

VHF SIGNAL GENERATORS

Versatility and value, 10-480 MHz
Models 608E, 608F



SIGNAL GENERATORS

Models 608E and 608F provide high-quality, versatile performance with distinctive ease of operation. The 608E provides an adjustable, calibrated output of 0.1 μ V to 1 V rms from 10 to 480 MHz. The 608F is calibrated from 0.1 μ V to 0.5 V rms over the 10-455 MHz frequency range and can be phase-locked with the 8708A Synchronizer for greater stability. An auxiliary RF output is available with both models.

Specifications, 608E and 608F

Frequency characteristics

Range: 608E: 10-480 MHz; 608F: 10-455 MHz in 5 bands.

Accuracy: 608E: $\pm 0.5\%$; 608F: $\pm 1\%$.

Drift: 608E/F: less than $50 \times 10^{-6}/10$ min after one hr warmup.

608F: stability when used with 8708A Synchronizer: $5 \times 10^{-5}/\text{min}$; $2 \times 10^{-7}/10$ min; $2 \times 10^{-6}/\text{day}$; $2 \times 10^{-7}/^{\circ}\text{C}$ (0° to 55°C); $2 \times 10^{-7}/10\%$ line voltage change.

Frequency control input (608F only): front panel input can be used with 8708A Synchronizer and external frequency control; limits 0 to -50 V, 4 K Ω nominal input impedance.

Resettability: better than $\pm 0.1\%$ after initial warmup; fine-frequency-adjust provides approx 25 kHz settability at 480 MHz (608E).

Crystal calibrator: provides frequency check points every 1 MHz up to 270 MHz or every 5 MHz over total range; jack provided for audio frequency output; crystal frequency accuracy better than 0.01% at room temperatures.

Residual FM: less than ± 5 parts in 10^7 peak.

Harmonic output: at least 35 dB below the carrier for harmonic frequencies below 500 MHz.

Output characteristics

Output level: continuously adjustable from 0.1 μ V to 1.0 V (608E) and 0.1 μ V to 0.5 V (608F) into a 50-ohm resistive load; output calibrated in volts and dBm.

Accuracy: within ± 1 dB of attenuator dial reading at any frequency when RF output meter indicates "ATTENUATOR CALIBRATED."

Impedance: 50 Ω with a maximum SWR of 1.2 for attenuator setting below -7 dBm.

RFI: meets all conditions specified in MIL-I-6181D; permits receiver sensitivity measurements down to at least 0.1 μ V.

Auxiliary RF output: 608E: at least 180 mV rms into 50 Ω provided at front panel.

608F: front panel output for use with HP 8708A Synchronizer or other external equipment. Power levels into 50 Ω are: 10 to 215 MHz, -1.8 to $+7$ dBm; 215 to 400 MHz, $+2.0$ to $+7$ dBm; 400 to 430 MHz $+1.0$ to $+7$ dBm.

Modulation characteristics

Internal AM

Frequency: 400 and 1000 Hz, $\pm 10\%$.

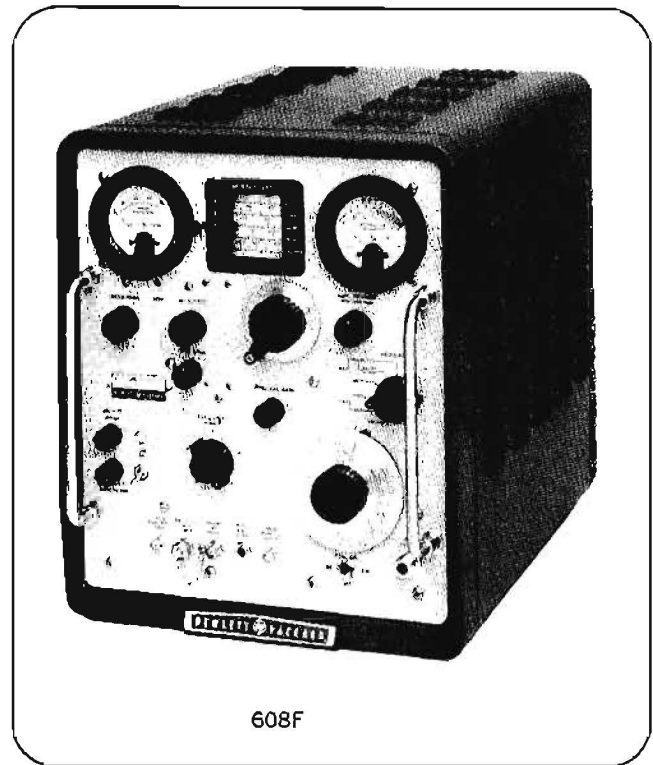
Modulation level: 0 to 95% modulation at carrier levels 0.5 V and below (608E) and .244 V (1 mW) or below (608F).

Carrier envelope distortion: less than 2% at 30% AM, less than 5% at 70% AM.

External AM

Frequency: 20 Hz to 20 kHz.

Modulation level: 0 to 95% modulation at carrier levels of 0.5 V and below (608E) and at .244 V (1 mW) or below (608F); continuously adjustable with front panel MOD LEVEL control; input required, 1-10 V rms (1000 Ω input impedance).



608F

Carrier envelope distortion: less than 2% at 30% AM, less than 5% at 70% AM, (modulation source distortion less than 0.5%).

Modulation meter accuracy: $\pm 5\%$ of full scale 0 to 80%, $\pm 10\%$ from 80% to 95% (for INT AM or 20 Hz to 20 kHz EXT AM).

Incidental FM (at 400 and 1000 Hz modulation): less than 1000 Hz peak at 50% AM for frequencies above 100 MHz; below 100 MHz, less than 0.001% at 30% AM.

External pulse modulation

Rise and decay time: from 40 MHz to 220 MHz, combined rise and decay time less than 4 μ s; above 220 MHz combined rise and decay time less than 2.5 μ s.

On-off ratio: at least 20 dB for pulsed carrier levels of 0.5 V and above.

Input required: positive pulse, 10-50 V peak, input impedance 2000 Ω .

General

Power: 115 or 230 V $\pm 10\%$, 50 to 400 Hz: approx 220 W.

Dimensions: cabinet: $13\frac{1}{4}$ " wide, $16\frac{3}{8}$ " high, 21" deep (337 x 416 x 533 mm); rack mount: 19" wide, $13\frac{31}{32}$ " high, $18\frac{3}{8}$ " deep behind panel (483 x 335 x 467 mm).

Weight: cabinet mount: net, 62 lbs (28 kg); shipping, 74 lbs (33.4 kg); rack mount: net, 62 lbs (28 kg); shipping, 83 lbs (37.4 kg).

Accessories available: (see page 556).

11508A Output Cable for high impedance circuits.

11509A Fuse Holder: protection for transceiver tests.

10514A Mixer for use as nanosecond pulse modulator.

Price: Model 608E (cabinet), \$1930; Model 608ER (rack mount), \$1975; Model 608F (cabinet), \$2090; Model 608FR (rack mount), \$2130.