

# DDS Function Generators

**GW INSTEK**

## SFG-2000 Series

- 20 / 10 / 7 / 4MHz Models.
- Direct Digital Synthesis (DDS) Design.
- Built-In 150MHz Counter (2100 Models).
- Int/Ext AM/FM Modulation (2100 Models).



		SFG-2120	SFG-2110	SFG-2107	SFG-2104	SFG-2020	SFG-2010	SFG-2007	SFG-2004
<b>Main</b>	Frequency Range (Sine, Square)	0.1Hz ~ 20MHz	0.1Hz ~ 10MHz	0.1Hz ~ 7MHz	0.1Hz ~ 4MHz	0.1Hz ~ 20MHz	0.1Hz ~ 10MHz	0.1Hz ~ 7MHz	0.1Hz ~ 4MHz
	Frequency Range (Triangle)	0.1Hz ~ 1MHz							
	Frequency Resolution	0.1Hz							
	Frequency Stability	± 20ppm							
	Frequency Accuracy	± 20ppm							
	Frequency Aging	5ppm/Year							
	Output Function	Sine, Square, Triangle							
	Amplitude Range	10Vpp (into 50Ω Load)							
	Flatness (Sine relative to 1kHz)	< ± 0.3dB, 0.1Hz~1MHz; < ± 0.5dB, 1MHz~4MHz;							
		< ±2dB, 4MHz~10MHz							
	Impedance	50Ω ± 10%							
	Attenuator	-20dB ± 1dB x 2							
	DC Offset	> ±5V (into 50Ω Load)							
	Duty Control Range & Res.	20% ~ 80% below 1MHz (Square Wave only), 1%							
	Display	9 Digits LED Display							
<b>Sine Wave</b>	Harmonic Distortion	-55dBc, 0.1Hz ~ 200kHz; -40dBc, 0.2MHz~4MHz; -30dBc, 4MHz~10MHz (over range 10 ~ 100% of full amplitude)							
<b>Triangle Wave</b>	Linearity	≥ 98%, 0.1Hz~100kHz; ≥ 95%, 100kHz ~ 1MHz							
<b>Square Wave</b>	Symmetry	+1% of Period + 4ns to 0.1Hz~100kHz; Rise or Fall Time ≤ 25ns at Maximum Output. (into 50Ω Load)							
<b>CMOS Output</b>	Level	4Vpp ± 1Vpp~14.5V pp ± 0.5Vpp Adjustable; Rise or Fall Time; ≤120ns							
<b>TTL Output</b>	Level	≥ 3Vpp; Fan Out into 20 TTL Loads; Rise or Fall Time; ≤ 25ns							
<b>Sweep Operation</b>	Sweep Rate	100 : 1 Ratio Adjustable				N/A			
	Sweep Time	0.5 Sec ~ 30 Sec Adjustable				N/A			
	Sweep Mode	Lin./Log. Switch Selector				N/A			
<b>Amplitude Modulation</b>	Depth & Modulation Frequency	0~100%, 400Hz (INT); 1MHz (EXT)				N/A			
	Carrier BW EXT Sensitivity	100Hz~5MHz (-3dB) ≤10Vpp for 100% Modulation				N/A			
<b>Frequency Modulation</b>	Deviation & Modulation Freq.	0~±5%; 400Hz (INT), 1kHz (EXT)				N/A			
	EXT Sensitivity	≤10Vpp for 10% Modulation				N/A			
<b>Frequency Counter</b>	Range	5Hz~150MHz				N/A			
	Accuracy	Time Base Accuracy ±1 Count				N/A			
	Time Base	± 20pm (23°C ± 5°C ) After; 30 Minutes Warm up				N/A			
	Resolution	10nHz for 1Hz; 0.1Hz for 100MHz				N/A			
	Input Impedance	1MΩ				N/A			
	Sensitivity	≤ 35mVrms (5Hz~100MHz) ≤ 45mVrms (100MHz~150MHz)				N/A			
<b>Store/Recall</b>	Size	10 Groups of Setting Memories							
<b>General</b>	Power Source	AC115V, 230V ± 15%, 50/60Hz							
	Accessories	Instruction Manual x 1, Power Cord x 1, GTL-101 x 2				Instruction Manual x 1, Power Cord x 1, GTL-101 x 1			
	Dimensions & Weight	107(W) x 266(H) x 293(D)mm 3.2kg				107(W) x 266(H) x 293(D)mm 3.1kg			

### ORDERING INFORMATION

SFG-2120	20MHz DDS Function Generator with Counter, Sweep & AM, FM Modulation.
SFG-2110	10MHz DDS Function Generator with Counter, Sweep & AM, FM Modulation.
SFG-2107	7MHz DDS Function Generator with Counter, Sweep & AM, FM Modulation.
SFG-2104	4MHz DDS Function Generator with Counter, Sweep & AM, FM Modulation.
SFG-2020	20MHz DDS Function Generator.
SFG-2010	10MHz DDS Function Generator.
SFG-2007	7MHz DDS Function Generator.
SFG-2004	4MHz DDS Function Generator.

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