

- Stable, easy to use, 800-2400MHz, 1800-4500MHz



8614A

8614A, 8616A Signal Generators

The HP 8614A and 8616A Signal Generators provide stable, accurate signals from 800 to 2400 MHz (8614A) and from 1800 to 4500 MHz (8616A). Both frequency and attenuation are set on direct-reading digital dials, while selectable functions include CW, leveled output, square-wave modulation, and external AM, FM and pulse modulation. Modulation can be accomplished simultaneously with or without leveling.

Two RF power outputs are simultaneously available from separate front-panel connectors. One provides at least 10 mW (2 mW above 3000 MHz) or a leveled output from 0 to -127 dBm. The other is at least 0.5 mW across the band. This signal can be used for phase-locking the signal generators for extreme stability, or it can be monitored with a frequency counter for extreme frequency resolution without adversely affecting the primary output.

A unique PIN diode modulator permits amplitude modulation from dc to 1 MHz or RF pulses with a 2 μ s rise time. This broad modulation bandwidth permits remote control of output level or precise leveling using external equipment. The internal leveling is also obtained by using a PIN modulator.

The 8614A and 8616A can also be used with companion modulators, HP 8403A modulators and HP 8730-series PIN modulators to provide 80 dB pulse on/off ratio (see page 395). In addition, TWT amplifiers can be used with these generators to provide high power levels.

Specifications

8614A

Frequency range: direct reading within 2 MHz, 800 to 2400 MHz.
Vernier: ΔF control has a minimum range of 1.0 MHz for fine tuning.

Frequency calibration accuracy (0 dBm & below): ± 5 MHz.

Frequency stability: approximately 50 ppm/ $^{\circ}$ C change in ambient temperature, less than 2500 Hz peak residual FM; 30 ppm change for line voltage variation of $\pm 10\%$.

RF output power: +10 dBm (0.707 V) into 50 Ω load. Output attenuation dial directly calibrated in dBm from 0 to -127 dBm. A second uncalibrated output (approximately -3 dBm) is provided on front panel.

RF output power accuracy (with respect to attenuation dial): ± 0.75 dB + attenuator accuracy (0 to -127 dBm) including leveled output variations.

Attenuator accuracy: +0, -3 dB from 0 to -15 dBm; ± 0.2 dB ± 0.06 dB/10 dB from -15 to -127 dBm; direct reading dial, 0.2 dB increments.

Output impedance: 50 Ω ; SWR <2.0.

Modulation: on-off ratio at least 20 dB for square wave, pulse.

Internal square wave: 950 to 1050 Hz. Square wave can be synchronized with a +1 to +10 V signal at PULSE input.

External pulse: 50 Hz to 50 kHz; 2 μ s rise time, +20 to +100 V peak input.

External AM: DC to 1 MHz.

External FM: a) front panel connector capacity-coupled to repeller of klystron; b) four-terminal rear panel connector (Cinch-Jones type S304AB) is dc-coupled to repeller of klystron.

Power source: 115 or 230 V $\pm 10\%$, 50 to 60 Hz, approximately 130 W.

Size: 141 H x 425 W x 467 mm D (5.5" x 16.75" x 18.4"); rack mount 133 H x 416 W x 483 mm D (5.2" x 16.4" x 19").

Weight: net, 19.5 kg (43 lb). Shipping, 22.7 kg (50 lb).

Option 001: external modulation input connectors on rear panel in parallel with front-panel connectors; RF connectors on rear panel only.

8616A

Frequency range: direct reading within 2MHz, 1800 to 4500 MHz.

Vernier: ΔF control has a minimum range of 1.0 MHz for fine tuning.

Frequency calibration accuracy (0 dBm & below): ± 10 MHz.

Frequency stability: approximately 50 ppm/ $^{\circ}$ C change in ambient temperature, less than 2500 Hz peak residual FM; 30 ppm change for line voltage variation of $\pm 10\%$.

RF output power: +10 dBm (0.707 V) to -127 dBm into 50 Ω load, 1800 to 3000 MHz; +3 dBm to -127 dBm from 3000 to 4500 MHz into a 50 Ω load. Output attenuation dial directly calibrated in dBm from 0 to -127 dBm. A second uncalibrated output (approximately -3 dBm) is provided on the front panel.

RF output power accuracy (with respect to attenuation dial): ± 1.0 dB + attenuator accuracy (0 to -127 dBm).

Attenuator accuracy: +1, -2 dB from 0 to -10 dBm, (± 0.2 dB ± 0.06 dB/10 dB) from -10 to -127 dBm.

Output impedance: 50 Ω ; SWR < 2.0.

Modulation: on-off ratio at least 20 dB for square wave, pulse.

Internal square wave: 950 to 1050 Hz. Other frequencies available on special order.

External pulse: 50 Hz to 50 kHz; 2 μ s rise time, +20 to +100 V peak input.

External AM: DC to 1 MHz.

External FM: a) front panel connector capacity-coupled to repeller of klystron; b) four-terminal rear panel connector (Cinch-Jones type S304AB) is dc-coupled to repeller of klystron.

Dimensions: 141 mm H x 425 mm W x 467 mm D (5.5" x 16.75" x 18.4"); rack mount 133 mm H x 416 mm W x 483 mm D (5.2" x 16.4" x 19").

Weight: net, 19.5 kg (43 lb). Shipping, 22.7 kg (50 lb).

Ordering Information

8614A: Signal Generator (800-2400 MHz)

Price

\$4950

8616A: Signal Generator (1800-4500 MHz)

\$4950

8614A and 8616A Options

Option 001: External modulation input connectors on rear panel in parallel with front-panel connectors; RF connectors on rear panel only.

add \$25

Option 908: Rack Flange Kit

add \$10