

XPT800

SOUND LEVEL METER AND FREQUENCY **ANALYSER**

INTRODUCTION

XPT800 is the high-end model, eldest son of the Expert Line family of handheld class 1 sound level meters-spectrum analyzers and vibration meters.

It is based on a scalable platform that can be adapted to the growing requirements of acoustic professionals. The needs for accuracy, high performance and ease of use have been satisfied thanks to the use of the latest technologies and a careful evaluation of the suggestions of experts in the sector. Top quality and performance to provide the acoustic specialist with a complete and reliable tool for all the main sector applications, from environmental noise and building acoustics, to risk assessment in the workplace, up to laboratory and industrial products analyses.

FEATURES

Compact and lightweight

Ergonomic design for one-hand operation allows easy transport and use in various locations, facilitating on-site noise assessments.

High versatility

Interchangeable microphones with auto-identification (Sensor Digital Interface) Wide range of applications in a single upgradable device

Enhanced audio processing capabilities

Automatic impulsivity and tonality detectors

Large Color Touch Screen Display

4.3" vibrant color touch screen display

Unyielding Durability

Rugged materials for harsh field conditions

Versatile Storage Options

Internal from 4GB on eMMC, µSD or external USB stick

Seamless Wireless Connectivity

Data transfer and remote control Embedded Wi-Fi, 4G,LAN, USB-C, RS232/485 interfaces

High Dynamic Range

Dynamic range exceeding 125dB for accurate measurements in both quiet and noisy environments

Long-lasting Battery Life

Internal rechargeable battery with smart power management Supports more than 24 hours of continuous measurement campaigns Automated Event Identification

Unattended noise monitoring with automatic audio recordings Advanced Trigger and Logging Capabilities

Unique logging features and advanced trigger logic with exceedances detection on broad levels and spectrum masks

Vibration Measurement

Triaxial input for vibration sensors



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MARKET-LEADING METROLOGICAL PERFORMANCE High-end accuracy with 125 dB dynamic range and miniumum inherent noise level.

CLASS 1 ACCORDING TO IEC 61672:2013 High precision and compliance with international standards ensure that the data collected is accurate and reliable. supporting compliance with regulations.

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ENHANCED USER EXPERIENCE User-friendly Interface Intuitive user interaction through smartphone-like gestures; possibility to manage functionalities even with the use of 3 buttons keyboard.



EASY CONFIGURATION Reduce significantly complex onsite configurations using internal customizable or factory apps.

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AT-A-GLANCE INFORMATION The status bar provides immediate visual feedback on essential device statuses, reducing the need for users to navigate through menus.



FIRMWARE UPGRADES Enhances device performance and stability. Unlocks new features and functionalities. Over-the-air (OTA) updates of firmware and new options.



Environmental Noise Assessment

Urban Noise Monitoring: Evaluate noise pollution in city environments to support urban planning and noise control measures.

Construction Site Monitoring: Measure noise impact on surrounding areas and ensure compliance with noise regulations during construction projects. **Residential Noise Studies:** Assess and mitigate noise levels in residential areas to improve living conditions and public health.



Building Acoustic

Professional Building Acoustics Assessments: Ideal for architects, engineers, and acousticians conducting noise assessments, sound insulation tests, and reverberation time measurements in buildings.



Occupational Noise and Vibrations

Exposure Assessment: Helps in assessing noise and vibrations exposure levels to protect public health and safety, particularly in workplaces and residential areas.

Robust body design and operation even via keyboard in harsh environments.

Industrial Noise Assessment: Monitor and manage noise levels in industrial settings to protect worker health and comply with regulations.



Product Noise Testing

Enhanced Product Quality: Ensures that products meet noise level standards, improving customer satisfaction and product quality. Regulatory Compliance: Helps manufacturers comply with noise regulations ensuring smooth market entry. Efficient Testing Process: Streamlines the noise testing process with real-time data, continuous monitoring, and comprehensive analysis tools. Versatile Applications: Suitable for a wide range of products and testing environments, offering flexibility and adaptability.

Data management

Data stored in the new sound level meters XPT800 and XPT801 are manually archived* or automatically synchronized (only with Push option for XPT80x via Wi-Fi, Lan or 4G device) in the cloud service through the NS Storage web application.

Data stored and organized in workspaces protected by access credentials can be viewed by the workspace owner as graphs and tables through any device equipped with a web browser connected to the Internet and can be exported in text format.

Workspace owners can share their data with any user by assigning, for example to a collaborator, specific (revocable) permissions for the use of one or more workspaces.

The data in the workspaces are directly accessible through the NS-ENS software and can be downloaded and archived locally for analysis.

*Limited free storage space.



NS Storage for mobile





Technical specifications

Inputs	Microphone	MC800: Free field ½", 50 mV/Pa sensitivity; 0 V; IEC 61094-4 WS2F, 3.15 Hz-20 KHz. MP800: preamplifier, automatic detection of model and calibration data. SDI (Sensor Digital Interface). CTC automatic electric calibration			
	Accelerometer	IEPE, 4-pin circular push-pull, tri-axial			
Measuring ranges	Dynamic range	> 125 dB			
(with MC800 microphone, MP800 preamplifier)	Linear Operating Range	A (1kHz) 20 dB - 137 (140 pk) C 22 dB - 137 (140 pk) Z 25 dB - 137 (140 pk)			
Frequency weightings		A, C + B or Z (user selection). 3 simultaneous			
Time constants		Fast, Slow, Impulse, Peak simultaneous			
Averaging		Linear, exponential, moving, max, min			
Parameters*		Lp, Leq, Lleq, SEL, Leq _{mov} (Sliding), L _{min/max} , L _{peak} , Level diff. (<i>i.e. LCeq-LAeq</i>), LUp, LUeq (User between two sel. bands), LAFT, LAFTeq (TaktMax), L _{PER} (L _{den} , L _{dn} , L _{day} , L _{evening} , L _{night}), Lp ^{1/1} , Lp ^{1/3} , Leq ^{1/1} , Leq ^{1/3} , Leq _{mov} ^{1/1} , Leq _{mov} ^{1/3} , Ln (0.1%-99.9%), Ln _{mov} , Ln ^{1/1} , Ln ^{1/3} , pL, pL ^{1/3} *For more details about measurement parameters see user manual			
Spectral Analysis	Octave	Real time, 1/1 octave, 8 Hz to 16 kHz, IEC 61260-1:2014 Real time, 1/3 octave 6.3 Hz to 20 kHz, IEC 61260-1:2014			
	FFT ⁽¹⁾	Real time FFT in parallel with 1/3 oct. (specifications TBA)			
Noise Criteria		NC, NR, RNC, RC			
Reverberation time		T60 calculation ⁽¹⁾			
Intelligibility		STI/STIPA (1)			
Statistical Analysis		Broad band and Spectral: 7xLn (Lin and Mov) selectable percentile levels (0.1%-99.9%). Probability/Cumulative distribution.			
Audio	Recording	Mode: continuous, manual or event triggered. Resolution 16, 24, 32-bit. Audio-band: 10, 20 KHz. Format: Wave or compressed (ADPCM ⁽¹⁾)			
	Playback	Embedded codec for signal generation. Playback channels: Generator, Trace (.wav) or Measurement (Mic input). Playback Mic or Mic-filtered (Wide Band A, C, Aux or 1/3 band selectable) for Audio playback of microphone input.			
Measurement Control		Start, stop, pause, reset, back-erase, continue, event marking, manual audio recording. Measure timer from 1 s to 23:59:59 hr			
Calibration	Acoustic	Manual or automatic (tone detection). Calibrations history: date/time, dB correction. Free Field, Random Incidence, environmental and shield corrections			
Vibration Measurements ⁽¹⁾	Triaxial vibration	Human exposure to hand-transmitted vibration (ISO 5349) Human exposure to whole-body vibration (ISO 2631-1) Human exposure to whole-body vibration in buildings (ISO 2631-2)			
Triggers	Broad band	Single or multiple (OR/AND) on broad-band levels, levels difference, Ln, $\mathrm{L}_{_{\mathrm{mov}}}$			
	Spectra	On 1/1 or 1/3 oct. masks. Single - All bands mode. Max, min thresholds editable (man or json file)			
Detectors	Tonality ⁽¹⁾	Automatic identification according to DM 16/03/1998 and ISO1996-2			
	Impulsivity ⁽¹⁾	Automatic identification according to DM 16/03/1998			
Storage	Physical	Embedded 4GB eMMC and up to 64GB µSD (TBA); USB memory stick.			
	Cloud	Upload to cloud storage service (NS-Storage). Manual or automatic (Push)			
	Archive	List, preview and plot with zoom function of stored data. Manual data upload on NS-Storage cloud service.			
Datalogging		Time history: independent Short, Standard, Report steps. Short: 10 ms. Standard: 100/200/500 ms / 1 s. Reports: 10/20/30 s,1/2/5/10/20/30/60 m Events: triggered broad-band, octave, Ln values Globals: Continuous, Daily integrations			

Notes (for more information contact sales department): - some hardware and firmware features may be subject to the purchase of specific options. - some features and applications may be under development (planned) and available later (TBA) - specifications may be subject to change without notice.

(1) Planned functionality



Views	SLM
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Numerical tables

Frequency spectrum

Time history

Statistics⁽¹⁾

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Display

6 user selectable parameters with easy-to-read numbers - Levels difference (selectable) - Bar graph of 3 broadband levels - Alarms display on exceedances Broad-band parameters, weightings & time const. all in parallel: Inst., Average, Max-Min. 7xLn percentiles broad-band, Ln moving, 7xLn of 1/1 or 1/3 octave frequency bands. Spectrum: Inst, Min, Max, Avg, Mov, Ln Exceedances: ongoing exceedances; nº of occurrences (SLM, Markers, audio.) Histograms: up to 4 selectable. Values @cursor position. Overall A, C, Z, User 1/1 or 1/3 octave; Spectrum ponderation: A, C, or Z; Time constants: Lin, Fast or Slow Type: Inst, Mov, Avg, Max, Min, Rep-Avg, Rep-Max, Rep-Min, Evn-Avg, Evn-Max, Evn-Min

Simultaneous display of up to 4 selectable parameters with display/hide feature. 1xAudio and 4xEvent-Marker as presence-coloured bars. 3xBroad-band values bars. Cursor with inst. level and time display.

Probability/cumulative distributions plots. Ln vs frequency bands (histogram)



4.3" touch, 480x800 px, colour TFT, high brightness, sunlight readability. Auto brightness. **Keyboard** ON/OFF/MENU key with RGB backlight; Function keys (2x); Multi-colour Status Indicator. Rechargeable battery pack, Li-Ion polymer, 9000 mAh. PCM circuit for battery protection Battery Type > 24 h Operating time Wireless Wi-Fi Embedded Wi-Fi module (IEEE 802.11 b/g/n), for web communication and time sync GSM (1) Embedded 4G-LTE modem module for web communication and time sync Hardware USB-C USB-C, OTG 2.0. MS (Mass Storage) and CD (Communication Device) interface Ethernet RJ45 10/100 Ethernet for web communication and time sync Aux RJ12: auxiliary connector for external devices as Meteo stations (Meteo interface (1)) Audio I/O 3.5 mm 4-pin audio jack: audio I/O and trigger I/O GPS⁽¹⁾ Localization Location tracking, time synchronization **Physical** Dimensions: 304x86x38 mm. Weight: 505 g (incl. batteries). Dust and water-resistant case (IP Rating pending). Standard ¹/₄" tripod mount thread. Language English, Italian (others TBA) System Status bar Battery, GPS, Wi-Fi/Lan/4G conn., Cloud conn.level, uload/dload, notifications, date/time, active storage media, remaining storage, overload/underload, audio recording, active measurement mode Monitor Battery level [%], device temp [°C], pressure [hPa], charge voltage, pre temp [°C] Via USB connection or Over-the-air (OTA)⁽¹⁾ updates of firmware and new options. Fw/Options upgrade **IFC** Acoustic Sound Level Meter standards IEC 61672-1 (2013) classe 1 IEC 60651 (1979) plus Amendment 1 (1993-02) and Amendment 2 (2000-10), type 1 IEC 60804 (2000-10) type 1 Octave and fractional octave band filters IEC 61260-1 (2014) ANSI Sound Level Meter ANSI S1.4-1983 plus ANSI S1.4A-1985 Amendment type 1 (sound level meter) ANSI/ASA S1.4-2014 class 1 ANSI S1.43-1997 type 1 Octave and fractional octave band filters ANSI/ASA S1.11-2014 Part 1 Noise Studio NS-ENS: environmental noise analysis Software Desktop Noise Studio NS-SIS⁽¹⁾: buildings acoustic performance analysis Web applications Noise Studio NS-Storage: storage and display of measurement data Noise Studio NS-Monitor ⁽¹⁾: remote management of compatible devices





- XPT800 with OH3B hardware option connector panel
- 1 Microphone capsule
- 2 Preamplifier
- 3 Push-pull connector
- 4 Light sensor
- 5 Touch Display
- 6 Keyboard
- 7 USB-C connector
- 8 GSM external antenna connector (optional)
- 9 LAN socket (optional): RJ45 type connector
- 10 AUX (optional): connector RJ12 type, for connection to external devices
- 11 IEPE type push & pull connector (optional): for connection to a triaxial accelerometer (TBA)
- 12 Connector for audio output/filtered trigger I/O: Ø 3.5 mm jack socket
- 13 Rubber protection for connectors
- 14 1/4" threaded hole for stand
- 15 Battery compartment
- 16 SIM slots (TBA)
- 17 Micro SD card slot (TBA)
- 18 Battery connection
- 19 Battery compartment opening/closing screw

• = Included in base model.

 \circ = Available separatly.



Ordering codes

(19) (18) (17)

(16) (15) (14)

(13)

(12)

XPT800 base version

connector panel

XPT800 Sound Level Meter can ordered as base model and additional functionalities can be added later as retrofit.

	additional functionalities can be added later as retrofit.						
XPT800		Class 1 Sound level meter, MC800 microphone, MP800 preamplifier (incl. carrying case, windshield, USB cable, conformity certificate)					
Hardware options							
XPT800-OH3B	0	Monitor module with tri-axial					
XPT800-OH3M	~	accelerometer input 4G network module with GPS					
XPT800-0H3M	•	Outdoor measurement (CIC and					
XI 1000 ONI4	•	preamplifier heater)					
XPT800-OH5	•	Trace/Signal generator (playback + measuring)					
Software options							
XPT800-OF1E	0	1/1 + 1/3 Octave bands Advanced Spectrum analyzer					
XPT800-OF1AE	0	1/1 Octave bands Advanced Spectrum analyzer					
XPT800-OF2	0	FFT spectrum analyzer					
XPT800-OF3	•	Statistic analyzer					
XPT800-OF3S	0	Advanced statistic analyzer					
XPT800-OF4	0	Audio Recording					
XPT800-OF5S	•	Push Automatic data upload					
XPT800-OF5A	0	Measure Monitor web service					
XPT800-OF6	0	STI/STIPA calculation					
XPT800-OF8A	•	Event Detector					
XPT800-OF8B	•	Fast data logging					
XPT800-OF8C	•	Moving average calculations					
XPT800-OF8D	•	Noise Assessment Periods levels					
XPT800-OF9	0	Noise Ratings calculation					
XPT800-OF10A	0	Human vibrations (ISO5349, ISO2631-1)					
XPT800-OF10B	0	Human vibrations in buildings (ISO2631-2)					
XPT800-OF11A	0	Tonality and impulsivity detectors (ISO1996)					
XPT800-OF11B	0	Tonality and impulsivity detectors (DM16/03/98)					
XPT800-OF12	0	Reverberation time calculation					
XPT800-OF13A	•	Datalogger					
XPT800-OF13B	•	Advanced datalogger					
XPT800-OF13M		Meteo parameters datalogger					
XPT800-OF15	•	Extended dynamic range					
Calibrations							
XPT800-CAL	0	ISO 17025 Accredited Calibration					
Accessories							
HD2020	0	Class 1 sound calibrator					
WSO	0	Outdoor microphone protection					
WSO-C	0	Outdoor microphone protection with sound source					
Software							
NS-STORAGE	•	NS-Storage web service					
NS-MONITOR	0	NS-Monitor web service					
NS-ENS	0	"Environmental Noise Studio" desktop application module					
NS-SIS	0	"Sound Insulation Studio" desktop application module					

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