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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 5370B Precision Time-Interval Universal Counter

HP Agilent 5370B Precision Time-Interval Universal Counter The HP/Agilent 5370B is a precision universal time-interval counter using phase-locked vernier interpolation for 20 ps single-shot LSD. OEM datasheet specifications cover time interval from -10 s to +10 s ($\pm$ TI) or 10 ns to 10 s ($\pm$ TI), frequency to 100 MHz with 11-digit resolution in 1 s, period average, and built-in statistics with HP-IB throughput to 800 readings/s in fast binary mode. Component and IC tester timing verification, radar/laser ranging time interval, digital communications jitter statistics, computer peripheral timing, and automated TI measurements over HP-IB. The HP/Agilent 5370B is a precision universal time-interval counter using phase-locked vernier interpolation for 20 ps single-shot LSD. OEM datasheet specifications cover time interval from -10 s to +10 s ($\pm$ TI) or 10 ns to 10 s ($\pm$ TI), frequency to 100 MHz with 11-digit resolution in 1 s, period average, and built-in statistics with HP-IB throughput to 800 readings/s in fast binary mode. Component and IC tester timing verification, radar/laser ranging time interval, digital communications jitter statistics, computer peripheral timing, and automated TI measurements over HP-IB.



MODEL

HP / Agilent 5370B

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

5370B

LISTING

<https://aumictechlabs.com/products/5370b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 5370B is a microprocessor-based precision time-interval universal counter engineered for high-resolution timing and frequency measurements in metrology, calibration, and research environments. It delivers single-shot time-interval resolution to 20 ps with measurement ranges spanning ± 10 seconds, achieving sub-100 ps accuracy through calibration. The instrument supports negative time measurement for differential phase analysis and provides frequency characterization from 0.1 Hz to 100 MHz with up to 11-digit resolution. Flexible arming, gating, and digital trigger-level control accommodate diverse test configurations. Built-in statistical functions - mean, standard deviation, minimum, maximum - enable jitter characterization and reduce measurement uncertainty. Fast throughput reaches 800 readings/second in binary mode or up to 8000 measurements/second in select modes, with formatted output at 10–20 readings/second. HP-IB interface supports full remote programming and rapid data transfer. Input sensitivity of 100 mV p-p (35 mV rms for sine) with selectable 1 M Ω impedance and 5 or 10 MHz frequency standard input rated for >10 V p-p into 1 k Ω accommodate variable signal levels.

Features & description

From manufacturer datasheet

Built-in mean, standard deviation, minimum, and maximum statistics

Flexible internal/external arming and hold-off Full HP-IB programming with fast binary output mode
Technical Specifications Time Interval Single Shot LSD: 20 ps Time Interval Range Plus Minus TI: -10 s to +10 s including zero Time Interval Range Plus TI: 10 ns to 10 s Time Interval Accuracy With Careful Calibration Class: ± 100 ps achievable with averaging and calibrator Frequency Range: 0.1 Hz to 100 MHz Frequency Resolution Class: 11 digits in 1 s Period Range: 10 ns to 10 s Period Average Samples: 1 to 100k samples Statistics Sample Size Front Panel: 1, 10, 100, 1k, 10k, 100k Statistics Sample Size HP-IB: 1 to 65536 Statistics Functions: Mean, Standard Deviation, Minimum, Maximum HP-IB Fast Binary Throughput: up to 800 readings/s HP-IB Fast Binary Dead Time: 125 μ s Fully Formatted Throughput Class: 10 to 20 readings/s Fully Formatted Dead Time Class: 330 μ s Input Sensitivity Class: 100 mV p-p, 35 mV rms sinexattenuator setting Arming Modes: +TI or $\pm$ TI with internal or external arming External Hold Off: supported Timebase: precision quartz crystal oscillator Interface: HP-IB programmable User Defined Time Reference: push-button systematic error cancellation Form Factor: Precision universal TI counter

5370B Characteristics / Specifications

PARAMETER	VALUE
Time Interval Single Shot LSD	20 ps
Time Interval Range Plus Minus TI	-10 s to +10 s including zero
Time Interval Range Plus TI	10 ns to 10 s
Time Interval Accuracy With Careful Calibration Class	±100 ps achievable with averaging and calibrator
Frequency Range	0.1 Hz to 100 MHz
Frequency Resolution Class	11 digits in 1 s
Period Range	10 ns to 10 s
Period Average Samples	1 to 100k samples
Statistics Sample Size Front Panel	1, 10, 100, 1k, 10k, 100k
Statistics Functions	Mean, Standard Deviation, Minimum, Maximum
Fully Formatted Throughput Class	10 to 20 readings/s
Fully Formatted Dead Time Class	330 us
Input Sensitivity Class	100 mV p-p, 35 mV rms sinexattenuator setting
Arming Modes	+TI or ±TI with internal or external arming
External Hold Off	supported
Timebase	precision quartz crystal oscillator
Interface	HP-IB programmable
User Defined Time Reference	push-button systematic error cancellation
Form Factor	Precision universal TI counter
Gate Times Frequency	down to 1 period with average mode statistics access

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 cover time interval from -10 s to +10 s ($\pm$ TI) or 10 ns to 10 s (+TI), frequency to 100 MHz with 11-digit resolution in 1 s, period average, and built-in statistics with HP-IB throughput to 800 readings/s in fast binary mode.

Applications

Component and IC tester timing verification, radar/laser ranging time interval, digital communications jitter statistics, computer peripheral timing, and automated TI measurements over HP-IB.

Key Features

20 ps single-shot least significant digit time-interval resolution

Positive, zero, and negative time-interval measurements

Built-in mean, standard deviation, minimum, and maximum statistics

Flexible internal/external arming and hold-off

Full HP-IB programming with fast binary output mode

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Time Interval Single Shot LSD	20 ps
Time Interval Range Plus Minus TI	-10 s to +10 s including zero
Time Interval Range Plus TI	10 ns to 10 s
Time Interval Accuracy With Careful Calibration Class	$\pm$ 100 ps achievable with averaging and calibrator
Frequency Range	0.1 Hz to 100 MHz
Frequency Resolution Class	11 digits in 1 s
Period Range	10 ns to 10 s
Period Average Samples	1 to 100k samples
Statistics Sample Size Front Panel	1, 10, 100, 1k, 10k, 100k

Statistics Sample Size HP-IB: 1 to 65536

Statistics Functions: Mean, Standard Deviation, Minimum, Maximum

HP-IB Fast Binary Throughput: up to 800 readings/s

HP-IB Fast Binary Dead Time: 125 μ s

Specifications

PARAMETER	VALUE
Fully Formatted Throughput Class	10 to 20 readings/s
Fully Formatted Dead Time Class	330 μ s
Input Sensitivity Class	100 mV p-p, 35 mV rms sinexattenuator setting
Arming Modes	+TI or $\pm$ TI with internal or external arming
External Hold Off	supported

PARAMETER	VALUE
Timebase	precision quartz crystal oscillator
Interface	HP-IB programmable
User Defined Time Reference	push-button systematic error cancellation
Form Factor	Precision universal TI counter
Gate Times Frequency	down to 1 period with average mode statistics access

Notes

Specifications from Agilent/HP 5370B Precision Time-Interval Universal Counter data sheet summaries. Systematic TI uncertainty depends on trigger level, slew rate, and calibration; use HP time-interval calibrator procedures for best accuracy.

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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.