HERTZINNO - 2023

An Acoustic Technology Company

Overseas Department in Shanghai

https://hertzinno.com/

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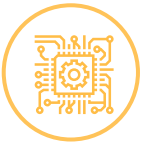

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Company Introduction

Story of Hertzinno

Story of Hertzinno

Founded

2018

The Company founded by a TOP acoustic team of scientists & engineers, has launched the first noise-capturing camera in Apr. 2018

The first acoustic solution on industrial sector

2020

The first **acoustic solution** released, which signifies the top-tier acoustic research capability and the ongoing efforts to explore the field of acoustics

Pre-A financing and Joint laboratory

2021

Secured a Pre-A financing of millions USD and established the Joint laboratory of environmental sound perception with NWPU

Acoustic Camera

2022

In Feb.2022, the successful development of the 1st gen. acoustic camera, the 2nd gen dual-mode acoustic & thermal released at the later of same year.

Shanghai Hertzinno Technology Co,. Ltd

2023

As the products matured, we expanded into international markets , launching the overseas brand HERTZINNO

History of Hertzinno

HQ

International sales team based on Shanghai

R&D Centre

More than 50 Scientists and Engineers R&D team in Xi`an

Partners

Already have channels partner in Multiple countries

Next One

Expect more and more partners to join us for mutual development

/02

Core Technology

A Full-stack Technology, from Hardware, Software Algorithms, Databases to Applications

Core Technology

Scientific Strength

Backed by top-tier acoustic universities, with a strong capacity for continuous innovation.

Database

Thousands of acoustic databases, with extensive accumulation in the industrial and environmental fields.

Algorithms

One of the world's TOP 3 acoustic algorithm teams, offering formidable industry barriers

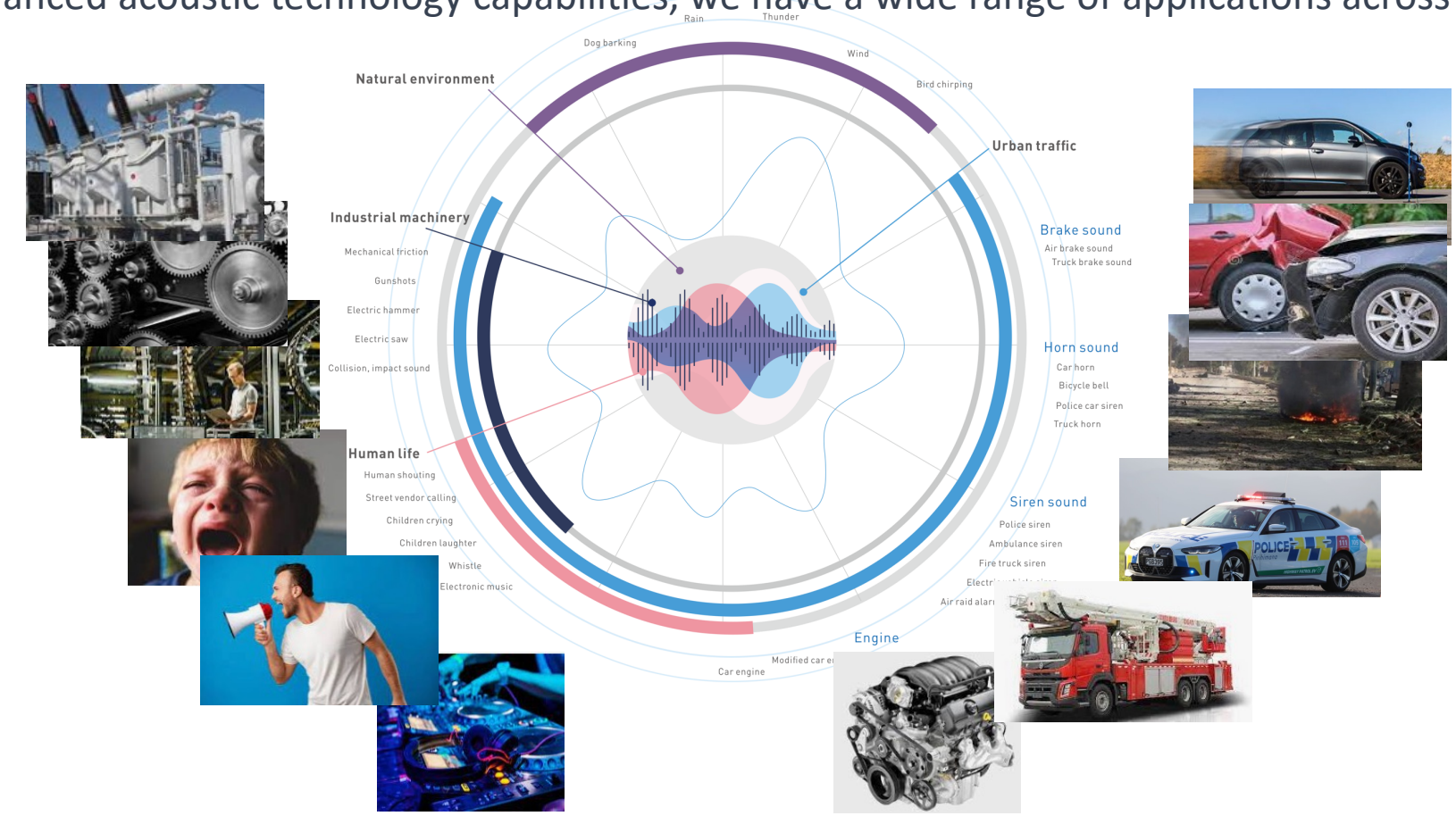
Applications

Widely applied in various fields such as green energy, electricity, industry, and public safety.

Core Technology

In both our daily lives and work, sound is omnipresent, whether it be in natural environments, urban transportation, human activities, or industrial production. acoustic signals can be found in every corner.

Leveraging our advanced acoustic technology capabilities, we have a wide range of applications across various industries.



Core Technology

International Top-Tier Event awards

DCASE-Detection and Classification of Acoustic Scenes and Events 2023

Bird CLEF 2020

2022 IEEE ICASSP GRAND CHALLENGE

DCASE 2022

The 5th position of Sound Event Localization and Detection Evaluated in Real Spatial Sound Scenes in the World

Champion of DCASE 2023

The 1st position of DCASE 2023 @ Task 4B (IEEE&AASP) from THU,CMU,NTU, Google, META, Samsung, Tencent

Unsupervised Algorithm

Won the 5th of the world on Unsupervised Algorithm Task recognition on the DCASE 2023

IEEE ICASSP

The 4th position of IEEE ICASSP Challenge 2022

/03

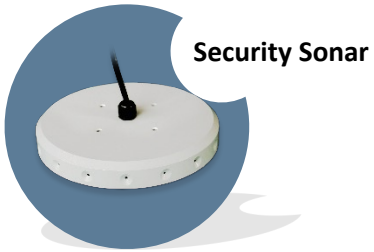
Products

Based on Acoustic Technology

Product Matrix

Acoustic Cam

The equipment for partial discharge detection & gas leakage detection



Sound Security

For urban noise monitoring, such as acoustic cameras for events like street racing

Defender series

A combined audio and vibration sensor used for detecting unauthorized vehicle or personnel intrusions

7*24 Monitoring system

For mining and power devices monitoring, based on a database of tens of thousands of positive samples and unsupervised algorithm

Acoustic Cameras

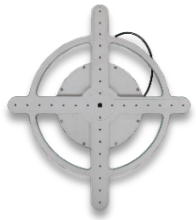
Acoustic Camera is a specialized equipment adopt a microphone array to measure the distribution of sound fields within a certain range. it can be used to detect and measure the location and radiation state of sound source.

- **In the electrical related industry,** the partial discharges are accompanied by the generation of ultrasonic. The acoustic camera supports quickly locate the PD point, the intensity and the type of PD.
- **In the gas related industry,** it can be used to detect gas leaks and assess the volume of the leakage of gas, no matter the type of gas.

Our high-end series of our acoustic camera equipped with **thermal module**, not only can detect the discharge, but also supports to switch infrared mode with software to detect the abnormal of temperature.

Sound Security

When there is an abnormal sound signal within the monitoring area (e.g., Call for help, Collision, Explosion, Alarm, Gun fire…) the sonar array will quickly locate the sound source and send a signal to PTZ camera to turn to the direction of abnormal sound generation to view. (ONVIF protocol)



Air Sonar Devices

Intelligent sound hear

Passive monitoring to active inspection, empower traditional surveillance

Integrated Linkage

Support linked with camera, to turn to the sound target location

Fast Response

Sound source orientation in milliseconds while abnormal appears

Evidence Storage

Accurate retention of audio and video file evidence for a few seconds before and after

Acoustic Defender

HZ-DA-200

Sound & Vibration

MEMS microphone
Coil vibration sensors
Wireless + inside battery

Vehicle & Human

70kg Human detection distance with 10m
2T Vehicle detection distance with 50m

Illegal Excavation

Full-direnctions
1.5 year battery
1.5km node communication distance
-40 to +55°C

Electrical Equipment Monitoring Sensor

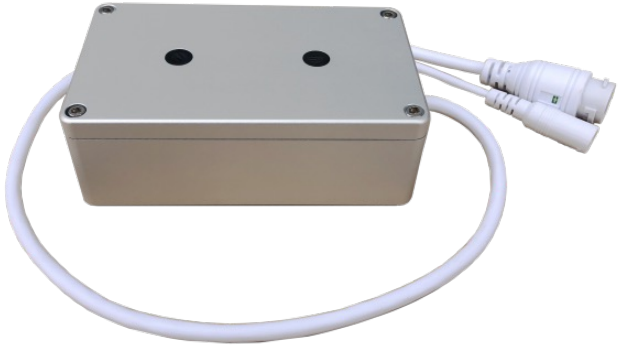
HZ-FA-100

HZ-FA-100/110 is the datalogger/sensor of the air sonar system.

User can choose from the acoustic which measure the target from distance, or the conducting Acoustic Sensor which is mounted on the target.

The frequency band from 20Hz to 60kHz, which means it can monitor the vibration, sound and ultrasound of electrical equipment.

Power Source	DV 12V
Data Interface	Ethernet
Working Temperature Range	-20℃ ~ 50 ℃
Ingress Level	IP65



HZ-FA-110

Mining Equipment Monitoring Sensor

Mining equipment

- 7*24h continually monitoring
- Mining machinery, Conveyor belt, Electric motors, idler equipment

AI Platform

- 10k+ item positive data of normal noises
- Unsupervised algorithm software to continue learning
- Support manual labelling of data

Sensors and Edge computing box

- Bone conductor & microphone .
- Edge computing box.

Mainly used for monitoring the operational status of mining machinery and equipment such as conveyor belt rollers. It provides equipment fault warnings by detecting abnormal noise

/04

Solution

for Power, Petrochemical, Mining, and Industrial Sectors

Acoustic Products

Acoustic Camera

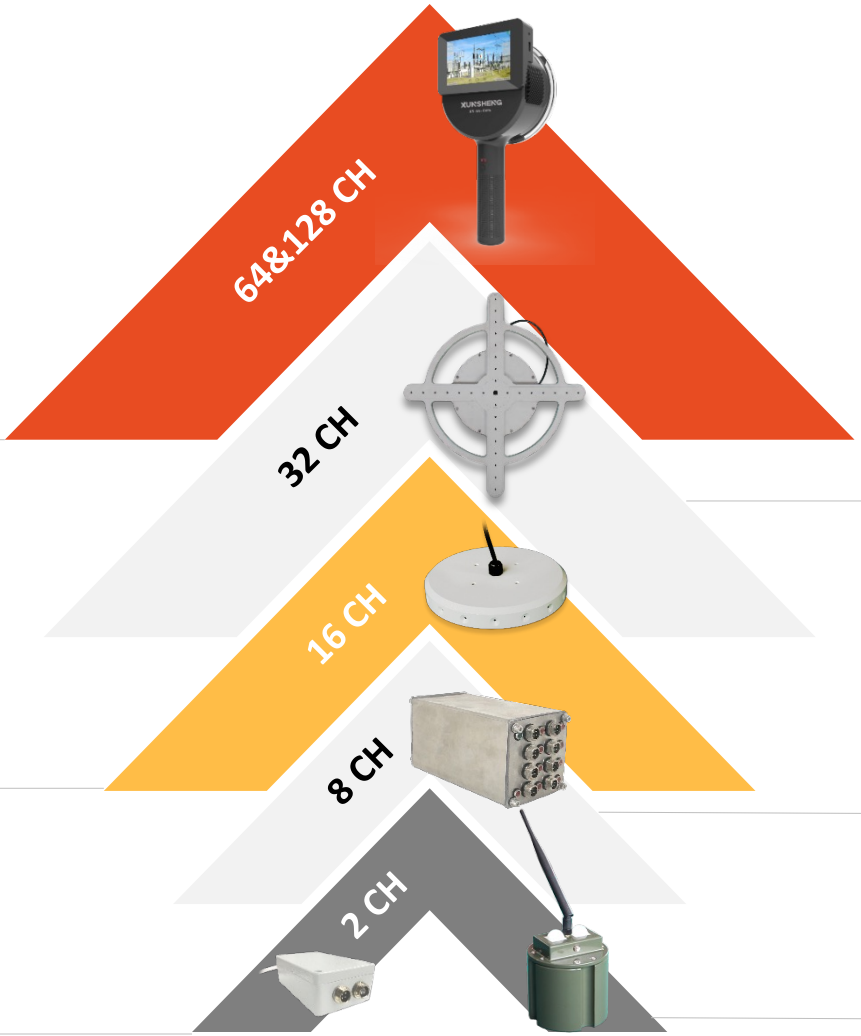
- 2kHz ~ 65kHz
- Partial discharge detection & Gas leaks detection

Security Sonar

- 200Hz ~ 10kHz
- Sound security sonar linkage system

Electrical monitoring solution

- 20Hz ~60kHz.
- Electrical device abnormal monitoring



Street Racing Sonar

- 100Hz ~ 20kHz
- Late-night drag racing & horn

Mining machinery monitoring

- 20Hz ~ 60kHz
- Mining machinery abnormal detection

Defender solution

- 10Hz ~100Hz.
- Human & Vehicle detection

Partial discharge inspection solution

With our acoustic camera and AI software, the partial discharge inspection solution help the client reduce recruitment and training costs and shortening inspection times and increasing efficiency.
Bring the industry a **digital** and **standardized** inspection process, reduces potential risks associated with human errors.
With the fixed acoustic camera support a mobile robot inspector, which providing client an **automated** solution to PD inspections.

Scan with acoustic camera → Take Photo → Upload to Software → export the report

With the revolution tools, it save 80% time than traditional process.

Gas leakage detection and inspection solution

With our acoustic camera and AI software, the gas leakage detection & inspection solution help the client to find out all most all the tiny leaks in a volve, connector and hose.
The acoustic camera can not only find the gas leaks point, but also estimate the leakage in real time.

Scan with acoustic camera → Take Photo → Upload to Platform → export the report

Perimeter defend solution

In some regions, Defender is deployed to secure its perimeter, primarily used for monitoring activities such as trespassing, approaching vehicles, and unauthorized mining.

With an extended battery life and LoRa antennas, this device offers advantages such as ease of deployment, high concealment, and sensitive detection.

It effectively eliminates blind spots in surveillance.

Electrical equipment monitoring Solution

- A positive database of over 10,000 samples
- Supports unsupervised learning algorithms
- Manual tagging is supported

AI Platform

- 10k+ item positive data of normal noises
- Unsupervised algorithm software to continue learning
- Support manual labelling of data

Electrical equipment

- 7*24h continually monitoring.
- Transformers, GIS, Distribution boxes, Cable connect

Sensors and Edge computing box

- Bone conductor & microphone .
- Edge computing box.

Mining equipment monitoring Sensor

Mining equipment

- 7*24h continually monitoring
- Mining machinery, Conveyor belt, Electric motors, idler equipment

AI Platform

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Sensors and Edge computing box

- Bone conductor & microphone .
- Edge computing box.

Mainly used for monitoring the operational status of mining machinery and equipment such as conveyor belt rollers. It provides equipment fault warnings by detecting abnormal noise

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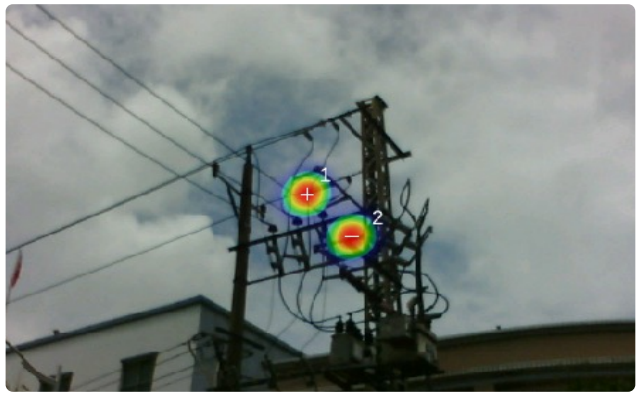
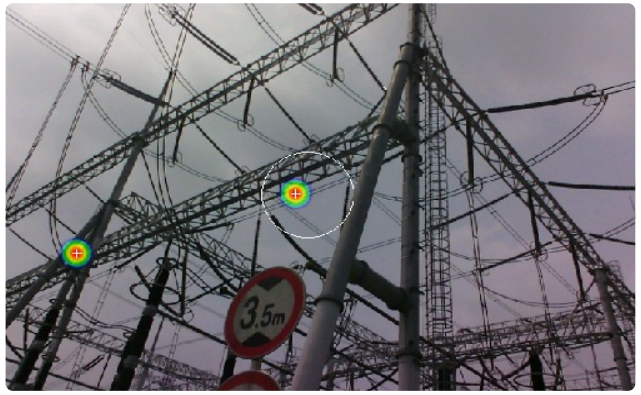
Success Cases

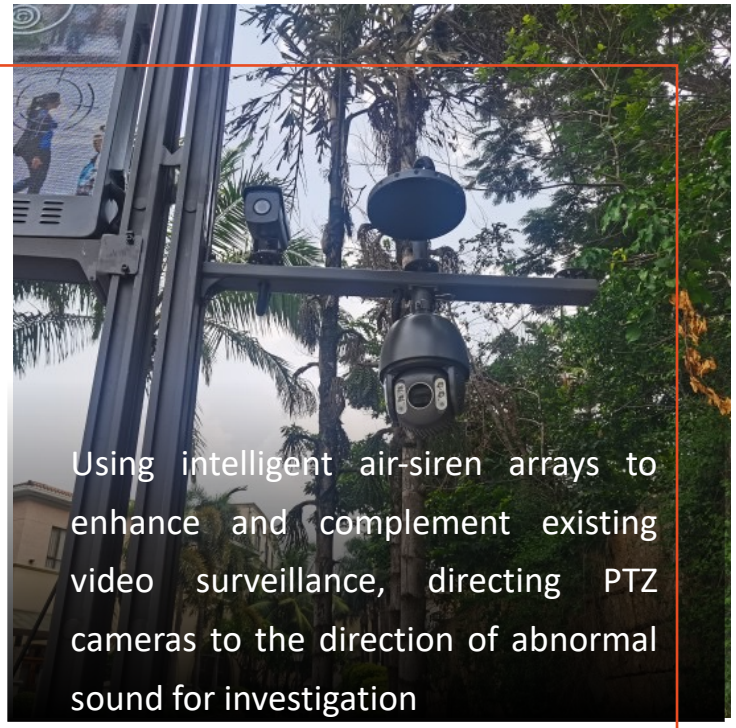
Applications of Acoustic Technology

Acoustic Camera

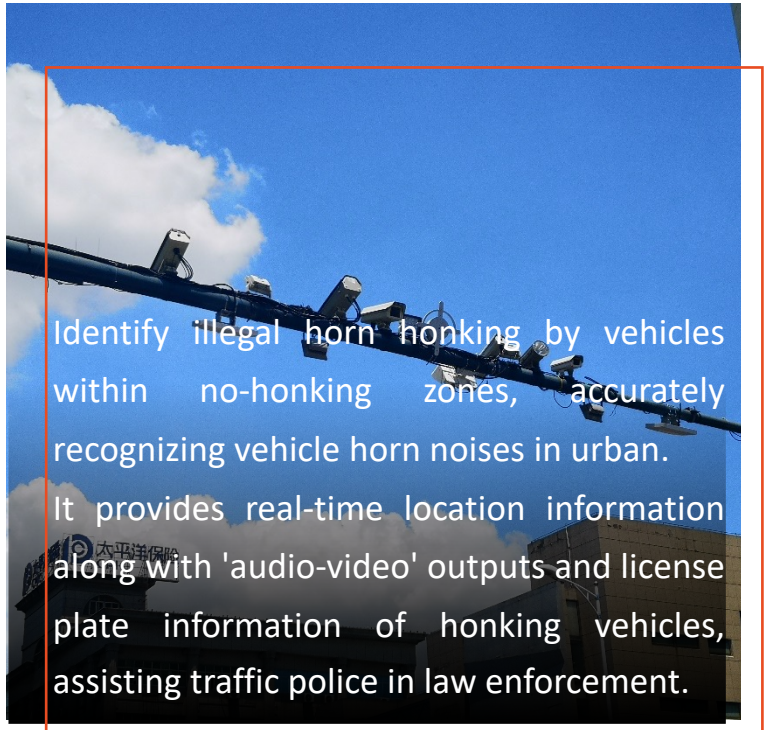




Security Sonar



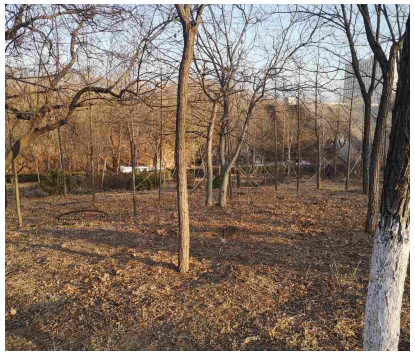
Using intelligent air-siren arrays to enhance and complement existing video surveillance, directing PTZ cameras to the direction of abnormal sound for investigation



Identify illegal horn honking by vehicles within no-honking zones, accurately recognizing vehicle horn noises in urban.

It provides real-time location information along with 'audio-video' outputs and license plate information of honking vehicles, assisting traffic police in law enforcement.

Acoustic Defender



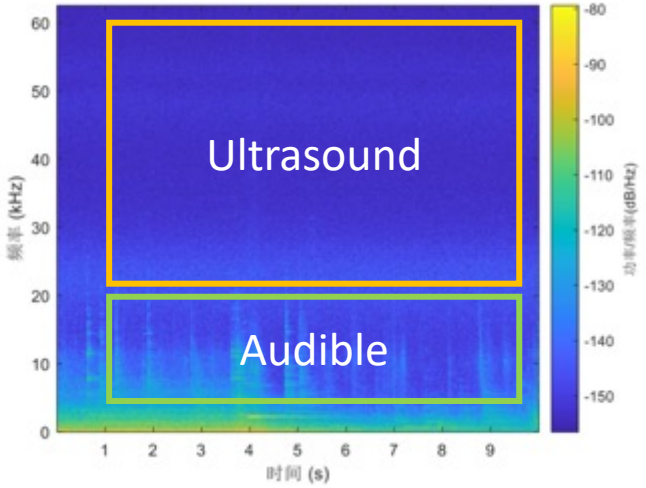
Electrical Monitoring

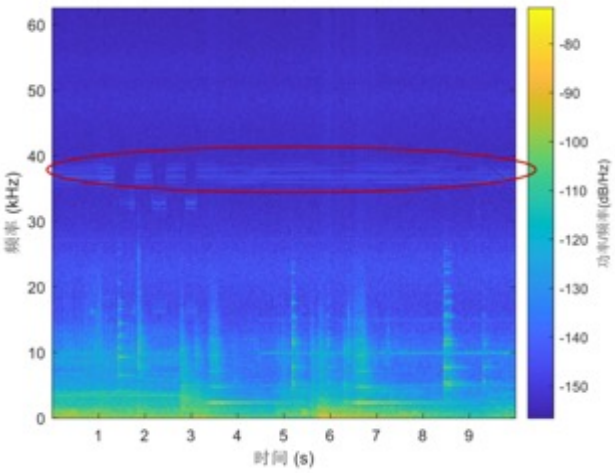
Location: An outdoor 500KV substation in Jiangxi

Case: the system detects significant acoustic information around 38 kHz,

High frequency energy ratio exceeds the standard,

Confirmed as internal transformer partial discharge.





Thanks

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