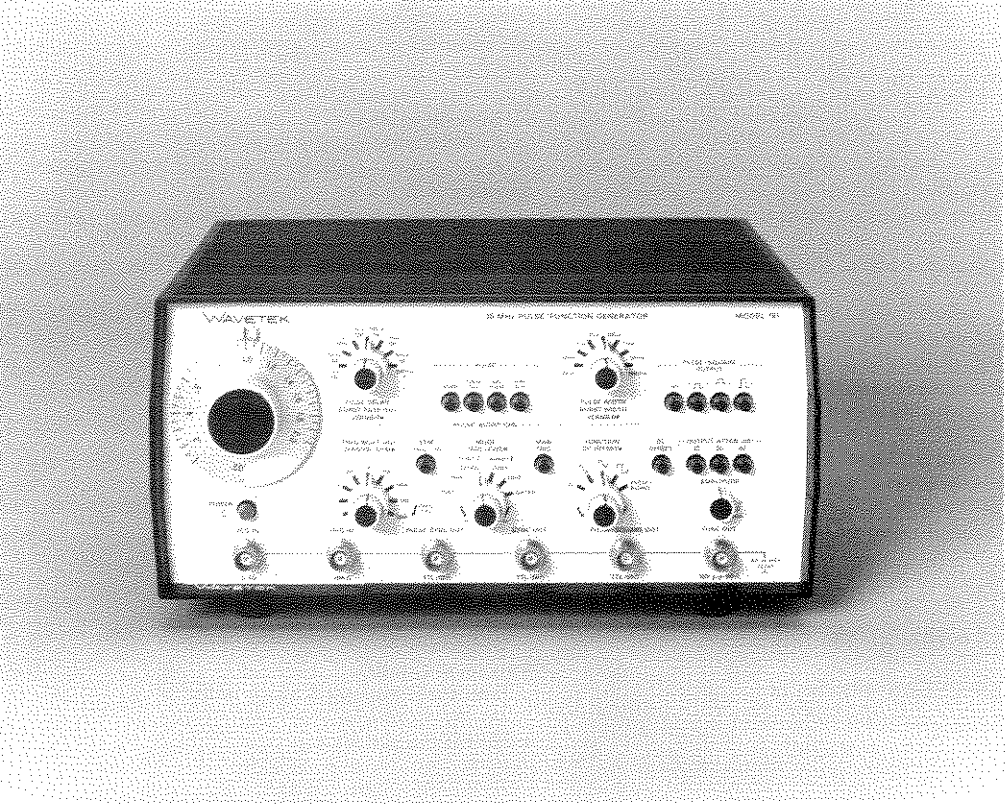

20 MHz Pulse/ Function Generator

- **0.002 Hz to 20 MHz Frequency Range**
- **Versatile Pulse and Burst Modes**
- **Full Function Generator Performance**
- **Triggered, Gated Bursts, Rate & Width Control**
- **Full 30 Volts Peak-to-Peak Output**

MAIN GENERATOR

Waveforms: Selectable sine, triangle, square, pulses, double pulses and dc.
Symmetry: 1:19 to 19:1.
Operational Modes
Function: Continuous, Triggered, Gated and Burst.
Burst Rate: 1 Hz to 5 MHz in 7 ranges.
Burst Width: 20 ns to 100 ms in 7 ranges.
Frequency Range: 0.002 Hz to 20 MHz in 9 overlapping decade ranges with 1% vernier.
Function Output: Amplitude variable to 30 Vp-p (15 Vp-p into 50Ω). Baseline amplitude variable to 15 Vp-p (7.5 Vp-p into 50Ω). 50 Ω source impedance.
DC Output and DC Offset: Adjustable between ±15 Vdc (±7.5 Vdc into 50Ω) with signal peak plus offset limited to ±15 Vdc (±7.5 Vdc into 50Ω).
Sync Output: TTL level pulse when terminated with 50Ω. 50Ω source impedance.
VCG—Voltage Controlled Generator: Up to 1000:1 frequency change with external 0 to ±5V signal.
Slew Rate: 2% of range per μs.
Linearity: ±0.5% thru ×100K range.
±5% on ×1M and ×10M ranges.
Impedance: 10 kΩ.
Trigger (and Gate) Input
Input Range: 1 Vp-p to ±10V.
Trigger Level Adj: −5V to +5V.
Impedance: 1.5 kΩ shunted by 1.5 pF.
Pulse Width: 25 ns minimum.
Repetition Rate

Input	Max Rep Rate
±1V	1 MHz
±2.5V	10 MHz.

PULSE GENERATOR

Pulse Modes
Normal Pulse: Adjustable width pulse in phase with pulse sync output.
Pulse Delay: Pulse delayed with respect to pulse sync output. Pulse delay and pulse width adjustable.
Double Pulse: Two pulses for every period. Time between pulses and pulse width adjustable.
Sync Delay: Pulse sync output delayed with respect to pulse output.
Pulse Period Range: 50 ns to 500s in 9 decade ranges.
Pulse Width: 20 ns to 100 ms in 7 ranges.
Pulse or Sync Delay: 0 ns to 100 ms in 7 ranges.
Duty Cycle: Up to 75% for pulse widths >100 ns and 50% for pulse widths of 20 ns to 100 ns.
Pulse/Burst Sync Output: TTL level pulse when terminated with 50Ω.

FREQUENCY PRECISION

Dial Accuracy
±3% of full scale from ×0.1 Hz to ×1 MHz.
±5% of full scale on ×10M range.

AMPLITUDE PRECISION

Amplitude Change with Frequency
Sine variation with frequency:
<±0.2 dB on all ranges through ×100K.
<±0.5 dB on ×1M range.
<±1.0 dB on ×10M range.
Step Attenuator Accuracy
±0.3 dB with 10, 20 and 40 dB.
±0.6 dB with 30, 50 and 60 dB.
±0.9 dB with 70 dB setting.

WAVEFORM CHARACTERISTICS

Sine Distortion
<0.5% on ×1K and ×10K Ranges.
<1.0% on ×0.1 to ×100, and ×100K ranges.
All harmonics 30 dB below fundamental on ×1M range, and 25 dB below fundamental on ×10M range.
Square Wave and Pulse
Rise/Fall Time at Function Output BNC: <15 ns (10% to 90%).
Total Aberrations: 5% of full amplitude (each peak of waveform).
Time Symmetry
Square wave variation from 0.1 to 2 on dial: <1% to 200 kHz; <10% to 20 MHz.
Triangle Linearity: >99% for 0.002 Hz to 200 kHz.

GENERAL

Stability: Main generator amplitude, frequency and dc offset. After 2 hour warm-up:
±0.05% for 10 minutes.
±0.25% for 24 hours.
Environment: Specifications apply at 23° ±5°C. Operates 0° to +50°C.
Dimensions: 28.6 cm (11¼ in.) wide; 13.3 cm (5¼ in.) high; 28.6 cm (11¼ in.) deep.
Weight: 4.6 kg (10 lb) net; 5.9 kg (13 lb) shipping.
Power: 100/120/220/240V (+5%, −10%), 48 Hz to 66 Hz, ≤70 VA.

FACTORY/FOB

San Diego, CA