Data Sheet

SDG800 Series Function/Arbitrary Waveform Generator

- ◆ DDS technology, Single-channel output
- ◆ 125MSa/s sample rate, 14bit vertical resolution.
- 5 types of standard output waveform, built-in 46 arbitrary waveforms(include DC)
- Complete set of modulation functions: AM, DSB-AM, FM, PM, FSK, ASK, PWM, Sweep, Burst
- Abundant input/output: waveform output,
 Synchronous signal output, , external trigger input.
- ◆ Standard interfaces: USB Device, USB Host.
- Supplied with powerful arbitrary editing software
- Support remote control

Reasonable price & outstanding performance

SDG800 series Function/Arbitrary Waveform Generator is a new family member of SIGLENT with friendly design: 3.5 inch TFT-LCD display; Built-in Chinese/English language; Online help function; Support U dick and internal storage, facilitative files management.

Application fields:

- Analog sensor
- Simulation environment signals
- Circuit function test
- ◆ IC test
- Researching and training



Edit arbitrary waveform

Enables edition of 14-bit 16kpts arbitrary output waveforms, Arbitrary editing software EasyWave provides 9 standard waveforms: Sine, Square, Ramp, Pulse, ExRise, ExpFall, Sinc, Noise and DC, which meets all engineers' basic needs; In addition, it provides plenty of ways of manual drawing, point-to-point line drawing and arbitrary point drawing. It facilitates to create complex waveforms; Multi-file screen management helps users to edit multiple-waveform simultaneously. It provides 10 Storage in non-volatile RAM. You can edit and store more waveforms by EasyWave.





Arbitrary waveform output

Built-in 46 arbitrary waveforms(include DC), including math, engineering and other commonly-used waveforms.

Complete set of modulation functions, sweep output, burst output

- Complete set of modulation functions: AM, DSB-AM, FM, PM, FSK, ASK, PWM, the modulation waveform can be observed directly, which it is suitable for education and training;
- ◆ Sweep output: change output frequency from starting frequency to ending one within sweeping time, Sweeping time range: 1ms~500s. The carrier can be Sine, Square, Triangle and Arbitrary waveforms.
- ◆ Burst output: It can periodically generate pulse sequence. Internal counter and external control signal are available to control burst output.





Specification

Model	SDG805	SDG810	SDG830
Max. output	5 MHz	10 MHz	30 MHz
frequency	3 IVITZ	IU WITZ	30 IVITZ
Output channels	1		
Sample rate	125MSa/s		
Arbitrary waveform	16kptc		
length	16kpts		
Frequency resolution	1μHz		
vertical resolution	14bits		
Waveform Sine, Square, Ramp, Pulse, Gaussian Noise. 46 built-in arbit		e. 46 built-in arbitrary	
vvaveioiiii	waveforms(include DC)		
Modulation	AM, DSB-AM, FM, PM, FSK, ASK, PWM, Sweep, Burst		
Standard interface	USB Host & USB Device		
Dimension	W x H x D=229mm x 105mm x 281mm		

Attention:

All these specifications apply to the SDG800 Series Function/Arbitrary Waveform Generator unless otherwise explanation. To satisfy these specifications, the following conditions must be met first:

- 1. The instrument has been operating continuously for more than 30 minutes within specified operating temperature range (18°C~28°C.
- The temperature variation does not exceed 5℃.

Note: all specifications are guaranteed unless where noted 'typical'.







Frequency Specification			
Model	SDG805	SDG810	SDG830
Waveform	Sine, Square, Ramp, Pulse, Noise, Arbitrary		
Sine	1µHz ~ 5MHz	1µHz ~ 10MHz	1µHz ~ 30MHz
Square	1µHz ~ 5MHz	1µHz ~ 10MHz	1µHz ~ 10MHz
Pulse	500µHz ~ 5MHz		
Ramp/Triangular	1µHz ~ 300kHz		
Gaussian white noise	>5MHz (-3dB)	>10MHz (-3dB)	>30MHz (-3dB)
Arbitrary	1µHz ~ 5MHz		
Resolution	1µHz		
Accuracy	Within 90days ±5	50ppm within 1 year	±100ppm
Temperature coefficient	<5ppm/°C		

Sine Wave		
	DC~1MHz <-60dBc	
Harmonic Distortion	1MHz~10MHz <-55dBc	
	10MHz~30MHz <-50dBc	
Total harmonic waveform	DC~20kHz,1Vpp<0.2%	
distortion	20 20KH2, 1 V PP 40.270	
	DC~1MHz<-70dBc	
Spurious signal(non-harmonic)	1MHz~10MHz<-60dBc	
	10MHz~30MHz<-55dBc	
Phase noise	10kHz Offset,-108dBc/Hz(typical value)	

Square Wave	
Rise/fall time	<24ns(10% ~ 90%)
Overshoot	<5%(typical,1kHz,1Vpp)
Duty Cycle	20%~80%
Asymmetric(50% Duty Cycle)	1% of period+20ns(typical,1kHz,1Vpp)
Jitter	500ps + 0.001% of period

Ramp/Triangle Wave	
Linearity	<0.1% of Vpp(typical,1kHz,1Vpp,100% symmetric)
Symmetry	0%~100%

Pulse Wave		
Pulse width	16ns, Min. 1ns resolution	
Rise/Fall time (10% ~ 90%,typical)	20ns~1.6ks	
Duty Cycle	0.1%Resolution	
Overshoot	<5%	
Jitter(pk-pk)	500ps + 0.001% of period	





Arbitrary Wave	
Waveform length	16k points
Vertical resolution	14bits
Sample rate	125MSa/s
Min. Rise/Fall time	8ns(typical)
Jitter(pk-pk)	8ns(typical)
Storage in non-volatile RAM	10 waveforms
memory (10 in total)	10 waveloms

Output Specification		
Amplitude	2mVpp~10Vpp(50Ω,≤10MHz)	
	2mVpp~5Vpp(50Ω,>10MHz)	
Vertical accuracy (100 kHz sine)	±(1mVpp +0.3dB of setting value)	
Amplitude flatness (compared to 100 kHz sine,5Vpp)	±0.3 dB	
Impedance	50Ω	
Protection	short-circuit protection	

DC Offset	
Range(DC)	±5V(50Ω)
	±10V(High-Z)
Offset accuracy	±(setting offset value *1%+3mV)

AM Modulation		
Carrier	Sine, Square, Ramp, Arbitrary(except DC)	
Modulation waveform	Sine, Square, Ramp, Noise, Arbitrary (2mHz ~	
	20kHz)	
Modulation depth	0% ~ 120%	
DSB-AM Modulation		
Carrier	Sine, Square, Ramp, Arbitrary(except DC)	
Modulation waveform	Sine, Square, Ramp, Noise, Arbitrary (2mHz ~	
	20kHz)	
Modulation depth	0% ~ 120%	
FM Modulation		
Carrier	Sine, Square, Ramp, Arbitrary(except DC)	
Modulation waveform	Sine, Square, Ramp, Noise,	
	Arbitrary(2mHz~20kHz)	
Frequency deviation	0 ~0.5*bandwidth 1mHz resolution	



PM Modulation			
Carrier	Sine, Square, Ramp, Arbitrary(except DC)		
Modulation waveform	Sine, Square, Ramp, Noise, Arbitrary		
	(2mHz~20kHz)		
Phase Deviation	0~360°,0.1°Resolution		
FSK Modulation			
Carrier	Sine, Square, Ramp, Arbitrary(except DC)		
Modulation waveform	50% duty-cycle square waveform(2mHz~50kHz)		
ASK Modulation			
Carrier	Sine, Square, Ramp, Arbitrary(except DC)		
Modulation waveform	50%duty-cycle square waveform(2mHz~50kHz)		
PWM Modulation			
Frequency	500μHz~20kHz		
Modulation waveform	Sine, Square, Ramp, Arbitrary(except DC)		
Sweep	Sweep		
Carrier	Sine, Square, Ramp, Arbitrary(except DC)		
Туре	linear/logarithmic		
Direction	Up/down		
Sweep time	1ms~500s		
Trigger source	Manual, external, internal		
Burst			
Waveform	Sine, Square, Ramp, Pulse, Arbitrary(except DC)		
Туре	Count(1~50,000 periods),infinite, Gated		
Start/Stop phrase	0°~360°		
Internal period	1μs~500s		
Gated source	External trigger		
Trigger source	Manual, External or Internal		

Trigger Input	
Input Level	TTL compatible
Slope	Up or down
Pulse width	>100ns
Input impedance	>5kΩ,DC coupling

SYNC Output	
Voltage level	TTL compatible
Pulse width	>50ns
Output impedance	50Ω(typical)
Max. frequency	2MHz





General Specification

Display		
Display type	3.5inch'TFT-LCD	
Resolution	320×RGB×240	
Color depth	24bit	
Contrast Ratio	350:1(typical)	
Luminance	300cd/m ² (typical)	
Power		
Voltage	100~240 VAC _{RMS} , 45~66Hz, CATII	
	100~127 VAC _{RMS} , 45~440Hz, CATII	
Consumption	<30W	
Fuse	1.25A,250V	
Environment		
Temperature	Operation:0°C~40°C	
Temperature	Storage:-20°C~60°C	
Humidity range	Below +35°C:≤90% relative humidity	
	+35℃~+40℃:≤60% relative humidity	
Altitude	Operation: below 3,000 meters	
	Storage: below 15,000 meters	
Others		
Dimension	Width:229mm	
	Height:105mm	
	Depth:281mm	
Weight	N.W: 2.6Kg	
	G.W: 3.4Kg	
IP protection		
IP2X		
Calibration Cycle		
1year		



Purchase Information

Product Name

SDG800 Series Function/Arbitrary Waveform Generator

Models:

SDG805 5MHz SDG810 10MHz SDG830 30MHz

Standard Accessories

- A Quick Start
- A Certification
- An CD(including EasyWave computer software system)
- A Power Cord that fits the standard of destination country
- A USB Cable

Optional Accessories

- BNC cable
- GPIB-USB Adapter

Contact SIGLENT

SIGLENT TECHNOLOGIES CO., LTD

Address: 3/F, No.4 BULIDING, 3rd LIUXIAN Rd, ANTONGDA INDUSTRY GARDEN, BAO'AN DISTRICT, SHENZHEN, CHINA

Tel: +86-755-36615186 Fax: +86-755-33591582 Post Code: 518101

E-mail:sales@siglent.com http://www.siglent.com

