HIKMICRO AI Series
Acoustic Imaging Camera (V5.5.57)

Release Notes

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1 Introduction

The HIKMICRO AI56 acoustic imaging camera is a professional product for sound source localization. With 64 Low-noise MEMS microphones and an adjustable bandwidth range from 0 kHz to 100 kHz, AI56 provides an easy and effective way to locate pressurized air leaks in industrial environments or detect partial discharge in high-voltage systems. By using a large 4.3" LCD touch screen, the results presented on top of a digital picture allow you to quickly find the source of the problems. The maximum operating distance could reach 100 meters, which can ensure you stay at a safe distance to inspect the high-voltage equipment. By adopting this lightweight and easy-to-use tool, you can discover potential safety risks, minimize troubleshooting, and save extra costs of equipment failures and downtime.

This document introduces new features and optimizations in V5.5.57 of AI series cameras.

For detailed operation guide, please refer to the user manual of AI series acoustic imaging camera, V5.5.57.

ⓘNote

- This product is designed to assess energy leakage to achieve energy savings. However, due to potential environmental factors that may impact detection accuracy, the estimations provided are approximate and for informational purposes only. It should be noted that the results presented by the devices are not a guarantee of actual energy savings or a recommendation, and may not accurately reflect the specific situation of your facilities.
- The images used in this document are for demonstration only. Please refer to the actual product.

1.1 Version Information

| Item	Description
Firmware Version	V5.5.57 build 230905
Models	AI56

1.2 How to Update to New Version

Before upgrading your device, make sure:

- Device battery is fully charged.
- Auto Power-off function is turned off to avoid accidental suspension during upgrading.
- A memory card has been installed to device.

Steps

1. Download new firmware from our website (https://www.hikmicrotech.com/en/industrial-products/ai56-acoustic-camera/), and save it to your PC.

2. Use supplied USB cable (USB type C to USB type A) to connect the device to PC.
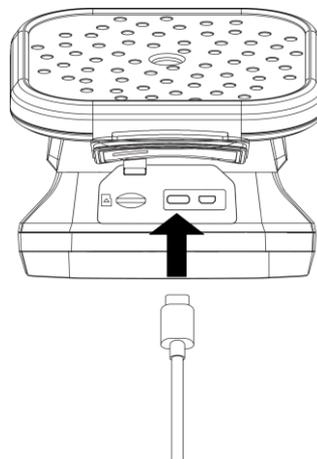
3. Open the detected disk on your PC.

4. Unzip the firmware and copy the .dav file to the root directory of the disk.

5. Disconnect the device from PC and reboot the device to start upgrading automatically.

2 New Feature

2.1 PD severity level display for quick handling

HIKMICRO AI56 of V5.5.57 offers partial discharge (PD) detection to locate the partial discharges that might jeopardize the operational safety of electrical systems.

With this build, the camera is able to judge the severity of detected partial discharge incidents and display the result next to the PD type.
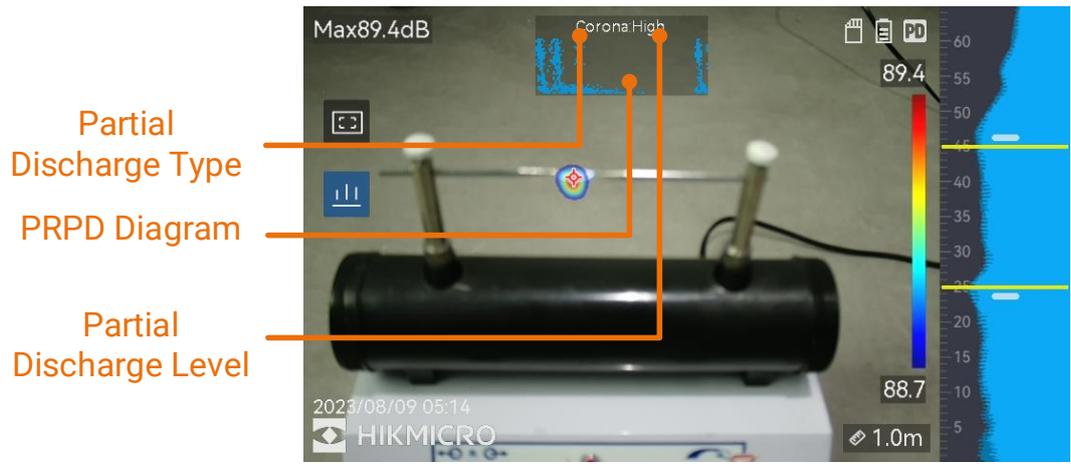

Different severity level requires different handling. Recommended handling for each level is shown in the table below.

Partial Discharge Severity	Recommended Handling
Normal	No observable/measurable deterioration.
Low	Minor deterioration which requires attention. Shorten inspection period and take maintenance actions when necessary.
Medium	Moderate deterioration. Locate and clean the item during routine maintenance, or carry out related electrical test of the item. Or use online monitor to monitor the discharge tendency.
High	Serious deterioration. Item cannot be returned to service without shutdown or engineering advise.

2.2   Showing multiple sound sources at the same time

In previous versions, camera only displays acoustic palettes at the strongest sound source. With this build, if you want to check other sound sources in the scene at the same time, turn on **Multiple Sources** from **Settings** > **Acoustic Settings** > **Multiple Sources**.
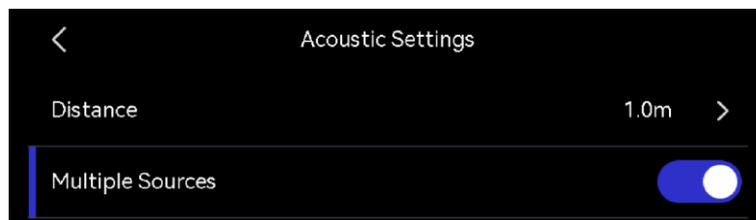
Single Source   Multiple Sources

2.3   Adjustable intensity range for palettes

Colors in palettes stand for different sound intensity values. In this build, intensity range settings for palettes is available.

The default mode is **Auto**, in which the camera calculates a suitable range according to the sound condition of detection scene.

If the auto mode display is not satisfactory, switch to **Manual**, set an **Intensity Delta** (gap between the upper and lower range limit), and let the camera decides the upper and lower limit. Larger intensity delta usually means larger color-marked area for a sound source.

Intensity Range: Manual
Intensity Delta: 3.0 dB

Intensity Range: Manual
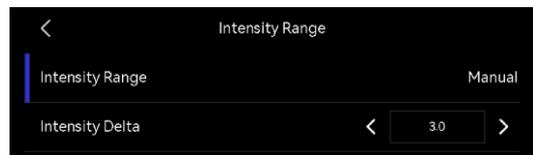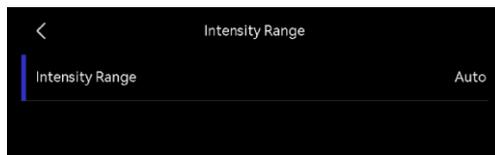Intensity Delta: 1.0 dB

Intensity Range: Auto

Adjust the settings from **Settings > Acoustic Settings > Intensity Range**.

Steps

1. In the live view interface, tap ▤ or press ⊙𝕂 to show the menu.

2. Go to **Settings > Acoustic Settings > Intensity Range**, and press ⊙𝕂 to switch to **Manual**.

3. Select **Intensity Delta** and press ⊙𝕂.

4. Press/hold △⊕ and ▽⊖ to adjust values.

5. Press ⇦ to save and exit.

## 2.4 Device sleep mode supported for power saving

In sleep mode, device screen is off to conserve your battery's charge.

Press ⏻ to enter sleep mode and press it again to wake the device up.

You can also set device auto sleep from **Settings > Device Settings > Auto Sleep**. When there is no button pressing or screen tapping operation on device for more than the set waiting time, device enters sleep mode automatically.

3 Optimization

3.1 Changes in frequency settings
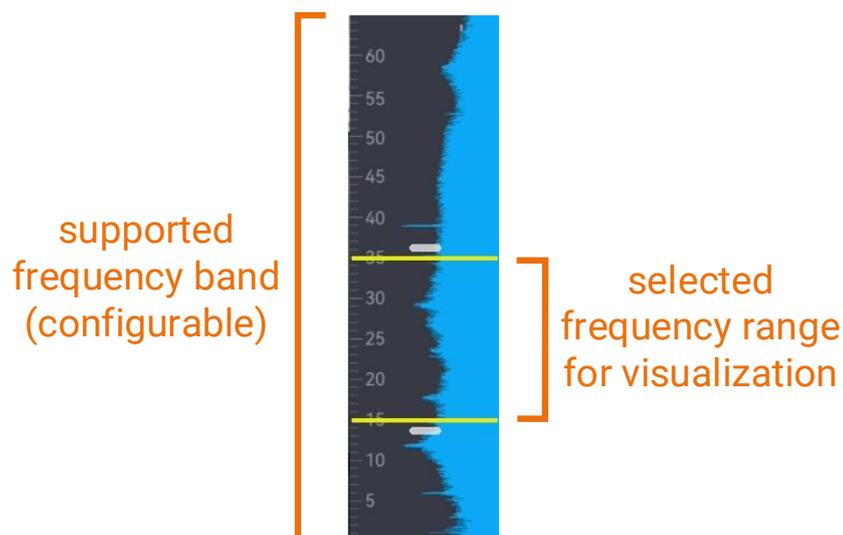
3.1.1 A wider frequency band (0-100 kHz) available

This build offers a wider frequency band ranging from 0-100 kHz comparing to the previous one (0-65 kHz).

Switch the frequency band from **Settings > Acoustic Settings > Frequency**.

3.1.2 Parameters for selected frequency range optimized

Camera visualizes sound sources of the selected frequency range (target frequency range) to acoustic palettes for easy observation.

Adjust the range manually or switch to several predefined target frequency ranges to better locate and display desired sound sources.

The manual adjustable range (gap between the upper and lower limits) is now 0.1 kHz to 30 kHz (0.1 kHz to 24 kHz in the previous version).

The predefined target frequency ranges under PD and LD mode are changed to:

Frequency Option	Frequency Range (PD)	Frequency Range (LD)
1	15-32 kHz	20-50 kHz
2	22-32 kHz	25-45 kHz
3	15-23 kHz	45-65 kHz

3.2 Gas leak detection: minimum unit price to 0.0001

Unit price is used to estimate possible cost of gas leakage. With minimum unit price down to 0.0001, cost calculated by some high-value currency can be displayed better.

3.3 Digital zoom up to 16x

Visual image is able to be zoomed 16x in this version (8x in the previous version).

● In the live view interface, hold △⊕ or ▽⊖ to zoom in or zoom out by 1× continuously.

● In the live view interface, press △⊕ or ▽⊖ to zoom in or zoom out by 0.1× precisely.

ⓘNote

Enable the status icon display from **Settings > Display Settings > Status Icon** to see zooming status showing at upper right of the screen.

3.4 Upgrading process simplified

Camera upgrading process has been simplified that only one file is required for the whole process (FPGA and main program are packed together).

See 1.2 How to Update to New Version for upgrading operations.

4 FAQ on Upgrade

4.1 Why my PC failed to detect the camera as a USB drive?

Check the following items:

- Use a good quality type A to type C USB cable to connect your PC to your camera. The supplied cable is recommended. Normally, a cable should be able to charge a camera and transfer data.
- Keep the microSD card inserted and do not remove it during connection.
- Keep the camera powered on.

4.2 What should I do when my PC notifies power surge on the USB port?

Check the following items:

- When you are looking for an adapter of USB type C to USB type A, please choose an unpowered hub. A powered hub such as Surface Dock Station is not compatible.
- If you are using a built-in USB PowerShare in your PC, please try another port.

4.3 What should I do when my PC notifies USB device not recognized?

In most cases, it does not affect use. You can just ignore the prompt and find the detected USB drive in **This PC**.

4.4 What should I do if my PC notifies the USB drive has a problem to be fixed?
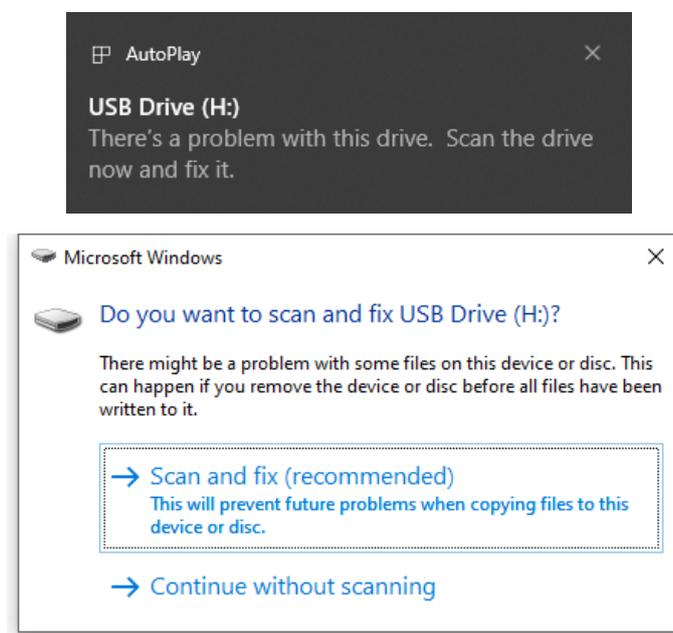
Some Windows computers will scan a USB drive when it is connected, and show the error. Click scan and fix, Windows will confirm the drive is fine and connect to it. You can also skip scanning and find the detected USB drive in **This PC**, which does not affect use in most cases.

Legal Information

About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the HIKMICRO website (www.hikmicrotech.com/).

Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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LEGAL DISCLAIMER

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