

KEYSIGHT TECHNOLOGIES (AGILENT HP)

33250A

The Keysight (formerly Agilent / HP) 33250A is a high-performance 80 MHz function and arbitrary waveform generator. It offers standard waveforms, pulse generation with variable edge times, and arbitrary waveforms powered by a 12-bit, 200 MSa/s architecture with 64 Kpoints of memory. It includes built-in AM, FM, and FSK modulation, linear/logarithmic sweep, and burst operation.

SPECIFICATIONS

General

Interfaces	GPIB, RS-232
Programming Language Compatibility	SCPI-1993, IEEE-488.2
Warm-up Time	1 hour
Calibration Interval	1 year
Power Consumption	140 VA maximum

Physical

Power Supply	100-240 V, 50-60 Hz; 100-127 V, 50-400 Hz; 140 VA max
Operating Temperature	0 to 55 °C
Dimensions (W×H×D)	254 × 104 × 374 mm
Weight	4.6 kg

Frequency Characteristics

Sine Frequency Range	1 µHz - 80 MHz
Square Frequency Range	1 µHz - 80 MHz
Pulse Frequency Range	500 µHz - 50 MHz
Ramp/Triangle Frequency Range	1 µHz - 1 MHz
Noise Bandwidth	50 MHz
Arbitrary Waveform Frequency Range	1 µHz - 25 MHz
Frequency Resolution	1 µHz
Timebase Accuracy	2 ppm (1 year)

Amplitude and Output Characteristics

Amplitude Range (into 50 ohms)	10 mVpp - 10 Vpp
Amplitude Range (Open Circuit)	20 mVpp - 20 Vpp
DC Offset Range (into 50 ohms)	±5 V
DC Offset Range (Open Circuit)	±10 V
Output Impedance	50 Ω
Short Circuit Protection	Continuous
Overvoltage Protection	±15 V peak

Signal Characteristics

Square Rise/Fall Time	< 8 ns
Square Overshoot	< 5%
Pulse Variable Edge Time	5 ns - 1 ms

Arbitrary Waveform Characteristics

Amplitude Resolution	12-bit
Sample Rate	200 MSa/s
Non-Volatile Memory Capacity	4 waveforms

Modulation

Modulation Types	AM, FM, FSK
Modulation Source	Internal, External
AM Depth	0.0% - 120.0%
FM Deviation	DC - 80 MHz
Internal AM / FM Modulation Rate	2 mHz to 20 kHz
Internal FSK Rate	2 mHz to 100 kHz

Sweep Characteristics

Sweep Type	Linear, Logarithmic
Sweep Direction	Up, Down

Burst Characteristics

Burst Type	Counted, Infinite, Gated
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Clock Reference

External Reference Input Frequency	10 MHz
Internal Reference Output Frequency	10 MHz

Amplitude Characteristics

Amplitude Accuracy (1 kHz)	± 1% of setting ± 1 mVpp
Amplitude Flatness (< 100 kHz)	± 0.1 dB (relative to 1 kHz)
Amplitude Flatness (100 kHz to 5 MHz)	± 0.15 dB (relative to 1 kHz)
Amplitude Flatness (5 MHz to 50 MHz)	± 0.3 dB (relative to 1 kHz)
Amplitude Flatness (50 MHz to 80 MHz)	± 0.5 dB (relative to 1 kHz)

Spectral Purity

Harmonic Distortion (DC to 1 MHz)	<-60 dBc
Harmonic Distortion (1 MHz to 5 MHz)	<-57 dBc
Harmonic Distortion (5 MHz to 50 MHz)	<-37 dBc
Harmonic Distortion (50 MHz to 80 MHz)	<-30 dBc
Spurious (DC to 1 MHz)	<-60 dBc
Spurious (1 MHz to 20 MHz)	<-50 dBc
Spurious (20 MHz to 80 MHz)	<-50 dBc + 6 dB/octave

Waveform Characteristics

Square Duty Cycle	20% to 80% (to 50 MHz); 40% to 60% (to 80 MHz)
Ramp Symmetry	0.0% to 100.0%
Minimum Pulse Width	8 ns

Inputs & Outputs

Trigger Input Level	TTL compatible
External Modulation Input Impedance	10 kΩ
External Modulation Input Level	±5 V full scale

Environmental

Storage Temperature	-30 °C to +70 °C
Operating Altitude	Up to 3,000 meters (10,000 ft)
Vibration and Shock	MIL-T-28800, Type III, Class 5

Sweep

Sweep Time	1 ms to 500 s
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Burst

Burst Count	1 to 1,000,000 cycles, or infinite
Burst Starting Phase	-360.0° to +360.0°

Outputs

Sync Output Impedance	50 Ω (nominal)
Output Isolation to Earth	42 Vpk maximum

Frequency Reference

External Reference Input Lock Range	10 MHz ± 35 kHz
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TECHNOLOGY

Direct Digital Synthesis (DDS)

APPLICATIONS

Test and Measurement

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.