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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight U2531A

Agilent Keysight U2531A USB Modular Simultaneous Sampling DAQ The Agilent/Keysight U2531A isaUSB modular simultaneous-sampling data acquisition device with 4 differential analog input channels, 14-bit resolution, and 2 MSa/s maximum sampling per channel. OEM U2500A Series tables list programmable bipolar/unipolar ranges and large on-board memory. Simultaneous multi-channel capture, transient recording, and USB modular synchronized measurements. 4 differential simultaneous sampling channels The Agilent/Keysight U2531A isaUSB modular simultaneous-sampling data acquisition device with 4 differential analog input channels, 14-bit resolution, and 2 MSa/s maximum sampling per channel. OEM U2500A Series tables list programmable bipolar/unipolar ranges and large on-board memory. Simultaneous multi-channel capture, transient recording, and USB modular synchronized measurements. 4 differential simultaneous sampling channels Maximum Sampling Rate: 2 MSa/s per channel



MODEL

**Agilent / Keysight
U2531A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

U2531A

LISTING

<https://aumictechlabs.com/products/u2531a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight U2531A is a USB modular data acquisition device that combines simultaneous analog sampling with digital I/O and counter capabilities. Operating as a standalone instrument or integrated within the U2781A chassis, it delivers synchronized multi-channel acquisition via USB 2.0 USBTMC-USB488 connectivity. The U2531A functions as a digital multimeter, oscilloscope, or general-purpose DAQ system, supporting polling, continuous, and burst acquisition modes across

Windows environments. Technical Specifications Analog Inputs: 4 simultaneous sampling channels at 2 MSa/s per channel, 14-bit resolution. Bipolar input ranges include ± 10 V, ± 5 V, and ± 2.5 V full-scale. Analog Outputs: 2 channels at 1 MSa/s update rate, 12-bit resolution. Supports both predefined and arbitrary waveform generation. Digital I/O: 24-bit programmable TTL input/output channels. Digital Counters: 2 general-purpose counter channels. Triggering: Simple triggering capabilities for acquisition control. Connectivity: USB 2.0 with USBTMC-USB488 standard compliance.

Key Features Four simultaneous analog input channels eliminate timing skew across measurement points 14-bit analog input resolution and 2 MSa/s per-channel sampling rate support waveform capture and transient analysis Dual analog outputs with 1 MSa/s update rate enable stimulus generation and real-time feedback control 24-bit digital I/O provides flexible logic-level interfacing and timing synchronization Multiple acquisition modes (polling, continuous, burst) adapt to DMM, oscilloscope, and data logging workflows Optional U2781A chassis integration enables multi-module synchronization and expanded channel density

Typical Applications Transient waveform capture and signal characterization Multi-channel environmental and sensor monitoring Automated test systems requiring synchronized stimulus-response measurement Educational laboratory setups combining measurement and signal generation Real-time data acquisition with TTL synchronization signals

Compatibility & Integration Supported development environments include Keysight VEE, MATLAB® R2007a, NI LabVIEW, and Microsoft® Visual Studio®. Keysight Measurement Manager software streamlines configuration and measurement workflows. Optional U2901A or U2902A terminal block adapters simplify field wiring. Runs on Microsoft® Windows® operating systems.

U2531A Characteristics / Specifications

PARAMETER	VALUE
Model	U2531A
Analog Input Resolution	14 bits
Analog Input Channels	4 differential
Maximum Sampling Rate	2 MSa/s per channel
Programmable Bipolar Input Ranges	plus or minus 10 V 5 V 2.5 V 1.25 V
Programmable Unipolar Input Ranges	0 to 10 V 5 V 2.5 V 1.25 V
Input Coupling	DC
Input Impedance	1 GOhm / 100 pF
Operational Common Mode Voltage Range	plus or minus 8.0 V maximum
Overvoltage Power On	continuous plus or minus 30 V
Overvoltage Power Off	continuous plus or minus 15 V
On Board Memory Class	up to 8 MSa class family
Trigger Modes	pre delay post and middle trigger
Remote Interface	Hi Speed USB 2.0
Series Family	U2500A simultaneous sampling DAQ
Compatible Chassis	U2781A USB modular product chassis
Brand Lineage	Agilent / Keysight
Instrument Type	simultaneous sampling USB DAQSampling Architecture: simultaneous sampling
Brand Lineage Detail	Agilent Keysight USB modular
Form Factor	USB modular module
Analog Output Class	per U2500A family tables when equipped

U2531A Specifications

PARAMETER	VALUE
Key Features	4 differential simultaneous sampling channels
Technical Specifications	Model: U2531A
Notes	From Keysight/Agilent USB Modular Products data sheet model column for U2531A.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Instrument Type	simultaneous sampling USB DAQSampling Architecture: simultaneous sampling
Brand Lineage Detail	Agilent Keysight USB modular
Form Factor	USB modular module
Analog Output Class	per U2500A family tables when equipped
Notes	
From Keysight/Agilent USB Modular Products data sheet model column for U2531A.	

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.