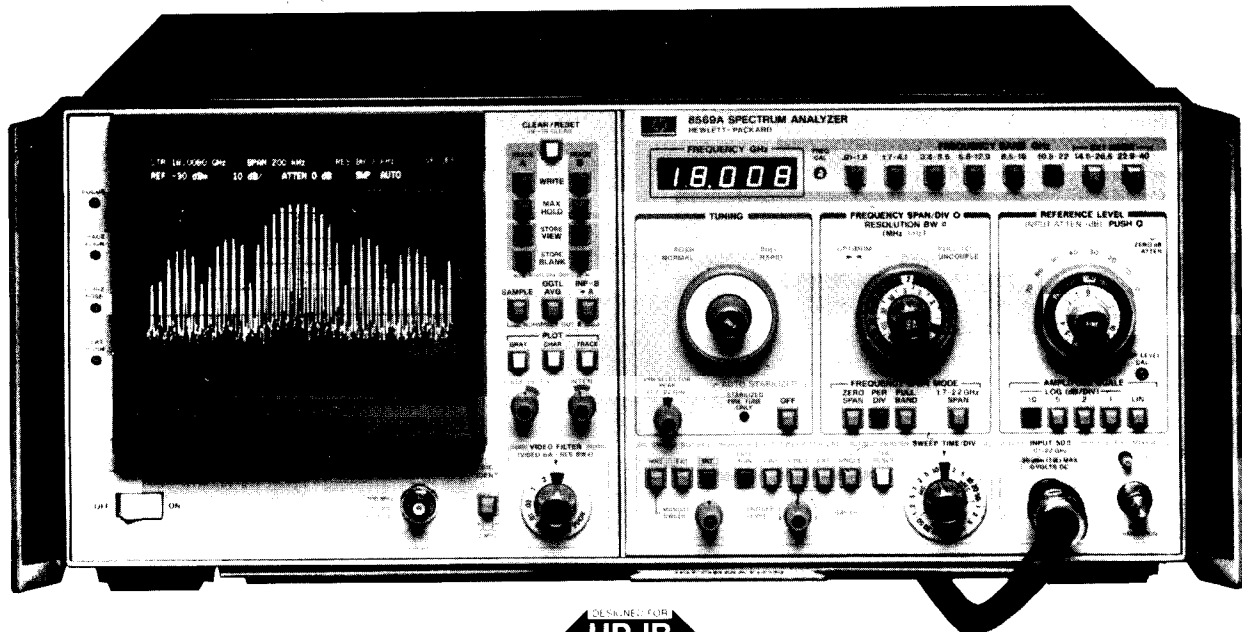


# SIGNAL ANALYZERS

## Microwave Spectrum Analyzer, 10 MHz to 40 GHz

### Model 8569A

- 10 MHz to 22 GHz, external mixing to 170 GHz
- Simplified three knob operation
- Internal preselection, 1.7 to 22 GHz
- Wide resolution range, 100 Hz to 3 MHz
- Digital display of traces, control settings
- Unique HP-IB interface



### 8569A Spectrum Analyzer

High performance and simple operation are combined with unique new microprocessor-controlled capabilities in the 8569A Microwave Spectrum Analyzer. Excellent sensitivity and internal preselection assure the wide, spurious-free measurement range necessary for production applications, while the digital display and coupled controls speed measurement routines. The internal frequency range of 10 MHz to 22 GHz is extendable to 40 GHz using the 11517A Opt. E03 External Mixer and to 170 GHz with other commercially available external mixers as described in Application Note 150-14. For semi-automatic operation, connect a desktop computer to the 8569A via HP-IB to allow access to the displayed trace data and the control settings necessary to analyze or record measurements, or display operator messages and prompts on the CRT. Direct, hard copy output to a digital plotter is possible without the need of a controller or programming.

#### Wide Range of Signal Resolution

Optimum resolution is possible for a wide range of signal characteristics with ten IF filters available from 100 Hz to 3 MHz. Fully automatic stabilization in narrow spans reduces residual FM to allow accurate measurements of closely spaced signals using the narrow bandwidths. The wide 1 and 3 MHz resolution bandwidths allow fast sweeps in wide spans and increased dynamic range for pulsed RF applications. All resolution filters are Gaussian-shaped for repeatable measurements, faster non-distortion sweep speeds, and best pulse response.

#### High Accuracy and Wide Dynamic Range

Absolute signal levels from  $-123$  to  $+30$  dBm are easily and accurately measured using IF substitution because the 8569A displays the reference level value directly on the CRT above the graticule. Damage to the mixer is prevented for signal levels of  $+30$  dBm with a built-in limiter below 1.8 GHz and a preselector from 1.7 to 22 GHz. The internal preselector also assures maximum use of this wide measurement range by reducing internal distortion products as much as 120 dB. In addition, flat frequency response insures accuracy for relative as well as absolute power measurements.

#### Convenient Operation with Digital Display

Preset the 8569A to the color-coded, "basic operation," settings and use the coupled controls to make most measurements in three easy

steps: tune to the signal, select a span and raise it to the reference level. While in the AUTO sweeptime position, a calibrated amplitude display is insured. However, the microprocessor also monitors manually-selected sweeptimes and displays a warning if the sweep speed chosen is too fast for calibrated measurements. Signals are displayed on either of two independent digitally stored traces with all major control settings annotated above the graticule area. Display processing capabilities include Max Hold, digital averaging and trace normalization for extended measurement capability.

#### HP-IB Includes Direct Plotter Control

A hard-copy record of the displayed traces, control settings and graticule can be made on a digital plotter via HP-IB quickly and simply using the 8569A's front-panel pushbuttons without need for a controller. For maximum capability, attach a controller to the 8569A to read the trace data and control settings for a measurement analysis or recording on tape. Also, you can illustrate the test parameters for each measurement with display lines and instruct the operator with messages on the CRT. The controller can verify correct control settings before taking the test data or going on to the next step.

#### 8444A Option 059 Tracking Generator

Characterize the frequency response of devices up to 1500 MHz by using the 8444A Option 059 Tracking Generator with the 8569A. Dynamic range is greater than 90 dB and system response errors can be removed using trace normalization. In addition, increase the analyzer's frequency accuracy to  $\pm 10$  kHz using a counter with the tracking generator. To configure a stimulus response system above 1500 MHz see Application Note 150-13.

#### 8569A Specifications

##### Frequency Specifications

**Frequency range:** 0.01 to 22 GHz with internal mixer, 14.5 to 40 GHz with HP 11517A Opt. E03 External Mixer. Extendable to 170 GHz with commercially available mixers.

**Tuning accuracy** (digital frequency readout in any span mode)

**Internal mixing, 0.01 to 22 GHz:**  $\pm 5$  MHz or 0.2% of center frequency, whichever is greater,  $+20\%$  of Frequency Span/Div).

**External mixing, 14.5 to 40 GHz:**  $\pm (0.7\%$  of center frequency  $+20\%$  of Frequency Span/Div).

