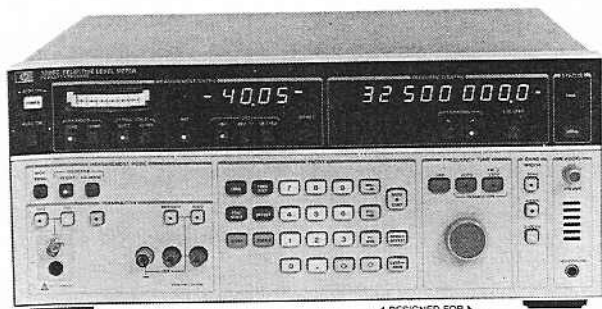


SIGNAL ANALYZERS

50 Hz to 32.5 MHz Selective Level Meter

Model 3586C

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HP 3586C

DESCRIPTION

The HP 3586C Selective Level Meter is designed for general purpose wave analysis applications in the design, manufacture, and maintenance of electronic systems. It's companion products, the HP 3586A and HP 3586B are optimized for measurements in Frequency Division Multiplex (FDM) systems. The HP 3586C is fully HP-IB programmable and covers the frequency range of 50Hz to 32.5 MHz, allowing measurement of audio, sonar and other low frequency systems, as well as high frequency communications and subsystems. Input impedances of 50, 75, and 600 Ohms are provided with 10kOhm bridging for maximum measurement flexibility in a wide variety of applications. Signal levels are measured with up to ± 0.2 dB accuracy down to -80 dBm with 0.01 dB resolution and bandwidth choices of 20, 400, or 3100 Hz. The built-in counter and narrow resolution bandwidths allow harmonic and intermodulation measurements to be made with ease. Frequency can be set or measured with 0.1 Hz resolution and $\pm \times 10^{-5}$ stability ($\pm 2 \times 10^{-7}$ optional).

Also included is a tracking output for frequency response measurements of high-Q filters and other selective networks

HP 3586C Specifications (abbreviated)

Frequency

Frequency range: 50/75 Ω unbalanced input, 50 Hz to 32.5 MHz; 600 Ω Balanced Input, 50 Hz to 108 kHz.

Frequency resolution: 0.1 Hz.

Center frequency accuracy: $\pm 1 \times 10^{-5}$ /year, ($\pm 2 \times 10^{-7}$ /year with option 004).

Counter accuracy: ± 1.0 Hz in addition to center frequency accuracy for signals within the 60 dB bandwidth of the IF filter chosen or greater than -100 dBm (largest signal is measured).

Selectivity

3 dB bandwidth,* $\pm 10\%$: 20 Hz, 400 Hz, 3100 Hz.

*Noise bandwidth is the same as the 3 dB bandwidth

60 dB bandwidth: 3100 Hz BW, ± 1850 Hz; 400 Hz BW, ± 1100 Hz; 20 Hz BW, ± 90 Hz.

Passband flatness ± 0.3 dB.

Amplitude

Measurement range: +20 to -120 dBm.

Amplitude resolution: .01 dB.

Level accuracy: 10 dB auto range, low distortion mode, after calibration, signal at ± 1 Hz from center frequency.

50/75 Ω Inputs				600 Ω Input	
dBm				dBm	
+20	$\pm .40$ dB	$\pm .20$ dB	$\pm .25$ dB	+20	$\pm .35$ dB
-80*	$\pm .95$ dB	$\pm .75$ dB		-80*	$\pm .75$ dB
-100				-100	
200 Hz	20 KHz	18 MHz	32.5 MHz	100 Hz	108 KHz

*20 Hz & 400 Hz BW below -90 dBm

Wideband power accuracy: After calibration, 100 dB range, average on, -45 to $+20$ dBm.

± 2.0 db	± 1.0 dB	± 2.0 dB
200 Hz	20 kHz	10 MHz
		32 MHz

Dynamic Range

Spurious Responses

-110 dBm maximum or the following, whichever is greater:

Image rejection (100-132 MHz): -80 dBc.

IF rejection: 15625 Hz, -80 dBc; 50 MHz, -60 dBc.

Spurious signals: >1600 Hz offset, >-80 dBc; 300 Hz to 1600 Hz, >-75 dBc.

Residual spurious: -110 dBm maximum; <350 Hz, -95 dBm.

Distortion

Harmonic distortion: -75 dB below full scale, low distortion mode, above 4 kHz.

Intermodulation distortion: Two-tone second and third order, separation 7 kHz to 1 MHz, 78 dB below full scale. Either tone ≥ 10 MHz, -70 dB.

Noise Floor (full scale setting -35 to -120 dBm)

Frequency	Bandwidth	Noise Level
100 kHz to 32.5 MHz	3100	-114 dBm
	20 Hz, 400 Hz	-120 dBm
2 kHz to 100 kHz	All	-105 dBm

The noise floor for full scale settings of -30 to $+25$ dBm will be 75 dB below full scale for >100 kHz, or 55 dB below full scale for <100 kHz.

Signal Inputs

Impedance	Frequency	Mating Connector	Return Loss
50/75 ohms unbalanced	50 Hz to 32.5 MHz	BNC	30dB
600 ohms balanced	50 Hz to 108 kHz	Dual Banana Plug	25dB
		0.75 inch Spacing	

Balance: 600 Ω ; 40 dB.

Demodulated Audio Output

Output level: 0 dBm into a 600 Ω load.

Auxiliary Signal Inputs/Outputs

Tracking output: 0 dBm rear panel tracking output.

Ext. reference input: 10 MHz $\div N$, where $N = 1, 2, 3 \dots 10$.

Reference output: 10 MHz at 8 dBm output (also 10 MHz oven oscillator on instruments with option 004).

Probe power: Front panel dc output for HP active high impedance accessory probes, (+15, -12 Vdc).

Additional outputs: Audio, phase jitter and meter output.

Options

Option 004: High stability frequency reference: 10 MHz oven stabilized reference oscillator improves frequency stability to $\pm 2 \times 10^{-7}$ /year.

General

Operating Environment

Temperature: 0° to 55° C.

Relative humidity: 95%, 0° to 40° C.

Altitude: $\leq 15,000$ ft., ≤ 4600 metres.

Storage environment temperature: -40° C to 75° C.

Storage altitude: $\leq 50,000$ ft., $\leq 15,240$ metres.

Power: 100/120/220/240 V, $+5\%$, -10% , 48 to 66 Hz, 150 VA.

Weight: 23 kg. (50 lb) net; 30 kg. (65 lb) shipping.

Size: 177 mm H x 425.5 mm W x 475.5 mm D (7" x 16.75" x 16.75").

Ordering Information

	Price
HP 3586C Selective Level Meter*	\$10,900
Opt 004: High Stability Frequency Reference	\$750
Opt 907: Front Panel Handles	\$66
Opt 908: Rack Flange Kit	\$36
Opt 909: Rack Flange & Handle Combination Kit	\$92
Opt W30: Extended Warranty	\$310

Accessories

HP 1124A: High Impedance Probe	\$350
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*HP-IB cables not supplied. See page 561.