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**Data Sheet**

August 3, 2026

KEYSIGHT

# Keysight B1530A Waveform Generator

Keysight B1530A Waveform Generator / Fast Measurement Unit (WGFMU) The Keysight B1530A isaWaveform Generator / Fast Measurement Unit (WGFMU) plug-in module for the B1500A Semiconductor Device Analyzer. It combines arbitrary linear waveform generation (ALWG) / pulsing with fast current and voltage measurement for pulsed-IV and transient characterization of advanced MOSFETs and nanoscale devices. Each module provides two channels. 100 ns-class pulsed IV; bias-temperature instability and charge-trapping studies; dual-pulse gate/drain stress; nano-device and CNT transistor characterization requiring nA-level resolution at high speed. The Keysight B1530A isaWaveform Generator / Fast Measurement Unit (WGFMU) plug-in module for the B1500A Semiconductor Device Analyzer. It combines arbitrary linear waveform generation (ALWG) / pulsing with fast current and voltage measurement for pulsed-IV and transient characterization of advanced MOSFETs and nanoscale devices. Each module provides two channels. 100 ns-class pulsed IV; bias-temperature instability and charge-trapping studies; dual-pulse gate/drain stress; nano-device and CNT transistor characterization requiring nA-level resolution at high speed.



MODEL

**Keysight B1530A**

CALIBRATION

**Available on request**

CONDITION

**Used**

STATUS

**In stock**

RFQ / SKU

**B1530A**

LISTING

<https://aumictechlabs.com/products/b1530a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

## This unit

The Keysight B1530A Waveform Generator/Fast Measurement Unit (WGFMU) integrates arbitrary linear waveform generation with high-speed current-voltage measurement in a single module. It

enables simultaneous stimulus and characterization of semiconductor devices and materials without resource switching. The unit generates complex waveforms - including DC, AC, pulses, and staircase patterns - while capturing transient behavior at nanosecond resolution across approximately 4 M data points per channel.

### Technical Specifications

#### Waveform Generation

Arbitrary Linear Waveform Generation (ALWG) with 10 ns timing resolution  
Output voltage range:  $\pm 10$  V peak-to-peak  
Output impedance: 50  $\Omega$  (Pulse Generator mode)  
Sampling rate: Up to 200 MSa/s  
Waveform memory: 1 GB per channel (2 GB total)  
Vector length: 10 ns to 10,000 s (10 ns resolution per vector)  
Maximum vectors: 2,048  
Maximum sequences: 512  
Maximum loop counts:  $10^{12}$

#### Measurement Capabilities

Sampling speed: 5 ns minimum  
Current resolution: 1 nA  
Voltage resolution: 16-bit  
Measurement interval: 5 ns, or 10 ns to 1 s (10 ns resolution)  
Averaging per point: 10 ns to 20 ms (10 ns resolution)  
Bandwidth: DC to 16 MHz  
Noise floor: <0.1 mV (rms)  
Approximate measurement capacity: 4 M data points per channel

### Key Features

- Fast IV measurement and Pulse Generator (PG) modes
- Random Telegraph Signal (RTS) noise measurement without external equipment
- Dynamic current ranging for arbitrary waveform output
- Embedded measurement events synchronized to waveform points
- Support for AM, FM, PM, ASK, FSK, PSK, and QAM modulation
- Synchronization terminals for WGFMU-to-WGFMU and external equipment coordination

### Typical Applications

- Semiconductor device characterization
- Materials research and analysis
- Transient and time-domain phenomenon analysis
- Device reliability and noise characterization

### Compatibility & Integration

The B1530A operates as a module within Keysight test systems, with synchronization capability for multi-unit configurations and external instrument coordination.

## Features & description

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From manufacturer datasheet

### Features

- Pulsed IV: pulse widths from 100 ns to 10 s • Current measurement resolution: 1 nA • Sampling interval: as fast as 5 ns class (fast IV mode literature); measurement sampling rates up to 200 MSa/s • Measurement bandwidth: ~16 MHz • ALWG bandwidth: ~45 MHz; minimum programmable timing resolution: 10 ns • Waveform vector memory depth: 2,048; sequence memory for segment loops • Output voltage ranges:  $\pm 3$  V,  $\pm 5$  V,  $-10$  V to 0 V, 0 V to  $+10$  V • Voltage resolution: 96  $\mu$ V ( $\pm 3$  V range); 160  $\mu$ V (other ranges) • Two channels per module (one-box pulsed IV without external pulse generators)

## B1530A Characteristics / Specifications

| PARAMETER                              | VALUE                                                                                                                                                                                                                                                                                       |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                                  | B1530A                                                                                                                                                                                                                                                                                      |
| Manufacturer                           | Keysight Technologies (Agilent)                                                                                                                                                                                                                                                             |
| Instrument Type                        | Waveform Generator / Fast Measurement Unit (B1500A module)                                                                                                                                                                                                                                  |
| Alias                                  | B1530A; WGFMU; B1500A WGFMU Host Platform                                                                                                                                                                                                                                                   |
| Mainframe                              | Keysight/Agilent B1500A Semiconductor Device Analyzer                                                                                                                                                                                                                                       |
| Channels per Module                    | 2 Generation                                                                                                                                                                                                                                                                                |
| ALWG                                   | linear segments 10 ns to 10,000 ns length with 10 ns resolution                                                                                                                                                                                                                             |
| Waveform Vector Memory                 | 2,048 points                                                                                                                                                                                                                                                                                |
| Analog Bandwidth (ALWG)                | approximately 45 MHz                                                                                                                                                                                                                                                                        |
| PG / Fast IV modes                     | pulse/waveform generation with integrated measurement (mode-dependent rise/fall) Measurement                                                                                                                                                                                                |
| Current Resolution                     | 1 nA                                                                                                                                                                                                                                                                                        |
| Sampling Rate                          | up to 200 MSa/s                                                                                                                                                                                                                                                                             |
| Measurement Bandwidth                  | ~16 MHz                                                                                                                                                                                                                                                                                     |
| Pulse Width Range (pulsed IV solution) | 100 ns to 10 s Output Ranges                                                                                                                                                                                                                                                                |
| Voltage Ranges                         | $\pm 3$ V; $\pm 5$ V; $-10$ V to 0 V; 0 V to $+10$ V                                                                                                                                                                                                                                        |
| Voltage Resolution                     | 96 $\mu$ V ( $\pm 3$ V); 160 $\mu$ V (other ranges) Operational Notes Requires B1500A mainframe and appropriate RSU/cabling for the device. Prefer Keysight B1530A / WGFMU technical overviews 5990-4567 and 5990-3672 for full current ranges, accuracy, and software (EasyEXPERT) limits. |
| Pulsed IV                              | pulse widths from 100 ns to 10 s                                                                                                                                                                                                                                                            |
| Current measurement resolution         | 1 nA                                                                                                                                                                                                                                                                                        |
| Sampling interval                      | as fast as 5 ns class (fast IV mode literature); measurement sampling rates up to 200 MSa/s                                                                                                                                                                                                 |
| ALWG bandwidth                         | ~45 MHz; minimum programmable timing resolution: 10 ns                                                                                                                                                                                                                                      |
| Waveform vector memory depth           | 2,048; sequence memory for segment loops                                                                                                                                                                                                                                                    |
| Output voltage ranges                  | $\pm 3$ V, $\pm 5$ V, $-10$ V to 0 V, 0 V to $+10$ V                                                                                                                                                                                                                                        |

PARAMETER

VALUE

Bandwidth

~16 MHz - ALWG bandwidth: ~45 MHz; minimum programmable timing resolution: 10 ns - Waveform vector memory depth: 2,048; sequence memory for segment loops - Output voltage ranges:  $\pm 3$  V,  $\pm 5$  V,  $-10$  V to 0 V, 0 V to  $+10$  V - Voltage resolution: 96  $\mu$ V ( $\pm 3$ )

# B1530A Specifications

| PARAMETER                | VALUE                                                                 |
|--------------------------|-----------------------------------------------------------------------|
| Key Features             | - Pulsed IV: pulse widths from 100 ns to 10 s                         |
| Technical Specifications | Model: B1530A                                                         |
| Host Platform            | Mainframe: Keysight/Agilent B1500A Semiconductor Device Analyzer      |
| Generation               | ALWG: linear segments 10 ns to 10,000 ns length with 10 ns resolution |
| Measurement              | Current Resolution: 1 nA                                              |
| Output Ranges            | Voltage Ranges: $\pm 3$ V; $\pm 5$ V; $-10$ V to 0 V; 0 V to $+10$ V  |

# 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                                                                                                | B1530A                                                                           |
| Manufacturer                                                                                         | Keysight Technologies (Agilent)                                                  |
| Instrument Type                                                                                      | Waveform Generator / Fast Measurement Unit (B1500A module)                       |
| Alias                                                                                                | B1530A; WGFMU; B1500A WGFMU                                                      |
| Host Platform                                                                                        |                                                                                  |
| Mainframe: Keysight/Agilent B1500A Semiconductor Device Analyzer                                     |                                                                                  |
| Channels per Module: 2                                                                               |                                                                                  |
| Generation                                                                                           |                                                                                  |
| Specifications                                                                                       |                                                                                  |
| PARAMETER                                                                                            | VALUE                                                                            |
| ALWG                                                                                                 | linear segments 10 ns to 10,000 ns length with 10 ns resolution                  |
| Waveform Vector Memory                                                                               | 2,048 points                                                                     |
| Analog Bandwidth (ALWG)                                                                              | approximately 45 MHz                                                             |
| PG / Fast IV modes                                                                                   | pulse/waveform generation with integrated measurement (mode-dependent rise/fall) |
| Measurement                                                                                          |                                                                                  |
| Specifications                                                                                       |                                                                                  |
| PARAMETER                                                                                            | VALUE                                                                            |
| Current Resolution                                                                                   | 1 nA                                                                             |
| Sampling Rate                                                                                        | up to 200 MSa/s                                                                  |
| Measurement Bandwidth                                                                                | ~16 MHz                                                                          |
| Pulse Width Range (pulsed IV solution)                                                               | 100 ns to 10 s                                                                   |
| Output Ranges                                                                                        |                                                                                  |
| Voltage Ranges: ±3 V; ±5 V; -10 V to 0 V; 0 V to +10 V                                               |                                                                                  |
| Voltage Resolution: 96 µV (±3 V); 160 µV (other ranges)                                              |                                                                                  |
| Operational Notes                                                                                    |                                                                                  |
| Requires B1500A mainframe and appropriate RSU/cabling for the device. Prefer Keysight B1530A / WGFMU |                                                                                  |

technical overviews 5990-4567 and 5990-3672 for full current ranges, accuracy, and software (EasyEXPERT) limits.

### Available from Aumictech

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

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

#### Aumictech

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NIST-traceable calibration · SAM registered ·  
30-day returns  
NAICS 423690 · 811210 · 541380  
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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.