FOTRIC

Sense the Digital Future

Cal Power

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See Sound

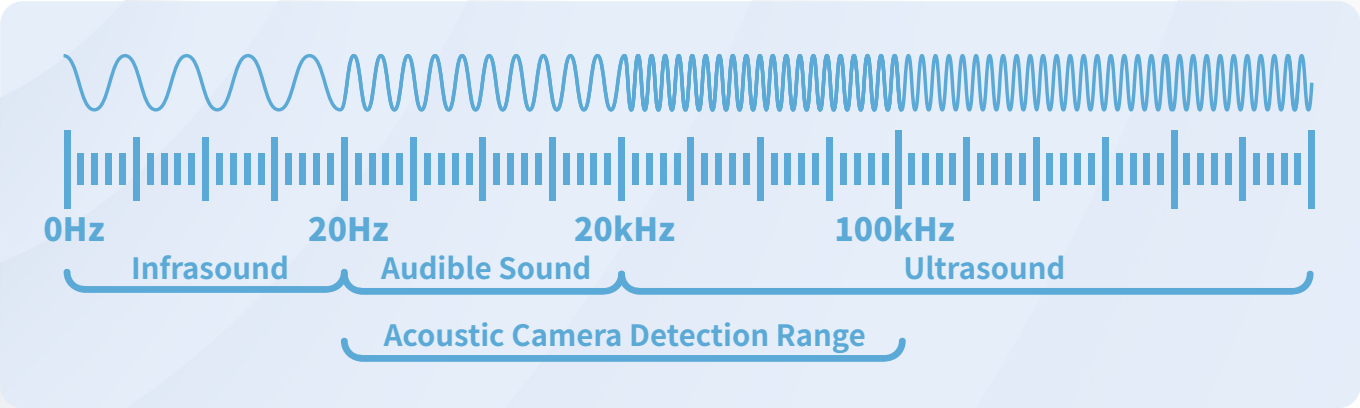
FOTRIC H4 Mini

Acoustic Imaging Camera

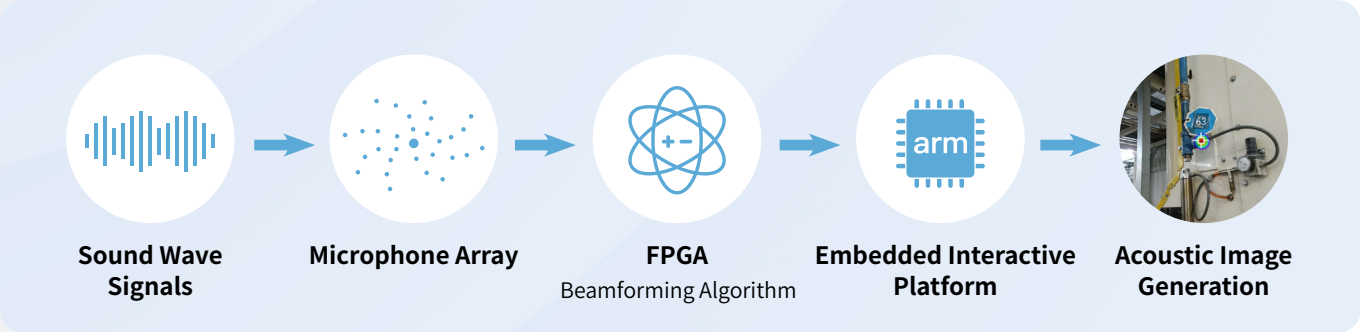
What is Acoustic Imaging?

Limitation of Human Perception

The human ear can only perceive sounds in the range of 20 Hz to 20 kHz. However, hidden faults such as gas leaks, bearing wear, and electrical discharges often emit much higher frequency ultrasound (>20 kHz) — sounds that are imperceptible to the human ear and beyond the capabilities of traditional stethoscopes or microphones.



How does it work?

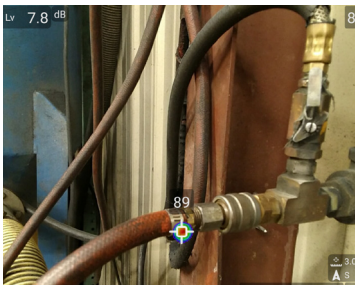


- **Microphone Array:** Simultaneously captures sound signals from multiple sources to enhance spatial accuracy.
- **Beamforming Algorithm:** Focuses on sound sources from specific directions, filtering out environmental noise.
- **Acoustic Image Overlay:** Displays sound source locations as a heatmap over the image.
- **Low-Latency Rendering Engine:** Enables near-instant response, ideal for continuous inspection scenarios.

Beyond What's Audible

The FOTRIC H4Mini acoustic imaging camera can detect not only audible sound (20Hz–20kHz), but also high-frequency ultrasonic signals that are beyond the range of human hearing.

This means it can easily capture things like:



Compressed Air System Leaks

As gas leaks emit high-frequency turbulence noise, the H4Mini can quickly detect even the smallest leaks in compressed air pipelines.

Vacuum System Leaks

The H4Mini precisely captures subtle leak sounds in vacuum systems that human ears cannot hear, enabling fast leak localization without contact or damage to equipment.

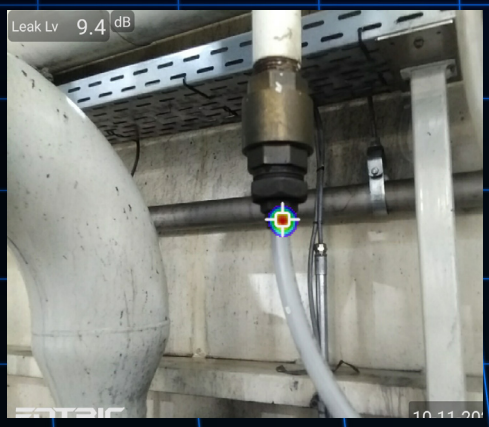
Loose Joint Vibration During Operation

The H4Mini detects abnormal high-frequency sounds caused by loose screws while equipment is running. It visualizes and pinpoints the issue in real time without requiring a shutdown.

Tire air leaks

The H4Mini quickly visualizes and locates tire leak points without the need for soap spray—precise, efficient, and easy to use.

- High-density microphone array with 112 MEMS digital microphones
- Industrial digital camera: 13 MP, 66° × 52° field of view
- ⩾ 4 hours of single-battery runtime, removable; device rated IP54
- Multiple imaging modes: single-source, multi-source, and holographic
- Multiple capture modes: Holographic image capture and video recording, and time-lapse capture.
- Professional features such as SPL measurement, Acoustic Image Delay (T-FFTD®) and Acoustic Image Focus
- On-device acoustic report generation.

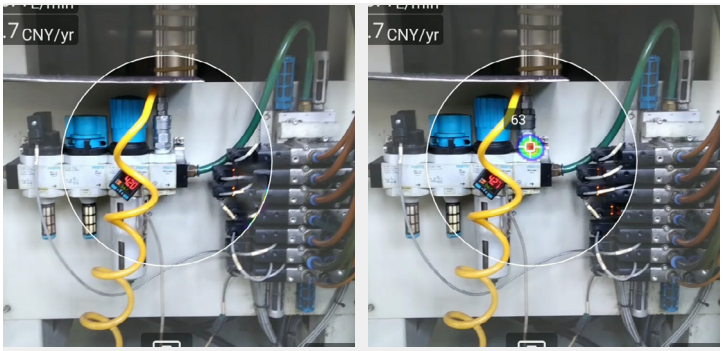


- Smart Leak Evaluation

H4Mini vs Traditional Methods

	FOTRIC Acoustic Camera	Ultra-probe
Detection Speed	Fast identification (within seconds)	Relies on user experience
Visualization	Real-time heatmap display	Not visualizable
Precision	High-precision positioning	Low-precision positioning
Data Recording&Analysis	Supports image export	Not supported
Ease of Use	Pick up and shoot	Requires skilled professionals

Unique Features

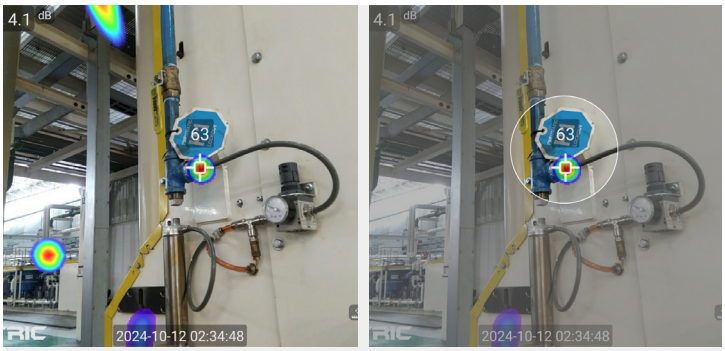


Off On

Acoustic Image Delay (T-FFTD®)

Utilizes a multi-modal transient acoustic matrix to enhance microsecond-level acoustic event retention.

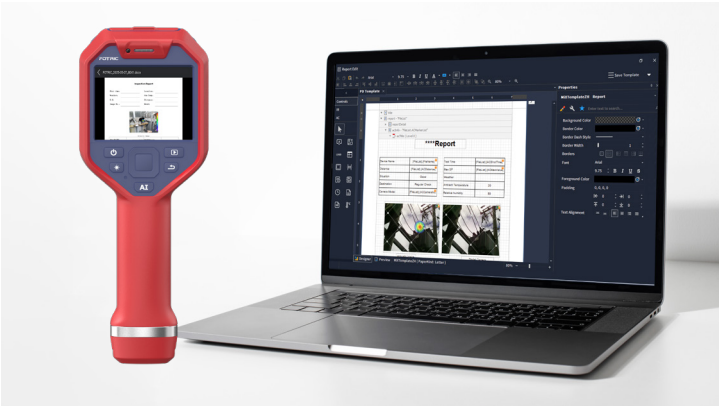
Boost signal retention and enhance inspection efficiency for intermittent sound sources.



Off On

Acoustic Image Focus

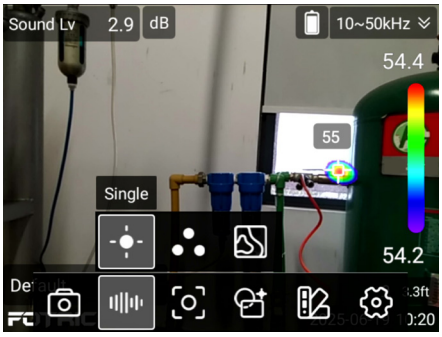
Combines adaptive dynamic noise reduction algorithms to achieve focused localization of sound sources.

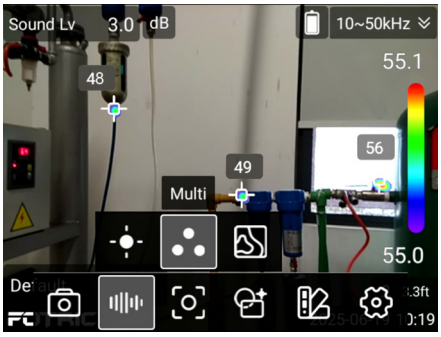


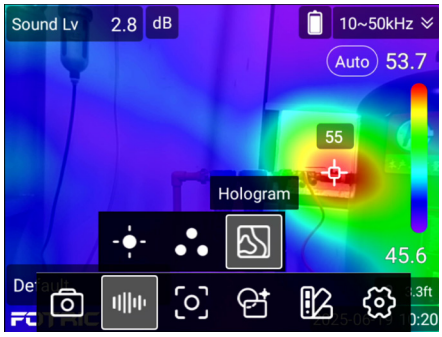
On-device Report Generation

The acoustic camera supports generating inspection reports on-device in either Word or PDF format, and previewing reports in gallery.

Unique Features

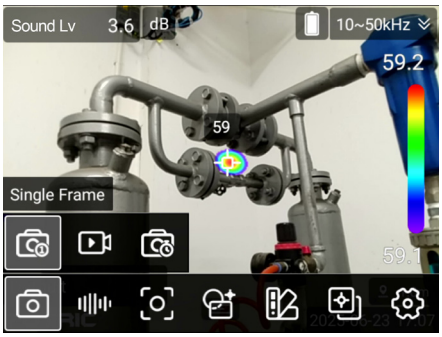


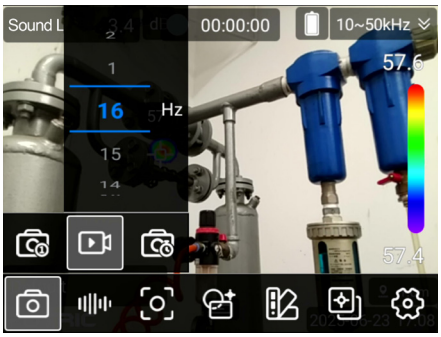


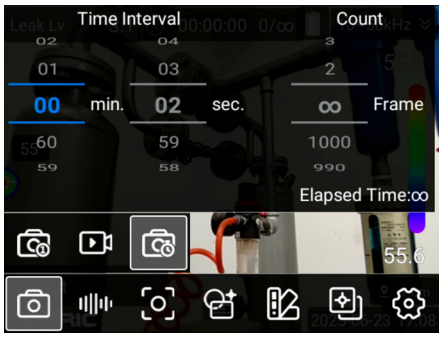


Source Mode Switching

The H4Mini Acoustic Imaging Camera supports multiple image modes, including single-source, multi-source, and holographic views, allowing users to adapt to varying noise complexities and detection targets on-site.

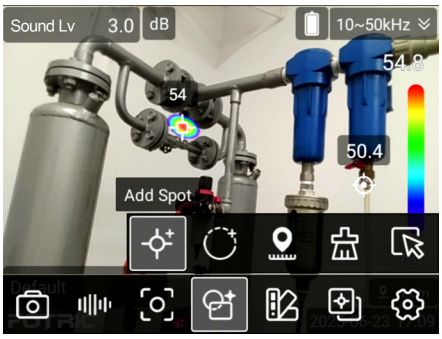


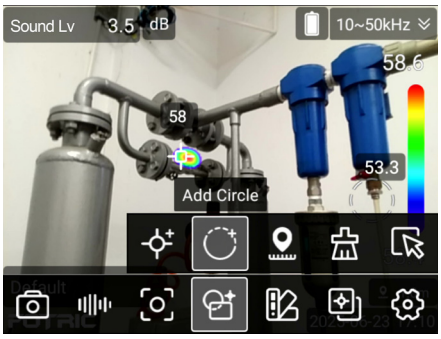




Flexible Capture Modes

The H4Mini camera supports holographic image capture, holographic video recording, and time-lapse capture, enabling inspectors to make comprehensive documentation on-site.





Precise SPL Measurement

Combining holographic imaging and decibel data measurement, the camera is capable of industrial-level sound source tracking and signal diagnosis, enhancing acoustic inspection efficiency and user safety.

Specifications

Parameters	H4Mini
Unique Features	
Size	243mm*95mm*150mm
Weight	770g
Acoustic Image Delay (T-FFTD®)	Captures instantaneous sound signals, can stay longer in real-time acoustic image
Acoustic Image Focus	Masks surrounding areas, focuses only on the acoustic image of the focused area
On-device Report Generation	The device is capable of directly generating acoustic image reports.
Gray Scale Background	Display digital camera images in grayscale.
Favorites	Click the favorite button to save the favorite status to acoustic images and holographic acoustic videos, highlighted in the gallery preview screen, and later filter by favorite status in the gallery.
QR Code Scanning	Scan QR code or Bar code for text annotation and tag table.
Battery Type	3.6V, 5000mAh Rechargeable Lithium Battery, Field-Replaceable
Basic Parameters	
Microphone Channel	112 MEMS Digital Microphones
Acoustic Image Field of View (FOV)	66° *52°
Sound Sampling Rate	200kHz
Acoustic Refresh Rate	25Hz
Operating Distance	0.3~100m
Frequency Range	2~100kHz
Detection Mode	Leakage mode: display leakage level on device
Display Screen	3.5-inch, 640 x 480 pixels, IPS LCD touch display
Image Modes	Single-source mode, multi-source mode, hologram mode
Digital Camera	13 Megapixels, Industrial-Grade Digital Camera
Battery Operating Time	Continuous operation time ⩾ 4 hours (Actual usage time depends on environmental and usage conditions)
Supported Languages	
Supported Languages	English, French, German, Italian, Japanese, Korean, Portuguese, Spanish, Thai, Traditional Chinese
Standard Accessories	
Standard Configuration	Acoustic imaging camera main unit, rechargeable lithium battery * 1, power adapter, USB Type-C to USB cable, 32G TF card, wrist strap, document bag (packing list, quick start guide), outer packaging box

*For more detailed information please refer to the Datasheet.

Versatile Power Source

Shared battery with FOTRIC compact handheld thermal cameras.

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2025/09

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