

KEYSIGHT TECHNOLOGIES (AGILENT HP)

5348A

The Keysight (Agilent/HP) 5348A is a high-performance 26.5 GHz microwave frequency counter and true power meter housed in a single, rugged half-rack instrument. Capable of making highly accurate and high-resolution measurements from 10 Hz to 26.5 GHz, the 5348A is engineered with exceptional dynamic range and linearity. This instrument is ideal for portable, field-service, and benchtop microwave applications, particularly when configured with the optional internal rechargeable battery for up to two hours of cordless operation.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488)
Display	Custom backlit liquid crystal display (LCD)
Power Sensor Maximum Cable Length	61 m (200 ft)
Save/Recall Registers	9 complete instrument setups

Physical

Power Supply	90 - 132 V AC / 198 - 264 V AC (47 - 66 Hz / 47 - 440 Hz); 11.5 - 18 V DC; optional internal battery
Operating Temperature	0 to 50 °C °C
Dimensions (W×H×D)	213 mm × 133 mm × 402 mm mm
Weight	9.1 kg (20 lb) kg
Rack Height	3U (half-rack width)

Frequency Measurement (Channel 1)

Frequency Range (Ch 1)	10 Hz - 520 MHz
Sensitivity (Ch 1)	25 mV rms
Input Impedance (Ch 1)	Selectable 1 MΩ (shunted by < 70 pF) or 50 Ω nominal
Coupling (Ch 1)	AC
Maximum Input Level (Ch 1)	1 MΩ: 1 V rms; 50 Ω: 1.5 V rms
Damage Level (Ch 1)	1 MΩ: 120 V (DC + peak AC) ≤ 1 kHz; 50 Ω: 5 V rms
Connector Type (Ch 1)	BNC female

Frequency Measurement (Channel 2)

Frequency Range (Ch 2)	500 MHz - 26.5 GHz
Sensitivity (Ch 2)	-32 dBm (500 MHz - 12.4 GHz), -27 dBm (12.4 GHz - 20 GHz), -20 dBm (20 GHz - 26.5 GHz)
Maximum Input Level (Ch 2)	+7 dBm
Damage Level (Ch 2)	+25 dBm (peak)
Input Impedance (Ch 2)	50 Ω nominal
VSWR (Ch 2)	< 2:1 typical to 18 GHz, < 3:1 typical to 26.5 GHz
Acquisition Time (Ch 2)	< 125 ms
FM Tolerance (Ch 2)	20 MHz p-p
AM Tolerance (Ch 2)	Any modulation depth, as long as the minimum signal level is above the sensitivity limit
Connector Type (Ch 2)	Precision APC-3.5 male
Tracking Speed (Ch 2)	1 MHz/sec

Power Measurement

Frequency Range (Power)	100 kHz - 50 GHz (sensor dependent)
Power Range (Power)	-70 to +44 dBm (sensor dependent)
Power Resolution	0.01 dB or 0.1% (selectable)
Instrumentation Accuracy	± 0.02 dB ($\pm 0.5\%$)
Sensor Compatibility	HP 8480 series power sensors
Built-In Calibration Tables	ROM-stored calibration data for HP 8481A, HP 8481D, HP 8482A, HP 8485A, and HP 8487A
Power Meter Linearity	Within $\pm 0.5\%$ (included in instrument accuracy)

Internal Power Calibrator

Calibrator Frequency	50 MHz
Calibrator Power Level	1.00 mW (0 dBm)
Calibrator Accuracy	$\pm 1.2\%$ (at 25 °C)

Reference Oscillator (Standard)

Reference Frequency	10 MHz
Aging Rate (Per Month, Standard)	$< 1 \times 10^{-7}$
Temperature Stability (Standard)	$< 1 \times 10^{-6}$ (0 °C to 50 °C)
Line Voltage Stability (Standard)	$< 1 \times 10^{-7}$ for a 10% change

Reference Oscillator (Option 001 Oven)

Aging Rate (Per Day, Option 001)	$< 5 \times 10^{-10}$ (after 24-hour warm-up)
Temperature Stability (Option 001)	$< 7 \times 10^{-9}$ (0 °C to 50 °C)
Warm-up Time (Option 001)	< 20 minutes to within 5×10^{-9} of final value

Reference Input & Output

External Reference Input Frequency	1, 2, 5, and 10 MHz
External Reference Input Level	0.2 V to 2.0 V rms
External Reference Impedance	1 k Ω nominal
Internal Reference Output Frequency	10 MHz

Measurement Functions

Frequency Resolution Settings	Selectable: 1 Hz, 10 Hz, 100 Hz, 1 kHz, 10 kHz, 100 kHz, 1 MHz
Self-Test Diagnostics	Automatic internal diagnostics upon power-on

Power Requirements

Line Voltage Ranges	90 - 132 V AC / 198 - 264 V AC (slide switch selection)
Line Frequency Range	47 - 66 Hz (all ranges); 47 - 440 Hz (90 - 132 V AC only)

Physical Characteristics

Form Factor	Half-rack width, 3U height
-------------	----------------------------

Environmental

Storage Temperature Range	-40 °C to +75 °C
Operating Humidity Limit	95% RH at 40 °C (non-condensing)
Maximum Operating Altitude	4,600 m (15,000 ft)

Options

Option 001	High-stability oven timebase
Option 002	Rear panel inputs
Option 002 Description	Rear panel inputs (places Ch 1, Ch 2, Sensor, and Calibrator connectors on rear)

Inputs & Outputs

Channel 1 Low-Pass Filter Cutoff	100 kHz (nominal)
GPIO Interface Capabilities	SH1, AH1, T5, L4, SR1, RL1, PP0, DC1, DT1, C0, E2

Performance

Channel 2 FM Modulation Rate	Up to 10 MHz
------------------------------	--------------

Compliance

EMC Compliance	CISPR 11 / EN 55011 Group 1, Class A
Safety Compliance	EN 61010-1 / IEC 1010-1

Frequency Counter

Frequency Measurement Speed (HP-IB)	Up to 30 readings per second
-------------------------------------	------------------------------

Power Meter

Power Sensor Calibration Factor Range	50.0% to 120.0% (in 0.1% steps)
Power Measurement Speed (HP-IB)	Up to 20 readings per second

Power & Battery

Battery Operating Time (Option 002)	Typically 2 hours
-------------------------------------	-------------------

TECHNOLOGY

Heterodyne / Frequency Counter & Power Meter

APPLICATIONS

Microwave Frequency and Power Measurement

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.