

USB Signal Generator – SG01

Specification



SG01 SPECIFICATION TABLE OF CONTENTS

	<u>Page #</u>
1.0 GENERAL INFORMATION	3
1.1 SG01 USB Signal Generator and SG01 Software Overview	3
1.2 Points of Contact	3
1.2.1 Information.....	3
2.0 SG01 SPECIFICATIONS	4
2.1 SG01 DC SPECIFICATIONS	4
2.2 SG01 AC SPECIFICATIONS	4
2.3 SG01 CHASSIS	4
3.0 GETTING STARTED	5
3.1 Installing SG01 Software	5
3.2 Starting the Application	5

1.0 GENERAL INFORMATION

1.1 SG01 USB Signal Generator and SG01 Software Overview

SG01 USB Signal Generator is a synthesized continuous wave signal generator and powered by USB. The Output frequency range is from 40MHz to 3200MHz. Output power level range is from -23dBm to 10dBm (84dBuV to 117dBuV -50ohm output). SG01 USB Signal Generator can work alone without computer connection as a fixed frequency and fixed power signal source.

The software for SG01 USB Signal Generator is SG01 Software, which includes three main elements:

- 1) One is the SG01 control panel (SG01.exe), which is user friendly Graphic User Interface (GUI). User can control the output of SG01 USB Signal Generator by just clicking the buttons or inputting the number of the desired frequency and inputting the number of desired output power level.
- 2) Second is Application Programmable Interface (API), which includes static library (SG01lib.h with SG01lib.lib) and dynamic -link library (SG01ALL.dll), and another library (SG01ALL_c.h, SG01ALL_c.lib and SG01ALL_c.dll). Users can write their own programs to control the SG01 USB Signal Generator automatically in any programming languages. Even in Windows Office software, such as Excel.
- 3) Third is command-line (SETSG01.exe). SETSG01.exe is a command at windows console. It can control SG01 USB Signal Generator by 4 parameters (serial number, frequency, output power, and output ON/OFF).

The API examples and command-line examples have been installed with the software together. The examples are built by Visual Studio 2005.

The GUI can control maximum 4 units of SG01 USB Signal Generators at the same time. The API can program maximum 30 units of SG01 USB signal generators.

For software details of the SG01 USB Signal Generator, please refer to "SG01 Software User's Manual".

SG01 USB Signal Generator is tested and calibrated at regular conditions. **It is not calibrated by precision equipment.** Please do not use it as precision instrument.

1.2 Points of Contact

1.2.1 Information

For additional information, please email: sales@lqelectronics.com.

2.0 SG01 SPECIFICATIONS

2.1 SG01 DC specifications

Items	Symbol	Description	Min	Typical	Max	Unit
1	Vdc	DC voltage input	4.5	5	5.5	V
2	Idc	DC current consumption	210	230	250	mA

2.2 SG01 AC specifications

Items	Symbol	Description	Min	Typical	Max	Unit
1	f_{out}	Output frequency range	40	-	3200	MHz
2	f_{step}	Output frequency step	-	1	-	KHz
3	P_{out}	Output power level range	-23	-	10	dBm
4	P_{step}	Output power level step	-	0.5	-	dB
5	P_{acc}	Output power level accuracy	-0.5	0	0.5	dB
6	f_{ref}	Reference frequency output	-	12	-	MHz
7	V_{ppref}	Peak to peak voltage of the reference output for 50ohm load	1.3	1.5	1.7	V
8	L	$f_{out} = 800\text{MHz}$ Phase noise @10KHz offset	-	-91	-	dBc/Hz
9	$P_{harmonics}$	Harmonic	-	-10	-	dBc
10	Z_{out}	Output impedance	-	50	-	

2.3 SG01 chassis

SG01 chassis has two LED indicators, two SMA connectors and one USB type B connector.

DC power ON: green light, indicating the USB power is connected.
 Output power ON: orange light, indicating there is signal output from the Signal Generator.
 Output: signal output SMA connector, impedance 50ohm.
 12MHz reference: reference frequency output SMA connector, impedance 50ohm.
 USB type B connector: connected to computer USB interface for DC power and remote control.

3.0 GETTING STARTED

Installing SG01 Software and starting Application

3.1 Installing SG01 Software

SG01 Software is properly compressed in an installation file, which is called SG01_setup.exe. All the files are included in SG01_setup.exe. SG01_setup.exe is stored in a USB flash drive which is attached with the SG01 USB Signal Generator when you buy the product. In addition, you can download it from website: <http://www.lqelectronics.com/support/USBSG/download.html>

When you start to install the SG01 USB Signal Generator, follow the steps below,

1. Plug the SG01 USB Signal Generator to a computer; ignore reminders of the computer.
2. Plug the USB flash drive, double-click the file of SG01_setup.exe
3. Follow the instruction appeared on the screen of your monitor, the software will be installed automatically.

We strongly recommend you plug SG01 USB signal generator to the computer before install SG01 Software to avoid window assigns wrong USB driver.

3.2 Starting the Application

The application of SG01 GUI is installed into the startup program menu at LQElectronics\SG01\. Just click it, the SG01 GUI starts up.

LQ Electronics Corp

Tel: (408)634-3078

Email: sales@lqelectronics.com

<http://www.lqelectronics.com>