MESSELEKTRONIK ULRICH FALM
Schall- und Vibrationsmessgeräte

RG16 and RG16F

Noise generator

Uses

- Building and room-acoustic measurements
- Electro acoustical measurements

Features

- Digital noise generator
- White and pink noise
- Battery-operated
- RG16F with wireless remote control

The noise generators RG16 and RG16F were developed particularly for the employment in the architectural acoustics and are very handy and easy. They produce white and pink noise.
The noise generator RG16F can be switched with the wireless remote control. If the wireless remote control is operated, then the exit is mutely switched and the red LED indicates this.
The SMA socket on the front side of the RG16F is used as antenna socket or manual stop socket. Here also a tracer can be attached over a 3,5mm mono jack plug instead of the antenna.

The noise generators RG16 / RG16F use as noise source a 31-stepped multiple regenerate digital shift register. This signal is simply pseudo-stochastic, like all sources using this method. So the signal is repeated after a while. However, due to the length of the register, this does not happen until a few hours. So in practice you get a noise with white frequency spectrum. The crest factor (relationship between peak magnitude and rms-value) is initially 1, because a rectangular signal with stochastic variable period is generated. Only with frequency band limitation or filtering the crest factor rises more than 1.

White noise is used preferentially when filters with constant absolute bandwidth (FFT) are used for measurement, because the noise of this type of filter supplies the same energy for each filter.
With acoustic measurements filters with constant relative bandwidth are mostly used, whose bandwidth and so also energy of white noise rises with the centre frequency linearly.

To get here also the same energy in each filter, the noise spectrum must be shaped in order to decrease the energy density with the frequency linearly (pink noise).
Such a filter should have a 3 db/Octave decreasing frequency response. But in practice this can only be realised approximately for a given frequency range.
The filter, which is used in RG16 /RG16F, is optimized for an acoustic range of 20Hz - 20 kHz.

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Technical Data

Analogue inputs

Antenna input:..... SMA socket
Stop input:..... 3,5mm jack plug

Analogue Outputs

Number: 1
Connectors:..... BNC-Connector
Output voltage:..... max. 1 V_{rms} adjustable

Noise generator

Frequency response white ..... 10 Hz – 20 kHz
Frequency response pink..... 20 Hz – 20 kHz
Internal resistanceca. 50 Ω in serial with 47 µF
Crest factor ..... 1–4 (s. description!)

Wireless remote control (RG16F only)

Frequency:..... 433 MHz (Country standard)
Distance:..... up to 50 m on sight

LED indications

„Power on“: ..... green
„Mute”: ..... red

Power supply

Internal:.... 9 V battery or rechargeable battery
External:.....12-14 V DC
Current consumption:..... 35 mA
Battery lifetime: ..... 6-8 h

Operating conditions

Operating temperature
range:..... +/- 0°C to +50°C

Mechanical Data

Cabinet material:.....Aluminum
Dimensions (W × H × D): . 100 × 35 × 105 mm
Weight incl. battery: .....ca. 400 g

Accessories included

External AC adapter, 100-240 VAC / 12 VDC
RG16F: wireless remote control

Optional Accessories

DO12: Loudspeaker Box in dodecahedral configuration
Power amplifier PA1000
BNC cables

Messelektronik Ulrich Falm reserves the right to change specifications and accessories without notice.

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