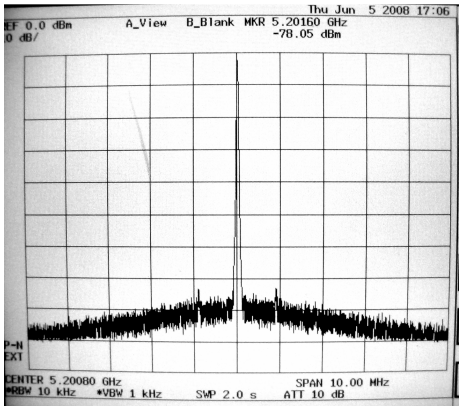
Analog High-Speed Products
Components, Modules and Subsystems

Product Brief

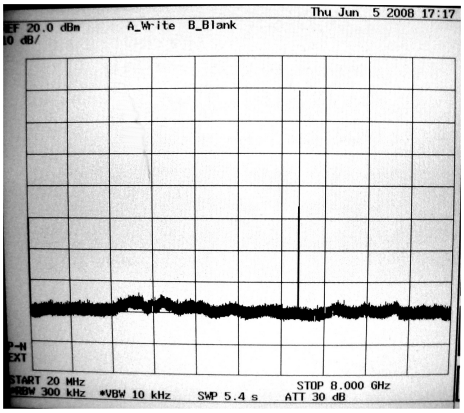
9 kHz to 6000 MHz Signal Generator APSIN6000

The APSIN6000 is a compact, high-performance signal sweep generator with wide frequency coverage from 9 kHz to 6500 MHz, mHz resolution, and broad power range up to 13 dBm. It combines excellent signal quality (low phase noise, good harmonic suppression and low spurious) with fast switching. An internal OCXO reference guaranteed high stability but can also be locked to an external reference. The APSIN6000 is also available with an optional internal battery and weights less than 3 kgs.

Spectrum at 5.2 GHz (RBW=10 kHz, Span =10 MHz)



Wideband spectrum 5.2 GHz/10 dBm Carrier (RBW=300 kHz)



Features

- Internal high-stability reference (OCXO)
- Web browser based control via LAN
- Easy remote access (DLL, VISA/SCPI)
- Internal power sensor for autocalibration

Specifications

- 9 kHz to 6000 MHz
- 1 mHz resolution
- 2 ms frequency and power switching
- Phase noise -120 dBc/Hz @ 20 kHz offset from 2.4 GHz carrier
- >40 dB harmonic suppression
- Output power -60 to +10 dBm (-95 dBm to 13 dBm below 3 GHz)

Applications

- High stability local oscillator
- Automated test systems (ATE)
- EMC testing

Options

- ***B6***: Internal rechargeable battery operation
- ***HC***: Front panel with rotary knob

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Key Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Note
Frequency range	f	9 kHz		6500	MHz	
resolution	f_{step}		0.001		Hz	1
Phase resolution	ϕ_{step}		0.1		deg	
Settling time				200	µs	
Frequency update rate			2		ms	
SSB Phase noise						
at 20 kHz from carrier			-110		dBc/ Hz	2
Wideband noise			-150		dBm/Hz	
Total jitter			120		fs RMS	*3*
Power level						
Range	P_{out}	-60		+13	dBm	
Resolution			0.5		dB	
Level uncertainty				±1	dB	4
Output impedance			50		Ohms	
Spectral purity Output harmonics Sub-harmonics			 -45 -60	 -30	 dBc dBc	 5
Non-harmonic spurious			-60		dBc	
Reference frequency input	f_{ref}	1	10	100	MHz	6
Input level		-8	0	+10	dBm	
Maximum deviation				+/- 1.0	ppm	
Input impedance			50		Ohms	
Internal reference frequency			100		MHz	
Temperature stability				±100	ppb	0 to 50 degC
Aging 1st year			0.5		ppm	
Aging per day (after 30days operations)				5	ppb	
Warm-Up time			5		min	
Output of internal reference			-3 50		dBm Ohms	

Notes:

1. depending on output frequency
2. at f = 5 GHz output carrier frequency
3. f = 1 GHz, jitter BW from 10 Hz to 20 MHz
4. -40 dBm < Pout < +10 dBm
5. at output connector, P_{out} < +10 dBm; f>10 MHz
6. must be integer N • 1 MHz

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