Signal Generators
SG 3000

- 1 MHz to 3000 MHz
- Resolution 1 Hz
- Frequency switching 50 µsec
- Phase offset 0,0° to 360°
- Harmonics ≤ - 30 dB
- Nonharmonics ≤ - 70 dBc
  f > 1700 MHz: ≤ - 65 dBc
- Nonharmonics ≤ - 70 dBc
  f > 1700 MHz: ≤ - 65 dBc
- SSB Phase noise ≤ - 120 dBc/Hz
  f > 1700 MHz: ≤ - 114 dBc/Hz
- BCD-Input
- IEEE - Bus
- LAN – Interface

The output frequency of the Frequency Synthesizer is settable with 1 Hz-steps in the frequency range 1 MHz to 3000 MHz. The extreme low phase noise combined with the precision of the internal reference frequency (TCXO or OCXO as an option) or an external reference frequency are features of the generator.

The wide frequency range, the excellent specifications for spectral purity and the short switching time for frequency changes make this instrument the best choice for lab applications such as local oscillator for engineering, or for applications in ATE.

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Preliminary Specifications Signal Generator SG 3000

Reference oscillator:
Type: ..... 10MHz/ TCXO
Temperature stability (+0 °C ... + 55 °C): ..... $\leq \pm 1 \times 10^{-6}$
Ageing: ..... $\leq 2 \times 10^{-6}$/year
Reference frequency output: ..... 10 MHz
Output level: ..... + 10 dBm
Source impedance: ..... 50 Ω
Connector: ..... BNC-socket

Reference frequency input: ..... 10 MHz $\pm 2 \times 10^{-7}$
Input level: ..... 0 dBm ... + 8 dBm
Input impedance: ..... 50 Ω
Connector: ..... BNC-socket

Precision reference oscillator (option):
Frequency / Type: ..... 10 MHz/OCXO
Temperature stability (+ 5 °C ... + 45 °C): ..... $\leq 3 \times 10^{-8}$
Ageing: ..... $\leq 2 \times 10^{-9}$/month

Synthesizer:
Frequency range: ..... 1 MHz ... 2999.999 998 MHz
Resolution (f < 1700 MHz): ..... 1 Hz
Accuracy: ..... same as reference
Frequency setting: ..... keyboard, rotary control
Remote control: ..... BCD-parallel
Switching time to new frequency: ..... approx. 200 µs
Mode selectable with DIL-switch to: ..... positive logic
negative logic
transparent
stored
IEEE-488.2(option): ..... set SCPI
Functions: SH1, AH1, T6, TE0, L4, LE0,
SR1, RL1, PP0, DC1,DT0, C0, E2

Phase offset:
Range: ..... 0.0° ... 359.9°
Resolution: ..... 0.1°

Spectral purity:
Harmonics (P ≤ + 13 dBm): ..... ≤ - 30 dBc
Subharmonics (f ≥ 1700 MHz): ..... ≤ - 50 dBc
(f < 1700 MHz): ..... none
Discrete spurious (f < 1700 MHz): ..... ≤ - 70 dBc
(f ≥ 1700 MHz): ..... ≤ - 65 dBc
SSB phase noise (20 kHz Offset):
(f < 1700 MHz): ..... ≤ - 120 dBc/Hz
(f ≥ 1700 MHz): ..... ≤ - 114 dBc/Hz

Output:
Output level range: ..... 0 dBm ... + 13 dBm
Resolution: ..... 0.1 dB
Frequency response (at + 10 dBm): ..... ≤ ± 1 dB
Settable in: ..... mV, V, dBm, dBµV
Source impedance: ..... 50 Ω
Connector: ..... N-socket

General:
LCD graphic display: ..... 240 x 64 dots
Backlighting: ..... LED's, with 4 brightness settings
Internal memory: ..... 100 complete instrument settings
Power supply: ..... 115 V/125 V, 230 V/250 V ± 10%
47 Hz ... 63 Hz; xx VA (Stand-by x VA)
Electrical safety: ..... EN 61010
Operating temperature: ..... 0 °C ... + 55 °C
EMC: ..... CE-mark
Dimensions (W x H x D): ..... 447 mm x 88 mm x 450 mm
Weight: ..... approx. xx kg

Supplied Accessories:
1 ea ..... Power cord
1 ea ..... Operating Manual
1 set ..... Spare fuses

Ordering inormation:
Frequency Synthesizer SG 3000 ..... BN 86310.000
Options:
IEEE-488-Bus ..... BN 86308.101
IRIG-B Inteface.....BN
LAN Interface.....BN
IQ-Modulation.....BN
RS 232
OCXO-reference ..... BN 86308.102
19"-adapter ..... BN 86302.101