FOTRIC
Sense the Digital Future

See Sound

From 'Inaudible' to 'Visible'

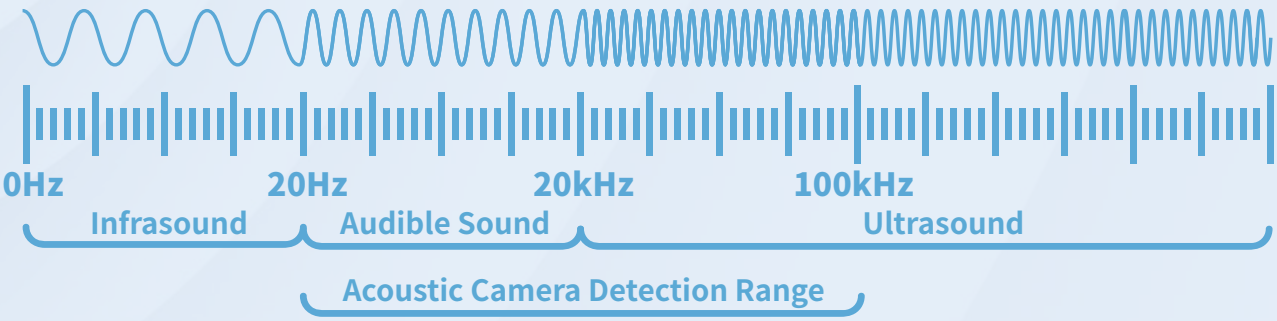
FOTRIC TD2e

Acoustic Imaging Camera

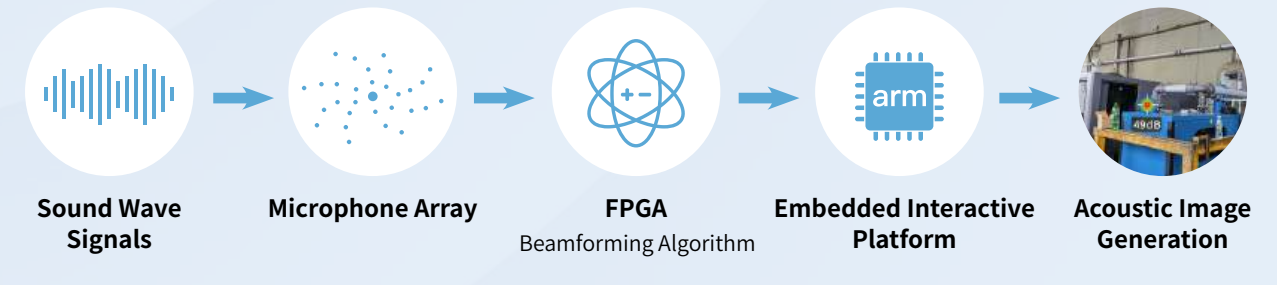
What is Acoustic Imaging?

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 TD2e acoustic imaging camera can detect not only audible sound, 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 TD2e can quickly detect even the smallest leaks in compressed air pipelines.

Vacuum System Leaks

The TD2e 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 TD2e 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.

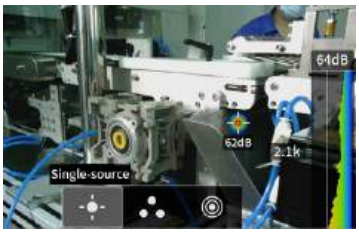
Pneumatic Valve Leakage Detection

As pneumatic valves, cylinders, and fittings in automated production lines age, they frequently generate high-frequency leakage noise. The TD2e captures real-time ultrasonic leakage signals from valve bodies and fittings, providing visual localization to pinpoint leak sources quickly.

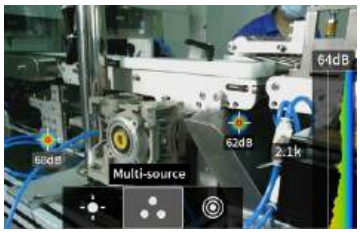
Professional-grade Features

Multiple Image Modes

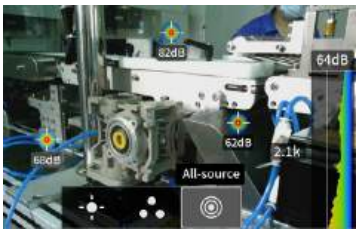
Even in noisy environments, sound sources no longer blur into one. Multi-source mode can simultaneously lock onto multiple abnormal sound points, automatically distinguish sources with different frequencies and intensities, and enable multi-target visualization—making every issue clearly visible.



Single-source



Multi-source



All-source

Dual Detection Mode

Noise Suppression Mode: Maintains stable acoustic imaging even in high-noise environments, accurately locating true sound sources.

Micro-Detection Mode: Captures subtle sounds, ensuring no potential issue points are missed.

Noise Suppression

Micro-Detection

- **High-density microphone array with 64 MEMS digital microphones**
- **Industrial digital camera: 5 MP, 58° × 45° field of view**
- **⩾ 3 hours of single-battery runtime, removable; Device rated IP54**
- **Detection distance: 0.3~60m**

TD2e 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

Specifications

Model	TD2e
Basic parameters	
Microphone channels	64 MEMS Digital Microphone
Acoustic image field of view (FOV)	58° *45°
Sound pressure sensitivity	0.01L/min@0.1MPa，1.5m，ϕ30μm orifice 0.025L/min@0.3MPa，3.5m，ϕ30μm orifice 0.045L/min@0.3MPa，4.5m，ϕ40μm orifice
Sound sampling rate	200kHz
Image Mode	Single-source, Multi-source, All-source
Working distance	0.3~60m
Positioning frequency range	2k–100kHz
Frequency range selection	Supports manual adjustment of the frequency range Supports displaying the peak frequency
Display screen	3.5-inch, 640*480 pixels, IPS LCD touchscreen with explosion-proof cover glass
Noise reduction mode	Filters out low-level sounds to reduce environmental interference
Micro detection mode	Captures faint sounds to avoid missing potential issues
Digital camera	5MP industrial-grade digital camera
Image format	jpg (acoustic image)
USB interface	USB Type-C, compliant with USB 3.0/2.0 standard
LED illumination lamp	Support flashlight illumination and flash mode
Power system	
Battery type	3.6V, 5000mAh Rechargeable Lithium Battery, Field-Replaceable
Battery operating time	⩾ 3 hours per battery(depends on
Reliability and certification	
Protection rating	IP54(GB/T 4208/IEC 60529)
Drop resistance	Designed for 2-meter drop resistance
Shock resistance	25g(GB/T 2423.5/IEC 60068-2-27)
Vibration resistance	2g(GB/T 2423.10/IEC 60068-2-6)
Languages	
Supported languages	English, German, French, Spanish, Portuguese, Italian, Polish, Japanese, Korean, Traditional Chinese, Thai
Standard product configuration	
Standard configuration	Main unit ×1、Rechargeable Lithium Battery×1、Charging Dock、Power Adapter、USB Type-C to USB cable ×1、32GB TF card、Quick start guide、Packing list

*For more detailed information please refer to the Datasheet.

Versatile Power Source

Shared battery with FOTRIC compact handheld thermal cameras.

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