CRYSOUND

# CRY8024

## Pocket Acoustic Imaging Camera

## User Manual

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# Revision History

| Revision Number | Description | Revision Date |
|---|---|---|
| 1.0 | ● Initial version | 2026/02/02 |

# 01 User Notice

## Legal Disclaimer

Copyright © 2026 Hangzhou CRYSOUND Electronic Co., Ltd. All rights reserved. This manual, including its text, images, graphics, and other content, is the property of Hangzhou CRYSOUND Electronic Co., Ltd. or other authorized companies. Without written permission, no entity or individual may excerpt, reproduce, translate, or modify this manual in any way. Hangzhou CRYSOUND Electronic Co., Ltd. does not provide any express or implied statements or warranties.

## Compliance

This device has been tested and complies with regulations regarding electronic products. It may cause interference to RF receivers in residential areas, and users are responsible for resolving such interference. The device is equipped with the CE mark, indicating compliance with relevant EMC requirements.

This device complies with the limits for Class A electronic devices specified in Part 15 of the FCC Rules. The device generates, uses, and radiates radio frequency energy. If not installed and used in accordance with the instructions, it may cause interference to radio communications. This manual serves solely as a guide for the specific model of the product and may differ from the actual product. Please refer to the physical product itself for accurate information and specifications.

In the event of product version upgrades or other requirements, CRYSOUND may update this manual. The latest version of the manual can be viewed on the device itself or accessed on the official website of CRYSOUND.

## Warranty and Calibration

This product is covered by a free warranty repair service for abnormalities or malfunctions within two years from the date of purchase. The free warranty repair service does not cover issues caused by improper use or accidental damage such as drops. Unauthorized disassembly of the product will void warranty.

In case of malfunctions caused by improper use or accidental damage, we offer repair services at cost price. The device is calibrated during the manufacturing

process. We recommend sending the device back to the manufacturer for calibration, testing, and maintenance every two years to ensure optimal performance during prolonged use.

## Safety Usage Reminder

To prevent potential fire or personal injury, please note:

1. Please carefully read the content of this safety notice before using the product.
2. Only use the product for its designated purpose.
3. Do not disassemble the device without authorization.
4. If the device experiences any malfunctions or abnormal heating, please stop using it.
5. Please contact the manufacturer for device repair services.
6. Do not place the device near heat sources, flames, or in high-temperature environments.
7. Prohibit the use of all cable connectors and sensors in hazardous areas.
8. Prohibit charging in hazardous areas.

## Limitations of the GHz Frequency Range

According to Article 10(10) of Directive 2014/53/EU, as indicated in the packaging instructions, when selling this wireless radio equipment in Belgium (BE), Bulgaria (BG), Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE), Northern Ireland (UK), Turkey (TR), Norway (NO), Switzerland (CH), Iceland (IS), and Liechtenstein (LI), the wireless local area network (WLAN) function is restricted and limited to indoor use within the frequency range of 5150 to 5250 MHz.

This product includes Wi-Fi, Bluetooth, and GPS functionality. The wireless operating frequency bands include：
Bluetooth: 2402 MHz ~ 2480 MHz.
Wi-Fi: 2.400 GHz ~ 2.4835 GHz, 5.155.35 GHz, 5.475.725 GHz, 5.725~5.85 GHz.

# 02 Introduction

The CRYSOUND CRY8024 Pocket Acoustic Imaging Camera makes the invisible audible—turning sound into vision through advanced acoustic imaging technology. It helps industries detect problems earlier, reduce energy loss, and ensure safer operations.

As the smallest and lightest acoustic camera in its class, the CRY8024 integrates high-sensitivity array sensing, real-time imaging, and intelligent analysis into a compact handheld device.

Users can quickly identify compressed-air leaks, partial discharges, and other anomalies, and generate standardized inspection reports effortlessly via mobile app.

As a key member of the CRYSOUND acoustic inspection family, the CRY8024 embodies the concept of a "pocket-sized acoustic imaging camera" —redefining efficiency and mobility in industrial inspection.

# 03 Glossary

## USB Power Delivery (USB PD)

The device utilizes a power delivery protocol based on the USB 3.0 standard, allowing for higher power transfer through the USB port.

## Sound Pressure Level (SPL)

The device measures the amplitude of the sound source using sound pressure level (SPL), which is a physical quantity that represents the magnitude of a sound wave. SPL is expressed in decibels (dB) and is referenced to a standard sound pressure level in air. It is commonly denoted as dBSPL when used for representation.

## Audible Domain

The frequency range of sound that can be perceived by human ears generally refers to the sound in the frequency band of 20Hz-20KHz.

## Ultrasonic

Generally, refers to a frequency of more than 20kHz, which the human ear cannot perceive.

## Sound Image

It refers to the two-dimensional data table representing the intensity distribution of sound sources in space, after the signal collected by microphone array is calculated by the algorithm.

## Palette

The color data used in the color mapping of a sound image.

## Sound Cloud Image

The sound pressure level data of each resolution point on the sound image is mapped to a certain color number on the palette, according to a certain conversion formula to form a color image. Then it is fused with the visible image to form a sound cloud image.

## Test Frequency Range

When a frequency range is selected within the full frequency range supported by the device, the device will only measure and display a sound cloud image that is within this frequency range. Sound outside this frequency range will not be displayed.

## Frequency Peak

A peak in the spectrum denotes a strong sound energy distribution at this frequency.

## Field of View

An angle formed by the camera and the two diagonal points of the rectangular picture captured by it.

For sound cloud image, it is an angle formed by the microphone array and the two diagonal points of the rectangular sound image.

# 04 Product and Accessories

## 4.1 Product Accessory List

| Item Numbers | Name | Description |
|---|---|---|
| 1 | Pocket Acoustic Imaging Camera | CRY8024 |
| 2 | USB-C Charge Cable | Cable used to charge the device or export data. |

## 4.2 Battery and Charging

### Battery Information

The device is powered by a lithium-ion battery with a nominal capacity of 3900mAh at 3.85V. To charge the device, use the USB-C port labeled "USB-C" on the device. It is recommended to use a power adapter or portable charger that supports the PD (Power Delivery) protocol with a 9V voltage output and a minimum output power of 15W.

### Battery Charging

Connect one end of the USB-C cable to the USB port of the device and the other end to the USB-C adapter.

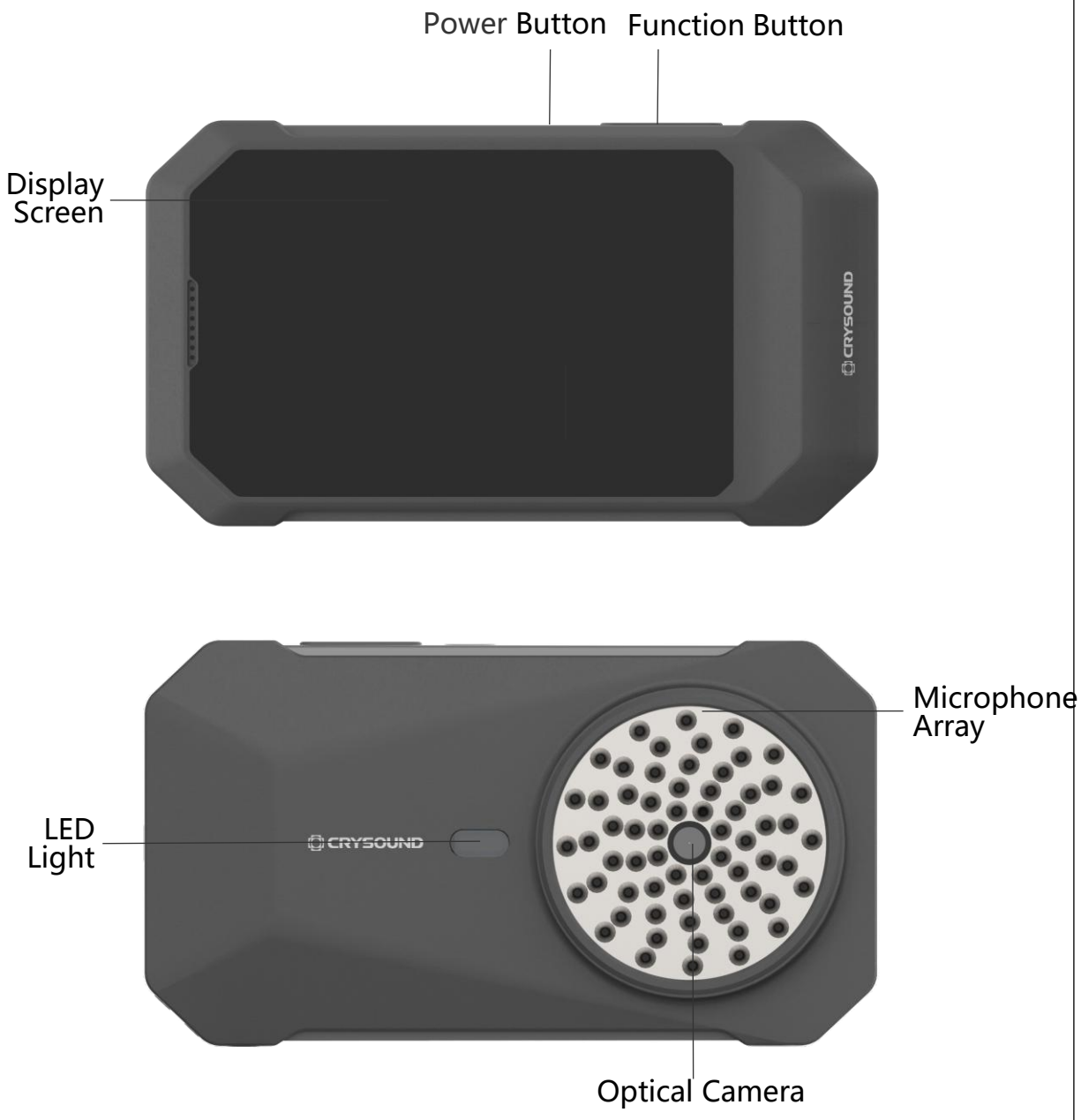
### Attention

1. Do not place the battery near heat sources, flames, or use it in high-temperature environments.
2. Do not expose the battery to direct sunlight for extended periods or use the product under prolonged exposure to sunlight.
3. Do not disassemble the battery without authorization.
4. Please do not charge the battery in high-temperature environments (exceeding 45°C).
5. If the product malfunctions or shows any abnormalities, please stop using it and contact the manufacturer to schedule a repair.
6. Please do not exceed 24 hours of charging time for the battery.
7. It is recommended to store the product within a temperature range of -20 °C to +40 °C.

8. If you plan not to use this product for extended periods, it is recommended to turn it off and store it in a cool, dry place. Additionally, recharge the device to approximately 70%-90% every three months or so to prevent battery damage from over-discharge.

# 05 Product Instruction

## 5.1 Appearance



## 5.2 Port

### 1 - Fixed threaded hole

Standard 1/4-inch imperial threaded hole for fixing the device to a tripod or mount.

### 2 - Type-C interface

Use a USB-C cable with a charger to charge the device; connect it to a computer to export files or perform software upgrades. When connected to a display via a USB-C to HDMI adapter, the device screen can be mirrored to the external display.

### 3 - Recording microphone

Built-in recording microphone for voice capture.

### 4 - Charging indicator

The indicator light stays solid while charging, turns off when fully charged, and flashes when a charging abnormality occurs.

## 5.3 Power On the Camera

When the battery is sufficiently charged, press and hold the "⏻" button for 3 seconds to turn on the Camera. After powering on, the camera will display a boot logo animation.

Note: Before powering on, please ensure that the battery has sufficient charge. If the battery is low, please charge it promptly.

## 5.4 Power Off the Camera

Press and hold the "⏻" button for 12 seconds to mandatory shutdown the camera. Short press the "⏻" button to bring up the shutdown options, then click on "Shutdown" to turn off the camera.

## 5.5 Sleep

### Manual Sleep

Short press the "⏻" button to bring up the options "Shutdown/Sleep/Cancel". Click on "Sleep" to put the camera into sleep mode.
Short press the "⏻" button again to wake up the camera.

### Auto Sleep

You can set the auto sleep time in the "System Settings" menu. Users can set the auto sleep time using the following steps:

1. tap "⚙" to access "System Settings" - "Low Power settings".
2. Enable auto sleep and set the desired time for auto sleep.
3. Tap "✕" to save and exit.

Note: Short press the "⏻" button to wake up the camera from sleep.

# 06 Software Functions

## 6.1 Main Interface

1 - Frequency Selection Box and FFT Spectrogram

You can set the test sound frequency range and view the FFT spectrogram.

2 - Dropdown Menu

By pulling down the dropdown menu, you can access and customize various functions and open the system settings.

3 - Acoustic Imaging Test Main Interface

Users can tap to enter the acoustic imaging main interface.

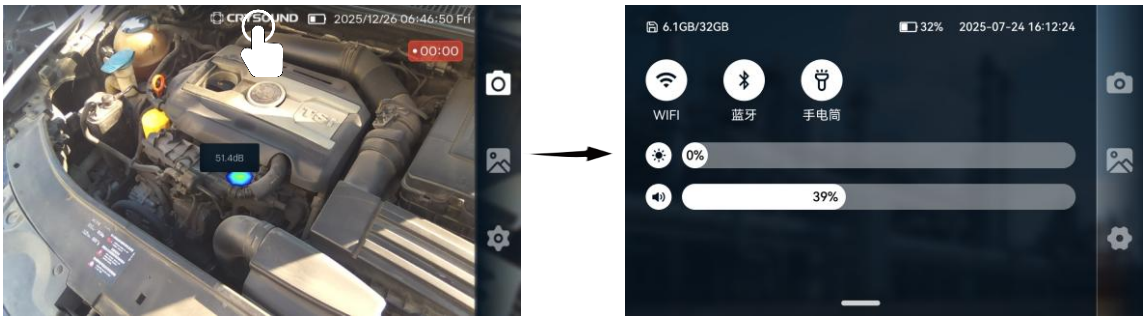
4 - Gallery Interface

Users can tap to enter the gallery.

5 - Settings Interface

Users can tap to enter the settings interface.

## 6.2 Interface Operation




Clicking the ">" button brings up the FFT spectrum. Pulling down from the top of the screen can open the quick-access dropdown window.

Clicking the three buttons on the right "" "" "" will switch to the main test interface, gallery interface, and settings interface in sequence.

## 6.3 Photos

After clicking the "Gallery" button, the user enters the Gallery interface, where captured images and videos are saved to the currently active album.

### Album Creation

Users can create a new album following these steps:

1. Click "⊕" to create a new album.
2. Enter a name to create a new album.

### Album Renaming

1. Tap the "⋮" icon in the upper-right corner of the Gallery interface to enter edit mode.
2. Select a single album and tap the "✎" button to edit its name.

### Active Album Setting

1. Click "⋮" in the upper-right corner of the Gallery interface to enter edit mode.
2. Select a single album and tap the "↑" button to mark it as the active album.

## Album Deletion

1. Tap the "⋮" button in the upper-right corner of the Gallery interface to enter edit mode.
2. Select one or multiple albums and tap the "🗑" button to remove the album(s) and their contents.
3. Tap the "•••" button to exit album edit mode.

## Image/Video Viewing

Tap an image to enter the Image Viewing interface. Tap the screen to switch to full-screen display for the image/video. Tap the "⋮" button in the upper-right corner to enter edit mode.

## Text Tagging

Users can setup a test tagging using the following steps:

1. Click "✎" to open the text tagging interface.
2. Tap the input box and use the keyboard to enter text content. Edit the text information using the keyboard.
3. Click "←" to save the text tag.

## Tags

Click "🏷" to bring up the tag information input interface. Users can input information about the tested equipment.

## Voice Tagging

Users can setup a voice tagging using the following steps:

1. Click "🎙" to open the voice tagging interface.
2. Click "◉" to start recording, then click "◉" to end the recording. After recording, click "⏸" to listen (headphones required), or click "🗑" to remove the recording.
3. Click "←" to save the voice tag.

## Image Deletion

Click "🗑" to remove the photo.

## 6.4 Dropdown Menu

Pull down from the top edge of the display area to open the dropdown menu interface.The dropdown interface displays the actual memory size, device battery level, and device time.

### Wi-Fi

Click "" to toggle Wi-Fi on or off. Long-press to enter Wi-Fi settings.

### Bluetooth

Click "" to toggle Bluetooth on or off. Long-press to enter Bluetooth settings.

### Light

Click " " to toggle the LED light on or off.

### Brightness

Slide the bar to the right of "" to adjust the backlight brightness of the display and disable auto brightness.

### Volume

Slide the bar to the right of "" to adjust the volume of the headphone jack.

## 6.5 System Settings

### Measurement Parameter Settings

#### Cloud Map Color

Sets the color of the acoustic cloud map in the detection interface. Options include Rainbow, Iron-red, and Grayscale.

#### Focus Function

Enables or disables the focus function on the main detection interface. When enabled, minor leaks can be detected. You may also double-tap the screen on the main test interface to turn the focus function on or off.

#### Frequency Range

Sets the mode for frequency selection. Options include Automatic Frequency Selection and Manual Frequency Selection.

# Language, Time & Region

## Language Settings

Tap the "∨" icon next to "Preferred Language" to select a language.

## Time & Region Settings

1. When the device is not connected to the internet, the automatic time synchronization function is inactive
2. Click "●" to enable automatic time synchronization. When connected to the internet, the device will automatically adjust its time to internet time.
3. In the time zone section, click "∨" to choose your time zone.
4. In the date settings, you can modify the date.
5. In the time settings, you can modify the time.
6. In the date format, you can set the display format to year-month-day, month-day-year, or day-month-year.
7. Click "<" to save and exit.

# Screen Brightness

Clicking "Screen Brightness" will take you to the display and brightness settings interface.

1. In brightness, you can adjust the brightness of the current display (0% to 100%).
2. Click "<" to save and exit.

# Low Energy Settings

Click "Low energy Settings" to enter the low power settings interface. Users can setup low energy settings using the following steps:

1. Click "∨"on the right side of "Auto Sleep Time" to select how long the device should wait before going to sleep when not in use.
2. Click "<" to save and exit.

# Bluetooth Settings

After entering the system settings interface, navigate to the Bluetooth® settings. The camera's Bluetooth name is CRY8024. Users can connect devices with Bluetooth using the following steps:

1. Click the "●" button to turn Bluetooth on or off.

2. Click "Refresh" to update the list of available Bluetooth devices.
3. Click on a Bluetooth device in the list to pair it. A pairing confirmation popup will appear; click "Pair" to complete the pairing process and connect the Bluetooth device.
4. Click " > " to view the details of a connected Bluetooth device. Click "🗑" to remove a connected Bluetooth device. Click " < " to save and exit.

## Wi-Fi Settings

Clicking "Wi-Fi Settings" will take you to the Wi-Fi settings interface. Users can connect devices with Wi-Fi using the following steps:

1. Click the "●" button to turn Wi-Fi on or off.
2. Click "Refresh" to update the list of available Wi-Fi devices.
3. Click on a Wi-Fi device in the list to connect to it. A password input interface will appear; enter the password and click "OK" to connect to the Wi-Fi.
4. Click " > " to view the details of a connected Wi-Fi device. Click "🗑" to remove a Wi-Fi device. Click the "●" switch to automatically connect to this Wi-Fi device on device startup. Click on the password to view the current password of the Wi-Fi device.
5. Click " < " to save and exit.

## About Device

Clicking "About Device " will take you to the device information interface. In this interface, you can view information about the device.

## Software Upgrade

Clicking "Software update" will take you to the software update interface, where you can view the current software version of the device.Both online updates and offline updates are supported.

### Software & System offline Update

Follow these steps for an offline update:

1. Download the firmware to your PC.
2. Place connect the device to your PC via USB-C cable, open the "CRY8024" disk, and place the firmware in the "Update" folder.

3. Navigate to "Settings" > "Software Update" interface. Click on "Check for offline Updates," prompting a window to select the firmware package.
4. Choose the firmware, then click "Confirm" to start the software update process.
5. Wait for the device to restart. Once restarted, return to "System Settings" > "Software Update" to confirm the software version.
6. Click " < " when finished.

## Software & System online Update

Follow these steps for an online update:

1. Connect the device to Wi-Fi or a hotspot.
2. Navigate to "Settings" > "Software Update" interface, tap "Check for Updates" button next to "Firmware Online Update". A firmware package selection window will pop up. Select the firmware, tap "Confirm", and the device will start downloading the latest version.
3. If a network interruption occurs during download, the process will pause automatically and can be resumed from the point of interruption.
4. Wait 3-5 minutes for the firmware download to complete, then tap Confirm to begin the update. Once restarted, return to "System Settings" > "Software Update" to confirm the software version.
5. Click " < " when finished.

## Microphone Test

Clicking "Microphone Test" will take you to the microphone self-test interface. Users can start the microphone test using the following steps:

1. Click on "Start test" to initiate the microphone test.
2. After the test is completed, review the microphone test results. If any damaged microphones are detected, please contact the manufacturer for repair.

# Help

Clicking "Help" will take you to the help interface.

### Operation Guide

Tap the "Enter" button to enter the Operation Guide interface.

Tap the " < " button to exit.

# 07 Usage Tips

## 7.1 Capturing Sound Dource

Observe the frequency spectrum graph for any prominent signals or peaks. If such signals exist, adjust the frequency band to encompass the frequency range where the prominent signal or peak is located. Then, observe if any sound sources appear in the display.

Try adjusting the dynamic range to relatively larger values. This allows for capturing multiple sound sources with similar sound pressure levels simultaneously. In scenarios where there are significant differences in sound pressure levels among multiple sound sources in the display, smaller dynamic range parameters may result in larger sound sources overshadowing smaller ones.

## 7.2 Eliminating Reflection Interference

If you are not unsure whether the sound cloud image in the display is the actual source or a reflected virtual image, you can try capturing the sound source from different angles. If the sound source is captured from multiple angles, it is likely the actual source location. Reflected sound sources may exhibit position shifts or even disappear at different angles.

## 7.3 Eliminating Interference Noise

Low-frequency ranges are susceptible to environmental noise interference. Depending on the characteristics of the sound source, it's advisable to use the mid to high-frequency ranges to pinpoint the location of the sound source effectively.

Select a relatively narrow frequency band range for locating the sound source. This helps to eliminate interference noise from other frequency bands.

## 7.4 Equipment Maintenance

Keep the acoustic sensor ports clean to prevent dust buildup, when there is dust in the acoustic sensor ports, gently blow air to clean them, and do not use a wet cloth for cleaning.

When the device is not in use for a long time, fully charge the device, then place it in its original packaging, and store it in a dry environment at room temperature.

Regularly checking and replenishing the device's battery can effectively prolong its lifespan.

# 08 Contact Us

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