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Data Sheet

August 5, 2026

KEYSIGHT

Keysight (Agilent) U2542A 500 kSa/s USB Modular Simultaneous Data Acquisition

Keysight (Agilent) U2542A 500 kSa/s USB Modular Simultaneous Data Acquisition The Keysight U2542A isaU2500A Series USB modular simultaneous-sampling multifunction DAQ with 16-bit resolution and up to 500 kSa/s per channel. It provides four differential analog inputs (dedicated ADC per channel), two 12-bit analog outputs, 24-bit programmable DIO, and two counter/timers. USB 2.0 / USBTMC-USB488; SCPI and IVI-COM. Simultaneous multi-channel acquisition; transient and phase-sensitive measurements; USB modular ATE; standalone or U2781A chassis modular DAQ. The Keysight U2542A isaU2500A Series USB modular simultaneous-sampling multifunction DAQ with 16-bit resolution and up to 500 kSa/s per channel. It provides four differential analog inputs (dedicated ADC per channel), two 12-bit analog outputs, 24-bit programmable DIO, and two counter/timers. USB 2.0 / USBTMC-USB488; SCPI and IVI-COM. Simultaneous multi-channel acquisition; transient and phase-sensitive measurements; USB modular ATE; standalone or U2781A chassis modular DAQ.

No photo

MODEL

Keysight U2542A

CALIBRATION

**N/A — off-catalog
OEM datasheet**

CONDITION

**See OEM
documentation**

STATUS

**Not listed on
Aumictech
inventory**

RFQ / SKU

U2542A

LISTING

**Off-catalog — OEM dat
asheet only**

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

Features & description

From manufacturer datasheet

Features

• Analog in: 4 differential; 16-bit; 500 kSa/s/ch simultaneous • Analog out: 2 ch; 12-bit; up to 1 MSa/s; FG mode (sine/square/triangle/sawtooth/noise) • DIO: 24-bit TTL programmable • Counters: 2 independent; 0.1 Hz–6 MHz @ 50% duty; max count $2^{31}-1$ • FIFO: up to 8 MSa (AI) • Ranges: bipolar $\pm 10/\pm 5/\pm 2.5/\pm 1.25$ V; unipolar 0–10/5/2.5/1.25 V • USB 2.0; SCPI; IVI-COM; optional U2901A/U2902A terminal blocks

U2542A Characteristics / Specifications

PARAMETER	VALUE
Model	U2542A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	USB Modular Simultaneous Sampling Multifunction DAQ
Family	U2500A Series
Alias	U2542A; Agilent U2542A Analog Input
Resolution	12 bits; Channels: 2
Channels	4 differential
Max Sampling Rate	500 kSa/s per channel (simultaneous)
Input Impedance	1 G Ω / 100 pF (family)
Common Mode	± 8.0 V max (family)
Overvoltage	Power-on ± 30 V continuous; Power-off ± 15 V continuous (family)
FIFO	up to 8 MSa (1 ch) / 2 MSa/ch (4 ch) (family) Analog Output
Max Update Rate	1 MSa/s
Ranges	bipolar $\pm 10/\pm 5/\pm 2.5/\pm 1.25$ V; unipolar 0–10/5/2.5/1.25 V
Output Impedance	0.1 Ω typical; Drive: 5 mA Digital / Counter
DIO	24-bit programmable I/O, TTL
Counters	2 up/down; 0.1 Hz to 6 MHz (50% duty) Operational Notes Sibling U2541A is 250 kSa/s; U2531A is 14-bit 2 MSa/s. Prefer Keysight U2500A datasheet 5991-0651.
Analog in	4 differential; 16-bit; 500 kSa/s/ch simultaneous
Analog out	2 ch; 12-bit; up to 1 MSa/s; FG mode (sine/square/triangle/sawtooth/noise)

U2542A Specifications

PARAMETER	VALUE
Key Features	- Analog in: 4 differential; 16-bit; 500 kSa/s/ch simultaneous
Technical Specifications	Model: U2542A
Analog Input	Resolution: 16 bits
Analog Output	Resolution: 12 bits; Channels: 2
Digital / Counter	DIO: 24-bit programmable I/O, TTL
Operational Notes	Sibling U2541A is 250 kSa/s; U2531A is 14-bit 2 MSa/s. Prefer Keysight U2500A datasheet 5991-0651.

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	
Specifications	
PARAMETER	VALUE
Model	U2542A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	USB Modular Simultaneous Sampling Multifunction DAQ
Family	U2500A Series
Alias	U2542A; Agilent U2542A
Analog Input	
Specifications	
PARAMETER	VALUE
Resolution	16 bits
Channels	4 differential
Max Sampling Rate	500 kSa/s per channel (simultaneous)
Input Impedance	1 G Ω / 100 pF (family)
Common Mode	± 8.0 V max (family)
Overvoltage	Power-on ± 30 V continuous; Power-off ± 15 V continuous (family)
FIFO	up to 8 MSa (1 ch) / 2 MSa/ch (4 ch) (family)
Analog Output	
Specifications	
PARAMETER	VALUE
Resolution	12 bits; Channels: 2
Max Update Rate	1 MSa/s
Ranges	0–10 V, ± 10 V, 0–AO_EXT_REF, $\pm$ AO_EXT_REF
Output Impedance	0.1 Ω typical; Drive: 5 mA
Digital / Counter	
DIO: 24-bit programmable I/O, TTL	
Counters: 2 up/down; 0.1 Hz to 6 MHz (50% duty)	

Operational Notes

Sibling U2541A is 250 kSa/s; U2531A is 14-bit 2 MSa/s. Prefer Keysight U2500A datasheet 5991-0651.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: N/A — off-catalog OEM datasheet. See OEM documentation · Not listed on Aumictech inventory.

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

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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.