

Single channel
models APSINxx+PE2-
FILT

VS

Keysight, Rohde,
middle class



APSIN20-PE2 + FILT





Model	APSIN12, APSIN20	N5173B	N5183B	SMB100A
Frequency range	100 kHz to 12.20 GHz, 9 kHz option 9K	9 kHz to 13.20 GHz	9 kHz to 13.20 GHz	100 kHz to 12.20 GHz
Min. power	-20 dBm, -120 dBm option PE2	-20 dBm, -120 dBm option 1E1	-20 dBm, -120 dBm option 1E1	-20 dBm, -120 dBm B120, B112
Type of attenuator	Mechanical	Mechanical	Mechanical	Electronic up to 12 GHz, mechanical
Max. power	Std/HP+PE2	Std 1EA	Std 1EA	Std B31 B31+atten
1 GHz	15/27/25	18/23	18/23	14 19 16
5 GHz	15/26/24	18/20	18/20	14 19 16
10 GHz	15/25/22	18/18	16/20	14 19 16



Model	APSIN12, APSIN20	N5173B	N5183B	SMB100A
20 GHz	15/21/18	15/19	16/19	14 19 16
Frequency agility	200 μ s, 30 μ s option FS	5 ms	5 ms	1 ms
Duty stability	0.5 ppm	0.1 ppm	0.1 ppm	1 ppm, 0.1 ppm, 0.03 ppm
Beginning frequency setting accuracy	40ppb	40ppb	40ppb	40ppb
PN level 1 GHz, 20 kHz	-130 dBc/Hz''	-122 dBc/Hz''	-131/-146 UNY	-122 dBc/Hz''
Harmonics	-30 dBc, >12 GHz -60 dBc (typ.)	-55 dBc	-55 dBc	-30 dBc, -50 dBc option
Non-harmonics				



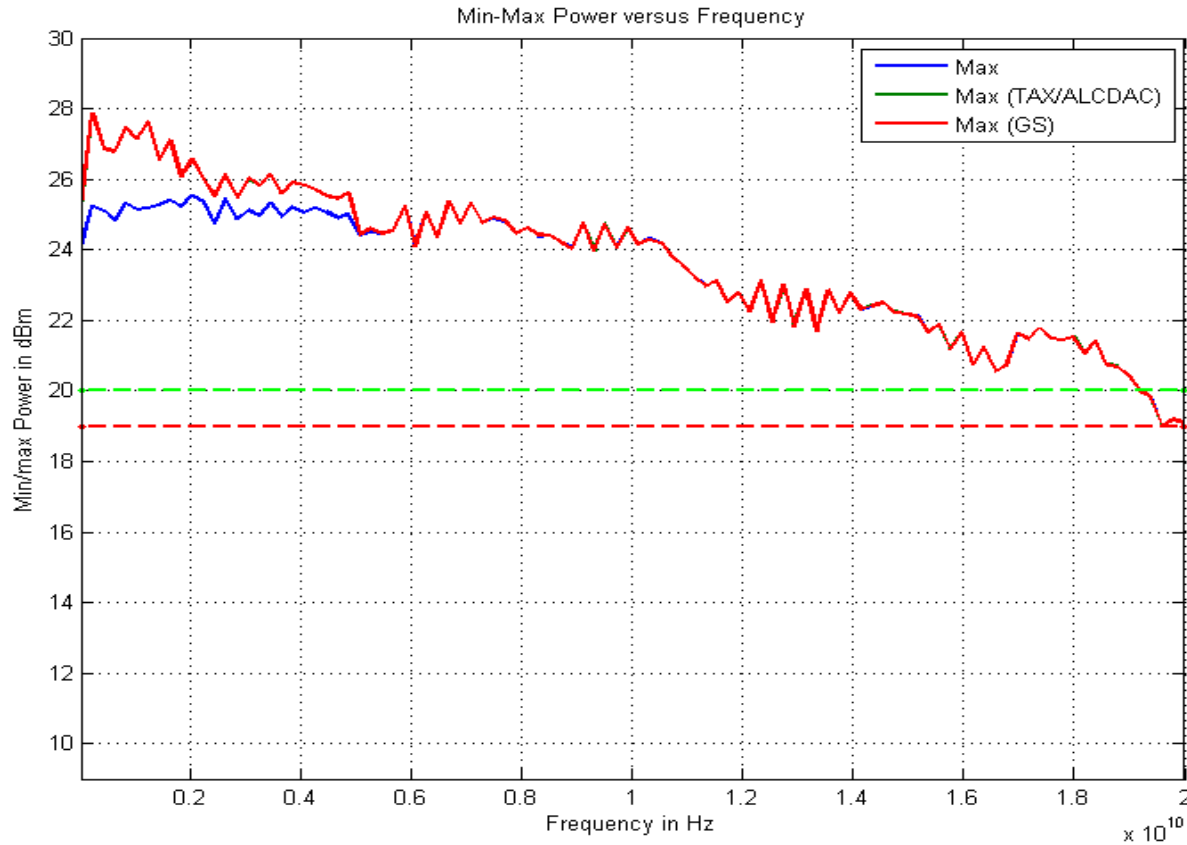
Model	APSIN12, APSIN20	N5173B	N5183B	SMB100A
5 GHz	-65	-60	-60, -80 UNY	-58
10 GHz	-65	-60	-63, -74 UNY	-52
20 GHz	-55	-60	-63, -68 UNY	-52
Pulse modulation	Standart	Option UNW	Option UNW	Option
Pulse width	15 ns	20 ns	20 ns	20ns, rise fall 20 ns
Resolution of pulse modulation	15 ns, optional NP 5 ns	10 ns	10 ns	10 ns
Power consumption	20 W	160 W	160 W	110 W



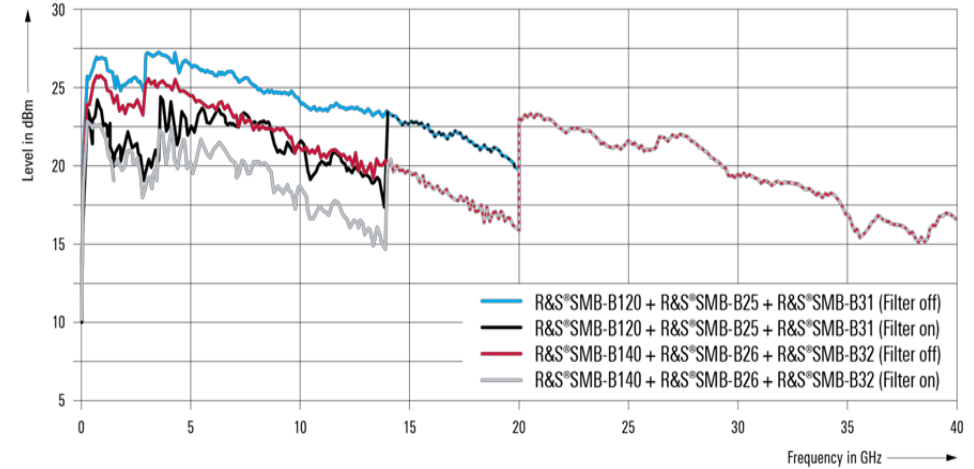
Model	APSIN12, APSIN20	N5173B	N5183B	SMB100A
Operation from an external battery	Yes	No	No	No
Frequency modulation				
Deviation	6 GHz-100 MHz	10 GHz-80 MHz	6 GHz-32 MHz	10 GHz-32 MHz

Power Graphs APSIN Series vs Keysight N5173B, N5183B, SMB100A

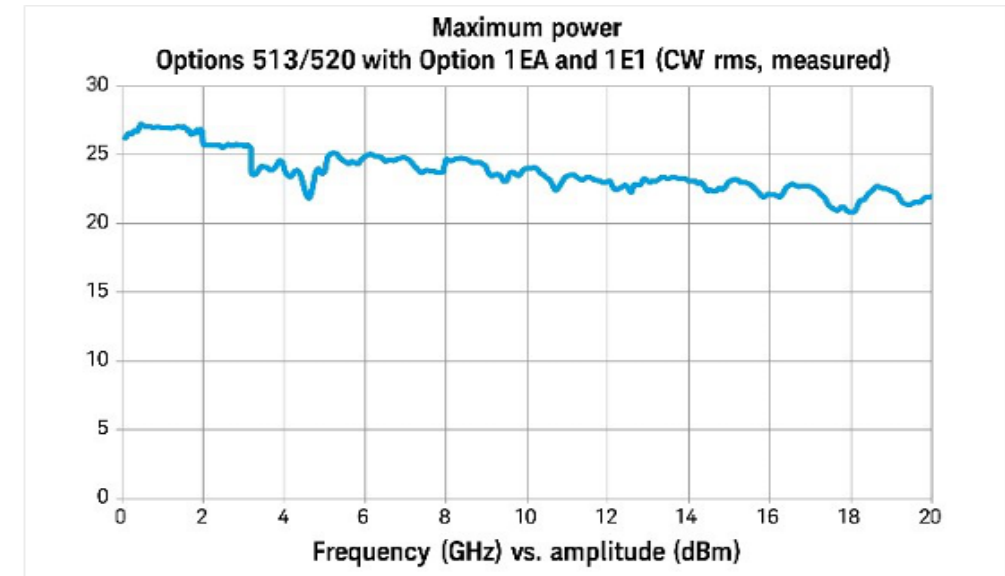
AnaPico APSIN, HP+PE2



Rohde SMB100A 20 GHz various options

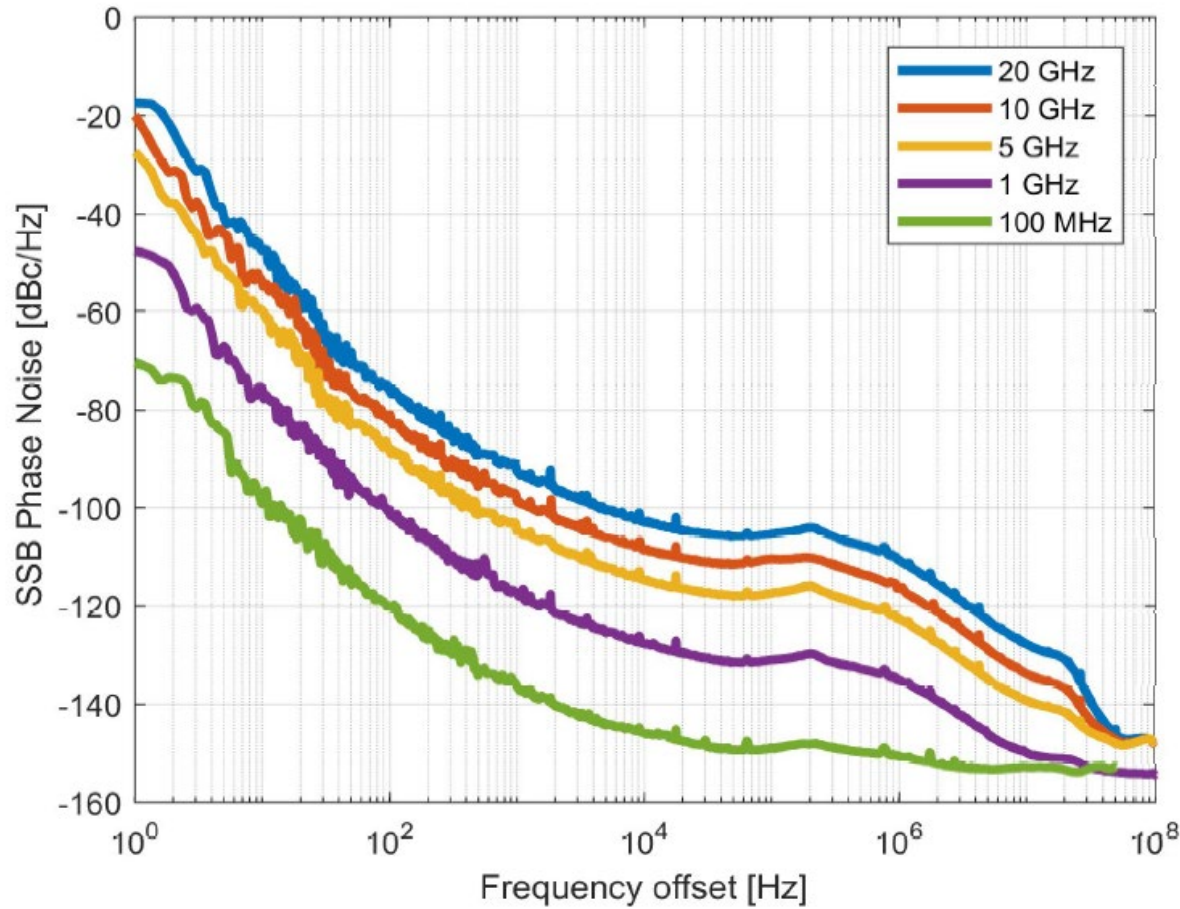


Keysight N5173B, N5183B attenuator+amplifier

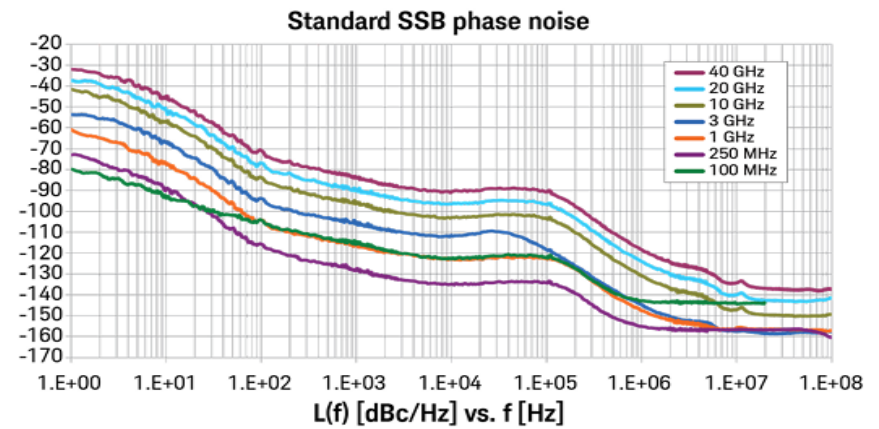


Phase Noise Plots APSIN, RFSU vs Keysight

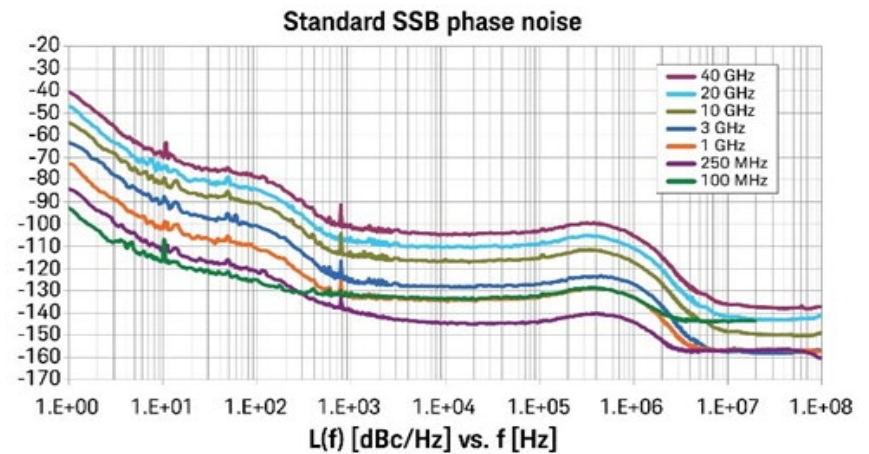
AnaPico APSIN



Keysight N5173B

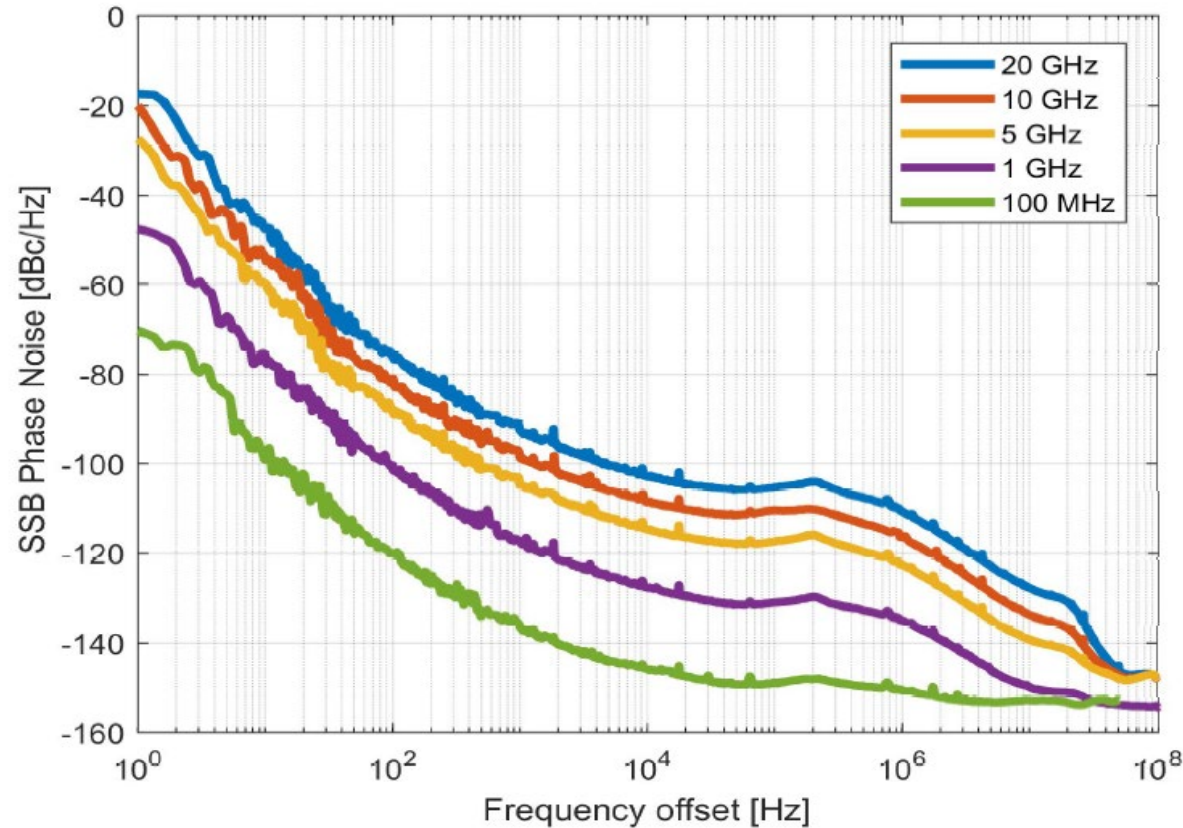


Keysight N5183B

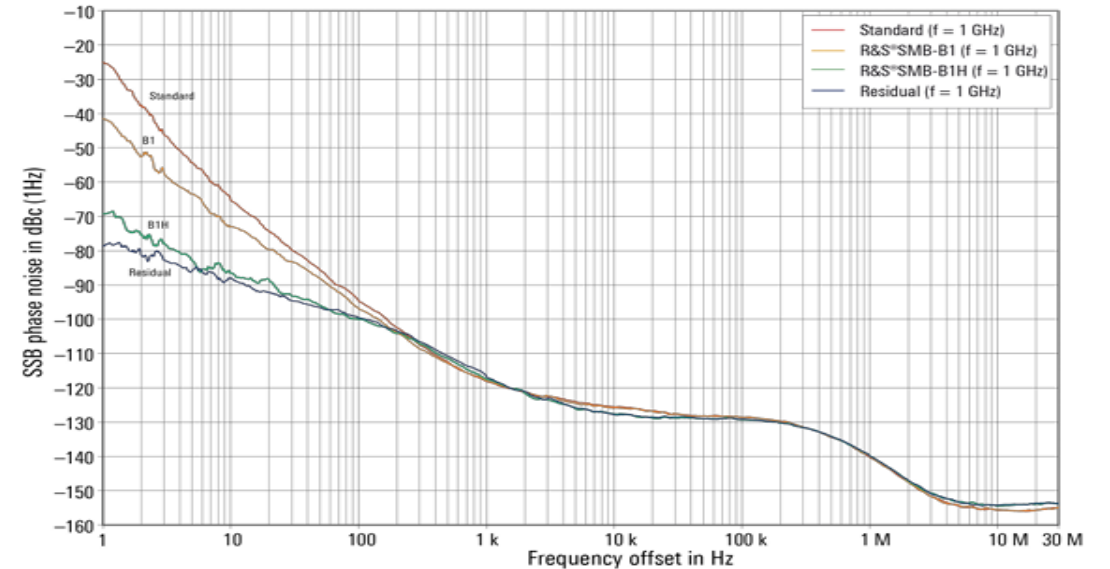


Phase Noise Plots APSIN, RFSU vs Keysight

AnaPico APSIN



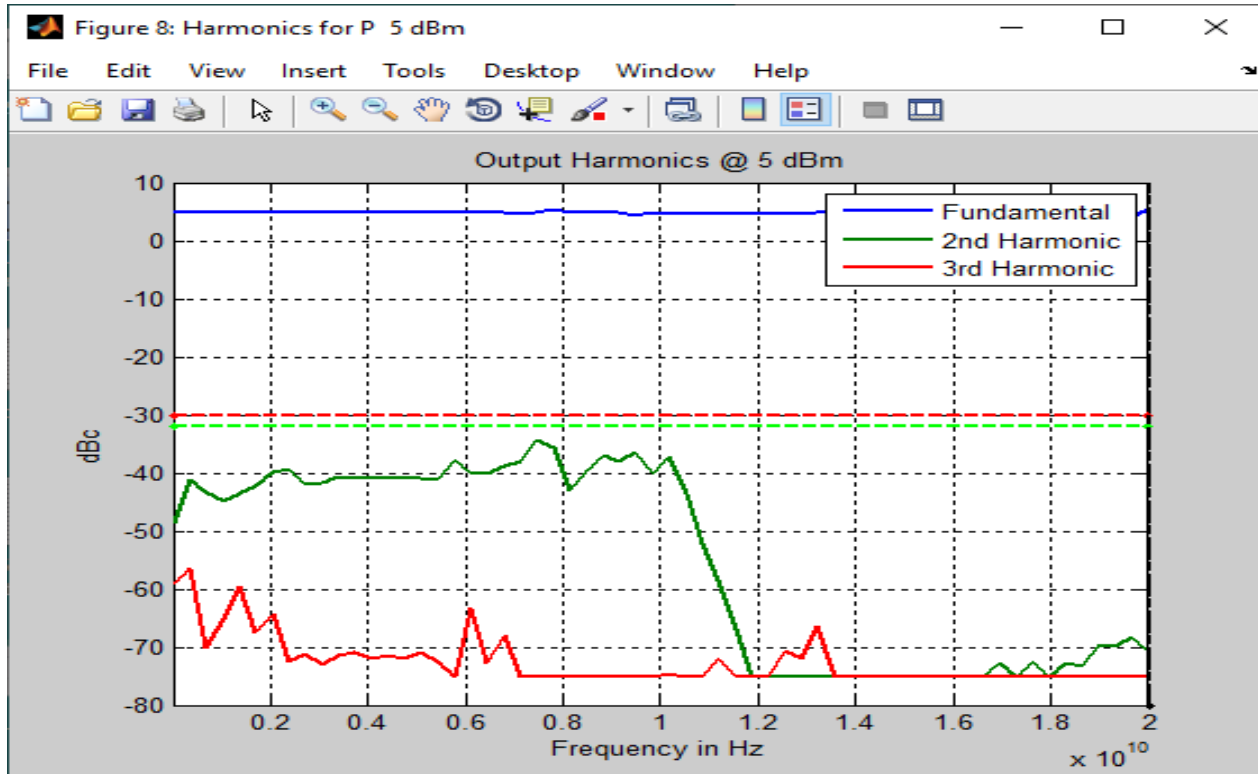
Rohde SMB100A



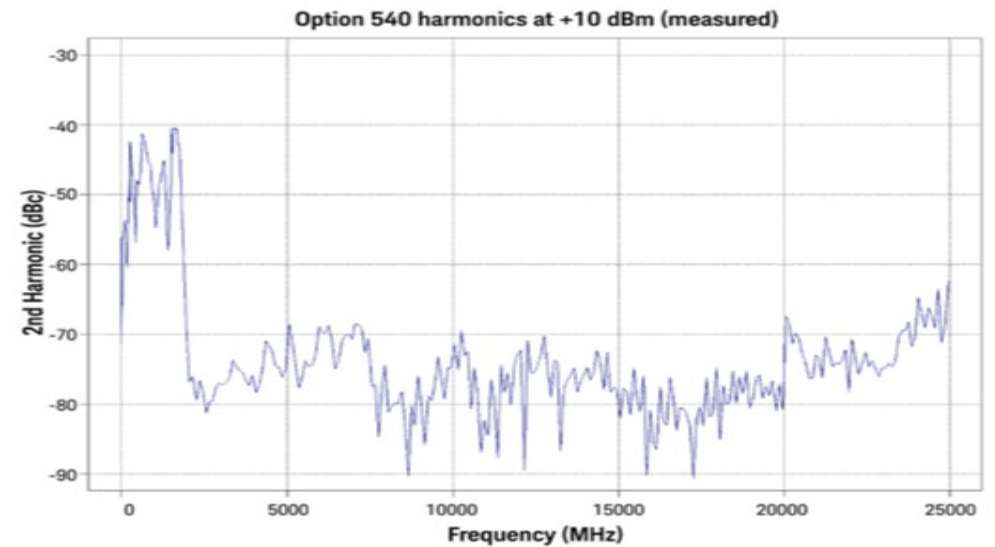
Measured SSB phase noise, $f = 1$ GHz, comparison with standard internal reference, R&S[®] SMB-B1 OCXO option, R&S[®] SMB-B1H OCXO option and residual phase noise.

Harmonic Graphs APSIN20 R&S vs Keysight

AnaPico Harmonics APSIN20

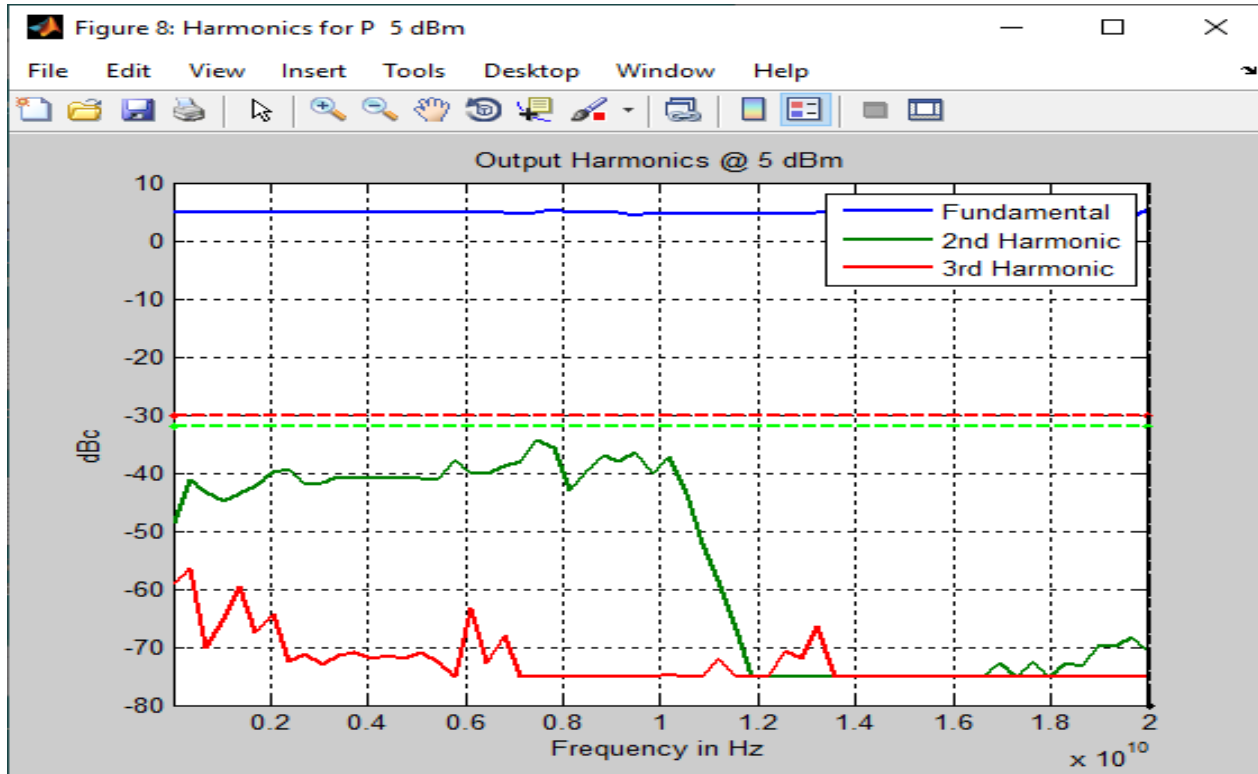


Keysight harmonics N5173B, N5183B

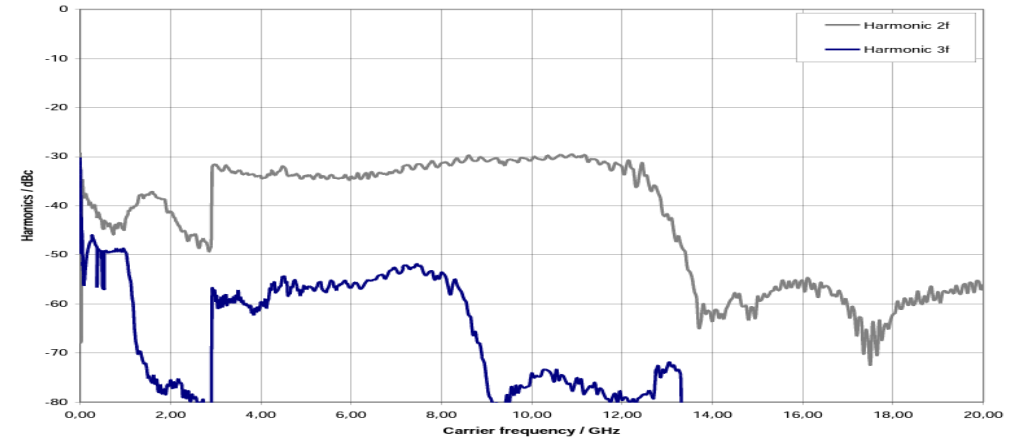


Harmonic Graphs APSIN20 vs R&S

AnaPico Harmonics APSIN20

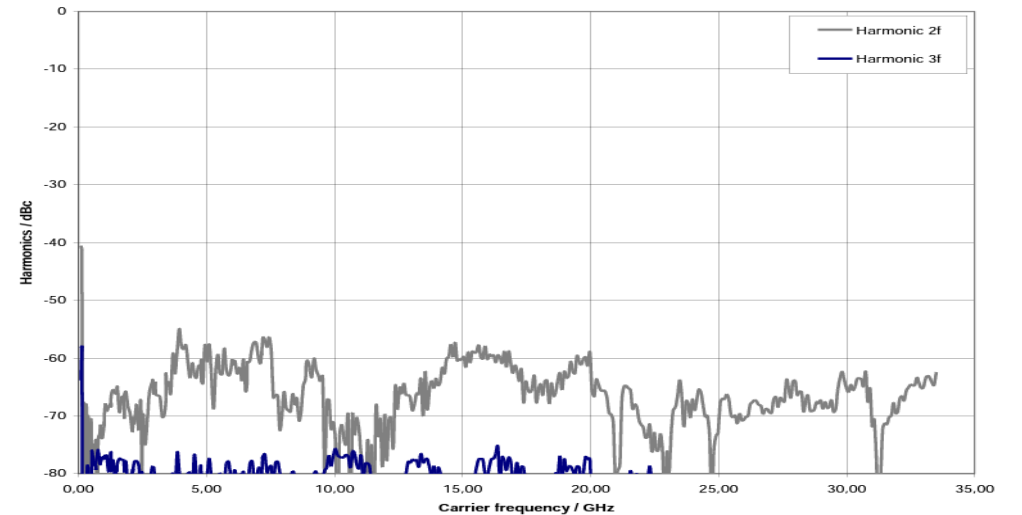


Harmonics SMB100A standard



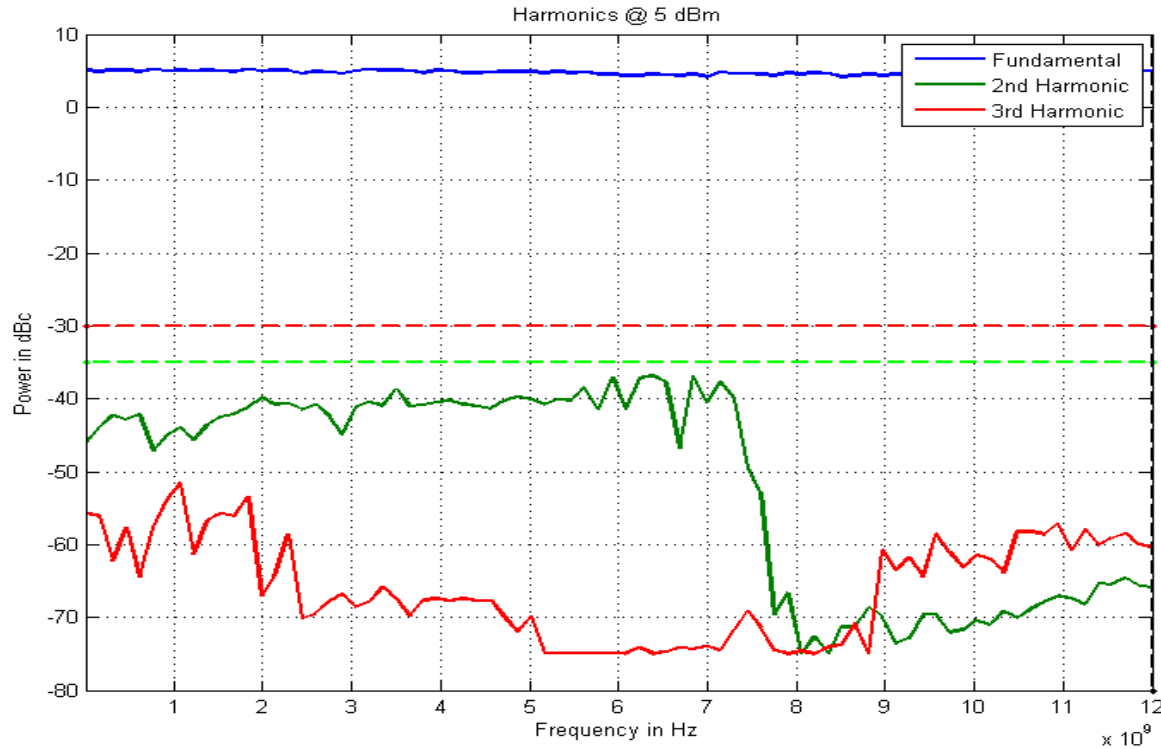
Harmonics versus carrier frequency at +13 dBm output level with R&S®SMB-B140 option and R&S®SMB-B32 (meas.).

Harmonics SMB100A option B25

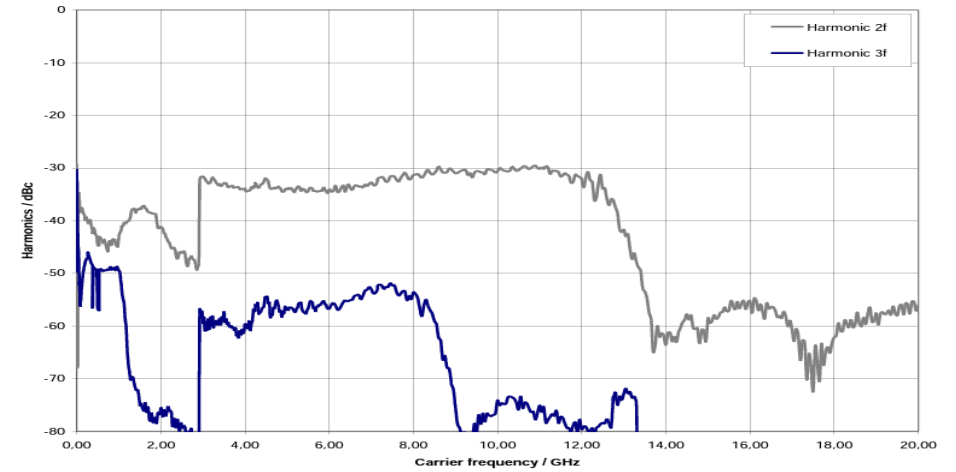


Harmonic Graphs APSIN12 vs R&S

AnaPico Harmonics APSIN12

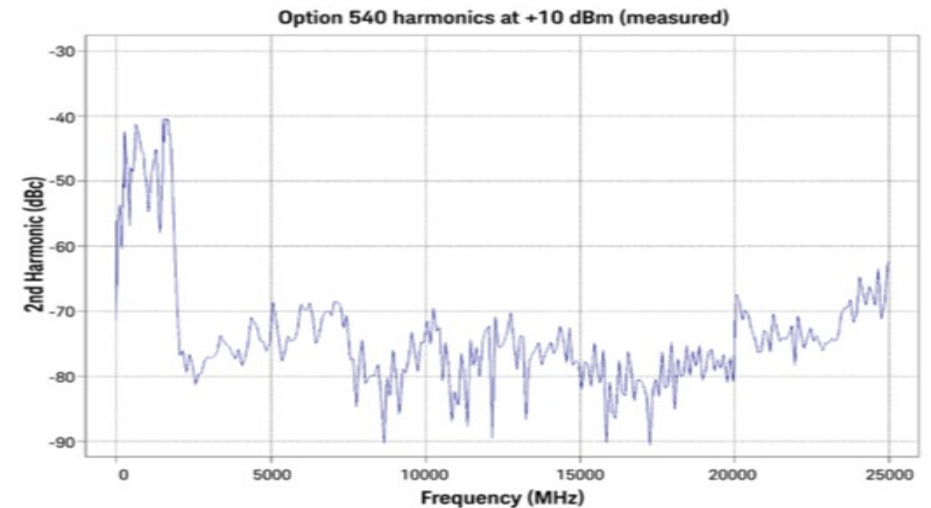


Harmonics SMB100A standard



Harmonics versus carrier frequency at +13 dBm output level with R&S[®] SMB-B140 option and R&S[®] SMB-B32 (meas.).

Keysight harmonics N5173B, N5183B



Conclusion

AnaPico APSIN12-PE2-FILT, APSIN20-PE2-FILT series generators are mid-range devices with slightly above average performance and a good price. In the APSIN-L generation you can get low harmonics in X-band and Ku-band, which is the main range for the defense industry and the signal generator is budget-friendly.

The advantages of the model are:

- Low phase noise 1 GHz 20 kHz detuning -130 dBn/Hz, this is better than N5173B, SMB100A
- Frequency range from 9 kHz, Rode Schwarz SMB100A only works from 100 kHz
- Good level of non-harmonics APSIN
- Max power and harmonics performance in important frequency range

Options with no counterparts in class:

- EB6 and B3, external and internal battery operation, no mains power. Very handy in the field.
- NP - short pulse modulation with 5 ns resolution
- NEC - fast frequency conversion, modulation with 4 pulses, pulse setting resolution of 5 ns.

APSIN series generators are on average 35% cheaper than their class counterparts.

Average delivery time 4-6 weeks