

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 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.



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



Building Acoustic

and public health.

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

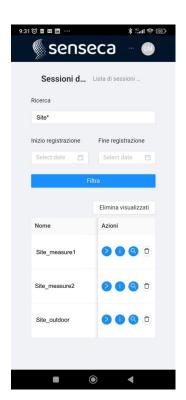
Data stored in the new sound level meters XPT800 and XPT801 are manually archived* or automatically synchronized (only with Push option for XPT80x via Wi-Fi, Lan or 4G device) in the cloud service through the NS Storage web application.

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

MC800: Free field ½", 50 mV/Pa sensitivity; 0 V; IEC 61094-4 WS2F, 3.15 Hz-20 KHz. Inputs Microphone

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

> 125 dB Dynamic range Measuring ranges

A (1kHz) 20 dB - 137 (140 pk) (with MC800 Linear microphone, MP800 Operating 22 dB - 137 (140pk) preamplifier) Range 25 dB - 137 (140 pk) 7

A, C + B or Z (user selection). 3 simultaneous **Frequency weightings**

Time constants Fast, Slow, Impulse, Peak simultaneous Linear, exponential, moving, max, min **Averaging**

Parameters* $Lp, Leq, Lleq, SEL, Leq_{mov} \ (Sliding), \\ L_{min/max}, \\ L_{peak}, Level \ diff. \ (i.e. \ LCeq-LAeq), \\ LUp, LUeq \ (User \ between \ two \ sel. \ Level \ Level$

 $\textit{bands}), \text{LAFT}, \text{LAFTeq}(\textit{TaktMax}), \text{L}_{\text{pER}}(\text{L}_{\text{den}}, \text{L}_{\text{dh}}, \text{L}_{\text{day}}, \text{L}_{\text{evening}}, \text{L}_{\text{night}}), \text{Lp}^{1/1}, \text{Lp}^{1/3}, \text{Leq}^{1/1}, \text{Leq}_{\text{mov}}^{1/1}, \text{Leq}_{\text{mov}}^{1/1}, \text{Leq}_{\text{mov}}^{1/3}, \text{Leq}_{\text{mov}}^{1/1}, \text{Lp}^{1/3}, \text{Leq}_{\text{mov}}^{1/1}, \text{Lp}^{1/3}, \text{Leq}_{\text{mov}}^{1/1}, \text{Lp}^{1/3}, \text{Leq}_{\text{mov}}^{1/1}, \text{Lp}^{1/3}, \text{Leq}_{\text{mov}}^{1/3}, \text{Leq}_{\text{mov}}^{1/3$

*For more details about measurement parameters see user manual

Real time, 1/1 octave, 8 Hz to 16 kHz, IEC 61260-1:2014 **Spectral Analysis** Octave

STI/STIPA (1)

Real time, 1/3 octave 6.3 Hz to 20 kHz, IEC 61260-1:2014 Real time FFT in parallel with 1/3 oct. (specifications TBA)

Noise Criteria NC, NR, RNC, RC Reverberation time T60 calculation (1)

FFT (1)

Intelligibility

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 Triaxial Human exposure to hand-transmitted vibration (ISO 5349) Measurements (1) vibration Human exposure to whole-body vibration (ISO 2631-1)

Human exposure to whole-body vibration in buildings (ISO 2631-2)

Single or multiple (OR/AND) on broad-band levels, levels difference, Ln, L_{mov} **Triggers** Broad band

> 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

Embedded 4GB eMMC and up to 64GB µSD (TBA); USB memory stick. **Storage** Physical

> 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):

⁽¹⁾ Planned functionality



⁻ 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.

Views SIM 6 user selectable parameters with easy-to-read numbers - Levels difference (selectable) - Bar graph of 3

broadband levels - Alarms display on exceedances

Numerical Broad-band parameters, weightings & time const. all in parallel: Inst., Average, Max-Min. tables

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.)

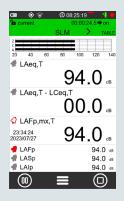
Histograms: up to 4 selectable. Values @cursor position. Overall A, C, Z, User Frequency

spectrum 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(1) Probability/cumulative distributions plots. Ln vs frequency bands (histogram)











Display 4.3" touch, 480x800 px, colour TFT, high brightness, sunlight readability. Auto brightness.

ON/OFF/MENU key with RGB backlight; Function keys (2x); Multi-colour Status Indicator. Kevboard **Battery**

Rechargeable battery pack, Li-Ion polymer, 9000 mAh. PCM circuit for battery protection 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 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

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 ¼" 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

Acoustic IFC. Sound Level Meter standards

ANSI

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) 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

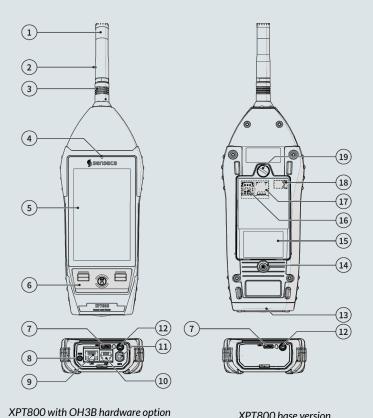
Noise Studio NS-ENS: environmental noise analysis Software Desktop

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





1 Microphone capsule

connector panel

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

XPT800 base version

connector panel

IEPE type push & pull connector (optional): for connection to a triaxial 11 accelerometer (TBA)

Connector for audio output/filtered trigger I/O: Ø 3.5 mm jack socket 12

13 Rubber protection for connectors

14 1/4" threaded hole for stand

15 Battery compartment

SIM slots (TBA) 16

17 Micro SD card slot (TBA)

18 Battery connection

19 Battery compartment opening/closing screw

- = Included in base model.
- \circ = Available separatly.

senseca

Ordering codes

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

XPT800

Class 1 Sound level meter, MC800 microphone, MP800 preamplifier (incl. carrying case, windshield, USB cable,

	COI	nformity certificate)
Hardware options		
ХРТ800-ОНЗВ	0	Monitor module with tri-axial accelerometer input
XPT800-OH3M	0	4G network module with GPS
XPT800-OH4	•	Outdoor measurement (CIC and 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		No o
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

V 1.0