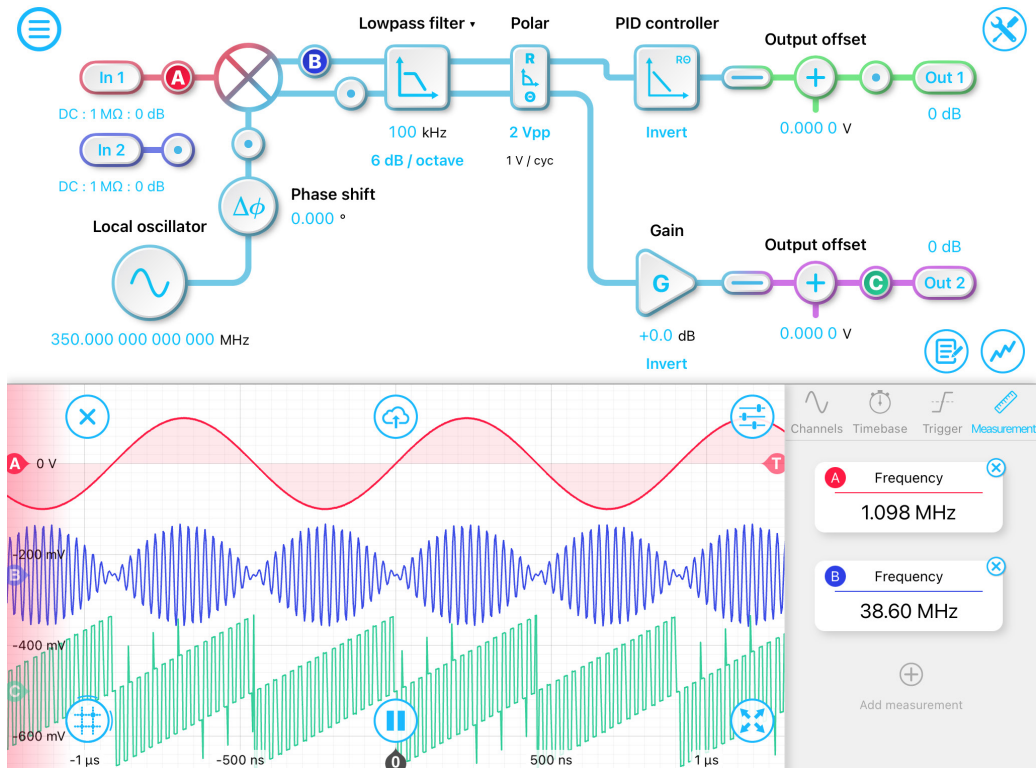




600 MHz Lock-in Amplifier

Moku:Pro's digital Lock-in Amplifier supports dual-phase demodulation (XY/R θ) from 1 mHz to 600 MHz with more than 120 dB dynamic reserve. A PID Controller can be placed after the demodulation stage for phase-locked loop applications. It also features an integrated 4-channel Oscilloscope and Data Logger, enabling you to observe signals at up to 1.25 GSa/s and log data at up to 10 MSa/s.



Demod. Frequency
1 mHz to 600 MHz

Dynamic Reserve
> 120 dB

Time Constant
From 12.8 ns

Filter Slopes
6, 12, 18, 24 dB/Oct

Input Noise
30 nV/ $\sqrt{\text{Hz}}$ at 100 Hz

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 and Data Logger

Specifications

- Demodulate with frequencies ranging from 1 mHz to 600 MHz with μHz resolution
- External 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 12.8 ns to 0.215 s
- 6, 12, 18, or 24 dB/octave filter roll-off
- Output gain range: -80 to +160 dB
- LO output up to 500 MHz with variable amplitude
- Ultrafast data acquisition: snapshot mode up to 1.25 GSa/s, continuous mode up to 1 MSa/s

Applications

- Laser frequency stabilization
- Laser scanning microscopy
- Magnetic sensing (magneto-optical Kerr effect)
- Pump probe / ultrafast spectroscopy