



Multi-sensor HDCVI Panoramic IR Bullet Camera

DH-HAC-PFW3601N-A180

Quick Start Guide

Version 001.001

Dahua Technology USA Inc.

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1 Welcome

This manual offers reference material and general information about the basic operation, maintenance, and troubleshooting of the Dahua Multi-Sensor Panoramic Camera. Read, follow, and retain the following safety instructions. Heed all warning on the unit and in the operating instructions before operating the unit. Keep this guide for future reference.

1.1 Important Safeguards and Warnings

Electrical safety

- Install the unit in accordance with the manufacturer's instructions and in accordance with applicable local codes.
- All installation and operation must conform to your local electrical safety codes.
- Do not overload outlets and extension cords, which may cause fire or electrical shock.
- Do not place the camera near or in a place where the camera may contact overhead power lines, power circuits, or electrical lights.
- All input/output ports are SELV circuits. Ensure that SELV circuits are connected only to other SELV circuits.
- Ground the unit using the ground connection of the power supply to protect the unit from damage, especially in damp environments.
- Protect the plug and power cord from foot traffic, being pinched, and its exit from the unit.
- Units with or without an ON/OFF switch have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON/OFF switch is in the ON position. The power cord is the main power disconnect device for switching off the voltage for all units.
- Operate the unit only from the type of power source indicated on the label. Before proceeding, disconnect the power from the cable to be installed into the unit.
 - For external power supplied units, use only the recommended or approved power supplies.
 - Limited power sources must comply with EN 60950. Substitutions may damage the unit or cause fire or shock.
 - For 24 VAC units, voltage applied to the unit's input power should not exceed $\pm 25\%$. User-supplied wiring must comply with local codes (Class 2 power levels). Do not ground the supply at the terminals or at the unit's power supply terminal.
 - Contact the local dealer or the power company to verify the correct power supply.
- Do not supply power via the Ethernet connection (PoE) when power is already supplied via the power connector.
- Do not attempt to service the unit. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified personnel.
- If the unit is damaged and requires service, unplug the unit from the main AC power supply and from the PoE supply and refer to qualified service personnel. Damage may include, but is not limited to:
 - The power supply cord or plug is damaged.
 - Liquid has spilled in or on the unit.
 - An object has fallen on the unit.
 - The unit has been dropped and the housing is damaged.

- The unit displays a marked change in performance.
- The unit does not operate in the expected manner when the user correctly follows the proper operating procedures.
- Ensure a service technician uses replacement parts specified by the manufacturer, or that have the same characteristics as the original parts. Unauthorized parts may cause fire, electrical shock, or other hazards. Dahua is not liable for any damage or harm caused by unauthorized modifications or repairs.
- Perform safety checks after completion of service or repairs to the unit.
- Use attachments and accessories only specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Dahua, could void the warranty.
- Incorporate a readily accessible disconnect device in the building installation wiring for quick power disconnect to the camera.
- Dahua assumes no liability or responsibility for any fire or electrical shock caused by improper handling or installation.

Environmental Precautions

- Do not aim the unit at a strong light source or into direct sunlight to focus. A strong light source may cause overexposure and may affect the longevity of the CCD or the CMOS sensor.
- Transport, use, and store the unit within the specified temperature and humidity range.
- Do not place the unit in a wet, dusty, extremely hot or an extremely cold environment; and avoid environments with strong electromagnetic radiation or unstable lighting.
- Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or cause a short circuit that may result in fire or electrical shock. Take care to not spill any liquid on the unit.
- Do not use units intended for indoor applications near water, in damp or wet environments, or in any area classified as a wet location. Do not expose an indoor unit to rain or moisture to reduce the risk of fire or electric shock.
- Do not block or cover any openings in the unit enclosure. These openings are provided for ventilation to prevent overheating and to ensure reliable operation. Ensure the unit is placed in an area with adequate ventilation.
- Do not place the unit near a heat source such as heaters, stoves, radiators or other equipment that produces heat.
- Pack the unit with standard factory packaging or material of the same quality when transporting the unit.
- Take care to avoid heavy stress, violent vibration, or water spills to the camera unit during transportation, storage, and installation.

Operation and Daily Maintenance

- Do not touch the heat dissipation component of the unit. This part of the unit is hot and may cause a burn.
- Do not open or dismantle the device; there are no components that a user can fix or replace. Opening the unit may cause water leakage or expose components to direct light. Contact the manufacturer or a qualified service representative to service the camera or to replace a component, including the desiccant.
- Dahua recommends the use of a thunder-proof device in concert with the unit.
- Do not touch the CCD or the CMOS optic sensor. Use a blower to clean dust or dirt on the lens surface. Use a dry cloth dampened with alcohol and gently wipe away any dust on the lens.
- Use a dry soft cloth to clean the unit's housing. If the unit is particularly dusty, use water to dilute a mild detergent, apply the diluted detergent to a soft cloth, then gently clean the device. Finally, use a dry cloth to wipe the unit dry. Do not use a volatile solvent like alcohol, benzene, or thinner; or use a strong detergent with abrasives, which may damage the surface coating or reduce the working performance of the unit.
- Do not touch or wipe a dome cover during installation, this cover is an optical device. Refer to the following methods clean the dome cover:
 - Stained with dirt: Use an oil-free soft brush or blower to gently remove the dirt.
 - Stained with grease or fingerprints: Use a soft cloth to wipe gently the water droplet or the oil from the dome cover. Then, use an oil-free cotton cloth or paper soaked with alcohol or detergent to clean the lens from the center of the dome to outside. Change the cloth several times to ensure the dome cover is clean.

Lifting Appliance Requirement

- Select the proper installation mode and use the proper lifting device to safely lift the camera at the installation site.
- Ensure that the lifting device has the proper capacity to reach the installation height.
- Use the lifting device in accordance with its operating instructions and abide by the device's safety precautions.

Warnings

- Change the default password after the initial login to protect the integrity of the network.
- Use the standard accessories provided by the manufacturer and ensure the unit is installed and commissioned by qualified professionals.
- Protect the lens area from laser radiation when using a laser device to aid in installation and leveling of the unit.
- Do not supply power via the Ethernet connection (PoE) when power is already supplied via the power connector.

1.2 FCC Information

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

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

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. 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 communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

1.3 Legal Notices

Copyright

This user guide is ©2017, Dahua Technology Company, LTD.

This user guide is the intellectual property of Dahua Technology Company, LTD and is protected by copyright. All rights reserved.

Trademarks

All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

1.4 Disclaimer

- This user guide has been compiled with great care and the information it contains has been thoroughly reviewed and verified. The text was complete and correct at the time of printing. This guide may be periodically updated to reflect changes to the product or to correct previous information and the content of this guide can change without notice. If you encounter an error or have any questions regarding the contents of this guide, contact customer service for the latest documentation and supplementary information. Dahua accepts no liability for damage resulting directly or indirectly from faults, incompleteness, or discrepancies between this guide and the product described. Dahua is not liable for any loss caused by installation, operation, or maintenance inconsistent with the information in this guide.
- Video loss is inherent to all digital surveillance and recording devices; therefore Dahua cannot be held liable for any damage that results from missing video information. To minimize the occurrence of lost digital information, Dahua recommends multiple, redundant recording systems, and adoption of backup procedure for all data.
- Contact the supplier or customer service if you encounter any issue while using this unit.

2 Unpacking

This equipment should be unpacked and handled with care. If an item appears to have sustained damage during shipping, notify the shipper immediately.

Verify that all the parts listed below are included. If an item is missing, contact customer support or your local representative.

The original packing carton is the safest container to transport the unit, in the event the unit must be returned for service. Retain the carton and all shipping material for future use.

Please refer to the enclosed CD for more details, to view the detailed User's Manual, and for configuration software.

Package Item	Quantity
Multi-sensor Bullet Camera	1
Mounting Template	1
Multi-Purpose Tool	1
Installation Hardware Pack	1
Expansion Bolts	4
Mounting Bolts	4
Quick Start Guide	1

3 Installation and Configuration

3.1 External Cable

The following table lists each cable and its function.

Cable Connections

No.	Port Name	Function	Connector	Note
1	AUDIO IN	Audio input port	RCA	Audio in to receive an analog audio signal from an external pickup.
2	HD 1	HDCVI HD1 Out	BNC	Individual HDCVI output channels.
3	HD 2	HDCVI HD2 Out	BNC	
4	HD 3	HDCVI HD3 Out	BNC	
5	Panoramic	180° Panoramic Out	BNC	Stitched Panoramic video output channel.
4	I/O	I/O port	-	Alarm signal input/output. Refer to Table 3-2 for more details.
5	POWER	Power input port	-	Power port. Input 12 VDC power. Use power according to the device tag.

Table 3-1

Alarm I/O Port Configuration

Port Name	Color	Name	Note
I/O Port	Blue	ALARM_OUT	Alarm output port. Use to output the alarm signal to the alarm device.
	Orange	ALARM_IN1	Alarm input port 1. Use to receive the On/Off signal from an external alarm source.
	Yellow	ALARM_IN2	Alarm input port 2. Use to receive the On/Off signal from an external alarm source.
	Black	ALARM_GND	Alarm ground port

Table 3-2

3.2 Framework and Dimensions

The following figures show the dimensions of the device in mm (in.). These images are intended as a reference only.

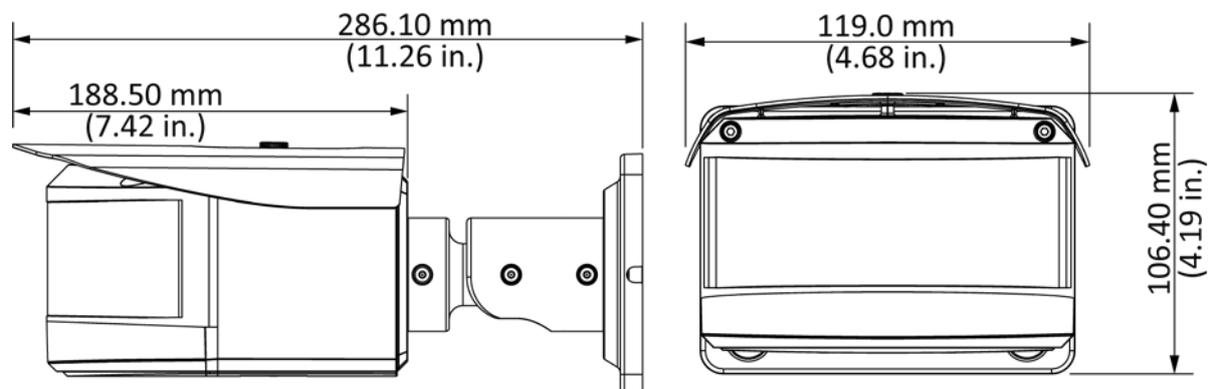


Figure 3-1

3.3 Alarm Setup

Certain devices support alarm inputs and outputs, check your specific device for alarm capability.

Alarm Input

Refer to Figure 3-3 for alarm input configuration. The device collects that status of the alarm input port when the input signal is idle or grounded. If the input signal is connected to the 3.3V or it is idle then the device receives the alarm input signal. If input signal is grounded, then no alarm input signal is detected.

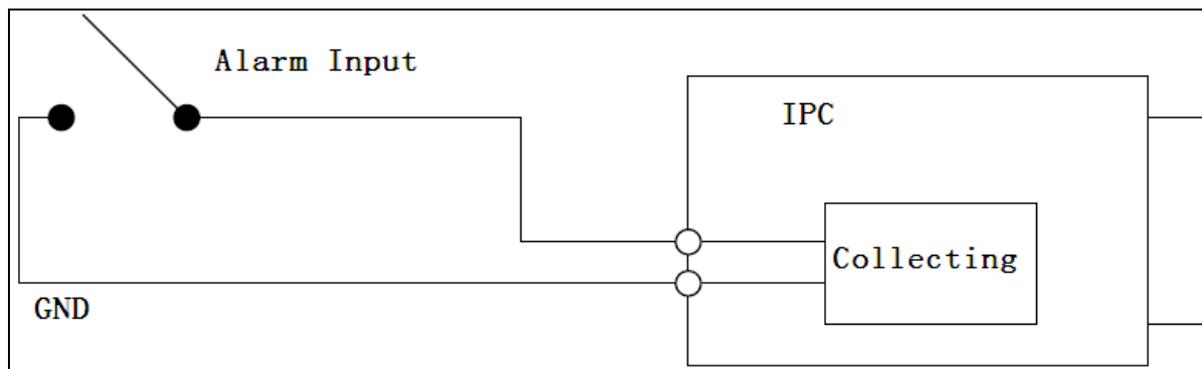


Figure 3-2

Alarm Output

The ALARM_OUT and the ALM_OUT_GND ports form a switch, which is used to provide alarm output. Normally the switch is on when there is no output signal. The switch is turned off when an alarm output signal is present.

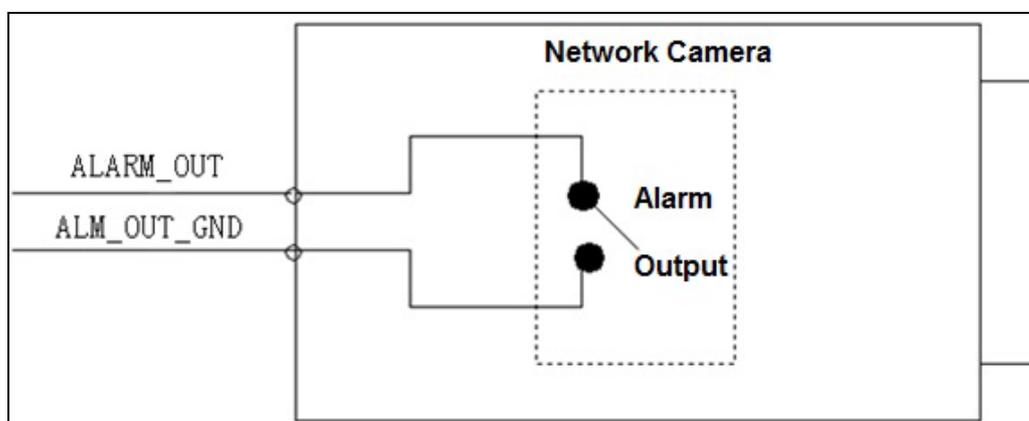


Figure 3-3

1. Connect the alarm input device to the ALARM_IN1 or ALARM_IN2 connector on the I/O port cable.
2. Connect an alarm output device to the ALARM_OUT and to the ALARM_OUT_GND connectors on the I/O port cable. The Alarm Output can only be connected to a Normally Open (NO) alarm device.

4 Device Installation

This section details installing the Multi-Sensor camera to a wall or to a ceiling. Note that the wall or ceiling must be capable of supporting a minimum of three (3) times the weight of the camera and a bracket (if used).

Warning: DO NOT connect the camera to the power supply during installation.

Warning: For units intended to be installed outdoors: All wiring connecting to the unit must be routed separately inside a different permanently earthed metal conduits (not supplied).

Warning: Install external interconnecting cables in accordance to NEC, ANSI/NFPA70 (for US application) and Canadian Electrical Code, Part I, CSA C22.1 (for CAN application) and in accordance to local country codes for all other countries. Branch circuit protection incorporating a 20 A, 2-pole Listed Circuit Breaker or Branch Rated Fuses are required as part of the building installation. A readily accessible 2-pole disconnect device with a contact separation of at least 3 mm must be incorporated.

Warning: DO NOT remove the protective film from the dome until the installation is complete to protect the dome from distortions from fingerprints, oil, grease or other contaminants.

Note: Dahua recommends attaching a “drip loop” (flex or hard conduit) during installation to ensure condensation does not form in the mount or the conduit.

4.1 Installing the Camera

1. Remove the camera, the mounting template, multi-purpose tool, and the hardware package from the box.
2. Remove the bottom cover from the camera to access the analog output port and the camera menu control buttons.
3. Connect an analog TV monitor to the CVBS Output port. This optional step assists with positioning and configuring the camera to produce the desired video scene.
4. Apply the mounting template to the mounting medium. Pre-drill the four perimeter holes for the expansion bolts, using a drill bit that is no wider than the expansion bolt.
5. Drill the center hole to route the cable from the camera through the installation medium.
6. Insert an expansion bolt into each pre-drilled perimeter hole.
7. Route the cables from the back of the camera through the installation medium and align the four holes on the base of the camera with the expansion bolts.
8. Insert a bolt into the expansion bolts and tighten with the Multi-purpose tool. Repeat this procedure with the other three (3) expansion bolts.
9. Adjust the sunshield, if necessary. Loosen the screw on the top of the camera and slide the sunshield back and forth to the desired location, then tighten the screw.
10. Connect the external cables from the camera to the appropriate cables for video, power, alarm I/O, and audio.
11. Press the Reset button for five (5) seconds to reset camera and to send video along the analog connection, if connected.

- Adjust the monitoring direction of the camera. Use the Multi-purpose Tool to loosen the three set screws along the shaft of the camera, then position the camera by tilting, twisting, and rotating the camera as shown in the figure below.

Note: Do not rotate the camera more than three (3) times in any one direction.

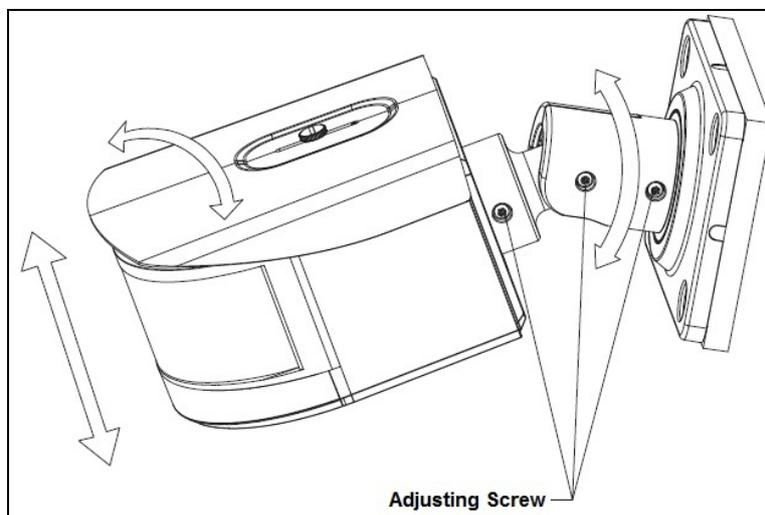


Figure 4-1

5 Setting Camera Parameters

HDCVI technology allows you to set parameters for the camera and to control the camera from a Dahua HDCVI DVR.

1. Connect the camera to a Dahua HDCVI DVR.
2. From the DVR, select the Main Menu and choose Setting. Then, select the System tab and select the PTZ link, on the left-side menu.
3. Select the appropriate channel number for the camera.
4. Set CONTROL MODE as HDCVI and set PROTOCOL as HD-CVI.



Figure 5-1

5. Click Save to store the changes.
6. Click the Camera tab at the top of the page.
7. Select the ENCODE link on the left-side menu.

- Set AUDIO FORMAT as G711a and set AUDIO SOURCE as HDCVI.



Figure 5-2

- Click Save to store the changes.
- Click the right-mouse button and select PTZ Control. The HDCVI DVR opens the PTZ Setup menu.



Figure 5-3

- Click the Camera icon to access the Operation Menu.



Figure 5-4

12. Use the following table to access the camera's menu:

Button	Function
	Access the camera's settings menu.
	Select a menu item.
	Select a setting value.
	Adjust lens zoom and auto trigger function.
	Adjust lens focus.
	Trigger autofocus at the current zoom factor.

6 Camera Maintenance

Proper maintenance will ensure consistent image quality over the life-span of the camera.

6.1 Optical Components

Take care not to touch or stain the dome cover, lens, or the mirror surface. If the one of these surfaces is stained, use the following methods to clean:

- Stained with dirt: Use an oil-free soft brush or blower to gently remove the dirt.
- Stained with grease or fingerprints: Use a soft cloth to wipe gently the water droplet or the oil from the dome cover. Then, use an oil-free cotton cloth or paper soaked with alcohol or detergent to clean the lens from the center of the dome to outside. Change the cloth several times to ensure the dome cover is clean.

6.2 Camera Body

Use a dry soft cloth to clean the unit's housing. If the unit is particularly dusty, use water to dilute a mild detergent, apply the diluted detergent to a soft cloth, then gently clean the device. Finally, use a dry cloth to wipe the unit dry. Do not use a volatile solvent like alcohol, benzene, or thinner; or use a strong detergent with abrasives, which may damage the surface coating or reduce the working performance of the unit.

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