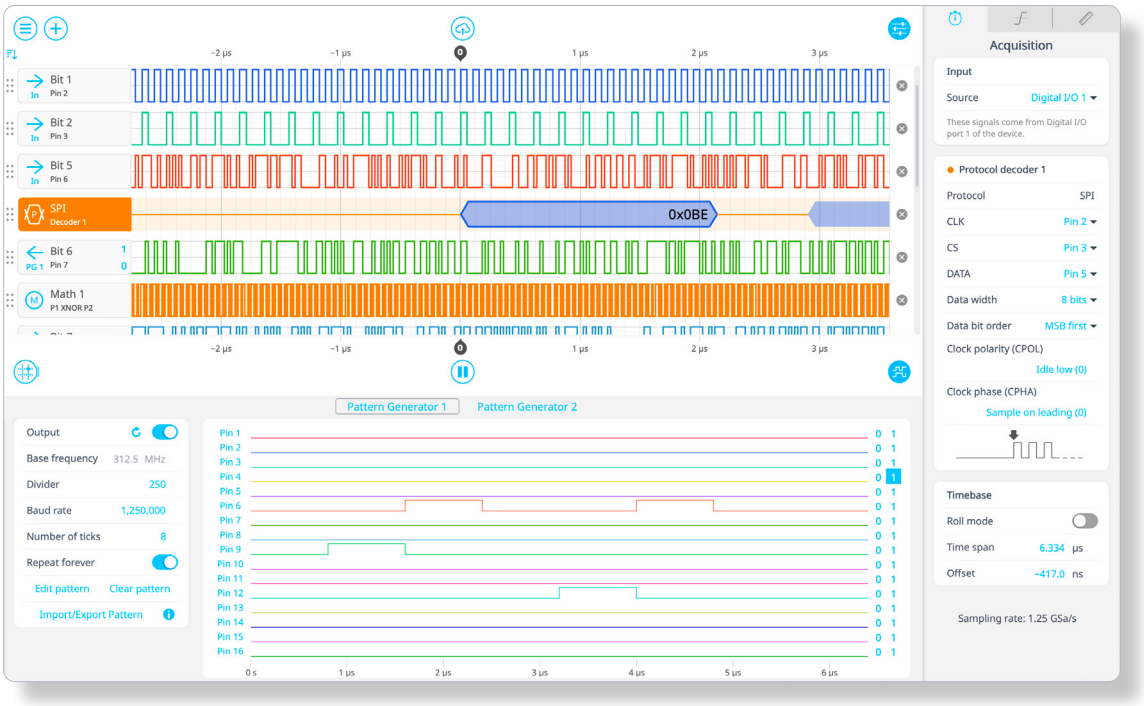
Moku:Delta Instrument Datasheet

Logic Analyzer

Moku:Delta Logic Analyzer enables high-speed, multi-channel digital signal inspection and protocol decoding with seamless integration into your workflow. Featuring 32 bidirectional digital I/O channels and 8 analog channels with configurable threshold sampling rates at 312.5 MSa/s. Decode standard protocols including UART, SPI, I2C, CAN, I2S, USB, and parallel bus with ease, and leverage built-in Boolean logic operations (AND, OR, XOR, etc.) for complex signal analysis. With full API support across Python and MATLAB, and tight integration with Moku Cloud Compile, the Logic Analyzer accelerates custom hardware development from design to deployment.



Sample Memory Depth	Pattern Memory Depth	Input / Output Sampling Rate	Supported Protocols	Decoding Rate
250k × 16	**32,764 × 16**	**312.5 MSa/s**	**UART, I2C, I2S, CAN, SPI, USB, and Parallel Bus**	**> 100 MHz**

Features

- Two selectable 16-bit input buses and two 16-bit Pattern Generators
- Eight analog inputs with configurable threshold
- One auxiliary input channel from external trigger input
- Supported protocol: UART, I2C, I2S, SPI, CAN, USB, and parallel bus
- Supported math: AND, OR, XOR, NAND, NOR, XNOR
- Intuitive graphical user interface with Python and MATLAB API support

Specifications

- Sample memory depth: 250k × 16
- Pattern memory depth: 32,768 × 16
- Maximum clock frequency: 312.5 MHz

Logic Analyzer

- Logic level: 3.3 V, 5 V tolerant
- Impedance: 1 MΩ
- Sampling rate: up to 312.5 MSa/s

Pattern Generator

- Sampling rate: up to 312.5 MSa/s
- Logic level: LVCMOS (3.3 V)

Protocol Decoder

- Decode rate: > 100 MHz (protocol dependent)

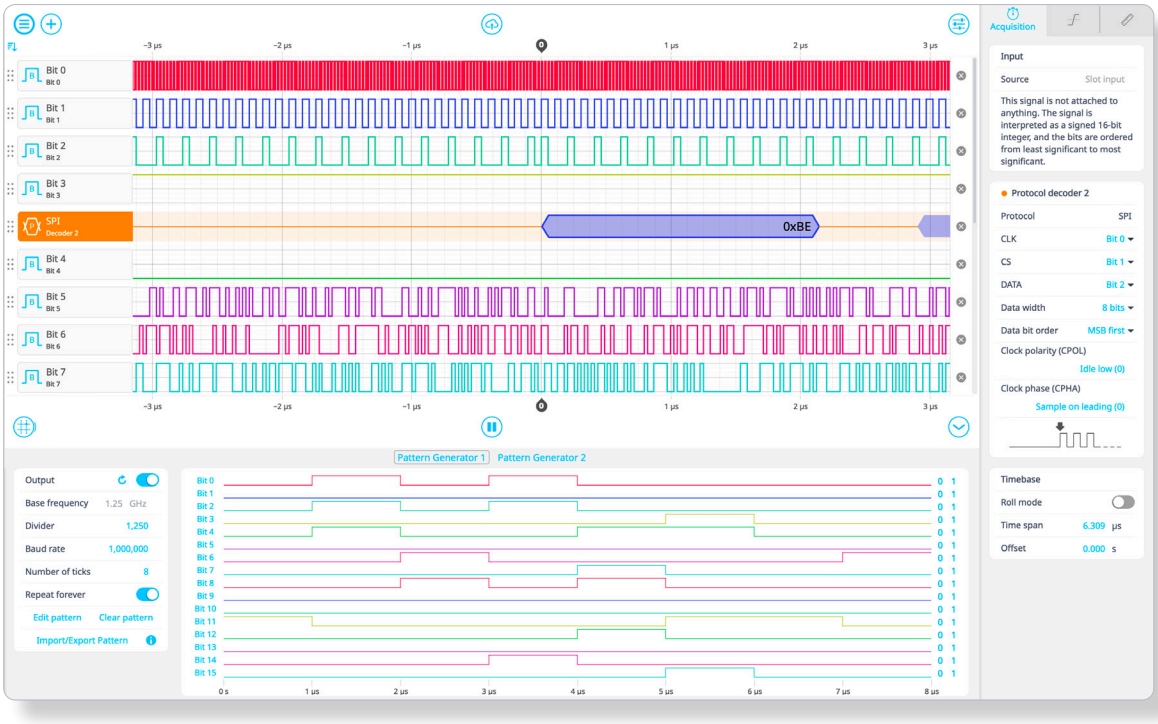
Applications

- Custom design simulation, debugging, and monitoring
- IC testing and validation
- Digital circuit design
- Digital communication diagnosis
- Protocol decoding
- Signal simulation
- Embedded system development
- Mixed-signal system debugging

Moku:Pro Instrument Datasheet

Logic Analyzer

The Moku:Pro Logic Analyzer can measure and decode digital signals through four analog inputs with configurable a threshold, the auxiliary TTL trigger port, or from other instruments in Multi-instrument Mode. Two independent Protocol Decoders can be added to decode UART, I2C, and other protocols. The Logic Analyzer is especially useful in Multi-instrument Mode, where it can be connected to other instruments through a 16-bit bus input and two 16-bit Pattern Generators. The Logic Analyzer is an invaluable tool for monitoring and debugging custom designs, significantly accelerating the development process.



Sample Memory Depth	Pattern Memory Depth	Input/Output Sampling Rate	Supported Protocols	Protocol decoding rate
250k × 16	**32,764 × 16**	**1.25 GSa/s**	**UART, I2C, I2S, and SPI**	**> 40 MHz**

Features

- Four analog inputs with configurable threshold
- One auxiliary input channel from external trigger input
- 16-bit input bus and two 16-bit Pattern Generators in Multi-instrument Mode
- Supported Protocol: UART, I2C, I2S, and SPI
- Supported Math: AND, OR, XOR, NAND, NOR, XNOR
- Powerful, intuitive graphical user interface with Python, MATLAB, and LabVIEW API support

Specifications

- Sample memory depth: 250k × 16
- Pattern memory depth: 32,764 × 16

Logic Analyzer

- Threshold range: 40 Vpp
- Impedance: 1 MΩ
- Sampling rate: up to 1.25 GSa/s*

Pattern Generator

- Sampling rate: up to 1.25 GSa/s
- Maximum clock frequency: 612 MHz

Protocol Decoder

- Max decode rate: > 40 MHz (protocol dependent)

Applications

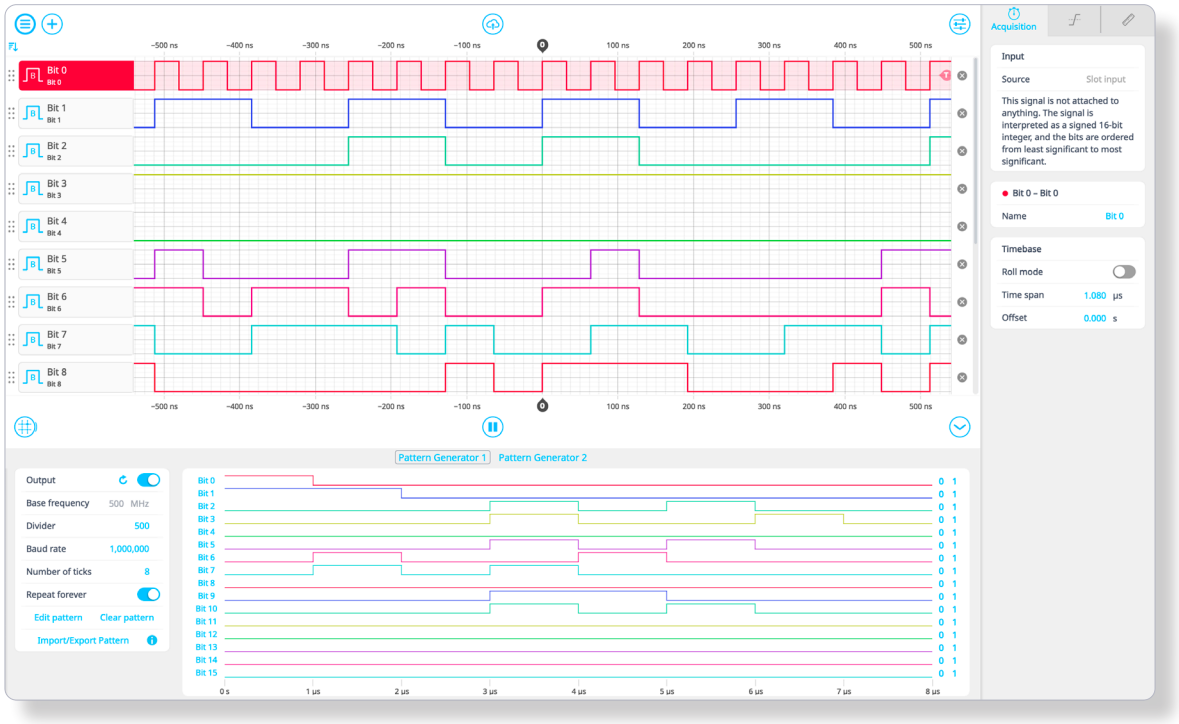
- Custom design simulation, debugging and monitoring
- IC testing and validation
- Digital circuit design
- Digital communication diagnosis
- Protocol decoding
- Signal simulation

** Note: Moku:Pro analog input bandwidth is 300 MHz*

Moku:Lab Instrument Datasheet

Logic Analyzer

The Moku:Lab Logic Analyzer can measure and decode digital signals through two analog inputs with configurable a threshold, the auxiliary TTL trigger port, or from other instruments in Multi-instrument Mode. Two independent protocol decoders can be added to decode UART, I2C, and other protocols. The Logic Analyzer is especially useful in Multi-instrument Mode, where it can be connected to the adjacent slot through a 16-bit bus input and two 16-bit Pattern Generators. The Logic Analyzer is an invaluable tool for monitoring and debugging custom designs, significantly accelerating the development process.



Sample memory depth	Pattern memory depth	Input sampling rate	Supported protocols	Protocol decoding rate
250k × 16	**32,764 × 16**	**500 MSa/s**	**UART, I2C, I2S, SPI**	**> 20 MHz**

Features

- Two analog inputs with configurable threshold
- One auxiliary input channel from external trigger input
- 16-bit input bus connection and two 16-bit Pattern Generators in Multi-instrument Mode
- Supported Protocol: UART, I2C, SPI, I2S
- Supported Math: AND, OR, XOR, NAND, NOR, XNOR
- Powerful, intuitive graphical user interface with Python, MATLAB, and LabVIEW API support

Specifications

- Sample memory depth: 250k × 16
- Pattern memory depth: 32,764 × 16

Logic Analyzer

- Analog range: 10 Vpp
- Impedance: 1 MΩ
- Sampling rate: up to 500 MSa/s*

Pattern Generator

- Sampling rate: up to 500 MSa/s
- Maximum clock frequency: 250 MHz

Protocol Decoder

- Max decode rate: > 20 MHz (protocol-dependent)

Applications

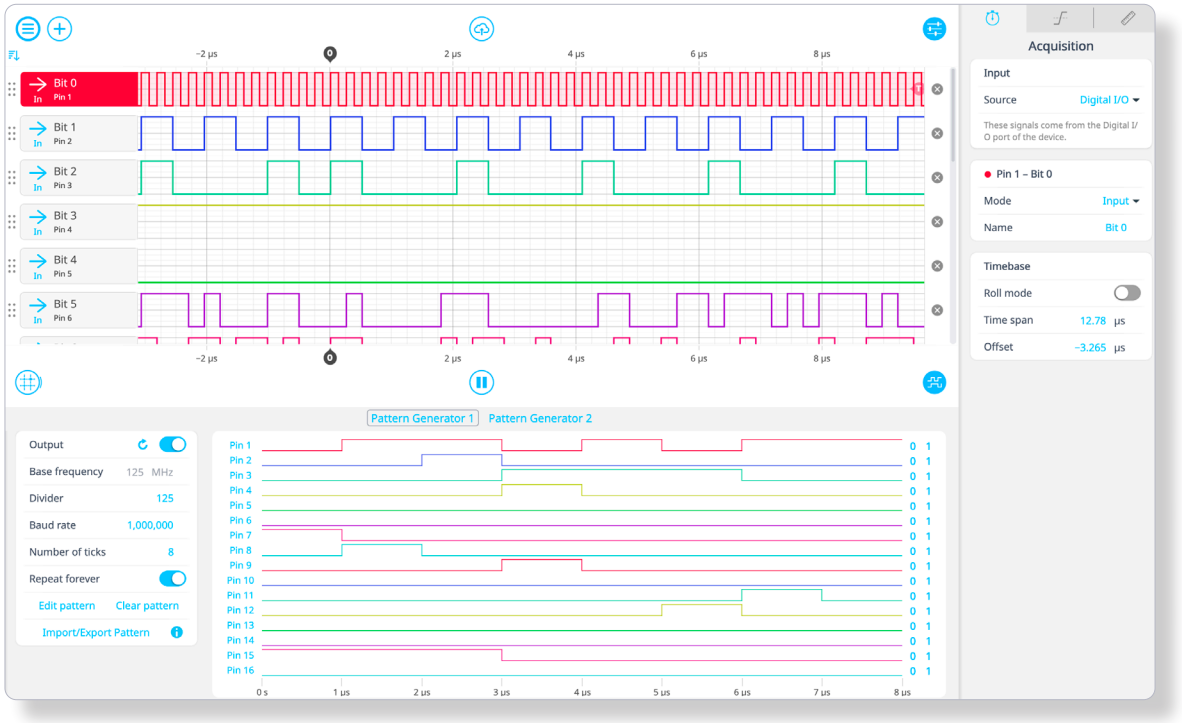
- Custom design simulation, debugging and monitoring
- IC testing and validation
- Digital circuit design
- Digital communication diagnosis
- Protocol decoding
- Signal simulation

** Note: Moku:Lab analog input bandwidth is 200 MHz*

Moku:Go Instrument Datasheet

Logic Analyzer

The Moku:Go Logic Analyzer is equipped with 16 bidirectional digital I/O with sampling rates up to 125 MSa/s. It supports 3.3 V logic levels (5 V tolerant) and 250k × 16 input sample depth. Two independent protocol channels can be added to decode CAN, UART, I2C, I2S, and SPI. Common measurements are readily available and can be shared along with data and screenshots to your computer or cloud. The Logic Analyzer is an invaluable tool for monitoring and debugging custom designs from Moku Cloud Compile, significantly accelerating the development process.



Sample Memory Depth	Pattern Memory Depth	Input/Output Sampling Rate	Supported Protocol	Max decoding rate
250k × 16	**32,764 × 16**	**125 MSa/s**	**UART, I2C, I2S, SPI, CAN, Parallel Bus**	**5 MHz**

Features

- 16 channel bidirectional digital I/O with sampling rates up to 125 MSa/s.
- 16-bit input bus and two 16-bit Pattern Generators in Multi-instrument Mode
- Supported Protocol: UART, I2C, I2S, SPI, CAN, and Parallel Bus
- Supported Math: AND, OR, XOR, NAND, NOR, XNOR
- Powerful, intuitive graphical user interface with Python, MATLAB, and LabVIEW API support.

Specifications

- Sample memory depth: 250k × 16
- Pattern memory depth: 32,764 × 16
- Maximum clock frequency: 62.5 MHz*

Logic Analyzer

- Logic level: 3.3 V, 5 V tolerant
- Impedance: 1 MΩ
- Sampling rate: up to 125 MSa/s

Pattern Generator

- Sampling rate: up to 125 MSa/s
- Logic level: 3.3 V
- Impedance: 400 Ω

Protocol Decoder

- Max decode rate: 5 MHz (protocol dependent)

Applications

- Custom design simulation, debugging and monitoring
- IC testing and validation
- Digital circuit design
- Digital communication diagnosis
- Protocol decoding
- Signal simulation

** Please note that a high-speed cable is required to achieve the maximum clock rate.*