5370B
Precision Time-Interval Universal Counter

Data Sheet

Product Specifications

Full Range of Measurement and Analysis Functions

Time Interval:Achieve 20 ps single-shot LSD on time intervals from 0 to 10 s, including negative time (in which the STOP channel event occurs before the START channel event)

Frequency: Measure up to 100 MHz with 11 digits of resolution in 1 s. Choose gate times down to 1 period: use 1 period with average mode and access the powerful statistics capabilities

Period: Measure period average from 1 to 100 k samples

Statistics: Reduce external computations, reduce random errors, and improve measurement throughput

Sample size: Select 1, 10, 1 k, 10 k or 100 k samples from the front panel, or 1 to 65,536 samples over HP-IB.

For the selected sample size, you can compute:
Mean
Standard Deviation
Minimum
Maximum

Flexible Arming and Gating: +TI or +±TI with internal or external arming, with or without external hold-off

Full HP-IB Programming and Fast Data Output: Up to 800 readings/s in fast binary mode -- 125 µs dead time 10 to 20 readings/s fully formatted -- 330 µs dead time

Time Interval Measurement Characteristics

Range
±TI: -10 to +10 s, including zero
+TI: 10 ns to 10 s

Resolution: Measurement resolution depends on input signal noise and slew rate.

Accuracy: Time-interval measurement accuracy is influenced by internal systematic uncertainties, trigger-level timing error for each trigger edge, and timebase aging in addition to resolution or random uncertainties.

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Careful calibration with the HP J06-59992A time interval calibrator and averaging will result in accuracies to ±100 ps.

Frequency and Period Measurement Characteristics

Range
Frequency: 0.1 Hz to 100 MHz
Period: 10 ns to 10 s

Resolution: Measurement resolution depends on input signal noise as well as measurement gate time.

Accuracy: Accuracy is influenced by internal certainties, timebase againg, and noise on the input signal. Periodic timebase calibration minimizes uncertainty due to timebase aging. Internal uncertainties and noise effects may be reduced by selecting longer gate times, or by averaging results.