

HP 53147A
HP 53148A
HP 53149A

- Three frequency ranges up to 46 GHz
- True power meter with HP 8480 series sensors
- DMM and battery optional
- Fully programmable GPIB and RS-232 standard



HP 53149A with DMM option

HP 53147A, 53148A, 53149A Microwave Counter/Power Meter/DMMs

The HP 53140 series microwave counter/power meters with optional digital multimeter have all the fundamental measurements required to install and maintain today's digital microwave radio links. Rugged field portability and a battery option complete the ensemble. These instruments are also at home in ATE applications with HP-IB and RS-232 fully programmable I/O ports as standard features. For those demanding R&D application, the HP 53140 series offer the laboratory-level performance and accuracy you've come to expect from HP.

HP 53140 Series Abridged Measurement

Specifications and Characteristics

For full specifications, please call your HP representative and request a Product Overview for the HP 53140 series microwave counters.

Counter Specifications

Input Characteristics

	Input 1 (1 M Ω)	Input 2 (50 Ω)
Frequency Range		
53147A	10 Hz to 125 MHz	.05-20 GHz
53148A	10 Hz to 125 MHz	.05-26.5 GHz
53149A	10 Hz to 125 MHz	.05-46 GHz
Sensitivity		53147A/48A 53149A
< 30 GHz	40 mV	—
to 125 MHz	25 mV	—
< 250GHz	—	-20 dBm
to 12.4 GHz	—	-33 dBm
to 18 GHz	—	-33 dBm
to 20 GHz	—	-29 dBm
to 26.5 GHz	—	-25 dBm (148)
to 40 GHz	—	-23 dBm
to 46 GHz	—	-17 dBm
Damage Level	5 Vrms to 120 Vp	+27 dBm

Channel 1

Resolution: Selectable 1 Hz to 1 MHz
Low Pass Filter: 50 kHz, selectable

Channel 2

Resolution: Selectable 1 Hz to 1 MHz
Acquisition Time: 100 ms to 140 ms
Gate Time: 1/Resolution
FM Tolerance: 20 MHz p-p max. @ 10 MHz rate to 26.5 GHz;
12 MHz p-p max. @ 10 MHz rate to 46 GHz
Amplitude Discrimination (above 250 MHz): 20 dB typ. for greater than 75 MHz separation; 10 dB typ. For less than 75 MHz separation
Connector: 3.5 mm SMA compatible (HP 53147A/53148A)
2.92 mm Planar Crown (HP 53149A)

Power Meter Specifications

Frequency Range: 10 MHz to 50 GHz, sensor-dependent
Power Range: -70 dBm to +20 dBm, sensor-dependent
Power Sensors: HP 8480 series
Display Units: Watts, dBm
Resolution: 0.01 dB in log mode, 0.1% of full scale in linear mode
Accuracy
Instrumentation: +/- 0.02 dB or +/- 0.5%
Power Reference
Power Output: 1.00 mW. Factory set to +/- 0.7%, traceable to U.S. National Institute of Standards and Technology.
DMM Specifications (option)
Function: AC and DC volts, Ohms

General

Display: Backlit LCD
Programming: HP-IB and RS-232C, SCPI compatible
Math Functions
Offset: Last reading and/or entered offset to reading for either power of frequency
Averaging: 1 to 99 measurement running average
Save and Recall: Up to 9 complete instrument setups may be saved and later recalled
Power Requirements:
90 – 132 VAC; 50, 60, 400 Hz
216 – 264 VAC; 50, 60 Hz
11 – 18 VDC: battery option only
Battery (option):
Type: VHS camcorder, sealed lead acid (2 each)
Charge Time: 8 hours in unit
Capacity: 2 hours typical

Timebase:

	TXCO (std)	Oven (opt)
Aging Rate	1 x 10 ⁻⁷ /mo	5 x 10 ⁻¹⁰ /day
Short Term (1 sec. avg.)	1 x 10 ⁻⁹	2 x 10 ⁻¹⁰
Temperature (0–55° C)	<1 x 10 ⁻⁶	<3 x 10 ⁻⁹

Accessories Furnished: Power cord, 1.5 m power sensor cable (HP 11730A), operating, programming and service manuals

Ordering Information

HP 53147A 20 GHz Counter/Power Meter Available Spring 2000
HP 53148A 26.5 GHz Counter/Power Meter Available Spring 2000
HP 53149A 46 GHz Counter/Power Meter Available Spring 2000

Options

DMM Available Summer 2000
Oven Timebase Available Spring 2000
Battery/DC Input Available Spring 2000