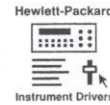
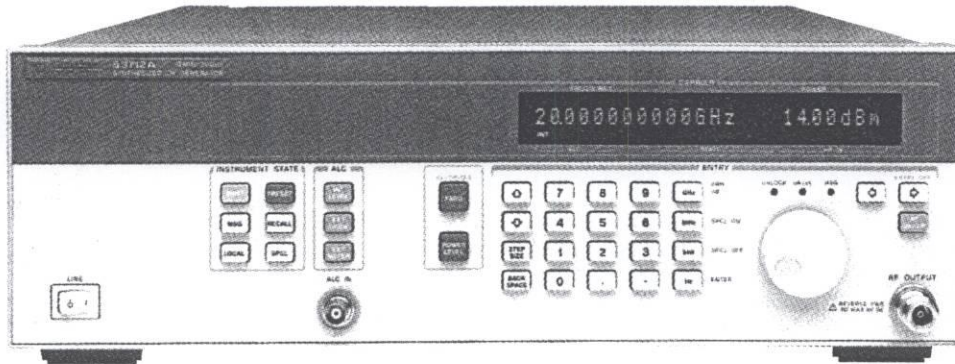


SIGNAL GENERATORS

CW Microwave

HP 83711A, 83712A



HP 83711A Synthesized CW Generator and HP 83712A Synthesized CW Generator

The HP 83711/12A synthesized CW generators are ideal for local oscillator and exciter applications. High output power and exceptional signal purity are combined with broad frequency coverage in these low-cost, performance-packed synthesizers. Light weight and excellent reliability make these units well suited for all applications including field maintenance.

Clean Signals with Plenty of Power

Choose the HP 83711A, 1 to 20 GHz, or the HP 83712A, 10 MHz to 20 GHz, for your applications that demand wide output dynamic range and stringent spectral purity. Fundamental oscillators and switched low-pass filters deliver <-55 dBc harmonics, eliminate subharmonics, and suppress spurious to <-60 dBc. The HP 83711/12A provide plenty of output power (typically $> +14$ dBm), while spectral purity is maintained even at high power levels (typical output power at frequencies below 1 GHz is $+20$ dBm). The HP 83711/12A deliver >100 dB dynamic range. Level resolution is 0.01 dB with typical accuracy of ± 1.0 dB at any frequency or power level. User Level Correction simplifies generating accurate, leveled power at distant test ports.

Versatile and Reliable

The HP 83711/12A are the recommended local oscillators for the HP 8970B noise figure meter. Low broadband noise minimizes errors in measurements of low gain devices. Use the HP 83711/12A with the HP 83550 Series millimeter wave modules to generate signals to 110 GHz.

All front panel functions are completely HP-IB programmable and SCPI compatible.

The HP 83711/12A are designed to remain within factory specifications for the entire life of the instrument. The recommended two-year performance verification cycle minimizes downtime and cost of ownership. If a unit ever drifts, automated adjustment routines can be run to return the unit to factory performance in <6 hours. Extensive use of surface mount technology and a minimum number of adjustments combine to deliver an estimated MTBF of $>20,000$ hours. Built-in functional verification routines speed servicing.

HP 83711/12A Specifications

(For complete specifications see HP 83711/12A technical data sheet, HP p/n 5091-5152E)

Frequency Characteristics

Frequency range: HP 83711A 1 to 20 GHz
 HP 83712A 0.01 to 20 GHz
Frequency resolution: 1 kHz standard, 1 Hz with Opt 1E8

Output Characteristics

Output power (with Opt 1E1):
 0.01 to 1 GHz $+13$ dBm
 1 to 18 GHz $+10$ dBm
 18 to 20 GHz $+8$ dBm

For typical output power plot, see page 415.

Resolution: 0.01 dB

Accuracy: ± 2 dB at any frequency, power level, or temperature

Flatness: ± 0.5 dB

Spectral Purity

Harmonics: <-50 dBc

Sub-harmonics: None

Spurious: -60 dBc

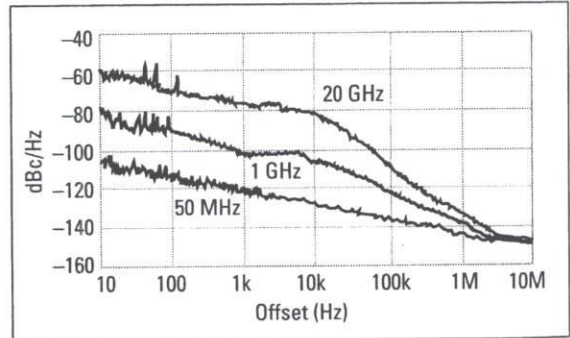
Phase noise (@ 10 kHz offset):

500 MHz -103 dBc/Hz

2 GHz -91 dBc/Hz

18 GHz -73 dBc/Hz

(Phase noise decreases 6 dB/octave below 500 MHz and reaches a floor of -140 dBc/Hz)



Typical single-sideband phase noise at 50 MHz, 1 GHz and 20 GHz, 25°C, CW mode. Offsets less than 100 Hz require the high stability timebase, Option 1E5.

General Specifications

Operating temperature range: 0° to +55°C

Size: 426 mm W x 133 mm H x 498 mm D (16.8 in x 5.2 in x 19.6 in)

Weight: <16 kg (35 lb)

Power: 90-132 V, 48-440 Hz, 198-264 V, 48-66 Hz, 400 VA maximum.

EMC: Meets or exceeds EN55011/CISPR 11/1990, Class A and Mil-Std-461C Part 2 RE02, CE03, CS02, RS03

Ordering Information

HP 83711A Synthesized CW Generator

HP 83712A Synthesized CW Generator

Opt 1E1 Add 90 dB Output Step Attenuator

Opt 1E5 Add High-Stability Timebase

Opt 1E8 1 Hz Frequency Resolution

Opt 0B2 Extra Operating Manual

Opt 0B3 Service Manuals

Opt 1CM Rack Mount Kit (HP p/n 5062-3977)

Opt 1CP Rack Mount and Handle Kit

(HP p/n 5062-3983)

Opt 1CR Rack Slide Kit (HP p/n 1494-0059)

Opt 1W30 Two Additional Years Return-to-HP

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