SAW Generator **BSG Series**

Datasheet

Functions

The BELEKTRONIG SAW generator BSG is used to control SAW actuators at professional applications in acoustofluidics. It integrates network analyzer, frequency generator, power amplifier and meter in a compact device. It therefore replaces the cost-intensive and complex setups that have been necessary for SAW actuators so far. The SAW actuators are controlled by a high frequency alternating voltage with variable frequency and amplitude. The optimum excitation frequency is automatically tracked and adjusted in case of deviations.

Key Features

- ✓ Compact, portable device that simplifies acoustofluidic experiments (time and cost savings)
- ✓ Intuitive operation - even without special knowledge in high-frequency technology
- ✓ Frequency range 5 to 215 MHz
- ✓ Power range 40 µW to 4 W
- ✓ Phase position -180 to +180° adjustable
- ✓ Scalar network analyzer (S-parameter)
- ✓ Automatic tracking of the optimum excitation frequency
- ✓ Continuous or pulse operation with variable duty cycle
- ✓ USB interface
- ✓ Supplied with PC software, USB driver, LabView VIs

Configurations

Name: SAW Generator BSG -	F10	F20
Frequency range [MHz]	5...215	5...215
Frequency resolution / -accuracy	1 Hz / 10 ppm typ.	1 Hz / 10 ppm typ.
Output power	40 µW...4 W	40 µW...4 W
Number of output channels [piece]	1	2
$\|S_{11}\|$	✓	✓
$\|S_{21}\|$, $\|S_{12}\|$, $\|S_{22}\|$	-	✓

Technical Data

Frequency Control
- Frequency range: 5...215 MHz
- Frequency resolution: 1 Hz
- Accuracy of frequency: 10 ppm typ.
- Fully automatical re-adjusting of optimal excitation frequency
- Adjustable scan parameter and scan ranges
- Modes of operation: (1) Power measurement
  (2) Frequency generator (manual mode)
  (3) Automated detection and re-adjustment of minima/maxima
  (4) Channel 2 synchronized with Chan. 1

Output Power
- Signal shape: AC, sinusoidal
- Power adjustable: 40 µW...4 W at 50 Ω
- Pulsed operation: PWM up to 100 Hz
  Sampling rate adjustable
- Modes of operation: (1) Power adjustable on device panel
  (2) Power adjustable via PC
  (3) Channel 2 synchronized with Chan. 1

Output Phase
- Adjustable phase: -180...180°

Trigger Input and Output
- 2x Trigger In to trigger the output signal by external devices
- 2x Trigger Out to control external devices (e.g: cameras)

Power Measurement, S-Parameter
- Measurement of the back and forth power wave
- Detection of S-parameter: $|S_{11}|$, $|S_{21}|$, $|S_{12}|$, $|S_{22}|$
- Functionality of scalar network analyzer

Interface
- USB 2.0 including drivers for virtual COM port

Software Control
- PC software
- LabView VIs
- ASCII command set

Power Supply, Dimensions and Conditions of Operation
- Power supply: 24 V (maximal 65 W)
- Dimensions (L x W x H): 285 x 250 x 100 mm³
- Weight: ~3.5 kg
- Operating temperature: 10...45°C
- Relative humidity: 0...80%, not condensating

Scope of Delivery
- SAW Generator BSG
- Power supply
- SMA and USB cable
- Termination resistor 50 Ω
- PC software (download link)

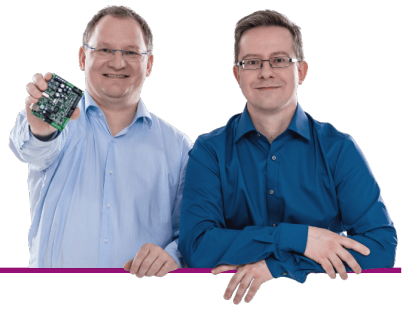
BSG Soft: Continuously Characterizing and Monitoring the SAW Actuators Conditions

- Setting of output frequency, phase, output power
- Adjusting of frequency limits and modes of operation
- Continuously characterize and monitor SAW actuators conditions in operation like resonant frequency, output power, reflection coefficient
- Continuous recording of measurement data

Matching Equipment to Complete your Experimental Setup

- Power Combiner/Splitter, RF Multiplexer, SMA cables
- SAW actuators (on request)
- SAW experimental platforms (on request)
- Customization of BSG firmware

Learn more about the quality standards of BELEKTRONIG and easily request a quote for your individual experimental setups.
Dr.-Ing. Glen Guhr and Dr.-Ing. Raimund Bruenig



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