

Test Equipment Solutions Datasheet

Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as spectrum analyzers, signal generators, oscilloscopes, power meters, logic analysers etc from all the major suppliers such as Agilent, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. As such, we fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 2 year warranty. Our staff have extensive backgrounds in T&M, totalling over 150 years of combined experience, which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, covering the cost of warranty returns BOTH ways (plus supplying a loan unit, if available) and supplying a free business tool with every order.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based near Heathrow Airport in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:

- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

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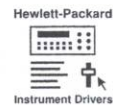
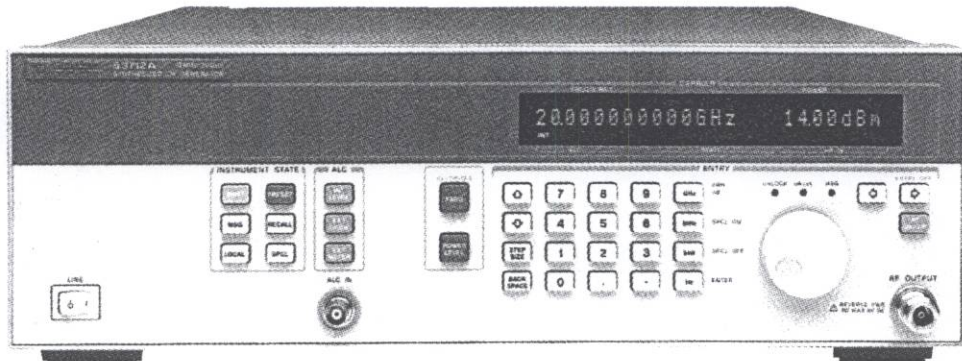
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SIGNAL GENERATORS

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

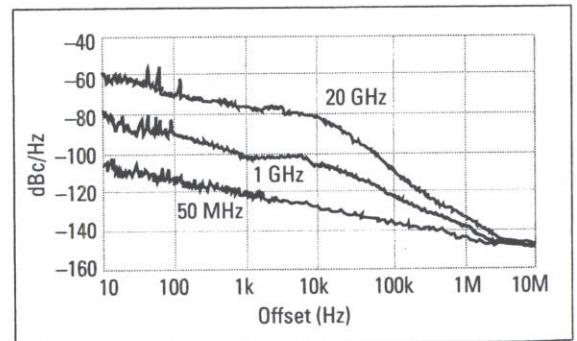
Phase noise (@ 10 kHz offset):

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, Opt 1E5.

General Specifications

Operating temperature range: 0° to +55°C

Size: 426 mm W \times 133 mm H \times 498 mm D (16.8 in \times 5.2 in \times 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 W30 Two Additional Years Return-to-HP Service