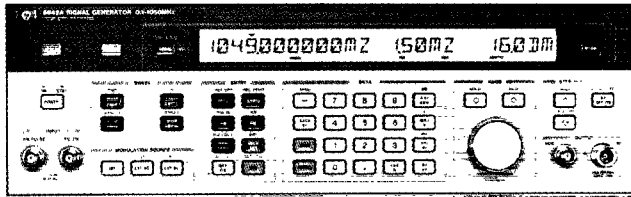
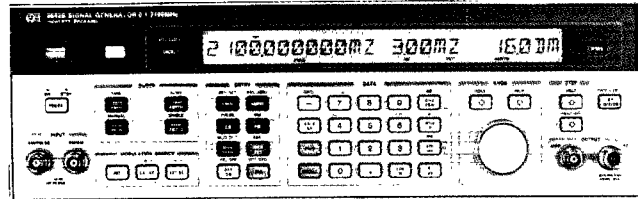


- 100 kHz to 2.115 GHz
- < -134 dBc/Hz SSB phase noise at 20 kHz offset
- -100 dBc nonharmonic spurious

- +20 dBm maximum output level
- AM, FM, Φ M and pulse modulation
- On-site repair and calibration



HP 8642A



HP 8642B



HP 8642A/B Synthesized Signal Generators

The HP 8642A and 8642B synthesized signal generators are high-performance, programmable signal generators intended for demanding out-of-channel RF receiver measurements and other stringent RF applications. The HP 8642A covers the frequency range from 100 kHz to 1057.5 MHz; the HP 8642B, to 2115 MHz.

Low SSB Phase Noise

The HP 8642A/B provide state-of-the-art in SSB phase noise at 20 kHz offsets of -134 dBc/Hz at 1 GHz.

-100 dBc Spurious

Nonharmonic spurious are held to below -100 dBc up to 1 GHz on the HP 8642A/B and to below -94 dBc above 1 GHz. These two generators allow receiver spurious rejection tests to be fully automated with the utmost confidence in test results.

Repeatability and Level Accuracy

In addition to a high-reliability attenuator, absolute output level accuracy is ± 1 dB down to -127 dBm (0.1 μ V). In research and development or on the production line, the HP 8642A/B will accurately measure receiver sensitivities.

Up to +20 dBm Output Level

Up to +20 dBm is available from the HP 8642A/B to perform a variety of high-level measurements, often eliminating the need for external amplifiers. This extra power can be used to overcome cabling losses. With the relative amplitude feature, the display can be offset to show correct output level at the end of the cable.

AM, FM, Φ M, and Pulse Modulation

The HP 8642A/B offer AM, FM, Φ M, and pulse modulation across their full frequency ranges.

A low distortion internal modulation oscillator can be used to modulate the HP 8642A/B up to 100 kHz rates. The internal audio oscillator can also be used as a standalone audio source with variable rates and levels.

HP 8642A/B Specifications

Frequency

Range: 100 kHz to 1057.5 MHz, HP 8642A; 100 kHz to 2115 MHz, HP 8642B

Bands: Both generators cover their ranges in one continuous span. However, many other specifications are dependent on carrier frequency. To simplify such specifications, the HP 8642A and 8642B carrier frequency ranges are divided into bands as shown in the following table.

| Band | Carrier frequency (MHz) | Band | Carrier frequency (MHz) |
|------|--------------------------------|------|-------------------------|
| 10 | 1057.500001 to 2115 (HP 8642B) | 4 | 16.523438 to 33.046875 |
| 9 | 528.750001 to 1057.5 | 3 | 8.261719 to 16.523437 |
| 8 | 264.375001 to 528.75 | 2 | 4.130860 to 8.261718 |
| 7 | 132.187501 to 264.375 | 1 | 0.1 to 4.130859 |
| 6 | 66.093751 to 132.1875 | HET | 0.1 to 132.1875 |
| 5 | 33.046876 to 66.09375 | | |

Resolution: 1 Hz, 0.1 Hz with special function

Stability: Same as reference oscillator

Internal Reference Oscillator

Standard: Aging rate: ± 2 ppm/year

Option 001: <10 %/day aging rate after 8 days warmup

Spectral Purity

Residual FM (in CW, AM or Angle Modulation <1/2 max. dev.):

500 MHz: <1.2 Hz (0.3 to 3 kHz BW), <2 Hz (0.05 to 15 kHz BW)

1000 MHz: <2 Hz (0.3 to 3 kHz BW), <5 Hz (0.05 to 15 kHz BW)

2000 MHz: <5 Hz (0.3 to 3 kHz BW), <9 Hz (0.05 to 15 kHz BW)

SSB Phase Noise at 20 kHz Offset (CW, AM or FM/ Φ M <1/2 maximum deviation):

125 MHz: -144 dBc/Hz

250 MHz: -141 dBc/Hz

500 MHz: -137 dBc/Hz

1000 MHz: -134 dBc/Hz

2000 MHz: -125 dBc/Hz

Residual AM: <0.01% AM rms, 0.3 to 3 kHz BW

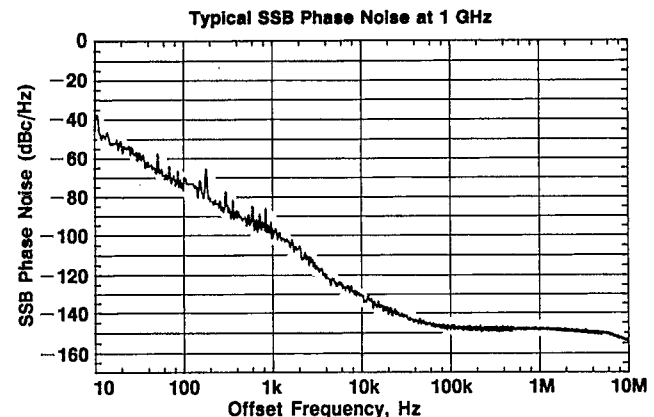
Spurious

Harmonics: -30 dBc at $\leq +10$ dBm (-25 dBc $f_c > 1057.5$ MHz)

Subharmonics: None, $f_c \leq 1057.5$ MHz (-45 dBc, $f_c > 1057.5$ MHz)

Nonharmonics (>10 kHz offsets): -100 dBc,

(-94 dBc $f_c > 1057.5$ MHz)



Output

Level Range: From maximum available to -140 dBm (0.023 μ V)

Maximum Level Available:

| | HP 8642A | HP 8642B |
|------------------|----------------|----------------|
| +20 dBm (2.24 V) | bands 1 thru 7 | bands 1 thru 7 |
| +19 dBm (2.00 V) | n/a | band 8 |
| +18 dBm (1.78 V) | bands 8 & HET | HET |
| +17 dBm (1.58 V) | n/a | band 9 |
| +16 dBm (1.41 V) | band 9 | band 10 |