

IoT hardware for audio recording and edge computing

Protecting machines, ensuring better business



 high-quality sound and vibration data

 early warnings of machine failures

 plug & play installation

 real-time continuous monitoring

 AI-powered sound analysis

 edge computing & offline data processing



nBox 6

The IoT recording & edge computing device

Install the standalone device on any asset and start the automatic audio monitoring. The device records sound and uses edge computing to run complex machine learning algorithms. It provides early failure warning without the need to transfer data to cloud storage.

Physical

Dimensions (W×L×H)	140 × 160 × 40 mm
Weight	650 g
Recording channels	6

Audio

Sampling rate	max 96 kHz
Resolution	16 bits

Compute power

CPU	6-core processor RK3399
Memory	2 GB
Storage	32 GB eMMC
GPU	ARM Mali-T860MP4

Energy

Power consumption	max 30 W
Power requirements	12 – 16 V DC
LED indicator	RGB

Environment

Operating temperature	-10 °C to 60 °C
Certification	ATEX zone-2
Protection	IP 40

Up to IP 64 with additional protective box.

Connectivity

LAN	1× Ethernet 1GbE
USB	1× USB 2.0
RS-232	1× RJ45
Wifi module	802.11ac 2.4 GHz/5.0 GHz
LTE module	ME909s-120 Mini PCI

nBox 12

Physical

Dimensions (W×L×H)	140 × 160 × 50 mm
Weight	730 g
Recording channels	12

Other specifications are the same as for nBox 6



nCard & nCard app

Mobile Recording Gadget

Record the machine's sound into your mobile phone via the nCard gadget and use the Android app to upload it to the cloud for real time analysis. Anytime, anywhere.

Physical

Dimensions (W×L×H)	87 × 58 × 27 mm
Weight	100 g
Recording channels	2
Material	ALU/plastic

Environment

Operating temperature	-10 °C to 50 °C
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Connectivity

Headphone	jack 3.5
USB	1× Micro – A 2.0

Audio

Sampling rate	48 kHz
Resolution	16 bits

Mobile application

OS	Android
Recording	FLAC samples up to 60 s
Uploading	using phone Wi-Fi or LTE
Tagging	custom – defined tags and project folders
Analysis	pre-trained algorithm on the server

Key use cases

Shortens initial sound assessment

No need to wait for nBox shipment and installation to capture minutes of recording.

Flexible and low cost

Collect sound samples from tens of machines or different machine components to decide which to select for a pilot with nBox.



Standard sensor & microphone

Leverage our sound recording experience

When working on standard projects, we typically attach durable piezo-electric sensors to critical machine components to record structure-borne sound. Alternatively, we can use condenser microphones. We standardly provide wired versions of our sensors and microphones. Wireless applications and other specific recording equipment is available on demand and charged separately.

Piezo-ceramic structure-borne sound



Physical

Dimensions (W×D)	18 × 22 mm
Weight	82 g
Cable	up 50 m

Technical specification

Frequency response	25 Hz – 35 kHz
Max vibration	800 m·s ⁻²

Environment

Operating temperature	–30 °C to 130 °C
Certification	ATEX zone-I

Installation

The sensor is screwed to the machine on a previously glued bolt; sensor can be easily removed and returned.

Sennheiser e 614 pre-polarised condenser microphone



Physical

Dimensions (W×D)	100 × 20 mm
Weight	93 g
Cable	up 50 m

Technical specification

Frequency response	40 Hz – 20 kHz
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Environment

Operating temperature	–0 °C to 60 °C
Sensitivity in free field, no load (1kHz)	3 mV/Pa (–50dB)
Maximum sound pressure level (passive)	139 dB/SPL