

# 3 MHz DDS FUNCTION GENERATOR



**SFG-1003/1013 (3MHz)**



SFG-1000 Series, an economic function generator with high accuracy and high stability output, is designed based on the DDS (Direct Digital Synthesized) technology embedded in a large scale FPGA. The frequency range of 3MHz and the output waveform selection of Sine, Square, Triangle and TTL of SFG-1000 Series adequately provide the fundamental features to ensure high confidence for the test results. The DDS technology at an affordable price gives a high value solution to the users who need a signal source for accurate but unsophisticated measurement applications.

## FEATURES

- \* DDS Technology and FPGA Design
- \* Frequency Range : 0.1Hz ~ 3MHz
- \* High Frequency Accuracy :  $\pm 20$ ppm
- \* High Frequency Stability :  $\pm 20$ ppm
- \* Max. Frequency Resolution : 100 mHz
- \* Low Distortion Sine Wave :  $-55$ dBc, 0.1Hz~200 kHz
- \* Voltage Display ( Only SFG-1013)

## SELECTION GUIDE

MAIN FUNCTION \ MODEL	SFG-1003	SFG-1013
Frequency	3 MHz	3 MHz
Offset	✓	✓
TTL Output	✓	✓
-40dB Attenuation	✓	✓
Voltage display	—	✓

## SPECIFICATIONS

MAIN	
Output Function	Sine, Square, Triangle, TTL
Frequency Range(For Sine, Square)	0.1Hz ~ 3MHz
Frequency Range(For Triangle)	0.1Hz ~ 1MHz
Resolution	0.1Hz maximum
Stability	$\pm 20$ ppm
Accuracy	$\pm 20$ ppm
Aging	$\pm 5$ ppm/year
Amplitude Range	10Vp-p (into 50 $\Omega$ load)
Amplitude Accuracy	$\pm 20\%$ at maximum position (only SFG-1013)
Impedance	50 $\Omega \pm 10\%$
Attenuator	-40dB $\pm 1$ dB $\times 1$
DC Offset	< -5V ~ > 5V (into 50 $\Omega$ load)
Duty Control Range	25% ~ 75% below 1MHz (for square wave only)
Display	6-digit LED display
Output Control	ON/OFF selector
SINE WAVE	
Harmonics Distortion	From Amplitude control at maximum position without any attenuation to its 1/10 of any combination setting, TTL OFF $\geq -55$ dBc, 0.1Hz ~ 200kHz $\geq -40$ dBc, 0.2MHz ~ 2MHz $\geq -35$ dBc, 2MHz ~ 3MHz
Flatness (at maximum amplitude relative to 1kHz)	< $\pm 0.3$ dB, 0.1Hz ~ 1MHz < $\pm 0.5$ dB, 1MHz ~ 2MHz < $\pm 1$ dB, 2MHz ~ 3MHz
TRIANGLE WAVE	
Linear	$\geq 98\%$ , 0.1Hz ~ 100kHz; $\geq 95\%$ , 100kHz ~ 1MHz
SQUARE WAVE	
Symmetry	5% of period+4ns, 0.1Hz ~ 100kHz
Rise or Fall Time	$\leq 100$ ns at maximum output. (into 50 $\Omega$ load)
TTL OUTPUT	
Level	$\geq 3$ Vp-p
Fan Out	20 TTL load
Rise or Fall Time	$\leq 25$ ns
GENERAL	
Operation Environment	Indoor use, altitude up ~ 2000m Ambient Temperature 0 $^{\circ}$ C ~ 40 $^{\circ}$ C Relative Humidity: Up to 80% at 0 $^{\circ}$ C ~ 40 $^{\circ}$ C Up to 70% at 35 $^{\circ}$ C ~ 40 $^{\circ}$ C Installation category II Pollution Degree 2
POWER SOURCE	
	AC 240V/220V/110V $\pm 10\%$ , 50/60Hz
STORAGE CONDITION	
Temperature	-10 $^{\circ}$ C ~ 70 $^{\circ}$ C
Humidity	70% (Maximum).
ACCESSORIES	
	User manual $\times 1$ , Power cord, GTL-101 $\times 1$
DIMENSION & WEIGHT	
	251(W) x 91(H) x 291(D) mm, Approx. 2.1kg

## ORDERING INFORMATION

<b>SFG-1003</b>	3 MHz DDS Function Generator
<b>SFG-1013</b>	3 MHz DDS Function Generator with Voltage Display