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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 33220A

HP Agilent 33220A Function Arbitrary Waveform Generator The Agilent/Keysight 33220A is a 20 MHz function/arbitrary waveform generator using direct digital synthesis for sine and square waveforms to 20 MHz, with 14-bit 50 MSa/s 64 k-point arbitrary waveforms. OEM datasheets specify 10 mVpp to 10 Vpp amplitude into 50 ohm, AM/FM/PM/FSK/PWM modulation, and USB/GPIB/LAN connectivity. General-purpose stimulus to 20 MHz, arbitrary waveform playback for mixed-signal test, and automated bench source work over USB, GPIB, or LAN. The Agilent/Keysight 33220A is a 20 MHz function/arbitrary waveform generator using direct digital synthesis for sine and square waveforms to 20 MHz, with 14-bit 50 MSa/s 64 k-point arbitrary waveforms. OEM datasheets specify 10 mVpp to 10 Vpp amplitude into 50 ohm, AM/FM/PM/FSK/PWM modulation, and USB/GPIB/LAN connectivity. General-purpose stimulus to 20 MHz, arbitrary waveform playback for mixed-signal test, and automated bench source work over USB, GPIB, or LAN. 14-bit, 50 MSa/s, 64 k-point arbitrary waveforms



MODEL

**Agilent / Keysight
33220A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

33220A

LISTING

<https://aumictechlabs.com/products/33220a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent/Keysight 33220A is a 20 MHz function and arbitrary waveform generator delivering direct digital synthesis (DDS) precision across benchtop and system applications. It generates seven standard waveforms - sine, square, ramp, triangle, pulse, noise, and DC - plus user-defined

arbitrary waveforms with 14-bit resolution at 50 MSa/s. The instrument spans 1 μ Hz to 20 MHz for standard waveforms and 1 μ Hz to 6 MHz for arbitrary waveforms, with ± 1 μ Hz resolution and frequency accuracy of $\pm(10 \text{ ppm} + 3 \text{ pHz})$ over 90 days.

Technical Specifications

Waveform Capabilities

Standard waveforms: Sine, square, ramp, triangle, pulse, noise, DC

Arbitrary waveforms: 14-bit resolution, 50 MSa/s sample rate, 2 to 64 k points per waveform

Non-volatile memory: Four arbitrary waveforms

Included patterns: Exponential rise/fall, negative ramp, $\sin(x)/x$, cardiac

Output Specifications

Amplitude range (50 Ω load): 10 mVpp to 10 Vpp

Amplitude range (open circuit): 20 mVpp to 20 Vpp

Amplitude accuracy: $\pm 1\%$ of setting ± 1 mVpp at 1 kHz

DC offset range (50 Ω): ± 5 V; (open circuit): ± 10 V

DC offset accuracy: $\pm 2\%$ of offset $\pm 0.5\%$ of amplitude ± 2 mV

Output impedance: 50 Ω typical

Output isolation: 42 Vpk maximum to earth

Short-circuit protected with automatic overload disable

Frequency & Timing

Standard waveforms: 1 μ Hz to 20 MHz

Arbitrary waveforms: 1 μ Hz to 6 MHz

Frequency resolution: 1 μ Hz

Square wave rise/fall time: < 13 ns; overshoot $< 2\%$; duty cycle 20–80% (≤ 10 MHz), 40–60% (≤ 20 MHz)

Pulse minimum width: 20 ns (period ≤ 10 s) with 10 ns resolution

Pulse edge time: < 13 ns to 100 ns variable

Ramp linearity: $< 0.1\%$ of peak output (1 μ Hz to 200 kHz)

Noise bandwidth: 10 MHz typical

Frequency Reference

Internal accuracy: $\pm(10 \text{ ppm} + 3 \text{ pHz})$ in 90 days; $\pm(20 \text{ ppm} + 3 \text{ pHz})$ in 1 year

External reference (Option 001): 10 MHz with ± 500 Hz lock range and < 2 s lock time

Modulation Types: AM, FM, PM, FSK, PWM

Carrier waveforms: Sine, square, ramp, arbitrary

Modulation source: Internal or external

Key Features

Direct digital synthesis ensures stable, low-distortion signals

14-bit arbitrary waveform resolution with up to 64 k points

Four non-volatile memory slots for custom waveforms

Amplitude measurement in Vpp, Vrms, dBm, or high/low levels

Programmable modulation for advanced signal testing

Typical Applications

Research, development, and production environments requiring precision waveform generation and modulation testing.

Compatibility & Integration

External frequency reference capability (Option 001) enables clock synchronization in multi-instrument setups.

33220A Characteristics / Specifications

PARAMETER	VALUE
Sine Frequency Range	1 uHz to 20 MHz
Square Frequency Range	1 uHz to 20 MHz
Arbitrary Waveform Length	64 k points
Arbitrary Sample Rate	50 MSa/s
Arbitrary Amplitude Resolution	14 bits
Amplitude Range into 50 Ohm	10 mVpp to 10 Vpp
Modulation Types	AM, FM, PM, FSK, PWM
Sweep Modes	linear and logarithmic
Burst Operation	yes
Interfaces	USB, GPIB, and LAN
Language	SCPI-1993, IEEE-488.2
State Storage	four user-configurable stored states
Power Consumption	50 VA maximum class
AC Line	100-120 or 200-240 Vac +/-10%
Operating Temperature	0 to 55 C
Operating Humidity	5% to 80% RH non-condensing
Operating Altitude	3000 meters
Storage Temperature	-30 to 70 C
Bench Dimensions WxHxD	261.1 × 103.8 × 303.2 mm
Rack Dimensions WxHxD	212.8 × 88.3 × 272.3 mm
Net Weight	3.4 kg (7.5 lb)
Warm Up Time	1 hour
Humidity	5% to 80% RH non-condensing

33220A Specifications

PARAMETER	VALUE
HP Agilent 33220A Function Arbitrary Waveform Generator	Overview
Key Features	20 MHz sine and square waveforms
Technical Specifications	Sine Frequency Range: 1 uHz to 20 MHz

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	30 to 70 C
Operating temperature	0 to 55 C
Operating Temperature	0 to 55 C
Humidity	5% to 80% RH non-condensing
Operating Humidity	5% to 80% RH non-condensing
Operating Altitude	3000 meters
Bench Dimensions WxHxD	261.1 × 103.8 × 303.2 mm
Rack Dimensions WxHxD	212.8 × 88.3 × 272.3 mm
Net Weight	3.4 kg (7.5 lb)
Warm Up Time	1 hour

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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PARAMETER	VALUE
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Arbitrary Sample Rate	50 MSa/s
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Warm Up Time	1 hour
Option 001: External timebase reference	
Notes	
From Keysight 33220A Function/Arbitrary Waveform Generator data sheet. Pulse, ramp, triangle, noise, and DC waveforms are included in the OEM feature set; amplitude accuracy tables are frequency-dependent on the full sheet.	

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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NIST-traceable calibration · SAM registered ·
30-day returns
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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.