



DS INSTRUMENTS

22GHZ WIDEBAND MICROWAVE GENERATOR



Description

All-new upgraded REV15 for MAY 2021 with lower phase noise, less harmonics, and smaller frequency step size!

The INCREDIBLY compact **SG22000L** (replaces *SG6000LDQ* and *SG22000*) Microwave Signal Generator delivers THE widest frequency coverage on the market for its size and **low price**. The three output bands cover the ENTIRE range of **20 to 22000+** MHz. Output power is calibrated between -20 and +10dBm in 0.5dB steps up to *13GHz*. The 12-22GHz band outputs a typical +15dBm signal for driving high power mixers or other Ku-band equipment. The crisp OLED display provides useful feedback for the user, and front control buttons provide a quick alternative to USB control. The output waveform is fully synthesized using modern fractional-N synthesis. The frequency step size has been reduced to 10 Hz in this latest hardware version. This synthesized signal source can automatically detect and accept an external 10 MHz reference OR it can use its own ± 280 PPB internal 10MHz TCXO reference. Like most of our products, the **SG22000L** easily fits in the palm of your hand, making it a truly portable and bench-space-saving device.

Looking for lower phase noise and adjustable calibrated power output? Try the [SG22000PRO!](#)

We can also build this model without OLED display or buttons for integration inside another system.

Microwave Signal Generator Specifications:

- Total Frequency Coverage: **20 – 22000MHz** (24GHz at reduced performance)
- Band 1 Range: 20 to 13000MHz
- Band 1 Power: -20 to +10dBm (calibrated 0.5dB steps & fine-tune vernier)
- Band 2 Range: 13000 to 22000MHz
- Band 2 Power Level +15dBm typical
- Phase Noise: 6GHz @ 10KHz offset: -85dBc/Hz
- Phase Noise: 12GHz @ 10KHz offset: -78dBc/Hz
- Phase Noise: 18GHz @ 10KHz offset: -73dBc/Hz
- Min frequency step size: **2Hz**
- Dimensions: 2.75" x 1.25" x 4.15"
- Input Voltage: 5V @ 1.0A (USB-C)
- Internal Reference: 10MHz ± 280 PPB TCXO

SG22000L REV15 Device Features:

- Calibrated output power on band 1 (Step and Vernier adjustable)
- High-power band 2 output
- Frequency-sweeping support (no PC needed once configured)
- External reference frequency input (MCX port – 10MHz)
- Internal / external auto-detect reference
- Professional industry standard SCPI command support
- Front frequency user frequency step buttons

- Front-mounted bright OLED display
- Sturdy all-aluminum black enclosure
- Simple and free Windows control GUI
- No drivers needed for PC control
- **Optional** Ethernet port
- Output Impedance: 50 Ohm
- RF Connectors: **2 x Gold Microwave SMA**

Common RF Applications:

- Automated testing environments
- Satellite Communications Testing
- General RF Lab use
- Flexible LO sourcing
- Antenna design
- EMC Testing
- KU-Band Development
- Production verification and testing
- Educational / university lab use
- Aerospace / Defense Research

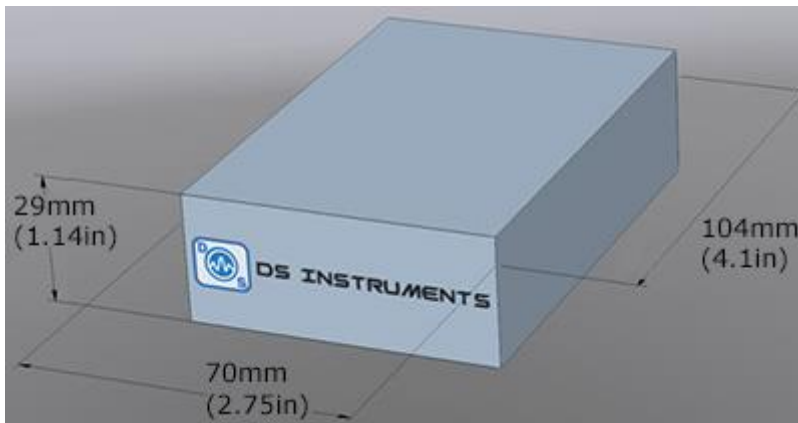
Featured on [Microwave Journal](#), [Microwaves&RF](#), [Military&Aerospace Electronics!](#)

PC Control Software:

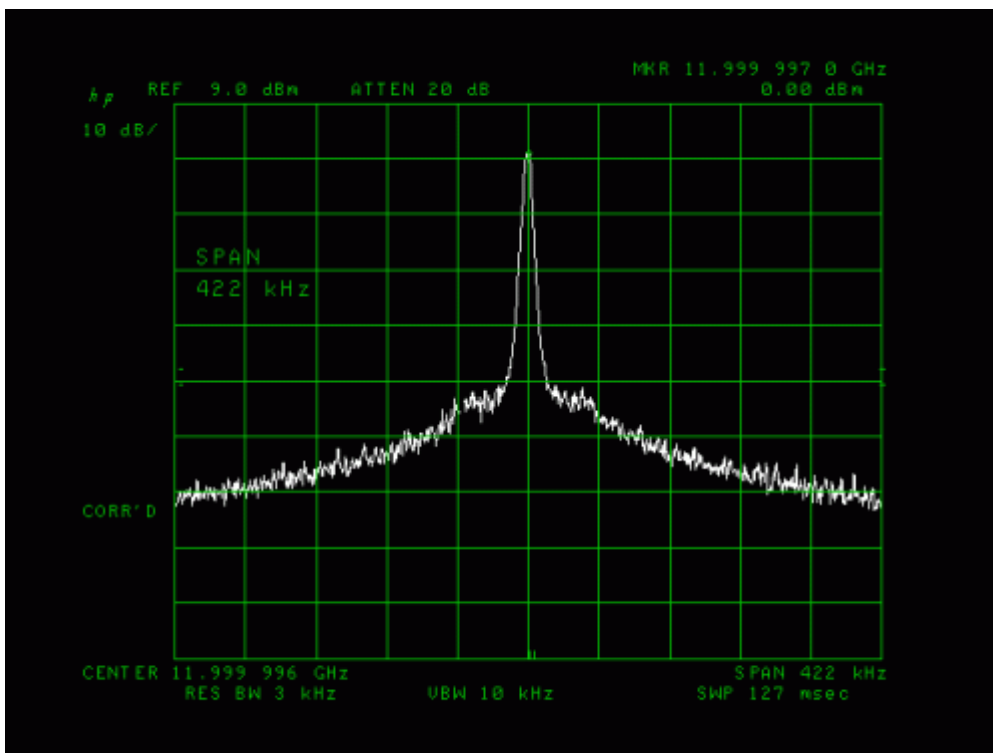
The screenshot displays the 'Signal Generator Control' software interface. Key features include:

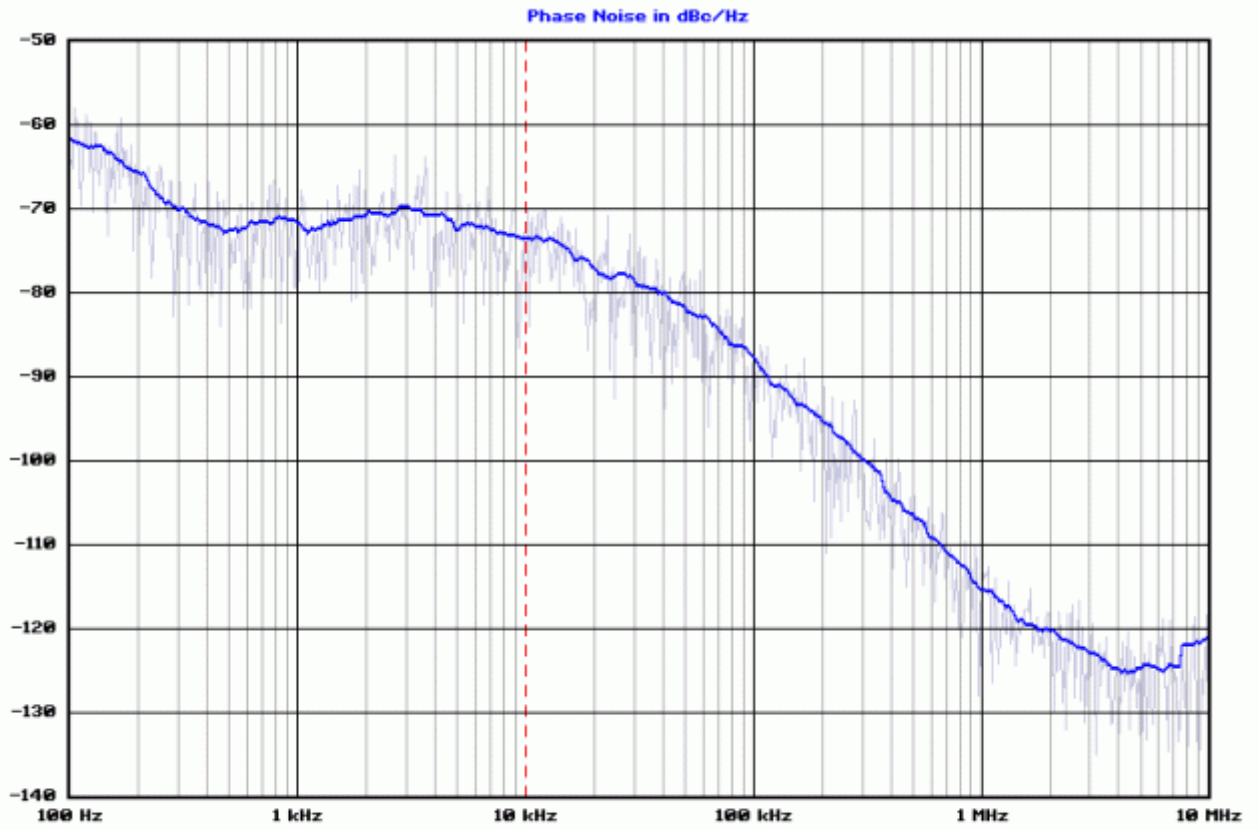
- Options:** Search for COM125, device ID SG12000-SER-1-FW 12.4 REV 12, firmware WolfPack-005, and internal reference.
- Controls:** Frequency set to 2025.0000 MHz with a 25 MHz step size. Power is set to 7.00 dBm. RF output is currently OFF.
- Sweep Controls:** Mode is Single, Direction is UP, Trigger is SWEEP. Sweep parameters include 11 points, 100 ms dwell, starting at 1000 MHz and ending at 2000 MHz, with a step size of 100.0000 MHz and a run time of approximately 1.100 seconds.
- Output Power Vernier:** A slider control currently set to 0.
- Status Bar:** Shows the current configuration: DS Instruments,SG12000,-1,V12.40 0 OFF ON WolfPack-005 +7.0dBm 2000000000HZ.

Device Enclosure Size:



RF Performance (details in full datasheet):





UPC: 0737212885902