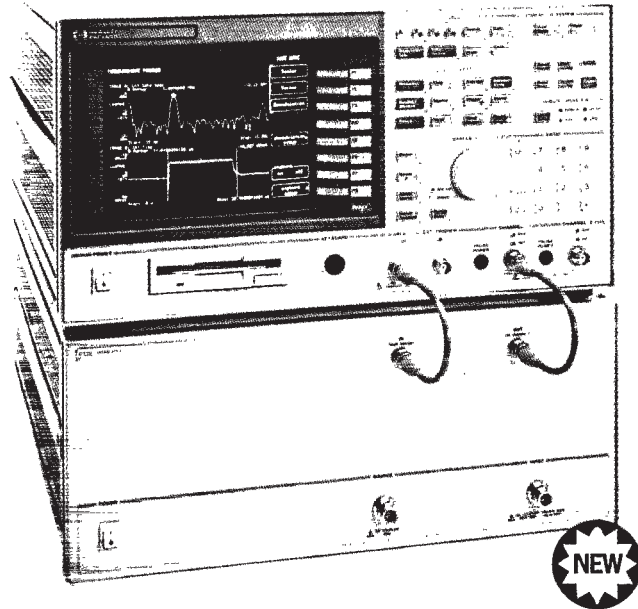


SIGNAL ANALYZERS

Vector Signal Analyzers, DC to 10 MHz, DC to 1.8 GHz, and DC to 2.65 GHz

HP 89410A, 89440A, 89441A, 89411A

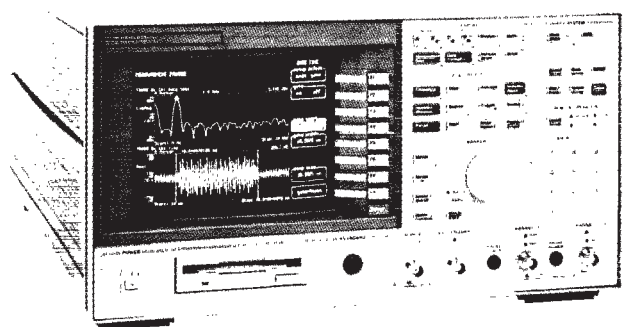
- High-performance spectrum analysis
- Advanced, optimized time-gated spectrum analysis
- Vector modulation analysis (optional)



HP 89441A DC to 2.65 GHz Vector Signal Analyzer
HP 89440A DC to 1.8 GHz Vector Signal Analyzer



- Precision digital AM, FM, PM demodulation
- Flexible internal RF signal source (optional)
- Narrowband spectrum speed to 60 updates/s
- Simultaneous time and frequency measurement
- 1 MSample time capture with postprocessing (optional)
- High-resolution, high-accuracy time domain
- Second 10-MHz input channel (optional)



HP 89410A DC to 10 MHz Vector Signal Analyzer



HP 89400 Series Vector Signal Analyzers

Advanced Measurements on Complex Signals

Hewlett-Packard's vector signal analyzers integrate frequency-domain and time-domain analysis to provide the most advanced measurements of complex and time-varying signals. Using state-of-the-art digitizing and signal processing technology, these analyzers offer complex signal analysis, such as digital modulation analysis and AM/FM/PM demodulation, vector spectrum analysis, and time-gated spectrum analysis. Simultaneous time- and frequency-domain measurements and displays improve productivity and enhance ease of use.

Complex and time-varying signals include burst, pulsed, transient, hopping, and analog- and digital-modulated signals. Signals such as these are common in RF communications, video broadcast, satellite, radar, sonar and ultrasound imaging systems and must be characterized in the design, manufacture and monitoring of these systems. Vector signal analyzers are ideally suited to making the needed power, frequency, and modulation measurements on these complex signals.

The HP 89410A covers baseband frequencies from dc to 10 MHz with one or two full-bandwidth input channels. The HP 89440A and 89441A cover baseband through RF frequencies of dc to 1.8 GHz and dc to 2.65 GHz, respectively, with a single RF input and an (optional) dc to 10 MHz second baseband channel.

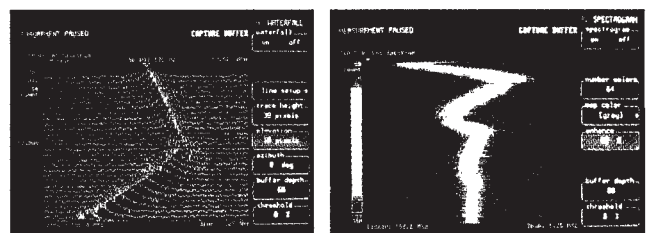
These analyzers provide unprecedented speed and power. Complex time and spectrum measurements are made and displayed up to 60 times each second. Deep time-capture RAM is available with flexible postprocessing in time and frequency domains. A variety of display types are available, including log frequency, polar, and (optionally), eye and constellation diagrams.

High-Speed, Narrow-Resolution Vector Spectrum

Using high-speed signal processing, these analyzers can measure both the magnitude and phase (in the frequency domain) of CW and nonstationary or burst signals. Multiple signal processors and micro-processors display signal and circuit behavior in real time, and produce fast averaged measurements with enhanced signal-to-noise ratio.

High measurement speed is preserved even in narrowband measurements, with display updates orders of magnitude faster than traditional analyzers performing equivalent measurements. Resolution is also better, with resolution bandwidths less than 0.001 Hz over the entire frequency range.

Optional waterfall and spectrogram display formats take full advantage of the high-measurement and display-update speed. Waterfalls display up to 300 successive spectra and scroll them through the display, while spectrograms use colors to indicate signal amplitudes. Both formats make it easy to monitor signal trends of short or long duration.



High-Resolution, High-Dynamic Range Time Domain

All measurements are made with a state-of-the-art A/D subsystem and proprietary signal processing. All frequency spans are image and alias protected, offering band-limited time-domain analysis not available in traditional oscilloscopes and waveform analyzers.

These products feature a deep-data memory of up to one million samples (optional). This memory can be used for long duration time capture, where the time-capture data can be selectively postprocessed (internally) or transferred via HP-IB to an external computer for further analysis.