



TURBO HD TVI Dome Camera

User Manual



UserManual

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

This manual applies to Vehicle-Mounted Camera.

This manual may contain several technically incorrect places or printing errors. The content is subject to change without notice, and 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 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 Low Voltage Directive 2014/35/EC, the EMC Directive 2014/30/EC.



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.



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 AC 24V or DC 12V 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 please 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 by 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 sensor 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.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 NOTE	Provides additional information to emphasize or supplement important points of the main text.
 WARNING	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
 DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

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 monitoring 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

The overview of dome camera is shown below.

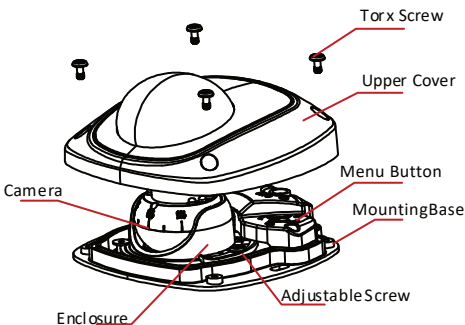


Figure 1-1 Overview of Dome Camera

1.3 Interface of Aviation Plug

The interface of aviation plug is shown below.

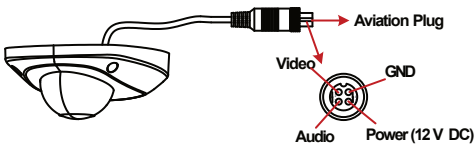


Figure 1-2 Interface of Aviation Plug

2 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 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 four times the weight of the camera and the mounting bracket.

If the wall is cement, 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.

2.1 Ceiling Mounting

The dome camera supports ceiling mounting. The installation steps are shown as follows.

Step 1 Loosen the torx screws to remove the upper cover from the device.

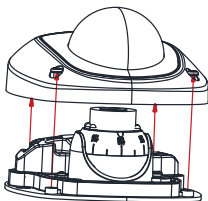


Figure 2-1 Remove the Upper Cover

Step 2 Stick the drill template to the ceiling. Step

3 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.

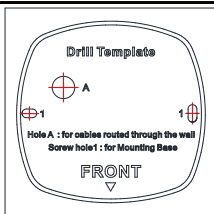


Figure 2-2 Drill Template

Step 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.

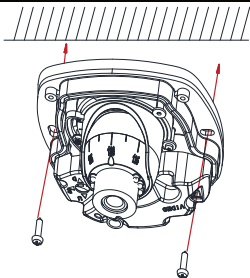


Figure 2-3 Fix the Mounting Base

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

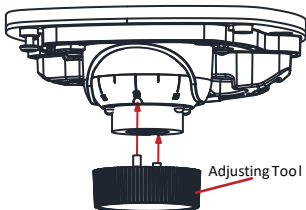


Figure 2-4 Align the Adjusting Tool

Step 6 Loosen the adjustable screw to adjust the pan angle ($\pm 30^\circ$), the tilting angle (0° to 75°), and the rotation angle ($\pm 180^\circ$) 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.

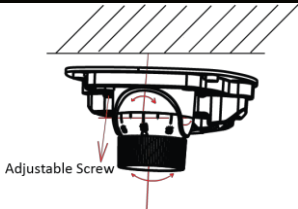


Figure 2-5 3-axis Adjustment

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

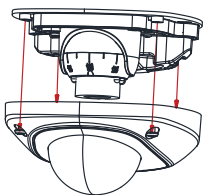


Figure 2-6 Install the Upper Cover

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.

3 Menu Description

Loosen the torx screws via L type wrench and hold the menu button for 2 seconds. The OSD menu will be displayed on the display device.

You can use the menu button to move the cursor up, down, left or right to set the parameters for the camera.

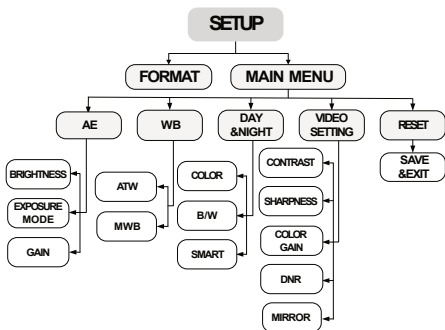


Figure 3-1 Main Menu Overview

3.1 Format

Move the cursor to **FORMAT**, and confirm 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**, **EXPOSUREMODE**, and **GAIN** in different light conditions.

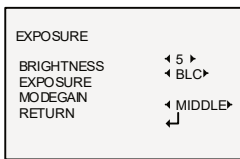


Figure 3-2 AE

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 **RGAIN/BGAIN** value from 0 to 255 to adjust the shades of red/blue color of the image.

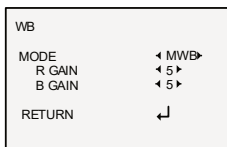


Figure 3-3 MWB Mode

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 **SMARTIR** in this menu.

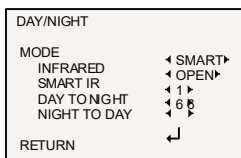


Figure 3-4 Day & Night

INFRARED

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

SMART IR

The **SmartIR** function is used to adjust the light to its most suitable intensity, and to prevent the image from over exposure. The **SMARTIR** 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 easier the color status switches to B/W status.

NIGHT TO DAY

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

3.2.4 VIDEO SETTING

Move the cursor to **VIDEOSETTING** and confirm 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 3-5 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 confirm to save the setting and exit the menu.