LIQUID INSTRUMENTS | YOTAVIS



Your next breakthrough, faster

- Arbitrary Waveform Generator
- Data Logger
- Digital Filter Box
- FIR Filter Builder
- Frequency Response Analyzer
- Gigabit Streamer
- Laser Lock Box
- Lock-in Amplifier
- Logic Analyzer / Pattern Generator
- Oscilloscope
- Phasemeter
- PID Controller
- Spectrum Analyzer
- Time & Frequency Analyzer
- Waveform Generator
- Multi-Instrument Mode
- Custom Instrument
- Neural Network



Maximize efficiency and speed in your lab

Moku delivers an entire suite of test instruments in one reconfigurable device.
Plus, every Moku device gets more powerful with regular over-the-air software updates.

Analyze

Oscilloscope
View multiple signals simultaneously on high-speed, low-noise input channels.

Spectrum Analyzer
Observe signals down to DC in the frequency domain with an ultra-low noise floor.

Frequency Response Analyzer
Apply a swept sine signal to your DUT to view the system's magnitude and phase response for real-time Bode analysis.

Lock-in Amplifier
Perform dual-phase demodulation all the way down to DC. Utilize multiple inputs for multi-channel, low-noise lock-in detection.

Logic Analyzer / Pattern Generator
Use digital I/Os to generate and analyze protocols including SPI, UART, I2C, I2S, and CAN.

Phasemeter
Perform precision multi-channel phase, frequency, and amplitude measurements.

Time & Frequency Analyzer
Perform time interval and frequency analysis, and view histograms in real time with low RMS jitter.

Data Logger
Log data directly to internal memory, a networked disk, or an SD card.

Generate



Arbitrary Waveform Generator

Choose from predefined or custom arbitrary waveforms to generate phase-synchronized outputs.



Waveform Generator

Choose from common waveform types and modulation options.

Control & conditioning



PID Controller

Build custom controllers and tune system responses with an interactive Bode plot.



Digital Filter Box

Select from preset or custom filters with adjustable parameters including type and order.



FIR Filter Builder

Fine-tune finite impulse response filters in the time and frequency domains.



Laser Lock Box

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

Custom & utility



Gigabit Streamer

Bidirectional, high-speed data streaming over SFP and QSFP interfaces at up to 5 Gbps or 80 Gbps.



Neural Network

Connect machine learning to the physical world with a real-time Neural Network.



Custom Instrument

Deploy custom bitstreams to the user-programmable FPGA in your Moku device.



Multi-Instrument Mode

Run up to eight instruments simultaneously on a single device.

Choose your hardware platform

Compare specifications to decide which Moku device is best for you.



Moku:Delta

Replace an entire rack of equipment with a single high-performance device

Moku:Delta delivers wideband signal generation, acquisition, and real-time processing for demanding RF and mixed-signal test environments.

Device specifications

Moku:Delta

Analog inputs	Eight 14+20-bit, 5 GSa/s 2 GHz analog bandwidth Input range up to ± 20 V
Analog outputs	Eight 14-bit, 5 GSa/s (10 GSa/s with interpolation) 2 GHz analog bandwidth ± 5 V into 50 Ω output range
Digital I/O	32-channel DIO Dedicated TTL trigger port
Clock stability	1 ppb with optional GPSDO 10 MHz / 100 MHz reference
Integrations	Windows 11, macOS, iPadOS, visionOS, Python, MATLAB





Moku:Pro

One integrated platform for demanding research applications

Moku:Pro is a flexible test solution for developing and validating next-generation devices and systems.

Moku:Go

A portable, easy-to-use tool for experimental design, commercial testing, and higher education

Test designs with the 16-channel DIO and embedded programmable power supply.

Moku:Pro

Analog inputs

Four 10+18-bit, 1.25 GSa/s
600 MHz analog bandwidth
Input range up to ± 20 V

Analog outputs

Four 16-bit, 1.25 GSa/s
500 MHz analog bandwidth
± 5 V into 50 Ω output range

Digital I/O

Dedicated TTL trigger port

Clock stability

300 ppb
10 MHz reference

Integrations

Windows 11, macOS, iPadOS, visionOS, Python, MATLAB, LabVIEW

Moku:Go

Analog inputs

Two 12-bit, 125 MSa/s
30 MHz analog bandwidth
Input range up to ± 25 V

Analog outputs

Two 12-bit, 125 MSa/s
20 MHz analog bandwidth
± 5 V maximum output range

Digital I/O

16-channel DIO at 125 MSa/s

Clock stability

25 ppm

Integrations

Windows 11, macOS, iPadOS, visionOS, Python, MATLAB, LabVIEW



Measure more with Multi-Instrument Mode

Multi-Instrument Mode enables you to build custom test configurations and sophisticated signal processing chains in a single device.

- Deploy multiple instruments operating in parallel.
- Link instruments together with low-latency, lossless interconnects.
- Hot-swap instruments without interrupting those running in tandem.
- Monitor the performance of each instrument in its own dedicated window for a bird's-eye view of your experiment.

Instrument slots

Moku:Delta
Up to eight instrument slots

Moku:Pro
Up to four instrument slots

Moku:Go
Up to three instrument slots



Develop and deploy custom features

Custom Instrument gives you direct access to the Moku FPGA so you can implement custom functionality. With **Moku Compile**, write VHDL or Verilog, compile locally or in the cloud, and deploy the bitstream to any Moku devices.

- Integrate your real-time DSP algorithms directly on the FPGA, running alongside built-in instruments.
- Start with example code or build from tools like Simulink® or MATLAB® and HDL Coder™.
- Add precompiled IP cores for advanced arithmetic and analysis, or create your own.



Implement your own artificial neural networks

The Moku Neural Network delivers fast, flexible signal processing by running neural models directly on the device's FPGA.

- Develop and train neural networks in Python, then upload parameters to your Moku device.
- Analyze up to four input channels (or one time-series channel) and drive up to four outputs – without accessing a host PC between calculations.
- Combine the Neural Network with other Moku instruments such as the Waveform Generator, PID Controller, and Oscilloscope to accelerate analysis, denoising, sensor conditioning, and closed-loop control.



Learn more about Moku

In hundreds of labs around the world, Moku has accelerated the timeline of crossing from idea to implementation by an order of magnitude, reducing the time and cost of advanced research and development.

Because our reconfigurable Moku test solutions are engineered by a team of distinguished research scientists to be easy to use and versatile, they deliver efficiency gains in the most complex test scenarios today and meet your ongoing needs in the future. Explore our resource center or contact us to learn more.

Contact YOTAVIS AG

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