DS INSTRUMENTS

# LOW-HARMONIC RF GENERATOR


Description

The DS Instruments **SG6000F** RF Signal Generator continues to set the industry standard in affordable ultra-compact RF Signal Generation. The SG6000F provides a pure low-harmonic sine-wave, unlike most other compact signal generators. This fully synthesized, modern fractional-N device covers up to 6GHz. Output power is auto-leveled to +10dBm and can be adjusted downward in 0.5dB steps, or continuously via the internal variable attenuator. The bright OLED display provides useful feedback for the user, and front control buttons provide a quick alternative to USB control. In applications where signal distortion is critical issue, the SG6000F or low-phase-noise SG6000PRO are unbeatable solutions.

Looking for lower phase-noise and smaller frequency step size? SG6000PRO

---

**SG6000F Features:**

- Active harmonic filtering
- External sweep trigger input *(MCX) (active low)*
- Stand-alone and USB remote operation
- 50MHz to 6GHz output frequency
- Adjustable output power (Step & Variable)
- Industry-standard **SCPI** command support
- Internal ±2.5PPM TCXO 10MHz reference
- Front user frequency step buttons
- Frequency-sweeping support
- Front-mounted bright OLED display
- Simple Windows control GUI
- Powered from standard micro-USB
- Easy to interface with all software packages (.NET, Matlab, python, android, linux…)

*RF Signal Generator Specifications:*

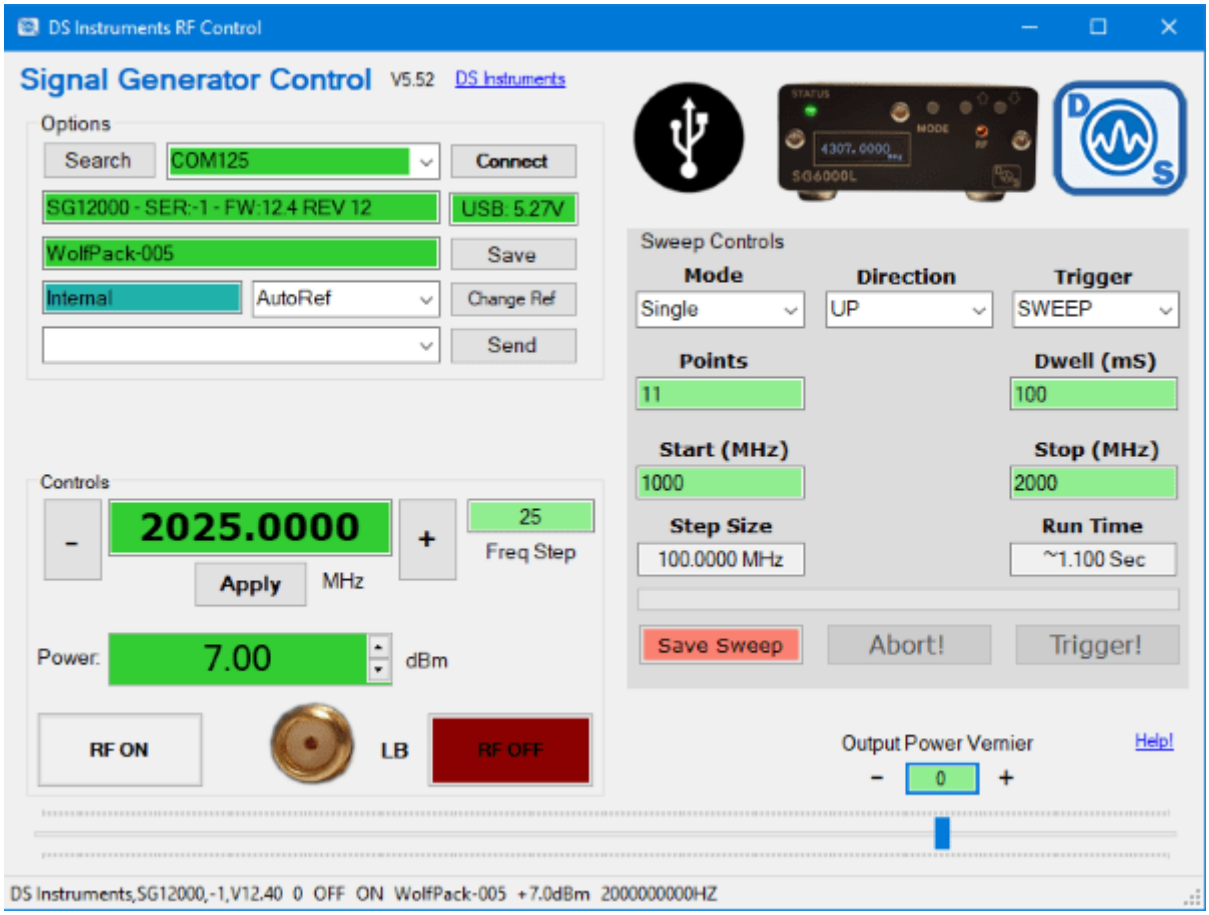
- Highest Harmonic Levels: -25dBc typical
- Frequency Range: **50-6000** MHz
- Default Power Level: +10 dBm
- Phase Noise: -74dBc @ 10KHz offset
- Internal Attenuator (digital): 64 x (0.5dB) Steps
- Internal Attenuator (variable): ~15dB (10 bit DAC)
- Dimensions: 2.75″ x 1.25″ x 3.15″
- Input Voltage: 5V Standard micro USB
- Output Impedance: 50 Ohm
- RF Connectors: Premium gold microwave SMA

*Common Applications:*

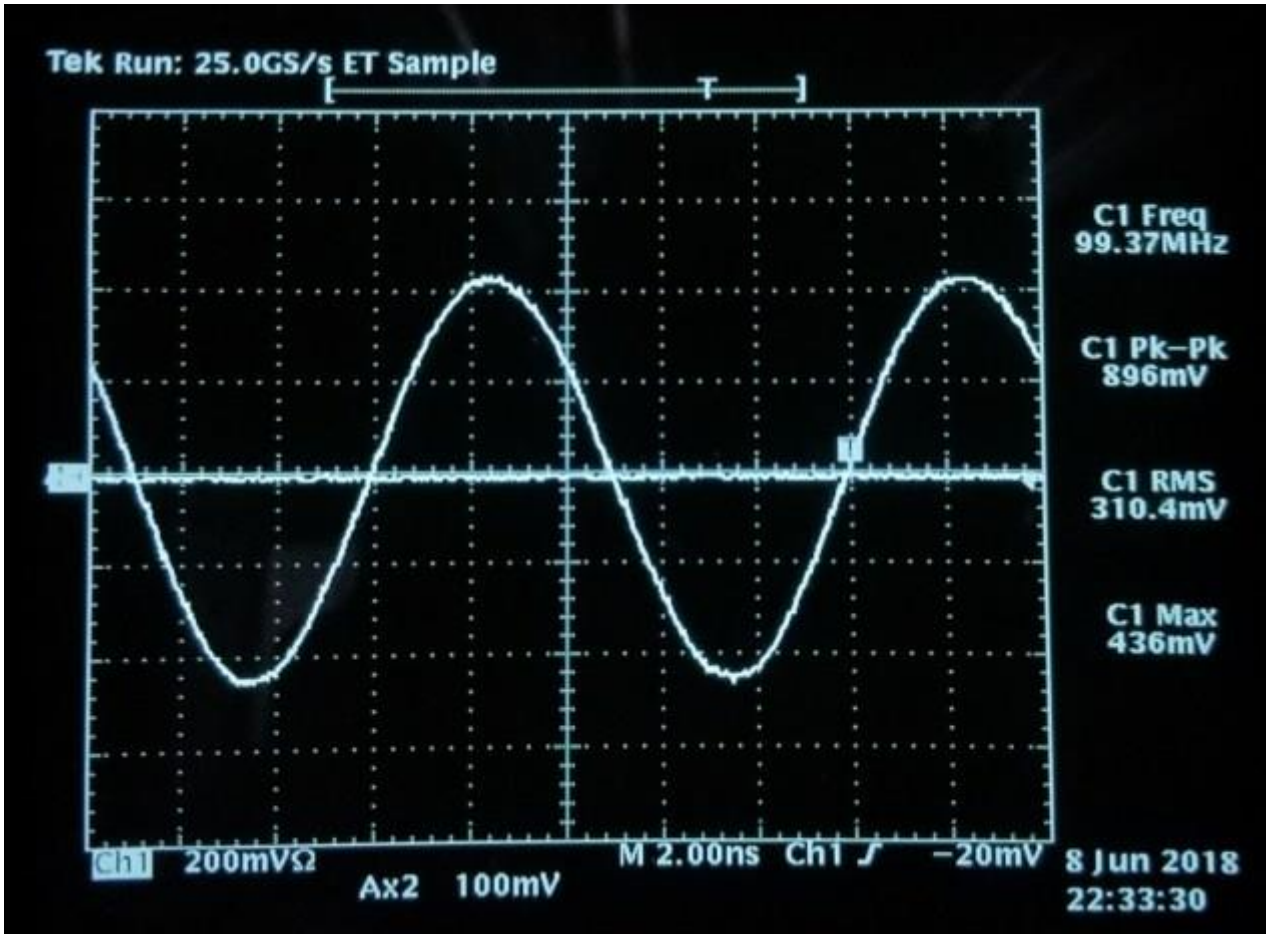
- Automated testing environments
- General RF Lab use
- Flexible LO sourcing
- Antenna design
- EMC Testing
- Production verification and testing
- Educational / university lab use
- Aerospace / Defense Research
- 802.11n Development / Testing
- LTE Engineering

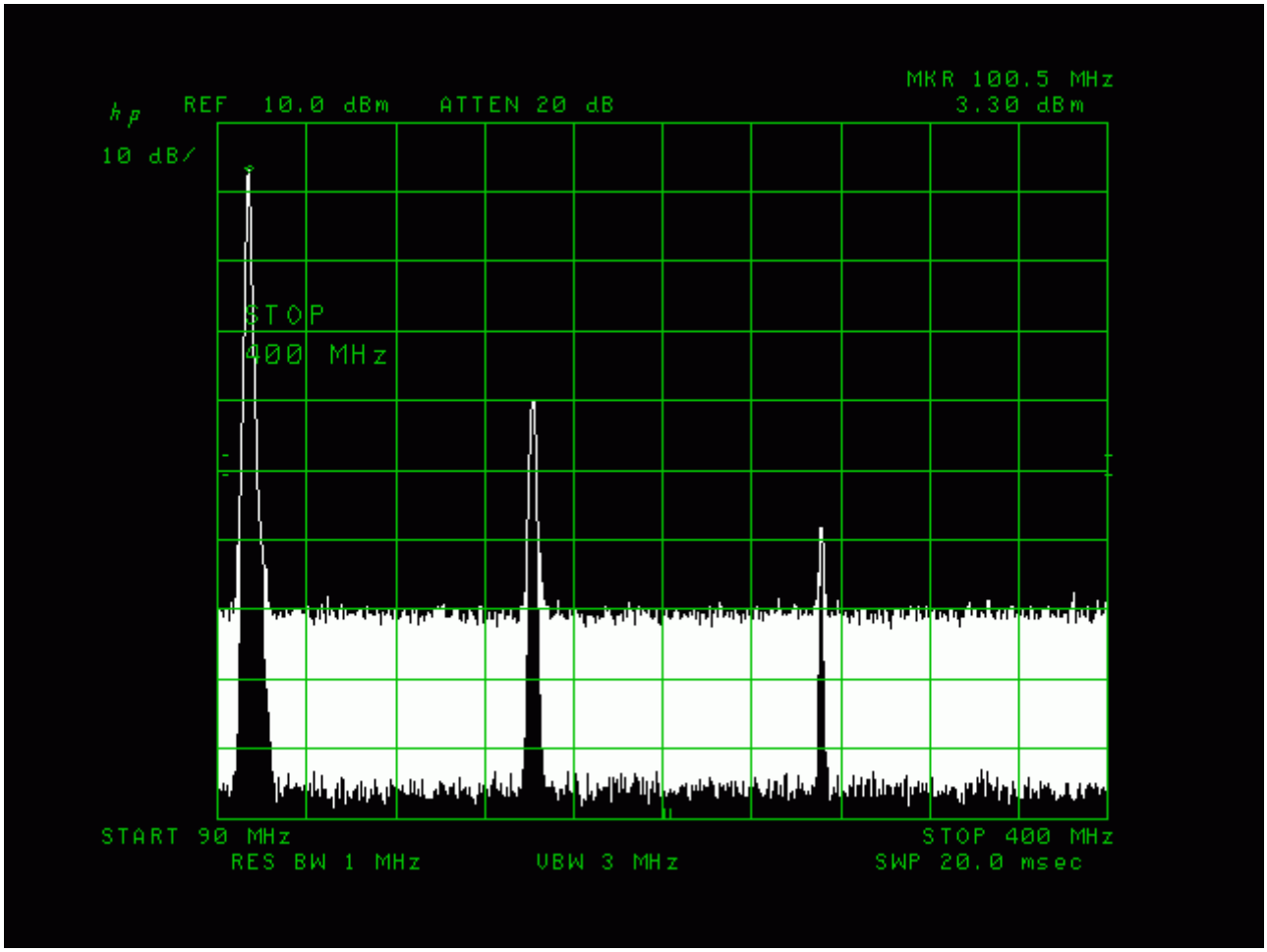
Rear Panel:

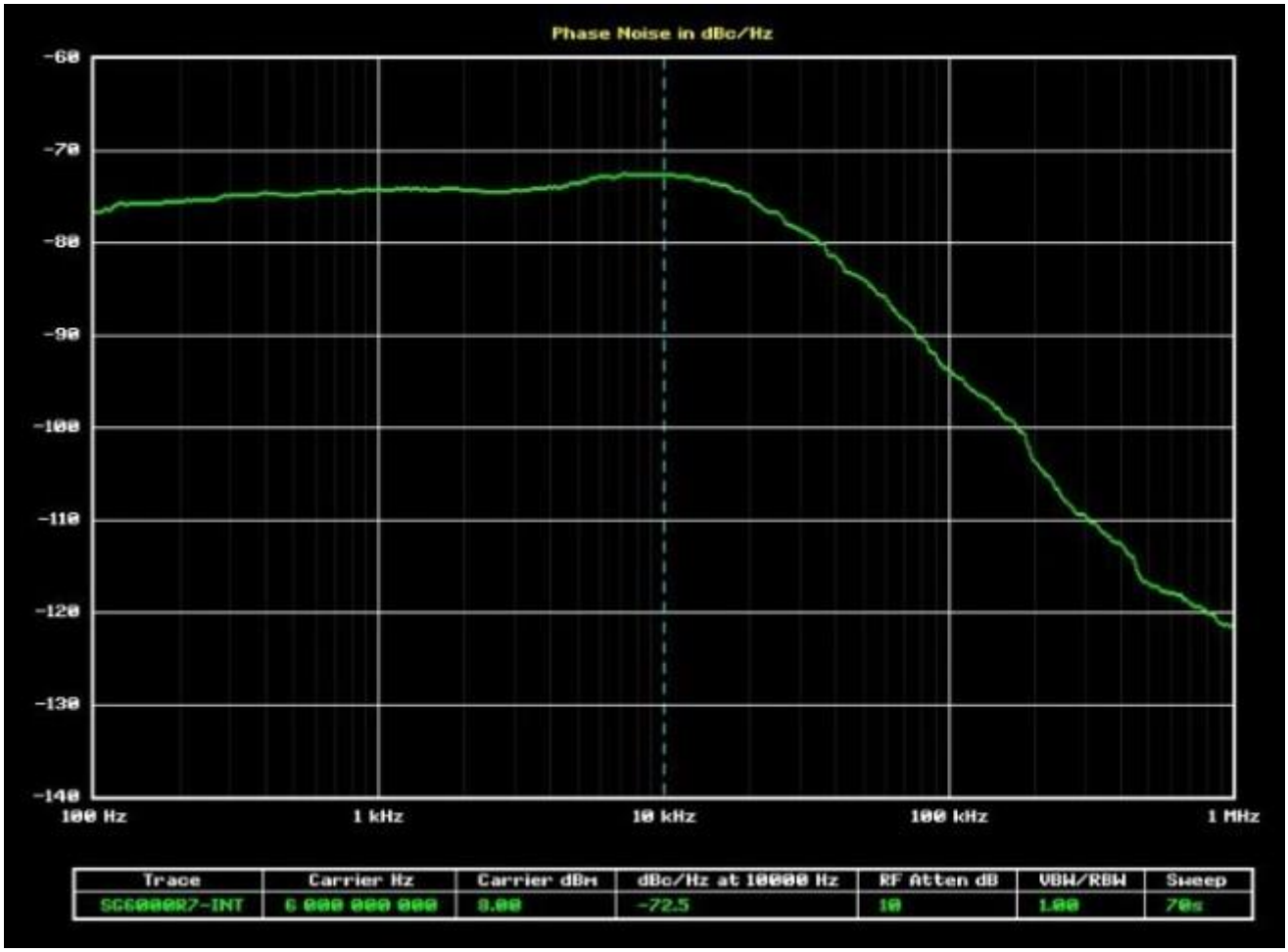

PC Control Software (USB / LAN):



SG6000F Performance Data:




hp
REF 10.0 dBm
ATTEN 20 dB
MKR 100.5 MHz
3.30 dBm
10 dB/
STOP
400 MHz
START 90 MHz
RES BW 1 MHz
VBW 3 MHz
STOP 400 MHz
SWP 20.0 msec


Phase Noise in dBc/Hz
-60
-70
-80
-90
-100
-110
-120
-130
-140
100 Hz
1 kHz
10 kHz
100 kHz
1 MHz
Trace
Carrier Hz
Carrier dBm
dBc/Hz at 10000 Hz
RF Atten dB
VBW/RBW
Sweep
SG6000R7-INT
6 000 000 000
8.00
-72.5
10
1.00
70s