

20MHz Pulse / Function Generator



Features

- ★ Versatile Waveform Generation for a Wide Range of Testing Application
- ★ Wide Range of Frequencies from 0.0002Hz (i.e. 5000s) to 20MHz (i.e. 50ns)
- ★ Choice of Eight Selectable Waveforms
- ★ All Outputs can Drive 50 ohms Terminations
- ★ Trigger and Gate Modes with Adjustable Start/Stop Control
- ★ Double-pulse Mode Available
- ★ Simultaneous Fixed Level $\overline{\text{TTL}}$, TTL, ECL and $\overline{\text{ECL}}$ outputs
- ★ 3 Digit Digital Indication for Frequency
- ★ 20 Volts Peak to Peak Output
- ★ SYNC Out Facility
- ★ Accurate Frequency Setting Achieved with the Use of 10T Vernier Pot

Description

APLAB's 20MHz Pulse / Function Generator is a precision source of sine, triangle, balanced square, positive square and negative square waveforms, a source of dc levels and a source of normal and inverted pulses. Double pulses (i.e. two pulses per period) are also available with variable time between pulses. The logical complement of the pulse is selectable and either pulse or its complement is available at output simultaneously as $\overline{\text{TTL}}$, TTL, $\overline{\text{ECL}}$, ECL & variable amplitude and offset pulses. The variable amplitude output of either waveform or pulse can be varied upto 20 Volts peak-to-peak (open circuit) and attenuated upto 80dB. The outputs are also triggerable for one or multiple cycles by front panel switch or remote signal. A TTL level sync. pulses at the frequency of the generator is available as an auxillary output.

Specifications

FUNCTION GENERATOR

- Operational Modes** : Continuous, Triggered or Gated.
- Frequency Range** : 0.002Hz to 20MHz in 10 overlapping ranges.
- Function Output** : Sine, balanced square and triangle selectable and variable upto 20V p-p $\pm 5\%$ (10V p-p into 50 ohms).
Positive square and negative square selectable and variable upto 10V p-p $\pm 5\%$ (5V p-p into 50 ohms).
All outputs may be attenuated to 60dB in 20dB steps with an additional 20dB vernier.
- DC Output and DC** : Adjustable with signal peak plus offset limited to $\pm 10V$ ($\pm 5V$ into 50 ohms).
- Sync. Output** : TTL level pulse capable of driving 50 ohms termination.
- VCG-Voltage Controlled Generator** : Upto 100:1 frequency change with external 0 to 2 Volt signal.
- Impedance** : 2K ohms approx.

TRIGGER AND GATE

- Input Range** : 1V p-p to $\pm 10V$ DC.
- Impedance** : 10K ohms // 33pF nominal.
- Pulse Width** : 25ns minimum.
- Repetition Rate** : 10MHz maximum.
- Adjustable Triggered Signal Start/Stop Point (Sine and Triangle only)** : Approx. -90° to $+90^\circ$ upto 2MHz.

FREQUENCY PRECISION

- Accuracy** : $\pm 3\%$ of full range from 0.01Hz to 1MHz ranges.
 $\pm 5\%$ of full range on 10MHz range.
- Time Symmetry** : Square wave variation less than $\pm 1\%$ from 0.001Hz to 200KHz
 $\pm 0.5\%$ from 20Hz to 20KHz.

AMPLITUDE PRECISION

- Amplitude Change** : Sine variation less than $\pm 0.1\text{dB}$ for 0.002Hz to 200KHz
 $\pm 0.5\text{dB}$ for 200KHz to 2MHz
 $\pm 3.0\text{dB}$ for 2MHz to 20MHz.
- Step Attenuator** : $\pm 0.3\text{dB}$ per 20dB step at 2KHz.

WAVEFORM CHARACTERISTICS

- Sine Distortion** : $< 1.0\%$ upto 100KHz ranges.
All harmonics 34dB below fundamental on 1MHz range.
All harmonics 26dB below fundamental on 10MHz range.

- Square Wave Rise / Fall Time** : At Function Out < 25 ns for max. output into 50 ohms.

PULSE GENERATOR

- Pulse Output** : Variable amplitude pulse and simultaneous fixed amplitude TTL, $\overline{\text{TTL}}$, ECL, $\overline{\text{ECL}}$ pulses and TTL sync pulse. All outputs can drive 50 ohms terminations.

- Operational Modes** : Continuous, triggered and gated generator operating in the following modes.
Normal, Delayed, Double (Min. delay between pulses is 100ns).

- Pulse Period** : 50ns to 5000s in 10 overlapping ranges.

- Pulse Delay** : 50ns to 10ms in 6 overlapping ranges.

- Duty Cycle** : Upto 70% for frequencies less than 10MHz.
Approx. 50% for frequencies above 10MHz.

- Function Output** : Variable upto 20V p-p $\pm 5\%$ (10V p-p into 50 ohms).
DC offset and attenuation are same as for function generator.

- Pulse Rise/Fall** : At Function Out $< 25\text{ns}$ for max. output into 50 ohms.

GENERAL

- Stability (Amplitude frequency and dc offset after $\frac{1}{2}$ an hour warm up) Except on last range** : Short term $\pm 0.05\%$ for 10 minutes.
Long term $\pm 0.25\%$ for 24 hours.

- Environmental** : Specification apply at $25^\circ\text{C} \pm 5^\circ\text{C}$.
Operating temperatures 0°C to 50°C ambient.

- Dimensions (mm)** : 292 (W) x 140 (H) x 340 (D).

- Weight** : 6 Kgs. approx.

- Power** : 230V $\pm 10\%$, 50Hz.

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