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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 53150A 20 GHz CW Microwave Frequency Counter

HP Agilent Keysight 53150A 20 GHz CW Microwave Frequency Counter The Agilent/Keysight 53150A is a portable CW microwave frequency counter with simultaneous power measurement on a single microwave input. Keysight technical overview 5966-3118E rates Channel 1 from 10 Hz to 125 MHz and Channel 2 from 50 MHz to 20 GHz, with GPIB and RS-232 standard and optional oven timebase and battery. Field and factory CW microwave frequency and power checks, LO and synthesizer verification to 20 GHz, portable battery-powered site measurements, and ATE frequency/power logging over GPIB or RS-232. The Agilent/Keysight 53150A is a portable CW microwave frequency counter with simultaneous power measurement on a single microwave input. Keysight technical overview 5966-3118E rates Channel 1 from 10 Hz to 125 MHz and Channel 2 from 50 MHz to 20 GHz, with GPIB and RS-232 standard and optional oven timebase and battery. Field and factory CW microwave frequency and power checks, LO and synthesizer verification to 20 GHz, portable battery-powered site measurements, and ATE frequency/power logging over GPIB or RS-232.



MODEL

**HP / Agilent
53150A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

53150A

LISTING

<https://aumictechlabs.com/products/53150a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 53150A is a 20 GHz CW microwave frequency counter that combines high-resolution frequency measurement with simultaneous power acquisition through a single ultra-wideband input. Designed for telecommunications, radar, and satellite communications applications, it delivers 1 Hz resolution and 1 Hz to 1 MHz selectable measurement bandwidth. The instrument measures frequency on Channel 1 from 10 Hz to 125 MHz and on the microwave input from 50 MHz to 20 GHz, while simultaneously capturing power in dBm or Watts across the entire microwave band.

Technical Specifications

Frequency Measurement

Channel 1: 10 Hz to 125 MHz
Channel 2 (Microwave): 50 MHz to 20 GHz
Maximum resolution: 1 Hz
Selectable resolution: 1 Hz to 1 MHz

Power Measurement

Range: -20 dBm to +10 dBm (trigger level capability)
Display units: dBm or Watts
Analog peaking indicator for signal optimization

Input Specifications

Channel 1: 40 mV rms (10–30 Hz); 25 mV rms (30 Hz–125 MHz); maximum 2 Vrms; 1 M Ω / 60 pF; BNC connector
Channel 2: 50 Ω impedance; SMA/APC-3.5 connector; SWR 1.5:1 (50–250 MHz), 2.0:1 (0.25–10 GHz)

Performance

Acquisition time: 100–140 ms
Measurement time: 1/Resolution + 20 ms
Sample rates: Fast (20 ms), Medium (250 ms), Slow (1 s)
Accuracy: ± 1 LSD $\pm$ residual stability $\pm$ (timebase error $\times$ frequency)

Timebase Options

Standard timebase
Option 001: High Stability Oven
Timebase External reference: 1, 2, 5, 10 MHz

Key Features

Dual-channel architecture: low-frequency and microwave inputs
Cable loss compensation with 10 independent frequency points
Measurement averaging: 1–99 running average
Frequency and power offset for relative measurements
Trigger modes: Internal, External, Manual, or Bus

Typical Applications

Telecommunications signal verification, radar frequency validation, satellite uplink/downlink measurements, and microwave component characterization.

Compatibility & Integration

Fully programmable via GPIB (IEEE 488) and RS-232C interfaces. SCPI-compliant command set enables integration into automated test environments.

Backlit LCD display; 4.4" H $\times$ 13.1" W $\times$ 14.6" D; 17.6 lbs.

53150A Characteristics / Specifications

PARAMETER	VALUE
Channel 1 Frequency Range Normal	10 Hz to 125 MHz
Channel 1 Frequency Range LPF Enabled	10 Hz to 50 kHz
Channel 2 Frequency Range	50 MHz to 20 GHz
Channel 1 Sensitivity 10 to 30 Hz	40 mVrms
Channel 1 Sensitivity 30 Hz to 125 MHz	25 mVrms
Channel 2 Sensitivity 50 to 300 MHz	-20 dBm
Channel 2 Sensitivity 0.3 to 12.4 GHz	-33 dBm
Channel 2 Sensitivity 12.4 to 18 GHz	-33 dBm
Channel 2 Sensitivity 18 to 20 GHz	-29 dBm
Channel 1 Maximum Input	2 Vrms
Channel 2 Maximum Input 50 MHz to 2 GHz	+5 dBm
Channel 2 Maximum Input Above 2 GHz	+13 dBm
Channel 2 Damage Level	+27 dBm
Channel 1 Impedance	1 M Ω / 60 pF
Channel 2 Impedance	50 ohm
Resolution	1 Hz to 1 MHz
Residual Stability Channel	0.6 LSD rms
Power Measurement Range Channel	counter sensitivity to +7 dBm
Power Resolution	0.01 dB
TCXO Aging Per Month	less than 1×10^{-7}
TCXO Temperature Stability 0 to 55 C	less than 1×10^{-6}
Oven Option Aging Per Day	less than 5×10^{-10}
Size WxHxD	213 $\times$ 88.5 $\times$ 300 mm
Operating Temperature	0 to 55 C
Weight Without Battery	4 kg

PARAMETER	VALUE
Weight With Battery Option	6.4 kg
Power AC	90-132 or 216-264 Vac; 75 VA max
Battery Capacity Option	2.5 hours min at 25 C

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 to 55 C
Operating Temperature	0 to 55 C
Weight Without Battery	4 kg
Weight With Battery Option	6.4 kg
Power AC	90-132 or 216-264 Vac; 75 VA max
Battery Capacity Option	2.5 hours min at 25 C Notes Specifications from Keysight Full-featured CW Microwave Counters technical overview 5966-3118E (53150A column). Power accuracy applies at input connector for 0 dBm to -20 dBm as published; see datasheet graphs for typical uncertainty vs frequency.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications

Specifications

PARAMETER	VALUE
Channel 1 Frequency Range Normal	10 Hz to 125 MHz
Channel 1 Frequency Range LPF Enabled	10 Hz to 50 kHz
Channel 2 Frequency Range	50 MHz to 20 GHz
Channel 1 Sensitivity 10 to 30 Hz	40 mVrms

Channel 1 Sensitivity 30 Hz to 125 MHz: 25 mVrms

Specifications

PARAMETER	VALUE
Channel 2 Sensitivity 50 to 300 MHz	-20 dBm
Channel 2 Sensitivity 0.3 to 12.4 GHz	-33 dBm
Channel 2 Sensitivity 12.4 to 18 GHz	-33 dBm
Channel 2 Sensitivity 18 to 20 GHz	-29 dBm
Channel 1 Maximum Input	2 Vrms

Channel 2 Maximum Input 50 MHz to 2 GHz: +5 dBm

Specifications

PARAMETER	VALUE
Channel 2 Maximum Input Above 2 GHz	+13 dBm
Channel 2 Damage Level	+27 dBm
Channel 1 Impedance	1 MΩ / 60 pF
Channel 2 Impedance	50 ohm
Resolution	1 Hz to 1 MHz
Residual Stability Channel 2	0.6 LSD rms
Power Measurement Range Channel 2	counter sensitivity to +7 dBm

Power Accuracy 0.05 to 12.4 GHz 0 to -20 dBm: ±1.5 dB
Power Accuracy 12.4 to 20 GHz 0 to -20 dBm: ±1.5 dB

Specifications

PARAMETER	VALUE
Power Resolution	0.01 dB
TCXO Aging Per Month	less than 1×10^{-7}
TCXO Temperature Stability 0 to 55 C	less than 1×10^{-6}
Oven Option Aging Per Day	less than 5×10^{-10}
Size WxHxD	213 x 88.5 x 300 mm
Operating Temperature	0 to 55 C
Weight Without Battery	4 kg
Weight With Battery Option	6.4 kg
Power AC	90-132 or 216-264 Vac; 75 VA max
Battery Capacity Option	2.5 hours min at 25 C

Notes

Specifications from Keysight Full-featured CW Microwave Counters technical overview 5966-3118E (53150A column). Power accuracy applies at input connector for 0 dBm to -20 dBm as published; see datasheet graphs for typical uncertainty vs frequency.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.