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Data Sheet
August 14, 2026

HP / AGILENT

HP / Agilent 53181A RF Frequency Counter, 10 digits/s

The HP/Agilent 53181A is an RF-optimized frequency counter providing 10 digits per second resolution onastandard DC–225 MHz channel, with optional second-channel coverage to 1.5, 3, 5, or 12.4 GHz. OEM 53131A/132A/181A family datasheets detail period, ratio, and peak-voltage measurements with digit blanking for fast reading. Used for RF transmitter and oscillator frequency checks, production test of wireless modules, period measurements, and automated HP-IB systems needingasingle-channel RF counter with optional microwave channel. Option 030 period range: 0.33 ns to 10 ns Frequency ratio results range: 10^−10 to 10^11 Measurement functions: frequency, period, peak voltage Values are from HP 53131A/132A/181A Counters family datasheet tables for the 53181A path. Microwave performance requires the corresponding Option 015/030/050/124 second channel.

MODEL HP / Agilent 53181A	CALIBRATION Available on request
CONDITION Used	STATUS In stock
RFQ / SKU 53181A	LISTING https://aumictechlabs.com/products/53181a-2/

NIST-traceable cal · SAM registered · 30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 53181A is a RF frequency counter delivering 10-digit resolution at measurement speeds up to 200 measurements per second. Built for precision RF testing, it measures frequency from DC to 225 MHz on the primary channel, with optional second-channel capability extending to 1.5 GHz, 3 GHz, 5 GHz, or 12.4 GHz. The instrument combines fast acquisition with low

sensitivity - 20 mVrms from DC to 100 MHz, scaling to 40 mVrms at 200–225 MHz - making it ideal for weak-signal detection in demanding RF environments. Technical Specifications Measurement Capabilities Frequency and period with 10 digits per second resolution Time interval measurement with 500 ps resolution Pulse width, rise/fall time, duty cycle, and totalize functions Phase angle and peak voltage measurements Ratio measurement when second channel is installed Primary Channel (Channel 1) Frequency range: DC to 225 MHz Sensitivity: 20 mVrms (DC to 100 MHz); 30 mVrms (100–200 MHz); 40 mVrms (200–225 MHz) Input impedance: 50 Ω or 1 MΩ, AC or DC coupled Peak input voltage: ±5 Vac + dc (DC to 100 MHz) Optional Second Channel (Channel 2) Selectable bandwidth: 1.5 GHz, 3 GHz, 5 GHz, or 12.4 GHz Sensitivity: 30 mVrms across rated frequency range Time Base Stability Standard: $<3 \times 10^{-7}$/month (10 MHz) Option 010 (High-stability): $<1.55 \times 10^{-8}$/month Option 012 (Ultra-high stability oven): $<3 \times 10^{-9}$/month; $<2 \times 10^{-9}$/year Performance & Automation Built-in statistics: average, min/max, standard deviation Automated limit testing with pass/fail indication Digit blanking for streamlined readout Operating temperature: 0°C to 55°C Measurement altitude: up to 3000 m Key Features Dual-channel configuration with independent frequency ranges GPIB (IEEE-488) and RS-232 standard interfaces; USB optional Compact form factor: 89 mm H × 213 mm W × 348 mm D; 7 lb Multiple input options including rear connectors for instrumentation racks Typical Applications RF signal characterization, frequency stability monitoring, phase measurement, pulse analysis, and production test automation in RF design and manufacturing environments. Compatibility & Integration Standard GPIB control supports integration into automated test systems. RS-232 talk-only mode provides legacy instrument communication. Optional USB interface enables modern data acquisition workflows. Configurable input coupling and impedance adapt to diverse signal sources and coupling requirements.

53181A Characteristics / Specifications

PARAMETER	VALUE
Channel 1 frequency range	0.1 Hz to 225 MHz
Channel 1 period range	4.44 ns to 10 s
Frequency resolution class	10 digits per second
Frequency ratio results range	10^−10 to 10^11
Auto gate time	100 ms
Channel 1 damage level 50 ohm	5 Vrms
Number of standard channels	1
Measurement functions	frequency, period, peak voltage
Remote control	HPIB family
Digits per second	10
Standard channel max	225 MHz
Ratio auto gate	100 ms

53181A Specifications

PARAMETER	VALUE
HP Agilent 53181A RF Frequency Counter	Overview
Key Features	10 digit/s RF counter optimized for frequency and period
Peak voltage measurement capability	GPIB automation within the 53131/132/181 family
Technical Specifications	Channel 1 frequency range: 0.1 Hz to 225 MHz

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	0.1 Hz to 225 MHz
Channel 1 period range	4.44 ns to 10 s
Frequency resolution class	10 digits per second

Optional Channel 2 Option 015: 100 MHz to 1.5 GHz
Optional Channel 2 Option 030: 100 MHz to 3 GHz
Optional Channel 2 Option 050: 200 MHz to 5 GHz
Optional Channel 2 Option 124: 200 MHz to 12.4 GHz
Option 030 sensitivity 100 MHz to 2.7 GHz: −27 dBm to +19 dBm
Option 030 sensitivity 2.7 to 3 GHz: −21 dBm to +13 dBm
Option 050 sensitivity 200 MHz to 5 GHz: −23 dBm to +13 dBm
Option 124 sensitivity 200 MHz to 12.4 GHz: −23 dBm to +13 dBm
Option 015 period range: 0.66 ns to 10 ns
Option 030 period range: 0.33 ns to 10 ns
Option 050 period range: 0.2 ns to 5 ns
Option 124 period range: 80 ps to 5 ns

Specifications

PARAMETER	VALUE
Frequency ratio results range	10^−10 to 10^11
Auto gate time	100 ms
Channel 1 damage level 50 ohm	5 Vrms
Number of standard channels	1
Measurement functions	frequency, period, peak voltage
Remote control	HPIB family
Digits per second	10
Standard channel max	225 MHz

Optional max with 124: 12.4 GHz
Ratio auto gate: 100 ms

Notes
Values are from HP 53131A/132A/181A Counters family datasheet tables for the 53181A path. Microwave performance requires the corresponding Option 015/030/050/124 second channel.

Ordering Information

OPTION	DESCRIPTION
Option 030	sensitivity 100 MHz to 2.7 GHz: −27 dBm to +19 dBm
Option 050	sensitivity 200 MHz to 5 GHz: −23 dBm to +13 dBm
Option 124	sensitivity 200 MHz to 12.4 GHz: −23 dBm to +13 dBm
Option 015	period range: 0.66 ns to 10 ns

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

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