XPT801

SOUND LEVEL METER AND FREQUENCY ANALYSER

INTRODUCTION

XPT801 is the model, within the Expert Line sound level meter range, with a price-performance ratio optimized through a light set of features and performances matched with respect to the applications of interest.

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.
Features and performances are offered in a light version compared to the top of the range, to provide the acoustician with an instrument of excellent price-performance value but complete and reliable for applications of interest such as environmental noise, workplace noise exposure assessment, or diverse industrial and laboratory applications.

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 microphone sets with automatic identification and calibrated sensitivity (Sensor Digital Interface). - Wide range of applications in a single upgradable device.

Audio Processing Features
Spectral analysis in octave and one-third octave bands. - Statistical analysis with calculation of probability distribution and percentile levels.

Large Color Touch Screen Display
4.3" vivid color touchscreen, sunlight-readable.

Unyielding Durability
Rugged materials for harsh field conditions.

Versatile Storage Options
Internal: 4GB on eMMC.

Seamless Connectivity
Data transfer via integrated Wi-Fi, Ethernet, or 4G.

High Dynamic Range
Linear range of 117 dB for accurate measurements in both quiet and noisy environments. - Measurable peak level of 140 dB, extendable up to 178 dB with a dedicated microphone set for high sound levels.

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.

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OPTIMISED PRICE-PERFORMANCE RATIO
117 dB linear range and 0.01 dB resolution

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.

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.

EASY CONFIGURATION
Reduce significantly complex onsite configurations using internal customizable or factory apps.
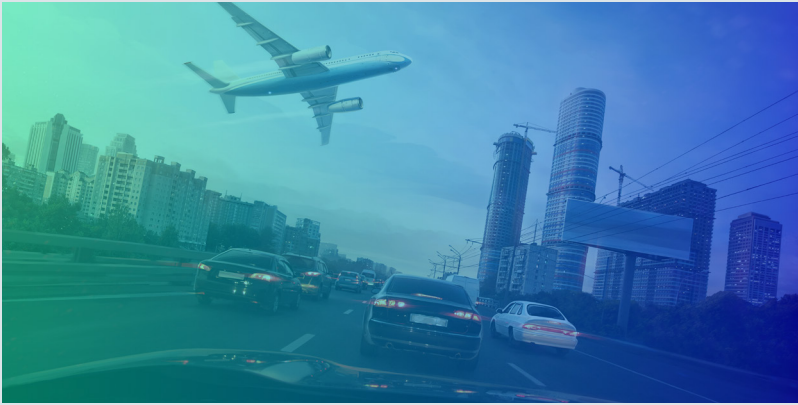
AT-A-GLANCE INFORMATION
The status bar provides immediate visual feedback on essential device statuses, reducing the need for users to navigate through menus.

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

Making the unknown, known

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.


Occupational Noise

Noise Exposure Assessment: Helps in assessing noise 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.
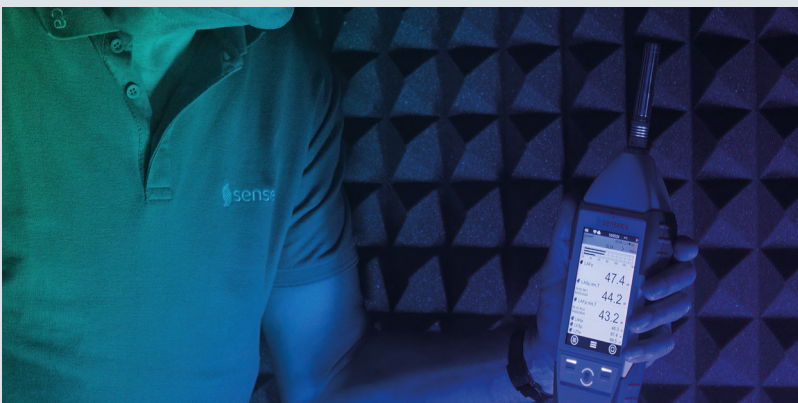
Product Noise Testing

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.
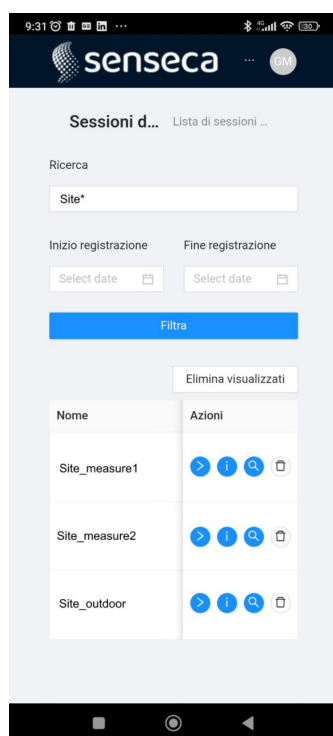
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Data management

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 stored in the workspaces is directly accessible through the NS1 and NS-ENS software modules and can be downloaded and stored locally for analysis.
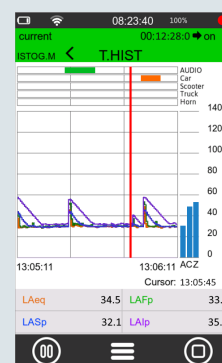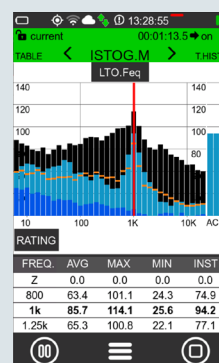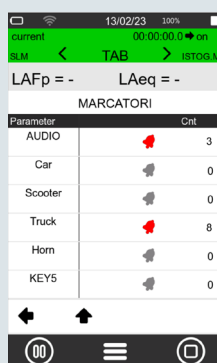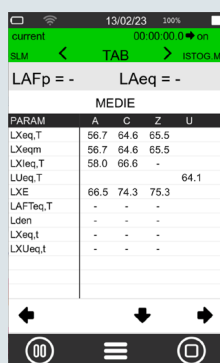
*Limited free storage space.

NS Storage for mobile

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Technical specifications

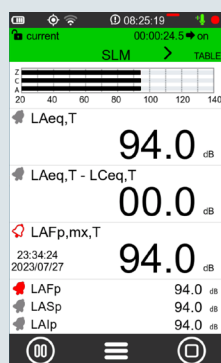|		

Inputs	MS801 microphone set	• **MC801:** ½" free-field measurement microphone, 50 mV/Pa; 0 V; IEC 61094-4 WS2F, 3.15 Hz–20 kHz.
		 • **MP801**: Preamplifier with SDI (Sensor Digital Interface)
		    • Automatic model and calibration data detection
		    • Automatic electrical calibration (CTC)
		    • Heater
		 • **Dynamic range:** from 21 dBA to 140 dBpeak

	Set microfonico MS802	• **MC802:** ¼" pressure measurement microphone, 0.56 mV/Pa; 0 V; IEC 61094-4 WS4P, 10 Hz–20 kHz. • **MP802**: Preamplifier with SDI (Sensor Digital Interface) • **Dynamic range:** from 65 dBA to 178 dBpeak
Linear range with MS801 microphone set		A (1 kHz) 21 dB – 137 dB (140 dBpk) C 24 dB – 137 dB (140 dBpk) Z 31 dB – 137 dB (140 dBpk)
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, $L_{min/max}$, L_{peak}, Level diff. (*i.e. LCeq-LAeq*), LUp, LUeq (*User between two sel. bands*), LAFT, LAFTeq (*TaktMax*) , $Lp^{1/1}$, $Lp^{1/3}$, $Leq^{1/1}$, $Leq^{1/3}$, Ln (*0.1%-99.9%*), pL *For more details about measurement parameters see user manual*
Spectral Analysis	Octave	Real time, 1/1 octave, 32 Hz to 16 kHz, IEC 61260-1:2014 Real time, 1/3 octave 10 Hz to 20 kHz, IEC 61260-1:2014
Noise Criteria		NC, NR, RNC, RC
Statistical Analysis		Broad band: 7xLn 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
	Line out	Microphone input on 3.5 mm jack
Measurement Control		Start, stop, pause, reset, back-erase, continue, event marking, manual audio recording. Measure timer from 1 s to 23:59:59 hrs
Calibration	Acoustic	Manual or automatic (tone detection). Calibrations history: date/time, dB correction. Free Field, Random Incidence, environmental and shield corrections
Triggers	Broad band	Single broadband level, level difference, statistical level Ln
	Spectra	On 1/1 or 1/3 oct. masks. *Single - All* bands mode. Max, min thresholds editable (man or json file)
Storage	Physical	Embedded 4GB eMMC
	Cloud	Upload to cloud storage service (NS-Storage). Manual or automatic (Push)
	Archive	List, preview and plots with zoom function of stored data. Manual data upload on NS-Storage cloud service.
Datalogging		Time history: independent Standard, Report steps. 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

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Views	SLM	6 user selectable parameters with easy-to-read numbers; Levels difference (selectable); Bar graph of 3 broadband levels; Alarms display on exceedances
	Table	Broad-band parameters, weightings & time const. all in parallel: Inst., Average, Max-Min. 7 x Ln percentiles broad-band Spectrum: Inst, Min, Max, Avg 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; Selectable linear or weighted spectrum; Time constants: Fast or Slow; Avarage: Lin Type: Inst, 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	Probability/cumulative distributions plots.

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	> 24h
Wireless	Wi-Fi	Embedded Wi-Fi module (IEEE 802.11 b/g/n), for web communication and time sync
	GSM	Embedded 4G-LTE modem module for web communication and time sync
Hardware interface	USB-C	MS (Mass Storage) and CD (Communication Device)
	Ethernet	RJ45 10/100 Ethernet for web communication and time sync
	Aux	RJ12: auxiliary connector for external battery power supply and for powering peripherals
	Audio I/O	3.5 mm 4-pin audio jack
Physical		Dimensions: 304 x 86 x 38 mm. Weight: 505 g (incl. batteries). Dust and water-resistant case (IP54). Standard ¼" tripod mount thread.
Operating conditions		Temperature: from -10 °C to 50 °C / Humidity: from 25 %RH to 90 %RH
Language		English, Italian *(Expandable to other languages)*
System	Status bar	Battery, 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]
	Fw/Options upgrade	Via USB connection or Over-the-air (OTA) updates of firmware and new options.
Acoustic standards	IEC	*Sound Level Meter*: IEC 61672-1 (2013) class 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 NS1: noise and vibration analysis in the workplace Noise Studio NS-ENS: environmental noise analysis
	Web applications	Noise Studio NS-Storage: storage and display of measurement data Noise Studio NS-Manager: management of XPT instruments (updates, options, notifications)

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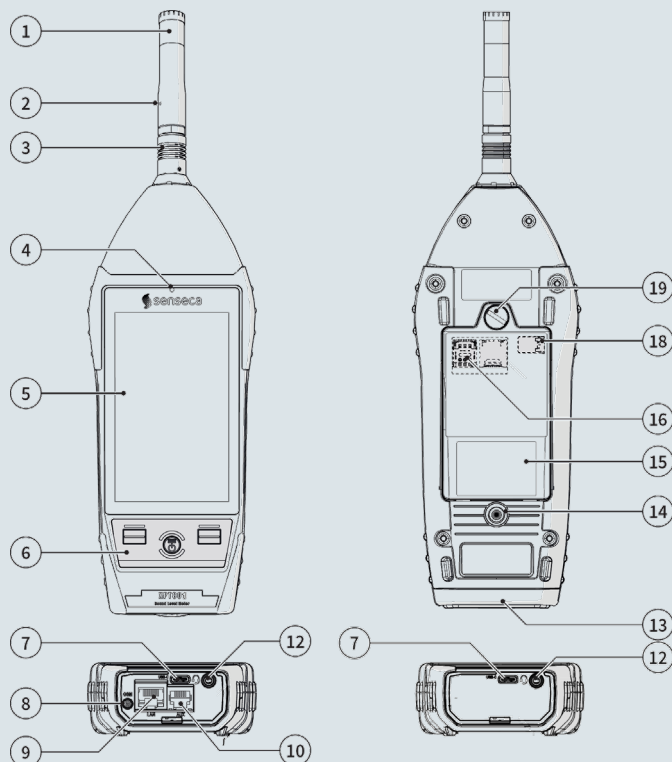
XPT801 with OH3A hardware option connector panel

XPT801 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

12   Connector for audio audio output / filtered audio / 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

18   Battery connection

19   Battery compartment opening/closing screw

Ordering codes

XPT801 Sound Level Meter can be ordered as base model and additional functionalities can be added later as retrofit.

XPT801	Class 1 sound level meter, MP801 preamplifier, ½" MC801 microphone (25 mV/Pa), WS90 windscreen, carrying case, USB-C cable, certificate of conformity. Dynamic range from 21 dBA to 140 dB peak.
XPT801-H	Class 1 sound level meter, MP802 preamplifier, ¼" MC802 microphone (0.56 mV/Pa), WS18 windscreen, carrying case, USB-C cable, certificate of conformity. Dynamic range from 65 dBA to 178 dB peak.

Included in base model

XPT801-OF3	Statistic analyzer
XPT801-OF8A	Event Detector
XPT801-OF13B	Advanced datalogger
NS-CLOUD	NS-Storage and NS-Manager cloud services

Additional hardware options

XPT801-OH3A	Monitor module
XPT801-OH3H	Network module with 4G modem

Additional firmware options

XPT801-OF1	1/1 + 1/3 Octave bands Advanced Spectrum analyzer
XPT801-OF1A	1/1 Octave bands Spectrum analyzer
XPT801-OF4	Audio Recording
XPT801-OF9	Noise Ratings calculation

Desktop / web applications

NS1	"Workers Protection": software module
NS-ENS	"Environmental Noise Studio" desktop application module

Accessories

HD2020	Class 1 sound calibrator
CPL-4.5	Microphone extension cable; 5 m
CPL-4.10	Microphone extension cable; 10 m
XPT800/SA	Support for attaching the preamplifier to the tripod
VTRAP	Tripod, maximum height 1310 mm
Vtrap4m	Tripod, maximum height 4 m
HDWME	Microphone protection for outdoor measurements. Includes windscreen, rain protection, and bird deterrent
BAG-8K	Rigid, airtight (IP65), protective carrying case
HD2020AD4	Adapter for ¼" microphones