



Gk101 10MHz Arbitrary Waveform Generator

Gk101 10MHz Arbitrary Waveform Generator based on a number of advanced technology, allows a small volume to achieve functions that common instrument has. The palm-sized instrument achieves 80M sampling rate, 10MHz maximum frequency, 10Vpp highest amplitude.

The instrument has a full-featured management of arbitrary waveform output function. Arbitrary waveform data use file system management, the protocol is open to users. Users can easily manage multiple arbitrary waveform files through virtual U disk technology.

The instrument uses a high-resolution 3-inch color LCD with a resistive touch screen. With very expressive English language interface, users can quickly use it to express waveform parameters perfectly.

The instrument has a firmware upgrade function. Ginkgo technology will gradually upgrade the instrument firmware based on user feedback.

For technical support & firmware updates:
<http://www.eeschool.org> (the official BBS)

Sale:
<http://i-board.taobao.com> (the official store)



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1. Technical indicators

■ Waveform characteristics

Standard waveforms:

Sine, Square, Triangle, Sawtooth up, sawtooth fall, SINC, Noise, Exponential rise, Exponential fall, Positive full-wave, Negative full-wave, Positive half-wave, Negative half-wave, Gaussian, DC

Sample rate: 80M_S/s
Vertical resolution: 14bit
Arbitrary Waveform Points: 2~32K
Built-in memory: 128M

■ Frequency characteristic

Output range:
Sine: 1mHz~10MHz
Square wave: 1mHz~10MHz
Other: 1mHz~10MHz
Resolution: 1mHz
Accuracy: 50ppm

■ Voltage characteristics

Output Range: 10mVpp~10Vpp
Resolution: 12bit
Accuracy: set point 8%
Offset range: ±5V amplitude
Flatness values: ≥0.3dB

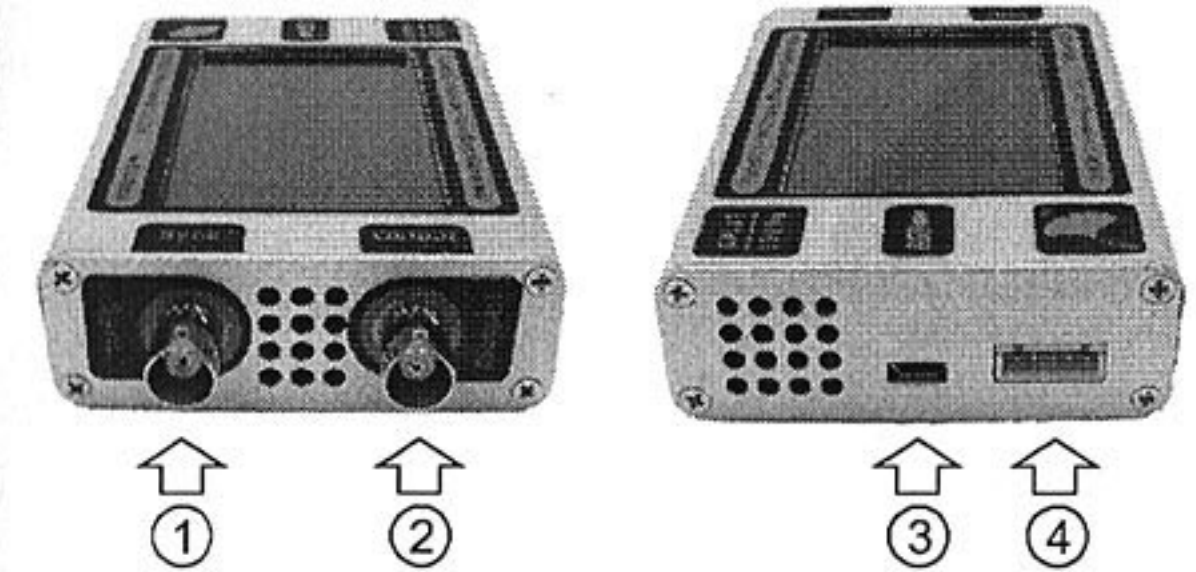
■ Square Wave

Duty cycle square wave:
1mHz~1MHz: 0.1%~99.9%
1MHz~10MHz: fixed 50%
Rising / falling edge: <20ns
Overshoot: <5%

■ Other Features

Output Impedance: 50 ohms
Ramp Symmetry: 0.1%~99.9%
Sync signal: 4.8V~5.2V, TTL level
Power requirements: DC 4.75V~5.25V, <400mA
Display Features: 3-inch, 240x400 resolution
Size: 116mmx76mmx26mm (LWH)
Weight: 180g

2. Interface description



1. Sync: Sync Output.

When the output channel is selected to export standard waveform, the synchronous output port will output TTL waveforms (Low 0V, High 5V) which has the same frequency and phase with the standard waveform. connected with a digital system, this port can be used as clock or trigger signal of the system.

2. Output: waveform output port.

The port is the main output port of the instrument, which can export standard waveforms / arbitrary waveforms. It has a 50 ohm output impedance. Do not input high-voltage to this port.

3. USB interface.

This is a standard micro usb interface. The functions are as follows: Firstly, supply power (5V voltage) for the instrument; secondly, communicate with the computer.

At last, We can also upgrade the firmware via this interface.

4. The expansions interface.

Contains UART, trigger input / output ports, for more details of the port's function, please refer to the specialized documentation.

3. The attachments



micro_usb_cable



Q9 output cable



5V power adapter



stylus

4. Basic operation

1. Connect to the power

There are two ways of power supply:

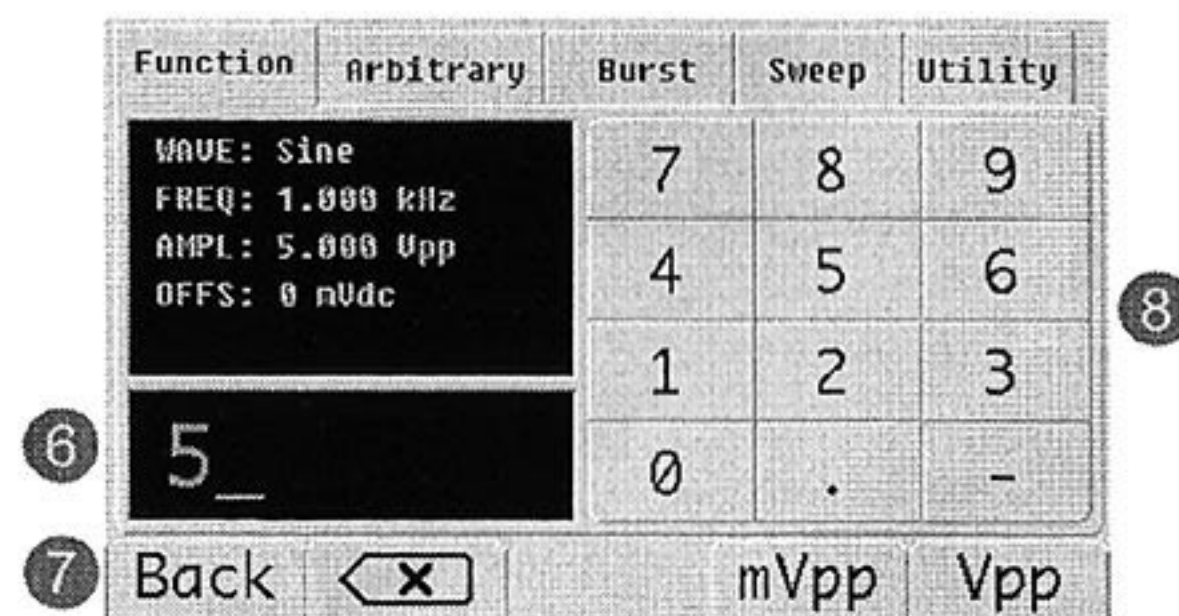
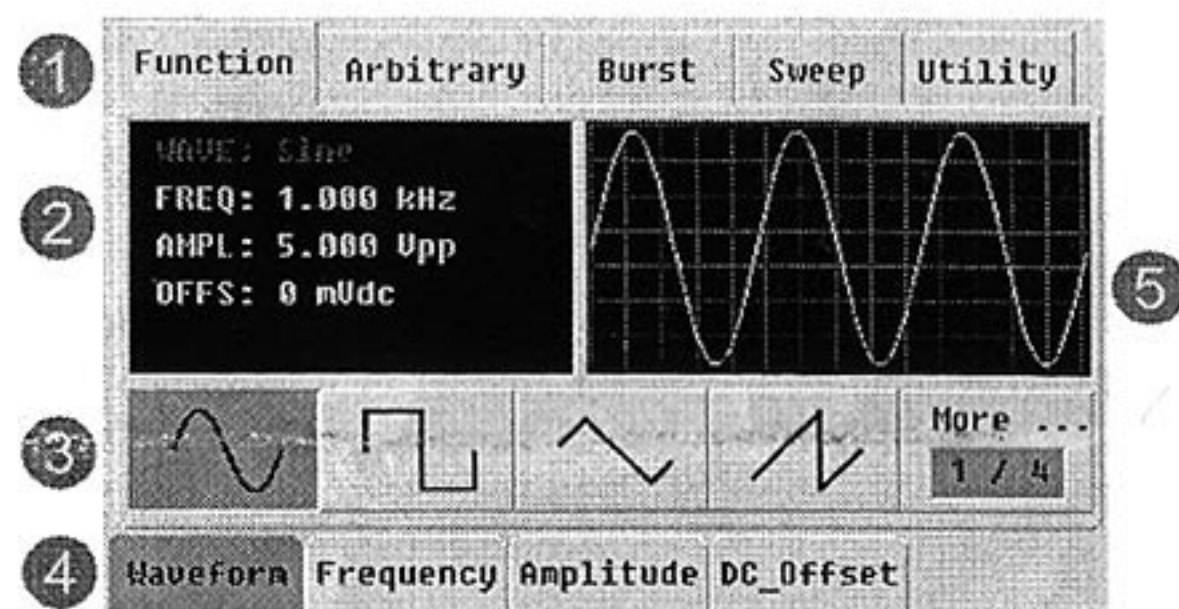
firstly, connect to the computer's USB port via micro_usb_cable.

Secondly, connect to the power via the 5V power adapter. Considering the small size of the micro_usb_interface, please be gentle, do not shake around violently when plug.

2. Export waveform

Touch the interface with stylus (or your finger nails) to complete the waveform selection, parameter setting and other operations. You can observe the output waveform by connecting the Q9_output_cable (or the oscilloscope probe) with the oscilloscope.

Note: The pressure is obligatory for a resistive screen.



1. The main function selection

2. Parameter display

3. Waveform selection

4. Attribute switch

5. Waveform preview

6. Digital input box

7. Unit setting

8. Keyboard

5. Virtual U disk function

All instrument parameters, data files are stored as files in the built-in _128M_memory. In order to facilitate the management, virtual U-disk function is built-in. As the name suggests, the function makes the instrument as a virtual U-disk. You can find a new disk (capacity 128M), after connected with the computer. Virtual U root directory contains two folders, namely:

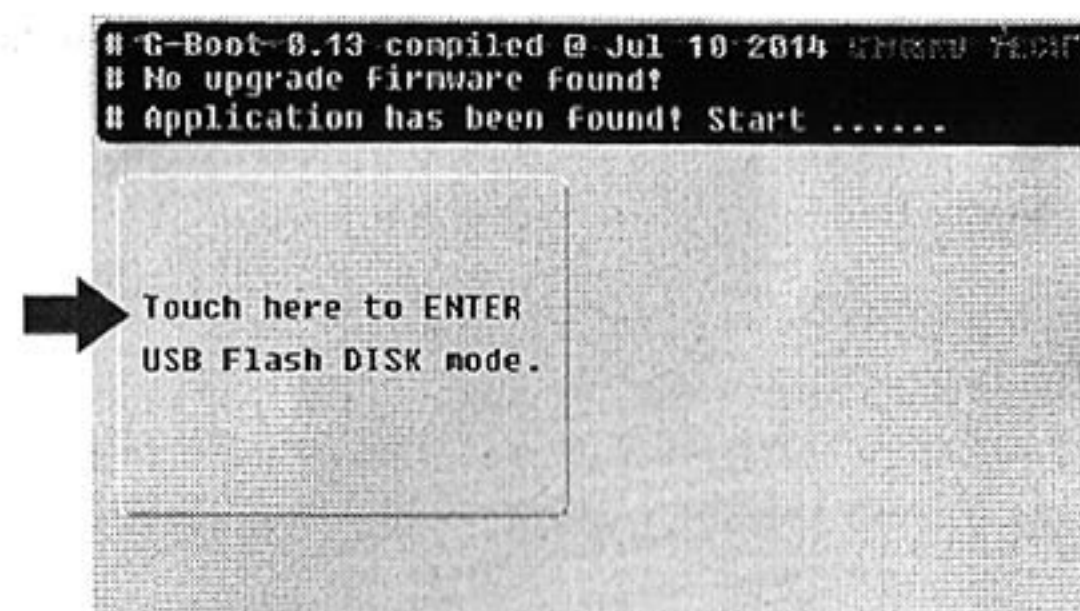
<system> System Folder

<arb_wave> Arbitrary wave folder

System Folder consists of configuration files, instrument calibration data, standard waveform files, parameter storage and other necessary files for system operation. Do not do any modifications to the files within this folder, otherwise the system can not boot properly.

Arbitrary Waveform folder is the storage of user's arbitrary waveform files. after connecting a computer, users can delete or establish a file inside this folder and do any other operations. For more arbitrary waveform generation method, please refer to the specific documentation.

Click the button to enter the virtual U disk mode when the system roots, click again to exit the virtual U disk mode. Users cannot enter this mode in the process of system running.



6. Upgrade firmware

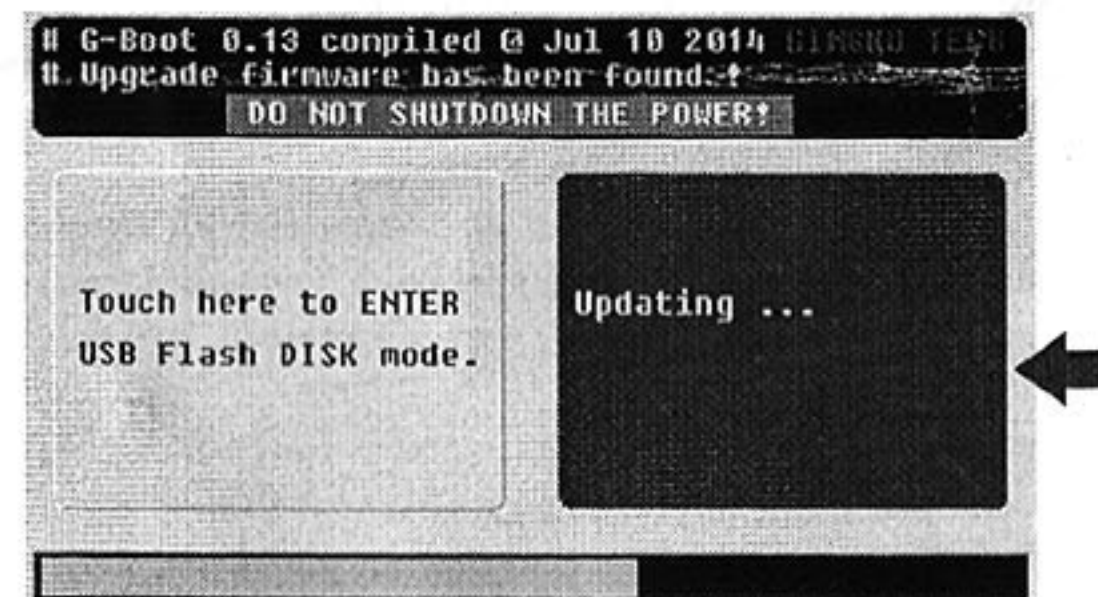
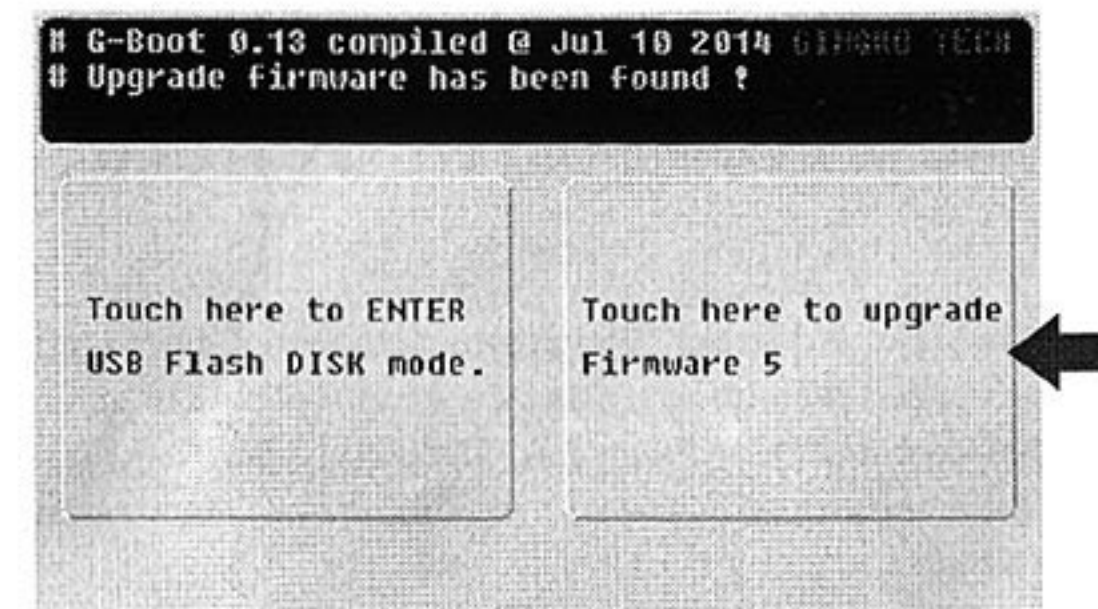
In order to gradually improve the functions of the instrument and fix bugs, the instrument provides to upgrade firmware. Users can upgrade the firmware via the virtual U disk mode. Steps to upgrade the firmware are as follows:

1. Visit the official BBS to download the file named "update.bin";
2. Connected the instrument to the computer; Enter the virtual U disk mode;
3. Copy the file to the root directory of the U disk without any modifications;

4. Exit the virtual U disk mode, then the instrument will automatically detect the upgrade file;

5. Click the upgrade button to upgrade the instrument. Ensure the instrument will not power off and no operations is performing when upgrading, or may lead to the upgrade fail. After upgrade successfully, the instrument will using the new firmware automatically.

6. In order to inspect whether the firmware upgrade was successful, you can check the instrument version informations under the <About> menu.



7. Warranty

The instrument's free warranty period is one-year, one year after the price of maintenance depends on the cost. Transportation costs caused by Warranty and maintenance will be paid by the company and the customer in half. The following conditions are not within the scope of free warranty:

1. The liquid crystal is wearing parts, please be gentle when using and carrying. LCD damage is not covered under warranty.
2. Man-made damage is not covered under warranty.
3. Improper operation damage (such as high-voltage inputs, water, etc.), are not covered under warranty.