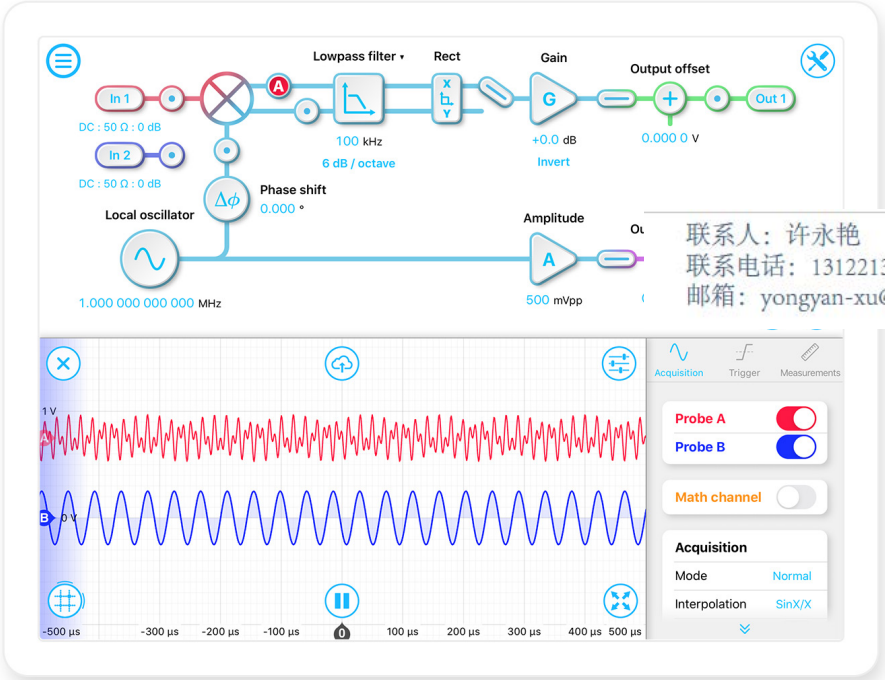
Moku:Lab Instrument Datasheet

200 MHz Lock-in Amplifier

Moku:Lab's digital Lock-in Amplifier supports dual-phase demodulation (XY/Rθ) from DC to 200 MHz with more than 120 dB of dynamic reserve. 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 1 MSa/s.



Demod. Frequency	Dynamic Reserve	Time Constant	Filter Slopes	Dual-phase Demod.	Built-in Feature
1 mHz to 200 MHz	**>120 dB**	**From 32 ns**	**6, 12, 18, 24 dB/Oct**	**X-Y or R-θ**	**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 PLL (phase-locked loop)
- Dual-phase demodulation
- Toggle between rectangular (X/Y mode) or polar coordinates (R/Theta mode)
- Built-in PID Controller

Specifications

- Demodulate with frequencies ranging from 1 mHz to 200 MHz with 3.55 µHz resolution
- Phase shift precision of 0.001°
- 50 Ω / 1 MΩ input impedance
- Adjustable time constant from 32 ns to 0.537 s
- 6, 12, 18, or 32 dB/octave filter roll-off
- Output gain range: -80 to +160 dB
- LO output up to 200 MHz with variable amplitude
- Ultra-fast data acquisition: snapshot mode up to 500 MSa/s, continuous mode up to 1 MSa/s

Applications

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