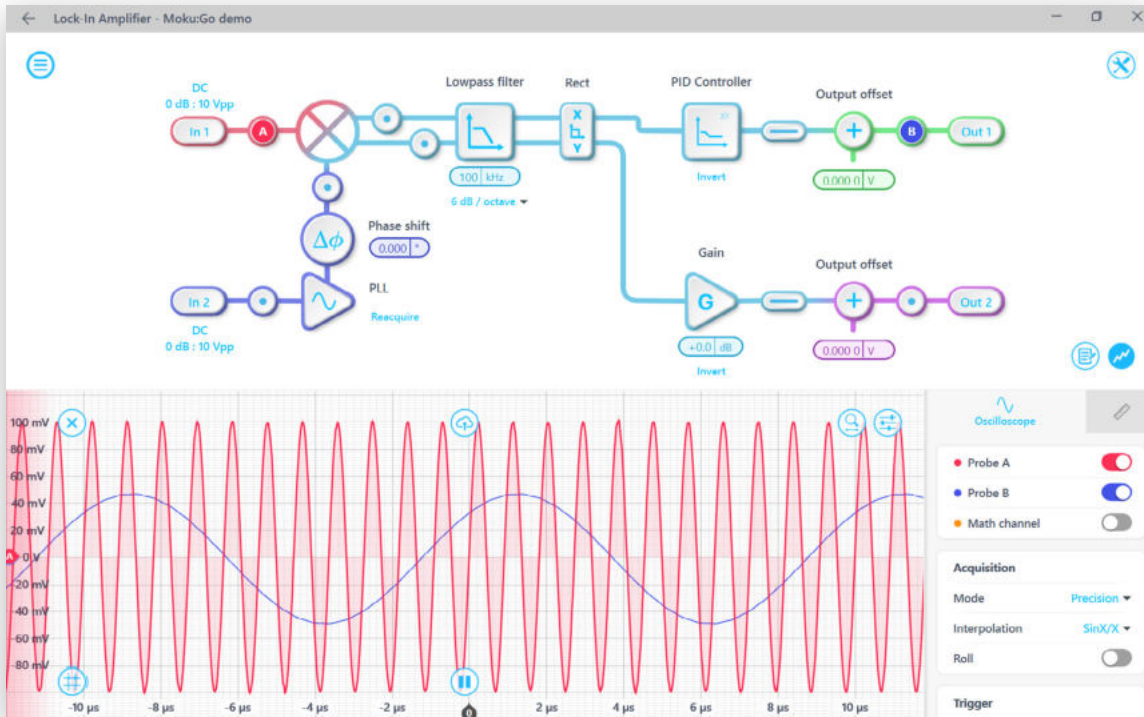




# 20 MHz Lock-in Amplifier



Moku:Go's digital Lock-in Amplifier supports dual-phase demodulation (XY/R $\theta$ ) from DC to 20 MHz. It features an integrated 2-channel oscilloscope and data logger, enabling you to observe signals at up to 125 MSa/s and log data at up to 1 MSa/s. A PID controller can also be placed after the demodulation stage for phase-locked loop applications.



<b>Demod. Frequency</b> 1 mHz to 20 MHz	<b>Time Constant</b> 128 ns to 1.59 s	<b>Filter Slopes</b> 6, 12, 18, 24 dB/Oct	<b>Dual-phase Demod.</b> X-Y or R- $\theta$	<b>Signal Generator</b> Up to 20 MHz	<b>Built-in Feature</b> PID Controller
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## Features

- 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 20 MHz with  $\mu$ Hz resolution
- Phase shift precision of 0.001°
- 1 M $\Omega$  input impedance, AC/DC coupling
- Adjustable time constant from 128 ns to 1.59 s
- 6, 12, 18, or 24 dB/octave filter roll-off
- Output gain range: -80 to +160 dB
- LO output up to 20 MHz with variable amplitude
- Dynamic reserve > 100 dB
- Onboard data acquisition: snapshot mode up to 125 MSa/s, continuous mode up to 1 MSa/s

## Applications

- Signal modulation and demodulation
- Software-defined radio
- Phase-locked loop
- Laser frequency stabilization
- Radio receiver education
- Signal extraction from noise education