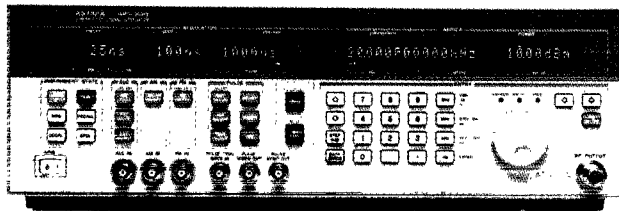
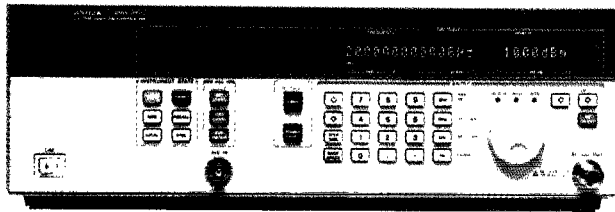


SIGNAL SOURCES

CW and High Performance Microwave

HP 83711A, 83712A, 83731A, 83732A



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.

HP 83711A/12A and HP 83731A/32A Signal Sources

The HP 83711A/12A synthesized CW generators and HP 83731A/32A synthesized signal generators set new standards for performance at prices that are surprisingly affordable. No longer will you have to give up frequency coverage, modulation, or reliability to meet your budget. These signal sources will perform beyond your expectations at a price within your reach.

Clean Signals with Plenty of Power

Choose the HP 83711A/83731A, 1 to 20 GHz, or the HP 83712A/83732A, 10 MHz to 20 GHz, for your receiver and system test applications. Fundamental oscillators and switched low-pass filters deliver < -55 dBc harmonics, eliminate subharmonics, and suppress spurious to < -60 dBc. These signal sources 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). These signal sources 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.

HP 83731A and HP 83732A Provide Unmatched Modulation Performance

Sophisticated modulation lets you simulate real-world signals. Test state-of-the-art radar and EW receivers with high-fidelity pulse modulation. <10 ns pulse rise/fall times, <25 ns pulse width, and >80 dB pulse on/off ratio give you the performance you need to verify modern receivers. A built-in multimode pulse generator adds the flexibility to generate triggered, doublet, and gated burst pulse modes.

In addition, logarithmic AM is a standard feature in the HP 83731A/32A. Use the >60 dB depth log AM and the fast pulse modulation simultaneously (scan modulation) for accurate simulation of antenna scanning patterns, or sweep power linearly and accurately to test power-sensitive devices.

The HP 83731A/32A offer unmatched performance for testing satellite communications and telemetry receivers. 10 MHz peak FM deviations, combined with the highest modulation index available (>300), simplify simulation of these difficult-to-generate signals. The HP 83731A/32A remain fully synthesized even at high modulation indices, eliminating the troublesome frequency drift of other signal sources.

Real-world signals often combine two or more modulations. The HP 83731A/32A let you use all three modulations simultaneously without any degradation in performance.

Versatile and Reliable

The HP 83711A/12A and HP 83731A/32A signal sources are the recommended local oscillators for the HP 8970B noise figure meter. Low broadband noise minimizes errors in measurements of low gain devices. Use these signal sources 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.

These signal sources 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 less than six hours. Extensive use of surface mount technology and a minimum number of adjustments combine to deliver an estimated MTBF of more than 20,000 hours. Built-in functional verification routines speed servicing.

Specifications

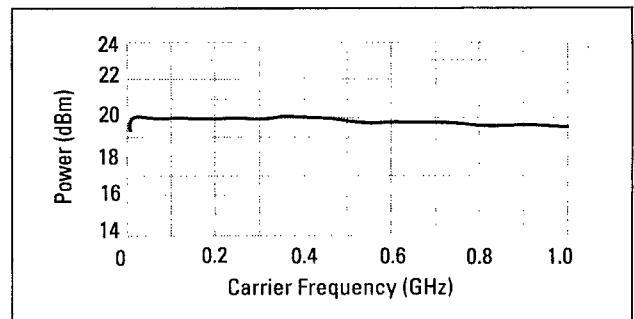
(For complete specifications see HP 83711A/12A technical data sheet, HP p/n 5091-5152E and HP 83731A/32A technical data sheet, HP p/n 5091-4318E).

Frequency Characteristics

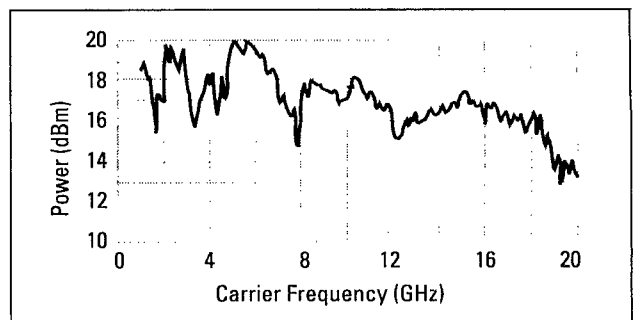
Frequency Range: HP 83711A, 1.0 to 20 GHz
 HP 83712A, 10 MHz to 20 GHz
 HP 83731A, 1.0 to 20 GHz
 HP 83732A, 10 MHz to 20 GHz
Frequency Resolution: 1 kHz, 1 Hz with Opt 1E8

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



Typical maximum available output power from 0.01 to 1 GHz at 25° C.



Typical maximum available output power from 1 to 20 GHz, at 25° C with output step attenuator (Option 1E1) installed.