SG SERIES
QUICK START GUIDE

SIGNAL GENERATOR QUICK START GUIDE

Vector Signal Generator
Up to 6 GHz

V1.1
07/16/2026

HAROGIC

Contents

1. Version Update Description

Version Update Description Table

Version	Content	Date
V1.1	1. Added: Installing Drivers (Linux) section for the SGA series 2. Added: Running Software in Linux System section for the SGA series 3. Modified: External Interface Description section for the SGA series 4. Added: GNSS Usage Instructions chapter 5. Added: Reference Clock Input and Output chapter	16/07/2026
V1.0	1. Initial version	21/04/2026

2. Operating Environment Requirements

SGA-60 is a USB-based vector signal generator that requires host computer software for operation. The recommended host system environment is detailed in the table below.

The table only specifies the recommended configuration. For systems operating below the recommended specifications, actual performance should be verified through testing.

Table 1 Operating Environment Requirements

Operating System	Windows 11/10/8/7 (requires VS2019 C++ redistributable)
Architecture	Windows: x64
Processor	Intel i3 or above
Memory	8 GB; for generating digital modulation waveforms with PN > 15, 16 GB is recommended for better performance and processing capability
Storage	Sustained disk read/write speed > 250 MBytes/s (For streaming mode at 50 MHz bandwidth)
Data Port	USB 2.0 or USB 3.0 (USB 3.0 recommended); streaming mode is limited by interface bandwidth
Display Resolution	At least 1280 × 800 pixels
Others	Some antivirus software may interfere with normal system operation

3. SGA Series Quick Start Guide

This chapter provides a quick start guide for the SGA series, including safety instructions, instrument operation, software operation, and external interface descriptions.

3.1 Safety Instructions

1. Adapter Selection: The original manufacturer-provided power adapter is recommended. Alternatively, choose an adapter with matching specifications as detailed in the product manual;
2. DC Power Requirements: Voltage 9 V ~ 12 V, current ≥ 3 A, ripple < 200 mVpp.

⚠ Failure to comply may result in instrument damage. Always strictly adhere to the product manual.

3.2 Using the SGA series Instruments

3.2.1 Connecting the Instrument

1. Connect the instrument's power port to the power adapter using the Type-C cable, and plug the adapter into a power outlet;
2. Connect the instrument's data port to the computer or embedded device using the Type-C cable. USB 3.0 is recommended for optimal performance.

figure 1 SA series connection diagram

3.2.2 Installing Drivers (Windows)

The following procedure describes how to install the Win10_x64 driver. Note: the Win10 driver is compatible with Windows 11.

1. Verify the OS version and architecture in your computer's system information;
2. Navigate to the folder Windows\driver\Win10_x64 on the included USB drive;
3. Right-click the Install_Driver.bat file and select "Run as administrator" to install the driver;

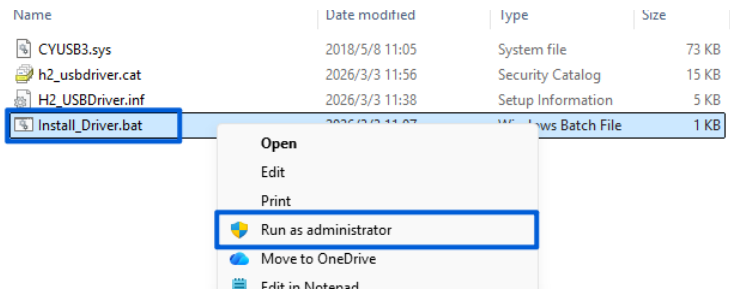

Figure 2 Install the driver

4. Verify that the terminal displays the message “USB Driver Installation Succeeded” to confirm successful installation.

3.2.3 Installing Drivers (Linux)

The following will be an example of installing the driver in Ubuntu 18.04.

1. Copy the "Linux" folder from the supplied USB flash to the system;
2. Go to the "Linux/Install_H2_SDK" directory, right-click the blank space, and choose "Open in Terminal" to open the terminal;
3. In the terminal type *sudo sh install_htraapi_lib.sh* and enter, according to the prompts to enter the current user password, and then enter again to confirm the installation;
4. After connecting the instrument, type *lsusb* in the terminal, such as ID:6430, ID:04b5 or ID:367f, it means the driver installation is successful.

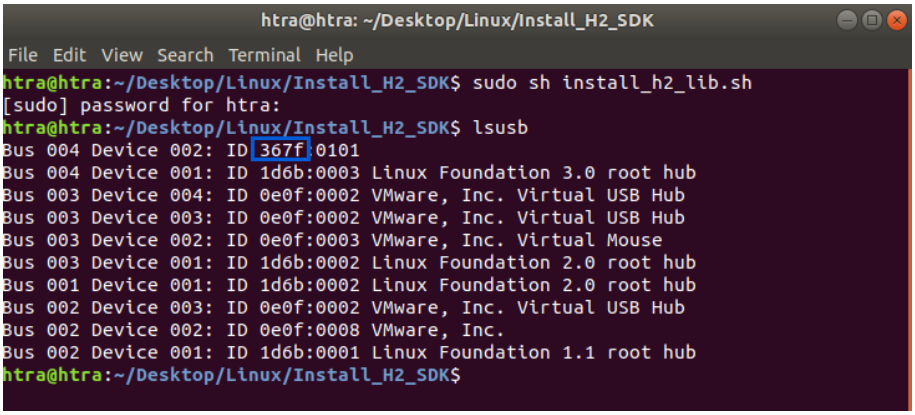

figure 3 Checking Whether the Instrument Is Properly Connected in Linux

3.3 Running the Software

3.3.1 Windows System

Assuming the instrument is properly connected and the driver is installed:

1. Copy the software folder from the USB drive’s Windows directory to the desktop or another location on your computer;
2. Open the \bin folder within the software directory and double-click the executable to run the program. (Ensure that the corresponding device calibration and license files are present

in the \bin\CalFile folder.) The signal generator interface will appear as shown below.

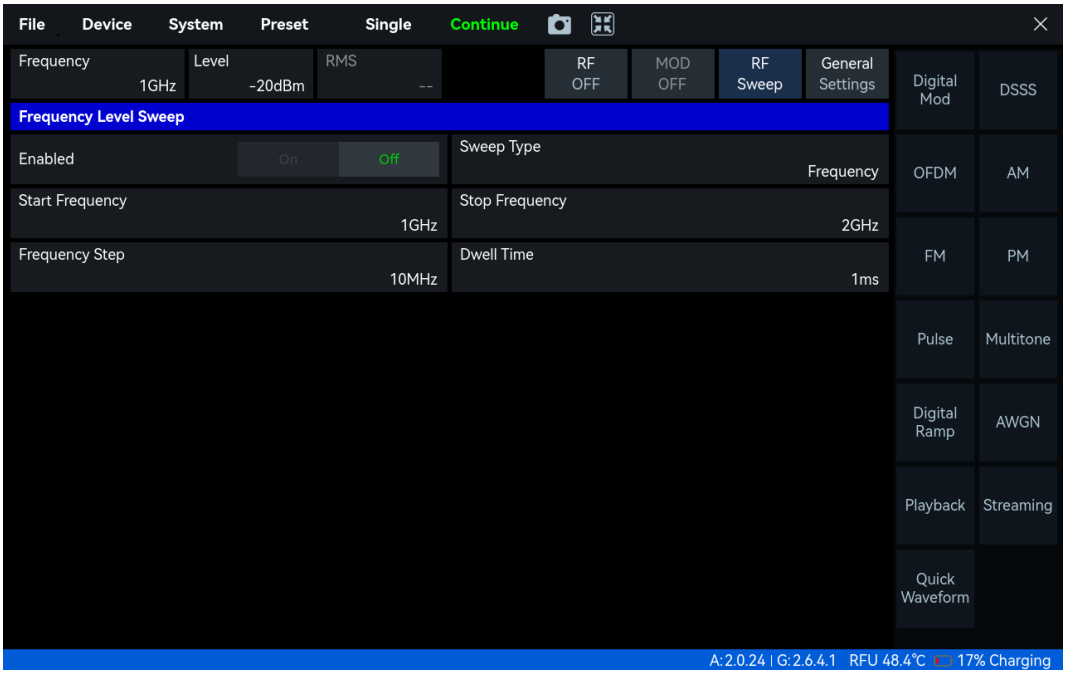

Figure 4 Normal software operating interface

As shown above, the status bar at the bottom of the interface displays the following information from left to right: USB real-time transfer speed (USB: 0B/S), device UID (169eXXXX3435), device model, hardware version, MCU version, FPGA version, API version, GUI version, and instrument operating temperature.

3.3.2 Linux System

1. Copy the compressed package for the corresponding architecture obtained from technical support to the Linux system, and decompress it;
2. Navigate to the bin folder under the software installation package directory, then double-click the software icon, or enter ./app.sh in the terminal within the current directory to launch the software.

3.4 External Interface Description

Figure 5 SGA-60 Interface Description

Table 2 SGA-60 Interface Description

No.	Interface Name	Description
1	RF Signal Output	N (F), output impedance 50 Ω
2	GNSS Antenna Input	SMA (F)
3	Reserved Interface	/
4	Medium Power Output (Option 10)	SMA (F), the typical maximum output power is ≥25 dBm from 10 MHz to 6 GHz
5	Power Port	Instrument charging port, Type-C 12 V 3A
6	Data Port	Type-C, USB 3.0 recommended (USB 2.0 supported but bandwidth limited)
7	Reference Clock Input	MMCX (F), supports 10 MHz reference clock
8	Reference Clock Output	MMCX (F), outputs 100 MHz clock signal
9	Reserved Interface	/
10	Multi-function AUXIO	Refer to the following table for detailed description
11	Device Status Indicator	At any given moment, only one color indicator light is lit. Green: Normal status. Red: Abnormal status. Yellow: Remote update failed

Table 3 Multi-function AUXIO Pin Description for Port 10 (orientation shown from right to left)

Pin	Name	Direction	Voltage Standard	Description
1	TRG in	I	3.3 V	External trigger input
2	TRG out	O	3.3 V	Trigger output
3	TRG IO3	/	/	/
4	NC	/	/	/
5	NC	/	/	/
6	3V3D	O	/	Power output, 3.3 V
7	UART_TX	/	/	/
8	GND	/	/	Ground
9	UART_RX	/	/	/
10	NC	/	/	/
11	NC	/	/	/
12	NC	/	/	/
13	GND	/	/	Ground
14	NC	/	/	/

4. GNSS Usage Instructions

Instruments are equipped with built-in GNSS modules. During use, connect the GNSS antenna with its receiving surface facing an unobstructed view of the sky to the corresponding interface as described below.

The connection steps are as follows:

Connect the antenna to the instrument's No. 2 GA interface, after connection, click "System" -> "GNSS Info" in the upper computer software menu bar. The GNSS module will acquire the satellite signal and complete positioning after approximately 3 minutes. The corresponding GNSS information will then be displayed in the pop-up window.

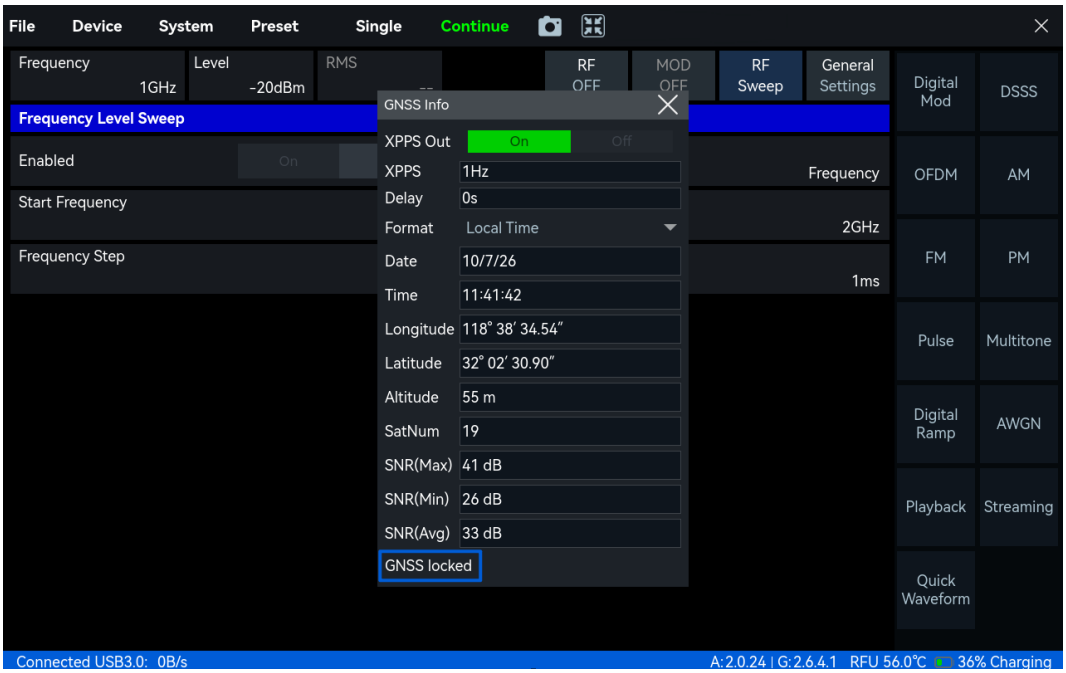

figure 6 Connecting the External GNSS Antenna

5. Reference Clock Input and Output

5.1 Reference Clock Input

5.1.1 Hardware Connection

SGA Series: Antenna -> instrument's No. 7 MMCX (F) interface.

5.1.2 Software Operation

In the software main settings area, click "General Settings" -> "RefCLKSource", select "External", and set the "ExtRefCLKFreq" to 10 MHz.

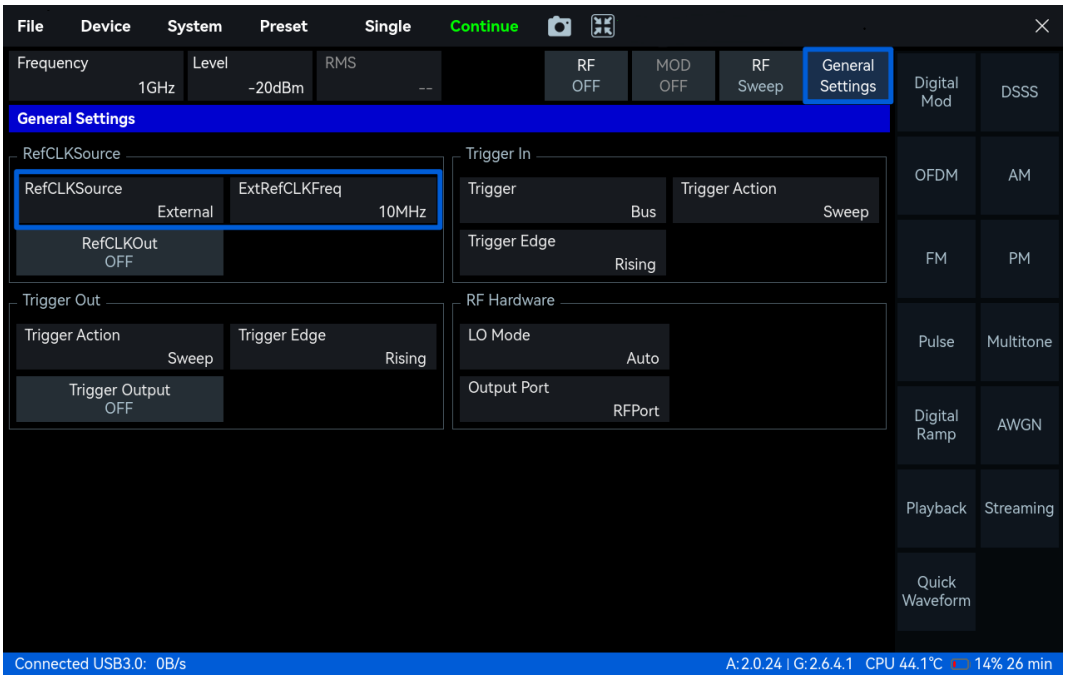

figure 7 Setting the External Reference Clock Source

5.2 Reference Clock Output

5.2.1 Hardware Connection

SGA Series: Antenna -> instrument's No. 8 MMCX (F) interface.

5.2.2 Software Operation

In the software main settings area, click "General Settings", and enable "RefCLKOut" under the "RefCLKSource" section.

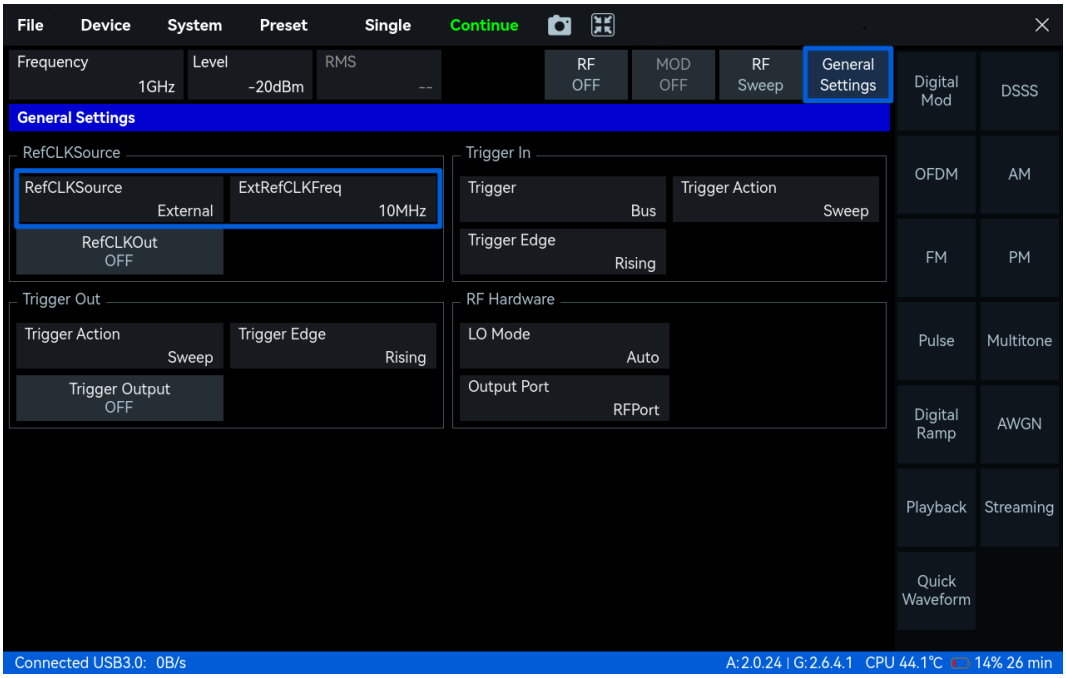

figure 8 Setting the Reference Clock Output

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