

# GD-CT-AC2116T

## TVI Bullet Camera

User Guide

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FOR A GOOD REASON  
**GRUNDIG**

Do not connect several devices to one power adapter as this may cause an adapter overload and can lead to over-heating and fire. Make sure that the plug of the power adapter is firmly connected to the power socket. Do not use any accessories that are not recommended by GRUNDIG. Do not modify the product in any way. If the product starts to smell or smoke comes out of the device, immediately stop using the product and disconnect it from the power supply to prevent fire or electric shocks. Then contact your dealer or the nearest service center.

If the product does not work correctly, contact your dealer or nearest service center. Never open, disassemble or alter the product yourself. GRUNDIG cannot accept any liability or responsibility for problems caused by attempted and unauthorized repair and maintenance.

Do not aim the camera or camera lens at a strong light such as the sun or a bright lamp. Irreversible damage to the camera can be caused by a strong light.

Do not expose the sensor of the product to laser beams as this may damage the sensor.

Do not install the product near radiation sources.

Do not install the product near heat sources, like radiators or other equipment that produces some heat.

### Installation References

Do not install the product on surfaces or in places that are vibrating. This product is not dedicated to be used in vehicles, trains etc..

Do not touch the sensor module with your fingers. Always adjust the focus by using a grey filter or at low illumination.

If the product supports IR, you need to take some precautions to prevent IR reflection. Do not install the product close to reflective surfaces of objects as this may cause reflection. The foam ring around the lens must be seated flush against the inner surface of the bubble to isolate the lens from the IR LEDs.

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

This manual may contain technical 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.

### Privacy Notice

Surveillance laws vary by jurisdiction. Check all relevant laws in your jurisdiction before using this product for surveillance purposes to ensure that your use of this product conforms. Please refer to the product specification for camera parameters and functions.

### Introduction

Please read these instructions carefully and keep them for future reference. You must heed all the warnings and cautions as well as follow all the safety and installation instructions.

### Safety Instructions

Make sure that you only use the power adapter that is specified in the specifications sheet of the product. If you use any other adapter or connect the power supply incorrectly, this may cause explosion, fire, electric shocks or damage the product.

## 1 INTRODUCTION

This series of camera adopts new generation sensor with high sensitivity and advanced circuit design technology. It features high resolution, low image distortion and low noise, etc., which makes it suitable for surveillance system and image processing system.

- High performance CMOS sensor and high resolution bring high-quality image;
- Low illumination;
- OSD menu, parameters are configurable;
- Support auto white balance, auto gain control,
- Support image effect adjustment;
- Unit transmission control;
- Advanced 3-axis design meets different installation requirements.

### 1.2 Overview

#### 1.2.1 Overview of Type I Camera

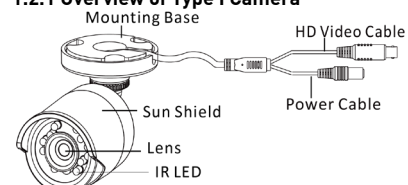


Figure 1-1 Overview of Type I Camera

#### 1.2.2 Overview of Type II Camera

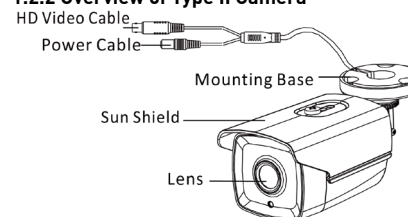


Figure 1-2 Overview of Type II Camera

#### 1.2.3 Overview of Type III Camera



Figure 1-3 Overview of Type III Camera

## 2 INSTALLATION

### Before you start:

- Please 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.
- Please make sure the wall is strong enough to withstand three times the weight of the camera and the mounting.
- If the wall is made of cement, you need to insert expansion screws before you install the camera. If it is a wooden wall, you can use self-tapping screw to secure the camera.
- If the product does not function properly, please contact your dealer or the nearest service center. Do not disassemble the camera for repair or maintenance by yourself.

### 2.1 Installation of Type I Camera

#### Steps:

1. Drill the screw holes according to the drill template.
2. Screw the clip plate onto the mounting base loosely.



Figure 2-1 Drill Template

3. Route the cables to the cable hole and connect the corresponding power cable and video cable.
4. Fix the camera to the ceiling with the supplied screws.

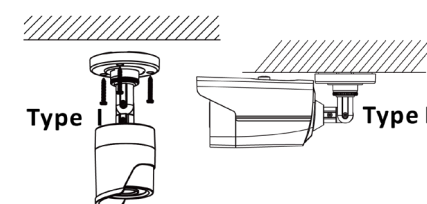


Figure 2-2 Fix the Camera to the Ceiling

5. Adjust the surveillance angle.

1. Loosen No.3 adjusting screw to adjust the panning position (0° ~ 360°).
2. Tighten No.3 adjusting screw.
3. Loosen the No.2 adjusting screw to adjust the tilting position (0° ~ 90°).
4. Tighten No.2 adjusting screw.
5. Loosen No.1 adjusting screw to adjust the azimuth angle of the image (0° ~ 360°).
6. Tighten No.1 adjusting screw.

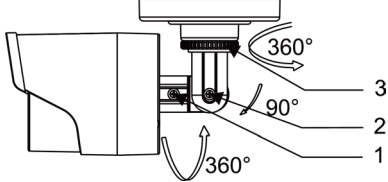


Figure 2-3 3-axis Adjustment

## 2.2 Wall Mounting for Type III Camera

Steps:

1. Wiggle the mounting plate to disassemble it from the wall mount.

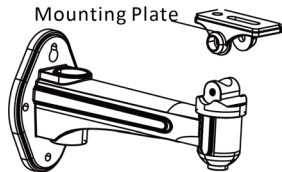


Figure 2-4 Disassemble Mounting Plate

1. Drill the screw holes on the wall according to the supplied drill template.

2. Attach the wall mount to the wall and tighten the screws to fix it.

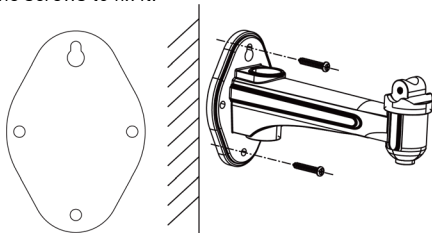


Figure 2-5 Drill Template & Install Mount

4. Screw the mounting plate onto the camera.

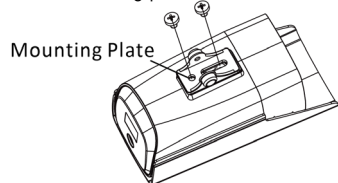


Figure 2-6 Screw the Mounting Plate

5. Fix the camera to the wall mount with the supplied screws.

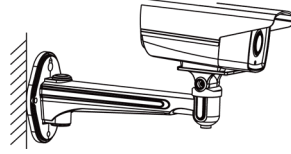


Figure 2-7 Fix the Camera

5. Adjust the surveillance angle.

1. Loosen No.1 adjusting screw to adjust the pan position (0° ~ 360°).
2. Tighten No.1 adjusting screw.
3. Loosen No.2 adjusting screw to adjust the tilting position (0° ~ 90°).
4. Tighten No.2 adjusting screw.

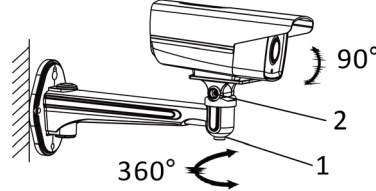


Figure 2-8 Angle Adjustment

## 3 MENU OPERATION

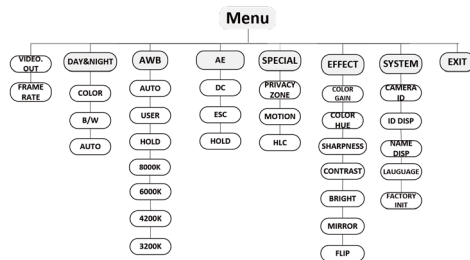


Figure 3-1 Main Menu

A coaxial camera controller (purchase separately) is required to select the menu and adjust the camera parameters.

### 3.1 VIDEO.OUT

You can set the frame rate as 25 fps/30fps.

### 3.2 DAY/NIGHT

Color, B/W, AUTO and EXT are selectable for DAY/NIGHT switches. Under the mode of the AUTO and EXT, you can set the IR LED as Smart and CDS. If the IR LED is selected as Smart, you can set the brightness of the IR LED.

DAY/NIGHT	
1. MODE	AUTO
2. D TO N	63
3. N TO D	63
4. DELAY TIME	20
5. RETURN	RET

Figure 3-2 DAY/NIGHT

AWB	
1. MODE	AUTO
2. R-G GAIN	255
3. B-G GAIN	151
4. RETURN	RET

Figure 3-3 AWB

### 3.3.3 AWB

Auto, User, Push, 8000k, 6000k, 4200k and 3000k are selectable for AWB. Under the mode of AUTO, you need to set the R-G/B-G Gain and to select an indoor/outdoor mode. If the AWB mode is selected as User, you need to set the R/G/B Gain manually.

### 3.3.4 AE

You can set the AE mode as HOLD, DC and ESC.

**Brightness:** Brightness refers to the brightness of the image.

**Shutter:** Shutter denotes the speed of the shutter. You can set the shutter as AUTO, 1/25, 1/30, 1/50, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1k, 1/3k and 1/10k.

**Flicker:** You can set the flicker status as 50HZ/60HZ to prevent image flicking.

**BLC:** BLC bases on the back area to enhance the brightness of the whole image. You can set the BLC gain from 0 to 16.

**AGC:** AGC optimizes the clarity of image in poor light scene. The value of AGC can be set from 1-5.

**LSC:** LSC corrects the phenomenon where the image gets darkened or blurred on the periphery.

### 3.3.5 SPECIAL

SPECIAL	
1. PRIVACY ZONE	
2. MOTION	
3. HLC	
4. RETURN	RET

Figure 3-4 SPECIAL

**Privacy zone:** Select a PRIVACY area. Set the MASK PAT as OFF, GRAY, WHITE or BLACK. Set the SX/EX/SY/EY value to define the position and size of the area.

**Motion:** Set the Motion status as ON or OFF. Set the SENSITIVITY from 0 to 255. Set the alarm status as ICON/TRANCE/OFF. Set the hold time from 0 second to 255 seconds.

**HLC:** HLC supplements the brightness of the peripheral area of the image. You can set the mask value and threshold from 0 to 255.

### 3.3.6 EFFECT

EFFECT	
1. COLOR GAIN	200
2. COLOR HUE	200
3. SHARPNESS	25
4. CONTRAST	150
5. BRIGHT OFF.	1
6. MIRROR	ON
7. FLIP	ON
8. RETURN	RET

Figure 3-5 EFFECT

**Color Gain:** Color gain adjust this feature to change the saturation of the color. You can set the value from 0 to 255.

**Color Hue:** You can adjust the image HUE from 0 to 71.

**Sharpness:** Sharpness determines the amount of detail that an imaging system can reproduce. You can set the value from 0 to 255.

**Contrast:** Contrast enhances the difference in color and light between parts of an image. You can set the value from 0 to 255.

**Bright Off.:** Bright Off. refers to the brightness compensation of the image. You can set the bright compensation value as 0 or 1.

**Mirror:** You can set the Mirror status as ON/OFF.

**Flip:** You can set the FLIP status as ON/OFF.

### 3.3.7 SYSTEM

SYSTEM	
1. CAMERA ID	255
2. ID DISP.	ON
3. NAME DISP.	ON
4. LANGUAGE	ENG
5. FACTORY INIT	OFF
6. RETURN	RET

Figure 3-6 SYSTEM

You can set the camera ID from 0 to 255.

Select the ID display and name display status as ON/OFF.

Chinese and English are selectable for the language of the menu.

You can restore the camera to the default by setting the factory initialization status as ON.

### 3.3.8 EXIT

Exit and Save & exit are selectable.