

## Instek Direct Digital Synthesis (DDS) Function Generators

Part Nos. 01SFG2004, 01SFG2104, 01SFG2007, 01SFG2107, 01SFG2010, 01SFG2110

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**SFG-2104/2107/2110 (4/7/10MHz)**



**SFG-2004/2007/2010 (4/7/10MHz)**

### FEATURES

- \* DDS Technology and FPGA Chip Design
- \* Frequency Range: 0.1Hz~4MHz/7MHz/10MHz
- \* High Frequency Accuracy :  $\pm 20$ ppm
- \* High Frequency Stability :  $\pm 20$ ppm
- \* Frequency Resolution : 100mHz
- \* Low Distortion Sine Wave : -55dBc, 0.1Hz~200KHz
- \* 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)
- \* Front Panel Setting Save/Recall with 10 Groups of Setting Memories

### SPECIFICATIONS

		SFG-2000 Series			SFG-2100 Series		
		SFG-2004	SFG-2007	SFG-2010	SFG-2104	SFG-2107	SFG-2110
<b>MAIN</b>	Frequency	0.1Hz~4MHz	0.1Hz~7MHz	0.1Hz~10MHz	0.1Hz~4MHz	0.1Hz~7MHz	0.1Hz~10MHz
	Range(For Sine, Square) Range(For Triangle) Resolution Stability Accuracy Aging	0.1Hz~1MHz 0.1Hz $\pm 20$ ppm $\pm 20$ ppm $\pm 5$ ppm / year					
	Output Function	Sine, Square, Triangle					
	Amplitude Range Flatness(Sinewave relative to 1kHz) Impedance Attenuator DC Offset Duty Control Display	10Vpp(into 50 $\Omega$ load) < $\pm 0.3$ dB, 0.1Hz~1MHz; < $\pm 0.5$ dB, 1MHz~4MHz; < $\pm 2$ dB, 4MHz~10MHz 50 $\Omega$ $\pm 10\%$ -20dB $\pm 1$ dBx2 < -5V ~ > +5V(into 50 $\Omega$ load) 20% to 80% below 1MHz (Square wave only) 1% 9 digits LED display					
<b>SINE WAVE</b>	Harmonics Distortion	-55dBc, 0.1Hz~200kHz; -40dBc, 0.2MHz~4MHz; -30dBc, 4MHz~10MHz (Specification applied from MAX. to 1/10 level)					
<b>TRIANGLE WAVE</b>	Linear	$\geq 98\%$ , 0.1Hz~100kHz; $\geq 95\%$ , 100kHz~1MHz					
<b>SQUARE WAVE</b>	Symmetry	$\pm 1\%$ of period +4ns to 0.1Hz~100kHz; Rise or Fall Time $\leq 25$ ns at maximum output.(into 50 $\Omega$ load)					
<b>CMOS OUTPUT</b>	Level	4Vpp $\pm 1$ Vpp~14.5Vpp $\pm 0.5$ Vpp adjustable; Rise or Fall Time; $\leq 120$ ns					
<b>TTL OUTPUT</b>	Level	$\geq 3$ Vpp; Fan Out; 20 TTL load; Rise or Fall Time; $\leq 25$ ns					
<b>SWEEP OPERATION</b>	Sweep/Rate Sweep/Time Sweep/Mode	—			100:1 ratio max. and adjustable 0.5Sec~30Sec adjustable Lin./Log. switch selector		
<b>AMPLITUDE MODULATION</b>	Depth & MOD. Frequency Carrier BW EXT Sensitivity	—			0~100% ; 400Hz(INT), DC~1MHz(EXT) 100Hz~5MHz(-3dB) $\leq 10$ Vpp for 100% modulation		
<b>FREQUENCY MODULATION</b>	Deviation & MOD. Frequency EXT Sensitivity	—			0~ $\pm 5\%$ ; 400Hz(INT), 1kHz(EXT) $\leq 10$ Vpp for 10% modulation		
<b>FREQUENCY COUNTER</b>	Range Accuracy Time base Resolution  Input Impedance Sensitivity	—			5Hz~150MHz Time base accuracy $\pm 1$ count $\pm 20$ ppm(23 $^{\circ}$ C $\pm 5^{\circ}$ C) after; 30 minutes warm up The maximum resolution is 10nHz for 1Hz and 0.1Hz for 100MHz 1M $\Omega$ /150pf $\leq 35$ mVrms(5Hz~100MHz) $\leq 45$ mVrms(100MHz~150MHz)		
<b>STORE/RECALL FUNCTION</b>		10 groups of Setting memories					
<b>POWER SOURCE</b>		AC115V, 230V $\pm 15\%$ , 50/60Hz					
<b>ACCESSORIES</b>		Instruction manualx1, Power Cord x 1, GTL-101x1			Instruction manualx1, Power Cord x 1, GTL-101x2		
<b>DIMENSION &amp; WEIGHT</b>		107(W) $\times$ 266(H) $\times$ 293(D) m/m; Approx. 3.1kg			107(W) $\times$ 266(H) $\times$ 293(D) m/m; Approx. 3.2kg		