



Innovator In Spectroscopy Equipment

SGC2818



SIGNAL GENERATOR AND COUNTER MODEL SGC2818

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CATALOG



MISCELLANEOUS



FREE DOWNLOAD

SIGNAL GENERATOR AND COUNTER

MODEL SGC2818

Features

- Wide temperature range
- Direct digital synthesizer technology
- 14-bit high-speed D/A converter chip
- Voltage Control Output (VCO) function
- Less than 1mv quantization error (@ 5Vpp)
- Providing stable, precise and low distortion signals
- Various digital signals including 5V TTL and CMOS, 3.3V LVTTL, 2.5V CMOS and 1.8V CMOS
- Various preset waveforms including Sine, Square, Pulse, Tringle/Ramp, etc.
- Various NIM signals including negative NIM logic, slow positive NIM logic and ECL
- Various modulation types including AM, FM, PM, ASK, FSK and PSK
- Various sweep functions including frequency, amplitude, offset and duty-cycle.
- Counter function with 2 working mode including AC and DC
- Standard dual full functional channels equals to two independent generators
- Ready for field operation
- Amplitude range 0~20Vpp
- Minimum amplitude resolution of 1mV
- Independent and Adjustable duty-cycle for each channel from 0.01% to 99.99% with 0.01% resolution
- -10V~+10V DC offset function with 0.001V resolution
- Output short-circuit protection (All channels can work for 60 seconds when the load is short-circuited)
- Special rugged design to withstand typical field usage, waterproof against streaming water and fully dust protected
- Waveform and state copy between channels using channel sync function
- 0.01o Precision in adjusting the phases of two channels
- Continuous operation under severe environmental condition

**Powerful Waveform Generator
and Counter with Two Fully
Independent Channels**



Description

The SGC2818 from Control Farayand Pasargad (CFP) is a signal generator and counter applicable to many fields. The device comes with two fully separated channels where their parameters could be arbitrary set. The device can generate various functions including pulses, analog/digital modulated signals, VCO, sweep, counters, frequency meter and others in a high performance, cost effective manner. Abundant shortcut keys and graphical user interface simplifies the operations with SGC2818. The device is suited for education, research and development, production, testing, maintenance and other fields. The device is easy to use and users do not need to spend a lot of time learn how to work with SGC2818.

The output signals are stable, precise, pure and low distortion due to the Direct Digital Synthesizer (DDS) technology utilized in SGC2818. Because the wide range of users in different fields, various considerations are made during the R&D procedure for SGC2818. All functions of the instrument can be controlled through the embedded PC via device software. The system is equipped with an IPS touch screen which lead to user-friendly graphical user interface while bringing new experience in working with signal generators.

Specifications

Input(s)
Power
AC 220V power cable (50Hz)
USB port
DC +5V USB (200mA) for connecting to the PC
COUNTER
Counter input
Output(s)
TTL Outputs
2 differential channels for each output (Totally 2 outputs)
TTL level amplitude > 3Vpp
Fan-out > 8 TTL load
Rise/fall time ≤10ns
CMOS Output
Low electric level < 0.3V
High electric level: 1V~10V
Rise/fall time ≤18ns
VCO
Modulation signal range to input: 0~5V
VCO signal frequency range: 0-1000Hz
Special function: amplitude and frequency modulation by external signal
Output 1 & 2

Amplitude (Vpp):
Frequency ≤10MHz: 1mVpp~20Vpp
10MHz ≤ Frequency ≤ 20MHz: 1mVpp~10Vpp
Frequency >20MHz: 1mVpp~5Vpp
Resolution: 1mV
Amplitude stability: ±0.1%/h
Amplitude flatness: ±2.5%(<10MHz) and ±5%(>10MHz)
Controls
PC button
PC different functions
Power push button
Push to turn device ON or OFF (shut down)
Indicator(s)
Power
Power on indicator (green color)
Logo
CFP logo indicator
Display
IPS, full color
10.1", 1280 × 800 pixels,
Performance
Waveform characteristics
Sine, Square, Pulse, Triangle/Ramp, Saw tooth Wave, CMOS, Four channels TTL, DC, Half wave, Full wave, Positive Step, Inverse Step, Positive Exponent, Inverse Exponent, Lorenz Pulse, Multi-tone, Noise, ECG, Trapezoidal Pulse, Sinc Pulse, Narrow Pulse, Gaussian White Noise, AM, FM, 5V CMOS (HC, AHC, AC), 5V TTL (TTL in/CMOS out, ACT, HCT, AHCT), 5V TTL (STD, H,LL, HS,LS, ALS), 3.3V TTL & CMOS (LV, LVT, ALVT, LVC, ALVC), 2.5V TTL & CMOS, 1.8V CMOS (AVC)
Waveform models (frequency)
Sine (0~60MHz)
Square (0~25MHz)
Ramp, Triangle (0~10MHz)
Pulse (0~10MHz)
TTL/CMOS (0~20MHz)
Accuracy
±25ppm
Stability
±0.5ppm/hour
Sampling rate
250MSa/s
Vertical resolution
14bits

Electrical and Mechanical

Power required

AC - 220V - 50Hz

Physical

Dimensions	466 x 230 x 357mm (L x W x H)
Weight	12.780kg
Storage temperature	0°C to 50°C
Operating temperature	10°C to 45°C.
Relative humidity	< 95%

Application

- Receiver testing in communication systems
- Electrical and electronics systems testing
- Nuclear magnetic resonance imaging
- High frequency induction heating
- Medical algorithms development
- Circuit and equipment testing
- Lab / R&D characterizations
- Medical systems testing
- Discrete filter design
- Data logger



Software and user interface

Device GUI

The SGC2818 can be used standalone using the companion 10.1" touch screen display.

This sensor can be used with PC interfaces and the data collection SGC2818 software.

Output channel 1 and 2

Output online setting, Output Configuration, Typical signal viewing, Categorized signal selection, Output signal properties

Counter panel, Modulation and sweep

Read count, Rate calculating, Basic statistical functions

PC software

SGC2818 (SOFTWARE)

Input /Output (using supplied SGC2818 software)

USB

Data Output formats

TXT, XLS, LOG

The screenshot displays the main window of the SGC2818 software interface. It is divided into several sections:

- Output Signals:** Shows two channels. CH1 displays a sine wave, and CH2 displays a square wave.
- Channel 1 Configuration:**
 - Wave (Type): Sine
 - Frequency: 60.000000000000MHz
 - Amplitude (Volt): 05.0000V
 - Offset (Volt): 00.000V
 - Duty Cycle (%): 50.000%
 - Phase (D°): 000.000°
- Channel 2 Configuration:**
 - Wave (Type): Square
 - Frequency: 00.000,002,000000Hz
 - Amplitude (Volt): 05.0000V
 - Offset (Volt): 10.000V
 - Duty Cycle (%): 50.000%
 - Phase (D°): 000.000°
- Counter Panel:** Includes tabs for Counter, Modulation, and Sweep. The Counter section shows:
 - Gate: 1S, 10S, 100S
 - Coupling: AC, DC
 - Mode: Count, Frequency
 - MAX: (AC+DC)<+5V
 - Control buttons: Play, Stop, Refresh
- Result Table:**

Setting	Result
Frequency	0 Hz
Cycle Time	0 nS
POS Pulse Width	0 nS
NEG Pulse Width	0 nS
Duty Cycle	0 %
- Footer:** SGC2818 SN:181020-001

Main window




Ordering info

Standard package includes

Part #	Image	Description
SGC2818 main		Includes the main body of device
ACCE2818001		CD User guide (1 Pack)
ACCE2818002		Hard case with foam insert
ACCE2818003*		Guarantee (one year)
ACCE2818010		Power cord cable 220VAC

* We fully support our products. We guarantee your satisfaction in the quality of our instruments by providing a complete one-year warranty covering any defect of workmanship, material, and/or design. If our products do not perform, we will provide complete repair and/or replacement. For guaranty conditions, please refer to device manual (SGC2818 - Manual).

Optional accessories and services

Part #	Image	Description
ACCE2818004		installation
ACCE2818005		Training
ACCE2818006**		Re-calibration services

** = The proper maintenance & calibration of your instruments is critical to ensure proper performance & accuracy. for Re-calibration (interval) services, please call with CFP company (021- 46045383).



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