VAR TECH®
Quality • Reliability • Economy

Function / Signal Generator
SGDA-80 M

ISO 9001

SGDA-80M Overview

1.The Instrument Introduction :

SGDA-80M Programmable dual channel function/arbitrary waveform signal generator can generate various waveforms such as sine wave, square wave, triangle wave, pulse wave, and arbitrary wave. The frequency range of the instrument is from 1nHz to 80MHz, and it has the functions of modulation, frequency sweep, measurement signal frequency and programming, etc.

It can display the output signal, amplitude, phase, duty and frequency at the same time. The instrument has excellent amplitude-frequency characteristics, multifunctions, high performance, high cost performance, portable and other characteristics providing a new choice for education, research and development, production, testing and other industries.

The appearance of this instrument is exquisite and beautiful, and it is equipped with a 3.5-inch high-resolution color LCD screen to bring you a brand new visual experience.

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Specifications :

Model	SGDA-80M
Channel	2
Sine wave frequency range	1nHz-80MHz
Sampling Rate	300MSa/S
Waveform characteristics	
Wave length	8192 points/channel
Waveform vertical resolution	14 bits
Basic waveform	Sine,square,pulse,ramp,CMOS,DC,partial sine and noise wave
Built-in waveform	Sine,square,pulse,triangle,ramp,CMOS,DC level,partial sine,half,full, positive step wave, inverse step wave, noise,exponential rise, exponential fall,logarithm ascending,logarithmic descending, sinker pulse, multi-tone ,lorenz

Frequency characteristics	
Sine wave frequency range	1nHz-80MHz
Square wave frequency range	1nHz-30MHz
Triangle wave frequency range	1nHz-50MHz
Pulse wave frequency range	1nHz-30MHz
TTL digital wave frequency range	1nHz-20MHz
Arbitrary wave frequency range	1nHz-50MHz
Pulse width adjustment range	5nS~4S
Pulse period adjustment range	10nS~40S
Frequency minimum resolution	1nHz
Frequency accuracy	±5ppm 0 to 50℃

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Frequency stability	±3ppm per 1 year
Sine wave spectrum purity	
Total harmonic distortion	≤0.5%（@1kHz,5Vpp）
Signal characteristics	
Square wave	
Rise/Fall Time	≤10nS
Overshoot	≤10%
Non-symmetry	≤0.1%
Ramp and triangle wave	
Non-linearity	≤1%(Less than 1MHz)
Non-symmetry	≤1%(Less than 1MHz)
Pulse wave	
Pulse Width	5nS~4S
Pulse period	10nS~40S
Duty cycle	0.01%-99.99%
Leading/Trailing Edge Time	≤10nS
Overshoot	≤10%
Arbitrary wave	
Wave length	8192 points (8K points)
Vertical resolution	14 bits
Minimum rise/fall time	≤10nS
Overshoot	≤10%
Arbitrary waveform non-volatile storage number	99

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Output characteristics	
Amplitude	
Amplitude range	Frequency≤1MHz; 2mVpp~25Vpp 1MHz≤Frequency＜11MHz; 2mVpp~10Vpp 11MHz≤Frequency＜60MHz; 2mVpp~5Vpp 60MHz≤Frequency＜80MHz; 2mVpp~3.6Vpp
Amplitude resolution	1mVpp
Amplitude stability	± 1% ±1 mVpp (@ 1 kHz,>10 mVpp)
Amplitude flatness	±1%(0.1dB)<10MHz ; ±2%(0.2dB)<10MHz~50MHz ±10%(0.9dB)<50MHz~70MHz; ±20%(1.9dB)<70MHz~80MHz
DC Offset	
Range	-9.99V-15.00V
Resolution	0.01V
Phase characteristics	
Adjustment range	0°-359.99°
Resolution	0.01
Waveform output	
Impedance	50Ω (typical)
Protection	Short-circuit protection
Modulation characteristics	
Modulation type	AM、FM、PM、ASK、FSK、PSK、PWM、BURST
AM	
Carrier waveform	Sine, square, ramp, arbitrary (except DC)
Source	Internal/External

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Modulating waveform	Sine, square, ramp, noise, arbitrary
Depth	0% to 200%
Modulating frequency	1mHz to 1MHz
FM	
Carrier waveform	Sine, square, ramp, arbitrary (except DC)
Source	Internal/External
Modulating waveform	Sine wave, square wave, ramp wave, noise wave, arbitrary wave
Modulating frequency	1mHz to 1MHz
Frequency deviation	0.1Hz to 10kHz
PM	
Carrier waveform	Sine, square, ramp, arbitrary (except DC)
Source	Internal/External
Modulating waveform	Sine, square, ramp, arbitrary (except DC)
Phase deviation	0° to 360°
Modulating frequency	1mHz to 1MHz
ASK	
Carrier waveform	Sine, square, ramp, arbitrary (except DC)
Source	Internal/External
Polarity	Positive and negative
Rate	1mHz to 1MHz
ASK amplitude	0% to 200%
FSK	
Carrier waveform	Sine, square, ramp, arbitrary (except DC)
Source	Internal/External
Modulating waveform	Pluse wave with 50% duty cycle
Polarity	Positive and negative

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Rate	1mHz to 1MHz
Frequency hopping	0.1Hz to 80MHz
PSK	
Carrier waveform	Sine, square, ramp, arbitrary (except DC)
Modulating waveform	Internal/External
Polarity	Positive and negative
Rate	1mHz to 1MHz
PSK phase	0° to 360°
PWM	
Carrier waveform	Pulse
Wave inversion	Regular and reverse
Pulse period	0.01uS to 40S
Pulse Width	0.001uS to 4S
Burst	
Idle	Zero position, positive maximum, negative maximum
Mode	Single, automatic
Trigger source	Manual t, CH2 burst, external (AC), external (DC)
Pulse number	1-1000000000

Measurement and counter function	
Measurement mode	
Measurement function	Frequency, positive/negative pulse width, period, duty cycle
Coupling method	DC, AC
Gate time	0.001S-10.000S
Measurement mode	Low frequency, high frequency
Frequency measurement range	1Hz~100MHz
Input signal amplitude range	2Vpp~20Vpp

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Period measurement	10nS~4S
Pulse Width	4S
Duty cycle measurement range	0.01%~99.99%
Counter mode	
Range	0-4294967295

Coupling method	DC and AC
Counting method	Manual
External modulation input characteristics	
Input signal amplitude range	0~3Vpp
Input signal frequency range	DC~20kHz
v	
Sweep characteristics	
Sweep channel	CH1 or CH2
Carrier waveform	Sine, square, ramp, arbitrary (except DC)
Sweep function	Sweep frequency, sweep amplitude, sweep duty
Sweep mode	Linear, logarithmic
Sweep direction	Increment, decrement, round trip
Start/end frequency	Consistent with the upper and lower limits of the corresponding carrier frequency
Start/end amplitude	Consistent with the upper and lower limits of the corresponding carrier amplitude
Start/end duty cycle	Consistent with the upper and lower limits of the corresponding carrier duty cycle
Sweep time	0.01S-640S

Voltage control characteristics	
Voltage control channel	CH1 or CH2
Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave (except DC)

Voltage control function	Frequency control, amplitude control, and duty cycle control
Sweep mode	Linear, logarithmic
Start/end frequency	Consistent with the upper and lower limits of the corresponding carrier frequency
Start/end amplitude	Consistent with the upper and lower limits of the corresponding carrier amplitude
Start/end duty cycle	Consistent with the upper and lower limits of the corresponding carrier duty cycle
Voltage control voltage range	0V-5V, starting point and end point can be set arbitrarily
v	
Programming features	
Running mode	Debugging、normal
Storage	P00-P19
Programming number	00-99
Programming time	Single serial number programming time 0-99S

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General parameters		
Display		
Screen	3.5 inch TFT color LCD screen	
Resolution	320*480	
Color	64K true color	
Store and load		
Quantity	100 groups	
Location	00 to 99 (The data of 00 storage location is loaded by default)	
Interface		
Interface method	USB to serial interface	
Extension interface	Serial port with TTL level, convenient for secondary development	
Communication rate	Standard 115200BPS	
Protocol	Using the command line, the protocol is open.	
Power		
AC power	Supply voltage	85V-264V，47-63Hz
	Power consumption	Less than 30W
	Fuse	250VAC,T3.15A
DC power	Voltage/current	DC5V±0.5V 3A
Environment		
Temperature	0~40℃	
Humidity	Humidity:<80%	
Dimensions	219x103x240 mm – 2.5 Kg	

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