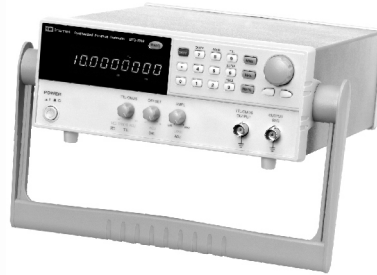


DDS Function Generator



SFG-2004/2007/2010(4/7/10MHz)
SFG-2104/2107/2110(4/7/10MHz)

Features

- DDS Technology and FPGA Chip Design
- Frequency Range :
0.1Hz ~ 4MHz / 7MHz / 10MHz
- High Frequency Accuracy : ± 20 ppm
- High Frequency Stability : ± 20 ppm
- Frequency Resolution:100mHz
- Low Distortion Sine Wave :
-55dBc, 0.1Hz ~ 200kHz
- Front Panel Setting Save/Recall with
10 Groups of Setting Memories
- Built-In 6 Digits 150MHz/High Resolution
Counter (SFG-2100 Series Only)
- INT / EXT AM/FM Modulation
(SFG-2100 Series Only)
- LIN/LOG Sweep Mode
(SFG-2100 Series Only)

We know what you want from FG, and we give you more..

DDS FG with Lowest Price

Based on the Direct Digital Synthesis (DDS) technology and unique FPGA design,the SFG-2000 series bring the performances that far exceed the function generators at this price. The stable output frequency , low distortion signal and fine frequency resolution features are well achieved in these brand-new series . Both series offer 4MHz , 7MHz and 10MHz frequency ranges. SFG-2000 series provides basic functions with such high performance , SFG-2100 series are Sweep, AM, FM and External counter functions added to SFG-2000 series. SFG-2000 series can fit for variety of applications , such as signal source of experiment, reference signal of PLL and equipment for electronic device test and adjustment.

Stable frequency signal source

Frequency stability of DDS FG follows the crystal based system clock which is naturally high. In conventional FG, frequency drifts as the component and current value changed with time and temperature. This is very important to modern electronic or communication system . Taking the PLL (phase locked loop) as an example, the engineers always looked for a stable reference signal, and they used to pay much more to get such quality signal . Now everyone can have his own DDS FG and does not have to share with someone else. In school,teacher does not have to

Low distortion waveform

For DDS FG, the signal is generated by delivering samplings of a sine waveform table (ROM or RAM) followed by DAC and Low Pass Filter.

A good low pass filter design can filter the harmonics, sampling clock signal out to make low distorted waveform. For the conventional FG , the frequency is occurred by switching the positive and negative current sources. The switching occurs on the peaks (positive and negative) of signal , accordingly the " Ringing " phenomenon happens . It is especially obvious when the output amplitude is low. But for DDS type FG, the low distortion remains even the output voltage is 10mVpp.

Familiar User Interface

It is difficult how to use the new product. However , SFG-2000/2100 Series take the easier user interface. By the state-of-the art design , the analog control is skillfully embedded into the DDS control mechanism, except the frequency and duty controls are operated by the numerical keys, the rest of operations are same as conventional FG, user who used to the conventional FG does not have to learn to operate the unit all over again. The numerical frequency control allows defining the desired frequency at 0.1Hz resolution , which is never anticipated for the conventional FG.

Abundant Features

SFG-2000 Series provides sine, triangle and rectangular waveforms, DC offset control, duty control, two 20dB fixed attenuators, TTL/CMOS output and store/recall function. SFG-2100 series provides more features like external 150MHz counter , sweep and AM/FM modulation. The external FM modulation is another unique achievement done by GW Instek's engineers.

Applications

- * Vibration Testing
- * General Audio testing through AM Radio Applications Ultrasonic device testing and servo system testing
- * Testing and adjustment of electronic devices
- * Testing and adjustment of Communications Products
- * Automatic controls Training schools

FREQUENCY RANG	4MHz		7MHz		10MHz	
MODEL	SFG-2004	SFG-2104	SFG-2007	SFG-2107	SFG-2010	SFG-2110
DUTY	✓	✓	✓	✓	✓	✓
TTL/CMOS	✓	✓	✓	✓	✓	✓
DC OFFSET	✓	✓	✓	✓	✓	✓
LIN/LOG SWEEP		✓		✓		✓
AM/FM MODULATION		✓		✓		✓
EXT COUNTER		✓		✓		✓

SFG-2000/2100 Series



Specifications

		SFG-2000 Series			SFG-2100 Series		
		SFG-2004	SFG-2007	SFG-2010	SFG-2104	SFG-2107	SFG-2110
MAIN	Frequency Range(For Sine, Square)	0.1Hz~4MHz	0.1Hz~7MHz	0.1Hz~10MHz	0.1Hz~4MHz	0.1Hz~7MHz	0.1Hz~10MHz
	Range(For Triangle) Resolution Stability Accuracy Aging	0.1Hz~1MHz 0.1Hz ±20 ppm ±20 ppm ±5 ppm / year					
	Output Function	Sine, Square, Triangle					
	Amplitude Range	10mV~10Vpp(into 50Ω load)					
	Flatness(Sinewave relative to 1kHz)	<±0.3dB, 0.1Hz~1MHz; <±0.5dB, 1MHz~4MHz; <±2dB, 4MHz~10MHz					
	Impedance	50Ω±10%					
	Attenuator	-20dB±1dBx2					
	DC Offset	<-5V~>+5V(into 50Ω load)					
	Duty Control	20% to 80% below 1MHz (Square wave only)					
	Display	1% 9 digits LED display					
SINE WAVE	Harmonics Distortion	-55dBc, 0.1Hz~200kHz; -40dBc, 0.2MHz~4MHz; -30dBc, 4MHz~10MHz (Specification applied from MAX. to 1/10 level)					
TRIANGLE WAVE	Linear	≥98%, 0.1Hz~100kHz; ≥95%, 100kHz~1MHz					
SQUARE WAVE	Symmetry	±1% of period +4ns to 0.1Hz~100kHz; Rise or Fall Time ≤25ns at maximum output. (into 50Ω load)					
CMOS OUTPUT	Level	4Vpp±1Vpp~14.5Vpp±0.5Vpp adjustable; Rise or Fall Time; ≤120ns					
TTL OUTPUT	Level	≥3Vpp; Fan Out; 20 TTL load; Rise or Fall Time; ≤25ns					
SWEEP OPERATION	Sweep/Rate Sweep/Time Sweep/Mode	—			100:1 ratio max. and adjustable 0.5Sec~30Sec adjustable Lin./Log. switch selector		
AMPLITUDE MODULATION	Depth & MOD. Frequency Carrier BW EXT Sensitivity	—			0~100%; 400Hz(INT), DC~1MHz(EXT) 100Hz~5MHz(-3dB) ≤10Vpp for 100% modulation		
FREQUENCY MODULATION	Deviation & MOD. Frequency EXT Sensitivity	—			0~±5%; 400Hz(INT), 1kHz(EXT) ≤10Vpp for 10% modulation		
FREQUENCY COUNTER	Range Accuracy Time base Resolution	—			5Hz~150MHz Time base accuracy±1count ±20ppm(23°C±5°C) after; 30 minutes warm up The maximum resolution is 10nHz for 1Hz and 0.1Hz for 100MHz		
	Input Impedance Sensitivity	1MΩ/150pf ≤35mVrms (5Hz~100MHz) ≤45mVrms (100MHz~150MHz)					
STORE/RECALL FUNCTION		10 groups of Setting memories					
POWER SOURCE		AC115V, 230V±15%, 50/60Hz					
ACCESSORIES		Instruction manualx1, Power Cord x 1, GTL-101x1			Instruction manualx1, Power Cord x 1, GTL-101x2		
DIMENSION & WEIGHT		107(W)x266(H)x293(D) m/m; Approx. 3.1kg			107(W)x266(H)x293(D) m/m; Approx. 3.2kg		

Specifications subject to change without notice.

Order Information

SFG-2004 4MHz DDS Function Generator

SFG-2007 7MHz DDS Function Generator

SFG-2010 10MHz DDS Function Generator

SFG-2104 4MHz DDS Function Generator with Counter ,Sweep &AM,FM Modulation

SFG-2107 7MHz DDS Function Generator with Counter ,Sweep &AM,FM Modulation

SFG-2110 10MHz DDS Function Generator with Counter ,Sweep &AM,FM Modulation

Standard Accessories

Instruction Manual

Power Cord

Probe:GTL-101x 1 for SFG-2004/2007/2010

Probe:GTL-101x 2 for SFG-2104/2107/2110

ISO-9001 & ISO-14001 CERTIFIED MANUFACTURER



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FG-2000GD0DH