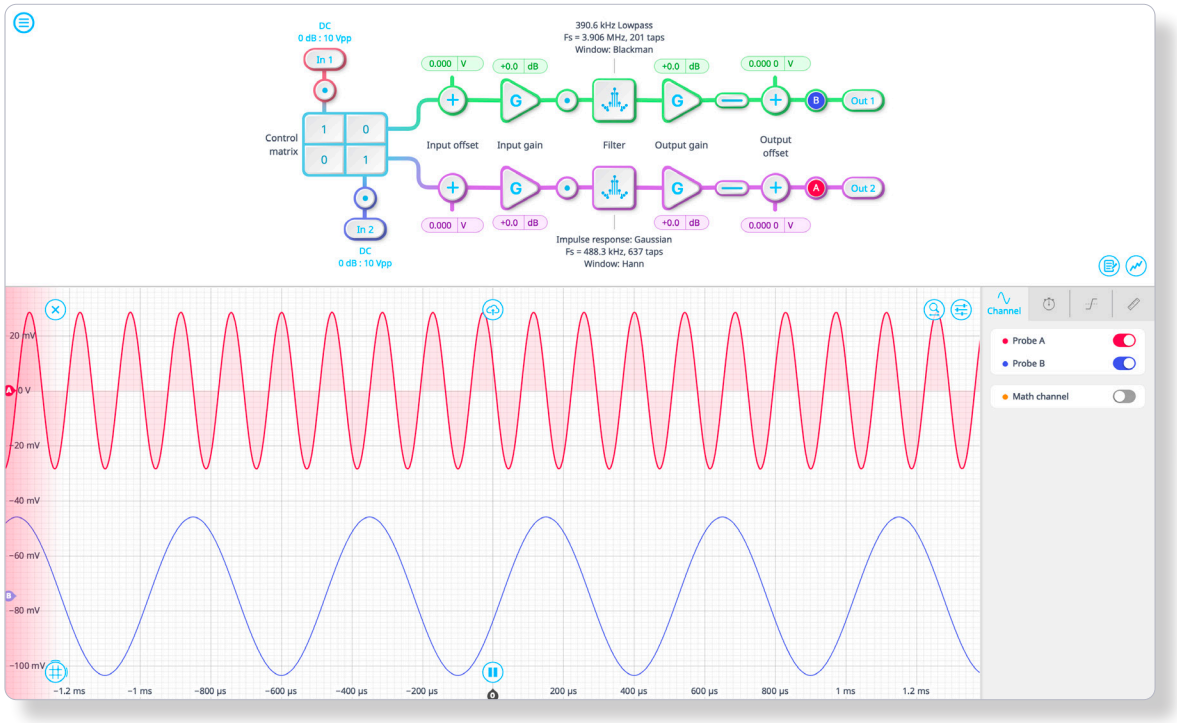
Moku:Go Instrument Datasheet

FIR Filter Builder

With the Moku:Go FIR Filter Builder, you can design and implement lowpass, highpass, bandpass, and bandstop finite impulse response (FIR) filters with up to 14,819 coefficients. The desktop interface allows you to fine-tune your filter's response in the frequency and time domains to suit your specific application. Select between four frequency response shapes, five common impulse responses, and eight window functions.



Sampling Rate	Filter Coefficients	Input Range	Output Voltage Range	Integrated Oscilloscope
Up to 3.906 MHz	**Up to 14,819**	**± 5 V or ± 25 V**	**± 5 V into high-z**	**125 MSa/s**

Features

- Visualize your signal and configuration in real-time: design filters in the time domain or in the frequency domain
- Visualize the filter's transfer function, impulse and step response, or group and phase delay
- Block diagram view of the digital signal processing chain with built-in probe points for signal monitoring and logging
- Load your own filter coefficients or enter an equation to create a customized impulse response

Specifications

- Independent channels: 2
- Coefficient count at various sampling rates:
  - 2 to 232 @ 3.906 MHz
  - 2 to 928 @ 976.6 kHz
  - 2 to 7,424 @ 244.1 kHz
  - 2 to 14,819 @ 61.04 kHz
  - 2 to 14,819 @ 30.52 kHz
- Design domains: time (impulse response), frequency (frequency response)
- Impulse response: rectangular, sinc, equation input, custom, etc.
- Frequency response: lowpass, highpass, bandpass, bandstop
- Window functions: Blackman, Hanning, Barlett, etc.

Applications

- Impulse response simulation
- DSP system design
- Noise filtering
- Signal amplification
- Fractional delay generation