

FG085 miniDDS Function Generator

How to Generate User Defined Waveform

Applicable Models: All FG085 variants

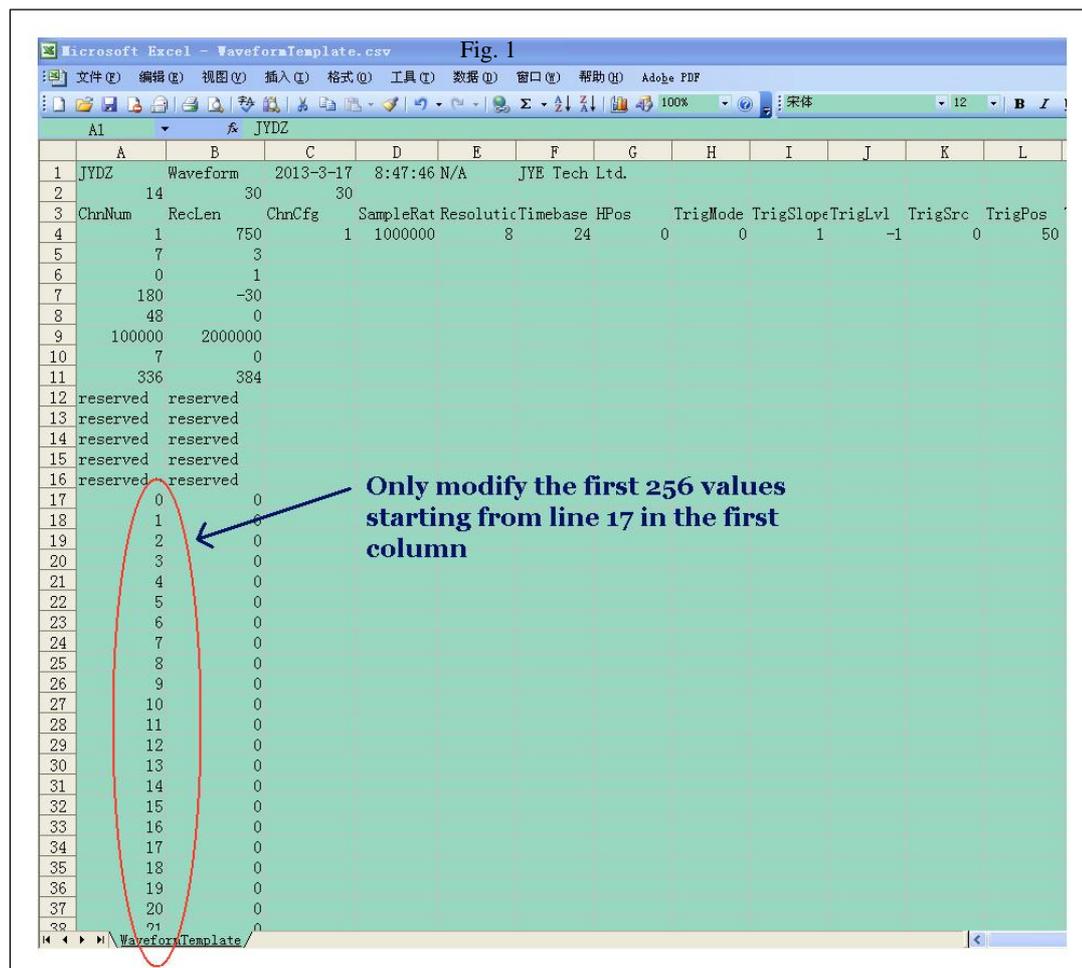
Following the simple steps below you will be able to make FG085 to generate any waveform you defined.

1. Create a Waveform File

FG085 contains a 256-byte buffer that stores user waveform data. A waveform file defines the value of each byte in that buffer. The waveform file is simply a plain text file stored in CSV (Comma-Separated Value) format. This format can be opened and edited by any text editor. But more conveniently it can be edited by spreadsheet applications like EXCEL.

There is a template waveform file available from JYE Tech web site (www.jyetechnology.com). So what you need to do is only download the file, open it in EXECL (or other similar applications), and change it to meet your requirement.

Fig. 1 shows the template file opened in EXCEL. The first 256 values starting from line 17 in the first column define a waveform and need to be change. Do not change anything else. It is to use another sheet or book to calculate the 256 values you need and then cut-and-paste them to place.



Make sure no space is contained in the values.

Save the file in CSV format. EXECL may ask you if you want to remove CSV un-compatible

contents. Choose “Yes”. Now your waveform file is done.

2. Connect FG085 to jyeLab

Connect FG085 to a USB port on PC. Launch jyeLab (version 0.60 or later). Go to menu “Options” select “Port Setup”. Choose the com port that hooked to FG085. If you don’t see the port click “ReScan” to scan for it. Then set Baudrate to 115200 and click “OK”. (See screen capture below)

Note: USB-Uart converter driver needs to be installed before you can connect FG085 to PC. The driver can be downloaded from the link below.

<http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpcdrivers.aspx>

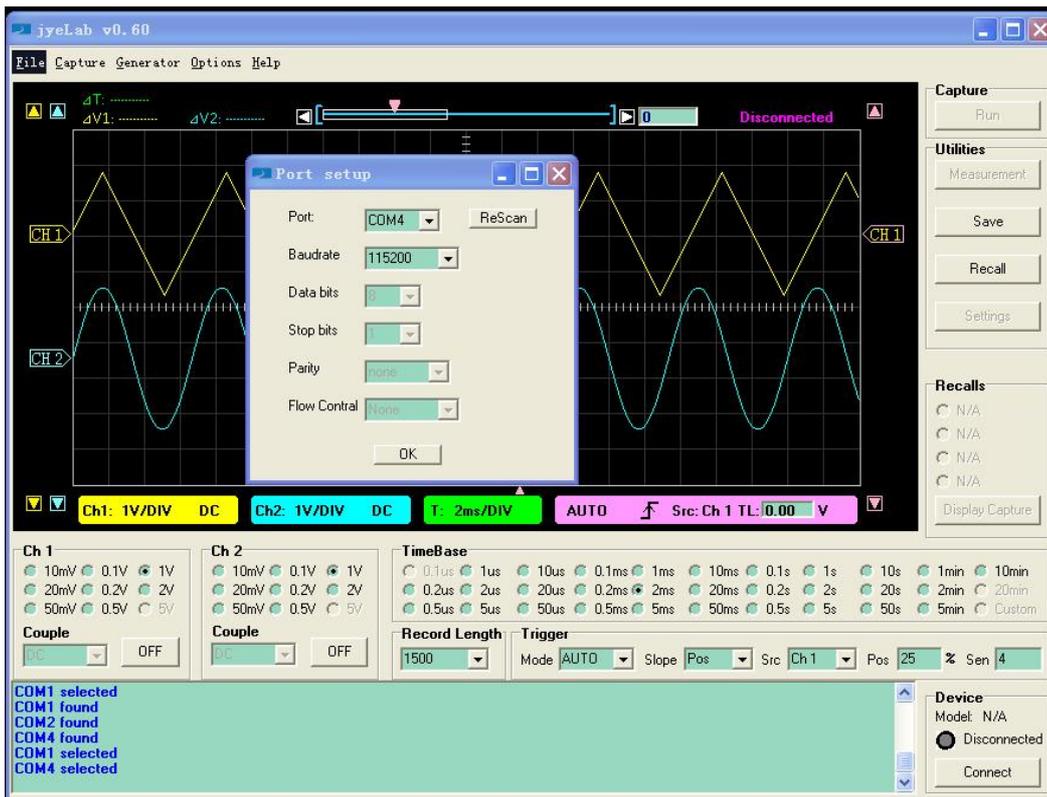


Fig. 2

Click the “Connect” button. The connection status indicator should turn green if connecting is successful.

3. Download Waveform File to FG085

Load the prepared waveform file into buffer by clicking on the “Recall” button to the right (or by menu “File -> Open”). You may see a warning message say something is not a valid floating point value. Just ignore the message and drag the CH1 vertical position indicator to the left to have loaded waveform shown (see Fig. 3). Now your waveform has been loaded into the buffer of jyeLab.

The screen of jyeLab can display 660 samples horizontally. Your waveform only occupies the first 256 samples. There may be something after the 256 samples. You don’t need to pay attention to that since they will be ignored at downloading anyway.

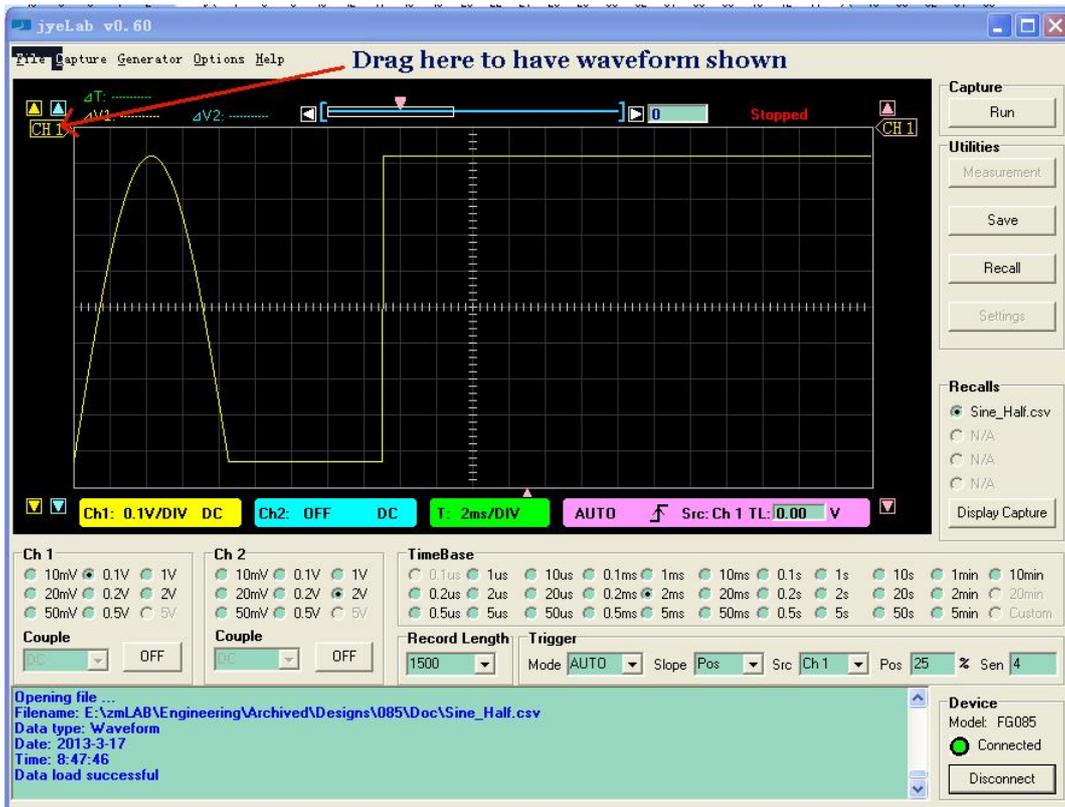


Fig. 3

Go to menu “Generator” and click “Download (FG085)” to start downloading. If successful you should see message “Data write successful” displayed in the message box at bottom (see Fig. 4).

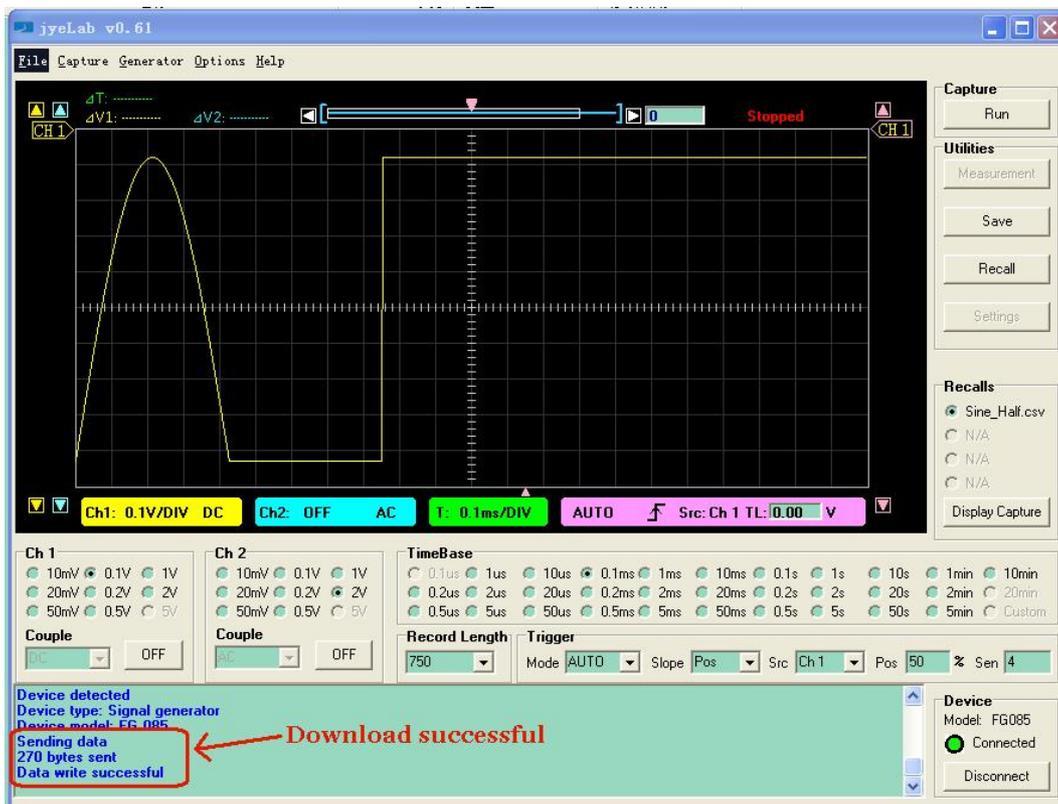


Fig. 4

4. Select the Waveform

Disconnect FG085 from PC. On FG085 panel press [WF] until waveform type “USER” is displayed. Check the output with oscilloscope. Fig. 5 is what we got from the waveform file shown in Fig. 3.

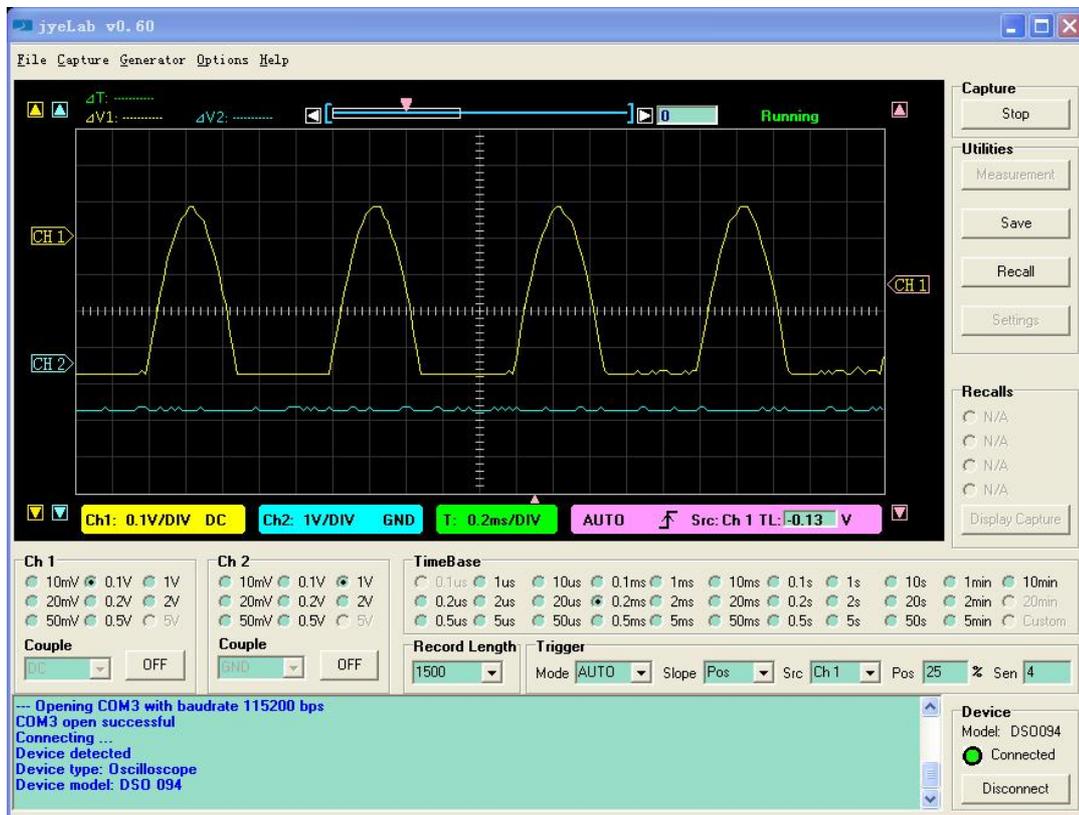


Fig. 5

Now change frequency, amplitude, and offset as you want. The waveform can be used in frequency sweeping too.

Revision History

Version	Date	Summary
v01	2013.03.20	First created