RIONOTE

The groundbreaking multi function measuring system from RION
Compact design, easy and intuitive operation
Wireless connections
Use it anytime anywhere!
RIONOTE is combining the newest technology in quality, ease of use and economical sense, which can be configured to up to 16 channels of wireless monitoring anywhere wireless. The Main Control Unit is versatile enough to program of your choice. All on a large color display, both programs and hardware for this measurement.

Analysis result display examples

FFT analysis
RIONOTE enables you to perform FFT analysis on multiple channels simultaneously. The results are shown in clear graphs on the large color screen, in real time, or from stored data when using the recall function. A marker allows you to scroll through the data, and enables the readout of the level of a frequency of interest.

Transfer function
The transfer function represents the relation between an input signal and output signal in the frequency domain, allowing the determination of amplitude and phase. In this mathematical calculation category, the RIONOTE supports coherence function and cross spectrum processing.

Waveform recording
By using the waveform recording program, it is possible to display and record the time waveform of the incoming signal(s). Available recording time depends on the number of input channels and the selected frequency range. The figure below shows a time waveform displayed on the screen of the Main Control Unit.

Waveform post processing
After completing waveform recording (as explained above), the stored waveforms can be displayed on the Main Control Unit’s large screen, and played back by using the earphone jack output. Moreover, various secondary post processing functions for the waveform data are available in the Main Control Unit, including FFT analysis as shown in the screen example below.

RIONOTE System Configuration

Main Control Unit and Amplifier
Supports direct connection of microphones and piezoelectric accelerometers.

Sensor amplifier slides into the underside of the Main Control Unit.
Octave band analysis

Real time analysis of noise or vibration levels for evaluation and designing countermeasures is usually performed by means of octave band analysis (using either octave bands or 1/3 octave bands). The below screen sample of the RIONOTE displays octave analysis results in 4 channels as a graph and numeric values at the same time.

RIONOTE intuitive user interface

Let's the user select the required program for the respective purpose:
- SX-A1FT (FFT analysis)
- SX-A1RT (octave band analysis)
- SX-A1WR (waveform recording)

The right side of the screen provides access to various settings.

RIONOTE calibration screen

Serves for calibration of microphones or accelerometers connected to the SA-A1.
RIONOTE Wireless Sensor Amplifier, SA-A1WL1

- Input: 1 channel (Microdot connector)
- Signal transfer to platform: Wireless/WLAN (IEEE802.11a/b/g/n, 2.45 GHz, Zigbee (IEEE802.15.4, 2.4 GHz)
- Range of wireless transfer: about 50 m
- Interface: USB2.0 (miniB, data output to PC and power supply)
- Memory: Internal memory (2 GB)
- Power supply: Li-ion battery, AC adapter
- Dimensions, Weight: Approx. 21 H x 54 W x 84 D (mm), Approx. 100 g (incl. battery)


- Wireless WLAN (IEEE802.11a/b/g/n, 2.45 GHz, Zigbee (IEEE802.15.4, 2.4 GHz)
- Distance of wireless transfer: about 50 m
- Interface: USB2.0 (miniB, data output to PC and power supply)
- Memory: Internal memory (2 GB)
- Power supply: Li-ion battery, AC adapter
- Dimensions, Weight: Approx. 21 H x 54 W x 84 D (mm), Approx. 100 g (incl. battery)

Specifications

- **Input section**
  - Number of channels: 4 (2, BNC connectors)
  - Max. input voltage: ±1 V
  - DC/DC: 2 mA, 24 V (4 mA Factory option)

- **Amplifier section**
  - Frequency range: DC to 2 kHz or 0 Hz to 20 kHz
  - Input range: -40 dB to 20 dB, 20 dB steps, 0 dB ref. Vrms = 1 V
  - Residual noise: -60 dB (full scale) ± 80 dB or less (0 dB range, AP level)
  - Dynamic range: 100 dB or better (0 dB range, ± 51.2 kHz, 400 time FFT noise level)
  - Phase difference: ±1 deg. or less (1 Hz to 20 kHz, same input range)

- **A/D converter section**
  - A/D converter: 24 bit, delta-sigma type, simultaneous sampling
  - Sampling frequencies: 51.2 kHz, 25.6 kHz, 12.8 kHz, 5.12 kHz, 2.56 kHz, 1.28 kHz, 512 Hz, 256 Hz

- **Display**
  - 10.1 inch TFT color LCD, 1 280 x 800 pixels, transmissive type
  - Time weighting: F (Fast) 125 ms, 630 ms, S (Slow) 1 s, 10 s
  - Store function: Auto/Manual

- **Input/output section**
  - USB: USB A x 1, mini B x 1
  - Earphone jack: Yes Stereo mini jack
  - SD card slot: Yes (SDHC support, max. 32 GB)
  - Input: 4 or 2 channels (Amplifier SA-A1B4/B2 needed)

- **Averaging and other processing functions**
  - Number of averaging runs: 1 to 1 024
  - Time weighted maximum level
  - Processing value data Time averaged level
  - Averaging and other processing functions

- **Trigger**
  - Trigger modes: Free, Single, Repeat
  - Trigger source: Waveform, External, Rotation speed
  - Trigger position: 3.5% or 6.7 of number of analysis points

- **General post-analysis processing**
  - Outline FFT analysis of WAVE files recorded with WR function
  - Number of channels: Max. 4 channels
  - Sampling frequencies: 50 Hz, 10 kHz, 5 kHz, 3 kHz, 1 kHz, 500 Hz, 250 Hz, 100 Hz
  - Number of analysis points: 256, 512, 1,024, 2,048, 4,096, 8,192, 16,384
  - Processing value data Time averaged level LWA, Time weighted maximum level Lmax

- **Number of recording**
  - 1 to 4 channels + rotation or General purpose DC

- **Frequency range**
  - 20 kHz, 10 kHz, 5 kHz, 3 kHz, 1 kHz, 500 Hz, 502 Hz, 250 Hz, 100 Hz

- **Environmental conditions**
  - Operating temperature: 10 °C to 50 °C
  - Humidity: 40 % RH or less

- **Measurement rotation**
  - 0.4 to 20 kHz, 20 kHz, 50 kHz, 200 kHz, 1 MHz, 10 MHz

- **Frequency weighting**
  - A, C, Z

- **Trigger position**
  - Free, Single, Repeat

- **Trigger source**
  - Waveform, External, Rotation speed

- **Input/output section**
  - USB: USB A x 1, mini B x 1
  - Earphone jack: Yes Stereo mini jack
  - SD card slot: Yes (SDHC support, max. 32 GB)

- **Input**
  - 4 or 2 channels (Amplifier SA-A1B4/B2 needed)

- **Trigger**
  - Trigger modes: Free, Single, Repeat

- **Trigger source**
  - Waveform, External, Rotation speed

- **Monitoring function**
  - Auto/Manual

- **Input/output section**
  - USB: USB A x 1, mini B x 1
  - Earphone jack: Yes Stereo mini jack
  - SD card slot: Yes (SDHC support, max. 32 GB)

- **Input**
  - 4 or 2 channels (Amplifier SA-A1B4/B2 needed)

- **Trigger**
  - Trigger modes: Free, Single, Repeat

- **Trigger source**
  - Waveform, External, Rotation speed

- **Monitoring function**
  - Auto/Manual

- **Input/output section**
  - USB: USB A x 1, mini B x 1
  - Earphone jack: Yes Stereo mini jack
  - SD card slot: Yes (SDHC support, max. 32 GB)

- **Input**
  - 4 or 2 channels (Amplifier SA-A1B4/B2 needed)

- **Trigger**
  - Trigger modes: Free, Single, Repeat

- **Trigger source**
  - Waveform, External, Rotation speed

- **Monitoring function**
  - Auto/Manual

- **Input/output section**
  - USB: USB A x 1, mini B x 1
  - Earphone jack: Yes Stereo mini jack
  - SD card slot: Yes (SDHC support, max. 32 GB)

- **Input**
  - 4 or 2 channels (Amplifier SA-A1B4/B2 needed)

- **Trigger**
  - Trigger modes: Free, Single, Repeat

- **Trigger source**
  - Waveform, External, Rotation speed

- **Monitoring function**
  - Auto/Manual

- **Input/output section**
  - USB: USB A x 1, mini B x 1
  - Earphone jack: Yes Stereo mini jack
  - SD card slot: Yes (SDHC support, max. 32 GB)

- **Input**
  - 4 or 2 channels (Amplifier SA-A1B4/B2 needed)

- **Trigger**
  - Trigger modes: Free, Single, Repeat

- **Trigger source**
  - Waveform, External, Rotation speed

- **Monitoring function**
  - Auto/Manual