

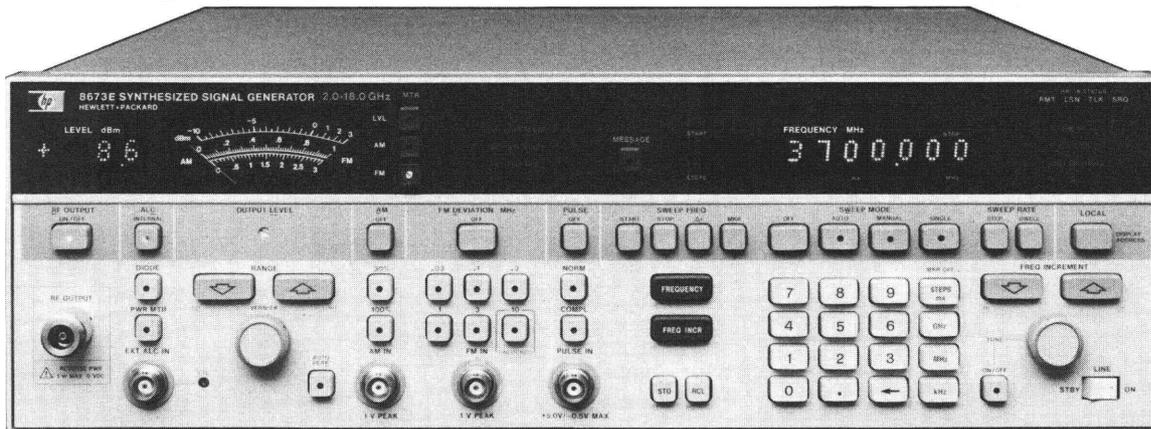
# SIGNAL GENERATORS

Synthesized Signal Generators

Model 8673E

391

- 2 to 18 GHz
- +8 to -120 dBm **calibrated output**
- 0.1 dB resolution, **digitally displayed**
- AM/FM/Pulse Modulation
- Low spurious and phase noise
- **1 to 3 kHz frequency resolution**



HP 8673E



## HP 8673E Synthesized Signal Generator

The HP 8673E is a synthesized signal generator that delivers value-oriented performance in precise microwave signal simulation. It is optimized for applications requiring high performance signal generation in the 2.0 to 18.0 GHz frequency range while also providing 128 dB dynamic output range. The HP 8673E includes the necessary modulation features required in a full performance microwave synthesizer.

### Exceptional Output Performance

The HP 8673E provides frequency coverage from 2.0 to 18.0 GHz with resolution of 1, 2, or 3 kHz depending upon the frequency band. Optimized for output level flexibility, power is internally (or externally) leveled and calibrated from -120 dBm to +8 dBm. Adding to your measurement convenience, the output level is displayed on the front panel with 0.1 dB resolution with a digital display.

### Flexible Modulation

As a full performance synthesized signal generator, the HP 8673E includes amplitude, frequency, and pulse modulation capability. AM depth up to 75% at rates up to 10 kHz is ideal for most applications. The HP 8673E features two types of FM: locked and unlocked operation. In the locked mode, operation is like other synthesizers providing up to 3 MHz deviation that is dependent upon modulation index. The unlocked mode allows up to 10 MHz deviation at rates as low as 50 Hz. Internally leveled pulse modulation over the entire 2 to 18 GHz range with ON/OFF ratios >70 dB is available with any externally supplied TTL-level input signals. Output pulses will have rise/fall times typically less than 50 ns.

### Many More Features

The HP 8673E includes many more features including excellent spectral purity and a YIG-tuned oscillator phase-locked to a 10 MHz quartz crystal reference. Full HP-IB and digital sweep capability identical to the HP 8673B/C/D is also included.

## HP 8673E Specifications

### Frequency Characteristics

**Range:** 2.0 - 18.0 GHz (1.95 - 18.6 GHz overrange)  
**Resolution:** 1 kHz, 2.0 - 6.6 GHz  
 2kHz, 6.6 - 12.3 GHz  
 3kHz, 12.3-18.0 GHz

### Spectral Purity

**Single-sideband phase noise (1Hz BW, 1kHz offset, CW mode):** <-60dBc  
**Harmonics:** <-40dBc at +3dBm  
**Subharmonics and multiples thereof:** -35dBc at +3dBm

### Output Characteristics

**Output level (+15°C to +35°C):** +8 to -120 dBm  
**Resolution:** 0.1 dB, digital display

### Pulse Modulation

**ON/OFF ratio:** >70 dB  
**Rise/fall times:** <50 ns, typical  
**Pulse repetition frequency:** 50 Hz to 1MHz  
**Minimum duty cycle:** <0.0001 for leveled performance

### Amplitude Modulation

**Depth:** 0 to 75%, at 0dBm maximum carrier level, 15°C to 35°C  
**Rate (30% depth):** 10 Hz - 50kHz, ±3dB  
**Sensitivity:** 30%/V and 100%/V ranges

### Frequency Modulation

Deviation Range	Rate (±3 dB BW)	Maximum Peak Deviation
30 kHz/V	100 Hz - 2 MHz	the smaller of 3 MHz or: $f_{mod} \times 5, 2.0 - 6.6 \text{ GHz}$ $f_{mod} \times 10, 6.6 - 12.3 \text{ GHz}$ $f_{mod} \times 15, 12.3 - 18.0 \text{ GHz}$
100 kHz/V	100 Hz - 2 MHz	
300 kHz/V	3 kHz - 2 MHz	
1 MHz/V	3 kHz - 2 MHz	
3 MHz/V	3 kHz - 2 MHz	
10 MHz/V (unlocked)	50 Hz - 2 MHz, (typical)	10 MHz

### Digital Sweep Characteristics

Identical to HP 8673B/C/D

### Remote Programming

All functions HP-IB programmable except line switch.

**Interface functions:** SH1, AH1, T5, TE0, L3, LE0, SR1, RL1, PP1, DC1, DT1, CO, EI

### General

**Operating temperature range:** 0°C to +55°C  
**Power:** 100, 120, 220, 240V, +5%, -10%; 48-66Hz; 400 VA max  
**Weight:** 29kg (64 lb.) net  
**Size:** 620mm D x 425mm W x 146mm H (24.4" x 16.8" x 5.7")

### Ordering Information

Ordering Information	Price
HP 8673E Synthesized Signal Generator	\$37,500
<b>Option 907:</b> Front panel handle kit	+\$55
<b>Option 908:</b> Rack mounting flange kit	+\$33
<b>Option 909:</b> Front panel handle with rack mounting flange kit	+\$80
<b>Option 910:</b> Extra operating and service manual	+\$70
<b>Option W30:</b> Two additional years of return to HP warranty	+\$915