HD-TVI Eyeball Camera
User Guide

GRUNDIG

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GD-CT-AP8117E

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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.

The appearance of the products, functions and firmware or software upgrade may differ from this manual.

GRUNDIG reserves the right to perform needed changes without prior notice.

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.

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 place containers with liquids on the product. Do not place conducting items like tools, screws, coins or other metal items on the product. These may fall from the product or can cause fire or electric shocks or other physical injuries.

Do not push or insert any sharp items or any objects into the device as this may cause damage to the product, fire, electric shocks and/or physical injuries.

Do not block any ventilation openings, if there are any. Ensure that the product is well ventilated to prevent any over-heating.

Do not subject the device to physical shock or drop the product.

If the product uses batteries, please use a battery type that is recommended by the manufacturer. Improper use or replacement of the battery may result in the hazard of explosion.

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.

Installation Instructions

It is necessary to fix the device firmly if the product is installed on a wall or ceiling.

Do not install the product on surfaces or in places that are vibrating.

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.

If the product is not classified by any IP class, do not install the product in very cold or hot temperatures (please refer to the working temperature specified in the specification sheet of the product), dusty, dirty or damp environment.

If the product is classified by any IP class, never touch the product cover directly with your fingers, because the acidic sweat of the fingers may damage the surface coating of the product cover. To clean the inside and outside of the product cover, use a soft and dry cloth. In any case, do not use alkaline detergents.

The correct configuration of all passwords and other security settings is the sole responsibility of the installer and/or end-user (this applies especially to IP Cameras and Recorders).

Special Installation Instructions for Cameras

Do not touch the sensor module with your fingers.

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.

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.

If the product has a dome cover, please remove the protection film only after installation to prevent dust or grease on the camera which can 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. Fasten the dome cover to the camera body so that the foam ring and the dome cover are attached seamlessly.

For cleaning use a clean cloth with a bit of ethanol and wipe it carefully and gently. In any case do not use alkaline detergents.

If a glove is provided in the package, please use it to open the product cover. Never touch the product cover directly with fingers, because the acidic sweat of the fingers may damage the surface coating of the product cover.

1 Introduction

1.1　Product Features

The main features are as follows:

- 8 MP High performance CMOS sensor
- Supports IR cut filter with auto switch;
- OSD menu, parameters are configurable;
- Supports auto white balance;
- SMART IR mode;
- Internal synchronization;
- Advanced 3-axis design meets different installation requirements.
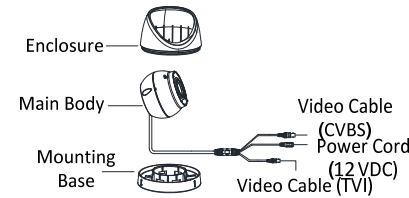
1.2 Overview

1.2.1 Overview of Camera

Figure 1-1 Overview of the Camera

2 Installation

2.1 Ceiling Mounting/Wall Mounting without Junction Box

Before you start:

Both wall mounting and ceiling mounting are suitable for the turret camera. Ceiling mounting will be taken as an example in this section. You can take the steps of ceiling mounting as reference when adopting the wall mounting.

Steps:

1. Disassemble the camera.
1.1. Rotate the camera to align the notch to one of the marks.

1.2. Pry the mounting base to remove the mounting base from the camera body with a flat object, e.g., a coin.
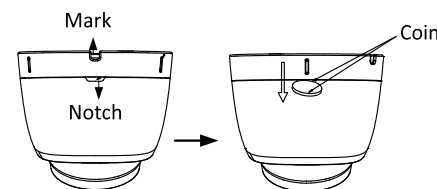

Figure 1-1 Disassemble the Camera

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

3. Drill the screw holes according to the drill template, and the cable hole (optional) on the ceiling.
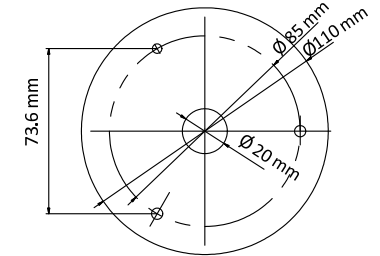

Figure 1-2 Drill Template

Note:

Drill the cable hole in the center of the drill template, when adopting the ceiling outlet to route the cable.

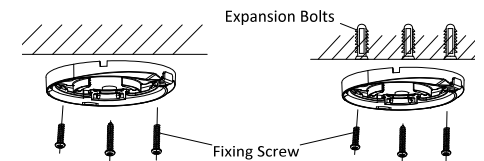4. Secure the mounting base to the ceiling with the supplied screws.

Figure 1-3 Fix the Mounting Base to the Ceiling

Note:

- The supplied screw package contains self-tapping screws, and expansion bolts.
- For cement wall/ceiling, expansion bolts are required to fix the camera. For wooden wall/ceiling, self-tapping screws are required.

5. Route the cables through the cable hole, or the side opening.
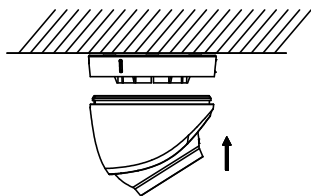
6. Secure the camera on the mounting base.

Figure 1-4 Secure the Camera

7. Connect the corresponding cables, such as the power cord and video cable.
8. Power on the camera to check whether the image on the monitor is gotten from the optimum angle. If not, adjust the camera according to the figure below to get an optimum angle.
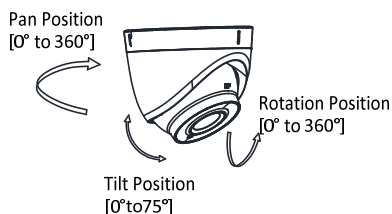

Figure 1-5 3-axis Adjustment

9.1. Hold the camera body and rotate the enclosure to adjust the pan position [0° to 360°].
9.2. Move the camera body up and down to adjust the tilt position [0° to 75°].
9.3. Rotate the camera body to adjust the rotation position [0° to 360°].

3 Menu Description

Follow the steps below to call the menu.

Note:
The actual display may vary with your camera model.
Steps:
1. Connect the camera with the TVI DVR, and the monitor, as shown in figure 3-1.
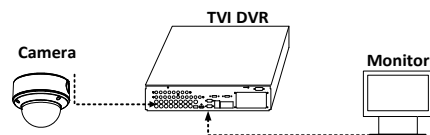

Figure 3-1 Connection

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.
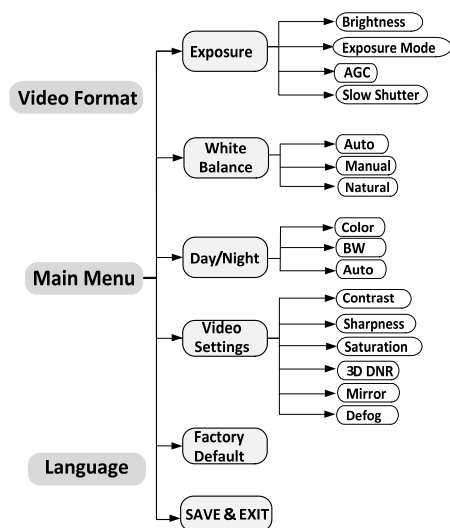4. Call the camera menu by clicking the 📋 button, or call the preset No. 95.

Figure 3-2 Main Menu Overview

5. Click the direction arrow to control the camera.
(1) Click the up/down direction button to select the item.
(2) Click Iris + to confirm the selection.
(3) Click the left/right direction button to adjust the value of the selected item.

3.1 FORMAT
You can set the video format to 8 MP@12.5fps, 8 MP@15fps, 5 MP@20fps, 4 MP@25fps, 4 MP@30fps, 1080p@25fps, or 1080p@30fps.

3.2 EXPOSURE
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 is, the brighter the image is.

EXPOSURE MODE
You can set the **EXPOSURE MODE** to **GLOBAL**, **BLC**, **HLC**, or **WDR**.
● **GLOBAL**
GLOBAL refers to the normal exposure mode which adjusts lighting distribution, variations, and non-standard processing.
● **BLC (Backlight Compensation)**
BLC (Backlight Compensation) compensates light to the object in the front to make it clear, but this may cause over-exposure of the background where the light is strong.
● **HLC (Highlight Compensation)**
HLC stands for highlight compensation. The camera detects the strong spots (the over-exposure portion of image), then reduces the brightness of the strong spots to improve the overall images.
● **WDR (Wide Dynamic Range)**
The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provides clear images with details.

AGC (Auto Gain Control)
It optimizes the clarity of the image in poor light conditions. The **AGC** level can be set to **HIGH**, **MEDIUM** or **LOW**.
Note:
The noise will be amplified when the **AGC** is on.

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** function as OFF, x2, x4 under 8 MP@15fps, or 8 MP@12.5fps mode, and as Off, x2, x4, x6, x8, or x16 according to the different light conditions.

3.3 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 the WB mode as Auto, Manual, or Natural.
AUTO
Under Auto mode, white balance is being adjusted automatically according to the color temperature of the scene illumination.
MANUAL
Click Iris+ to enter the submenu, you can set the R Gain/B Gain value from 1 to 255 to adjust the shades of the red/blue color of the image.
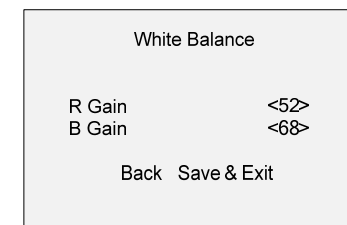

Figure 3-3 WHITE BALANCE

WHITE BALANCE

NATURAL

Set the white balance as **NATURAL** when a large part of the monitoring scene is monochrome.

3.4 DAY/NIGHT

COLOR, **B&W** (Black White), and **AUTO** are selectable for DAY and NIGHT switches.

COLOR

The image is colorful in day mode all the time.

B&W

The image is black and white all the time. It is recommended to turn the IR LIGHT on in poor light conditions.

AUTO

You can turn on/off the **IR LIGHT**, and set the value of **SMART IR** in this menu.
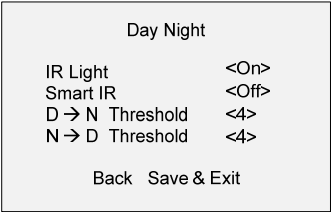
```
              Day Night

IR Light              <On>
Smart IR              <Off>
D → N  Threshold      <4>
N → D  Threshold      <4>

        Back   Save & Exit
```

Figure 3-4 DAY/NIGHT

●**IR LIGHT**

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

●**SMART IR**

The Smart IR function is used to adjust the light to its most suitable intensity, and prevent the image from over-exposure. You can turn on/off this function.

●**D►N THRESHOLD (Day to Night Threshold)**

Day to Night Threshold is used to control the sensitivity of switching the day mode to night mode. You can set the value from 1 to 9. The larger the value is, the more sensitive the camera is.

●**N►D THRESHOLD (Night to Day Threshold)**

Night to Day Threshold is used to control the sensitivity of switching the night mode to day mode. You can set the value from 1 to 9. The larger the value is, the more sensitive the camera is.

3.5 VIDEO SETTINGS

Move the cursor to **VIDEO SETTINGS** and click Iris+ to enter the submenu. **CONTRAST**, **SHARPNESS**, **SATURATION**, **3 DNR**, and **MIRROR** are adjustable.

```
            Video Settings
Contrast                <5>
Sharpness               <5>
Saturation              <5>
3D DNR                  <5>
Mirror                  <Off>
Defog                   <0>

        Back    Save & Exit
```
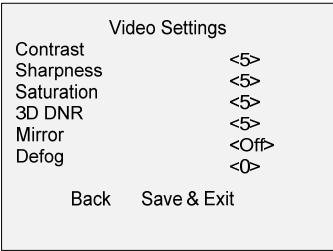
Figure 3-5 VIDEO SETTINGS

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.

SATURATION

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

3 DNR (3D DNR)

3 DNR refers to 3D digital noise reduction. Comparing with the general 2D digital noise reduction, the 3D digital noise reduction function processes the noise between two frames besides processing the noise in one frame. The noise will be much less and the video will be clearer. You can set the 3D DNR value from 1 to 10.

MIRROR

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

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.

DEFOG

It is used in special environments such as foggy or rainy weather, or in high illumination conditions, in which the dynamic range is lower than that in an ordinary environment and the image appears hazy.

Enabling the defog function can enhance the subtle details to display clear images.

3.6 FACTORY DEFAULT

Click Iris+ to enter the submenu, and click OK to reset all the settings to factory default. Click CANCEL to give up the reset settings.

3.7. SAVE & EXIT

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

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