



SonoDAQ & OpenTest

Next Generation

Intelligent Acoustic and Vibration Testing System



Precisely capture every data point to empower scientific and industrial innovation.

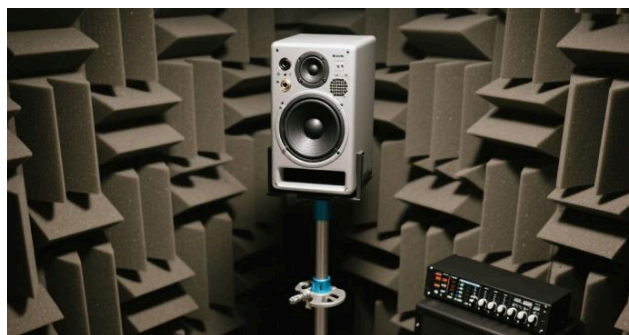
SonoDAQ

Next Generation Sound & Vibration DAQ

- Rugged carbon fiber mainframe with **IP67 protection**
- **Hot-swappable dual lithium batteries**
- Gigabit Ethernet supporting daisy chaining and **90 W PoE**
- Modular design for **1000+ channels**
- PTP synchronization with sampling accuracy **better than 100 ns**
- **170 dB** dynamic range
- **1000V** electrical isolation between slot
- **Built-in AI and real-time edge computing**
- Local data recording on microSD card



Typical Applications



Electroacoustic Testing



NVH



Industrial Control



Aerospace

Product Features



High-Precision Performance

- Sampling rate up to 384 kS/s, 32-bit resolution
- Dual-gain ADC synchronous sampling with seamless data integration, achieving a dynamic range of 170 dB



Technological Innovation

- Proprietary multi-channel synchronous sampling technology: channel-to-channel skew < 100 ns
- Intelligent caching algorithm to prevent loss of high-frequency data
- Supports hot-swappable dual lithium batteries



User-Friendly Design

- Plug-and-play on Windows, Linux, and macOS; full SDK included
- Accompanying data visualization software, supporting real-time waveform display and offline analysis



Reliability Assurance

- Industrial-grade protection standard: IP67, operating temperature range: -40°C to 70°C

Mainframe Technical Specifications



SonoDAQ LT

System Configuration
24 Channels

/

/

6 Modules

Dual Ethernet

/

/

Operating Temperature: -10 °C to 50 °C

Vibration, Shock: EN60068-2

1000 V Slot Isolation

IP43

SonoDAQ Pro

System Configuration
Over 1000 Channels

PTP (IEEE 1588v2)

AI & Edge Computing

6 Modules

Daisy Chain Ethernet + PoE

External microSD Card Storage:
Default 256 GB, Optional Up to 2 TB

GPS & BDS / Wi-Fi

Operating Temperature: -10 °C to 50 °C

Vibration, Shock: EN60068-2

1000 V Slot Isolation

IP43

SonoDAQ Ultra

System Configuration
Over 1000 Channels

PTP (IEEE 1588v2)

AI & Edge Computing

6 Modules

Daisy Chain Ethernet + PoE

External microSD Card Storage:
Default 256 GB, Optional Up to 2TB

GPS & BDS / Wi-Fi

Operating Temperature: -40 °C to 70 °C

Vibration, Shock: GJB 150

1000 V Slot Isolation

IP67

Module Technical Specifications

Released



Analog In - Medium

4 Channels, BNC

32-bit Resolution

Maximum Sampling Rate of 204.8 kHz

Input Range: 31.4 Vpk

Dynamic Range: 170 dB

TEDS

Noise Floor: ≤ -117 dBV

Crosstalk: $\leq (-130 \text{ dB} + 0.1 \mu\text{V})$ at 20 kHz

In Planning



Analog In - Lite

4 Channels, BNC

24-bit Resolution

Maximum Sampling Rate of 204.8 kHz

Input Range: 10 Vpk

Dynamic Range: 136 dB

TEDS

Noise Floor: ≤ -116 dBV

Crosstalk: $\leq (-130 \text{ dB} + 0.1 \mu\text{V})$ at 20 kHz

In Planning



Analog In - High

4 Channels, BNC

32-bit Resolution

Maximum Sampling Rate of 409.6 kHz

Input Range: 230 Vpk

Dynamic Range: 170 dB

TEDS

Noise Floor: ≤ -121 dBV

Crosstalk: $\leq (-130 \text{ dB} + 0.1 \mu\text{V})$ at 20 kHz

Released



In Planning



Analog Out + Class D

Analog Output Mode	Amplifier Mode
2 Channels, BNC	2 Channels, BNC, Class D Amplifier
32-bit Resolution	Output Impedance: 190 mΩ
204.8 kHz / 192 kHz Sampling Rate	Minimum Load: 4 Ω
Output Voltage: 0 – 21.21 Vrms (60 Vpp) Balanced Mode 0 – 10.61 Vrms (30 Vpp) Unbalanced Mode	Output Voltage: 9.475 Vrms (8 Ω load)
Frequency Range: 0.1 Hz – 160 kHz	Supported Output Power: 10 W @ <0.2% THD+N (8 Ω load) 6 W @ <0.3% THD+N (4 Ω load) TEDS
Amplitude Accuracy: ±0.03 dB	Noise Floor: ≤ -80 dBV
Frequency Accuracy: ±0.0003% + 100 uHz	Impedance Measurement Range: 4 Ω – 600 Ω
Crosstalk: ≤ (-147dB + 0.2 μV) to 20 kHz	Impedance Measurement Accuracy: ≤ 0.5% (20 Hz – 20 kHz)

Analog Out - High

Analog Output Mode
2 Channels, BNC
32-bit Resolution
204.8 kHz / 384 kHz Sampling Rate
Output Voltage: 0 – 26.66 Vrms (75.4 Vpp) Balanced Mode 0 – 13.33 Vrms (37.7 Vpp) Unbalanced Mode
Frequency Range: 5 Hz – 180 kHz
Amplitude Accuracy: ±0.04 dB
Frequency Accuracy: ±0.0003% + 100 uHz
Crosstalk: ≤ (-147 dB + 0.2 μV) to 20 kHz

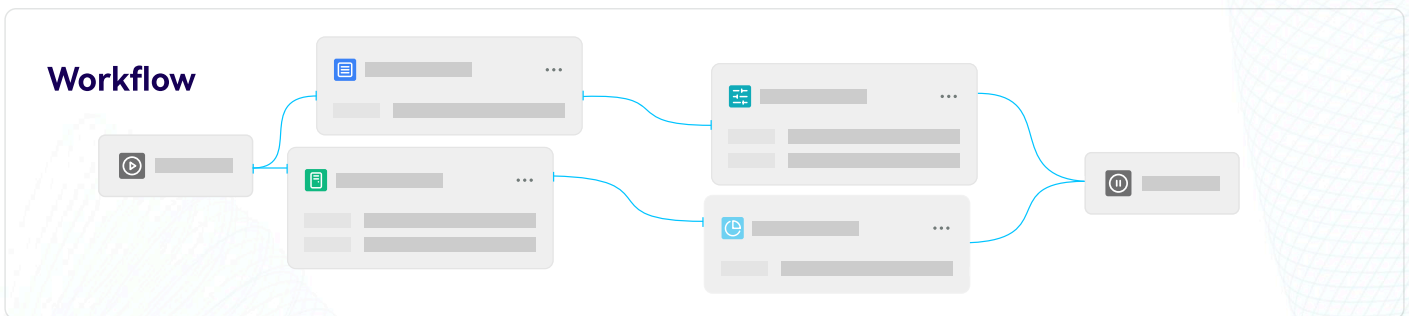
In Planning

In Planning

NO.	Module	Features	NO.	Module	Features
1	Bluetooth	2 × SMA Bluetooth 5.3	7	HDMI	2 × HDMI Audio In and Out
2	LE Audio	Bluetooth Low Energy	8	DSIO (Digital Serial IO)	I2S / TDM
3	A2B	4 × Phoenix Terminal	9	Battery Module	12.6V / 6600mAH
4	PDM	3 × PDM	10	STG	8 × Strain Gauge
5	LVI Module	8 × Logic Voltage / Tacho	11	THI	8 × Thermocouple
6	CHG	4 × Charge Input	12		More

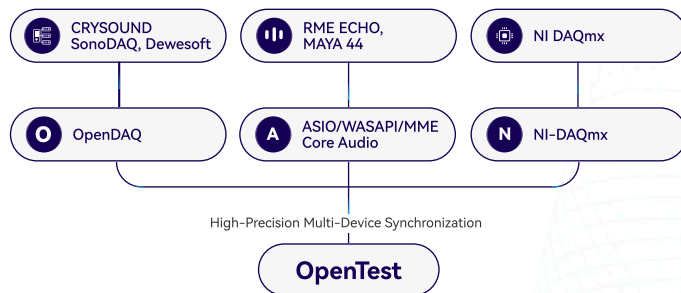
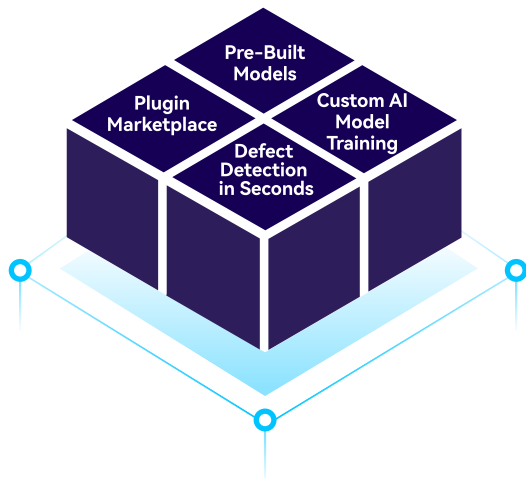
Revolutionize acoustic measuring with openness, AI, and universal compatibility

The screenshot displays the 'Testbench' application interface. At the top left, a user profile for 'John Doe' with the role 'Operate' is visible. The main area features a large blue waveform representing a signal. Below the waveform, a purple line graph is labeled 'Frequency Response Test'. On the right side, there is a 'Plugin Marketplace' section with a list of available plugins: '+ Defect Detection for TWS Earbuds', '3D Noise Mapping', and 'Industrial Diagnostics'. The interface is clean and modern, with a light gray background and blue accents.



Manage Multi-Brand Hardware Under One Platform

OpenTest delivers cross-platform compatibility across professional-grade interfaces, consumer audio devices, and embedded systems, providing centralized control of multi-vendor hardware to eliminate driver conflicts and streamline workflows.



Pluggable Architecture

- **Pre-Built Models**
- **Custom AI Model Training**
- **Support for Python/LabVIEW/MATLAB Algorithm Integration**
- **Complete API for Students to Write Personalized Testing Logic**
- **One-Stop Signal Acquisition and Custom Algorithm Processing**

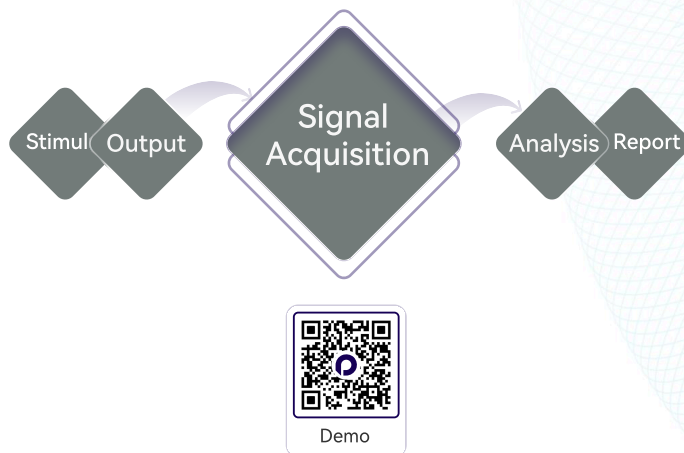
Adaptive Orchestration Framework

• No-Code Workflows

Drag-and-drop interface to design test sequences (e.g., signal generation → data capture → AI analysis → report generation).

• Code-Friendly

Call Python, MATLAB, LabVIEW scripts or REST APIs for custom logic.



Industry Solutions



Consumer Electronics

AI-powered defect detection for TWS earbuds, speaker performance validation, etc.



Industrial Diagnostics

Predictive maintenance 2.0, smart production line QC, etc.



Research & Innovation

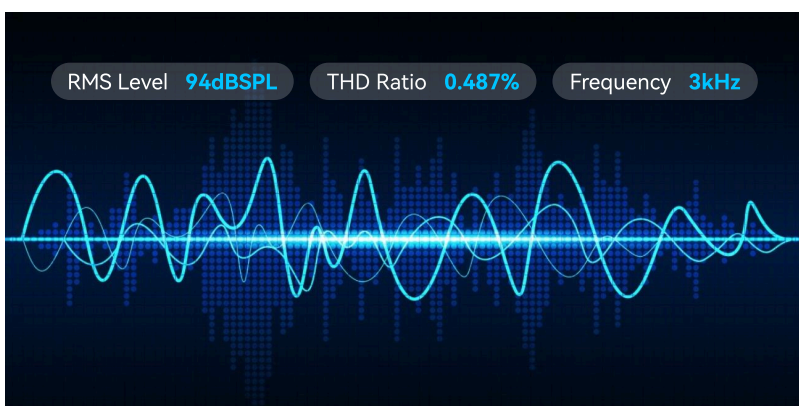
Acoustic material R&D, 3D noise mapping, etc.



Automotive Engineering

Full-vehicle NVH (noise, vibration, harshness) profiling

Features



Monitors & Meters

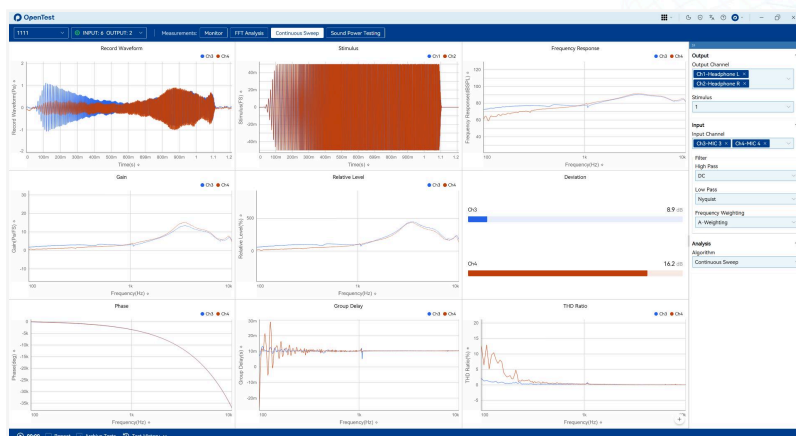
Dynamic Tracking and Instant Anomaly Detection

Continuous waveform monitoring and FFT spectrum analysis enable real-time identification of signal anomalies, such as clipping, clock jitter, and other issues. It simultaneously tracks key metrics, including RMS level, THD, SND, and frequency response, with configurable high-pass/low-pass filters and A/C/Z frequency weighting.

Continuous Sweep Analysis

Full-Range Rapid Measurement

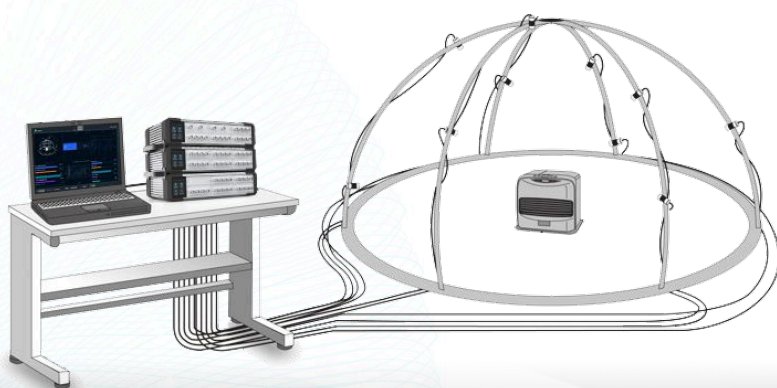
This function utilizes logarithmically varying sweep signals to extend energy accumulation time in low-frequency ranges, ensuring measurement accuracy. At the same time, it significantly improves test efficiency. It enables fast and reliable testing for applications such as resonance peak detection in speakers, phase continuity analysis in headphones, and frequency response flatness evaluation in amplifiers. Results automatically comply with industry standards and generate professional test reports. It is an indispensable tool for audio R&D, production, and quality control.



Sound Power Testing

Precise Quantification of Acoustic Performance

This solution supports sound pressure-based sound power measurement, fully compliant with international standards ISO 3744 (Engineering Method), ISO 3745 (Precision Method), and ISO 3746 (Survey Method), meeting various accuracy requirements in different scenarios. It is suitable for R&D and quality control in consumer electronics, automotive audio systems, and professional audio equipment.



Lightweight & Easy Deployment

Cross-Platform Compatibility (Windows/Linux/MacOS)

Multi-Language Support (Python/LabVIEW/MATLAB)

To learn more, please visit www.opentest.com