General technical specification of NoisePAD

The following data refers to the 4 channel version NoisePAD_4C. All analyzer input and output connectors are NIM-CAMAC.

### NoisePAD base device
- Processor: Intel ATOM Cherrytrail, 4 GB RAM
- Display: TFT 8” 1024 x 600
- Storage medium: SSD 128 GByte
- Storage medium: NIM-CAMAC
- Interface: 2x USB, WiFi, Bluetooth, 4G, GPS, HDMI, 2x camera
- Operating system: Windows 10

### Industrial 8” Tablet PC
- Processor: Intel ATOM Cherrytrail, 4 GB RAM
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- Storage medium: SSD 128 GByte
- Storage medium: NIM-CAMAC
- Interface: 2x USB, WiFi, Bluetooth, 4G, GPS, HDMI, 2x camera
- Operating system: Windows 10

### Input channels 1–4
- Resolution: 24 bit
- Real-time bandwidth: DC–20 kHz
- Dynamic range: 110 dB
- Random noise: > 2 Vrms @ 0.1 Hz
- Sample rates: 1 kHz–20 kHz per channel
- Decimation: yes
- Anti-aliasing filter: yes
- Max. input voltage: ± 10 V peak
- Amplification: 0 dB, 20 dB
- Overload detection: yes
- Offset adjust: yes, automatically with self-calibration
- Frequency weighting: A, C, Z
- Time weighting: Fast, Slow, Impulse
- Measurement range: 25 dB(A)–135 dB(A)
- Displayed values: SLM, 1/3 octaves, level recorder
- Measurement values: L_A, L_Aeq, L_AS, L_Amax, L_ZF, L_At, L_E, L_AIeq, L_Cpeak, L_Zpeak
- Integration time: freely adjustable via Start / Stop
- TCP/IP-interface: control of measurement via WiFi

### Output channel
- Resolution: 24 bit
- Real-time bandwidth: DC–20 kHz
- Max. output voltage: ± 3.16 Vpeak

### Trigger channels
- 2x Trigger 1/2”, trigger level selectable via software

### Physical characteristics
- Dimensions: 226 mm x 156 mm x 28 mm
- Weight: 950 g
- Battery: Lithium Ion battery
- Autonomy: up to 12 h
- External power supply: 5 VDC, 100...240 VAC converter is included

### Accessories
- Keyboard: wireless Touchpad keyboard (German or English)
- Cradle: optional, with LAN, 3x USB

### Environmental conditions
- Protection rating: IP67 (with closed protection cups)
- Shock resistance: according to MIL–STD 810F
- Humidity: 30 %...90 %
- Temperature range: -20 °C...+50 °C
- Storage conditions: -20 °C...+60 °C, max. 95 % humidity

### EMC
- Emission: compliant to EN55032–1
- Immision: compliant to EN55032–1

### Trade marks and owners
- Windows: Microsoft Corp.
- SAMURAI: SINUS Messtechnik GmbH
- MATLAB: The MathWorks, Inc.
- ME’scope VES: Vibrant Technology Inc.
- ARTeMIS: Structural Vibrations Solution
- RoHS: 2002/95/EC
- WEEE: 2002/96/EC

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**The new generation of mobile acoustics & vibration analyzer - compatible with the proven SAMURAI™ software package**

**Scope:**
- Microphones: Outdoor protection
- Number of channels: Sound level meter
- 1/3 octave analyzer: Displayed values
- Measuring range:
- Frequency weighting: A, C, Z
- Time weighting:
- Measurement values: L_A, L_Aeq, L_AS, L_Amax, L_ZF, L_At, L_E, L_AIeq, L_Cpeak, L_Zpeak
- Integration time: freely adjustable via Start / Stop
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**Input channels 1–4**
- Resolution: 24 bit
- Real-time bandwidth: DC–20 kHz
- Dynamic range: 110 dB
- Random noise: > 2 Vrms @ 0.1 Hz...40 kHz
- Sample rates: down to 200 Hz sample rate, selectable per channel
- Decimation: yes
- Anti-aliasing filter: yes
- Max. input voltage: ± 10 V peak
- Amplification: 0 dB, 20 dB
- Overload detection: yes
- Offset adjust: yes, automatically with self-calibration
- Frequency weighting: A, C, Z
- Time weighting: Fast, Slow, Impulse, Peak
- Measurement range: 25 dB(A)...135 dB(A)
- Displayed values: SLM, 1/3 octaves, level recorder
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**Rev: 01/2019**
NoisePAD Acoustics & Vibration Analyzer

Ruggedized 4-channel PC-based instrument offers full connectivity.

Perfect for field and laboratory applications!

NoisePAD™ is our new class of 4-channel real-time analyzer for noise & vibration. This combination of a robust industrial 8” Tablet and a DSP-based analyzer meets the standard MIL 810. All connectors are protected against water and dust with rubber protection caps. The NoisePAD allows you to work practically everywhere - in the office as well as outdoor with 12 h autonomy onboard 4G, GPS and WiFi. Typical applications:

• Industrial safety and environmental protection
• Engineering services and maintenance
• Quality assurance
• Research and development

With the bright TFT display, a very low power consumption and the full connectivity, the NoisePAD unites the performance of a high-quality measuring device with the possibilities of a modern Windows Tablet PC.

The flexible SAMURAI™ software offers in the base version the raw data recorder and FFT analyzer per channel. We offer many options and attractive software bundles:

• Acoustic Bundle
• Vibration bundle
• 5, 10 or all options bundle

So you may customize the functionality of your NoisePAD with any combination of SAMURAI software options on demand. Individual user programming (e.g. MATLAB, Python, C++) and alternative software are also supported (A1TeMIS, ME'scope).

Software options for SAMURAI 3.0:

Option: Post-Processing
This option offers a new analysis from stored or imported samples. The data browser allows a comfortable selection and editing of the time signals that will be analyzed in post process.

Option: Automation
Automatic comparison of the measured spectra with reference spectra and their management as well as automatic detection by the device and start of an application (e.g. to send an email).

Option: Building Acoustics (SAMBA)
The whole acoustic testing of airborne noise and impact sound insulation is organized according to ISO 717 and ISO 10140. The measurements are prepared (rooms, partitions, measuring tasks) and performed; the results are then provided in printable form.

Option: Sound Intensity and Sound Power ISO 9614
Sound pressure and intensity measurements according to ISO 9614 parts 1 and 2 with sound mapping on digital photos.

Option: Multi-Generator
This option additionally provides the signal types: sine, rectangle, triangle, impulse, multi-sine, sine-sweep (lin and log), pseudo-noise and the synchronized output of *.wav files.

Option: NoiseCam
Together with the signal data recorder, this option allows the video documentation with overlaid measurement values and export to a multimedia standard format using the internal cameras.

Option: Order Tracking
This option allows measurement and display of spectra versus order of a basic frequency or RPM of a rotating machine.

Option: TCP/IP Interface
These option allows all features of SAMURAI to be controlled via network and integrated into a complex measuring system.

Option: Room Acoustics
Measurement of the room-acoustics parameters Clarity, Distinctness (C30 / C50 / C80 / D50 / D80), RASTI, STIPA and STITECL according to ISO 3382 and ISO 18233 on the basis of sine-sweep.

Option: Vibration Meter

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Measurement of building vibration according to DIN 4150 with the 3D-Seismometer and assessment of the vibration impacts on people in buildings using the KVBV value.

Option: Transfer FRF
Measurement of building vibration according to DIN 4150 with the 3D-Seismometer and assessment of the vibration impacts on people in buildings using the KVBV value.

Option: Fractional Octaves
This option provides 1/1 to 1/48 octaves up to 20 kHz in real-time (filters comply with class 1, IEC 61260).

Option: Human Vibration Multi Analyzer
The HVMA allows the 3-channel measurements according to all filter curves of the ISO 8041 standard and the calculation of the resultant vectors for hand-arm or whole body vibrations.

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