

Analog Function Generators

The function generator is a particularly versatile instrument. It can generate a variety of precision wave shapes over a range of frequencies from mHz to MHz with a wide range of controlled amplitudes from a low-impedance source, and maintain constant amplitude as the frequency is varied. Although digital function generators may offer more features, analog function generators have advantages that can make them more appropriate for certain applications.

Analog Function Generators - comparison table						
	TG310	TG315	TG320	TG330	TG550	TG120
Maximum Frequency	3MHz		3MHz		5MHz	20MHz
Minimum Frequency	0.03Hz		0.03Hz		0.005Hz	0.2Hz
Frequency Setting	Dial		Digital Readout via LCD		Dial	
Waveform Functions	Sine, Square or Triangle all with variable symmetry (plus DC)					
Variable Symmetry Range			1:9 / 9:1 at frequency/10			1:6 / 6:1 *
Digital Frequency Lock	No		No		Yes	No
External Freq. Counter	No	No	Yes	Yes	Yes	No
External Sweep Input	1000:1		1000:1		1000:1	20:1
Internal Sweep Generator	No	No		Yes	Yes	No
Internal/External AM	No	No		Yes	Yes	No
Amplitude Range (pk-pk EMF)	2mV - 20V		2mV - 20V			10mV - 20V
DC Offset Range			+/- 10V (reduced by attenuator setting)			
Amplitude/Offset Display	No		Digital Readout via LCD			No
Output Impedance			50Ω and 600Ω			50Ω
Auxiliary Output			TTL / CMOS square wave in phase with main output			

Power: 230V or 115V AC nominal 50/60Hz, adjustable internally. Size & weight: TG120: 220 x 82 x 230 mm (WxHxD). 1.5 kg (3.0 lb). TG210, TG315, TG320, TG330, TG550: 260 x 88 x 235 mm (WxHxD). 1.9 kg (4.2 lb).
Notes: * TG120 symmetry applies up to 500kHz.

Function generators fall into two basic categories, analog and digital.

Analogue generators use a voltage controlled oscillator to generate a triangular waveform of variable frequency. Sinusoids and square waves are generated from this.

Digital generators use a digital to analog converter (DAC) to generate a wave shape from values stored in memory. Normally such generators only offer sine and square waves up to the maximum generator frequency. Triangle waves and other waveforms are limited to a much lower frequency.

Analogue generators offer several advantages:

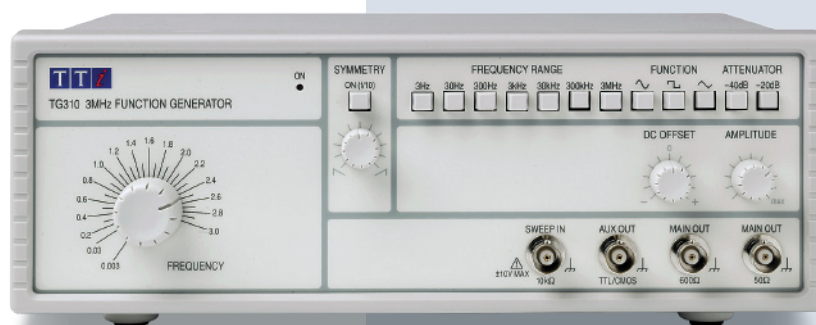
1. They provide simple and instantaneous manual control of frequency and amplitude.
2. They do not have the high frequency limitations for non-sinusoidal waveforms such as triangles and ramps that digital generators do.
3. The starting price for an analog generator is generally lower than for a digital generator.

The TG310 is a basic 3MHz function generator which offers very high waveform quality at all frequencies and levels. Frequency is set using a calibrated vernier knob.

The feature set includes variable symmetry at constant frequency and variable dc offset with centre detent.

Output impedances of 50Ω and 600Ω are supported via separate output sockets.

- ▶ 0.03Hz to 3MHz frequency range
- ▶ High waveform quality at all frequencies & levels
- ▶ 2mV to 20V pk-pk from 50Ω or 600Ω
- ▶ Sine, square and triangle waveforms plus dc
- ▶ 1000:1 frequency change on each range
- ▶ Variable symmetry control
- ▶ External sweep input



TG310

- ▶ Dial-set 3MHz function generator
- ▶ High waveform quality

The TG120 uses a different waveform generation technique from that used in other Aim-TTI analog function generators.

By doing so it achieves a greatly extended maximum frequency point of 20MHz.

Although offering a slightly poorer overall specifications than other Aim-TTI generators, it represents excellent value for users who require a higher frequency waveform source.

- ▶ 0.2Hz to 20MHz frequency range
- ▶ Sine, square and triangle waveforms plus dc
- ▶ 10mV to 20V pk-pk from 50Ω
- ▶ DC offset control with zero detent
- ▶ Variable symmetry control
- ▶ External sweep input
- ▶ Excellent price/performance ratio



TG120

- ▶ Dial-set function generator
- ▶ 20MHz frequency range