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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 5385A 10 Hz to 1 GHz Frequency Counter

The Agilent/HP 5385A extends the 5384A architecture with ChannelB fused coverage from 90 MHz to 1000 MHz while retaining ChannelA from 10 Hz to 100 MHz. OEM data sheet rows specify TCXO timebase aging under $1e-7$ per month and AGC/manual attenuator on the UHF input. VHF/UHF frequency measurements to 1 GHz, IF and LO checks, and remote programmed counting via HP-IB with LCD readout. ChannelB fused front-panel accessible input to 1 GHz TCXO timebase with tight aging and line specs Timebase Temperature 0 To 40 C: less than $2e-6$ Timebase Line Voltage: less than $5e-8$ for plus or minus 10% variation LSD Displayed Class: 10 Hz to 1 nHz per gate-time formula Specs from Agilent 5385A Frequency Counter data sheet. ChannelB fused input notes and damage levels are as published; use the OEM sheet for gate-time resolution formulas.



MODEL

HP / Agilent 5385A

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

5385A

LISTING

<https://aumictechlabs.com/products/5385a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 5385A is a dual-channel frequency counter delivering precise measurements from 10 Hz to 1 GHz. Channel A covers 10 Hz to 100 MHz; Channel B extends to 1000 MHz. With 9-digit resolution per second and a stable 10 MHz TCXO timebase, the instrument measures frequency, period, ratio, and time interval with single-shot resolution down to 100 ns and averaging resolution

to 10 ps. The 12-character alphanumeric LCD and half-rack form factor support benchtop operation and ATE system integration across telecommunications, aerospace, and R&D environments.

Technical Specifications

Frequency Measurement

Channel A: 10 Hz to 100 MHz
Channel B: 90 MHz to 1000 MHz (50 Ω fused input) or 50 MHz to 225 MHz
Resolution: 9 digits per second
Measurement Functions: Frequency, Period, Ratio, Time Interval (single-shot 100 ns to 100,000 s; averaging to 10 ps resolution), Period A, Ratio A/B, A By B, Totalize

Sensitivity & Input

Channel A: 15 mVrms (50 Hz–100 MHz), 25 mVrms (10–50 Hz), 45 mV pk-pk (5 ns minimum pulse)
Channel B: 10 mVrms (100–1000 MHz), 15 mVrms (90–100 MHz)
Channel A Impedance: 1 M Ω $\pm$, <25 pF (X1); 500 k Ω $\pm$, <25 pF (X20)
Channel B Impedance: 50 Ω $\pm$
Dynamic Range A: 45 mV to 4 V pk-pk; B: 10 mV to 7 Vrms
Timebase TCXO: 10 MHz
Aging: <1 $\times$ 10⁻⁷/month
Temperature Stability: <2 $\times$ 10⁻⁶ (0–40°C)
Line Voltage Stability: <5 $\times$ 10⁻⁸ ($\pm$ 10%)
Drift: <0.002 ppm over 14 days
Accuracy: $\pm$ Resolution $\pm$ Time Base Error $\times$ Period

Signal Conditioning

Attenuator A: X1 or X20 (X40 below 50 Hz)
Attenuator B: Manual X1 to X18 (0–25 dB) or Auto AGC mode
Low Pass Filter: 100 kHz nominal
3 dB point (Channel A)
Coupling: AC
Dual Slope Technique eliminates $\pm$ 1 count error

Key Features

12-character alphanumeric LCD display
Automatic and manual trigger control with adjustable trigger level
Half-rack width for flexible deployment
AC coupling on both channels

Typical Applications

Telecommunications frequency validation
Aerospace component testing
R&D signal characterization
Automated test system integration

5385A Characteristics / Specifications

PARAMETER	VALUE
ChannelA Frequency Range	10 Hz to 100 MHz
ChannelA Sensitivity 50 Hz To 100 MHz	15 mVrms sine (MAIN LEVEL off)
ChannelA Sensitivity 10 Hz To 50 Hz	25 mVrms sine
ChannelA Pulse Sensitivity	45 mV pk-pk 5 ns minimum pulse width
ChannelA Dynamic Range	45 mV to 4 V pk-pk times attenuator setting
ChannelA Coupling	AC
ChannelA Impedance X	500 kohm nominal parallel less than 25 pF
ChannelA Attenuator	X1 or X20 nominal
ChannelA Low Pass Filter	100 kHz nominal 3 dB point
ChannelB Frequency Range	90 MHz to 1000 MHz
ChannelB Sensitivity 100 To 1000 MHz	10 mVrms (minus 27 dBm)
ChannelB Sensitivity 90 To 100 MHz	15 mVrms (minus 33 dBm)
ChannelB Dynamic Range	10 mV to 7 Vrms (minus 27 to +30 dBm)
ChannelB Impedance	50 ohm nominal
ChannelB Manual Attenuator	variable X1 to X18 (0 to 25 dB) nominal
ChannelB Damage AC Above 1 MHz	+30 dBm (7 Vrms)
ChannelB Damage AC Below 1 MHz	2 Vrms
ChannelB Damage DC	plus or minus 5 V
Timebase Frequency	10 MHz TCXO
Timebase Aging Rate	less than 1e-7 per month
Timebase Temperature 0 To 40 C	less than 2e-6
Timebase Line Voltage	less than 5e-8 for plus or minus 10% variation
LSD Displayed Class	10 Hz to 1 nHz per gate-time formula

5385A Specifications

PARAMETER	VALUE
HP Agilent 5385A Frequency Counter	Overview
Applications	VHF/UHF frequency measurements to 1 GHz, IF and LO checks, and remote programmed counting via HP-IB with LCD readout.
Key Features	Channel B fused front-panel accessible input to 1 GHz
TCXO timebase with tight aging and line specs	Channel A 1 Mohm path with attenuator and 100 kHz LPF
Manual and AGC attenuator modes on Channel B	Reciprocal counting resolution architecture shared with 5384A
Technical Specifications	Channel A Frequency Range: 10 Hz to 100 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	
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PARAMETER	VALUE
ChannelAFrequency Range	10 Hz to 100 MHz
ChannelASensitivity 50 Hz To 100 MHz	15 mVrms sine (MAIN LEVEL off)
ChannelASensitivity 10 Hz To 50 Hz	25 mVrms sine
ChannelAPulse Sensitivity	45 mV pk-pk 5 ns minimum pulse width
ChannelADynamic Range	45 mV to 4 V pk-pk times attenuator setting
ChannelACoupling	AC
ChannelAImpedance X1	1 Mohm nominal parallel less than 25 pF
ChannelAImpedance X20	500 kohm nominal parallel less than 25 pF
ChannelAAttenuator	X1 or X20 nominal
ChannelALow Pass Filter	100 kHz nominal 3 dB point
ChannelBFrequency Range	90 MHz to 1000 MHz
ChannelBSensitivity 100 To 1000 MHz	10 mVrms (minus 27 dBm)
ChannelBSensitivity 90 To 100 MHz	15 mVrms (minus 33 dBm)
ChannelBDynamic Range	10 mV to 7 Vrms (minus 27 to +30 dBm)
ChannelBImpedance	50 ohm nominal
ChannelBManual Attenuator	variable X1 to X18 (0 to 25 dB) nominal
ChannelBDamage AC Above 1 MHz	+30 dBm (7 Vrms)
ChannelBDamage AC Below 1 MHz	2 Vrms
ChannelBDamage DC	plus or minus 5 V
Timebase Frequency	10 MHz TCXO
Timebase Aging Rate	less than 1e-7 per month
Timebase Temperature 0 To 40 C	less than 2e-6
Timebase Line Voltage	less than 5e-8 for plus or minus 10% variation
LSD Displayed Class	10 Hz to 1 nHz per gate-time formula

Notes

Specs from Agilent 5385A Frequency Counter data sheet. ChannelBfused input notes and damage levels are as published; use the OEM sheet for gate-time resolution formulas.

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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NIST-traceable calibration · SAM registered ·
30-day returns
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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.