

## Product Datasheet - Technical Specifications



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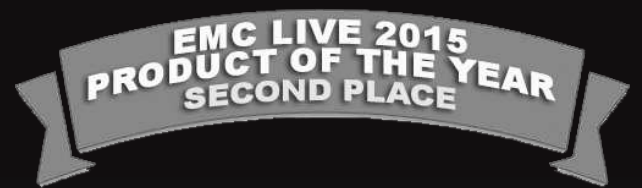
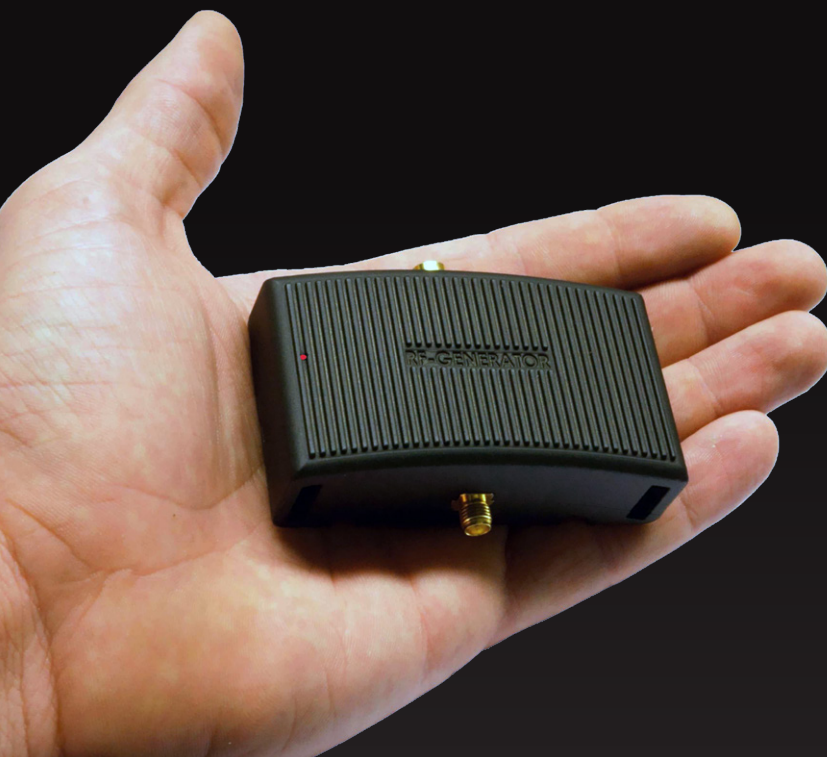
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# AARONIA BPSG SERIES

# SIGNAL GENERATORS

World's smallest, battery powered signal generator from 23,5MHz to 6GHz



## Highlights:

- Frequency range: 23,5MHz to 6GHz
- Incl. intuitive PC control software
- Battery powered or via Power Supply
- Extremely compact and portable
- High output power up to +18dBm
- Up to 65dB dynamic range
- Onboard TCXO for high frequency accuracy
- Connector for external reference clock



MADE IN GERMANY

# Details

## Highest performance in the smallest place

Aaronia presents the new, battery-powered signal generators of the BPSG series. The BPSG generators allow to generate RF signals, tests of EMC-shielding and EMI/RFI testing.

Available in 4 different versions the generators cover a frequency range from 23,5MHz up to 6GHz. With the very compact dimensions of just 80x50x30 mm and weight of only 150 grams, the BPSG series is predestined for mobile use and fits in every pocket. The compact form factor makes the BPSG the world's smallest battery-powered RF generator up to 6GHz.



Scope of delivery: transport case, international 12V power supply, USB cable, SMA/SMA (f/f) adapter, SMA tool, PC software, calibration data



Frontside



Backside



OEM version

Many Aaronia antennas can be transformed into an active field strength generator in combination with the BPSG in a few simple steps. In standalone mode, the generator can produce simple or very complex batch programs that automatically start after power up. This allows to create a fixed frequency and level or the start of a predefined sweep, complex frequency lists, modulation, etc.

With a maximum output of + 18dBm and a Dynamic range of up to 65dB the BPSG sets new standards for battery-powered signal generators. Thanks to the internal TCXO time base the BPSG generates stable and accurate RF frequencies up to 6GHz. The BPSG can also be connected to an external reference clock and thus be synchronized with a measuring system. In addition, this way even higher accuracy can be achieved (using an OCXO, rubidium timebase etc.).



The BPSG as field-strength-generator up to 3V/m (1m distance), available as „DFG 4060“

# Technical Data

## BPSG 4

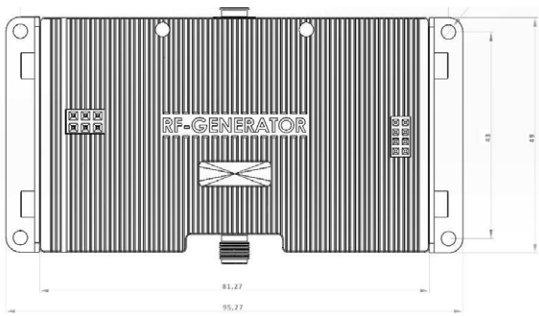
- ◆ Frequency range: 35MHz to 4,4GHz
- ◆ Highest output level: + 17dBm, adjustable in 0.5dB steps
- ◆ Smallest output level: -48dBm
- ◆ Accuracy: +/-1dB
- ◆ Up to 65dB dynamic range (55dB within +/- 1dB)
- ◆ Frequency accuracy: 15Hz (<100MHz), 150Hz (<1GHz), 600Hz (<4GHz)
- ◆ 1Hz phase noise of -99dBc (1kHz @ 500MHz)
- ◆ Modulations: AM, FM, PM
- ◆ Onboard TCXO for high frequency accuracy connectivity to external reference clock for system synchronization via SMA connector (female)
- ◆ Onboard CPU / memory for intelligent self-running profiles
- ◆ Stand-alone operation (no PC/USB connection required)
- ◆ Battery operation up to 4 hours.
- ◆ USB port for real-time PC control or storage of programs
- ◆ Interface: USB 2.0 / 1.1
- ◆ Incl. carrying case, 12V International charger with adapters, USB cable, SMA Adapter (f/f), SMA tool and PC software
- ◆ Weight: 150gr with battery
- ◆ Dimensions (L / B / H): 81x61x29mm

## BPSG 6

- ◆ Frequency range: 23,5MHz to 6GHz
- ◆ Highest output level: + 18dBm, adjustable in 0.5dB steps
- ◆ Smallest output level: -45dBm
- ◆ Accuracy: +/- 1dB
- ◆ Up to 63dB dynamic range (55dB within +/- 1dB)
- ◆ Frequency accuracy: 15Hz (<100MHz), 150Hz (<1GHz), 450Hz (<3GHz), 900Hz (<6GHz)
- ◆ 1Hz phase noise: -98dBc (1kHz @ 500MHz)
- ◆ Modulations: AM, FM, PM
- ◆ Onboard TCXO for high frequency accuracy connectivity to external reference clock for system synchronization via SMA connector (female)
- ◆ Onboard CPU / memory for intelligent self-running profiles
- ◆ Stand-alone operation (no PC/USB connection required)
- ◆ Battery operation up to 4 hours
- ◆ USB port for real-time PC control or storage of programs
- ◆ Interface: USB 2.0 / 1.1
- ◆ Incl. carrying case, 12V international charger with adapters, USB cable, SMA adapter (f/f), SMA tool and PC software
- ◆ Weight: 150gr with battery
- ◆ Dimensions (L / B / H): 81x61x29mm

## BPSG 4 OEM

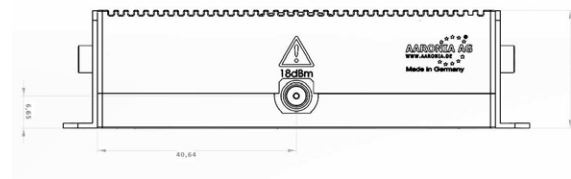
- ◆ Identical to BPSG 4, but with special OEM housing with screw holes for easy installation in existing systems/ housings incl. 2 screwable brackets (90°)



Front view BPSG OEM versions

## BPSG 6 OEM

- ◆ Identical to BPSG 6, but with special OEM housing with screw holes for easy installation in existing systems/ housings incl. 2 screwable brackets (90°)



Side view BPSG OEM versions

Carrier Frequency	Offset from carrier			
	1kHz [dBc/Hz]	10kHz [dBc/Hz]	100kHz [dBc/Hz]	1MHz [dBc/Hz]
0.5 GHz	-99	-101	-103	-123
1 GHz	-90	-92	-97	-119
2 GHz	-85	-88	-91	-114
3 GHz	-82	-85	-87	-109
4 GHz	-81	-81	-86	-106
4.4 GHz	-80	-81	-80	-105

Phase noise BPSG 4 and BPSG 4 OEM

Carrier Frequency	Offset from carrier			
	1kHz [dBc/Hz]	10kHz [dBc/Hz]	100kHz [dBc/Hz]	1MHz [dBc/Hz]
0.5 GHz	-98	-95	-115	-128
1 GHz	-91	-91	-111	-127
2 GHz	-88	-85	-105	-128
3 GHz	-86	-86	-100	-125
4 GHz	-81	-79	-99	-123
5 GHz	-79	-77	-97	-121
6 GHz	-75	-73	-93	-118

Phase noise BPSG 6 and BPSG 6 OEM

# REFERENCES



## Selected Aaronia Clients

### Government, Military, Aeronautic, Astronautic

- **NATO**, Belgium
- **Department of Defense (DoD)**, USA
- **Department of Defence**, Australia
- **Airbus**, Germany
- **Boeing**, USA
- **German Armed Forces**, Germany
- **NASA**, USA
- **Lockheed Martin**, USA
- **Lufthansa**, Germany
- **German Aerospace Center (DLR)**, Germany
- **Eurocontrol**, Belgium
- **EADS**, Germany
- **Drug Enforcement Administration (DEA)**, USA
- **Federal Bureau of Investigation (FBI)**, USA
- **Federal Criminal Police Office (BKA)**, Germany
- **Federal Police**, Germany
- **Ministry of Defence**, Netherlands

### Research/Development, Science and Universities

- **MIT - Physics Department**, USA
- **California State University**, USA
- **Indonesian Institute of Science (LIPI)**, Indonesia
- **Los Alamos National Laboratory (LANL)**, USA
- **University of Bahrain**, Bahrain
- **University of Florida**, USA
- **University of Victoria**, Canada
- **University of Newcastle**, United Kingdom
- **University of Durham**, United Kingdom
- **University Strasbourg**, France
- **University of Sydney**, Australia
- **University of Athen**, Greece
- **University of Munich**, Germany
- **Technical University of Hamburg**, Germany
- **Max-Planck Inst. for Radio Astronomy**, Germany
- **Max-Planck Inst. for Nuclear Physics**, Germany
- **Research Centre Karlsruhe**, Germany

### Industry

- **IBM**, Switzerland
- **Intel**, Germany
- **Shell Oil Company**, USA
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- **Hyundai Europe**, Germany
- **VIAVI**, Korea
- **Wilkinson Sword**, Germany
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- **Nokia-Siemens Networks**, Germany

