HIKVISION

ColorVu

2 MP TurboHD Bullet and Turret Cameras

User Manual

122919NA

DS-2CE10DFT-F • DS-2CE10DFT-F28
DS-2CE12DFT-F • DS-2CE12DFT-F28
DS-2CE72DFT-F •DS-2CE72DFT-F28

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User Manual

Thank you for purchasing our product. If there are any questions or requests, do not hesitate to contact the dealer.

This manual applies to the models below:

Type	Model
Type I Bullet Camera	DS-2CE10DFT-F
	DS-2CE10DFT-F28
Type II Bullet Camera	DS-2CE12DFT-F
	DS-2CE12DFT-F28
Type I Turret Camera	DS-2CE72DFT-F
	DS-2CE72DFT-F28

This manual may contain several technical mistakes or printing errors, and the content is subject to change without notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance

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

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

CE This product and, if applicable, the supplied accessories too are marked with "CE" and comply therefore with the applicable

harmonized European standards listed under the Low Voltage Directive 2014/35/EU, the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE Directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (Battery Directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information, see: www.recyclethis.info.

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Warning

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

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions."

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

	
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

Warnings

In the use of the device, you must be in strict compliance with the electrical safety regulations of the nation and region.

Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 12 VDC according to the IEC60950-1 standard. Refer to technical specifications for detailed information.

Do not connect multiple devices to one power adapter to avoid overheating or a fire hazard caused by overload.

Make sure that the plug is firmly connected to the power socket.

Make sure that the device is firmly fixed if wall mounting or ceiling mounting is used.

If smoke, odor, or noise rise from the device, turn off the power at once, unplug the power cord, and contact the service center.

Never attempt to have the camera disassembled by unprofessional personnel.

Cautions

Do not drop the camera or subject it to physical shock.

Do not touch sensor modules with fingers.

Do not place the camera in extremely hot, cold (the operating temperature shall be -40° to 60° C), dusty, or damp locations, and do not expose it to high electromagnetic radiation.

If cleaning is necessary, use a clean cloth with a bit of ethanol, and wipe it gently.

Do not aim the camera at the sun or extra bright places.

The sensor may burn out by a laser beam, so if any laser equipment is in use, make sure that the surface of the sensor will not be exposed to the laser beam.

Do not expose the device to high electromagnetic radiation or an extremely hot, cold, dusty, or damp environment.

To avoid heat accumulation, good ventilation is required for the operating environment.

Keep the camera away from liquid while in use for a non-waterproof device.

While in delivery, the camera shall be packed in its original, or similar, packing.

Mark Description

Table 0-1 Mark Description

Mark	Description
⎓	DC Voltage

1 Introduction

Product Features

The main features are as follows:

- **High Performance CMOS Sensor**
- **Full Time Color**
- **OSD Menu with Configurable Parameters**
- **Auto White Balance**
- **Internal Synchronization**
- **Smart Light Mode**
- **3-Axis Adjustment**

2 Overview

This manual applies to two types of bullet camera and one type of turret camera. The overviews of each type are shown in the figures below.

1.1 Overview of Type I Bullet Camera

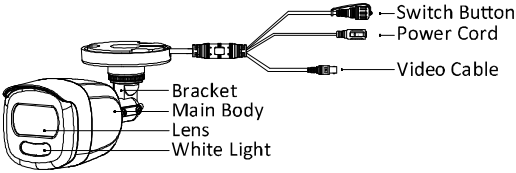

Figure 1, Type I Bullet Camera Overview

NOTE: *Press and hold the switch button for five seconds to switch the video output. Four kinds of video outputs are available: TVI, AHD, CVI, and CVBS.*

1.2 Overview of Type II Bullet Camera

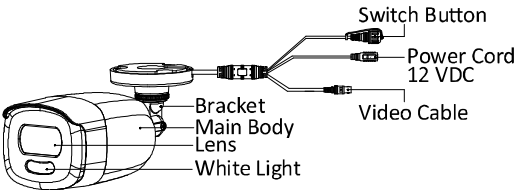

Figure 2, Type II Bullet Camera Overview

NOTE: *Press and hold the switch button for five seconds to switch the video output. Four kinds of video outputs are available: TVI, AHD, CVI, and CVBS.*

1.3 Overview of Type I Turret Camera

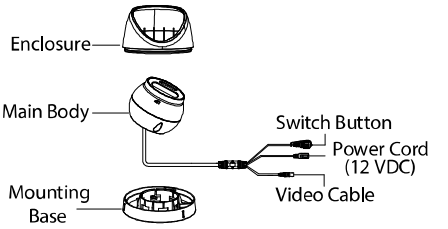

Figure 3, Type I Turret Camera Overview

NOTE: *Press and hold the switch button for five seconds to switch the video output. Four kinds of video outputs are available: TVI, AHD, CVI, and CVBS.*

3 Installation

Before You Start

Make sure that the device in the package is in good condition and all the assembly parts are included.

Make sure that all the related equipment is powered off during the installation.

Check the specification of the products for the installation environment.

Check whether the power supply matches your power output to avoid damage.

Make sure the wall is strong enough to withstand three times the weight of the camera and the mount.

If the wall is concrete, insert expansion bolts before installing the camera. If the wall is wood, use self-tapping screws to secure the camera.

If the product does not function properly, contact your dealer or the nearest service center. Do NOT disassemble the camera for repair or maintenance yourself.

2.1 Installation of Type I Bullet Camera

2.1.1 Ceiling/Wall Mounting without Junction Box

1. Paste the drill template (supplied) where you want to install the camera.
2. Drill the screw holes and the cable hole (optional) in the ceiling/wall according to the drill template.

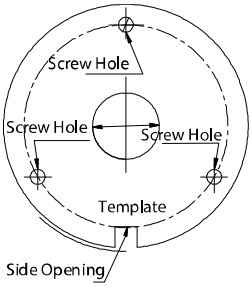

Figure 2-1 Drill Template

NOTE: *Drill the cable hole when using the ceiling outlet to route the cable.*

3. Attach the bracket to the ceiling/wall, and secure the camera with supplied screws.

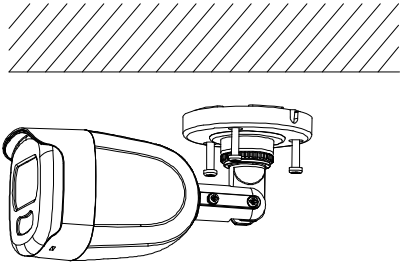

Figure 2-2 Affix Camera to Ceiling

NOTE: *The supplied screw package contains self-tapping screws and expansion bolts.*

For a concrete wall/ceiling, expansion bolts are required to affix the camera. For a wood wall/ceiling, self-tapping screws are required.

4. Route the cables through the cable hole or the side opening.
5. Connect the corresponding power cord and video cable.
6. Power on the camera to check whether the image on the monitor is at an optimum angle. If not, adjust the camera according to the figure below to get an optimum angle.

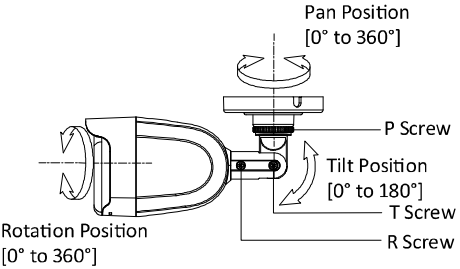

Figure 4, 3-Axis Adjustment

1) Loosen the P screw to adjust the pan position [0° to 360°]. Tighten the screw after completing the adjustment.

2) Loosen the T screw to adjust the tilt position [0° to 180°]. Tighten the screw after completing the adjustment.

3) Loosen the R screw and rotate the camera [0° to 360°]. Tighten the screw after completing the adjustment.

2.1.2 Ceiling/Wall Mounting with Junction Box

Before You Start

You need to purchase a junction box separately.

1. Paste the drill template on the ceiling/wall.

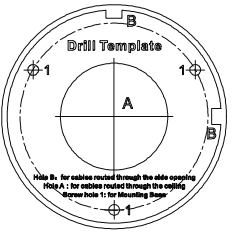

Figure 5, Junction Box Drill Template

2. Drill screw holes and the cable hole in the ceiling/wall according to the drill template holes.

3. Take apart the junction box, and align the bullet camera screw holes with those on the junction box cover.

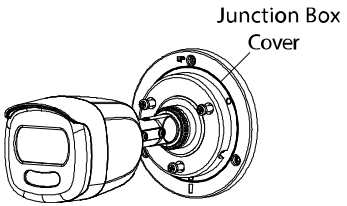

Figure 6, Attach Camera to Junction Box Cover

4. Attach the camera on the junction box's cover with supplied screws.

5. Attach the junction box body to the ceiling/wall by aligning the screw holes of the junction box.

6. Secure the junction box's body with supplied screws on the ceiling/wall.

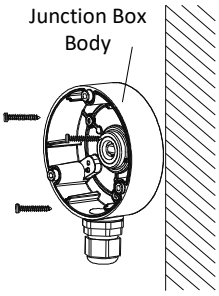

Figure 7, Affix Junction Box to Wall/Ceiling

7. Route the cables through the bottom cable hole or the side cable hole of the junction box.

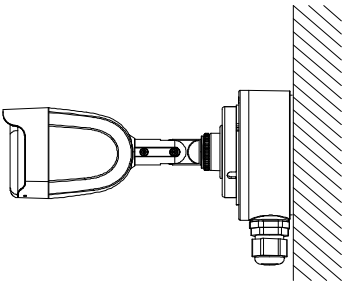

Figure 8, Reattach Cover to Junction Box

8. Connect the junction box cover to its body.
9. Repeat steps 5 and 6 of *2.1.1 Ceiling/Wall Mounting without Junction Box* to complete the installation.

2.2 Installation of Type II Bullet Camera

2.2.1 Ceiling/Wall Mounting without Junction Box

1. Paste the drill template (supplied) where you want to install the camera.
2. Drill the screw holes according to the drill template and the cable hole (optional) on the ceiling.

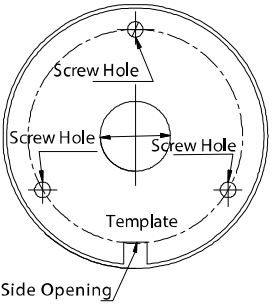

Figure 9, Drill Template

NOTE: *Drill the cable hole in center of drill template when using ceiling outlet to route the cable.*

3. Route the cables through the cable hole (optional) or the side opening.

4. Fix the camera to the ceiling with supplied screws.

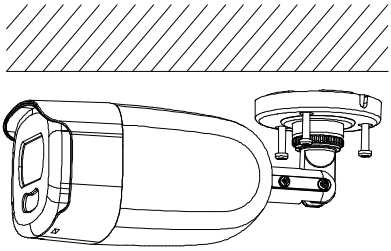

Figure 10, Affix Camera to Ceiling

NOTE: *The supplied screw package contains self-tapping screws and expansion bolts.*

5. For a concrete wall/ceiling, expansion bolts are required to fix the camera. For a wood wall/ceiling, self-tapping screws are required.

6. Connect the corresponding power cord and video cable.

7. Power on the camera to check whether the image on the monitor is at an optimum angle. If not, adjust the surveillance angle.

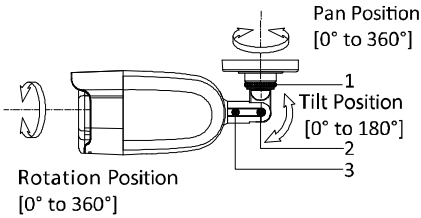

Figure 11, 3-Axis Adjustment

1) Loosen the No.1 adjusting screw to adjust the pan position [0° to 360°]. Tighten the No.1 adjusting screw.

2) Loosen the No.2 adjusting screw to adjust the tilting position [0° to 180°]. Tighten the No. 2 adjusting screw.

3) Loosen the No.3 adjusting screw to adjust the rotation position [0° to 360°].Tighten the No.3 adjusting screw.

2.2.2 Ceiling/Wall Mounting with Junction Box

Before You Start

You need to purchase a junction box separately.

1. Paste the drill template on the ceiling/wall.

2. Drill screw holes and the cable hole (optional) in the ceiling/wall according to the drill template holes.

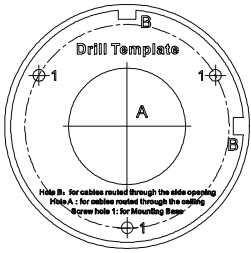

Figure 12, Drill Template

NOTE: *Drill the cable hole when using ceiling outlet to route the cable.*

3. Take apart the junction box, and align the screw holes of the bullet camera with those on the junction box's cover.

4. Fix the camera on the junction box's cover with three supplied screws.

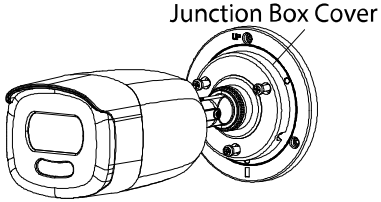

Figure 13, Install the Junction Box

5. Secure the junction box's body with supplied screws on the ceiling/wall.

6. Route the cables through the bottom cable hole or the side cable hole of the junction box.

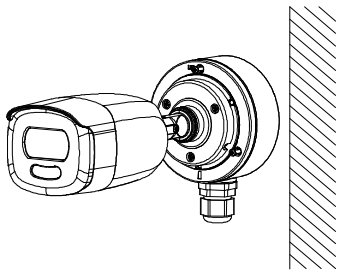

Figure 14, Attach Junction Box Cover to its Body

7. Attach the junction box cover to its body with supplied screws.

8. Repeat steps 5 and 6 of *2.2.1 Ceiling/Wall Mounting without Junction Box* to complete the installation.

2.3 Installation of Type I Turret Camera

2.3.1 Ceiling/Wall Mounting without Junction Box

1. Disassemble the camera.

   1) Rotate the camera to align the notch to one of the marks.

2) Pry the mounting base to remove the mounting base with the camera body with a flat object (e.g., a coin).

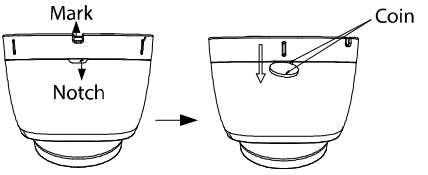

Figure 15, Pry Open Mounting Base

2. Paste the drill template (supplied) to where you want to install the camera.

3. Drill the screw holes and the cable hole (optional) in the ceiling/wall according to the drill template.

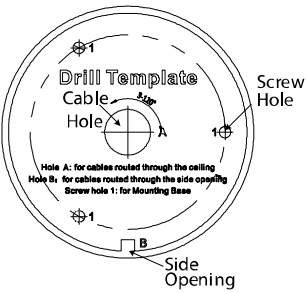

Figure 16, Drill Template

NOTE: *Drill the cable hole when using the ceiling outlet to route the cable*

4. Attach the mounting base to the ceiling/wall, and secure with supplied screws

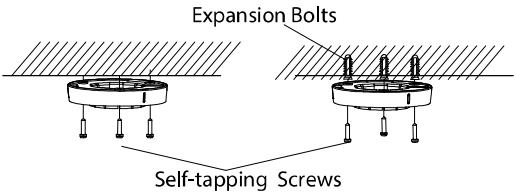

Figure 17, Attach Mounting Base to Ceiling

NOTE: *The supplied screw package contains self-tapping screws and expansion bolts.*

For concrete wall/ceiling, expansion bolts are required to fix the camera. For wood wall/ceiling, self-tapping screws are required.

5. Route the cables through the cable hole or the side opening.

6. Align the camera with the mounting base, and secure the camera on the mounting base.

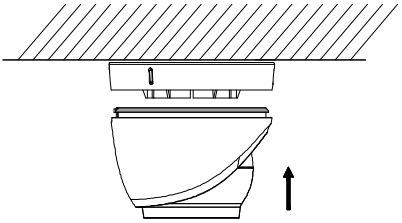

Figure 18, Secure Camera to Mounting Base

7. Connect the corresponding cables such as power cord and video cable.

8. Power on the camera to check whether the image on the monitor is at an optimum angle. If not, adjust the camera according to the figure below to get an optimum angle.

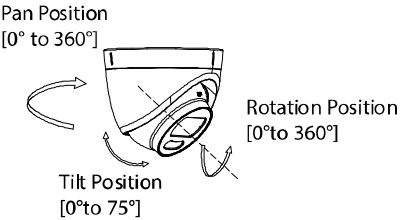

Figure 19, 3-Axis Adjustment

1) Hold the camera body and rotate the enclosure to adjust the pan position [0° to 360°].

2) Move the camera body up and down to adjust the tilt position [0° to 75°].

3) Rotate the camera body to adjust the rotation position [0° to 360°].

2.3.2 Ceiling/Wall Mounting with Junction Box

Before You Start

You need to purchase a junction box separately.

1. Paste the drill template on the ceiling/wall.

2. Drill screw holes and cable hole (optional) in the ceiling/wall according to the drill template holes.

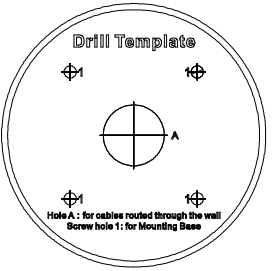

Figure 20, Junction Box Drill Template

NOTE: *Drill the cable hole when using the ceiling outlet to route the cable.*

3. Disassemble the junction box, and align the screw holes of the turret camera's mounting base with those on junction box's cover.

4. Fix the mounting base on junction box's cover by supplied screws.

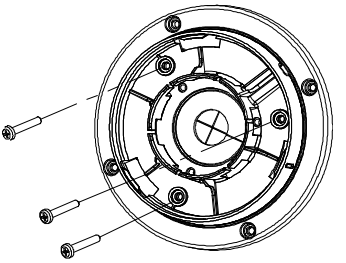

Figure 21, Install Turret Camera's Mounting Base

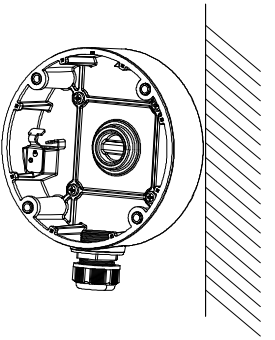

Figure 22, Install Junction Box Body on Ceiling/Wall

5. Secure the junction box's body to the ceiling/wall with supplied screws.

6. Attach the junction box cover to the junction box body.

7. Repeat steps 5 to 8 of *2.3.1 Ceiling/Wall Mounting without Junction Box* to install the camera to the junction box.

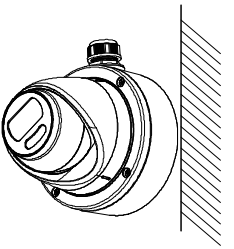

Figure 2-8 Fix the Camera to the Junction Box

4 Menu Description

Follow the steps below to call the menu.

NOTE: *The actual display may vary by camera model.*

1. Connect the camera to the TVI DVR and the monitor.

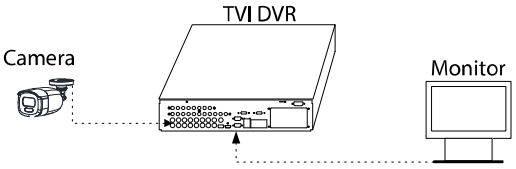

Figure 23, Connections

2. Power on the camera, TVI DVR, and the monitor to view the image on the monitor.
3. Click PTZ Control to enter the PTZ Control interface.
4. Call the camera menu by clicking the button or call the preset No. 95.

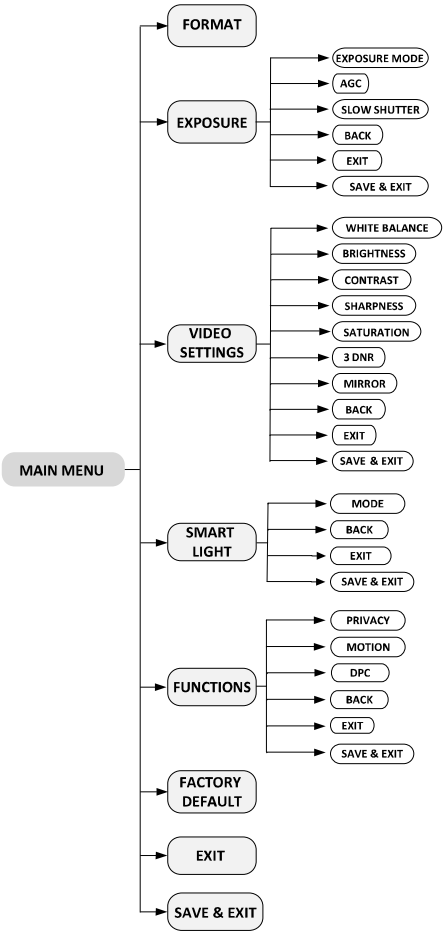

Figure 24, Main Menu Overview

5. Click the direction arrow to control the camera.

   1) Click up/down direction button to select the item.

   2) Click **Iris +** to confirm the selection.

   3) Click left/right direction button to adjust the value of the selected item.

3.1 FORMAT

You can set the video format to 2 MP @ 25 fps or 2 MP @ 30 fps.

3.2 EXPOSURE

EXPOSURE describes the brightness-related parameters, which can be adjusted by **EXPOSURE MODE**, **AGC**, and **SLOW SHUTTER**.

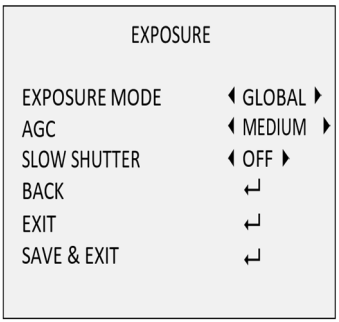

Figure 25, AE

3.1.1. EXPOSURE MODE

You can set the **EXPOSURE MODE** to **GLOBAL**, **BLC**, or **WDR**.

- **GLOBAL** refers to the normal exposure mode, which adjusts lighting distribution, variations, and non-standard processing.
- **BLC (Backlight Compensation)** compensates light to the object in the front to make it clear, but may cause overexposure of the background where the light is strong.
- **WDR (Wide Dynamic Range)** helps the camera provide clear images even under backlight circumstances. WDR balances the brightness level of the whole image and provides clear images with details.

3.1.2. AGC (Auto Gain Control)

AGC optimizes the clarity of the image in poor light conditions. The **AGC** level can be set as **HIGH**, **MEDIUM**, or **LOW**. Select **OFF** to disable the **AGC** function.

NOTE: *Noise will be amplified when the **AGC** is on.*

3.1.3. SLOW SHUTTER

SLOW SHUTTER increases the exposure time on a single frame, which makes a camera more sensitive to the light so it can produce images even in low lux conditions.

You can set the **SLOW SHUTTER** according to different light conditions.

3.1.4. VIDEO SETTINGS

Move the cursor to **VIDEO SETTINGS** and click Iris+ to enter the sub-menu. **WHITE BALANCE**, **BRIGHTNESS**, **CONTRAST**, **SHARPNESS**, **SATURATION**, **3 DNR**, and **MIRROR** are adjustable.

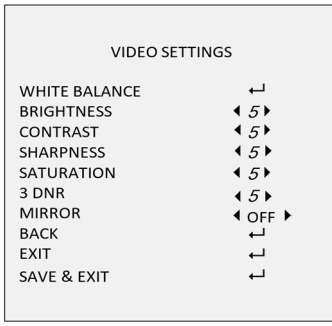

Figure 26, Video Settings

- **WHITE BALANCE.** The white rendition function of the camera, is to adjust the color temperature according to the environment. It can remove unrealistic color casts in the image. You can set **WHITE BALANCE** mode to **AUTO** or **MANUAL**.

  - **AUTO**: White balance is adjusted automatically according to the color temperature of the scene illumination.

  - **MANUAL:** You can set the R-GAIN/B-GAIN to adjust the shades of red/blue color of the image.

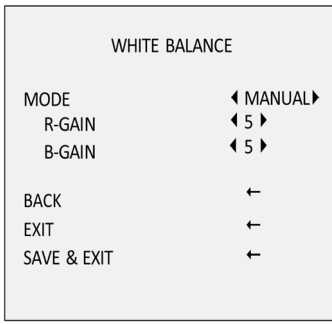

Figure 27, Manual Mode

- **BRIGHTNESS.** Brightness refers to the brightness of the image. You can set the BRIGHTNESS to darken or brighten the image. The greater the value, the brighter the image.
- **CONTRAST.** This feature enhances the difference in color and light between parts of an image.
- **SHARPNESS.** Sharpness determines the amount of detail an imaging system can reproduce.

- **SATURATION.** Adjust this feature to change the color intensity.
- **3 DNR (Digital Noise Reduction).** The 3 DNR function can decrease the noise effect, especially when capturing moving images in poor light conditions, and deliver a more accurate and sharper image.
- **MIRROR. OFF**, **H**, **V**, and **HV** are selectable.
  - **OFF:** The mirror function is disabled
  - **H:** The image flips 180° horizontally
  - **V:** The image flips 180° vertically
  - **HV:** The image flips 180° both horizontally and vertically

3.1.5. SMART LIGHT

Under the **SMART LIGHT** sub-menu, you can set the mode to **AUTO** or **OFF**.

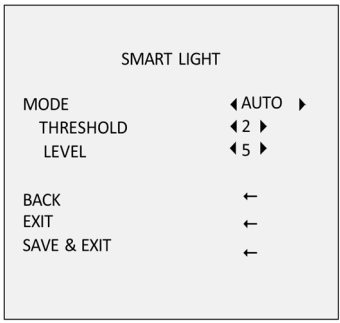

Figure 28, Smart Light

- **AUTO.** Under the **AUTO** mode, the white light turns on automatically when the environmental illumination becomes poor.
  - **THRESHOLD** value controls the sensitivity of the white light. The greater the value, the more sensitive the white light.
  - **LEVEL** value controls the white light brightness. The greater the value, the brighter the white light.
- **OFF.** This is the default mode.

3.1.6. FUNCTIONS

In the **FUNCTIONS** sub-menu, you can set the **privacy mask**, the **motion detection**, and **DPC** of the camera.

- **PRIVACY.** The privacy mask allows you to cover certain areas you don't want to be viewed or recorded. Up to four privacy areas are configurable.

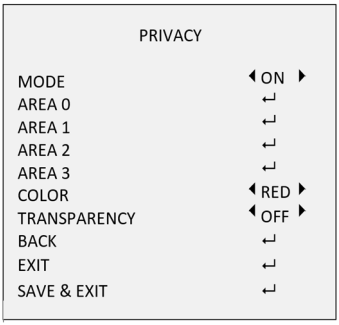

Figure 29, Privacy

1. Select a **PRIVACY** area.
2. Set the **MODE** as **ON**.
3. Click up/down/left/right button to define the position and the size of the area.

- **MOTION.** In the user-defined motion detection surveillance area, the moving object can be detected and the alarm will be triggered. Up to four motion detection areas can be configured.

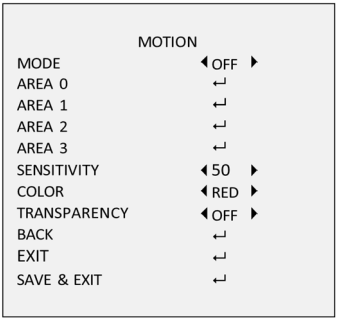

Figure 30, Motion

1. Select a **MOTION** area.
2. Set the **MODE** as **ON**.
3. Click the up/down/left/right button to define the position and the size of the area.

- **DPC (Defective Pixel Correction).** Defective pixels are pixels in a CMOS image sensor that fail to sense light levels correctly.

  This series of cameras supports defective pixel correction. You can set the **DPC** as **ON** or **OFF**.

3.1.7. FACTORY DEFAULT

Resets all settings to the factory defaults.

3.1.8. SAVE & EXIT

1. Move the cursor to **SAVE & EXIT**.
2. Click **Iris+** to save the setting and exit the menu.