

Instek Direct Digital Synthesis (DDS) Function Generators

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.

Part Nos. 01SFG1003 and 01SFG1013

FEATURES

- * DDS Technology and FPGA Design
- * Frequency Range : 0. 1Hz ~ 3MHz
- * High Frequency Accuracy : ± 20 ppm
- * High Frequency Stability : ± 20 ppm
- * Max. Frequency Resolution : 100 mHz
- * Low Distortion Sine Wave : -55dBc, 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	± 20 ppm
Accuracy	± 20 ppm
Aging	± 5 ppm/year
Amplitude Range	10Vp-p (into 50 Ω load)
Amplitude Accuracy	$\pm 20\%$ at maximum position (only SFG-1013)
Impedance	50 $\Omega \pm 10\%$
Attenuator	-40dB ± 1 dBx1
DC Offset	<-5V ~ >5V (into 50 Ω 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 ≥ -55 dBc, 0.1Hz ~ 200kHz ≥ -40 dBc, 0.2MHz ~ 2MHz ≥ -35 dBc, 2MHz ~ 3MHz
Flatness (at maximum amplitude relative to 1kHz)	< ± 0.3 dB, 0.1Hz ~ 1MHz < ± 0.5 dB, 1MHz ~ 2MHz < ± 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	≤ 100 ns at maximum output. (into 50 Ω load)
TTL OUTPUT	
Level	≥ 3 Vp-p
Fan Out	20 TTL load
Rise or Fall Time	≤ 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 manualx1, Power cord, GTL-101x1
DIMENSION & WEIGHT	
	251(W) x 91(H) x 291(D) mm, Approx. 2.1kg

ORDERING INFORMATION

SFG-1003	3 MHz DDS Function Generator
SFG-1013	3 MHz DDS Function Generator with Voltage Display