Aim TTi
Measurably better value

Digital Function Generators

Digital function generators can be divided into three broad categories:

1. DDS* Function Generators without Arbitrary - these perform a similar function to an analog function generator, but with the advantages of DDS based stability, resolution, and sinewave purity. The TG2000 falls into this category.

2. DDS Function/Arbitrary Generators - these have the ability to produce arbitrary waveforms in addition to standard waveforms, but within the limitation imposed by using a DDS system. The TG1010A and TG5011 fall into this category.

3. Universal Arbitrary Waveform Generators - these combine a DDS function generator with a variable-clock* arbitrary generator. Typically these generators incorporate more sophisticated systems for the production of arbitrary waveforms. The TGA1240 and TGA12100 series (see page 19) fall into this category. The TG4001 also has a similar architecture.

Digital Function and Function/Arbitrary Generators - comparison table (see also TGA series - page 18)				
	TG1006	**TG1000/2000**	**TG2511A/5011A**	**TG2512A/5012A**
Number of Channels	One	One	One	Two
Dual Channel Operation	-	-	-	Full Independent, Coupled or Tracking modes
Frequency Range (sine)	0.001Hz to 10MHz	0.001Hz to 10/20MHz	0.001mHz to 25/50MHz	
Frequency Resolution (sine)	6 digits or 1mHz	6 digits or 1mHz	14 digits or 0.001mHz	
Waveform Generation System	DDS	DDS	DDS	
Multi-Generator Phase Lock	No	No	Yes	
Frequency Accuracy	Better than ±10ppm		Better than ±1ppm	
Waveform Functions	Sine, Square, Triangle,	Sine, Square, Triangle, +ve/-ve Pulse	Sine, Square, Ramp, Pulse, Noise, PRBS, sinx/x, exponential rise, logarithmic rise	
Variable Symmetry Range	20% to 80% square	20% to 80% square/pulse	0.1% - 99.9% ramp, 20% to 80% square	
Additional Pulse Generator Features			Independent period, delay, width. Variable rise/fall times	
Arbitrary Waveforms (Size)	None	None	Yes - 2 to 128K words	
Arbitrary Vertical Resolution		-	14 bits	
Arbitrary Waveform Clock		-	125MHz (DDS)	
ARB Waveform PC Software		-	Waveform Manager Plus	
Frequency Sweep (Rate/Mode)	50ms to 999s, lin or log	50ms to 999s, lin or log	1ms to 500s, lin or log	
Internal/External Modulations	FSK, AM	Tone, FSK, External AM	Internal/External AM, FM, PM, PWM, Sum, BPSK, FSK	
Internal Trigger Generator	0.001Hz to 10kHz	0.001Hz to 5kHz	0.005 Hz to 1MHz	
Gated/Triggered Burst	No	Yes/No	Yes/1 to 1048575 cycles	
Amplitude Range (pk-pk EMF)	2mV - 20V from 50/600Ω	5mV - 20V from 50/600Ω	20mV - 20V from 50Ω	
DC Offset Range	±10V EMF.	±10V EMF.	±10V EMF unattenuated	
Sinewave Purity	Typically 0.1% to 20kHz <-30dBc at 10MHz	Typically 0.1% to 20kHz <-40dBc at 20MHz	<0.15% to 100kHz, typically <-35dBc at 50MHz	
Output Flatness	±0.5dB to 500kHz; ±2dB to 10MHz	±0.2dB to 500kHz; ±2dB to 20MHz	±0.15dB to 5MHz; ±0.5dB to 50MHz	
Auxiliary Output	Sync	Multi-function output for Waveform Sync, Trigger Out, Sweep Sync., Marker (not TG2000)		
Display	8 digit LCD	Dot-matrix backlit LCD	Full Graphic backlit LCD	
Digital Interfaces	None	RS232/USB (TG2000 only)	USB/LAN (GPIB option)	
Power: 230V or 115V AC nominal 50/60Hz, Size & weight: TG1006 and TG1000/2000: 260 x 88 x 235 mm (WxHxD) 2.0 kg (4.4lb) . TG2511A/5011A: 2U half-rack: 212 x 87 x 335 mm (WxHxD). 2.6 kg (5.7 lb); TG2512A/5012A: 2U half-rack: 212 x 87 x 360 mm (WxHxD). 2.7 kg (6 lb)				

N.B. The TG1010A and TG4001 are older legacy products and are not included within the comparison table above.

* For an explanation of DDS (direct digital synthesis) and of DDS and variable-clock architectures for generators go to our web site: **www.aimtti.com/go/arb**

for more complete information:
www.aimtti.com/generator

TG1006

The TG1006 is a low cost function generator using DDS frequency generation and covering the range 1mHz to 10MHz. Up to ten frequencies can be stored in a list.

Despite its price it includes a wide range of features including wide range phase continuous sweep, AM and FSK.

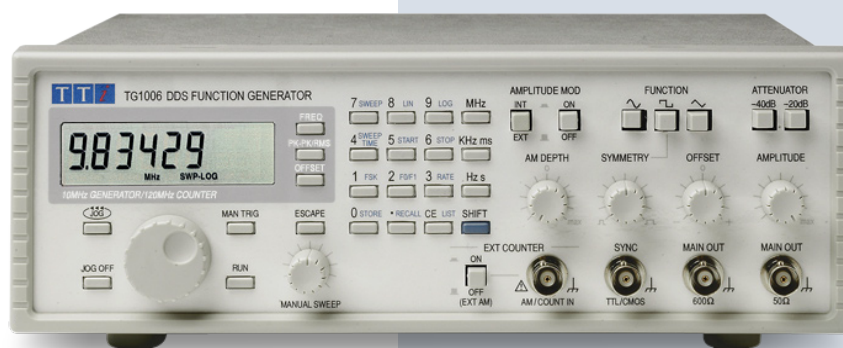A seven digit frequency counter covering 3Hz to 120MHz is also incorporated.

A unique feature is manual sweep which enables any frequency range to be spanned by a quasi-analog control.

Further details are provided in the comparison table above. Full details are available on the web site.

▶ **10MHz DDS function generator**
▶ **120MHz frequency counter**
▶ **Sweep, AM, and FSK**

▶ 0.001Hz to 10MHz or 20MHz frequency range
▶ 6 digits or 1mHz resolution
▶ Simultaneous display of frequency and voltage amplitude or offset
▶ 1ppm stability and 10ppm one year accuracy
▶ Low distortion, high spectral purity sine waves
▶ Internal phase-continuous sweep, lin or log
▶ Unique manual sweep gives quasi-analog control
▶ AM and FSK modes, frequency list (10 steps)
▶ 2mV to 20V pk-pk from 50 or 600 Ohms
▶ Built-in seven digit 120MHz frequency counter

NEW