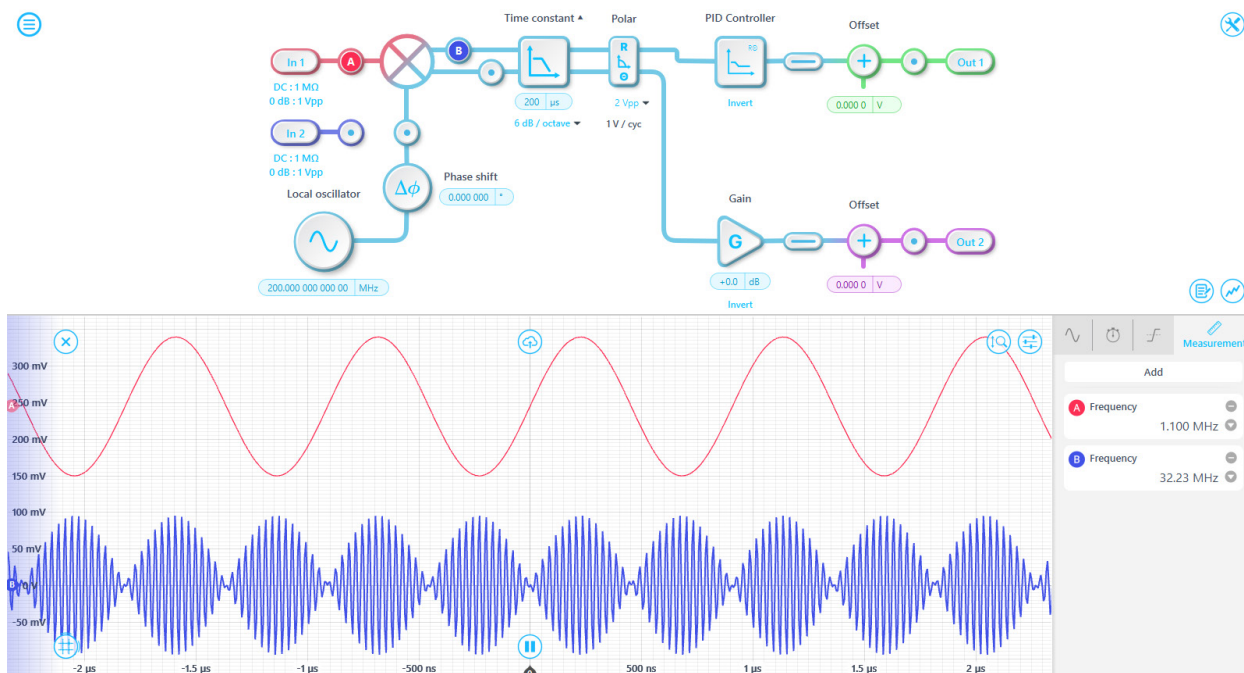




The Moku:Lab digital Lock-in Amplifier supports dual-phase demodulation (X/Y or R/ θ) from DC to 200 MHz with more than 120 dB of dynamic reserve. A PID Controller can be placed after the demodulation stage for phase-locked loop applications. It also features an integrated 2-channel Oscilloscope and Data Logger, enabling you to observe signals at up to 500 MSa/s and log data at up to 250 kSa/s.



Demod. frequency
1 mHz to 200 MHz

Dynamic reserve
>120 dB

Time constant
From 32 ns

Filter slopes
6, 12, 18, 24 dB/oct

Dual-phase demod.
X/Y or R/ θ

Built-in feature
PID Controller

Features

- Measure signals obscured by noise with more than 120 dB dynamic reserve
- Block diagram view of the digital signal processing chain
- Built-in probe points for signal monitoring and data logging
- Internal or external demodulation modes including a phase-locked loop (PLL)
- Demodulate at up to the 250th harmonic or down to 1/8th of the fundamental frequency
- Toggle between rectangular (X/Y mode) or polar coordinates (R/ θ mode)
- Built-in PID Controller

Specifications

- Demodulate with frequencies ranging from 1 mHz to 200 MHz with μ Hz resolution
- PLL frequency multiplier: 0.125x to 250x
- Phase shift precision of 0.000 001°
- 50 Ω / 1 M Ω input impedance
- Adjustable time constant from 32 ns to 537 ms
- 6, 12, 18, or 24 dB/octave filter roll-off
- Output gain range: -80 to +160 dB
- Local oscillator output up to 200 MHz with adjustable amplitude
- Data acquisition up to 250 kSa/s

Applications

- Frequency stabilization
- Laser scanning microscopy (SRS, TA, and more)
- Magnetic sensing (magneto-optical Kerr effect)
- Pump probe / ultrafast spectroscopy