

DDS Function Generator

B6

NEW



CE

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

NEW



CE

SFG-2004/2007/2010 (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

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

ORDERING INFORMATION

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