



Hewlett-Packard offers the widest selection of high-performance signal sources from dc to 110 GHz. They cover every application range from low-frequency navigation

signals, through cellular mobile radio, to millimeterwave satellite systems. Each offers synthesized frequency accuracy and stability as well as calibrated level and remote pro-

grammability. Modulation capabilities range from general purpose AM, FM, Φ M, pulse, and I-Q modulation to more specific formats such as QPSK, 16-QAM, 64-QAM, 0.3 GMSK, and $\pi/4$ DQPSK.

Signal Sources Economy RF

Frequency	Model	Characteristics	Page
0.25 to 1000 MHz	HP 8647A	HP's lowest cost synthesized source with electronic attenuator. ± 1.5 dB level accuracy. Remote sequencing capability. 10 Hz frequency resolution. -110 dBc/Hz @ 20 kHz SSB phase noise.	400
0.1 to 990 MHz	HP 8656B	Economically priced signal generator. ± 1.0 dB absolute level accuracy from $+13$ to -127 dBm in 0.1 dB steps. Calibrated AM and FM. Frequency resolution of 10 Hz. Timebase aging rate of ± 2 ppm/year.	401
0.1 to 1040 MHz	HP 8657A	Spectral purity and electronic attenuator at an affordable price. < -130 dBc/Hz @ 500 MHz SSB phase noise. < -60 dBc spurious. Electronic attenuator. ± 1 dB level accuracy. AM and FM.	401
0.1 to 2060 MHz	HP 8657B	Spectral purity and pulse to 2 GHz at an affordable price. < -130 dBc/Hz @ 500 MHz SSB phase noise. < -60 dBc spurious. ± 1 dB level accuracy. AM, FM, and pulse with > 90 dB on/off at 1030 MHz.	401

Digital/I-Q Modulation

Frequency	Model	Characteristics	Page
0.1 to 1040 MHz GSM bands	HP 8657A Opt 022	0.3 GMSK for GSM radio testing. Analog performance of the HP 8657A plus 0.3 GMSK from 10 to 130 MHz and 520 to 1040 MHz. $< 3^\circ$ rms phase error.	401
0.1 to 2060 MHz GSM and PCN bands	HP 8657B Opt 022	0.3 GMSK for GSM and PCN radio testing. Analog performance of the HP 8657B plus 0.3 GMSK from 10 to 130 MHz and 520 to 2060 MHz. $< 3.5^\circ$ rms phase error. Baseband I/Q outputs.	401
0.1 to 1030 MHz NADC and JDC bands	HP 8657D	Analog and digital modulation for North American and Japanese digital cellular. Analog performance of the HP 8657B to 1030 MHz. $\pi/4$ DQPSK from 10 to 129.9 MHz, 810 to 965 MHz, and 1420 to 1540 MHz. $< 4\%$ error vector magnitude, baseband I/Q outputs.	405
0.1 to 1030 MHz JDCT band	HP 8657J	$\pi/4$ DQPSK for Japanese digital cordless telephone testing. Analog performance of the HP 8657B to 1030 MHz. $\pi/4$ DQPSK from 1800 to 2000 MHz. $< 3.5\%$ error vector magnitude, baseband I/Q outputs.	405
0.01 to 3 GHz	HP 8780A	Precision wideband analog and digital modulation source for digital microwave communications and radar. Synthesized signal generator for wideband and complex modulation formats. Digital formats from BPSK to 64 QAM. Vector (quadrature) bandwidths dc to 350 MHz. $+10$ to -100 dBm.	406
1 to 250 MHz	HP 8782B	Precision wideband analog and digital modulation source. Synthesized signal generator for digital modulations BPSK through 256 QAM. DC to 100 MHz symbol rates. $+7$ to -100 dBm. Analog I/Q inputs.	407

High-Performance RF

Frequency	Model	Characteristics	Page
0.252 to 1030 MHz 0.252 to 2060 MHz	HP 8643A, HP 8644B	Performance signal generator for RF design. < -130 dBc/Hz @ 1 GHz SSB phase noise HP 8643A; < -137 dBc/Hz HP 8644B. < -100 dBc spurious. AM, FM, pulse modulation. Advanced modulation source. Lowest specified leakage. Avionics option available (Opt 009).	408
0.1 to 1057.5 MHz 0.1 to 2115 MHz	HP 8642A HP 8642B	Broadband spectral purity and FM for phase noise testing. High spectral purity. 1 Hz frequency resolution. ± 1 dB absolute output level accuracy. AM, FM, Φ M, and pulse. Sweep. Two-hour on site repair.	411
0.01 to 1280 MHz	HP 8662A	Low close-in noise. 0.1 Hz frequency resolution, 5×10^{-10} /day stability. Calibrated and leveled output from $+13$ to -140 dBm. Digital sweep. Completely HP-IB programmable. AM/FM modulation. Fast switching.	413
0.1 to 2560 MHz	HP 8663A	Low close-in noise with complex modulation. 0.1 Hz frequency resolution, 5×10^{-10} /day stability. Calibrated and leveled output from $+16$ to -130 dBm. Digital sweep. Completely HP-IB programmable. AM, FM, Φ M, pulse modulation. Fast switching.	413
0.1 to 3.0 GHz 0.1 to 4.2 GHz 0.1 to 6.0 GHz	HP 8664A HP 8665A HP 8665B	Performance signal generators for 3.0 GHz, 4.2 GHz and 6 GHz testing. Excellent spectral purity. AM and FM. High Performance pulse modulation. Advanced modulation source.	408