Innovation Leader in AI-based Acoustic Detection, Tracking and Inspection

English ver.

www.soundcam-kr.com

SOUNDCAM KOREA SCK

Acoustic-based Detection and Diagnosis solution Applicable to various Industrial sites

Artificial Intelligence x Acoustic Inspector

AI Square

Intelligent Acoustic Inspector
Urban unmanned aerial vehicle detection system
Industrial Facility Fault Diagnosis and Monitoring System

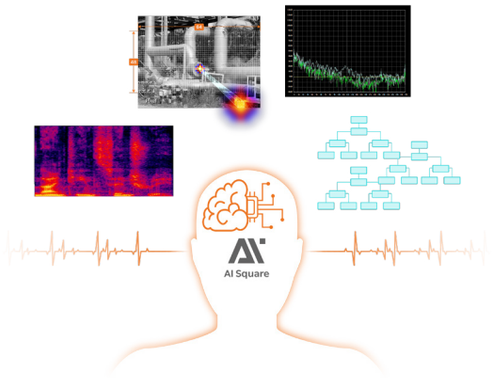
Advanced Acoustic Inspection Algorithm Developed by SOUNDCAM KOREA,

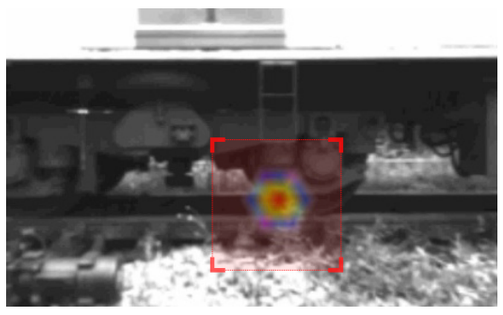
Artificial Intelligence Acoustic Inspection System

AI Square

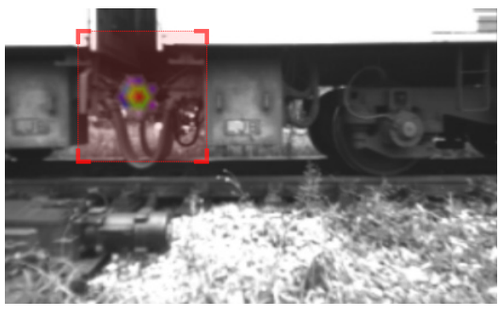
AI² learns and defines normal and abnormal acoustic data based on machine learning, respectively, and the accumulated data can be advanced in detection through deep running.

Real-time visualization algorithms as soon as abnormal data is detected Inform the user of the location of the noise source.

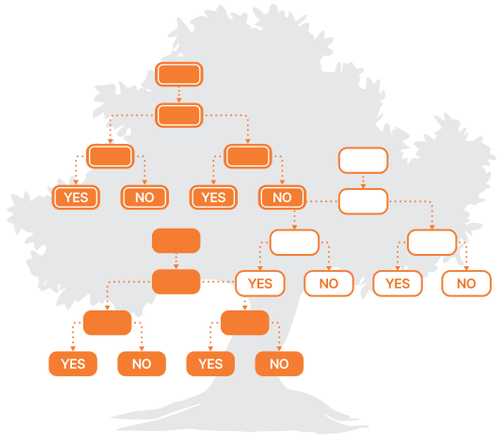




Noise detection of wheel abnormalities on the running train

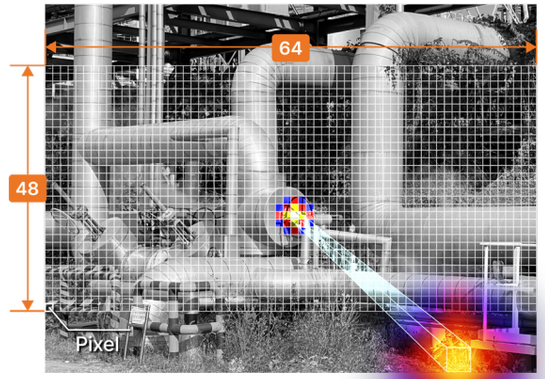


Detection of air hose leakage on the running train



AI² classifies acoustic data in real time using the decision tree algorithm, creates complex nodes for abnormal noise, environmental noise, and irregular noise based on normal acoustic data, and collects and determines classes according to the results.

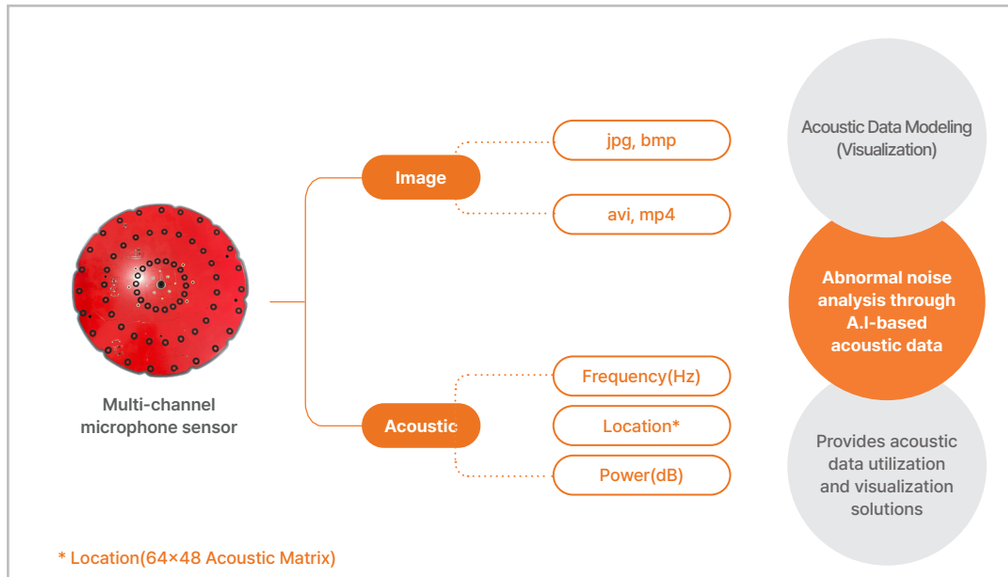
It can implement the abnormal noise position generated based on the image through the standard color. In addition, it is possible to improve detection power using auto gain, a targeting technique, by combining environmental noise removal through a discrimination algorithm and acoustic data that may occur in each space with a learning algorithm.



How to Build Learning Data

Source Data Collection	Data Design	Data Labelling	Building a Dataset	A.I Modeling
Multichannel microphone sensors collect abnormal noise by band and obtain source data along with images of targets measured from cameras in the sensor	Design classification criteria for analyzing abnormal noise by band obtained and analyzing the location and size of the acquired sound	Labelling by data using classification criteria to analyze the location and size of the acquired sound	Building a dataset to detect accurate location information by integrating abnormal noise coordinates and image information for each measurement target using labeled data	Use different types of algorithms, such as linear or logistic regression, as learning data to build AI models

Acoustic data collection and processing



Intelligent Acoustic Inspector

This is an abnormal noise detection, tracking and inspection system that provides the location of abnormal noise in real time by detecting and analyzing the noise generated in the manufacturing process of home appliances and the abnormal noise data generated during quality inspection of manufactured products.

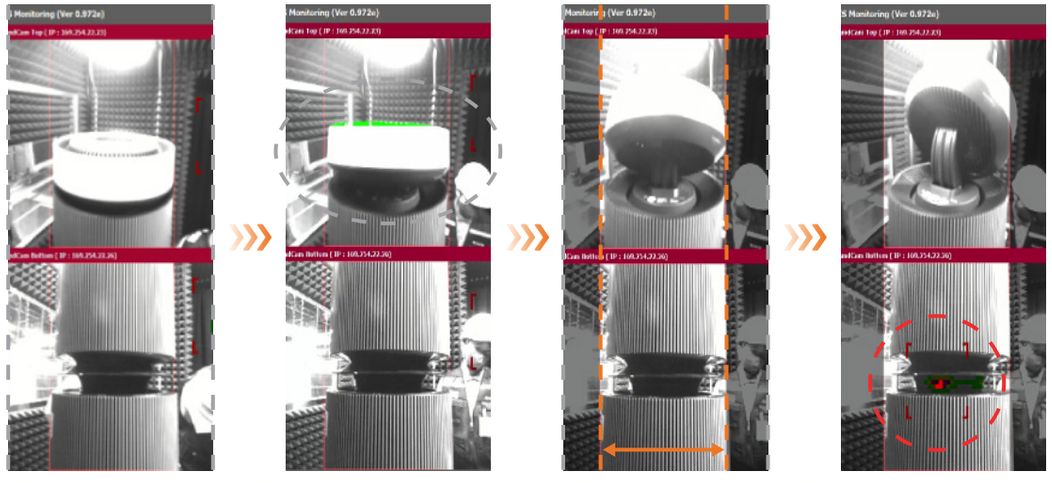
System Configuration

Smart Manufacturing Intelligent Systems

In-line based intelligent home appliances abnormal noise detection, tracking, inspection and abnormal noise data analysis and statistical search system

- Abnormal noise detection, tracking and inspection system
- Abnormal noise data analysis and statistics, search system
- Server for database
- Multi-channel microphone sensor

Introduction S/W engines



1 Preparation for target

2 Recognition of object motion

3 Set inspection area

4 Identification of abnormal noise

Video & Audio Acoustic Image Matching

Real-time video & audio acoustic image data processing and matching engine

Detection

Abnormal noise frequency analysis engine for each home appliance model

Tracking

Abnormal noise tracking engine based on video & audio acoustic image matching engine

Inspection

Analysis of ambient noise, discrimination of abnormal noise by home appliance model, and visualization results

User-friendly UI/UX

1 1st order noise filtering area

2 2nd order noise filtering area

3 Intensive acoustic inspection area

4 Set inspection area and noise filter area

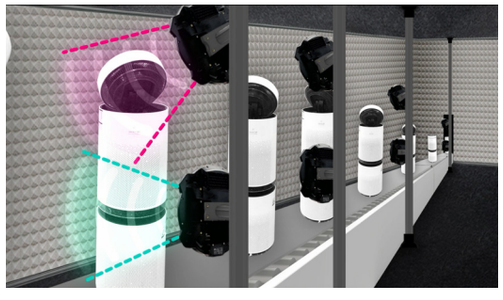
5 Set detection and learning levels

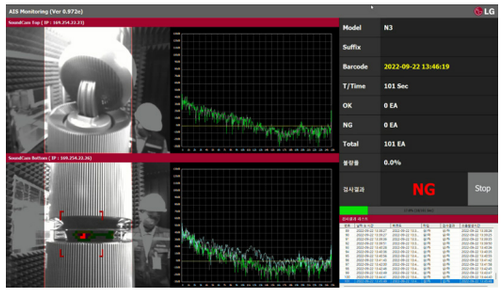
- In acoustic data collection, analysis, and inspection, users can directly classify and process data through mode change
- Automatic application of learning algorithms according to classification
- The learning position can be freely designated for the space desired by the user, such as the intensive inspection area and the noise filtering area.

Application case) LG Electronics - Intelligent Abnormal Noise Inspector

Air purifier production line

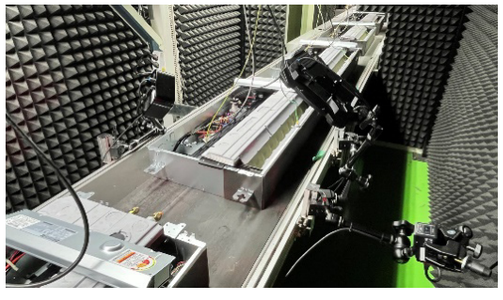
Detecting abnormal noise from motors, fans, and gearboxes during operation during quality inspections on five types of air purifiers being produced

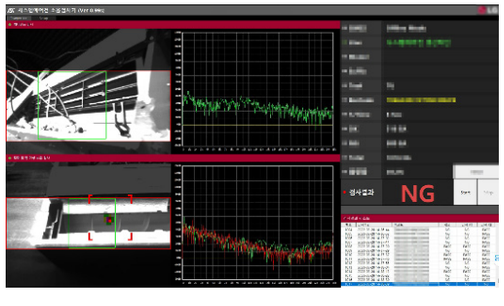




System air conditioner production line

Detecting abnormal noise from motors and rotating fans during quality inspection of system air conditioners manufactured and produced In-line





Urban unmanned aerial vehicle detection system

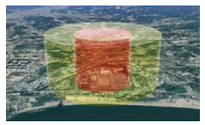
Multi-channel microphone sensor-based system that detects, tracks and analyzes frequencies generated from motors or accessory rotational bodies in unmanned aerial vehicles. Day/ night, such as in downtown areas with high-rise buildings and low-altitude flights that Lidar, Radar, and RF scanners cannot detect. It is a next-generation low-altitude UAV detection system capable of detecting and responding.

Illegal drone intrusion detection
on private property and national facilities

Illegal drone detection in high-rise buildings

UAV detection and analysis

Water purification center



Detection airspace range
- Altitude: 200m
- Distance: 500m

Airport

Defensive area setting
- Caution: 500m - Warning: 200m
- Alert: 300m - Danger: 100m

UAV Day/Night Detection System

UAV Monitoring

100fps multi-channel acoustic sensor-based low-altitude UAV detection and response system

- Sensor data integration
- Data analysis and monitoring
- Real-time data search
- UAV detection algorithm
- Rapid response alarm service
- Linkage with related institution response system

AI²-applied urban UAV detection system

- Frequency data learning and processing for each movement of the drone
- Learning and processing of all frequency data generated by main power motors, engines, gimbals, cooling fans, and propellers
- It is possible to detect motion changes according to changes in the number of rotations of the main power source and propeller
- Development of identification and classification techniques according to environmental noise in the city(cars, birds, outdoor units, etc.)
- Possession of a web server that can be linked with IoT service

  Ex) Automatic curtain closing when a drone appears (to prevent illegal filming), mobile alarm, warning broadcast in the building, etc.

Features and Benefits

Applicable to private facilities

The only anti-drone system that does not violate domestic and foreign radio laws and aviation laws

Illegal Filming Security and Surveillance

Control system optimized for protection of business sites, private property and privacy from drones for filming

Detection of illegal flying objects in urban areas

Optimization of detection of illegal flying drones in urban areas where high-rise buildings are concentrated

Cautions and Alerts

Integrated control solution for real-time tracking and reporting from expected to critical alarms

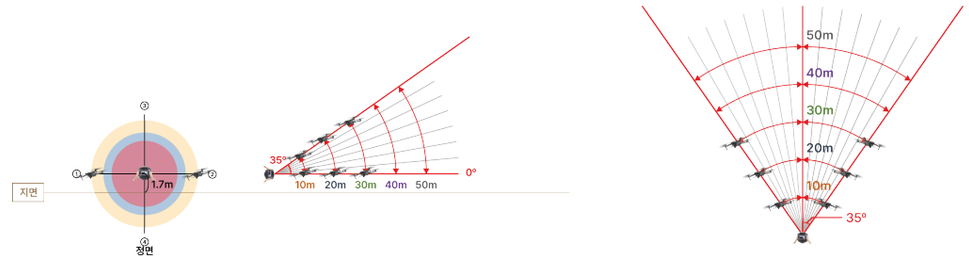
Prevention of terrorism and accidents

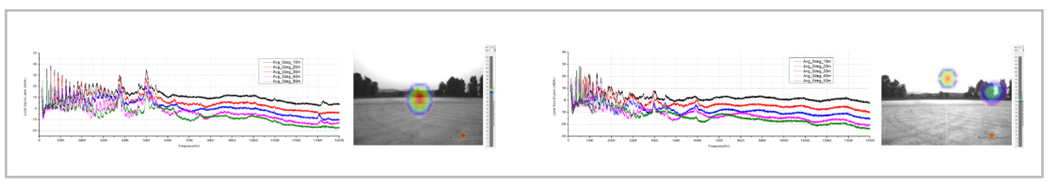
Prevention of accidents due to infiltration and fall of UAV in major national industrial facilities

Real-time detection

Real-time detection of low-flying, hovering, low-speed flying, and small aircraft that are difficult to detect by Lidar and Radar

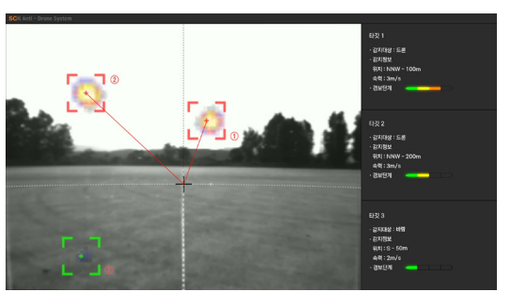
UAV flight data collection and analysis





Collection and analysis of learning data for various variables such as flight distance, longitude, and latitude

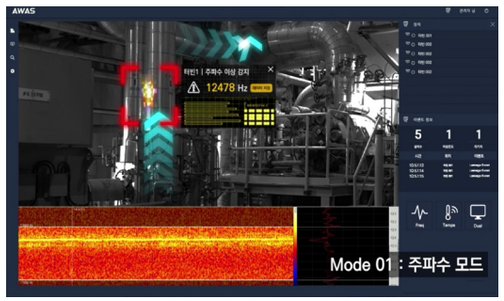
Detect drones approaching from a distance



Detecting drones flying in groups of two or more

Industrial Facility Fault Diagnosis and Monitoring System

It is a cutting-edge diagnostic solution that can foresee abnormal signs by collecting acoustic frequency data generated in industrial facilities that are difficult for humans to access at any time based on unmanned aerial vehicles and ground-based robots.



Industrial facility integrated control system combining AI² and digital twin

Leak detection monitoring system with AI² algorithm

As is

2D

Data analysis is necessary with 2D data

Cost and time

It takes a lot of time and money to understand the data and acquire the analytical ability of the expert level

Check the result

Decision-making is difficult due to data interpretation and intuitive understanding and problems, and human error may occur

Decision

Results must be checked and judged through a separate heterogeneous system

AI² Series

Intuition of information

Increase interpretation efficiency through intuitive data information.

Initial response

Abnormal noise can be checked visually, so quick problem response is possible.

Advanced analysis

Eliminate human errors by introducing artificial intelligence analysis technology and provide advanced algorithms with high accuracy

Efficiency improvement

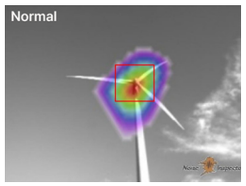
Provides facility information intuitively through data graphic visualization to support decision making

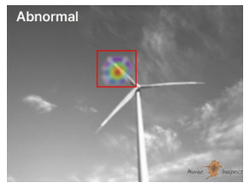
Applicable to various industrial sites by combining with unmanned aerial vehicles and driving robots, artificial intelligence solution optimized for smart factories with easy 24/7 monitoring and diagnosis.

Driving robot-based
Industrial Facility Diagnosis System

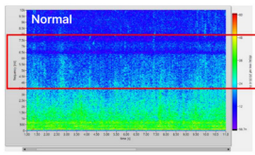
Unmanned Aerial Vehicle-based
Industrial Facility Diagnosis System

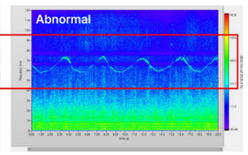
Application case) Wind turbine blade defect detection using drones



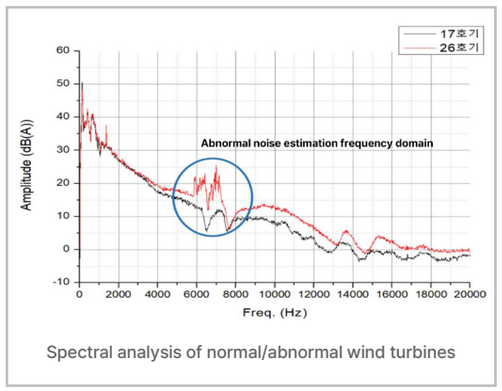


Acoustic image for normal/abnormal wind power generator





Spectrograms for normal/abnormal wind power generators



Spectral analysis of normal/abnormal wind turbines

Unmanned system for diagnosing industrial facilities

UAV

AMR

	UAV	AMR
Main detection sensor	62 or 72ch multi-channel microphone sensor	
Assistance detection sensor	- Vision camera - IR Sensor	- Vision camera - IR Sensor - Gas detector
Autonomous driving	- GPS autonomous flight - Proximity Lidar autonomous	- Vision SLAM Technology - GPS autonomous - Lidar
Network	TCP/IP, LTE or 5G (Available for industrial LTE)	
Application	- Wind generators (including marine) - High-rise gas pipe - Chemical gas piping harmful to human body - For rescuer search and rescue	- Indoor and outdoor plants - Danger area - Harmful areas requiring constant monitoring - Facility security and risk facility detection

You can see them with SoundCam

Abnormal Noise, Leakage and Electrical Noise

Acoustic Camera

SoundCam Series
Bionic Series
Software

SoundCam Series

The First Portable Acoustic Camera For Everyone

SoundCam Family is a total solution that images and tracks the location of sound source and helps interpret it with objective graphs and data.

The Portable acoustic camera SoundCam enables real-time sound tracking and analysis in the field by rear display and collects acoustic data for precise analysis of post-processing software Noise Inspector.

Combined with Noise Inspector, SoundCam analyzes acoustic information based on various algorithms and outputs the results as objectified data such as images, video, spectrum, and graphs.

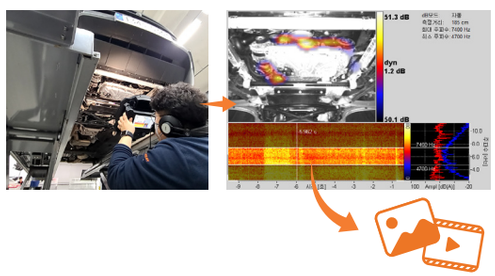
SoundCam Family User can accelerate work efficacy and efficiency with prompt measurement and outstanding solutions.

SoundCam Series Forte

DAQ – From Measurement to Reporting

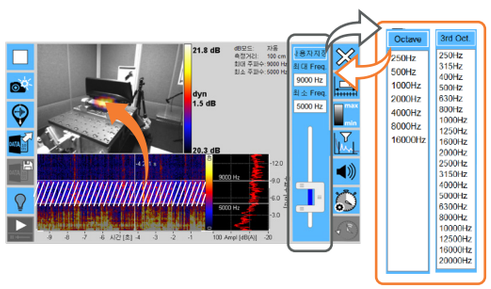
- Collects 10Hz-100kHz Acoustic Raw Data
- Acoustic Image, time-frequency spectrum, FFT graph on the display
- Real-time video and image output available

PROCESS
Measurement → Real-time analysis with rear display → Convert to Video and image



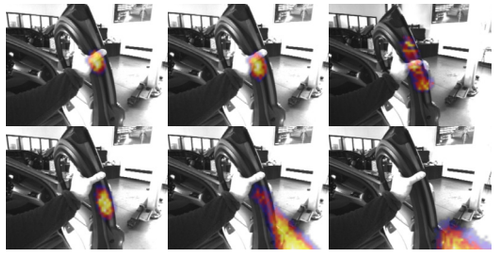
The beamforming function

- Output only specific frequency ranges to acoustic images
- Frequency filters: Customization, 1/3-Octave, Octave



100FPS, The Highest acoustic frame rate

- The word's first and only 100FPS
- Real-time tracking, able to instantaneous noise and leakage analysis
- Reflection and diffusion analysis
- Supports slow motion playback(0.5x, 0.25x)

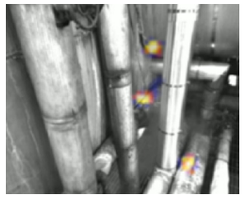


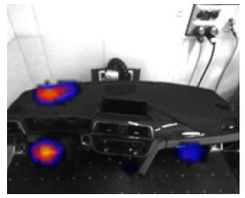
Optimized design for industrial site

- IP54 Design for protect data and device
- 8 Buttons for quick control
- Able to tracking the location of long-distance sound source
- 4 high-power LEDs : measurable even in the dark

Multiple noise source

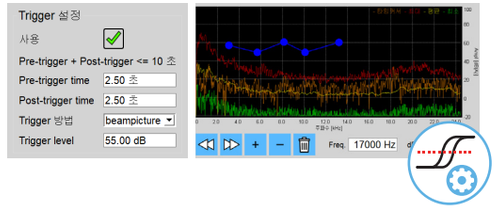
- Sound pressure(dB) scale and dynamic range adjustment function
- Displays multiple noise sources, leaks, and electric noise location on one screen





Trigger function

- Real-time monitoring and auto-save function when intermittent noise occurs
- Sound pressure(dB) Trigger : Automatically save data when noise exceeds the set sound pressure(dB)
- Band Trigger : Sound pressure(dB) band can be set for each frequency. Automatically save data when noise exceeds the band.



Easy to use like a smartphone

- Intuitive UI icons
- Multi touch display

SoundCam

SoundCam effectively tracks and analysis the location of abnormal noise, leakage, and electrical noise with a wide beamforming frequency range and beamforming optimization function. Sensitive sensors collect acoustic raw data range of 10Hz-100kHz.

SoundCam Ultra

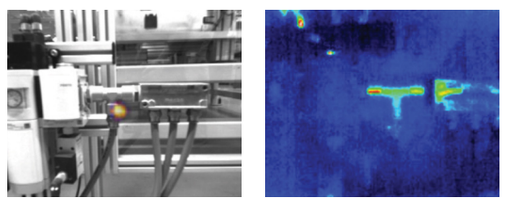
SoundCam Ultra is an ultra-light acoustic camera that visualizes the frequency range up to 100kHz.
Optimized for track and analyzing the location of leackage and electrical noise from a long distance.

1 Camera 2 LED lights 3 USB Port 4 Physical Buttons 5 Headphone socket
6 Ethernet(LAN) Port 7 64ch Microphones 8 72ch Microphones 9 IR Sensor

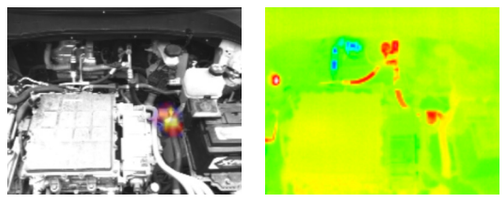
Opt. Thermal Imaging camera(IR Sensor) ※ Only for SoundCam Ultra

The Thermal imaging camera can measure and compare real-time acoustic and thermal imaging data and can collect and store data at the same time. Through the integrated measurement system of acoustic and thermal images, it able to measure efficiently and accurately in a variety of filed, including turbines, transformers, power stations, and power lines. This enables rapid detection and prevention of anomalies and faults, and it is effective in improving system performance and maintenance.

Applications



Acoustic and thermal image of compressed air leakage

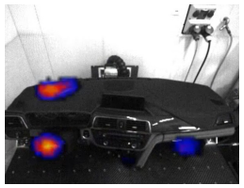


Electrical noise and thermal image of EV car

Specification of Thermal imaging camera(IR Sensor)

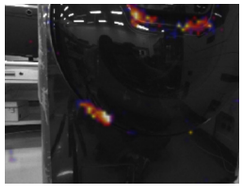
Sensor Type	Uncooled VOx microbolometer
Spectral Range	8~14μm(LWIR)
Thermal Array Format	160 × 120, Progressive Scan
Fixel Size	12μm
Thermal Frame Rate	8.7 Hz
NETD	<50mK(0.05°C)
Temperature Range	-10° to +450°C High Gain Mode: -10°C to +140°C Low Gain Mode: -10°C to +400°C
Accuracy	High Gain Mode: ±5°C or ±5% Low Gain Mode: ±10°C or ±10%
Non-uniformity correction	Auto
Aperture Angle	57°(FOV Horizontal) 71°(FOV Diagonal)

Applications of SoundCam

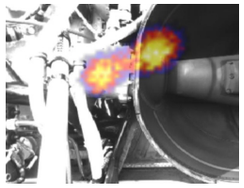


Car Dashboard BSR test

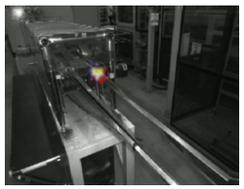
EV transmission noise



Appliance QC



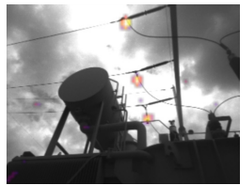
Aircraft powertrain noise



In-line facility maintenance
(Compressed air leakage)

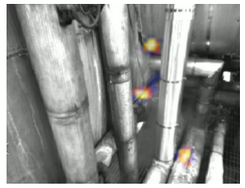
Noise assessment in construction sites

Applications of SoundCam Ultra

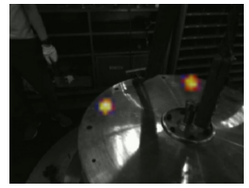


Power lines partial discharge

Transmission tower maintenance



Multiple leaks in pipelines



Facility maintenance

In-line facility maintenance
(Compressed air leakage)

Chemical storage tank maintenance
(Gas leakage)

SoundCam Family VS.

SoundCam Series	SoundCam	SoundCam Ultra
Microphone	64ch Digital MEMS	72ch Digital MEMS
Beamforming Frequency Range	800Hz – 60kHz	2kHz – 100kHz
Dimensions	34×34×9.5cm	31×16×5.5cm
Weight	3kg	1.5kg
IR Sensor	X	O
Real-time Acoustic Frame Rate	100 FPS	
Operating Temperature	-20°C ~ +50°C	
Sensing Distance	0.1m~∞	

Bionic Series

The Advanced Modular Premium Acoustic Camera

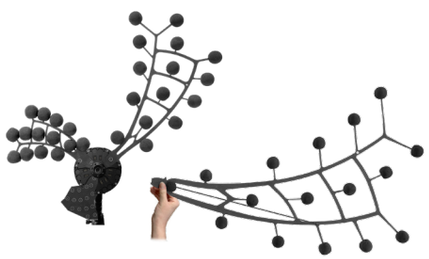
Bionic Family is the acoustic camera that images sound. The device locates sound sources in real time and immediately displays the results on the screen. The microphone array of each model is modular type which can be replaced according to the frequency range.

The device is easy to carry with DAQ system, and represents acoustic images and data that user can intuitively apprehend through the rear display. User can analyze Acoustic data using various algorithms of the user-friendly software Noise Inspector, and able to infrasound analysis from 40Hz through the Near-field holography technology.

Bionic Series Forte

Modular acoustic camera

- Combines size-specific microphone arrays(XS/ S/ M/ L) with one DAQ
- Modular, easy to change frequencies according to arrays
- Easy array attachment and detachment using magnetic



Wide and free external input and channel expansion

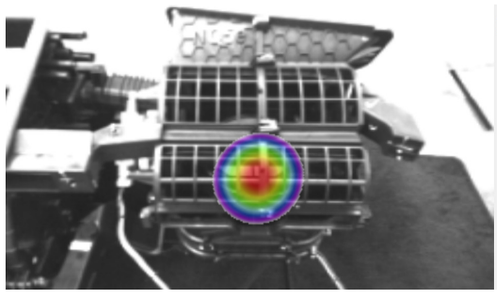
- Expanding over 1,000 microphone channels through front-end connection
- Tacho for RPM measurement /Trigger function to save when an event occurs

All in one hardware

- Easy to carry with DAQ integrated device
- Able to check Acoustic image, time-frequency spectrum, FFT graph on the rear display in real-time

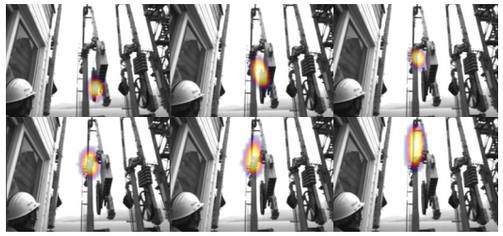
Various acoustic imaging algorithms

- Supports Near-field acoustic holography algorithm that able to analyze infrasound of 40Hz to 2kHz
- Supports various algorithms optimized for each application



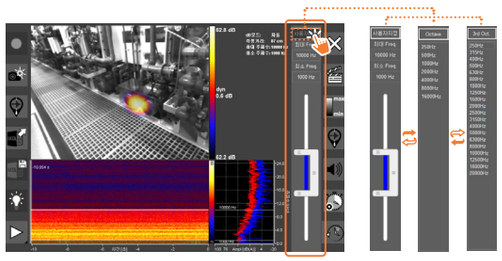
100FPS, The Highest acoustic frame rate

- Visualizes sound information of 100 frames per second
- Supports slow motion playback(0.5x, 0.25x)



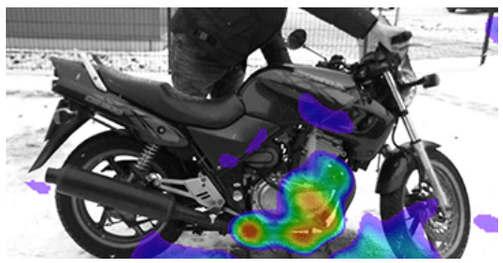
The beamforming optimization function

- Acoustic imaging in the frequency range set by user
- Frequency filters : Cusomization, 1/3-Octave and Octave



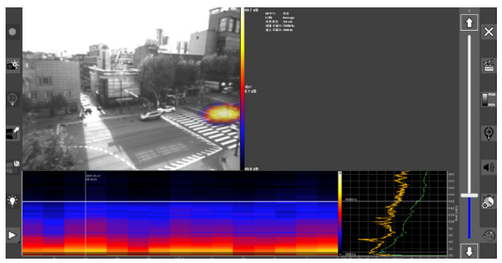
High resolution acoustic image

- Clearly noise source localization
- Visualization of key noise distributions
- Tracking various noise sources simultaneously



Noise contribution measurement LTM function

- Check the Noise contribution
- Provide two visualization modes, Average or Peackhold



1 Power button	2 Power cable port
3 Battery level indicator	4 Tablet PC connection port
5 USB Port	6 Ethernet(LAN) port

Bionic XS

With small size and beamforming optimization, Bionic XS able to noise measurement, analysis in confined spaces like the inside of a vehicle or indoor space.

Bionic S

High performance with optimal beamforming in mid to low frequency range and portability, Bionic S provides a variety of noise source analyses, including NVH test and quality control.

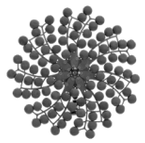
Bionic M

With optimized beamforming in infrasound range, Bionic M able to Comprehensive noise measurement analysis, including nosie source tracking in the automotive field and facilities.

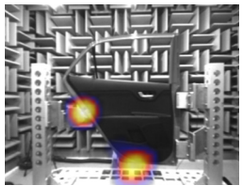
Bionic L

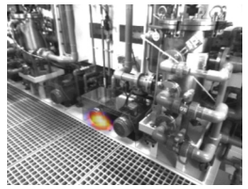
Infrasound specialized microphone array design optimizes track of slow-rotating body noise sources.

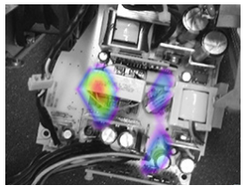
Bionic Series VS.

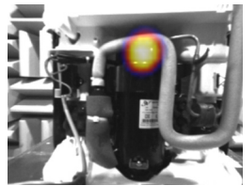
Bionic Series	 Bionic XS	 Bionic S	 Bionic M	 Bionic L
Microphone	112ch Digital MEMS			
Diameter	28cm	54cm	100cm	170cm
Weight	3.2kg	3.4kg	3.8kg	5.1kg
Beamforming frequency range	850Hz~24Khz	480Hz~24kHz	250Hz~24kHz	150Hz~24kHz
Near-field acoustic holography (SONAH)	—	40Hz~2kHz		
External signal input	Trigger and Tacho			

Applications of Bionic XS


BSR test

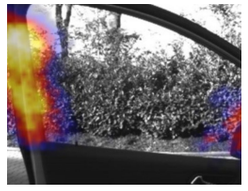

Facility maintenance
(Abnormal Noise)

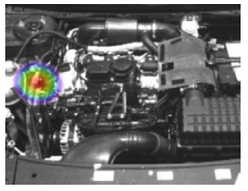

Product Quality Control
(Main Noise Source)


Product Quality Control
(Abnormal Noise Source)

Applications of Bionic S

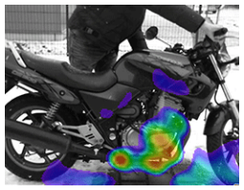

Product Quality Control
(Main Noise Source)

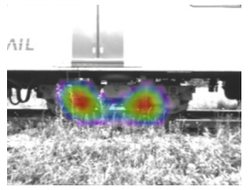

Vehicle maintenance
(Main Noise Source)

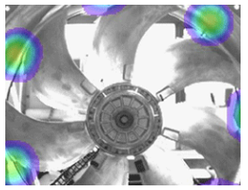

Automotive maintenance
(Abnormal Noise Source)

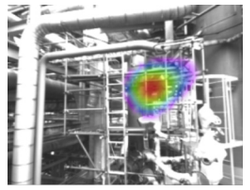

Product Quality Control
(Abnormal Noise Source)

Applications of Bionic M

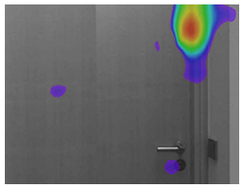

Motorcycle maintenance
(Abnormal Noise Source)


Train maintenance
(Abnormal Noise Source)

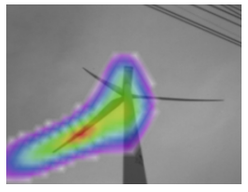

Product Quality Control
(Main Noise Source)


Facility maintenance
(Abnormal Noise Source)

Applications of Bionic L


Indoor Sound Insulation
performance measurement


Building maintenance
(Abnormal Noise Source)


Wind power generator
maintenance

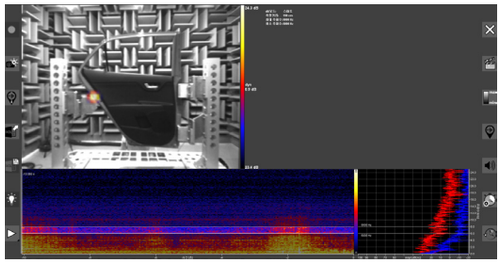

Environmental noise
in production site

Software

SoundCam for Windows

PC software that streams acoustic data with the same UI as the device's UI. It is possible to analysis and reporting acoustic images, graph by specifying frequency band in real time.

- Streaming acoustic images, FFT graph, spectrum
- Slow motion playback
- Convert to image and video

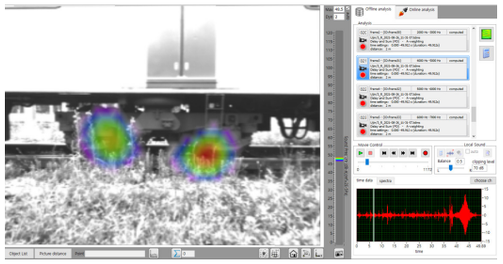


The result of real-time acoustic imaging

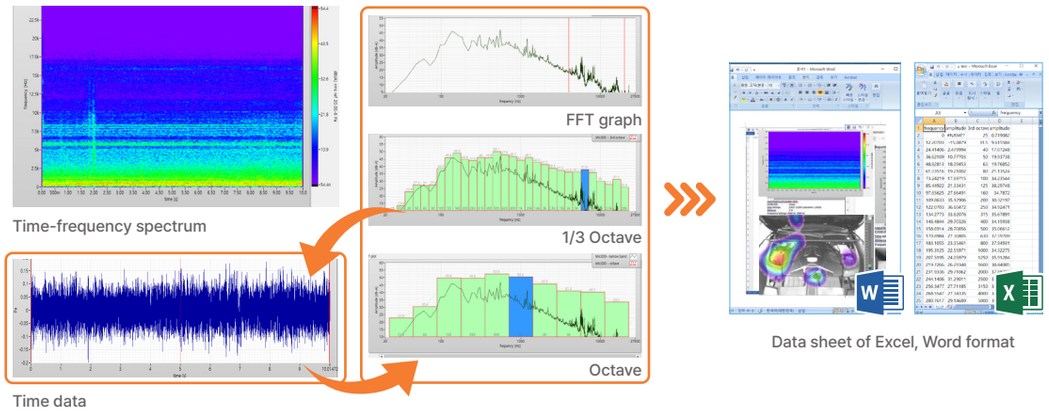
Streaming App. & Noise Inspector

Turnkey Solution software that plays and collects acoustic information in the 10Hz to 24kHz frequency range through microphones, and visualizes it by applying various algorithms by selecting the frequency range that the user wants.

- Time data, time-frequency spectrum, FFT graph analysis
- Local sound playback and save, frequency weighting filter(A, B, C) calculation
- Analysis results convert to image and video, provide Excel, Word Format data sheet
- High data flexibility on each application



The result of acoustic imaging



Algorithms

· **Beamforming**

Clean SC | CAPON | DAMAS | Delay and Sum | EVOB | MUSIC
Orthogonal Beamforming | User Algorithms

· **Holography**

SONAH(Near field holography algorithm)

Acoustic Camera Spec Sheet

Product Specifications

SoundCam Series Specification
SoundCam Series Common Specification
Bionic Series Specification
Bionic Series Common Specification

SoundCam Series Specification

SoundCam

Dimension	34 × 34 × 9.5cm
Weight	3kg
Dustproof, Waterproof	IP 54
Real-time acoustic frame rate	100 FPS(Frames per Sec.)
Beamforming frequency range	800Hz – 60kHz
Physical Buttons	8 configurable + power on/off
Operation Temperature	-20°C ~ +50°C
Internal Storage	32GB(Opt. 512 GB)
Battery Lifetime	~4hours(fully charged in 1.5h)

SoundCam Ultra

Dimension	31 × 16 × 5.5cm
Weight	1.5kg
Dustproof, Waterproof	IP 54
Real-time acoustic frame rate	100 FPS(Frames per Sec.)
Beamforming frequency range	2kHz – 100kHz
Physical Buttons	8 configurable + power on/off
Operation Temperature	-20°C ~ +50°C
Internal Storage	32GB(Opt. 512 GB)
Battery Lifetime	~4hours(fully charged in 1.5h)

SoundCam Sensor

Microphone	64Ch Digital MEMS
Microphone Frequency Range	10Hz – 100kHz
Sample Rate	200kHz
Maximum Sound pressure	120dB(40 dB Dynamic)
Resolution	24 bit

SoundCam Ultra Sensor

Microphone	72Ch Digital MEMS
Microphone Frequency Range	10Hz – 100kHz
Sample Rate	200kHz
Maximum Sound pressure	120dB(40 dB Dynamic)
Resolution	24 bit

SoundCam Series Common Specification

Optimization Function

UI	Acoustic Image, FFT Graph, Spectrum(Time-Frequency)
Beamforming optimization setting Function	Distance Setting Frequency band setting (Customization, 1/3-Octave, Octave) Acoustic Image size setting (Sound Pressure(dB) band setting)
Local Sound	Able to listen specific local sound
Trigger Function(2 Types)	Based on Sound Pressure(dB) Trigger Frequency Band Trigger
Report Output Function	Convert to Video(*.webm, *.mp4) Convert to Audio(*.wav) Screenshots(*.png)
Analysis Assist Function	Playback Function(x1, x0.5, x0.25) Marker Function
PC Software	SoundCam for Windows
Post-process Software	Opt. Noise Inspector
Raw data collecting	Each Microphone able to collect Data (Opt. Noise Inspector)

Interface

USB	Data Import/ export
Ethernet(LAN)	Connect to PC and Software
Audio	3.5mm AKG Headphone

Power

Power Supply	Power Cable and Adaptor(19V) Able to operate in Power ON
Internal Battery	Li-ion Battery(48Wh)

OS

SoundCam	Linux
PC Software	Windows

Bionic Series Specification

Bionic XS

Dimension		28 × 28 × 15cm
Weight		3.2kg
Dustproof, Waterproof		IP 54
Battery Lifetime		~4hours(fully charged in 1.5h)
Real-time acoustic frame rate		100FPS(Frames Per Sec.)
Operation Temperature		-20°C ~ +50°C
Controller (DAQ)	Storage	32GB(Opt. 512GB)
	OS	Linux

Bionic S

Dimension		54 × 54 × 15cm
Weight		3.4kg
Dustproof, Waterproof		IP 54
Battery Lifetime		~4hours(fully charged in 1.5h)
Real-time acoustic frame rate		100FPS(Frames Per Sec.)
Operation Temperature		-20°C ~ +50°C
Controller (DAQ)	Storage	32GB(Opt. 512GB)
	OS	Linux

Bionic XS Microphone Array Sensor

Microphone Array	112Ch Digital MEMS
Microphone Frequency Range	850Hz ~ 24kHz
Sample Rate	48kHz
Distance	0.2m ~ ∞
Maximum Sound pressure	Max. 120dB(40dB Dynamic)
Resolution	24bit

Bionic S Microphone Array Sensor

Microphone Array	112Ch Digital MEMS
Microphone Frequency Range	850Hz ~ 24kHz
SONAH(Near-field Holography) Frequency Range	40Hz ~ 2kHz
Sample Rate	48kHz
Distance	0.2m ~ ∞
Maximum Sound pressure	Max. 120dB(40dB Dynamic)
Resolution	24bit

Bionic M

Dimension		100 × 100 × 15cm
Weight		3.8kg
Dustproof, Waterproof		IP 54
Battery Lifetime		~4hours(fully charged in 1.5h)
Real-time acoustic frame rate		100FPS(Frames Per Sec.)
Operation Temperature		-20°C ~ +50°C
Controller (DAQ)	Storage	32GB(Opt. 512GB)
	OS	Linux

Bionic L

Dimension		170 × 170 × 15cm
Weight		5.1kg
Dustproof, Waterproof		IP 54
Battery Lifetime		~4hours(fully charged in 1.5h)
Real-time acoustic frame rate		100FPS(Frames Per Sec.)
Operation Temperature		-20°C ~ +50°C
Controller (DAQ)	Storage	32GB(Opt. 512GB)
	OS	Linux

Bionic M Microphone Array Sensor

Microphone Array	112Ch Digital MEMS
Microphone Frequency Range	250Hz ~ 24kHz
SONAH(Near-field Holography) Frequency Range	40Hz ~ 2kHz
Sample Rate	48kHz
Distance	0.2m ~ ∞
Maximum Sound pressure	Max. 120dB(40dB Dynamic)
Resolution	24bit

Bionic L Microphone Array Sensor

Microphone Array	112Ch Digital MEMS
Microphone Frequency Range	150Hz ~ 24kHz
SONAH(Near-field Holography) Frequency Range	40Hz ~ 2kHz
Sample Rate	48kHz
Distance	0.2m ~ ∞
Maximum Sound pressure	Max. 120dB(40dB Dynamic)
Resolution	24bit

Bionic Series Common Specification

Optimization Function

UI	Acoustic Image, FFT Graph, Spectrum(Time-Frequency)
Beamforming optimization setting Function	Distance Setting Frequency band setting (Customization, 1/3-Octave, Octave) Acoustic Image size setting (Sound Pressure(dB) band setting) Provide Time Weighting function (Fast, Slow, Impulse)
Report Output Function	Convert to Video(*.webm, *.avi) Convert to Audio(*.wav) Screenshots(*.png) Data Sheet(*.csv)
Raw data collecting	Each Microphone able to collect Data
Local Sound	Able to listen specific frequency range or entire range of local sound
Analysis Assist Function	Slow motion Playback Function (x1, x0.5, x0.25)
Additional Function	Trigger Function(SPL or Frequency), LTM(Long Term Measurement), Tacho(Opt.)

Interface

USB	Data Import/ export
Ethernet(LAN)	Connect to PC and Software
Audio	3.5mm AKG Headphone
External Input	Trigger, Tacho

Power

Power Supply	Power Cable and Adaptor(19V) Able to operate in Power ON
Internal Battery	Li-ion Battery(48Wh)

Software

PC Software	Bionic for Windows Noise Inspector (Windows OS)

SOUNDCAM KOREA

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