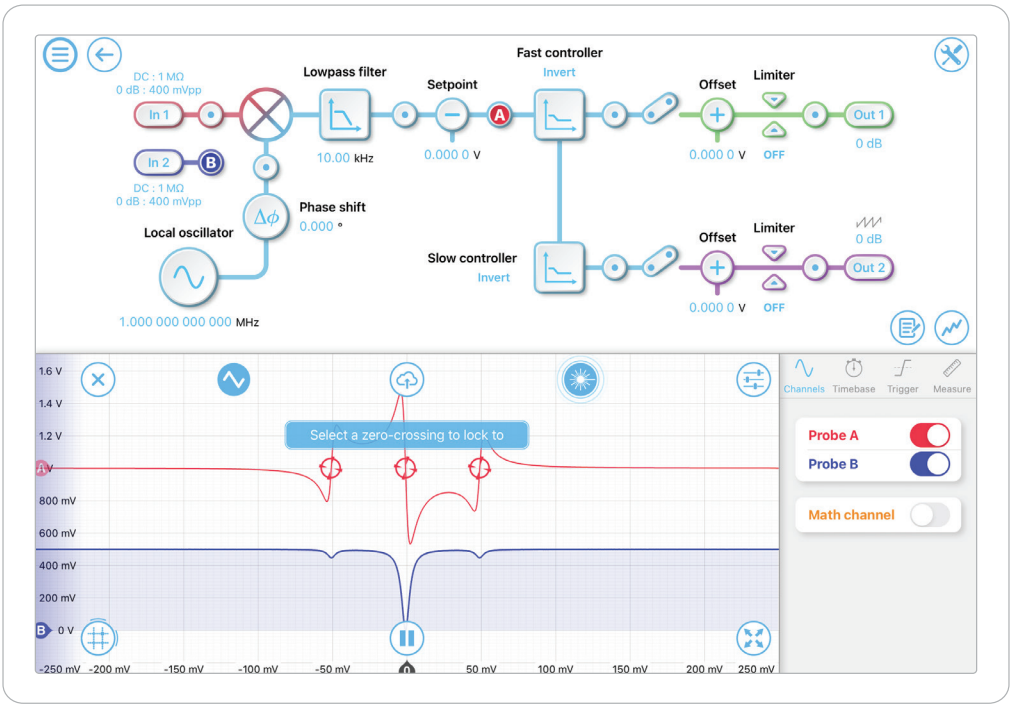
Moku:Pro Instrument Datasheet

Laser Lock Box for PDH Technique

Moku:Pro's Laser Lock Box enables you to lock a laser's frequency to a reference cavity or atomic transition using high-performance modulation locking techniques. The Laser Lock Box includes a "Tap-to-Lock" feature, enabling you to quickly lock to any zero-crossing on the demodulated error signal. With Multi-instrument Mode (MIM), you can deploy up to four laser lock modules simultaneously on a single Moku:Pro. Each module shares the same clock base from the internal or an external source. This is the ideal solution for multi-laser stabilization systems.



Demod. Frequency	Scan Frequency	Adjustable Filter	DAC Resolution	Built-in Controllers	Integrated Oscilloscope
1 mHz to 600 MHz	up to 10 MHz	2.6 kHz to 35 MHz	16 bits	Dual PID	1.25 GSa/s

Features

- Stabilize a laser's frequency to a reference cavity or atomic transition
- Virtually probe within signal processing chain with an integrated oscilloscope
- Quickly lock to any zero-crossing in the error signal using the "Tap-to-Lock" feature
- Individually configure high- and low-bandwidth PID controllers for fast and slow feedback
- Quickly access the controls you need with a customizable control palette view
- Built-in IIR filter for custom filtering

Specifications

- Local oscillator frequency: 1 mHz to 600 MHz
- Scan waveforms: positive sawtooth, negative sawtooth, triangle
- Scan frequency: 1 mHz to 10 MHz
- Infinite impulse response low-pass filter corner frequency: 2.6 kHz to 35.16 MHz (second or fourth order)
- Integrator crossover frequency: 312.5 mHz to 3.125 MHz, 988.2 mHz to 9.882 MHz (double integrator)
- Ultra-fast data acquisition: snapshot mode up to 1.25 GSa/s, continuous mode up to 10 MS/s

Applications

- Pound-Drever-Hall technique
- Precision spectroscopy
- Gravitational wave detection
- Custom phase-locked loop
- Other closed-loop control systems