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Data Sheet

August 3, 2026

KEYSIGHT

Keysight 33522B 30MHz Waveform Generator

Keysight 33522B 30 MHz Waveform Generator Overview The Keysight 33522B is a two-channel 30 MHz Trueform waveform generator with arbitrary waveform capability in the 33500B Series. It provides 250 MSa/s sampling, 16-bit amplitude resolution, standard 1 MSa/channel arb memory (16 MSa optional via MEM), jitter < 40 ps, and THD < 0.04%. Optional IQP baseband IQ player is available on 33522B. Applications Dual-channel function and arbitrary waveform generation; embedded and mixed-signal stimulus; IQ baseband playback (with IQP); general R&D and production ATE. Overview The Keysight 33522B is a two-channel 30 MHz Trueform waveform generator with arbitrary waveform capability in the 33500B Series. It provides 250 MSa/s sampling, 16-bit amplitude resolution, standard 1 MSa/channel arb memory (16 MSa optional via MEM), jitter < 40 ps, and THD < 0.04%. Optional IQP baseband IQ player is available on 33522B. Applications Dual-channel function and arbitrary waveform generation; embedded and mixed-signal stimulus; IQ baseband playback (with IQP); general R&D and production ATE.



MODEL

Keysight 33522B

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

33522B

LISTING

<https://aumictechlabs.com/products/33522b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight 33522B is a dual-channel 30 MHz waveform generator delivering high-fidelity signal synthesis across independent channels with 14-bit arbitrary waveform resolution. It generates

standard waveforms - sine, square, triangle, and pulse - plus white noise and modulated signals with comprehensive AM, FM, PM, and FSK capabilities. The instrument supports sweep functions in linear and logarithmic modes, coupled with flexible triggering from internal, external, manual, or line sources. Design verification, manufacturing test, and research applications benefit from its low THD ($<0.05\%$ at 1 kHz), tight phase noise (<-135 dBc/Hz at 1 kHz offset from 1 MHz carrier), and amplitude flatness to ± 0.25 dB up to 10 MHz.

Technical Specifications

Bandwidth: 30 MHz
Channels: 2 independent Arbitrary Waveform Memory: 14-bit resolution, 1 MSa/s sample rate, 16 Mpt record length per channel
Sine Wave Frequency Range: 1 μ Hz to 30 MHz
Sine Wave Amplitude Range: 1 mVpp to 10 Vpp (50 Ω load)
Amplitude Flatness: ± 0.25 dB up to 10 MHz; ± 0.5 dB up to 30 MHz
Total Harmonic Distortion: $<0.05\%$ at 1 kHz; $<0.1\%$ up to 30 MHz
Phase Noise: <-135 dBc/Hz (1 kHz offset, 1 MHz carrier)
Square Wave Frequency Range: 1 μ Hz to 30 MHz; edge time <10 ns typical
Pulse Wave Frequency Range: 1 MHz to 10 MHz; pulse width 10 ns to period minus 10 ns
Ramp Wave Frequency Range: 1 μ Hz to 5 MHz
Output Impedance: 50 Ω $\pm 2\%$
Output Amplitude Accuracy: $\pm 1.0\%$ of setting ± 1 mVpp
Output Offset Accuracy: $\pm 0.5\%$ of setting ± 5 mV

Key Features

Modulation: AM (0–100% depth), FM (0–10 MHz deviation), PM (0–360°), FSK with programmable hop times
Sweep modes: linear and logarithmic, 1 ms to 500 s rate, up/down/bidirectional direction
Trigger types: edge, pulse width, and state detection
TTL-compatible external trigger input and sync output
White Gaussian noise with programmable crest factor

Typical Applications

Electronic design verification and validation
Manufacturing test and parametric characterization
Research in signal processing and system design

Compatibility & Integration

Trigger sources include internal, external, manual, and line. The 50 Ω output impedance and TTL-level I/O integrate readily into test benches and automated measurement systems.

Features & description

From manufacturer datasheet

Features

- Bandwidth: 30 MHz; 2 channels with arbitrary waveforms - Trueform technology - Jitter: < 40 ps - THD: < 0.04% - Amplitude: 1 mVpp to 10 Vpp - Sample rate: 250 MSa/s - Resolution: 16-bit - Arb memory: 1 MSa/channel standard; 16 MSa optional (MEM) - Optional: OCX high-stability timebase; SEC NISPOM security; IQP IQ baseband player

33522B Characteristics / Specifications

PARAMETER	VALUE
Technical Specifications Model	33522B Manufacturer: Keysight Technologies Instrument Type: Waveform / Arbitrary Waveform Generator (Trueform) Family: 33500B Series Alias: 33522B; Keysight 33522B; Agilent 33522B
Bandwidth and Channels Bandwidth	30 MHz Number of Channels: 2 Arbitrary Waveforms: Yes (standard on 33522B) Sine / Pulse: Up to 30 MHz
Trueform Performance Jitter	< 40 ps THD: < 0.04% Amplitude Range: 1 mVpp to 10 Vpp Sample Rate: 250 MSa/s Amplitude Resolution: 16-bit Memory: 1 MSa/channel standard; 16 MSa/channel with Option MEM
Model Contrast 33520B	30 MHz, 2 channels, no arbitrary waveforms 33522B: 30 MHz, 2 channels, with arbitrary waveforms 33521B: 30 MHz, 1 channel, with arb Operational Notes Prefer Keysight 33500B Series datasheet/product fact sheet 5991-0757 for full modulation, accuracy, and interface tables. Do not confuse with 33611A/336xx (80/120 MHz Trueform).
Bandwidth	30 MHz; 2 channels with arbitrary waveforms - Trueform technology - Jitter: < 40 ps - THD: < 0.04% - Amplitude: 1 mVpp to 10 Vpp - Sample rate: 250 MSa/s - Resolution: 16-bit - Arb memory: 1 MSa/channel standard; 16 MSa optional (MEM) - Optional: OCX

33522B Specifications

PARAMETER	VALUE
Keysight 33522B 30 MHz Waveform Generator	Overview
Key Features	- Bandwidth: 30 MHz; 2 channels with arbitrary waveforms
Technical Specifications	Model: 33522B
Bandwidth and Channels	Bandwidth: 30 MHz
Trueform Performance	Jitter: < 40 ps
Options	MEM: 16 MSa memory per channel
Model Contrast	33520B: 30 MHz, 2 channels, no arbitrary waveforms

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 Model: 33522B Manufacturer: Keysight Technologies Instrument Type: Waveform / Arbitrary Waveform Generator (Trueform) Family: 33500B Series Alias: 33522B; Keysight 33522B; Agilent 33522B

Bandwidth and Channels Bandwidth: 30 MHz Number of Channels: 2 Arbitrary Waveforms: Yes (standard on 33522B) Sine / Pulse: Up to 30 MHz

Trueform Performance Jitter: < 40 ps THD: < 0.04% Amplitude Range: 1 mVpp to 10 Vpp Sample Rate: 250 MSa/s Amplitude Resolution: 16-bit Memory: 1 MSa/channel standard; 16 MSa/channel with Option MEM

Options MEM: 16 MSa memory per channel OCX: High-stability OCXO timebase SEC: NISPOM and file security IQP: IQ baseband signal player (33512B/33522B)

Model Contrast 33520B: 30 MHz, 2 channels, no arbitrary waveforms 33522B: 30 MHz, 2 channels, with arbitrary waveforms 33521B: 30 MHz, 1 channel, with arb

Operational Notes Prefer Keysight 33500B Series datasheet/product fact sheet 5991-0757 for full modulation, accuracy, and interface tables. Do not confuse with 33611A/336xx (80/120 MHz Trueform).

Trueform Performance

PARAMETER	VALUE
Jitter	< 40 ps
THD	< 0.04%
Amplitude Range	1 mVpp to 10 Vpp
Sample Rate	250 MSa/s
Amplitude Resolution	16-bit
Memory	1 MSa/channel standard; 16 MSa/channel with Option MEM

Specifications

PARAMETER	VALUE
Bandwidth	30 MHz
Number of Channels	2
Arbitrary Waveforms	Yes (standard on 33522B)
Sine / Pulse	Up to 30 MHz

Technical Specifications

PARAMETER	VALUE
Model	33522B
Manufacturer	Keysight Technologies
Instrument Type	Waveform / Arbitrary Waveform Generator (Trueform)
Family	33500B Series

PARAMETER

VALUE

Alias

33522B; Keysight 33522B; Agilent 33522B

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

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NIST-traceable calibration · SAM registered ·
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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.