CRYSOUND

SonoDAQ & OpenTest

Next Generation

Intelligent Acoustic and Vibration Testing System

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

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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
- **1000 V** electrical isolation between slot
- **Built-in AI and real-time edge computing**
- Local data recording on microSD card

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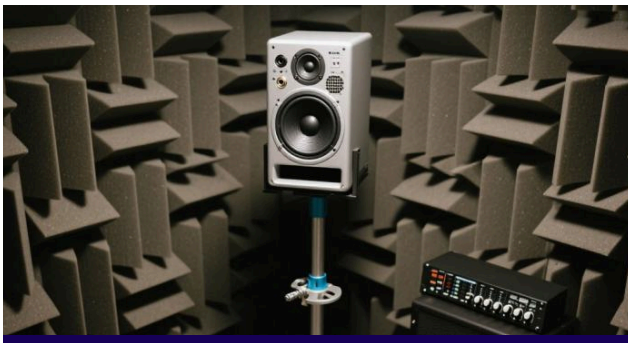
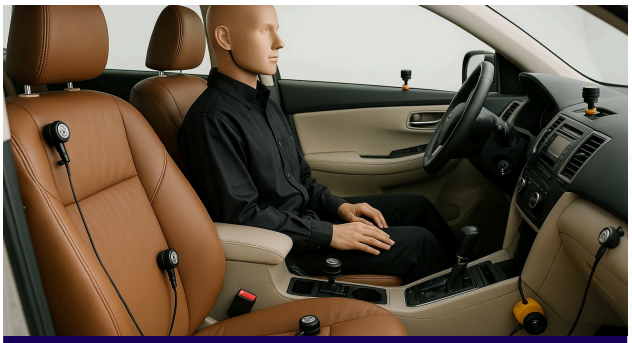
Typical Applications

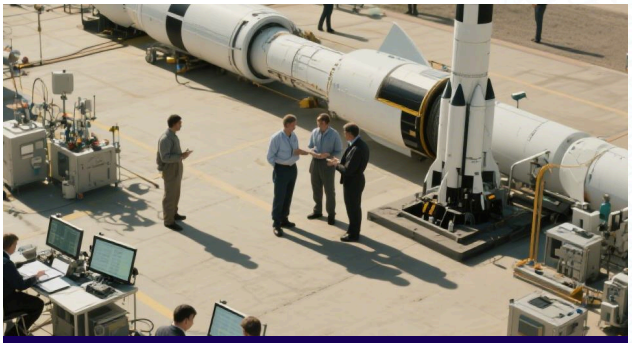


Electroacoustic Testing



NVH

Industrial Control



Aerospace

Product Features

High-Precision Performance

- Sampling rate up to 204.8 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: IP67, operating temperature: -40°C to 70°C (SonoDAQ Ultra)

Mainframe Technical Specifications

Released	Released	In Planning
		
SonoDAQ LT	**SonoDAQ Pro**	**SonoDAQ Ultra**
System Configuration 24 Channels	System Configuration Over 1000 Channels	System Configuration Over 1000 Channels
/	PTP (IEEE 1588v2)	PTP (IEEE 1588v2)
/	Edge AI	Edge AI
6 Modules	6 Modules	6 Modules
Dual Ethernet	Daisy Chain Ethernet + PoE	Daisy Chain Ethernet + PoE
/	External microSD Card Storage: Default 256 GB, Optional Up to 2 TB	External microSD Card Storage: Default 256 GB, Optional Up to 2TB
/	GPS & BDS / Wi-Fi	GPS & BDS / Wi-Fi
Operating Temperature: -10 °C to 50 °C	Operating Temperature: -10 °C to 50 °C	Operating Temperature: -40 °C to 70 °C
Vibration, Shock: EN60068-2	Vibration, Shock: EN60068-2	Vibration, Shock: GJB 150
1000 V Slot Isolation	1000 V Slot Isolation	1000 V Slot Isolation
IP43	IP43	IP67

Module Technical Specifications

Released	Released	In Planning
		
Analog In - IES	**Analog In - IED**	**Analog In - IEQ**
4 Channels, BNC, IEPE	4 Channels, BNC, IEPE	2 Channels, BNC, IEPE
24-bit Resolution	32-bit Resolution	32-bit Resolution
Maximum Sampling Rate of 192 kHz	Maximum Sampling Rate of 204.8 kHz	Maximum Sampling Rate of 409.6 kHz
Input Range: 10 Vpk	Input Range: 90 Vpk	Input Range: 230 Vpk
Dynamic Range: 130 dB	Dynamic Range: 160 dB	Dynamic Range: 170 dB
TEDS	TEDS	TEDS
Noise Floor: ≤ -116 dBV	Noise Floor: ≤ -117 dBV	Noise Floor: ≤ -121 dBV
Crosstalk: < -130 dB at 1 kHz	Crosstalk: < -130 dB at 1 kHz	Crosstalk: < -130 dB at 1 kHz

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Released

Analog Out - ADD

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 ~ 90 kHz	Supported Output Power: 10 W @ <0.2 % THD+N (8 Ω load) 6 W @ <0.3 % THD+N (4 Ω load)
Amplitude Accuracy: ±0.03 dB	Noise Floor: ≤ -80 dBV
Frequency Accuracy: ±0.0003% + 100 μHz	Impedance Measurement Range: 4 Ω ~ 600 Ω
Crosstalk: < -147 dB at 1 kHz	Impedance Measurement Accuracy: ≤ 0.5 % (20 Hz ~ 20 kHz)

Released

Analog Out - ADS

Analog Output Mode
2 channels, headphone amplifier jack, 1 channel, banana plug connector
32-bit Resolution
204.8 kHz Sampling Rate
Headphone amplifier Maximum Output: 9 Vrms 2 ~ 800 Ω @100 mW THD+N: < -90 dB
35 W Mono Power Amplifier Maximum Output: 17 Vrms 2 ~16 Ω @35 W Impedance Measurement Accuracy: ≤1 % @4 Ω ~16 Ω (20 Hz~20 kHz) ≤2 % @2 Ω ~4 Ω (20 Hz~20 kHz)

In Planning

NO.	Module		Features
1	Bluetooth		2 × SMA Bluetooth 5.3
2	LE Audio		Bluetooth Low Energy
3	A2B		4 × Phoenix Terminal
4	PDM		3 × PDM
5	LVI Module		8 × Logic Voltage / Tacho
6	CHG		4 × Charge Input

In Planning

NO.	Module		Features
7	HDMI		2 × HDMI Audio In and Out
8	DSIO (Digital Serial IO)		I2S / TDM
9	Battery Module		12.6 V / 6600 mAh
10	STG		8 × Strain Gauge
11	THI		8 × Thermocouple
12	.....	.....	More

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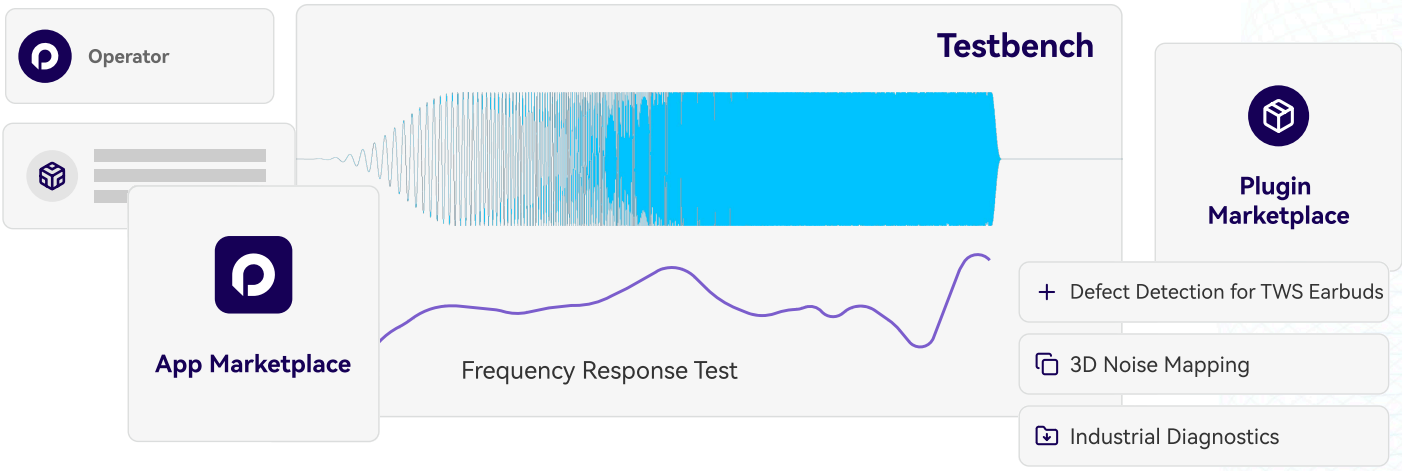
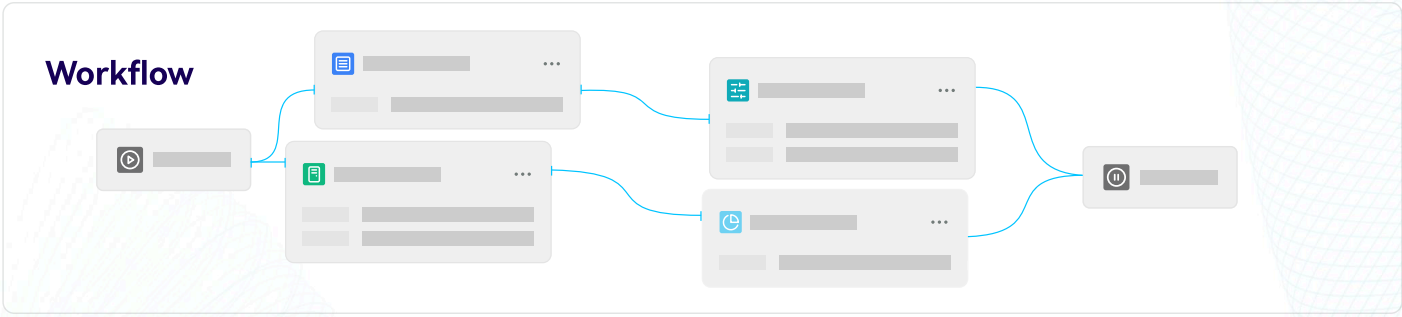
OpenTest

A new acoustic measurement software
Revolutionize acoustic measuring with openness, AI, and universal compatibility

www.opentest.com





AI Meets Testing

Multi-Device Syncing

Cross-Platform

No-Code Development

Flexible Deployment

Enterprise-Grade Security

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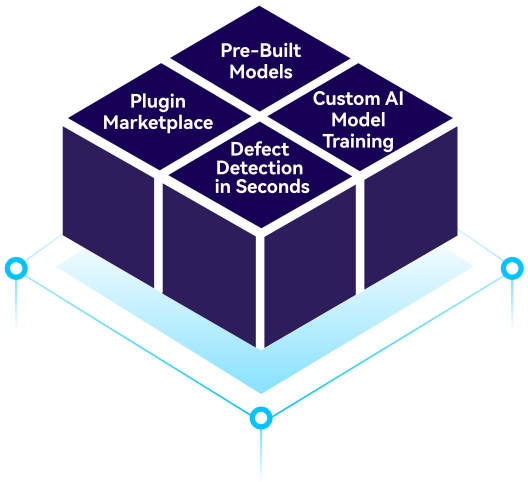
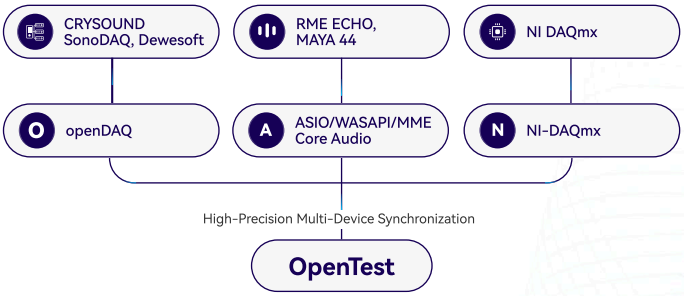
Manage Multi-Brand Hardware Under One Platform

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.

Demo

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

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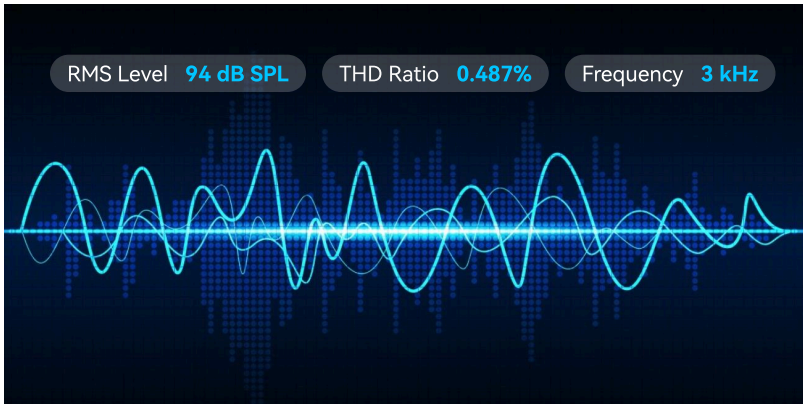
Features



Monitors & Meters

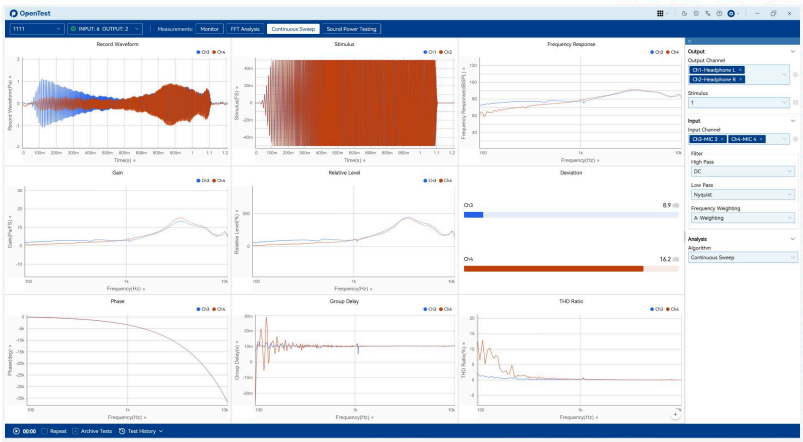
Dynamic Tracking and Instant Anomaly Detection

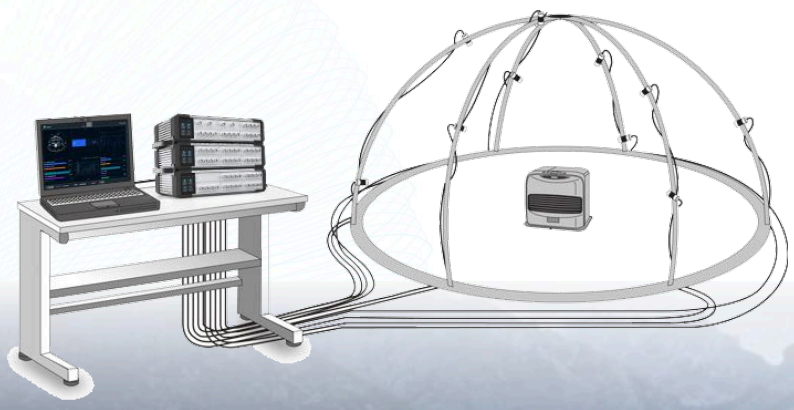
Continuous waveform monitoring and FFT spectrum analysis enable real-time identification of signal anomalies, such as clipping, clock jitter, and other issues. It simultaneously tracks key metrics, including RMS level, THD, SND, and frequency response, with configurable high-pass/low-pass filters and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

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Features

Octave Analysis

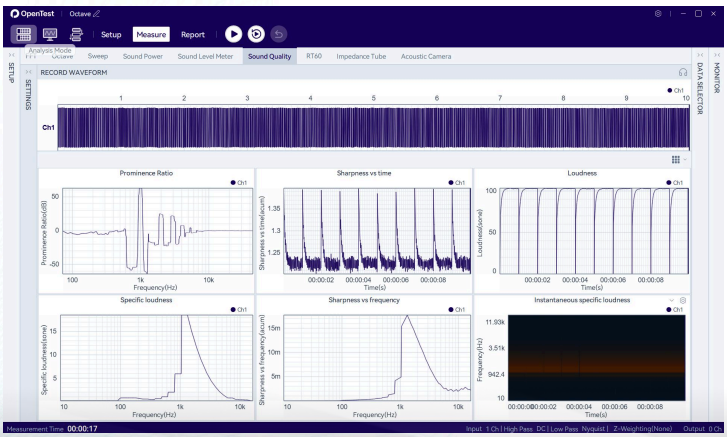
Multi-Resolution Frequency Band Evaluation

Supports 1/1 to 1/24 octave analysis for fast band evaluation and precise detection of resonance, abnormal noise, and narrowband anomalies, delivering intuitive and reliable results for production screening and R&D troubleshooting.

Sound Level Meter Analysis

Synchronized Multi-Metric Analysis for More Comprehensive Acoustic Evaluation

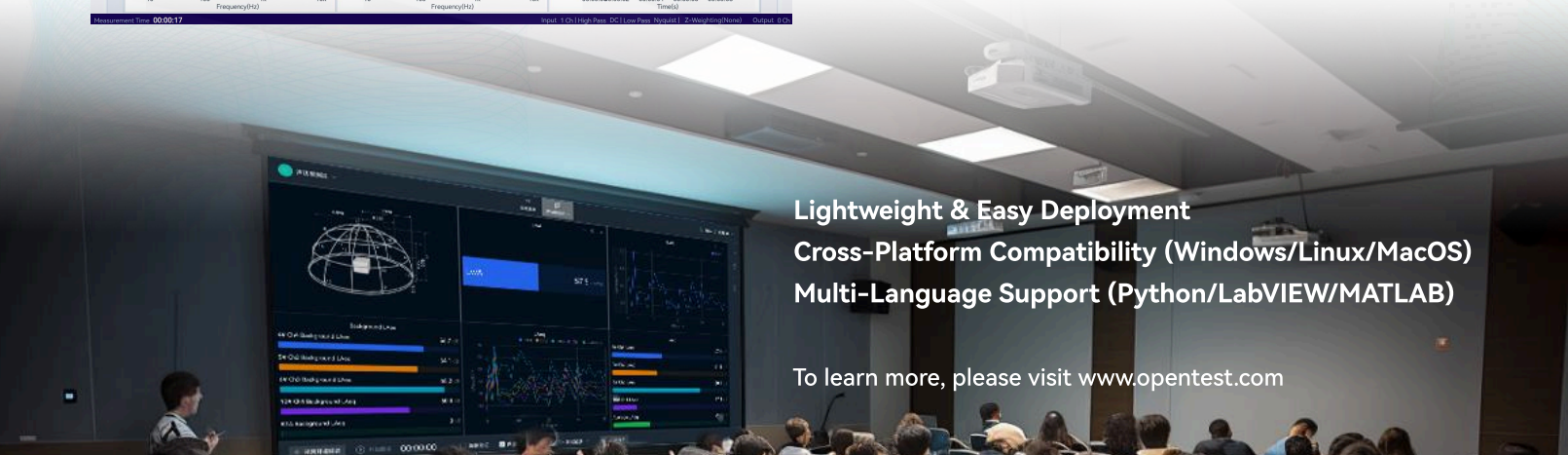
Supports Lp, Lmax, Lmin, Leq, Lpeak, Ln, LE, SD, and octave analysis, with A/C/Z weighting and F/S/I time weighting for comprehensive evaluation of sound pressure level, peaks, statistical distribution, and band energy. Suitable for R&D validation, production testing, and quality control, it helps users obtain clear and accurate acoustic results for product optimization and noise analysis.



Sound Quality Analysis

Bridging Objective Metrics and Subjective Perception

Supports loudness, sharpness, and prominence analysis for quantitative evaluation of sound quality. Suitable for consumer electronics, home appliances, automotive, and industrial products, it helps users identify issues, compare differences, and improve overall acoustic performance.



Lightweight & Easy Deployment
Cross-Platform Compatibility (Windows/Linux/MacOS)
Multi-Language Support (Python/LabVIEW/MATLAB)

To learn more, please visit www.opentest.com