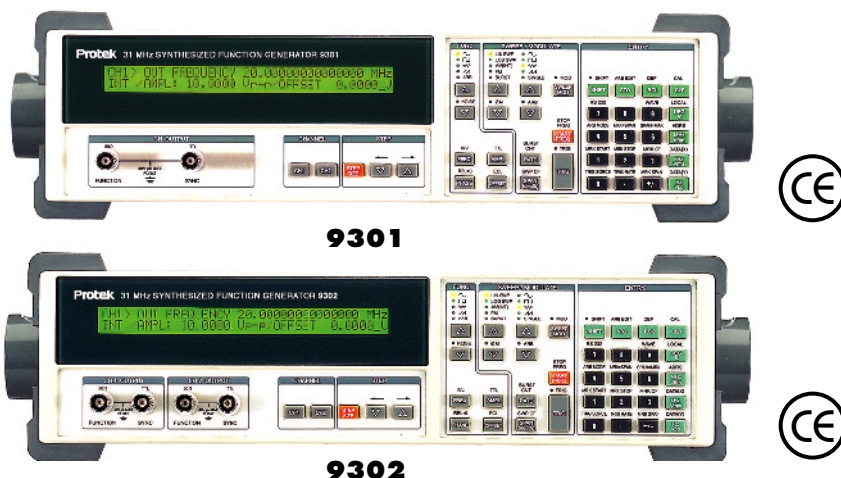


1 & 2 Channel Synthesized Function/Arbitrary Waveform Generator

- Log, linear, phase continuous sweeps
- Frequency to 31MHz
- 0.01 μ Hz frequency resolution
- 16 to 16K points arbitrary waveform lengths
- Standard waveforms: Sine, Square, Triangle, Ramp and Noise
- Includes waveform design software
- Waveforms may be designed via front panel or software
- Dual independent channels (9302)
- Sweep times to 1000s
- AM, FM and phase modulation
- RS-232, GPIB and software interface



SPECIFICATIONS

Waveforms

Sine, Square, Triangle, Ramp Noise, Arbitrary

Frequency

Sine and Square: 0.01 μ Hz to 31MHz

Ramp and Triangle: 0.01 μ Hz to 2MHz

Noise: 10MHz

Output

Output: 9301: 1CH; 9302: 2CH

Output Volts: 20mV to 20V P-P, no load 10mV to 10V P-P, into 50 Ω

Resolution: 3 digits

Best Accuracy: Sine wave: ± 0.2 dB (1 μ Hz to 20MHz)

Square Wave: $\pm 3\%$ (0.01 μ Hz to 100kHz)

Ramp, Triangle and Arbitrary: $\pm 3\%$

DC Offset

0 to ± 10 V (no load), 0 to ± 5 V DC (50 Ω load)

Resolution: 3 digits

Accuracy: $\pm 1.5\% + 0.2$ mVDC

Sine Wave

Sine Wave Spectral Purity Spurious: < -50dBc (non harmonic)

Phase Noise: < -50dBc in a 30kHz band

Subharmonics: < -50dBc

Harmonic Distortion: -45dBc: DC to 1MHz

-32dBc: 1kHz to 31MHz

Square Wave

Rise/Fall Time: < 15ns from 10 to 90% of full amplitude

Asymmetry: < 1% of period + 4ns

Overshoot: < 5%

Ramp, Triangle and Arbitrary

Rise and Fall Time: < 35ns

Settling Time: < 1 μ s

Linearity: $\pm 0.5\%$ FS

Arbitrary Waveforms

Standard: Sine, Square, Triangle, Ramp, DC, Exponential Fall, Noise, Freehand, Line, Damped Sine

Sample Rate: 40MS/s (Max)

Waveform Length: 16 to 16,384 points

Amplitude Resolution: 12 Bit

Phase

Range: 9999.99 $^\circ$; Resolution: 0.01 $^\circ$; Rate: 0.001Hz to 10kHz

Frequency Modulation

Source: Internal

Waveforms: Sine, Square, Ramp, Triangle, Ramp, Arbitrary

Rate: 0.001Hz to 10kHz

Span: 0.01Hz to 31MHz (2MHz for Triangle or Ramp)

Amplitude Modulation

Source: Internal or external

Waveforms: Sine, Square, Ramp, Triangle, Arbitrary

Depth: 0 to 100%

Rate: Internal: 0.001Hz to 10kHz; External: 20kHz Max.

Distortion: < -35dB

DSB Carrier: < -35dB typical at 1kHz modulation rate

Ext. Input: 5V for 100% modulation

Frequency Sweep

Type: Linear or log, phase continuous

Waveforms: Up, down, Up-down, Single sweep

Sweep Time: 100 μ s to 1000s (0.001Hz to 10kHz)

Span: 0.01 μ Hz to 31 MHz (2MHz for Ramp and Triangle)

Markers: Two markers may be set between any sweep point

Sweep Output - 0 to 10V linear ramp signal synchronized to sweep

Burst

Waveforms: Sine, Square, Triangle, Ramp, Arbitrary

Frequency: 2MHz Max for any waveform

Count: 1 to 65,000 cycles/burst

Phase Shift: ≤ 100 kHz

Trigger Generator

Source: CH 1: Single, Int rate, Pos Ext, Neg Ext 1, Line

CH 2: Int CH 1, Int rate, Pos Ext 2, Neg Ext 2 (9302 only)

Rate: 100 μ s to 999.99s

External: Positive or negative slope, TTL input

Output: TTL Level

Timebase

Accuracy: ± 3 PPM (20 to 30 $^\circ$ C)

Aging: ± 3 PPM/Yr

Input: 10MHz/N ± 2 PPM where N=1 to 8.1V P-P Min. input level

Output: > 1V P-P 10MHz sine wave into 50 Ω

General Specifications

Interface: RS-232 (baud rates from 2400 to 19.2k bps, DCE) and GPIB

Size: 14.0" W \times 3.5" H \times 13.5" D; Weight: 22 lbs.

Power Consumption: 46 Ω (9301); 80 Ω (9302)

Supplied Accessories: Manual, Line cord, Software, BNC cable

