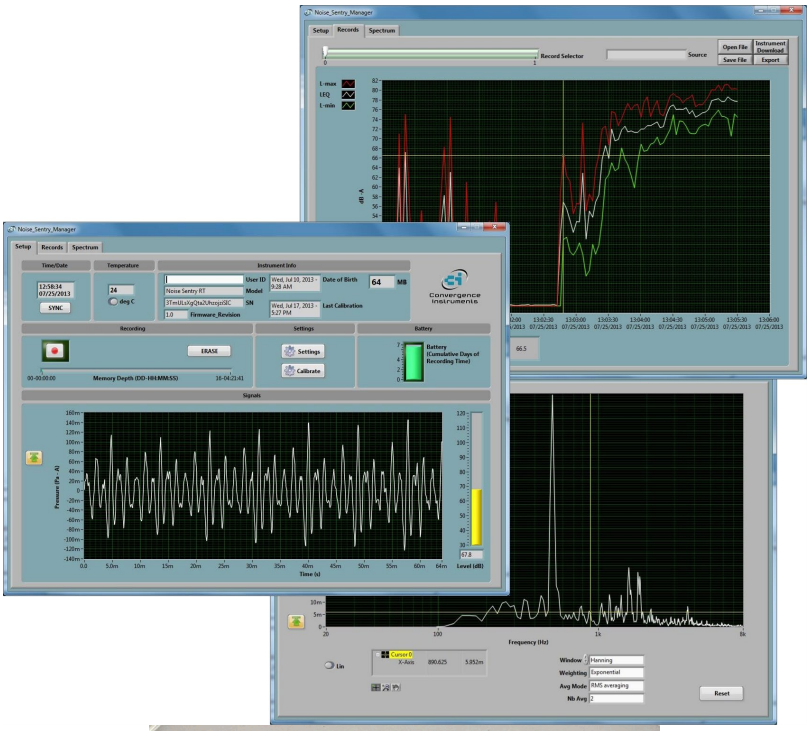
Convergence Instruments

NSRT_mk4_Dev

Data Sheet





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1 Product Description

NSRT_mk4_Dev is a variant of the *NSRT_mk4* that is targeted at developers and OEMs. It includes a digital MEMS microphone and an open communication protocol based on Virtual Com Port. It can measure real-time exponentially-averaged levels “L”, as well as integrated LEQs.

The *NSRT_mk4_Dev* includes the following features:

- Type I precision
- A, C and Z weighting curves.

- *Integrating* Sound-Level Meter, provides LEQ and instantaneous exponentially averaged level “L”

- Individual Manufacturer’s Certificate of Calibration from Convergence Instrument provided with every instrument purchased.
- Digital very sensitive MEMS microphone (30 dBA typical noise floor)
- Completely sealed weatherproof enclosure designed for outdoors applications. Now includes an ePTFE membrane that seals the microphone against dust and water.
- 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
- Adjustable response time.
- Can be used as a high-quality USB digital microphone (Optional USB-Audio interface)
- 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 after a power loss.

2 Applications

- Sound level and acoustic dose measurement and recording.
- Monitoring of safe working conditions.
- 24/7 noise monitoring on construction sites.
- Activity detection and logging.
- Long-term measurement and recording of acoustic levels for environmental impact studies.
- Specially designed for long-term outdoors applications.

3 Specifications

Category	Specification
Bandwidth	• 20 Hz to 20 kHz
Microphone Sensor	• Digital MEMS
Precision Class	• Type I
Saturation Level (typical @ 1 kHz)	• 120 dB-A • 120 dB-C • 120 dB-Z
Temperature Error	• Better than 0.6 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 • dB-Z
Noise-Floor (Typical)	• 30 dB-A • 46 dB-C • 52 dB-Z
Duty Rate of Signal Capture and processing	• 100% - No Missed Samples
Calibration	• Field-calibrated using a 94 dB 1/2” calibrator
Connectivity	• USB (Virtual Com Port interface with open communication protocol)
Temperature Range	• -20 degC to 60 degC (-4 degF to 140 degF)
Dimensions	• 19 mm x 42 mm x 160 mm • (0.75” x 1.65” x 6.25”)
Weight	• 50 g
Construction	• Weather-proof enclosure
Microphone Dust Protection	• Expanded polytetrafluoroethylene (ePTFE) dust and water barrier
Protocol	• Open and Documented

Table 1

3.1 Frequency Response

Figure 1 shows the typical spectral error in dB-A, dB-C and dB-Z, at 32 kHz and 48 kHz sampling rate, together with the type I limit lines.

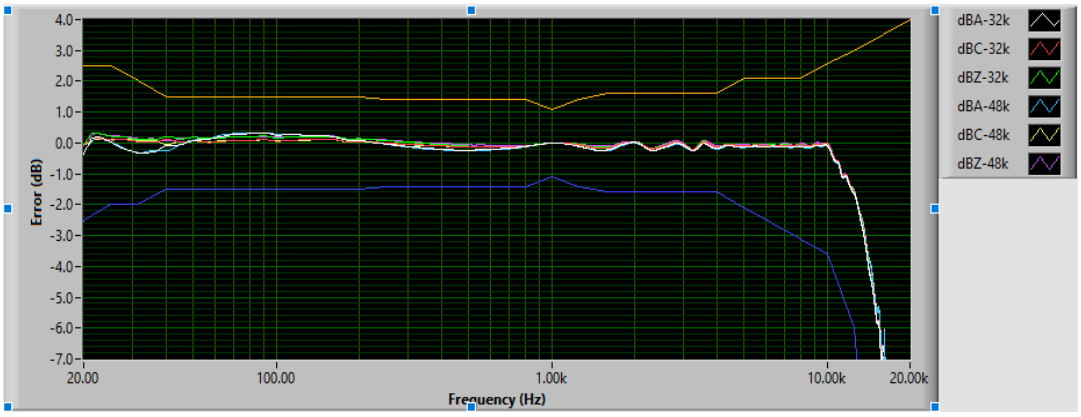


Figure 1

3.2 Directivity

Figure 2 shows the directivity of the instrument as a function of frequency.

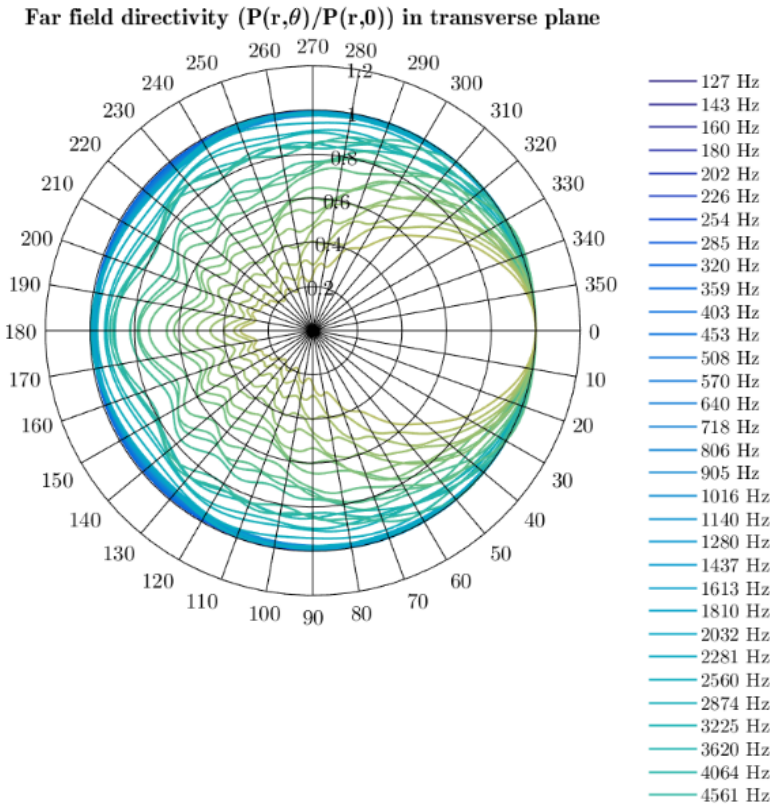


Figure 2

4 Platforms supported

- Windows
- MacOS
- Linux

The instrument has been tested on Windows and Linux. It will work on any platform that provides a generic CDC-class USB driver (Virtual Com Port).