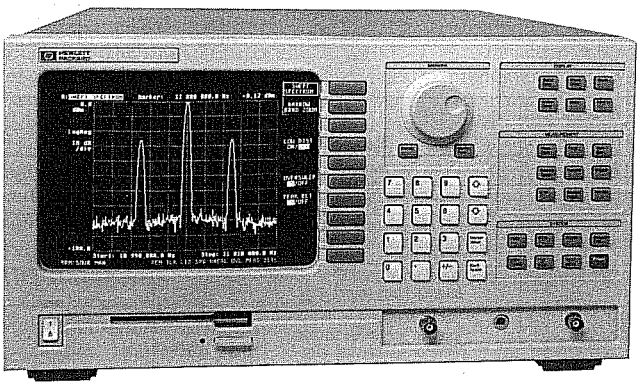
SIGNAL ANALYZERS

Spectrum Analyzer 10 Hz to 150 MHz

HP 3588A

- 1 Hz resolution
- ±0.4 dB typical level accuracy
- Very fast narrow band measurements
- Scalar network analysis with built-in tracking generator
- Built-in 3.5 inch flexible disk drive
- Internal instrument BASIC and controller option



HP 3588A

DESIGNED FOR HP-IB SYSTEMS

NEW

High Performance Signal Characterization

The HP 3588A spectrum analyzer provides high-performance spectrum analysis from 10 Hz to 150 MHz, with outstanding frequency and amplitude accuracy. A wide range of frequency spans and resolution bandwidths accommodates many types of measurements. A built-in tracking generator with programmable amplitude allows easy scalar network measurements for passive and active networks. The HP 3588A offers swept spectrum mode and narrowband zoom mode. Both modes provide excellent speed and greater resolution than conventional analyzers. Swept spectrum mode provides the performance and features of traditional swept-tuned analyzers but adds very sharp digital IF filters for improved frequency resolution (to 1.14 Hz). Narrowband zoom uses an implementation of the Fast Fourier Transform to provide faster measurements with even greater resolving power.

Built-in autocalibration allows amplitude accuracies better than ±0.4 dB (typical), including all absolute, temperature, and frequency response errors (200 kHz to 150 MHz). This amplitude accuracy, combined with the frequency stability and accuracy of a synthesized receiver, provides the high performance needed for the most demanding measurement situations. Maximum signal-to-noise dynamic range is 112 dB. Low-distortion mode measurements are optimized to provide 80 dB of distortion-free dynamic range.

Faster Narrowband Analysis

Narrow resolution measurements with conventional swept-tuned analyzers typically require long measurement times, which can drive up development time and test costs. In contrast, the HP 3588A sets new standards in speed with no loss of resolution.

Faster measurements are possible in swept spectrum mode because of the analyzer digital IF filters have nearly twice the selectivity of analog filters and offer faster measurements while still resolving low-level carrier sidebands. The predictability of digital filters also permits the analyzer to sweep faster, using a built-in correction algorithm. This provides measurement speed up to four times faster than conventional swept-tuned analyzers with no additional amplitude error or resolution loss.

Narrowband zoom provides the fastest spectrum measurements (more than fifty times faster than swept-tuned analyzers for comparable measurements), with resolution unequalled by traditional technologies. Narrowband zoom can be used for spans of 40 kHz and less, and it is ideal for both phase noise measurement and close-in modulation sideband analysis.

Extensive Features Offer a Complete Solution

It is easy to design custom measurements with the HP 3588A because it supports the HP BASIC instrument programming language, which also lets you control other instruments through HP-IB. You can use the built-in disk drive or non-volatile memory to store and retrieve traces, instrument states, or programs. Other features include autoranging input, limit lines with go/no-go indication, direct plotter or printer output, and HP-IB operation — all of which allow faster setup and documentation of results.

Noise and Modulation Analysis Applications

With the HP 3588A, a broad range of communication equipment can be quickly characterized to demanding standards. Direct noise and discrete sideband measurements of signals below 150 MHz are possible with the narrow resolution and low internal phase noise. Narrowband zoom mode provides power line frequency, voice channel, and audio-band modulation sideband analysis at speeds untouched by conventional swept-tuned spectrum analyzers.

Specifications

The following summary specifications describe warranted performance at temperatures from 0°C to 55°C. Refer to the technical data sheet for full performance specifications. Specifications are preliminary and are subject to change.

Frequency

Range: 10 Hz to 150 MHz

Span:

Swept spectrum full span range: 10 Hz to 150 MHz

Narrowband zoom span range: 1.22 Hz to 40 kHz in divide by 2 steps

Resolution bandwidth:

Swept sizes: 1.14 Hz to 18.6 kHz in divide by 2 steps

Bandwidth selectivity: selectable to be less than 4:1

Frequency accuracy: ±1x10-7/mo. of frequency (with optional temperature-controlled reference oven)

Phase noise: −105 dBc/Hz at 1 kHz offset

Amplitude

Measurement range: −132 dBm to +20 dBm in 50 Ω input

Input range settings: −20 dBm to +20 dBm in 10 dB steps

Amplitude accuracy: <±0.6 dB for 200 kHz to 150 MHz full scale signal when reference level = range (typical <±0.4 dB)

Dynamic range

Maximum dynamic range of 80 dB for signal to distortion, 112 dB for full scale signal to noise (50 Ω input)

Tracking generator

Frequency range: 10 Hz to 150 MHz

Amplitude range: −59.9 dBm to +10 dBm, off. Programmable level

Impedance: 50 Ω

Signal inputs and outputs

Input:

Impedance: 50 Ω or 1 MΩ selectable, 75Ω with adapter barrel

Other: probe power, external frequency reference input, frequency reference output, external trigger input, trigger output, HP-IB

Accessories available

Active probe HP 41800A

Ordering Information

	Price
HP 3588A Spectrum Analyzer	TBA

Available First Quarter 1990.

Contact your HP sales office for information.

See page 739.