HIKVISION

TURBO HD
D7T Series Dome Camera

User Manual

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 model listed below.

Model
DS-2CS54D7T-IRS
DS-2CS58D7T-IRS

This manual may contain several technically incorrect places 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

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

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 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.

Industry Canada ICES-003 Compliance

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

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 product, you must be in strict compliance with the electrical safety regulations of the nation and region.
- Refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 24 V AC or 12 V DC according to the IEC60950-1 standard. Refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Make sure that the plug is firmly connected to the power socket.
- When the product is mounted on wall or ceiling, the device shall be firmly fixed.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then contact the service center.
- If the product does not work properly, contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

⚠ Cautions

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- Do not touch senor modules with fingers. If cleaning is necessary, use clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period, replace the lens cap to protect the sensor from dirt.

- Do not aim the camera at the sun or extra bright places. Blooming or smearing may occur otherwise (which is not a malfunction), and affect the endurance of sensor at the same time.
- The sensor may be burned out by a laser beam, so when any laser equipment is in using, make sure that the surface of sensor will not be exposed to the laser beam.
- Do not place the camera in extremely hot, cold, dusty or damp locations, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required for operating environment.
- Keep the camera away from liquid while in use.
- While in delivery, the camera shall be packed in its original packing, or packing of the same texture.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Chapter 1   Introduction

1.1   Product Features

This series of camera adopts high performance CMOS sensor and advanced circuit board. It features high resolution, low distortion, and low noise, etc. It is suitable for surveillance system, and image process system.

The main features are as follows:

- High performance CMOS sensor
- 1080p resolution
- Auto white balance
- Auto electronic shutter
- Auto gain control (AGC)
- True WDR
- IR cut filter
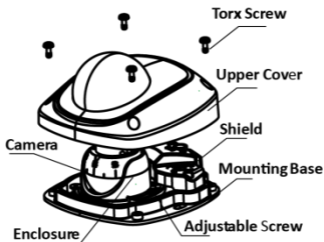- Internal 3-axis adjustment

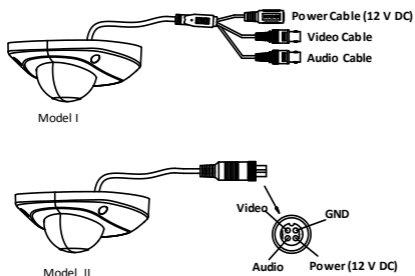## 1.2   Overview

Figure 1. 1 Overview of Dome Camera

Figure 1. 2 Power Cable and Video Cable

Chapter 2   Installation

2.1   Installation Preparation

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 power-off during the installation.
- Check the specification of the products for the installation environment.
- Check whether the power supply is matched with your power output to avoid damage.
- Make sure the wall is strong enough to withstand three times the weight of the camera and the mounting bracket.
- If the wall is cement l, you need to insert expansion bolts before you install the camera. If the wall is wooden, you can 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 by yourself.

2.2   Ceiling Mounting

Steps:

1. Stick the dill template to the ceiling.
2. Drill the screw holes, and the cable hole (optional) in the ceiling according to the drill template.

Note:
Cable hole is required when you adopts ceiling outlet to route the cable.
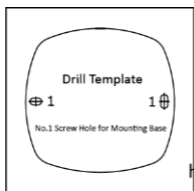

Figure 2. 1 Drill Template

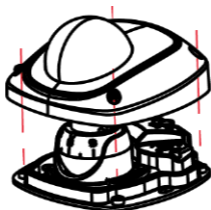3. Loosen the torx screws to remove the upper cover from the device.

Figure 2. 2 Remove the Upper Cover

4. Fix the mounting base to the ceiling with the supplied screws.

Note:
- In the supplied screw package, both self-tapping screws and expansion blots are contained.
- If the wall is cement, expansion blots are required to fix the camera. If the wall is wooden, self-tapping screws are required.
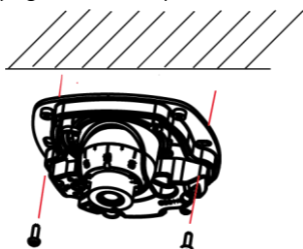

Figure 2. 3 Fix the Mounting Base

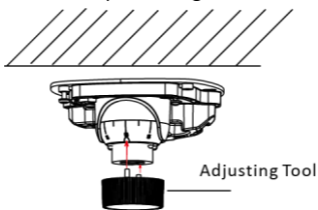5. Align the supplied adjusting tool to the small hole on the camera, and push it to get it fixed.

Figure 2. 4 Fix the Mounting Base

6. Loosen the adjustable screw to adjust the pan angle (±30°), the tilting angle (0° to 85°), and the rotation angle (±180°) with the adjusting tool, then tighten the adjustable screws.

Note:

Before adjusting the surveillance angle, you need to power on the camera first to check whether the image on the monitor is gotten from the optimum angle.
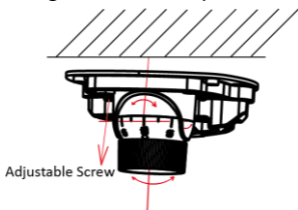

Figure 2. 5 3-axis Adjustment

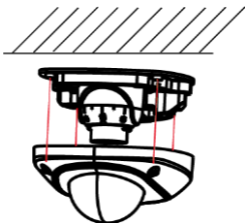7. Install the upper cover back by tightening the torx screws.

Figure 2. 6 Install the Upper Cover

Note:

- The camera is in optimum surveillance angle by default. Slightly adjust the pan tilting angle according to the actual environment.

- The upper cover should be installed before having the live view.

Chapter 3   Menu Description

Two methods are available to call the menu. This section takes the method b) as the example to state the menu operation.

a)   Call the menu and adjust the camera parameters with a coaxial camera controller (purchase separately).

b)   Call the menu with supported TVI DVR by clicking ▤ button on the PTZ interface, or by calling preset No. 95.
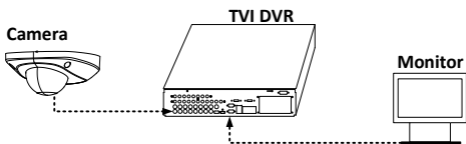

Figure 3. 1 Connection

Steps:

1. After the connection is done, power on the analog camera, TVI DVR, and monitor to view the image on the monitor.

2. Click PTZ Control to enter the PTZ Control Interface.

3. Call the camera menu by clicking ▤ button, or call preset No. 95.

4. Click up/down direction button to select the item, click Iris + to confirm the selection, and click left/right direction button to adjust the value of the selected item.
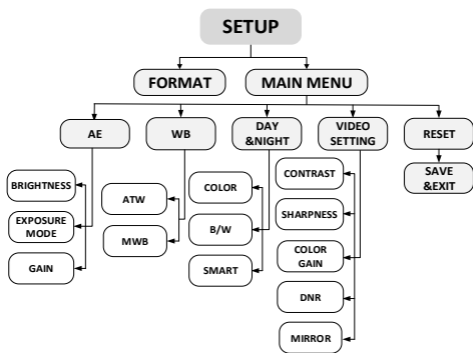
Figure 3. 2 Main Menu Overview

3.1 Format

Move the cursor to **FORMAT**, and click Iris+ to enter the FORMAT sub menu. You can set the format as NTSC or PAL.

3.2 Main Menu

3.2.1 AE (Auto Exposure)

AE describes the brightness-related parameters. You can adjust the image brightness by the **BRIGHTNESS**, **EXPOSURE MODE**, and **GAIN** in different light conditions.
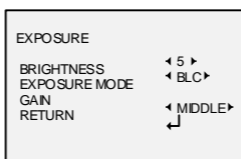
```
EXPOSURE

BRIGHTNESS        ◄ 5 ►
EXPOSURE MODE     ◄ BLC ►
GAIN              ◄ MIDDLE►
RETURN            ↵
```

Figure 3. 3 AE

BRIGHTNESS

Brightness refers to the brightness of the image. You can set the brightness value from 1 to 10 to darken or brighten the image. The higher the value, the brighter the image is.

EXPOSURE MODE

You can set **AE** mode as **GLOBAL**, **BLC**, and **WDR**.

● **GLOBAL**

GLOBAL refers to the normal exposure mode which adjusts the situations including unusual lighting distribution, variations, non-standard processing, or under other exposure conditions to get an optimum image.

● **BLC (Backlight Compensation)**

BLC (Backlight Compensation) compensates light to the object in the front to make it clear, but this causes the over-exposure of the background where the light is strong.

When BLC is selected as the exposure mode, the BLC level can be adjusted from 0 to 8.

● **WDR (Wide Dynamic Range)**

The 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.

GAIN

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

Note:

The noise will be amplified when the GAIN is on.

3.2.2 WB (White Balance)

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 WB mode as **ATW**, or **MWB**.

ATW

Under **ATW** mode, white balance is being adjusted automatically according to the color temperature of the scene illumination.

MWB

You can set the **R GAIN**/**B GAIN** value from 0 to 255 to adjust the shades of red/blue color of the image.
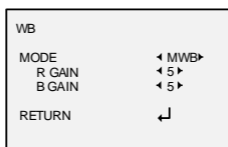
```
WB

MODE          ◄ MWB►
  R GAIN      ◄ 5 ►
  B GAIN      ◄ 5 ►

RETURN          ↵
```

Figure 3. 4 MWB Mode

3.2.3 DAY-NIGHT

Color, **B/W**, and **SMART** are selectable for DAY and NIGHT switches.

COLOR

The image is colored in day mode all the time.

B/W

The image is black and white all the time, and the IR LED turns on in the low-light conditions.

SMART

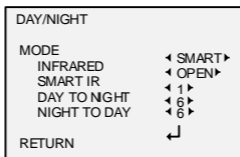You can turn on/off the **INFRARED** and set the value of **SMART IR** in this menu.

```
DAY/NIGHT

MODE            ◄ SMART►
  INFRARED      ◄ OPEN►
  SMART IR      ◄ 1 ►
  DAY TO NIGHT  ◄ 6 ►
  NIGHT TO DAY  ◄ 6 ►

RETURN            ↵
```

Figure 3. 5 Day & Night

- **INFRARED**

You can turn on/off the IR LED to meet the requirements of different circumstances.

- **SMART IR**

The **Smart IR** function is used to adjust the light to its most suitable intensity, and to prevent the image from over exposure. The **SMART IR** value can be adjusted from 0 to 3. The higher the value the more obvious effects are, and it is disabled when the value is 0.

- **DAY TO NIGHT**

Set the value from 1 to 10. The higher the value, the earlier the color status switches to B/W status.

- **NIGHT TO DAY**

Set the value from 1 to 10. The higher the value, the earlier the B/W status switches to color status.

3.2.4 VIDEO SETTING

Move the cursor to **VIDEO SETTING** and click Iris+ to enter the submenu. **CONTRAST**, **SHARPNESS**, **COLOR GAIN**, **DNR**, and **MIRROR** are adjustable.
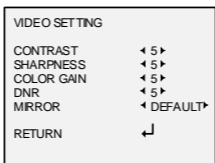
```
VIDEO SETTING

CONTRAST        ◄ 5 ►
SHARPNESS       ◄ 5 ►
COLOR GAIN      ◄ 5 ►
DNR             ◄ 5 ►
MIRROR          ◄ DEFAULT ►

RETURN          ↵
```

Figure 3. 6 Video Setting

CONTRAST

This feature enhances the difference in color and light between parts of an image. You can set the **CONTRAST** value from 1 to 10.

SHARPNESS

Sharpness determines the amount of detail an imaging system can reproduce. You can set the **SHARPNESS** value from 1 to 10.

COLOR GAIN

Adjust this feature to change the saturation of the color. The value ranges from 1 to 10.

DNR (Digital Noise Reduction)

The DNR function can decrease the noise effect, especially when capturing moving images in low light conditions and delivering more accurate and sharp image quality. You can set the **DNR** value from 1 to 10.

MIRROR

DEFAULT, **H**, **V**, and **HV** are selectable for mirror.

DEFAULT: 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.

3.2.5 RESET

Reset all the settings to the default.

3.2.6 SAVE & EXIT

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