt

Some series products support proportional pan and tilt function.

Before you adjust the focus, please make sure the camera has been installed on the proper position and has been securely fixed and the lens is facing the proper position. Connect the camera to the HDCVR DVR and boot up the device. After there is video on the connected monitor, now you can use the proportional pan and tilt function.

There are mainly 4 focus adjustment modes. Please refer to your actual product for detailed information.

3.2.1 Motorized Varifocal Focus Lens Camera

Note:

If you want to adjust again, please click to reset the lens.

1) On the preview window, right click mouse, you can see the menu.
2) Select the PTZ, system pops up the following interface.

Figure 3-10

3) Click the “+” or “-” button of the Zoom to adjust the zoom. Or you can click the “+” or “-” to adjust continuously. After the zoom adjustment completed, the camera can auto adjust the focus. It

may take 1 or 2 seconds.

Please note the following steps are optional. Please refer to your actual products for detailed information：

4) Click the “+” or “-” button of the Focus to adjust the focus manually. Click the “+” or “-” button of the Iris to auto adjust focus in current zoom rate.

3.2.2 Peripheral Auto Decoder

Figure 3-11

1) Refer to the following sheet to connect the cable of the motorized Varifocal focus lens to the peripheral decoder.

Motorized Zoom Lens Cable Color	Auto-Focus Decoder Port
Yellow	ZOOM +
Red	ZOOM -
Green	FOCUS +
Black	FOCUS -

Sheet 3-3

2) Connect the A, B port of the peripheral decoder to the A,B port of the rear panel of the camera.

Figure 3-12

3) Connect the +, - power port of the peripheral decoder to the +,- port of the power adapter.

Figure 3-13

4) Use the five direction buttons at the rear panel of the camera to control the motorized Varifocal focus lens. The left/right button is to adjust zoom, the up/down button to control the focus. Or you can use the Zoom/Focus button of the PTZ menu of the HDCVI DVR to adjust.

3.2.3 Manual-Focus Lens Dome Camera

1) Open the dome cover.

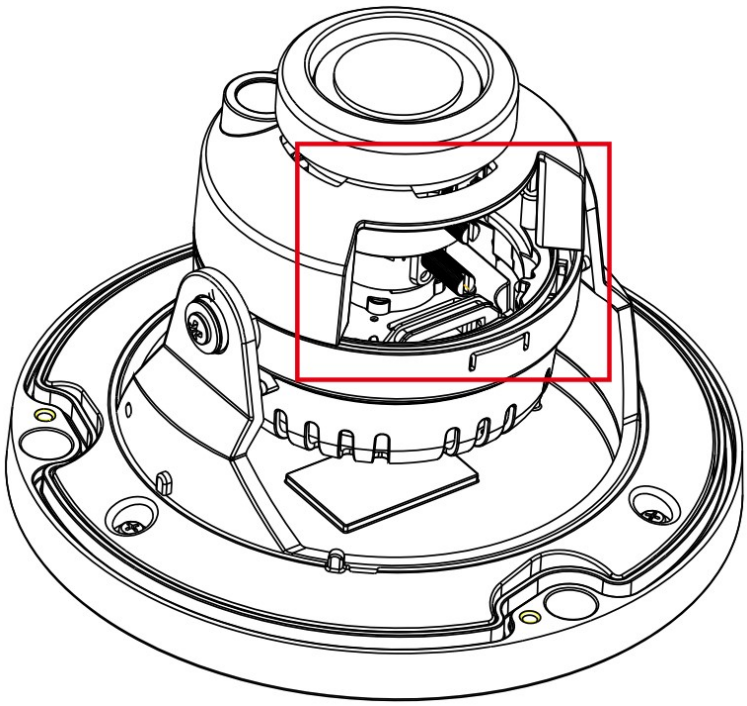

Figure 3-14

2) Loosen zoom lever and focus lever.

Please refer to the following contents to identify the zoom lever or the focus lever：

- Zoom lever：There marked“T” and“W”.
- Focus lever：There marked“F”and“N”，or there is no mark.

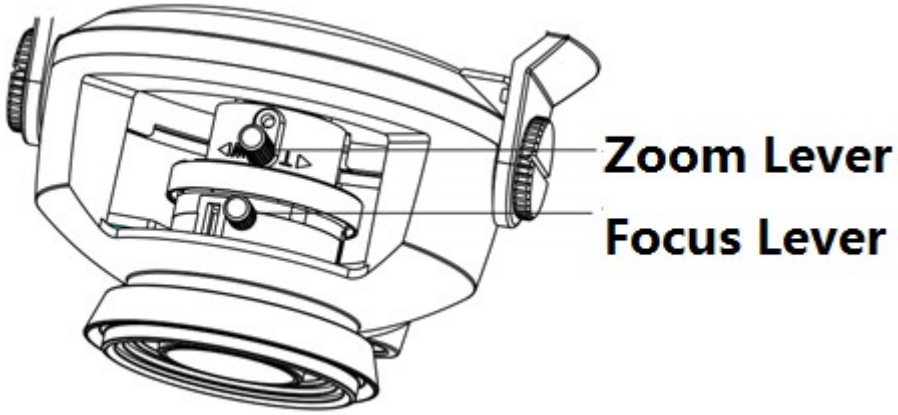

Figure 3-15

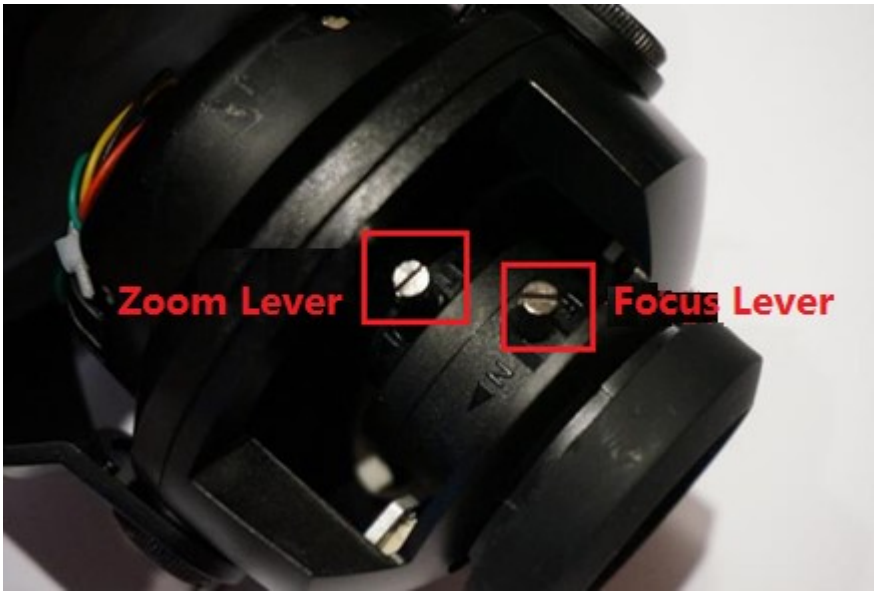

Figure 3-16

3) Adjust the zoom lever to turn the lens to the proper X rate.
4) Use focus lever to turn the lens to adjust the focus until you get the clear image.
5) Fasten the zoom lever and focus lever and put the dome cover back.

3.2.4 Manual-Focus Lens Bullet Camera

1) Open the bottom lip.
2) Loosen the zoom lever and the focus lever.

Please refer to the following contents to identify the zoom lever or the focus lever：

- Zoom lever：There marked“T” and“W”.
- Focus lever：There marked“F”and“N”，or there is no mark.

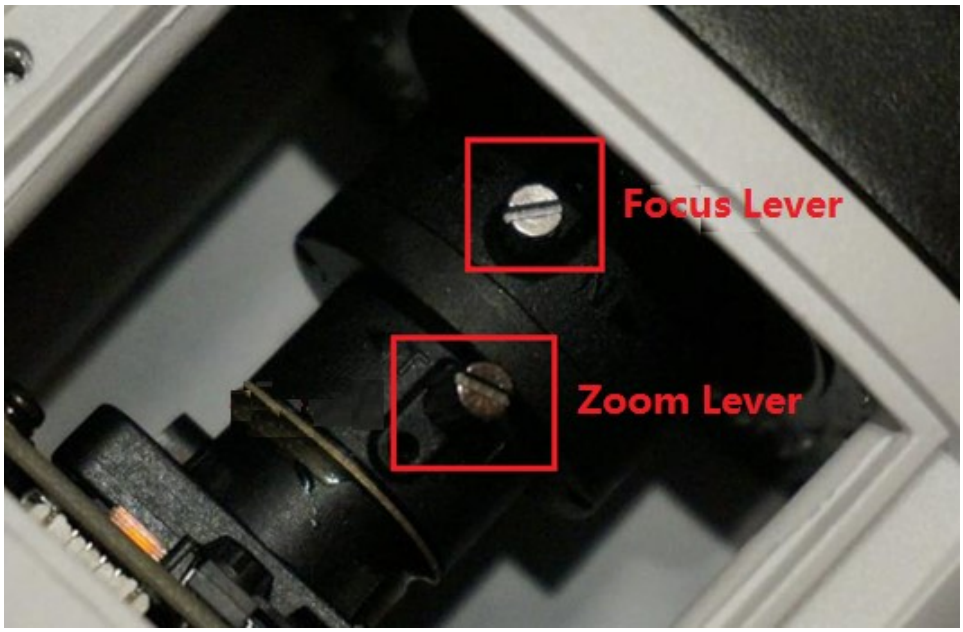

Figure 3-17

3) Adjust the zoom lever to turn the lens to the proper X rate.
4) Use focus lever to turn the lens to adjust the focus until you get the clear image.
5) Fasten the zoom lever and focus lever and put the bottom lip back.

3.2.5 Manual External Focus Camera

Please refer to the following contents to identify the zoom hole and the focus hole.

- Zoom adjustment hole：There marked“ZOOM”.
- Focus adjustment hole：There marked“FOCUS”.

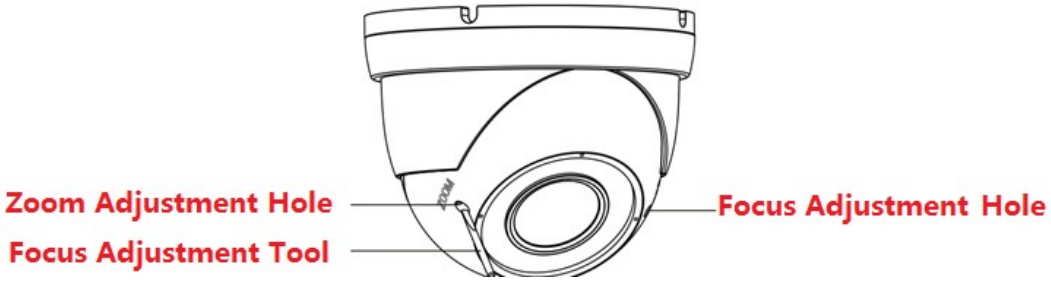

Figure 3-18

1) Use tools such as slotted screwdriver to adjust the zoom.
2) Use tools such as slotted screwdriver to adjust the focus until you get the clear image.

3.3 Upgrade via Coaxial Cable

Note:

- Before the operation, please make sure the current HDCVI DVR version supports coaxial cable, and the camera version supports coaxial cable. Please make sure the upgrade applications matches the camera product series.
- The application upgrade process may take 3 hours. During the process, there may color block on the screen, it is normal. You can go to the upgrade interface again to view the process.
- The HDCVI DVR supports multiple cameras to upgrade at the same time. The amount is the 1/4 of the HDCVI DVR channel amount. For example, the 4-channel HDCVI camera supports 1 camera to upgrade at the same time. The 8-channel HDCVI camera supports 2 cameras to upgrade at the same time.

Important

During the upgrade process, do not shut down the device or unplug the power cable.

Please follow the steps listed below：

1) Unzip the application to your local computer.
2) Connect the camera to the DVR and then boot up the device. Please make sure the HDCVI DVR is running properly and there is preview video on the monitor. Now you can go to the next step.
3) On the preview window, right click the mouse, you can see an interface shown as below. Please select Main menu.

Figure 3-19

4) From main menu->Setting->Camera->Upgrade, you can go to the upgrade interface. Please note for some series product, you need to from main menu->Setting->Camera->Remote->Upgrade, you can go to the upgrade interface.

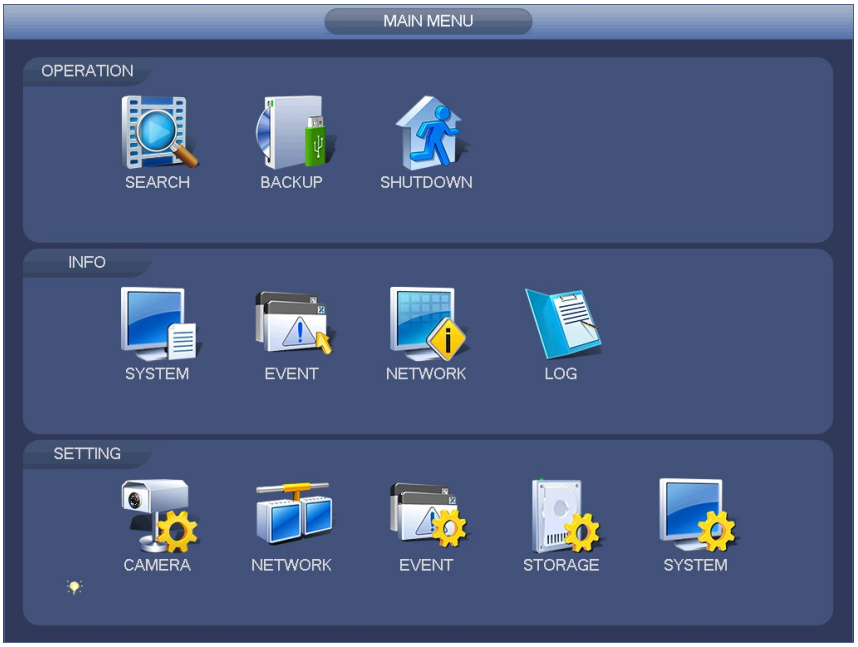

Figure 3-20

Figure 3-21

5) Click Browse to select the applications and then click OK to go back to the upgrade interface.

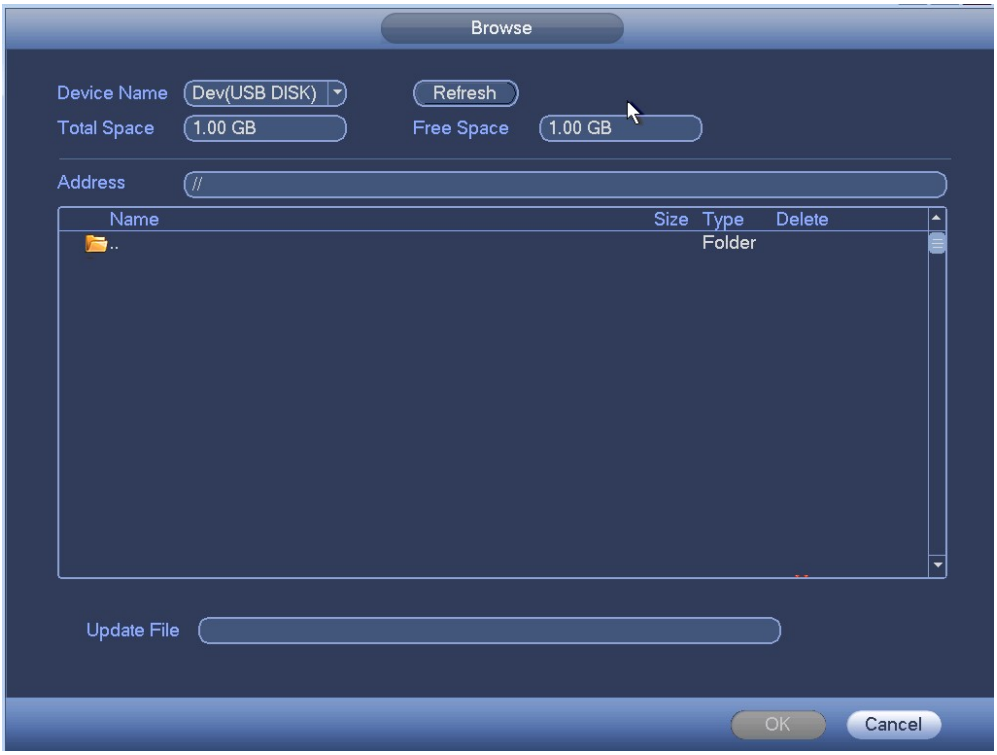

Figure 3-22

6) On the upgrade interface, check the channel(s) you want to upgrade and then click Start upgrade. During the upgrade process, you can view the upgrade status and process. After the operation, you can see the upgrade result such as success, fail.

4 FAQ

4.1 Image Quality

4.1.1 There is no video.

1) Check the power input positive/negative terminal connection, check the camera installation according to the user's manual.
2) Check the output power voltage according to the product label.
   Use the multimeter to check.
3) Check video cable connection
4) Check the lens setup is the same as the menu setup.
   - Go to the menu, ''Lens > Control > Video".
   - Go to the menu, "Lens > Control > DC".
5) Check the iris is disabled or not.
   - For manual iris, check the iris is enabled or not.
   - For auto iris, check the iris mode is off or not.

4.1.2 Why the video is not clear? It is blurry.

1) Check the installation environments. Make sure the camera window is clean and there is no dust, oil stain, spider web and etc.
2) Make sure the focus rate is proper. There is no fingerprint or dirty material.
3) Make sure you are using IR lens if you are using IR compensation light. If it is IR light, make sure there is no IR light reflection, which may result in image blurry or video becoming white.

4.1.3 Why there is stripe sometimes?

1) Check the video cable connection.
2) Check power supplying situation. If it is the centralized power supplying mode, please use the independent power to the camera.
3) Usually we recommend one coaxial cable to connect the camera. Do not connect two or more coaxial cables connected together.
4) Make sure there is no interference sourcing such as high voltage or high magnetic fields. If the camera is installed at the elevator, please use the 75-5 coaxial cable or higher. Do not connect two or more coaxial cables connected together.

4.1.4 Why the camera cannot get clear image during focus process?

1) Check CS/C connection is right or not. CS/C port has used the adapter ring or not.
2) Check the lens is IR lens or not.
3) If it is not our recommended lens, you may need to adjust the back focus.
4) The default vari-focal lens cannot focus to get the clear image at the min rate. When using the screws to secure the camera, the lens internal part may become broken if the strike intensity is too strong. It may result in focus problem.
5) Adjust the zoom again and then focus at the different zoom rate.

4.1.5 The video becomes blurry after a period of time.

1) Check the lens is OK or not.
2) The fasten screws are secure or not, it has anti-vibration function or not.
3) The lens window is clean or not.

4.1.6 Why the video color is color cast?

1) Check the light condition situation has changed a lot or not. Slightly adjust the monitor angle while maintain the original monitor object.
2) Check the ICR can work properly or not during day/night switch.
3) Check the angle of view is proper or not. Change the angle of view to enhance the image quality.
4) Check the WB menu setup is OK. Select the proper WB mode to enhance the image quality.
5) Check the sync mode. For the AC 24V, the setup can be set as LL (external).
6) Check the shutter mode setup.
7) Do not use WDR function in the indoor or outdoor simple environments. Or you use the WDR function in the non-WDR environment.
8) For the product of non-ICR function, there may be slight color cast situation in the daytime. There is some IR light in the camera due to the double-pass filter. Usually we recommend the product of ICR function.
9) For the warm light environment, please use the camera of menu or the dial switch. The menu shall set as WB or fix shutter speed.

4.1.7 Why the image is clear in the daytime while it becomes blurry at night?

1) Check you are using IR confocal lens or not.
2) Check there is interference from other IR device or the IR light reflection or not.

4.1.8 Why the image is overexposure or it is too dark?

1) Check the iris is at the proper position or not.
2) For the product of OSD, check the exposure mode and the brightness setup.
3) For the product of OSD, adjust the shutter or the gain setup.

4.1.9 There is special English letter on the monitor video.

1) Check the camera menu button is jammed or not.
2) Check the camera menu button can work or not.
3) Shut down the device, unplug the power cable and then connect again to reboot the camera.

4.1.10 Why there is black edge around the monitor video?

1) Check the resolution of the rear-end device. Usually we recommend 960H instead of D1 or CIF.
2) Go to the menu to lower the sharpness setup.

4.1.11 Why the image quality is poor or something wrong with the video?

1) Check there is no fingerprint or the stain on the lens.
2) Check the installation environment. The lens window has oil, dust or spider web or not.
3) Check the same DC power has connected too much devices or not. Too much devices may result in video interference.
4) Check the power voltage is sufficient or not.
5) Check there is interference or not. If the camera is installed at the elevator, please make sure it is earthed.
6) Check the camera menu setup and working environment is OK.
7) Check the camera is earthed or not.
8) Check the iris has adjusted to the proper position.
9) Check the video cable connection is OK or not.

10) Check the electronic shutter or the WB setup.
11) Check the transmission distance is too long or not. For the 720P camera, it supports 500M, for the 1080P camera, it supports 300M.
12) Check CS port connection is right or not.
13) Check the transmission cable can work or not. Usually we recommend the high-level cable such as fiber when there is long-distance transmission.
14) Check the camera power and the video cable are insulation or has use the waterproof tape to shield tightly. Do not connect casually without any protection measures.
15) Check the installation angles.

4.1.12 Why the video color is slightly red?

1) Check it is centralized power supplying or it has independent power supply. Check the voltage and current value of the remote power has met the device power supplying standard.
2) After the camera properly booted up, check the actual power supplying voltage is OK or not.
3) Mask the camera lens and turn the IR light to the full degree, check the power supplying is OK or not, the ICR can work or not.
4) Use the coaxial cable menu to realize the day/night switch to check.

4.1.13 Why the image is not clear in the WDR mode and the human face is a little bit dark?

1) When the image is not clear, go to the menu->Function->WDR->on, and then decrease the value or disable the WDR.
2) In WDR mode, if the human face or the object is a little bit dark, go to the menu->function->WDR->on, and then increase the intensity value.

4.1.14 Why the image is still too dark when the IR light works properly?

1) Check the IR light works properly or not.
2) Check the lens work properly or not.
3) Check the camera ICR cut-filter.
4) If video of several devices are all dark, check the power supply voltage is sufficient or not.

4.2 IR light

4.2.1 Why the IR light is flicking in some special environments?

1) Go to the OSD menu->Day/night->Night-day>Brightness, increase the brightness value.
2) Go to the OSD menu->Day/night->Night-day->Gain, set the gain value as 0 so that it has less effect on the default day/night switch threshold.

4.2.2 Why the IR effect is poor when it is installed on the project?

1) Check there are too many devices at the same DC power cable or not.
2) Check the power supplying cable is too long or not, the voltage is sufficient or not.
3) Check the power on-off voltage is sufficient or not.
4) Check there is any light reflection object nearby.
5) Check the IR distance selection is right or not.

4.3 Day/Night Switch

4.3.1 Why the ICR cut continuously switch back and forth at night?

1) Check compensation light setup.
2) Check there is IR light on the camera or not. If you are using the IR compensation light to the bullet camera, check you have properly connected the peripheral IR light signal cable to the D/N/G port of the rear panel. The day/night menu shall be set as LL(external).
3) Check there is strong reflection light in the surveillance environment or not. If yes, adjust the installation angle to avoid the strong reflection light.
4) Check the camera power supplying has met the requirements or not.

4.3.2 Why the image of the ICR camera is dark at night?

1) Check the camera cable connection.
2) Check ICR switch is OK or not.
3) Check the auto iris works or not.
4) Check the default day/night switch setup works or not. Adjust the switch threshold value to check.

4.4 Reboot

4.4.1 Camera cannot boot up or reboot continuously after connected to the power supplying cable.

1) Check the camera power supplying voltage. For example, working voltage of Dahua F581/781/481EP series product shall be over 10.8V or higher, otherwise, it may result in camera reboot.
2) Check the power supplying meet the device input voltage.
3) Always use the power adapter recommended by the manufacturer.

4.5 Power

4.5.1 Important notes on the power

1) Please make sure there is lightening proof at the power port, especially you are using the camera in the outdoor or the area of high frequent thunder strike rate.
2) Using independent strong cable, weak cable and the video cable, in case there is interference.
3) For centralize power supplying, especially for the DC 12V centralized power supplying, the branch line shall be as short as possible.

4.6 Interference

4.6.1 How is it to eliminate electromagnetic interference?

1) Check the camera case material. Theoretically speaking, the metal case has sound radiation protection effect than the plastic case.
2) The camera cable shall not be near to high voltage cable. There is interference if the video cable, or the power cable are too long.
3) The camera installation position shall not be near to the interference source such as voltage transformer, radio frequency base station, high power-consumption industrial device and etc.
4) Check the camera transmission cable and port connection. For the environment near the sea, the salt spray issue may raise a big concern. So please use transmission device and accessories of high quality and prepare the sound precaution measures. Usually the transmission cable shall be under the ground instead of hanging in the air.
5) The camera installation metal pole or the bracket shall be far away from the interference source

such as high pressure sodium light.

So, please select the proper transmission solution according to the electronic and magnetic environment, weather and geographical conditions. Please fully understand and go to the actual environment to check in case there is modification after the installation.

4.6.2 Interference

1) The cabling shall be far away from the strong interference source such as transformer and engine.
2) When using the centralized power supplying, use independent video cable and the AC power cable.
3) Always use the power adapter recommended by the manufacturer.
4) For the centralized power supplying, pay attention to the interference issue. Prepare isolation measure in case it is needed.
5) If there is interference on the ground, you can skip earth if it has no effect on the system performance or you can earth at the position free of interference.
6) Use the recommended anti-interference brand in the elevator.
7) Check one section after another section to confirm the interference source.

4.6.3 Why there is white spot, wave, stripe or the video is distorted?

1) Check there is strong electricity power source. Please isolate it to reduce interference.
2) Check the DVR power supplying is AC 220V or DC 12V. If it is AC 220V, please make sure the socket is earthed.
3) Check the camera combination cable and the BNC port connected to the coaxial cable have comes into contact with the peripheral conduction object such as ceiling. If yes, please isolate it.

5 Maintenance

Attention:
Please maintain the device according to the following instructions in order to ensure the image effect and long-term stable operation of the device.

Maintenance for lens and mirror surface

The lens and mirror surface are covered with antireflection coating, so it may produce hazardous substance and lead to performance reduction or scratch, dimness etc when it is stained with dust, grease, fingerprint and so on, please refer to the following methods to deal with once dirt is found:

Stained with dirt

Use oil-free soft brush or hair dries to remove it gently.

Stained with grease or fingerprint

Use soft cloth to wipe the water drop or oil gently to make it dry, then use oil-free cotton cloth or paper soaked with alcohol or detergent to wipe from the lens center to outward. It is ok to change the cloth and wipe several times if it is not clean enough.

Camera Body Maintenance

Use a soft dry cloth to clean the camera body when it is dirty, in case the dirt is hard to remove, use a clean dry cloth soaked with mild detergent and wipe gently, make it dry later. Don’t use volatile solvent like alcohol, benzene, thinner and etc or strong detergent with abrasiveness, otherwise it will damage the surface coating or reduce the working performance of the device.

Maintenance for Dome Cover

Dome cover is an optical device, please don’t touch or wipe cover surface directly during installation and use, please refer to the following methods to deal with once dirt is found:

Stained with dirt

Use oil-free soft brush or hair dries to remove it gently.

Stained with grease or fingerprint

Use soft cloth to wipe the water drop or oil gently to make it dry, then use oil-free cotton cloth or paper soaked with alcohol or detergent to wipe from the lens center to outward. It is ok to change the cloth and wipe several times if it is not clean enough.

Note

- **This manual is for reference only. Slight difference may be found in the user interface.**
- **All the designs and software here are subject to change without prior written notice.**
- **All trademarks and registered trademarks mentioned are the properties of their respective owners.**
- **If there is any uncertainty or controversy, please refer to the final explanation of us.**
- **Please visit our website or contact your local service engineer for more information.**

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