

Product Brief

100 kHz to 20 GHz Microwave Signal Generator

APSIN20G / APSIN20G-NM

The APSIN20G is a low-noise and fast-switching microwave signal generator covering a frequency range from 100 kHz up to 20 GHz.

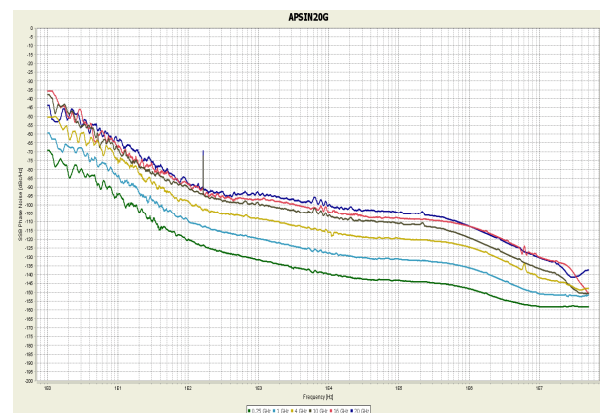
Two models of the APSIN20G are available: the APSIN20G and the APSIN20G-NM. The APSIN20G comprises a full set of analog modulation (AM, FM; PM, Pulse, Pulse trains, Chirps) while the APSIN20G-NM does not support any modulation and acts as a CW only signal source.

With a 0.001 Hz frequency resolution, a wide and accurately levelled output power range, and low spurious levels, the APSIN20G operates with an ultra-stable temperature compensated 100 MHz reference (OCXO) and can be phase-locked to any external reference from 1 to 200 MHz.

Available also as truly portable model with internal rechargeable battery module, this instrument offers a reliable and powerful alternative to expensive high-end microwave signal generators, where small size and excellent microwave performance at an attractive cost is required.



SSB Phase Noise



Key Features

- Only 400 μ s frequency switching time
- Very low SSB phase noise: -108 dBc/Hz at 10 GHz and 20 kHz offset
- Excellent phase coherence / phase stability
- Comprehensive AM, low-distortion, wideband DCFM, and high speed pulse modulation for testing all types of receivers
- LAN/USB/GPIB (optional) remote control with SCPI 1999 command set
- Input for USB power sensor
- Powerful trigger and sweeping modes

Applications

- R&D low noise signal source
- Production testing (industry-leading switching times; high dynamic range)
- Service and maintenance
- Signal simulation (Radar, WiMax, UWB)
- Aerospace & Defence (Pulse modulator, Chirps)

Hand Carry Bag



Options

- PE3: mechanical step attenuator added (70 dB)
- GPIB: IEEE 4888 General Purpose Interface Bus
- Bag: Robust hand carry bag
- B3: Internal rechargeable batteries

Key Specifications (typical)

Parameter	Typical Value	Notes
Frequency range	100 kHz to 20 GHz	
resolution	0.001 Hz	
Phase resolution	0.1 deg	
Settling time	100 μ s	
SSB Phase noise		
at 20 kHz from carrier	-108 dBc/Hz	10 GHz carrier
wideband noise	-150 dBc/Hz	
Power Level Range	-20 to +15 dBm -90 to +13 dBm	standard options PE3
resolution	0.01 dB	
uncertainty	< 1.0 dB	
Output impedance	10 Ω	
VSWR	2	
Spectral purity		
output harmonics	-40 dBc	at +5 dBm
non-harmonic spurious	< -60 dBc	
Sweeps & Trigger		
Dwell time	min 50 μ s	
Time resolution	10 μ s	
List size	65.000	
Trigger	auto, external, bus, gated	
Frequency Modulation		
Modulation rate	DC to 800 kHz	
Maximum deviation	5 % of carrier	
Distortion	0.1 %	$f_{mod} = 1 \text{ kHz}$ & $f_{dev} = 10 \text{ MHz}$
Amplitude Modulation		
Rate	0.1 Hz – 20 kHz	
Depth	0 to 90 %	
Pulse Modulation		
Rate	DC – 10 MHz	
On/OFF Ratio	80 dB	Pout = +10 dBm
Pulse width	35 ns	
Rise/Fall times	10 ns	
Internal reference frequency	10/100 MHz	
Temperature stability	± 100 ppb	0 to 50 $^{\circ}$ C