Specifications in brief

Frequency

Range
SMG
SMH
SMGL
Resolution
Setting time
Frequency drift f ≥31.25 MHz
Reference frequency
Aging (after 30 days of operation) Temperature effect
Input/output for external/ internal reference frequency

Level

Range

Underrange and overrange without guarantee of specs

Accuracy for levels >-127 dBm (SMG, SMH) >-118 dBm (SMGL) Frequency response at 0 dBm output level Characteristic impedance VSWR

Setting time Non-interrupting level setting Overload protection (maximum permissible RF power)

Spectral purity

Spurious signals Harmonics Subharmonics SMG, SMGL SMH Residual AM, rms (0.03 to 20 kHz) Nonharmonic spurious signals at >5 kHz from carrier Residual FM, rms 0.3 to 3 kHz (CCITT) SSB phase noise, carrier offset 20 kHz, 1 Hz bandwidth, typical

100 kHz to 2000 MHz 9 kHz to 1000 MHz 1 Hz <15 ms $<0.5 \times 10^{-9}$ + error of reference standard I OCXO oscillator 2 x 10⁻⁶/year 2.5 x 10⁻⁶/ <1 x 10⁻⁹/day 0 to 50°C <2 x 10⁻⁹/°C 5 or10 MHz, selectable -140 to +13 dBm (SMG, SMH) -118 to +30 dBm (SMGL) -140 to +16 dBm (SMG, SMH) -130 to +36 dBm (SMGL) ±1.5 dB 1 dB (typ. 0.3 dB) 50 Ω <1.5 for level ≤0 dBm (SMG, SMH) <1.5 for level ≤16 dBm (SMGL) <25 ms 0 to 20 dB 50 W <-30 dBc (SMGL: level ≤27 dBm) none <-40 dBc (f ≥1 GHz) < 0.02%

100 kHz to 1000 MHz

see line a in table below

see line b in table below

see line c in table below

						1000		
a <	-70	-80	-80	-80	-76	-70	-64	dBc
b <	2	1	1	1	2	4	8	Hz
c	-139	-148	-142	-136	-130	-124	-118	dBc

Amplitude modulation

Modes Modulation depth AM distortion at 1 kHz, 0 to 30% AM Modulation frequency AM EXT AC (DC) AM INT

AM INT with option SMG-B2

INT, EXT AC, EXT DC, two-tone 0 to 99% <1% 10 Hz (DC) to 50 kHz 40/150/300/400 Hz 1/3/6/15 kHz ±3% 10 Hz to 100 kHz (SMG, SMH) 10 Hz to 50 kHz (SMGL)

Frequency modulation Modor

Modes				INT, EXT AC, EXT DC, two-tone				
f <	31.25	62.5	125	250	500	1000	2000	MHz
Max. dev.	200	50	100	200	400	800	1600	kHz

FM distortion at 1 kHz and 50% of maximum deviation Modulation frequency

<0.5% (typ. 0.1%)

FM EXT AC (DC) FM INT

FM INT with option SMG-B2 Frequency drift with FM DC, carrier frequency offset when switching on FM DC for f_{carrier} ≥31.25 MHz

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Phase mo Modulatio	INT, EXT AC, two-tone									
f <	31.25	62.5	125	250	500	1000	2000	MHz		
Max. dev.	20	5	10	20	40	80	160	rad		
Phase moo 1 kHz and Modulatic φM EXT φM INT	10 Hz 40/1 1/3/0	<0.5% (typ. 0.1%) 10 Hz to 10 kHz 40/150/300/400 Hz/ 1/3/6 kHz ±3% 10 Hz to 10 kHz								
Pulse mod Mode On/off ra Rise/fall ti $f_c > 200$ Pulse repe Modulatio	tio me (10/ MHz tition free			>70 c typ. 2 0 to1	external >70 dB (typ. >80 dB) typ. 20 ns 0 to 10 MHz TTL levels					
AF Synthe Frequency Readout Frequency Level error Distortion Phase-con response to command	10 Hz to 100 kHz 3 digits <4 x 10 ⁻⁵ <3% (typ. 1%) <0.1% (typ. 0.03%)									
RF sweep, (AF sweep Modes Sweep rai Step size Time per s	digital start-stop sweep in discrete steps automatic following ramp function, single-shot, manual control via spin- wheel, linear or logarithmic user-selectable over entire frequency range user-selectable 10 ms to 10 s									
X output (X output	0 to 10 V staircase ramp, max. 1000 steps									
Remote co	ontrol			IEC 62	IEC 625-1 (IEEE 488)					
General d Power sup Power c Dimension SMG, SM SMGL Weight fo	100/120/220/240 V ±10% 47 to 440 Hz max. 130 VA (SMG, SMH) max. 250 VA (SMGL) 435 mm x 147 mm x 460 mm 435 mm x 147 mm x 570 mm 17 kg (SMG, SMH), 22 kg (SMGL)									
Ordering information										
Signal Ge Power Sig	SMG SMH SMGL									

10 Hz (DC) to 100 kHz

40/150/300/400 Hz/ 1/3/6/15 kHz ±3%

1% of deviation + 1 x 10⁻⁶ x f_{carrier}

10 Hz to 100 kHz

Options

X Output

Reference Oscillator OCXO SMG-B1 AF Synthesizer SMG-B2 SMG-B3 0802.0005.02 0802.0405.02 0801.9609.02