

# 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



#### MARKET-LEADING METROLOGICAL PERFORMANCE

High-end accuracy with 125 dB dynamic range and minimum 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.



#### 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.



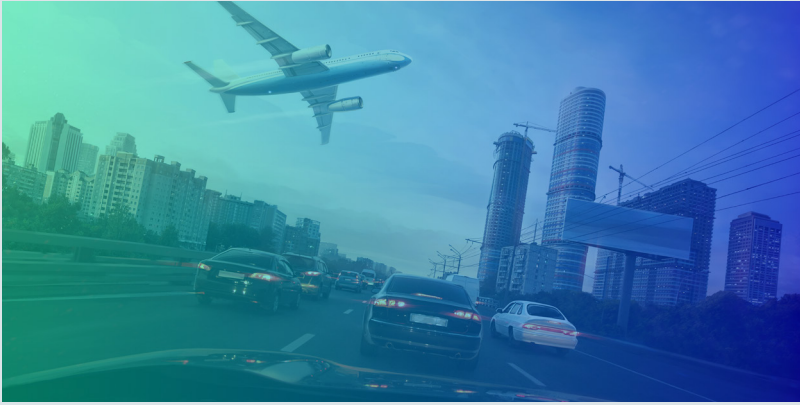
#### AT-A-GLANCE INFORMATION

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.

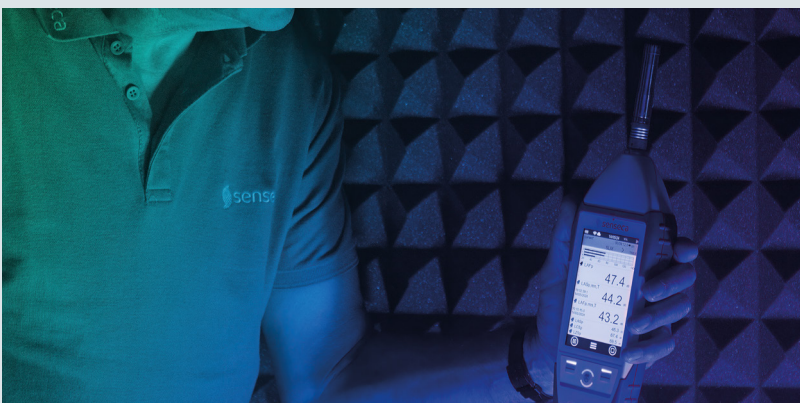


## Occupational Noise and Vibrations

**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

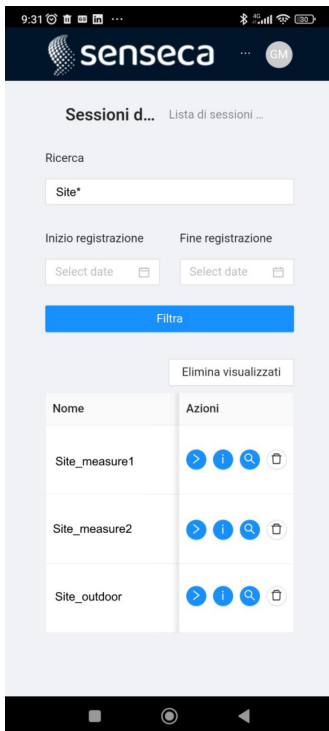
Data stored in the new sound level meters XPT800 and XPT801 are manually archived\* or automatically synchronized (only with Push option for XPT80x via Wi-Fi, Lan or 4G device) in the cloud service through the NS Storage web application.

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

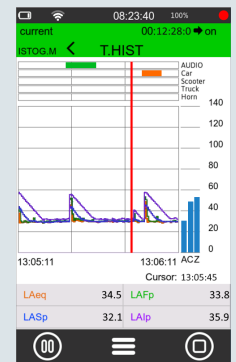
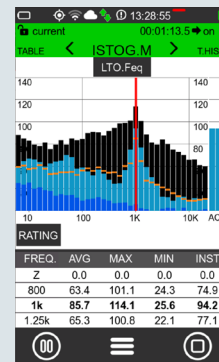
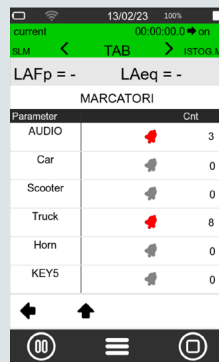
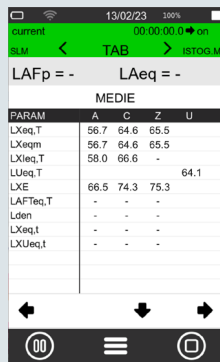
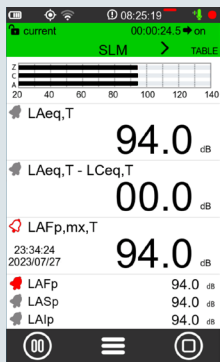
<b>Inputs</b>	Microphone	<b>MC800:</b> Free field ½", 50 mV/Pa sensitivity; 0 V; IEC 61094-4 WS2F, 3.15 Hz-20 KHz. <b>MP800:</b> preamplifier, automatic detection of model and calibration data. SDI (Sensor Digital Interface). CTC automatic electric calibration
	Accelerometer	IEPE, 4-pin circular push-pull, tri-axial
<b>Measuring ranges</b>	Dynamic range	> 125 dB
(with MC800 microphone, MP800 preamplifier)	Linear	A (1kHz) 20 dB – 137 (140 pk)
	Operating	C 22 dB – 137 (140pk)
	Range	Z 25 dB – 137 (140 pk)
<b>Frequency weightings</b>		A, C + B or Z (user selection). 3 simultaneous
<b>Time constants</b>		Fast, Slow, Impulse, Peak simultaneous
<b>Averaging</b>		Linear, exponential, moving, max, min
<b>Parameters*</b>		Lp, Leq, LLeq, SEL, Leq <sub>mov</sub> (Sliding), L <sub>min/max</sub> , L <sub>peak</sub> , Level diff. (i.e. LCeq-LAeq), LUp, LUEq (User between two sel. bands), LAFT, LAFTeq (TaktMax), L <sub>PER</sub> (L <sub>den</sub> , L <sub>dn</sub> , L <sub>day</sub> , L <sub>evening</sub> , L <sub>night</sub> ), Lp <sup>1/1</sup> , Lp <sup>1/3</sup> , Leq <sup>1/1</sup> , Leq <sup>1/3</sup> , Leq <sub>mov</sub> <sup>1/1</sup> , Leq <sub>mov</sub> <sup>1/3</sup> , Ln (0.1%-99.9%), Ln <sub>mov</sub> , Ln <sup>1/1</sup> , Ln <sup>1/3</sup> , pL, pL <sup>1/3</sup> *For more details about measurement parameters see user manual
<b>Spectral Analysis</b>	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 <sup>(1)</sup>	Real time FFT in parallel with 1/3 oct. (specifications TBA)
<b>Noise Criteria</b>		NC, NR, RNC, RC
<b>Reverberation time</b>		T60 calculation <sup>(1)</sup>
<b>Intelligibility</b>		STI/STIPA <sup>(1)</sup>
<b>Statistical Analysis</b>		Broad band and Spectral: 7xLn (Lin and Mov) selectable percentile levels (0.1%-99.9%). Probability/Cumulative distribution.
<b>Audio</b>	Recording	Mode: continuous, manual or event triggered. Resolution 16, 24, 32-bit. Audio-band: 10, 20 KHz. Format: Wave or compressed (ADPCM <sup>(1)</sup> )
	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.
<b>Measurement Control</b>		Start, stop, pause, reset, back-erase, continue, event marking, manual audio recording. Measure timer from 1 s to 23:59:59 hr
<b>Calibration</b>	Acoustic	Manual or automatic (tone detection). Calibrations history: date/time, dB correction. Free Field, Random Incidence, environmental and shield corrections
<b>Vibration Measurements <sup>(1)</sup></b>	Triaxial	Human exposure to hand-transmitted vibration (ISO 5349)
	vibration	Human exposure to whole-body vibration (ISO 2631-1)
		Human exposure to whole-body vibration in buildings (ISO 2631-2)
<b>Triggers</b>	Broad band	Single or multiple (OR/AND) on broad-band levels, levels difference, Ln, L <sub>mov</sub>
	Spectra	On 1/1 or 1/3 oct. masks. Single - All bands mode. Max, min thresholds editable (man or json file)
<b>Detectors</b>	Tonality <sup>(1)</sup>	Automatic identification according to DM 16/03/1998 and ISO1996-2
	Impulsivity <sup>(1)</sup>	Automatic identification according to DM 16/03/1998
<b>Storage</b>	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.
<b>Datalogging</b>		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.

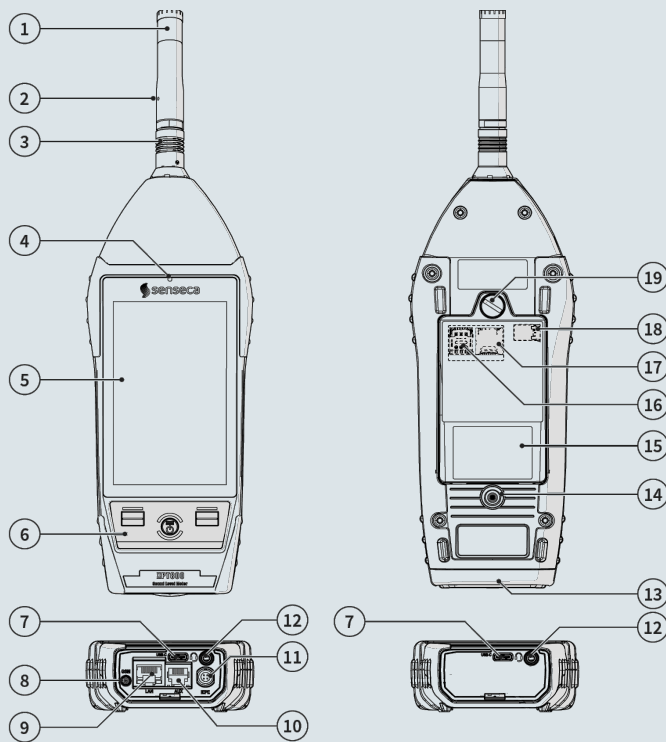
<sup>(1)</sup> Planned functionality

Views	SLM	6 user selectable parameters with easy-to-read numbers - Levels difference (selectable) - Bar graph of 3 broadband levels - Alarms display on exceedances
	Numerical tables	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; n° of occurrences (SLM, Markers, audio.)
	Frequency spectrum	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
	Time history	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.
	Statistics <sup>(1)</sup>	Probability/cumulative distributions plots. Ln vs frequency bands (histogram)



Display		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.
Battery	Type	Rechargeable battery pack, Li-Ion polymer, 9000 mAh. PCM circuit for battery protection
	Operating time	> 24 h
Wireless	Wi-Fi	Embedded Wi-Fi module (IEEE 802.11 b/g/n), for web communication and time sync
	GSM <sup>(1)</sup>	Embedded 4G-LTE modem module for web communication and time sync
Hardware interface	USB-C	USB-C, OTG 2.0. MS (Mass Storage) and CD (Communication Device)
	Ethernet	RJ45 10/100 Ethernet for web communication and time sync
	Aux	RJ12: auxiliary connector for external devices as Meteo stations (Meteo interface <sup>(1)</sup> )
	Audio I/O	3.5 mm 4-pin audio jack: audio I/O and trigger I/O
Localization	GPS <sup>(1)</sup>	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, upload/download, 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]
	Fw/Options upgrade	Via USB connection or Over-the-air (OTA) <sup>(1)</sup> updates of firmware and new options.
Acoustic standards	IEC	Sound Level Meter 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
Software	Desktop	Noise Studio NS-ENS: environmental noise analysis Noise Studio NS-SIS <sup>(1)</sup> : buildings acoustic performance analysis
	Web applications	Noise Studio NS-Storage: storage and display of measurement data Noise Studio NS-Monitor <sup>(1)</sup> : remote management of compatible devices





*XPT800 with OH3B hardware option  
connector panel*

*XPT800 base version  
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

## Ordering codes

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

**XPT800** Class 1 Sound level meter, WS90 windscreen, standard small carrying case, Conformity Certificate, USB-C cable.

### Included in base model

XPT800-OH1	MP800-MC800 microphone set
XPT800-OH4	Outdoor measurement (CIC and preamplifier heater)
XPT800-OH5	Trace/Signal generator (playback + measuring)
XPT800-OF3	Statistic analyzer
XPT800-OF5S	Push Automatic data upload
XPT800-OF8A	Event Detector
XPT800-OF8B	Fast data logging
XPT800-OF8C	Moving average calculations
XPT800-OF8D	Noise Assessment Periods levels
XPT800-OF13B	Advanced datalogger
XPT800-OF15	Extended dynamic range
NS-STORAGE	NS-Storage web service

### Additional hardware options

XPT800-OH3B	Monitor module with tri-axial accelerometer input
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### Additional software options

XPT800-OF1E	1/1 + 1/3 Octave bands Advanced Spectrum analyzer
XPT800-OF1AE	1/1 Octave bands Advanced Spectrum analyzer
XPT800-OF3S	Advanced statistic analyzer
XPT800-OF4	Audio Recording
XPT800-OF9	Noise Ratings calculation

### Desktop / web application

NS-ENS	"Environmental Noise Studio" desktop application module
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### Accessories

HD2020	Class 1 sound calibrator
WSO	Outdoor microphone protection
CPL-4...	Microphone extension cable. Available length 5 or 10 m.

### Upcoming releases

XPT800-OH3M	4G network module with GPS
XPT800-OF2	FFT spectrum analyzer
XPT800-OF6	STI (STIPA method) analyzer
XPT800-OF10A	Human vibrations (ISO5349, ISO2631-1)
XPT800-OF10B	Human vibrations in buildings (ISO2631-2)
XPT800-OF11A	Tonality and impulsivity detectors (ISO1996)
XPT800-OF11B	Tonality and impulsivity detectors (DM16/03/98)
XPT800-OF12	Reverberation time calculation
XPT800-OF13M	Meteo parameters datalogger
WSO-C	Outdoor microphone protection with sound source
XPT800-OF5A	NS-Monitor web service
NS-SIS	"Sound Insulation Studio" desktop application module