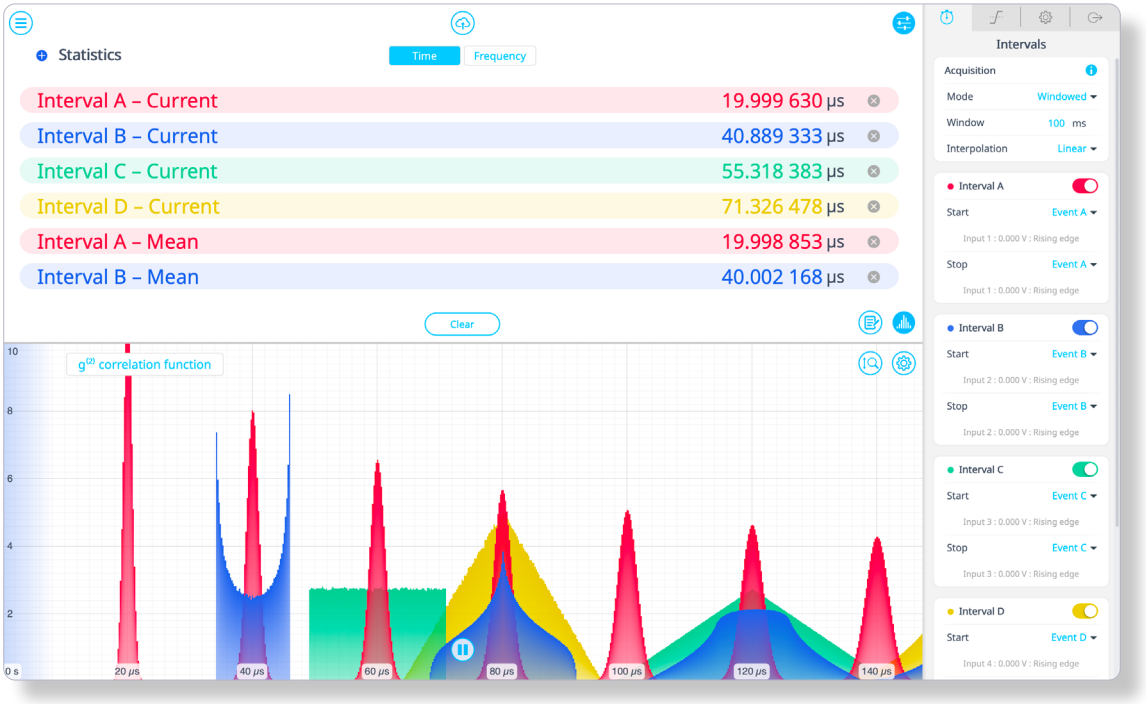
Moku:Delta Instrument Datasheet

Time & Frequency Analyzer



The Moku:Delta Time & Frequency Analyzer delivers high-resolution interval measurements between user-defined start and stop events, with a 5 GSa/s sampling rate and 0.2 ps digital resolution. It supports continuous, windowed, or gated acquisition modes with real-time and lossless histograms, statistical analysis, and correlation information. It can also generate high-resolution timestamp data to on-board storage. Optimized for precision timing applications, it is ideal for photon counting, pulsed laser characterization, and synchronized multi-detector systems.



No. of independent interval analyzers	Clock stability	Digital resolution	Max interval rate	Histogram
8	1 ppb	0.2 ps	312.5 MHz	Real-time and lossless

Features

- Up to eight independent event detectors with configurable thresholds on rising edge, falling edge, or both edges
- Lossless, real-time histograms with a minimum bin width of 0.2 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 up to seven other instruments in Multi-Instrument Mode for system level characterization and feedback control
- Real-time calculation of second-order correlation ($g^{(2)}$) function

Specifications

- No. of independent interval analyzers: 8
- Digital resolution: 0.2 ps
- Input frequency range: DC to 2 GHz
- Input trigger threshold range: 100 mVpp, 1 Vpp, 10 Vpp, or 40 Vpp
- Maximum interval rate: 312.5 MHz
- Acquisition mode: continuous, windowed, or gated
- Interpolation mode: none or linear
- Output range: 1 Vpp or 10 Vpp
- Output mode: interval count or current interval

Applications

- Oscillator analysis
- Photon counting
- Jitter and phase noise analysis
- Light source characterization
- Linear optical quantum computing
- Pulsed laser stabilization
- Time-of-flight and LiDAR systems
- Particle or neutron detection
- Quantum computing and quantum sensing

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Note: All Moku:Delta specifications are subject to change.