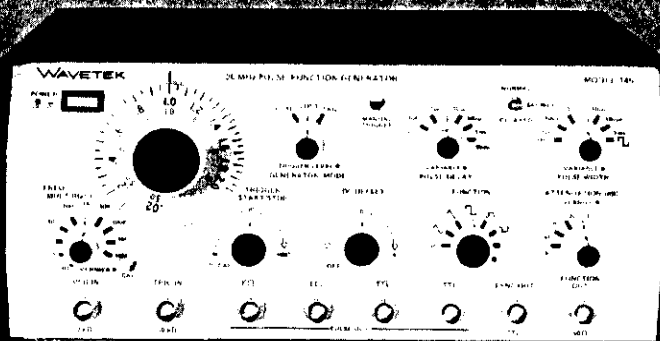




**PULSE/FUNCTION  
GENERATOR  
MODEL 145**



# 20 MHz Pulse/ Function Generator

- 0.0001 Hz to 20 MHz Frequency Range
- 15 Volt Peak-to-Peak Output into 50Ω
- Continuous, Triggered and Gated Operation
- Fixed TTL and ECL Outputs
- Delayed and Double Pulse Outputs

**Two Instruments for the Price of One**  
The Model 145 combines the features of a function generator and a pulse generator in a single, compact unit.

### Function Generator

As a function generator it provides sine, triangle, and square waves over a wide 0.0001 Hz to 20 MHz frequency range. Each waveform can be triggered or gated, as well as continuous. The variable trigger start/stop control allows you to select a haversine or other special waveform outputs. Its Voltage Controlled Generator (VCG) input permits you to shift or sweep the generator's frequency over a full 1000:1 range.

### Pulse Generator

As a pulse generator, the Model 145 produces pulses with independent variable delays and widths; these pulses can be triggered, gated, and continuous. Pulse generator outputs can be both fixed output (TTL and ECL) as well as variable outputs with DC offsets.

### WAVEFORMS

Selectable sine, square, triangle, positive square, negative square, ECL and TTL pulses and DC.

### Sine Distortion

x100 Hz to x10 kHz: <0.5%.  
x.01 to x10 Hz and x100 kHz: <1.0%.

**Rise/Fall Time:** At Function Out <20 ns for 15 Vp-p output into 50Ω load.

### MODES

Continuous, triggered and gated and normal, delayed and double pulse.

### FREQUENCY

**Range:** 0.0001 Hz to 20 MHz.

### Dial Accuracy

From x.01 Hz to x1 MHz: ±3% of full range.

x10 MHz: ±5% of full range.

### Time Symmetry: Square wave variation.

0.001 Hz to 200 kHz: <±1%.

20 Hz to 20 kHz: <±0.5%.

### AMPLITUDE

**Range:** Functions to 30 Vp-p (15 Vp-p into 50Ω). Pulses to 15 Vp-p (7.5 Vp-p into 50Ω)

**Amplitude Change With Frequency:** Sine variation.

0.001 Hz to 200 kHz: <±0.1 dB.

200 kHz to 2 MHz: <±0.5 dB.

2 to 20 MHz: <±3.0 dB.

### OFFSET

±15 Vdc (±7.5 Vdc into 50Ω) with signal peak plus offset limited to ±15 Vdc (±7.5 into 50Ω).

### OUTPUTS

**Function Out (50Ω):** Source of primary functions and pulses.

**Sync Out (50Ω):** A TTL level pulse.

**GCV—Generator Controlled Voltage (600Ω):** 0 to 2V. Proportional to generator frequency.

### INPUTS

**VCG—Voltage Controlled Generator:** 0 to 2V for 1000:1 frequency change.

### Trigger and Gate

**Input Range:** 1 Vp-p to ±10V.

**Impedance:** 10 kΩ, 33 pF.

**Adjustable Triggered Signal Start/Stop Point:** Approximately -90° to +90°.

### PULSE GENERATOR

**Pulse Period Range:** 50 ns to 10,000s.

**Pulse Width:** 25 ns to 1 ms.

**Pulse Delay:** 50 ns to 10 ms.

**Duty Cycle:** Duty cycles to 70% for periods >100 ns.

### GENERAL

**Environment:** Specifications apply at 25° ±5°C. Operate 0° to +50°C.

**Dimensions:** 28.6 cm (11 in.) wide; 13.3 cm (5 in.) high; 27.3 cm (10 in.) deep.

**Weight:** 5 kg (11 lb) net; 5.9 kg (13 lb) shipping.

**Power:** 90 to 105V, 108 to 126V, 198 to 231V and 216 to 252V selectable; 48 to 400 Hz; less than 30 VA.

### FACTORY/FOB

San Diego, CA

### ORDER INFORMATION

Model 145

For full specifications or a demonstration, contact your local Wavetek representative (pages 211 to 213).