

SIGNAL ANALYZERS

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Single-Channel, Dynamic Signal Analyzer 0.000125 Hz to 100 kHz

HP 3561A

- Spectrum analysis, FFT synthesized 1/3 and 1 octave analysis
- Time average (20 s) command
- High speed (7.5 MHz real-time rate)

- High accuracy, ± 15 dB
- 80-dB dynamic range, to 840 μ Hz resolution bandwidth
- Non-volatile memory option stores 107 measurements

Solutions in Spectrum Analysis

The HP 3561A gives you the look for fast, efficient spectrum analysis. In addition to standard marker functions, such as marker-to-point and peak marking, it provides harmonic analysis with automatic computation of THD in either percent or dB. Band markers quickly compute rms band level or average band power. Saturated markers make it easy to identify the frequency spacing of nonlinearities and automatically compute the poles.

Solutions in Vibration and Acoustics

When used with an accelerometer or other motion transducer, the HP 3561A is an excellent diagnostic tool for vibration analysis. By using the display marker capabilities, you can quickly define the cause of many machine vibration problems. For acoustic measurements, the screen displays update quickly to indicate short-term changes in noise level. Calibrated sound pressure level measurements are also possible with the simple engineering unit feature.

Specifications

Frequency

Range: 0.000125 Hz to 100 kHz
Accuracy: $\pm 0.0075\%$ of display center frequency
Resolution: 0.20% of frequency span
Window: Flat top, Hanning, cosine, and exponential
Real-time bandwidth: (Typical) single display, 1 MHz. Full average display, 7.5 MHz

Amplitude

Measurement range: -27 to $+30$ dBV rms (20 V rms to 0.1 mV rms)
Dynamic range: 80 dB
Accuracy at the displayed center:
 $+0.02$ dB $\pm 0.025\%$ of input range: $+27$ to $+40$ dBV input range
 $+0.2$ dB $\pm 0.025\%$ of input range: -40 to -75 dBV input range

Input

Impedance: (X10) $Z = 1\Omega$ chosen by 0V of maximum resolution impedance may be automatically chosen ground or fixed up to 50-ohm rms (40-ohm peak) above ground
Coupling: Input may be ac or dc coupled. Low frequency 2-40 pHz to <1 Hz filter mode
DC current: Maximal 4 mA current source provided

Output

Source: Pseudo-random, random, or impulse

Display

Display: Magnitude, phase, time and math traces can be selected.

Units available are:

Vertical: Hz, seconds, RPM, volts, force, or log spacing
Vertical: dBV, dBm (reference 10, rms, rms squared), and user-defined units

Math: Arithmetic operations can be performed on one or multiple arbitrary spectra. Add, subtract, multiply, divide, integrate, differentiate and statistical functions are available. 128K 1-bit parallel Power Spectral Density (PSD) computations.

Internal Memory

Non-volatile	Volatile
Standard: 8 traces, 8 waves	40 trace records
Optional: traces \times waves \times 8	40 trace records
0 - 30 trace records \times 107	40 trace records

General

Weight: net, 12 kg (26 lb); shipping, 21.4 kg (47.1 lb)
Size: 307 mm H \times 470 mm W \times 200 mm D (12 in \times 18.5 in \times 7.9 in)

Ordering Information

HP 3561A Single-Channel Signal Analyzer	Price
HP 3561A Standard Non-volatile Memory	\$3,100
HP 3561A Standard Random Access, see page 67.	+ \$1,000



HP 3561A



Fronting High-Performance Signal Analysis

2000 Hz and measurement applications require the performance of a full instrument with comparable convenience, the HP 3561A is ready to go work for you. It provides 80 dB dynamic range with ± 0.2 dB amplitude accuracy, giving you the precision needed to handle small amplitudes in a digital.

The HP 3561A's set of measurement functions lets you approach problems from several different angles. Spectra can be displayed in a variety of formats and rates, including a three-dimensional 3D spectral plot. The way displays up to 80 secondary spectra and is extremely useful for analyzing transient and monitoring dynamic signals in both domains and mechanical systems.

In addition to spectrum measurements, the HP 3561A displays time waveforms, and you can observe a signal in both the time and frequency domains simultaneously. A 40 sample sine buffer captures waveforms for later use in measurements and analysis. Make accurate measurements with the FFT-synthesized 1/3 and 1 octave measurements, together with the built-in analog A-weighted filter.



Spectral maps greatly reduce the time required to analyze complex high dB measurement measurements.