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Data Sheet

August 3, 2026

KEYSIGHT

Keysight 33511B 20MHz Waveform Generator

Keysight 33511B 20 MHz Waveform Generator The Keysight 33511B is a single-channel 20 MHz Trueform waveform generator with arbitrary waveform capability in the 33500B Series. Jitter < 40 ps, THD < 0.04%, amplitude 1 mVpp–10 Vpp, 250 MSa/s, 16-bit resolution, 1 MSa arb memory (16 MSa Option MEM). Single-channel function/arb generation at 20 MHz; design validation and ATE. Instrument Type: Waveform / Arbitrary Waveform Generator (Trueform)

The Keysight 33511B is a single-channel 20 MHz Trueform waveform generator with arbitrary waveform capability in the 33500B Series. Jitter < 40 ps, THD < 0.04%, amplitude 1 mVpp–10 Vpp, 250 MSa/s, 16-bit resolution, 1 MSa arb memory (16 MSa Option MEM). Single-channel function/arb generation at 20 MHz; design validation and ATE. Instrument Type: Waveform / Arbitrary Waveform Generator (Trueform) Bandwidth: 20 MHz; Channels: 1; Arbitrary: Yes



MODEL

Keysight 33511B

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

33511B

LISTING

<https://aumictechlabs.com/products/33511b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight 33511B is a single-channel, 20 MHz arbitrary/function waveform generator built on Keysight's Trueform technology platform. It delivers superior signal fidelity with 5x lower harmonic distortion and 10x less jitter than conventional DDS generators, ensuring measured device characteristics reflect true performance rather than source imperfections. The instrument generates standard waveforms (sine, square, ramp, pulse, triangle, Gaussian noise, PRBS, DC) and nine built-in arbitrary waveforms including cardiac, exponential, Gaussian pulse, and Lorentz

profiles. User-defined arbitrary waveforms support up to 1 MSa standard memory (16 MSa optional) at 160 MSa/s or 1 MS/s sampling rates with 16-bit resolution. Advanced modulation capabilities include AM, FM, PM, FSK, BPSK, and PWM. Output ranges from 1 mVpp to 10 Vpp with 1 mVpp amplitude resolution - 10x better than typical generators for low-voltage work. Integrated waveform builder on the large color display simplifies signal creation. Multi-segment sequencing and signal summing enable complex waveform development. Variable bandwidth noise control adjusts frequency content. USB, LAN (LXI-C), and GPIB interfaces enable local and remote operation via integrated web browser.

Technical Specifications

Maximum output frequency: 20 MHz
Amplitude range: 1 mVpp to 10 Vpp
Amplitude resolution: 1 mVpp
User-defined arbitrary waveform memory: 1 MSa standard; 16 MSa optional (Option MEM)
Arbitrary waveform sampling rate: 160 MSa/s or 1 MS/s
Vertical resolution: 16-bit
Harmonic distortion: 5x lower than competitive models
Jitter: 10x less than conventional generators
Standard waveforms: Sine, Square, Ramp, Pulse, Triangle, Gaussian Noise, PRBS, DC
Built-in arbitrary waveforms: Cardiac, Exponential Fall, Exponential Rise, Gaussian Pulse, Haversine, Lorentz, D-Lorentz, Negative Ramp, Sinc
Modulation types: AM, FM, PM, FSK, BPSK, PWM, Sum
Operating temperature: 0 to 55 °C
Input voltage: 100–240 V AC

Key Features

Trueform technology for enhanced fidelity and reduced distortion
Multi-segment arbitrary waveform sequencing
Signal summing and dual-tone multifrequency generation
Variable bandwidth noise control
Large color display with integrated waveform builder

Typical Applications

Precision signal generation for device characterization
Low-voltage circuit testing and validation
Modulation and timing research
Arbitrary waveform development for specialized applications

Compatibility & Integration

USB, LAN (LXI-C), and GPIB connectivity
Remote control via integrated web browser
BenchVue enabled for measurement integration

Features & description

From manufacturer datasheet

Features

- 20 MHz; 1 channel; with arb • Trueform; jitter < 40 ps; THD < 0.04% • 250 MSa/s; 16-bit; 1 MSa (16 MSa MEM) • Options: MEM, OCX, SEC

33511B Characteristics / Specifications

PARAMETER	VALUE
Model	33511B
Manufacturer	Keysight Technologies
Instrument Type	Waveform / Arbitrary Waveform Generator (Trueform)
Family	33500B Series
Alias	33511B
Bandwidth	20 MHz; Channels: 1; Arbitrary: Yes
Jitter	< 40 ps; THD: < 0.04%
Amplitude	1 mVpp to 10 Vpp
Sample Rate	250 MSa/s; Resolution: 16-bit
Memory	1 MSa/channel; 16 MSa with MEM Model Contrast 33509B: 20 MHz, 1 ch, no arb 33511B: 20 MHz, 1 ch, with arb 33512B: 20 MHz, 2 ch, with arb Operational Notes Prefer Keysight 33500B Series fact sheet 5991-0757.
Options	MEM, OCX, SEC

33511B Specifications

PARAMETER	VALUE
Keysight 33511B 20 MHz Waveform Generator	Overview
Applications	Single-channel function/arb generation at 20 MHz; design validation and ATE.
Key Features	- 20 MHz; 1 channel; with arb
Technical Specifications	Model: 33511B
Model Contrast	33509B: 20 MHz, 1 ch, no arb
Operational Notes	Prefer Keysight 33500B Series fact sheet 5991-0757.

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	33511B
Manufacturer	Keysight Technologies
Instrument Type	Waveform / Arbitrary Waveform Generator (Trueform)
Family	33500B Series
Alias	33511B

Specifications

PARAMETER	VALUE
Bandwidth	20 MHz; Channels: 1; Arbitrary: Yes
Jitter	< 40 ps; THD: < 0.04%
Amplitude	1 mVpp to 10 Vpp
Sample Rate	250 MSa/s; Resolution: 16-bit
Memory	1 MSa/channel; 16 MSa with MEM

Model Contrast

33509B: 20 MHz, 1 ch, no arb

33511B: 20 MHz, 1 ch, with arb

33512B: 20 MHz, 2 ch, with arb

Operational Notes

Prefer Keysight 33500B Series fact sheet 5991-0757.

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.