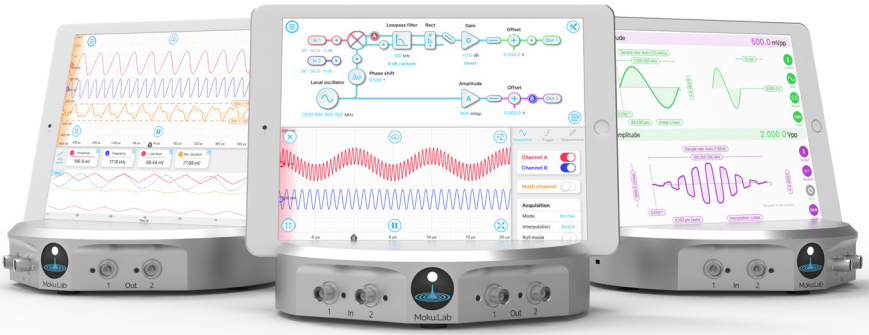
Moku:Lab

Performance meets flexibility.



Lock-in Amplifier

Arbitrary Waveform Generator

Oscilloscope

Frequency Response Analyzer

Waveform Generator

PID Controller

Phasemeter

Data Logger

Spectrum Analyzer

Laser Lock Box

Digital Filter Box

FIR Filter Builder

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Learn more about Moku:Lab

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Discover Moku:Lab

One flexible hardware platform

Moku:Lab is a software-configurable hardware platform for test and measurement that combines the signal processing power of an FPGA with high-speed analog inputs and outputs. Moku:Lab brings a new level of flexibility to the lab, the field, and on the production line.

An expanding suite of instruments

Moku:Lab includes a suite of twelve professional-grade instruments, with more on the way through software updates! As you may have noticed, we've got big plans for this compact device.

2 inputs (analog)

- 500 MS/s, 12-bit ADCs
- 200 MHz bandwidth (-3 dB, 50 Ω)
- 50 Ω or 1 MΩ impedance
- AC or DC coupling

2 outputs (analog)

- 1 GS/s, 16-bit DACs
- >300 MHz bandwidth (-3 dB)
- 50 Ω impedance
- DC coupled

Clocks & triggering

- Ultra-stable oscillator (<500 ppb accuracy)
- 10 MHz reference input
- 10 MHz reference output
- External trigger input (BNC, TTL)

Connectivity & storage

- Wi-Fi, Ethernet and USB
- iPad, LabVIEW, Python, and MATLAB
- Save to cloud, SD, or RAM
- 16 GB SD card included

Sophisticated measurements with an intuitive interface

Twelve powerful instruments

Lock-in Amplifier

Demodulate small signals at frequencies up to 200 MHz with PLL, I-Q and R-Θ modes and a built-in PID.

Arbitrary Waveform Generator

Generate custom waveforms with up to 65k points with update rates up to 1 GS/s, load waveform points from a file or input an equation directly.

Oscilloscope

Capture and display signals at up to 500 MS/s with a built in dual-channel waveform generator. Use sophisticated waveform measurements and modern visualization tools such as histograms, measurement trends and advanced interpolation options.

Frequency Response Analyzer

Measure the magnitude and phase of a system's transfer function using a swept sine output from 10 mHz to 120 MHz.

Waveform Generator

Generate sine, square, ramp or pulse waveforms with frequencies up to 250 MHz. Make triggered bursts or sweeps, and modulate the amplitude, frequency or phase from an internal or external source.

PID Controller

Create two independent control loops with flexible gain profiles and sub-µs latency.

Phasemeter

Track phase, frequency and amplitude of tones from 1 kHz-200 MHz, perform advanced spectral analysis and save data at up to 125 kS/s.

Featuring integration with Python, MATLAB, and LabVIEW

Data Logger
Log voltage data to an SD card at up to 100 kS/s, or to internal memory for short durations at up to 1 MS/s, and upload data files directly to the cloud.

Spectrum Analyzer
Record power spectra of signals from 100 Hz to 250 MHz, with a resolution bandwidth down to 1 Hz.

Laser Lock Box
Stabilize a laser's frequency to a reference cavity or atomic transition using high-performance modulation locking techniques.

Digital Filter Box
Create up to eighth-order lowpass, highpass, bandpass and bandstop filters with adjustable parameters, or use your own coefficients to build a customized response.

FIR Filter Builder
Design finite-impulse-response (FIR) filters with arbitrary impulse response in the time or frequency domain.

More to come
Expect more from Liquid Instruments. We're continuing to provide improvements and updates. It just keeps getting better.

Is there something you'd like to see from us?
Stay in touch at support@liquidinstruments.com

Download on the App Store | Windows (beta) | python | MATLAB | LabVIEW

An intuitive user interface

Capture results in a beautiful way

Moku:Lab's fluid and intuitive user interface takes full advantage of the iPad's multi-touch gesture capability, to redefine the way scientists, engineers, students, and professionals acquire data, run measurements, and control their experiments.

(Moku:Lab's Oscilloscope interface pictured above)

Try the App for free on your iPad

1. Search for "Moku:Lab" on the App Store, then install.
1. Tap "Demo" on the device selection screen.
2. Enjoy the quick interactive preview
3. Visit our website for more info on each instrument

Try the App for free on your Desktop

1. Download from liquidinstruments.com/desktop then install.
2. Tap "Demo" on the device selection screen.
3. Enjoy the quick interactive preview
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iPad App available on the App Store.
Desktop App available on our website.

Learn more about Moku:Lab

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Liquid Instruments was founded by a team of experimental physicists and engineers with expertise in precision measurement and gravitational wave detector instrumentation. We provide equipment that helps scientists, engineers, students and professionals seamlessly acquire data, run measurements and control their experiments.

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