Moku:Go Instrument Datasheet

Time & Frequency Analyzer



The Moku:Go Time & Frequency Analyzer measures intervals between user-defined start and stop events with sub-ns precision. Select between continuous, windowed, or gated acquisition mode, compute histograms of interval duration losslessly and in real time, and log high-resolution event timestamps to on-board storage. Output the measured interval count or current interval to analog output channels for active feedback control.



No. of independent interval analyzers	Jitter	Clock stability	Digital resolution	Max interval rate	Histogram
2	**< 50 ps**	**25 ppm**	**7.8 ps**	**15 MHz**	**Real-time and lossless**

Features

- Low device jitter of < 50 ps for high timing resolution analysis
- Up to two independent event detectors with configurable thresholds on rising edge, falling edge, or both
- Lossless, real-time histograms with a minimum bin width of 7.8 ps
- Output interval count or current interval with adjustable scaling factor
- High-resolution raw event timestamp logging to on-board storage for post processing
- Combine with any other instruments in Multi-Instrument Mode for system level characterization or feedback control
- Real-time calculation of second-order correlation ($g^{(2)}$) function

Specifications

- No. of independent interval analyzers: 2
- Jitter: < 50 ps
- Digital resolution: 7.8 ps
- Input frequency range: DC to 30 MHz
- Input trigger threshold range: ± 5 V, or ± 25 V
- Maximum interval rate: 15 MHz
- Acquisition modes: continuous, windowed, or gated
- Interpolation mode: none or linear
- Event logging rate:
  - up to 15 Mevnt/sec burst
  - up to 10 Mevnt/sec continuous
- Output range: 10 Vpp
- Output mode: interval count or current interval

Applications

- Oscillator analysis
- Photon counting
- Jitter analysis
- Light source characterization
- Linear optical quantum computing
- Pulsed laser stabilization

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