Convergence Instruments

Noise-Sentry-RT- Wireless Network

Data Sheet

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1 Product Description

Noise-Sentry-RT- Wireless Network is a new generation of *WiFi*™ enabled smart integrating sound-level meter/datalogger. It includes a digital MEMS microphone, an accurate date/time clock, a non-volatile 128 Mb recording memory and *Wireless* connectivity. Running on battery, it can record sound pressure levels and report them through *WiFi*™ for a week. Connected to an external USB charger it can record and report for months. Its very small size allows it to be attached to or embedded within the monitored equipment.

The *Noise-Sentry-RT-Wireless Network* includes the following features:

- *WiFi*™ connectivity to report measured levels remotely and automatically at preset intervals.
- *WiFi*™ connectivity allows alarm emails on over-level and weak battery events.
- Individual Manufacturer's Certificate of Calibration from Convergence Instrument provided with every instrument purchased.
- Digital very sensitive MEMS microphone (31 dBA typical noise floor)
- Completely sealed weatherproof enclosure designed for outdoors applications.
- All-digital design.
- Ultra stable sensitivity (field recalibration is easily done, but seldom required)
- Very low sensitivity variation due to temperature changes
- Very low sensitivity to vibrations
- A and C weighting curves.
- *Integrating* Sound-Level Meter, records L-max, L-min and Leq levels.
- Software function calculates global Leq and/or dose, according to ISO and OSHA methods.
- Adjustable response time.
- Preprogrammed recording start date/time.
- Integrated oscilloscope function that can show the acoustic signal in real time.
- Integrated spectral analyzer function that can show the spectrum (or 3rd-octave bands) in real time.
- Allows the observation of recorded levels while the recording is ongoing.
- Works standalone, or USB connected.
- Long life internal rechargeable battery that recharges from USB and most USB chargers.
- Can be field-calibrated.
- Observes and records 100% of the acoustic signal (no missed samples).
- Editable individual custom ID for easier instrument management.
- All settings are stored in non-volatile memory. So the instrument will regain full functionality and *WiFi* connection from hard-reset or battery loss.
- LabVIEW driver available

2 Applications

- Sound level and acoustic dose measurement and recording.
- Monitoring of safe working conditions.
- Email Alarms when the noise is too loud.
- Activity detection and recording.
- Long-term measurement and recording of acoustic levels for environmental impact studies.
- Specially designed for long-term outdoors applications.

3 Specifications

Category	Specification

Bandwidth	• 25 Hz to 8 kHz
Microphone Sensor	• Digital MEMS
Precision Class	• Type II
Saturation Level (typical @ 1 kHz)	• 117 dB-A • 114 dB-C
Temperature Error	• Better than 0.1 dB (0 degC < T < 60 degC) • Better than 0.5 dB (-20 degC < T < 60 degC
Sensitivity to Vibrations	• 60 dB_{SPL}/g (20 dB lower than typical measurement microphone)
Weighting Curve	• dB-A • dB-C
Noise-Floor (Typical)	• 31 dB-A • 40 dB-C
Recording Resolution	• 0.1 dB
Duty Rate of Signal Capture	• 100% - No Missed Samples
Real-Time Spectral Display	• 256-point Power Spectrum – dB or Lin Scale.
Calibration	• Field-calibrated using a 1/2" calibrator
Connectivity	• USB • WiFi
Battery Type	• Integral Li-Poly - USB-Rechargeable
Recharge Time	• 2 H 30 (Typical)
Battery Autonomy (Full-Charge)	• 7 days while recording (WiFi operation will drain battery slightly more, depending on rate of connect
Battery Life	• > 300 Charge/Discharge Cycles
Temperature Range	• -20 degC to 60 degC (-4 degF to 140 degF)
Recording Memory	• Non-Volatile Flash Memory
Recording Memory Capacity (RT128 Model)	• 128 Mb • Ex: can continuously record Lmax, Lmin and Leq levels at 1s intervals for 32 days, or 10s intervals for 320 days.
Recording/Erasure Cycles	• Greater than 100 000
Data Retention	• Greater than 20 Years
Dimensions	• 76.2 mm x 39.4 mm x 59 mm • (3" x 1.55" x 0.81")

Weight	• 100 g
Construction	• Integrally Potted Weather-Proof ABS Enclosure
WiFi Security	• Open • WEP • WPA / WPA2
Max Defined Routers/Access Points	• 3
Max Defined Servers	• 4

Table 1

3.1 Frequency Response

Figure 1 shows the typical spectral error in dB-A and dB-C, together with the type II limit lines.

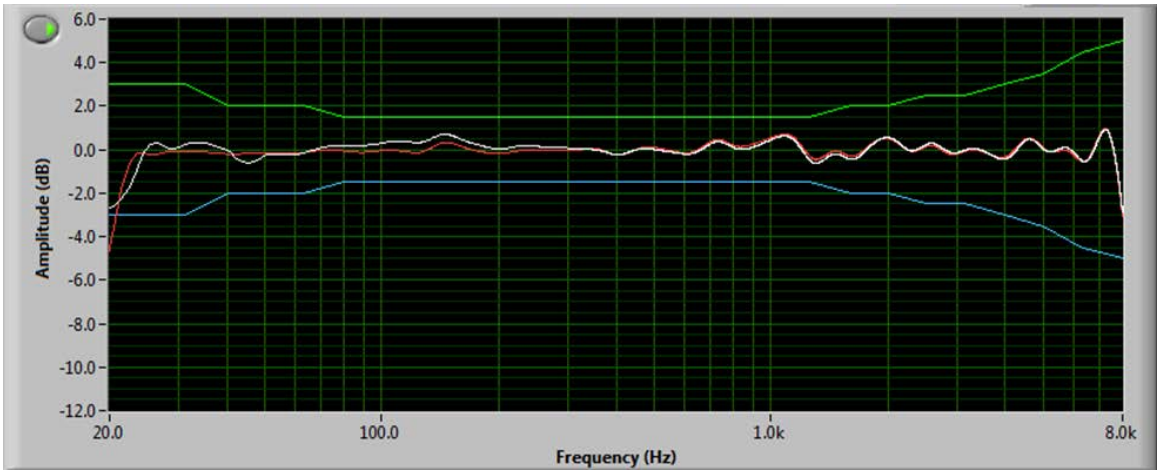

Figure 1

4 NS_RT_Manager Application Specifications

Category	Specification
Compatibility	• Windows XP, Windows Vista, Windows 7, Windows 8
Configuration	• Instrument Internal Time • User ID • Weighting curve • Recording Interval • Recording Statistics • Time constant for level measurement • Start Date/Time

	• *WiFi* Connection Setup • Email Alarm Setup
Display	• Instrument Internal Time • Instrument Internal Temperature • *WiFi* Connection Status • Instrument Information (Serial Number, User-ID, Calibration…etc.) • Real-Time Acoustic Signal • Real-Time Sound Level • Real-Time Spectrum • Recorded Sound Levels • Global Leq/Dose Calculation (ISO and OSHA methods) • Battery Level and Charge • All graphs can be viewed in dB or Lin scale
Record Management	• Record Manual Start/Stop • Recording Memory Download (Even while recording) • Recording Memory Clear • Auto-Calculation of Memory Depth
Data Export	• Export to Tab-Delimited Format for Use with Spreadsheet Applications

Table 2

Note: Our application portfolio is always growing. In addition to the main NS_RTW_Manager application, we have several post-processing applications. Please see our web site at http://www.convergenceinstruments.com/noise-sentry-rt.html *for up to date information.*