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2 MHz Sweep/Function Generator

[image]

Manufacturer: Wavetek Model: 19

Description

The generator is a precision source of sine, triangle, ramp, and pulse waveforms plus DC output. A TTL/CMOS output is also provided.

The frequency range is 0.002 Hz to 2MHz selcted by a seven decade range multiplier and calibrated vernier. Both the frequency vernier and the sweep input can control up to 1000:1 frequency change within a selected range.

The generator output level is 20 Vp-p maximum from a 50 ohm source. The level is set via a switched attenuator plus vernier with a total range of 50 dB. DC offset is vernier adjustable over a $\pm 10V$ range with center detent for 0V. A 9:1 symmetry range permits ramp and pulse waveforms to be produced.

Specifications

Waveforms	sine, triangle, square, TTL pulse or DC OUT
Frequency	0.002 Hz to 2 MHz (7 ranges)
	2: 0.002 to 2 Hz
	20: 0.02 to 20 Hz
	200: 0.2 to 200Hz

	2k: 2 Hz to 2kHz
	20k: 20 Hz to 20 kHz
	200k: 200 Hz to 200 kHz
	2 M: 2 kHz to 2MHz
Internal Sweep Generator	
Sweep Range	Up to 1000:1 within each range
Sweep Rate	30 ms to 15 s (typically 20 ms to 20 s)
Sweep Mode	Linear or logarithmic.
Amplitude Modulation	
Modulated by internal 400 Hz oscillator	
Precision (Display Accuracy)	
Frequency	±5 digits on 2 kHz to 2MHz ranges
	8
	<= 1.5% of full scale on 2Hz to 200Hz ranges
Amplitude	<= 1.5% of full scale on 2Hz to 200Hz ranges Typically 5% of range at 1kHz
Amplitude DX offset	<= 1.5% of full scale on 2Hz to 200Hz ranges Typically 5% of range at 1kHz Typically 2% of reading + 100 mV
Amplitude DX offset Resolution	<= 1.5% of full scale on 2Hz to 200Hz ranges Typically 5% of range at 1kHz Typically 2% of reading + 100 mV 0.05% maximum on all ranges (1 part in 2000)
Amplitude DX offset Resolution Distortion	<= 1.5% of full scale on 2Hz to 200Hz ranges Typically 5% of range at 1kHz Typically 2% of reading + 100 mV 0.05% maximum on all ranges (1 part in 2000) less than 1% on 200, 2k and 20k ranges (sine)
Amplitude DX offset Resolution Distortion	<= 1.5% of full scale on 2Hz to 200Hz ranges Typically 5% of range at 1kHz Typically 2% of reading + 100 mV 0.05% maximum on all ranges (1 part in 2000) less than 1% on 200, 2k and 20k ranges (sine) less than 1.5% on 20 and 200k ranges (sine)
Amplitude DX offset Resolution Distortion Output Impedence	<= 1.5% of full scale on 2Hz to 200Hz ranges Typically 5% of range at 1kHz Typically 2% of reading + 100 mV 0.05% maximum on all ranges (1 part in 2000) less than 1% on 200, 2k and 20k ranges (sine) less than 1.5% on 20 and 200k ranges (sine) Source of selected function at 50 ohm

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Operating Instructions

- 1. Setting generator frequency
 - 1. Use FREQUENCY RANGE BUTTONS to select the decade range in which your desired frequency appears.
 - 2. Adjust the FREQUENCY VERNIER to the required target frequency.
 - 3. Observe the display readout and readjust the FREQUENCY VERNIER if necessary until the display matches the target frequency.
- 2. Selecting waveform and waveform symmetry
 - 1. Select a waveform using FUNCTION BUTTONS (sine, square, triangle)
 - 2. Skewness of waveform can be obtained by pressing the SYM BUTTON and then adjusting the SYMMETRY control. Monitor the display.
- 3. Selecting waveform amplitude and offset
 - 1. Adjust the AMPLITUDE control where the display reads twice the desired waveform voltage

(ie. a 2 Vp-p sine wave should have AMPLITUDE set to 4 Vp-p).

- 2. Press the DISPLAY SELECT BUTTON to enable the "DC" units indicator. To specify offset, adjust DC OFFSET until the display reads twice the desired offset.
- 4. Operating Sweep Generator
 - 1. After setting FREQUENCY RANGE, pull the RATE and STOP controls out to turn on the sweep generator to a LOG vs linear sweep.
 - 2. Press and hold SET START while adjusting the FREQUENCY DIAL to the opening range frequency.
 - 3. Press and hold SET STOP while adjusting the FREQUENCY DIAL to the closing range frequency.
 - 4. Connect SWEEP OUT to a frequency counter to set the waveform period (seconds)
 - 5. Connect MAIN OUT to the scope to observe the swept waveform.

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keywords: signal generator, frequency generator, triangle wave generator, sine wave generator, square wave generator, electrical source.

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