

SIGNAL SOURCES

High-Performance RF (cont'd)

HP 8643A, 8644B, 8664A, 8665A, 8665B

Specifications	HP 8643A	HP 8644B	HP 8664A HP 8665A/B
Frequency Range: Resolution: Stability: Switching speed (typ.):	0.252 to 1030 MHz 0.252 to 2060 MHz (Opt 002) 0.01 Hz 5 × 10 ⁻⁹ /day (Opt 001) < 90 ms; < 200 ms with FM on	0.252 to 1030 MHz 0.252 to 2060 MHz (Opt 002) 0.01 Hz 5 × 10 ⁻⁹ /day (Opt 001) < 350 ms	0.1 to 3000 MHz (HP 8664A) 0.1 to 4200 MHz (HP 8665A) 0.1 to 6000 MHz (HP 8665B) 0.01 Hz 5 × 10 ⁻⁹ /day (Opt. 001) < 100 ms
Spectral Purity SSB phase noise @ 1 GHz (20 kHz offset): Nonharmonics: (> 10 kHz offset) Harmonics: Subharmonics: Residual FM @ 1 GHz: 0.3 to 3 kHz post det. BW	-130 dBc/Hz -100 dBc, 0.252 to 1030 MHz < -94 dBc, 1030 to 2060 MHz < -25 dBc, output ≤ +8 dBm None, 0.252 to 515 MHz < -60 dBc, 515 to 1030 MHz < -40 dBc, 1030 to 2060 MHz < 2 Hz rms	-136 dBc/Hz < -105 dBc, 0.252 to 1030 MHz < -100 dBc, 1030 to 2060 MHz < -25 dBc, output ≤ +10 dBm None, 0.252 to 515 MHz < -60 dBc, 515 to 1030 MHz < -40 dBc, 1030 to 2060 MHz < 1 Hz rms	-117 dBc/Hz; -134 dBc/Hz (Opt 004) < -100 dBc, 187.5 to 2060 MHz < -90 dBc, 2060 to 6000' MHz, 0.1 to 187.5 MHz < -30 dBc, output ≤ +10 dBm < -75 dBc, 0.1 to 1500 MHz < -40 dBc, 1500 to 3000 MHz < -50 dBc, 3000 to 6000' MHz < 7.5 Hz rms; < 1.2 Hz rms (Opt 004)
Output Level Range: Resolution: Absolute accuracy: Reverse power protection:	+13 to -137 dBm 0.01 dB ±1 dB, output ≥ -127 dBm 50 W	+16 to -137 dBm, +13 dBm (Opt 002) 0.01 dB ±1 dB, output ≥ -127 dBm 50 W	+13 to -139.9 dBm +9 dBm (Opt 008) 0.01 dB ±1 dB, ≤ -119.9 dBm, 1 to 1000 MHz ±1.5 dB, output ≤ -119.9 dBm, 1000 to 3000 MHz ±2 dB, output ≤ -119.9 dBm, >3000' MHz, <1 MHz 25 W ² , 0.1 to 2060 MHz, 1 W, >2060' MHz
Amplitude Modulation Depth: (@ ≤ +7 dBm) Resolution: Bandwidth (3 dB) ≤ +7 dBm: Accuracy: 1 kHz rate Distortion: 30% depth, 1 kHz rate	0 to 100% 0.1% dc to > 100 kHz, > 128 MHz ± (7% of setting + 1%) up to 80% depth < 3%; < 4% (Opt 002)	0 to 100% 0.1% dc to > 100 kHz, > 128 MHz ± (7% of setting + 1%) up to 80% depth < 3%; < 4% (Opt 002)	0 to 100% 0.1% > 10 kHz for > 10 MHz ± (6% of setting + 1%) up to 90% depth < 4%
Frequency Modulation Maximum peak deviation: (Deviation halves per lower octave) Resolution: Bandwidth (3 dB): Carrier accuracy in FM: Indicator accuracy: Distortion:	2 MHz, 1030 to 2060 MHz; 1 MHz, 515 to 1030 MHz 2.5% of setting dc to 100 kHz ± 0.5% of setting < 5%, < 30 kHz rates; < 10%, < 100 kHz rates < 5%, 20 Hz to 100 kHz rates	20 MHz/200 kHz ² , > 1030 MHz; 10 MHz/100 kHz ² , > 515 MHz 2.5% of setting dc to 100 kHz ± 0.5% of setting < 5%, < 30 kHz rates; < 10%, < 100 kHz rates < 5%, 20 Hz to 100 kHz rates	20 MHz, 3000 to 6000' MHz; 10 MHz, 1500 to 3000 MHz 2.5% of setting dc to 800 kHz ± 0.8% of setting ± 9%, < 20 kHz rates < 1%, 20 Hz to 20 kHz rates
Pulse Modulation On/off ratio: Rise/fall time, 10 to 90%: Repetition rate: Internal width/delay:	> 35 dB; > 80 dB, > 1030 MHz < 100 ns dc to 1 MHz N/A	> 35 dB; > 80 dB, > 1030 MHz < 100 ns dc to 1 MHz N/A	> 80 dB Opt 008 < 5 ns dc to 10 MHz Variable, 50 ns to 1 s
Internal Modulation Source Waveforms and rates: Frequency accuracy: Output level (into 600 Ω): Output resolution:	Sine; white Gaussian noise (0.1 Hz to 400 kHz); Triangle, sawtooth, square (0.1 Hz to 50 kHz) Same as timebase 1 V pk, 2 V pk for HP 8643A and 8644B 2 mV pk		
Frequency Sweep Digital sweep: Markers/Z-axis output: Phase continuous sweep:	Digitally stepped sweep over entire frequency range. Linear/log selection. 0.5 to 1000 s sweeps. 3 markers available/Z-axis output nominally +5 V/X-axis output nominally 0 to 10 V, 40 MHz of span available at maximum carrier frequency. 20 ms to 10 s sweep times.		
Remote Programming Interface: Control language: IEEE-488 functions:	HP-IB (IEEE 488.2-1987) Hewlett-Packard Systems Language (HP-SL). All functions controlled except power. SH1, AH1, T6, TEO, L4, LEO, SR1, RL1, PPO, DC1, DTO, CO, E2		
General Power requirements: Operation temperature: Leakage: Calibration interval: Weight: Size:	± 10% of 100 V, 120 V, 220 V, or 240 V; 48 to 440 Hz; 500 VA (except HP 8643A/44B: 400 VA) 0° to 55° C Conducted and radiated interference meets MIL STD 461B REO2 and FTZ 1046. Recommended 3 years (MTBC) HP 8643A: 23 kg (50 lb). HP 8644B: 30 kg (67 lb). HP 8664A/65A/B: 35 kg (78 lb) 177 mm H × 426 mm W × 624 mm D (7 in × 16.8 in × 24.6 in). Opt 010 adds 35 mm (1.4 in) to D.		

¹ 3000 MHz for HP 8664A, 4200 MHz for HP 8665A, 6000 MHz for HP 8665B

² N/A to HP 8665B

³ Low-noise mode

Ordering Information

	HP 8643A	HP 8644B	HP 8664A	HP 8665A	HP 8665B
Options 001 High-Stability Timebase 002 2 GHz Doubled Output 004 Low-noise Option 005 Electronic Attenuator (N/A with Opt 002) 008 Pulse Modulation 009 Specified VOR/ILS 011 2 GHz Internal Frequency Counter Service Kit 003 Rear-Panel Input/Output 010 Reduced-Leakage Configuration W30 Add 3 Years to Return Warranty 907 Front-Handle Kit (5062-3990) 908 Rack Flange Kit (5062-3978)	(08645-61116)	(08645-61116)	(08665-61116)	(08665-61116)	(08665-61116)

*See Specifications