“FreeCapture”- A PC remote control program for GDS-800 SERIES (RS-232/GPIB)

Version 2.0

Overview

Thank you for using GDS-800 SERIES PC remote control program. This program is a demo tool for exploring our superior GDS-800 SERIES digital storage oscilloscope. Users can acquire the waveform data from GDS-800 SERIES digital storage oscilloscope to personal computer via RS-232 or GPIB port. The waveform data can also be saved into several graphic formats, perfect for data presentation use. The totally thirty of measurement readout (channel1 and channel2) can be displayed at same time, suitable for multi-measurement. The outstanding “Template Edit” function can edit any arbitrary waveform by hand and transfer to oscilloscope as a template for Go/NoGo function.

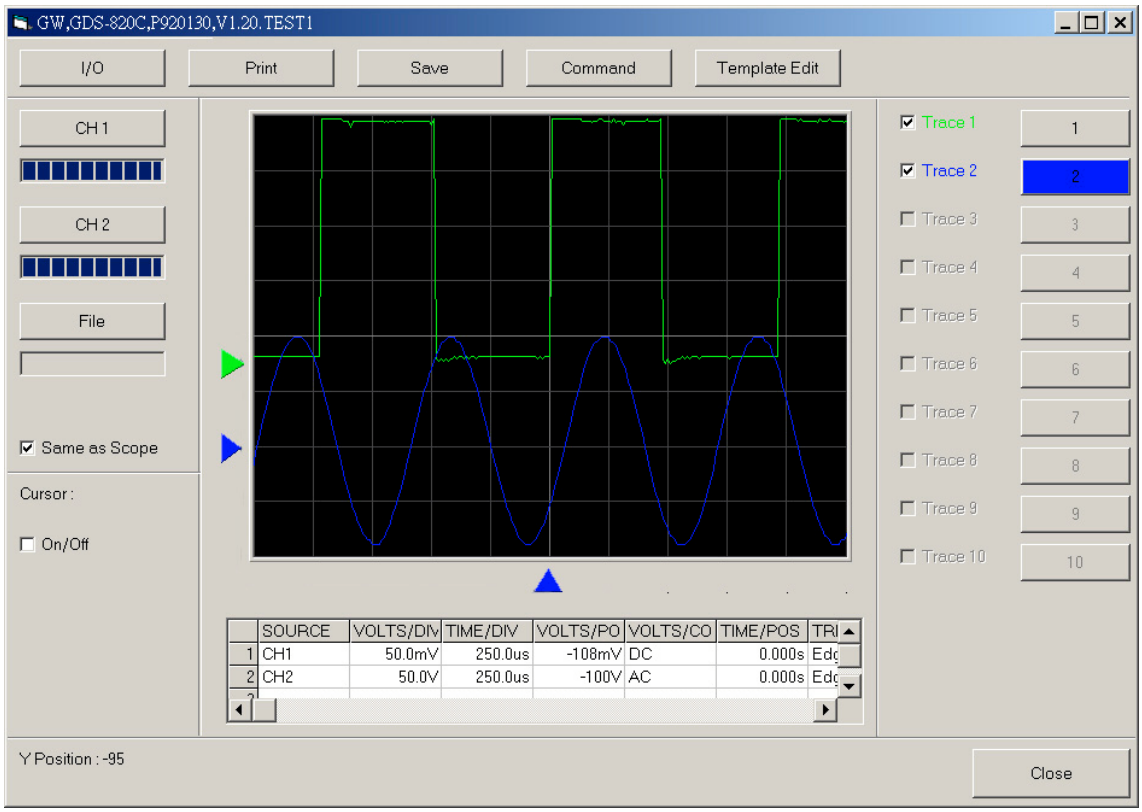


Figure1. This graphic user interface of “FreeCapture”

Features

1. The graphic user interface is friendly, easy to use. Even un-training person can easily to operate our software.
2. This program can save your waveform image as
   -BMP,
   -PCX,
   -TIFF,
   -PNG
   -JPEG
   Users can embedded these images into any application for their own particular purpose. For instance, users can embed the image into Microsoft® Word program and make an impressive document.
3. The saved image files (10 sets maximum) can be re-loaded into PC monitor screen, perfect for waveform evaluation and comparison.
4. Thirty measurements (channel 1+channel 2) can be display simultaneously. This feature can display your specific measurement items on the screen in the same time! Users can monitor all necessary measurement items simultaneously. Best for the production lines of manufacturers.
5. The printout data sheet will include the details of horizontal and vertical data. Make your report more precisely, that is great for your data reports!
6. The wave image can input any text descriptions as you like. This feature is good for users who want to make descriptions on the waveform image files.
7. The supreme “Template Edit” function can input maximum one hundred arbitrary waveforms into the oscilloscopes as the templates for “GO/NoGO” judgments.

The ”FreeCapture” PC remote control program is plenty of features that make measurements as easy as possible!

Requirement

This program can be executed under WIN98, WIN2000 and XP now.

You must have at least 10MB of available hard-disk space. This program has been tested on the PC with:

a. CPU: Celeron 1.8GHz, DDR DRAM:256MB, Hard disk 40GB

b. CPU: 800MHz PIII, DRAM: 128MB, Hard disk: 20G

c. CPU: AMD K6 400MHz PIII, DRAM: 128MB, Hard disk: 20GB

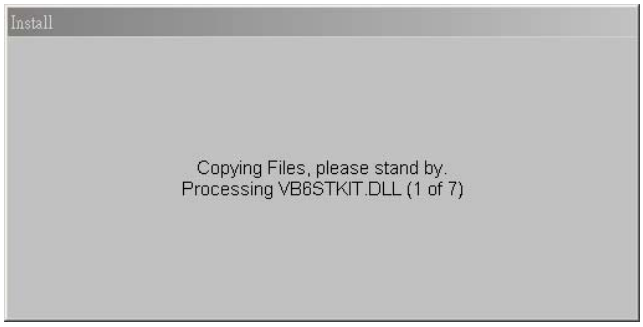
If you use Windows 2000/XP, you must be an administrator to install ”FreeCapture” PC remote control program.

Installation

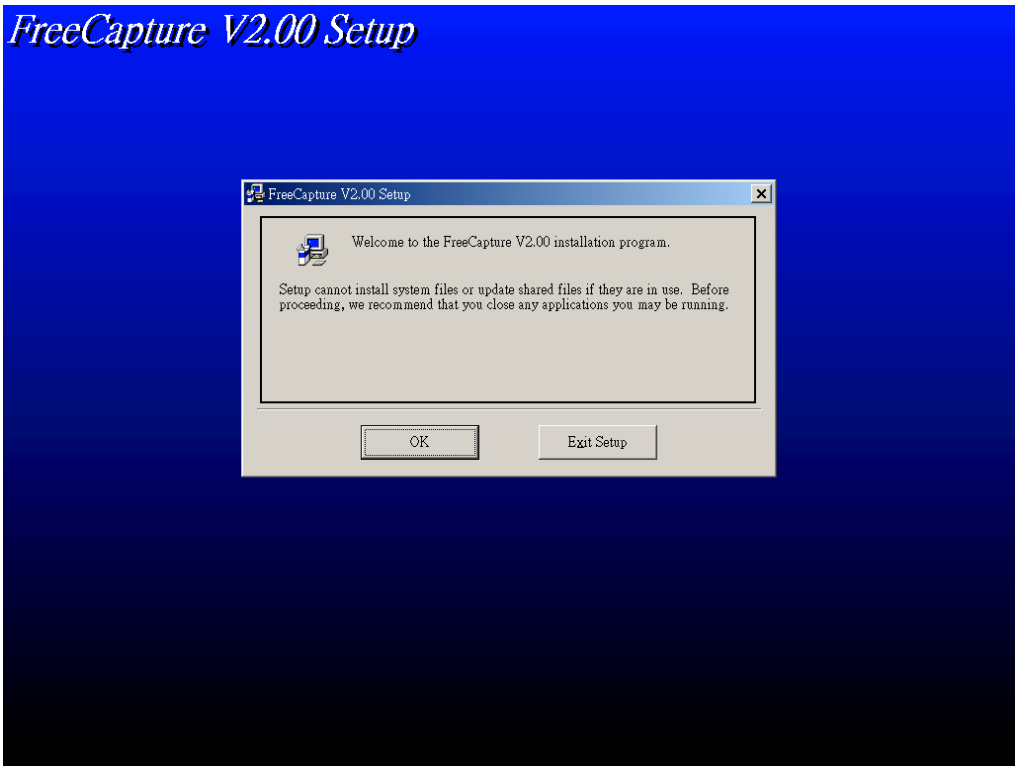
Note: If you had any old version of "FreeCapture" 2.0 on your PC, please uninstall the old one before install this program.

To install "FreeCapture" PC remote control program,

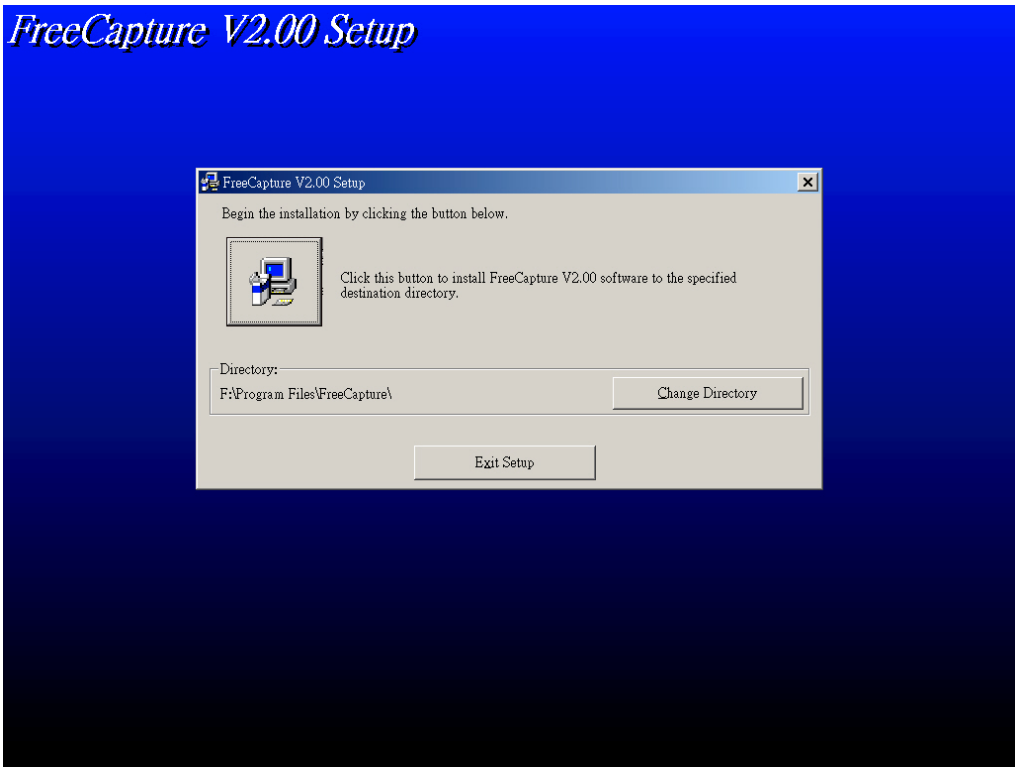
1. Unzip the "fc200.zip"
2. click to "package" directory
3. Double clicking the "setup.exe" file, the installation will start and you will have to follow the instructions displayed on screen.
4. The initial procedures for installation will go on in advance.



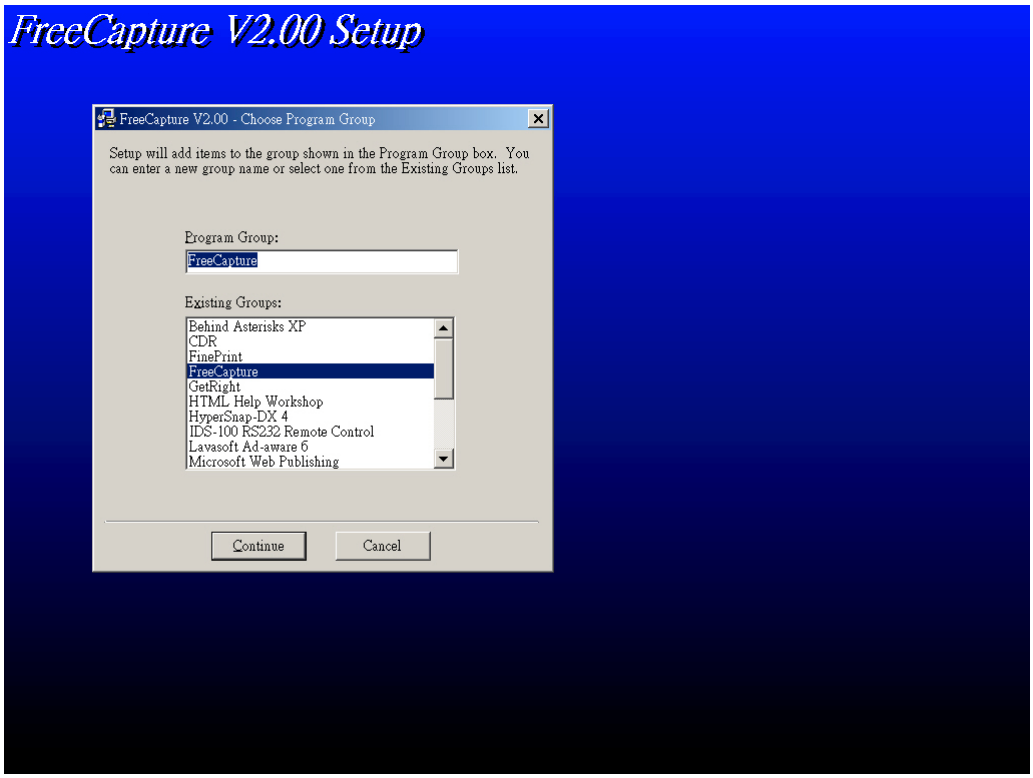
5. The welcome message screen will be display and click the "OK" to continue the installation.



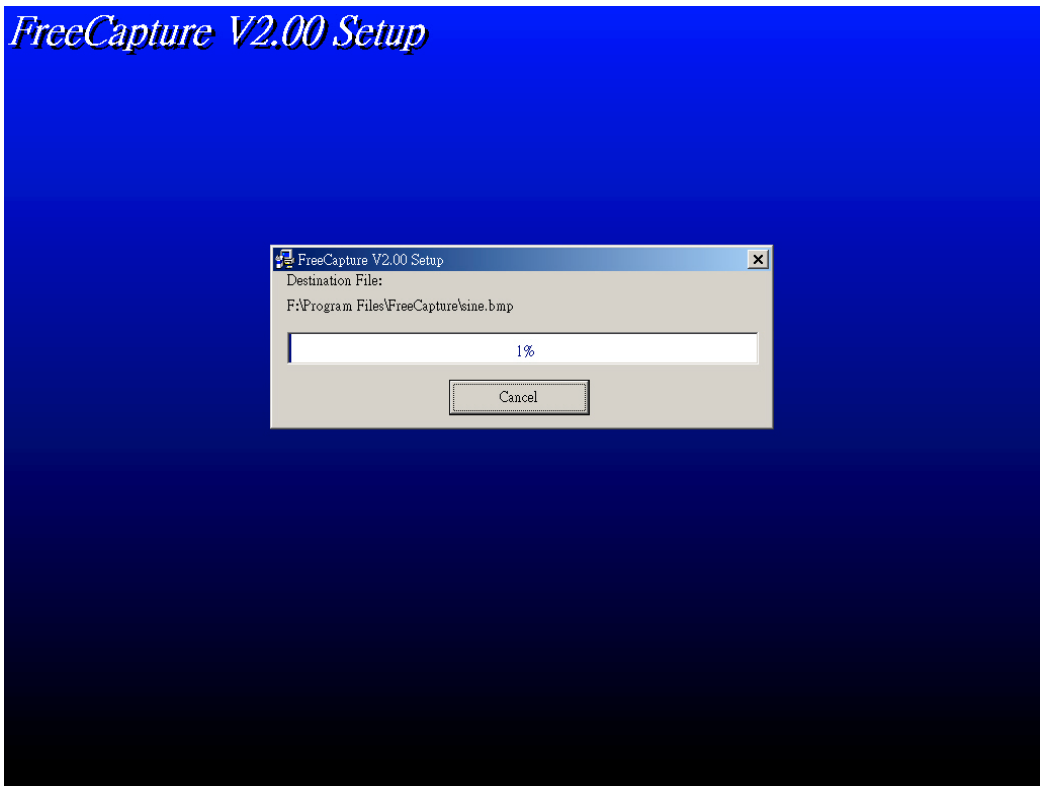
6. Select the program location and press the install button.



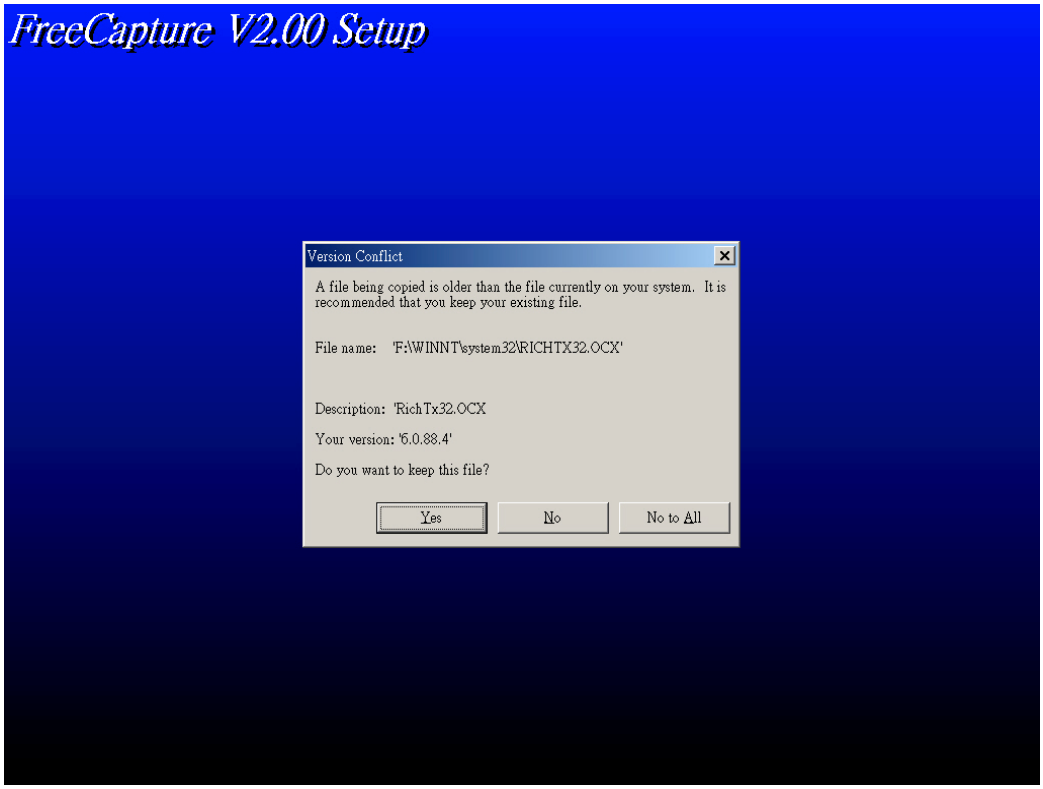
7. Select the program group and press “Continue” button.



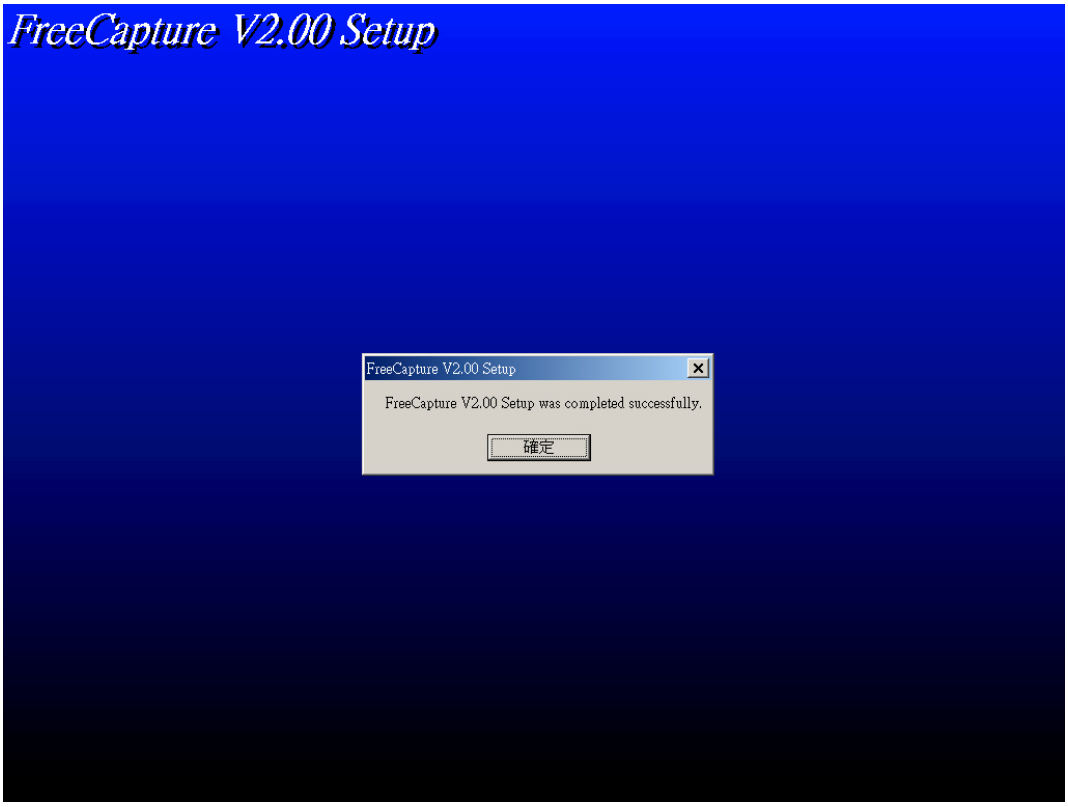
8. The installation is proceeding.



9. If there are some “Version Conflict” happened, press “Yes” button to keep the original file.



10. The “FreeCapture” is installed on the target computer already.



Removing “**FreeCapture**” PC remote control program

To remove “FreeCapture” PC remote control program from your computer system, go to **Start->Settings->Control Panel->Add/Remove** Programs, “FreeCapture” PC remote control program will be listed as “FreeCapture”. The removal system is automated and requires very little user intervention (Simply click OK to confirm that you wish to remove “FreeCapture” PC remote control program).

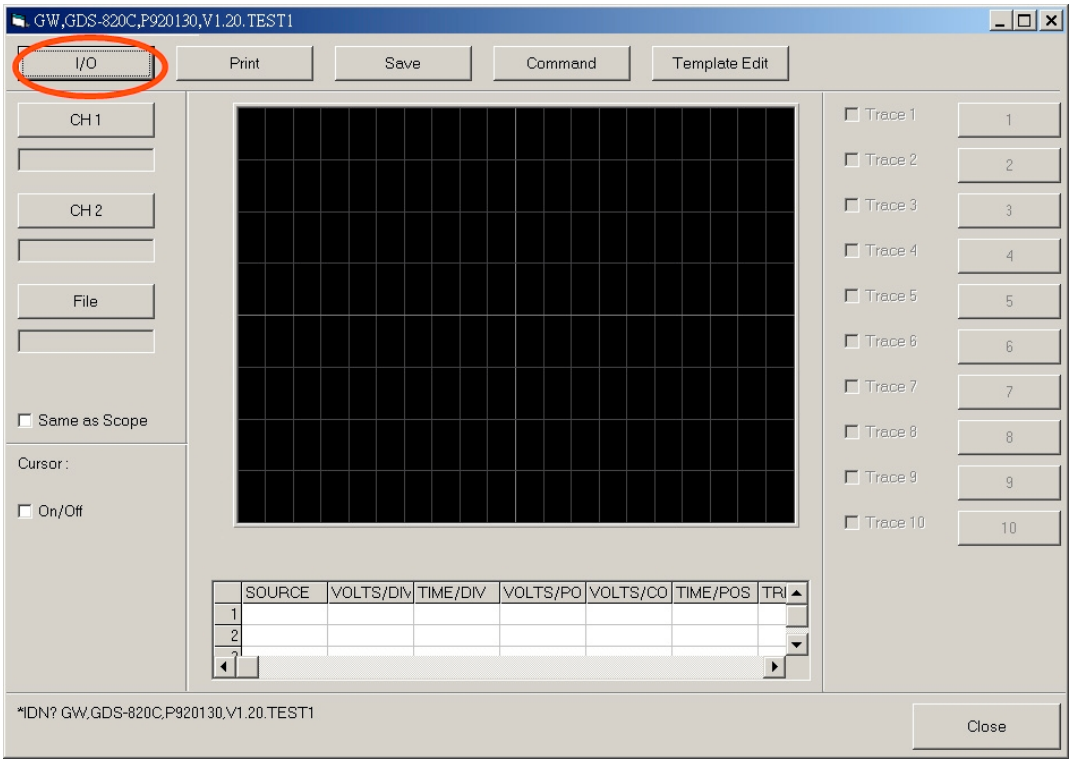
Starting this program

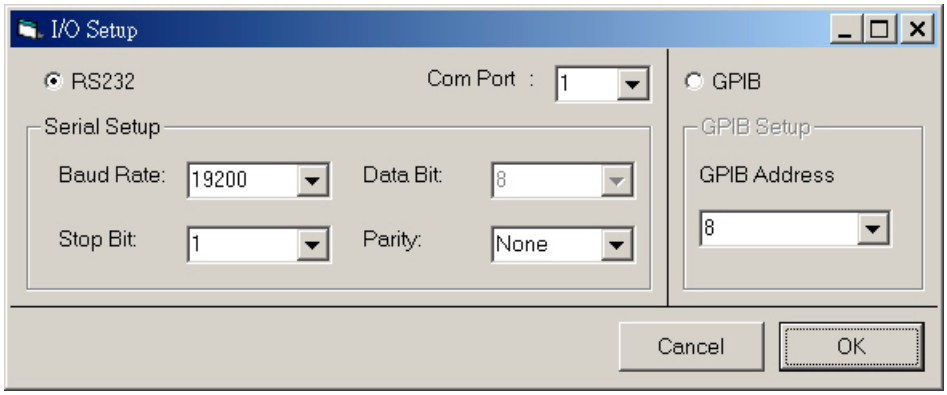
1. Turn on GDS-800 SERIES and setup the RS-232 (or GPIB) communication settings.

2. On the Windows operating system the “FreeCapture” can be found in the Start menu > Programs> Shortcut> FreeCapture. By clicking on the name of the software it will be started.

3. The “FreeCapture” PC remote program’s RS232 (or GPIB) setting is following:

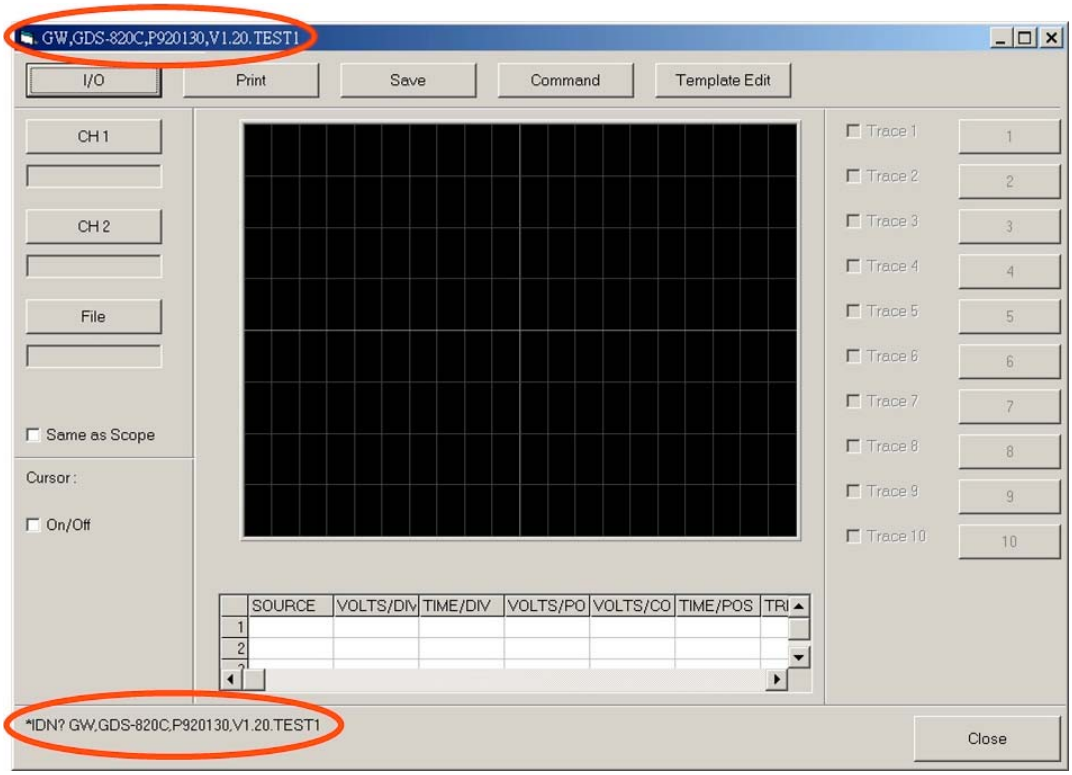
   a. Click the “I/O” icon. The “I/O Setup” dialog window is appeared.





   b. Select all the proper settings which have to be identical with oscilloscope settings and press “OK” button.

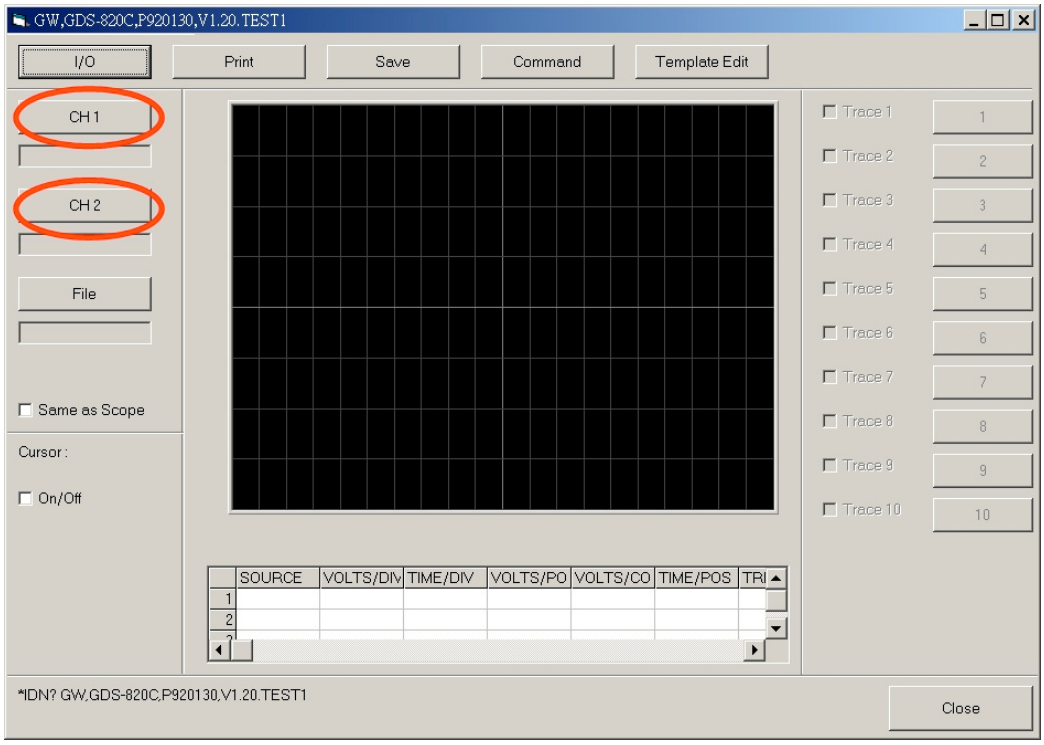
c. If all settings are correct, the oscilloscope identification messages will appear.



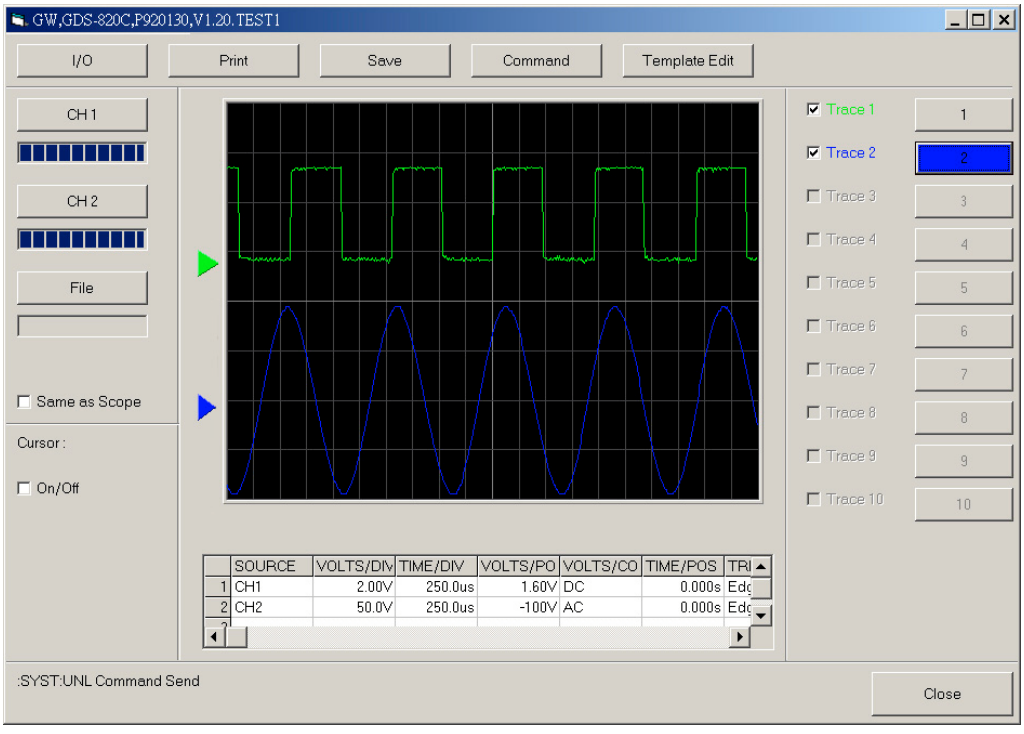
The initialization of “FreeCapture” is done for now!

Operation

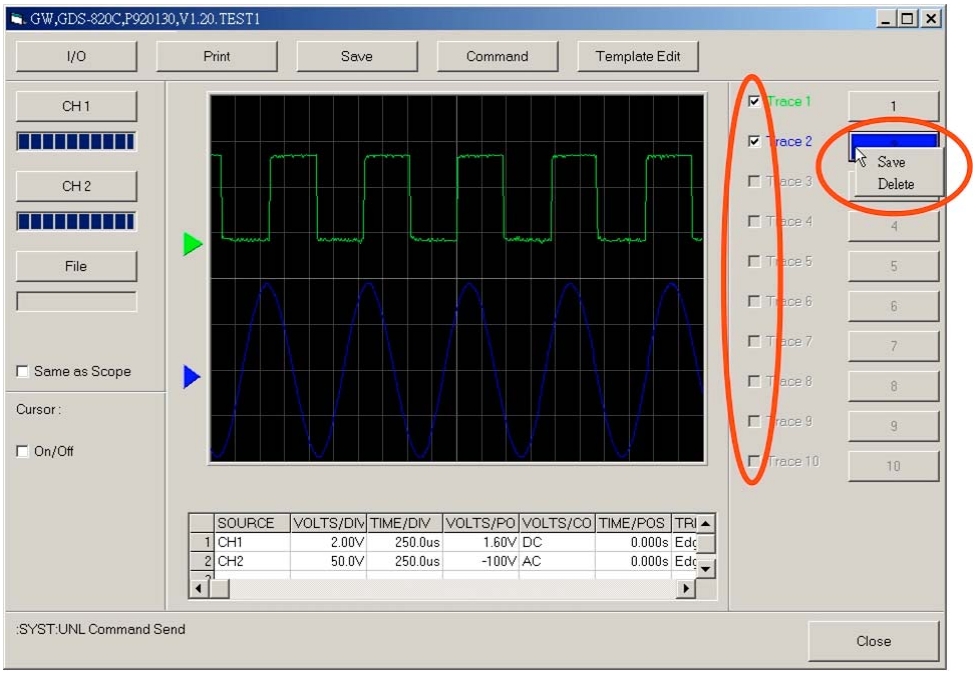
1. Press “CH1” or “CH2” button can get the waveform data from oscilloscope’s channel one or channel two individually.



After “CH1” or “CH2” button pressed, the waveforms data of oscilloscope just transferred to PC automatically. User can shift these colored triangles by mouse in order to move the traces to upper or lower position.

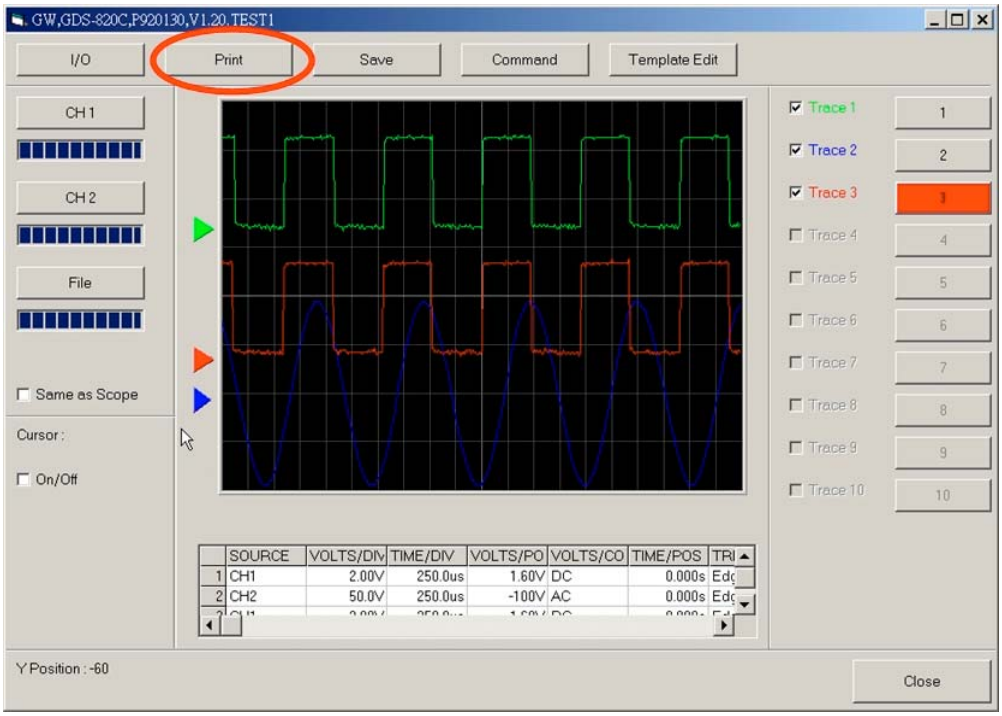


2. **<u>Save Waveform data</u>**: The two input waveforms can be saved as CSV format file or erased from PC monitor. Users just right click on the numeric button (1~10), a small dialog box with "**Save**" and "**Delete**" will be displayed. The "**Save**" function can save the specific waveform data into CSV format file; the "**Delete**" function will remove the specific image from PC monitor. The waveform data image can be temporal removed from PC monitor by just click on the "Trace X" box.

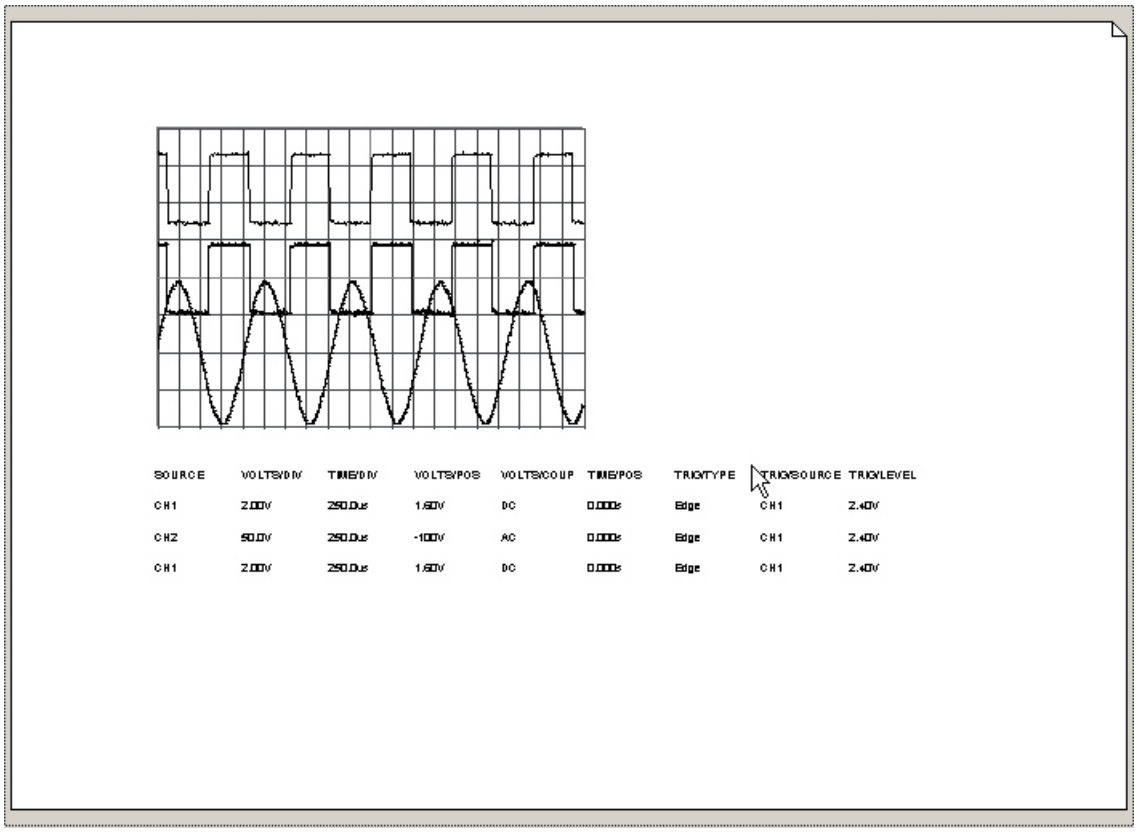


The saved CSV format files can be also recalled and displayed on the PC monitor. Users press the "File" button and select the target file. The target file will be displayed on PC monitor after few seconds.

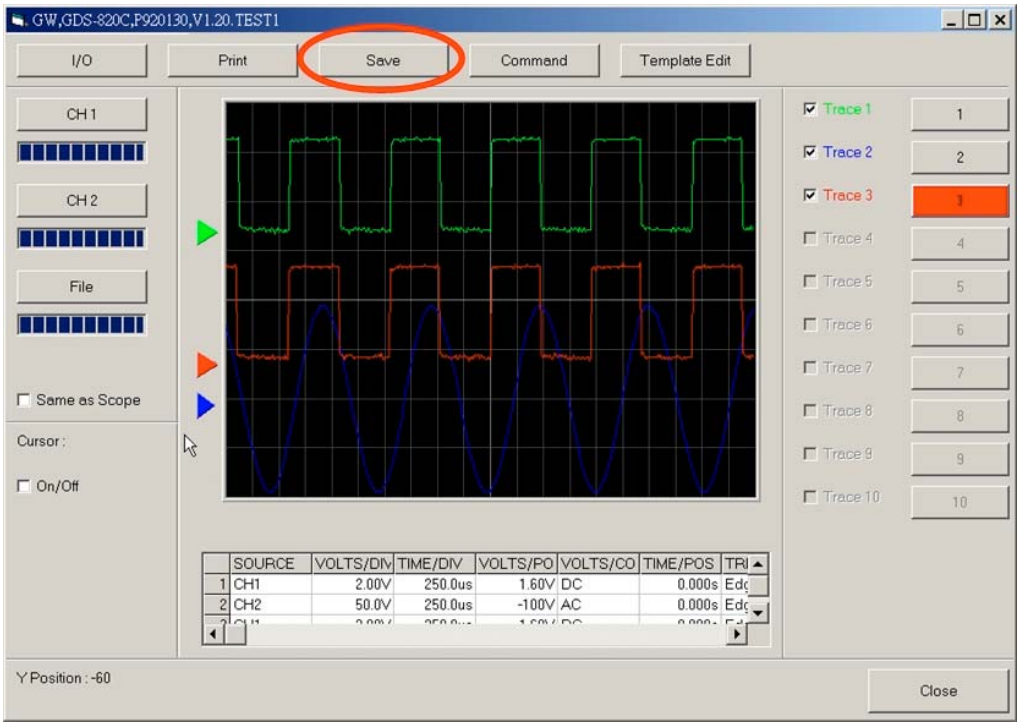
3. **<u>Printing</u>**: The all waveform date display area on the PC monitor can be printed out. Press the “Print” button that the data will be printed out from the default printer.



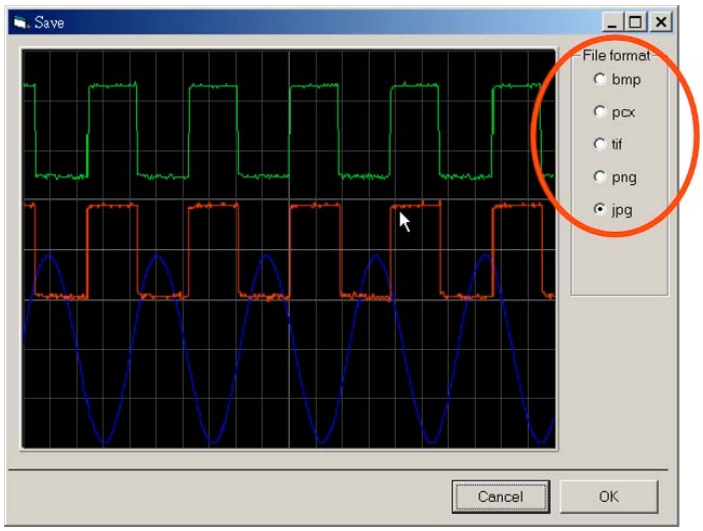
The all relative to waveform data will be also printed out too. The standard printing sheet is same as below figure.



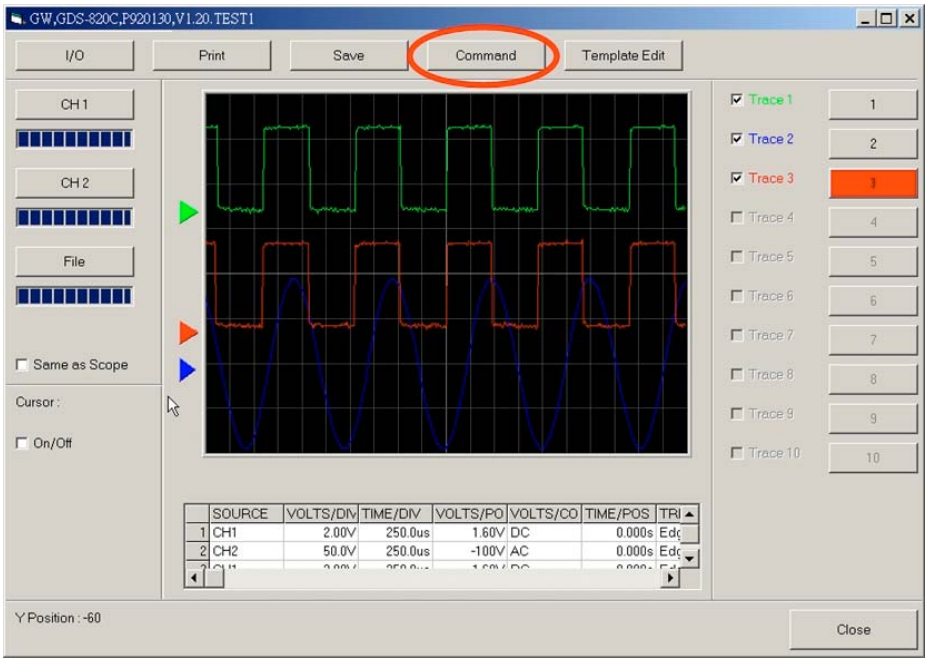
4. **Save Waveform image**：save your waveform image as a BMP, PCX, TIFF, PNG or JPEG format.



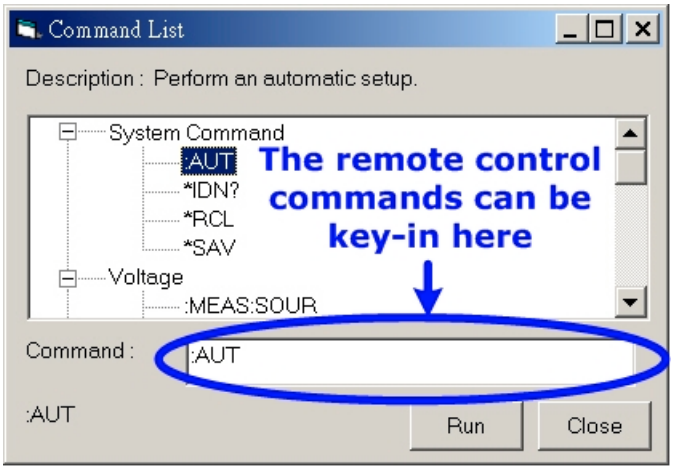
A “save” dialog box will appear after “Save” button pressed. Select the suitable format and the file name and location afterward.



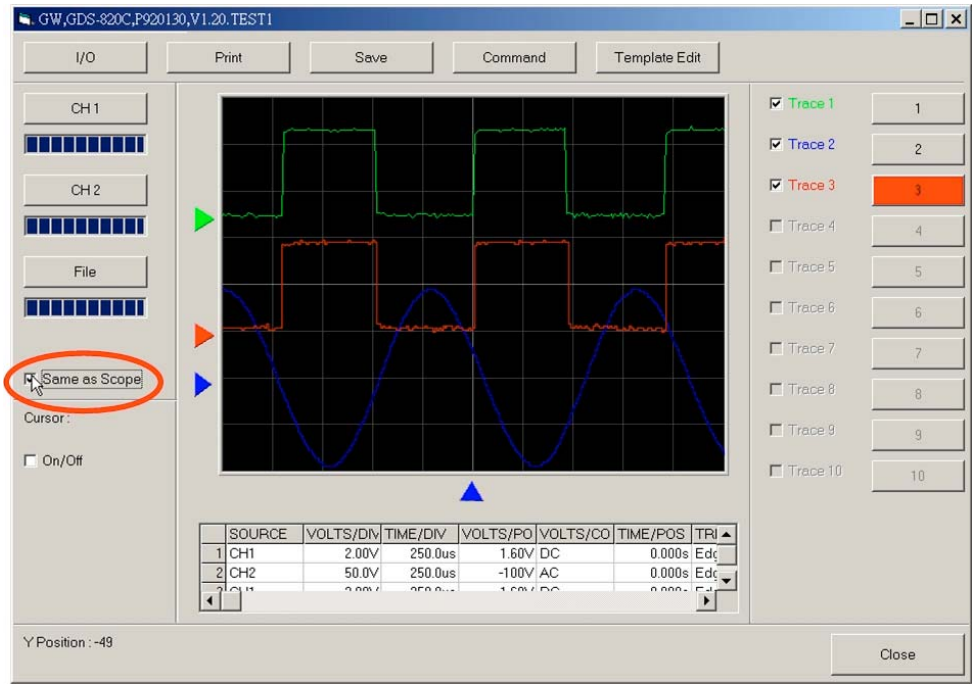
5. **<u>Manually operation</u>**: Press “Command” button, all the oscilloscope’s remote control commands will be listed. Users can input command manually.



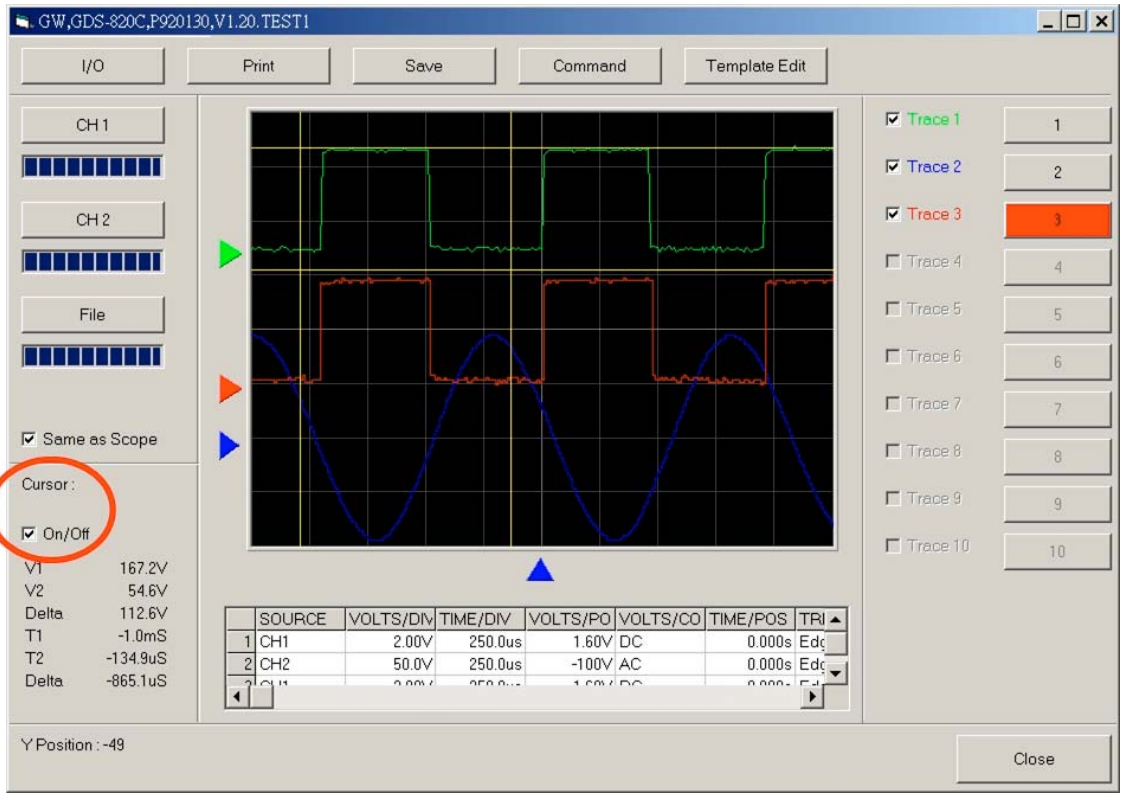
The “Command List” dialog box is following. A brief description for each command will also be indicated on the top of dialog box. Please refer to “Programming Manual” for the details of all remote commands.



6. Click the “Same as Scope” box, the “FreeCapture” will only display 250 dots on the PC monitor. Otherwise, all 500 dots will be display simultaneously.

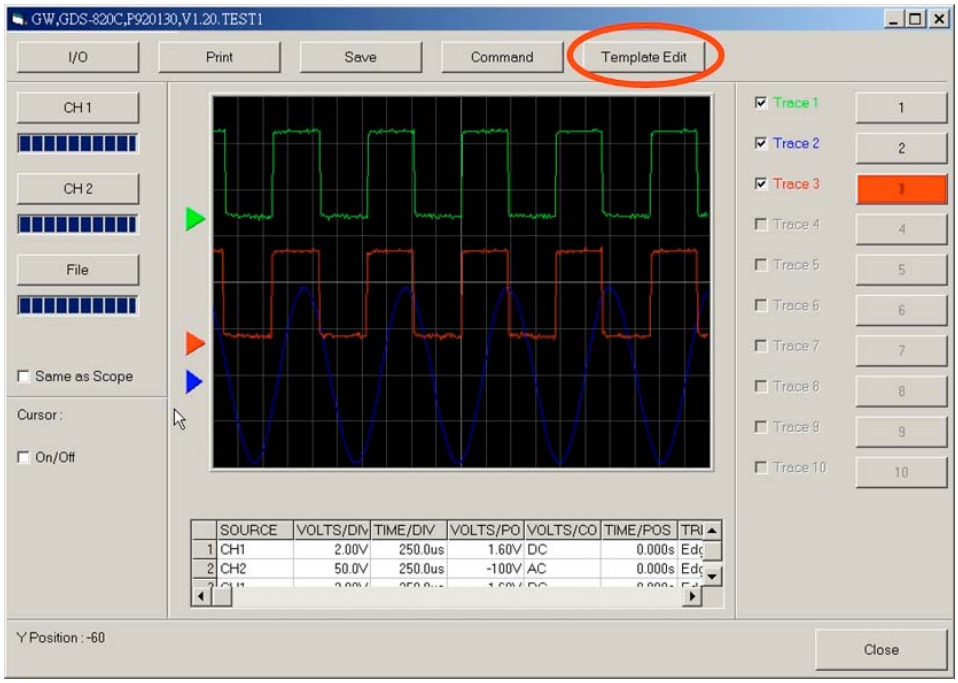


7. **<u>Cursor</u>**: Click the “Cursor On/Off” box, the vertical and horizontal cursors will be appeared. The information relative to the cursors will also be shown. Left chick any of the yellow cursor line can move the line upper or lower (left or right).

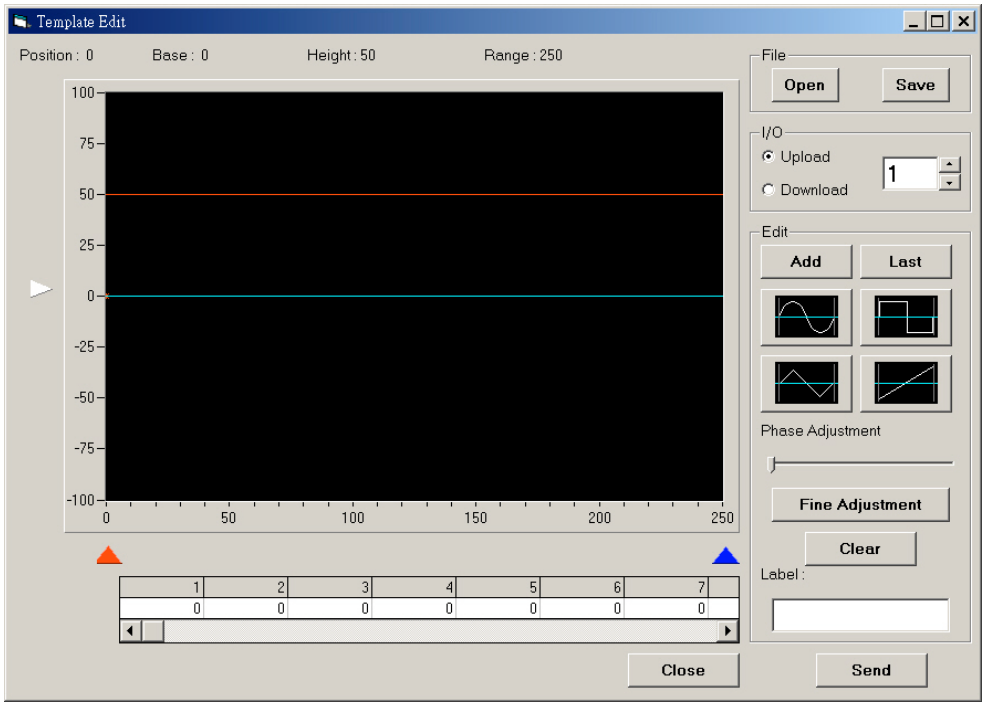


Template Editing

1. Press “Template” button can active the “template edit” function.

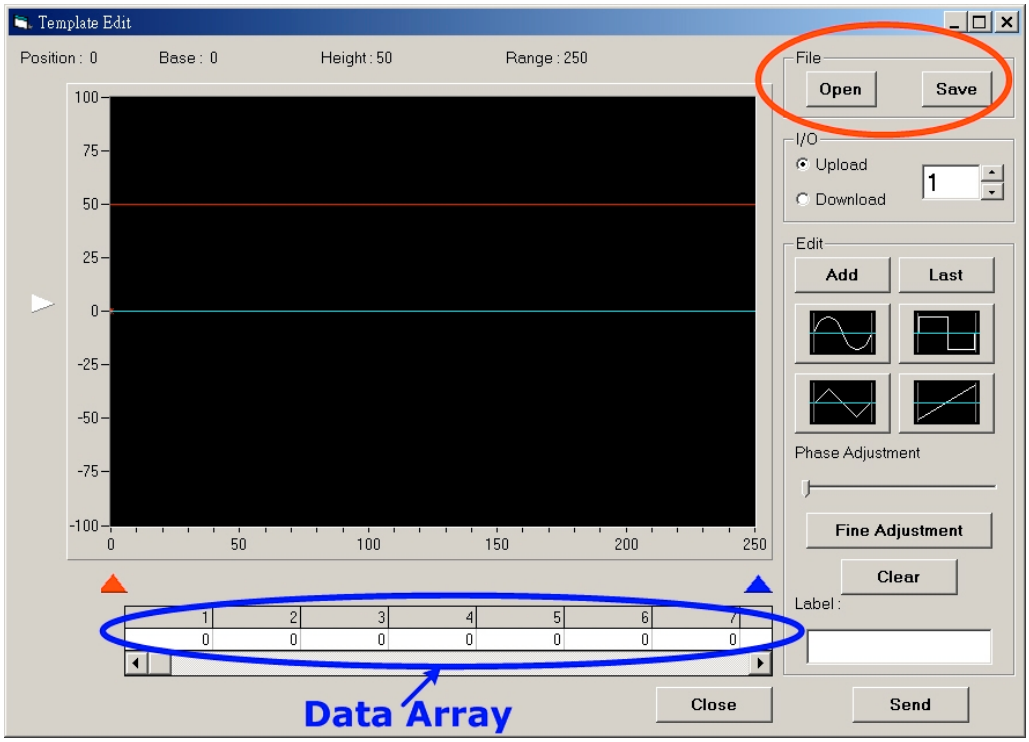


The “template Edit” graphic user interface (GUI) look like below.

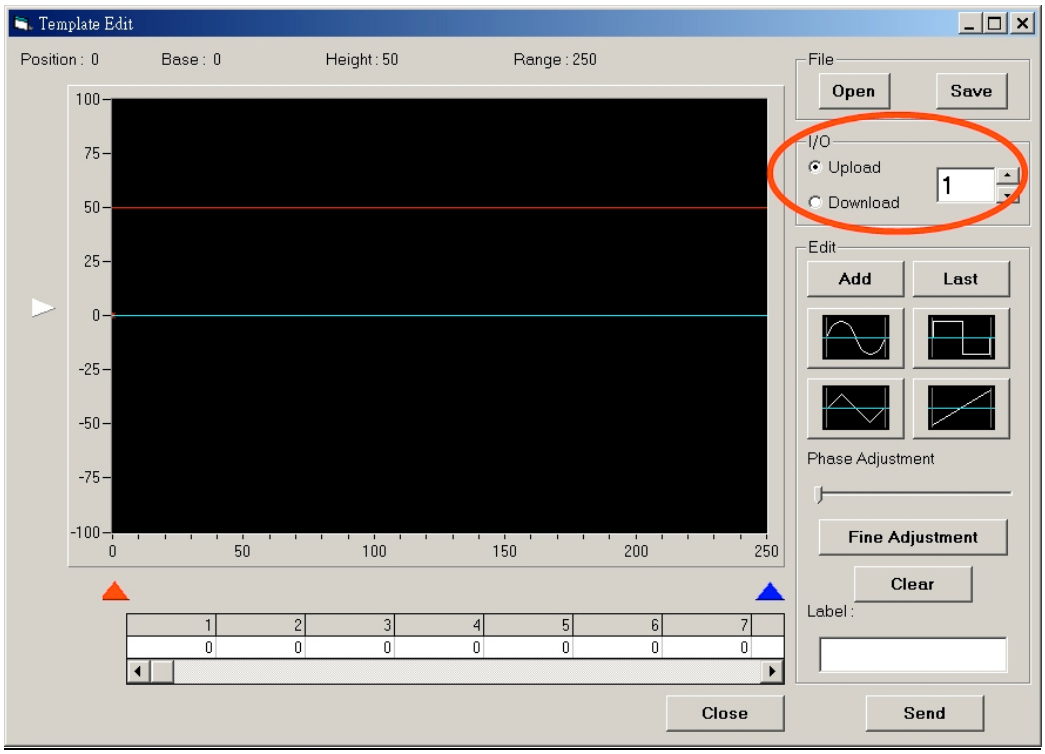


2. **<u>File Open/Save</u>**: Open an existing file or save the current template file.

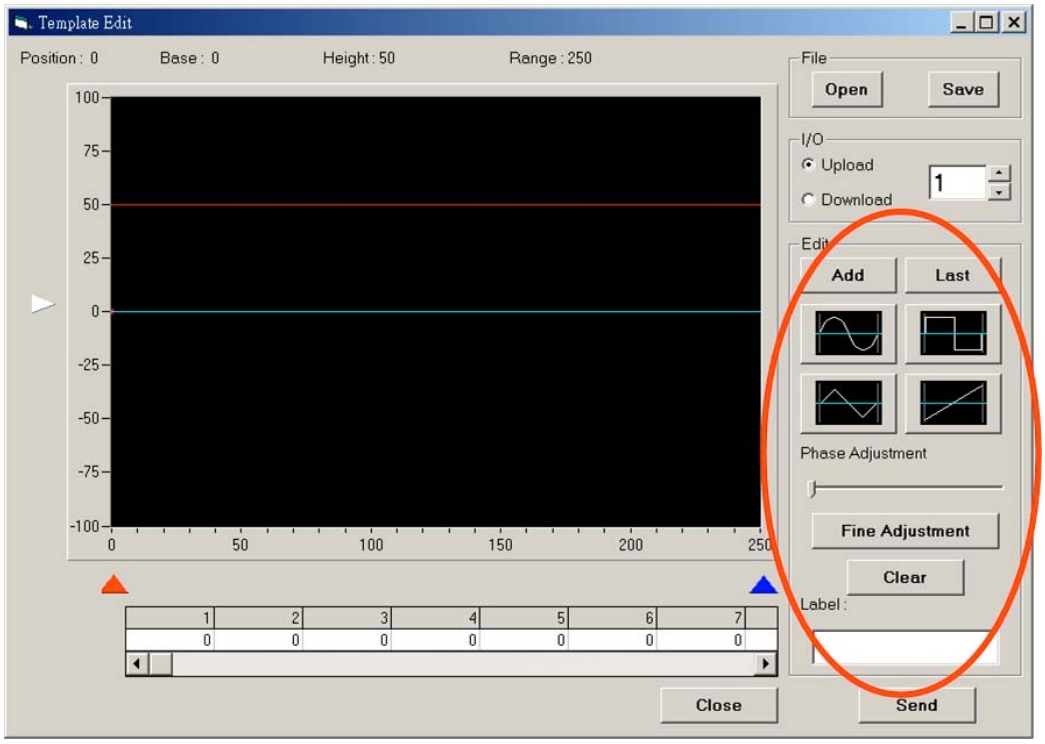
Note: The saved template file can only modify dot by dot from the "Data Array (250 dots)".



3. **<u>I/O</u>**: Upload/download template file to/from oscilloscope. The oscilloscope can accept maximum **one hundred** template files from "FreeCapture".



4. **Edit**: The main editing function. Users can design any preferred waveform template here. “FreeCapture” provides four of sine, triangle, square and line editing function. The “Phase Adjustment” can adjust the phase of target waveform template **only** during the waveform template editing, The “Clear” button will erase the current waveform template **only** during the waveform template editing too. The waveform template can be also added the text comments (**38** letters maximum).

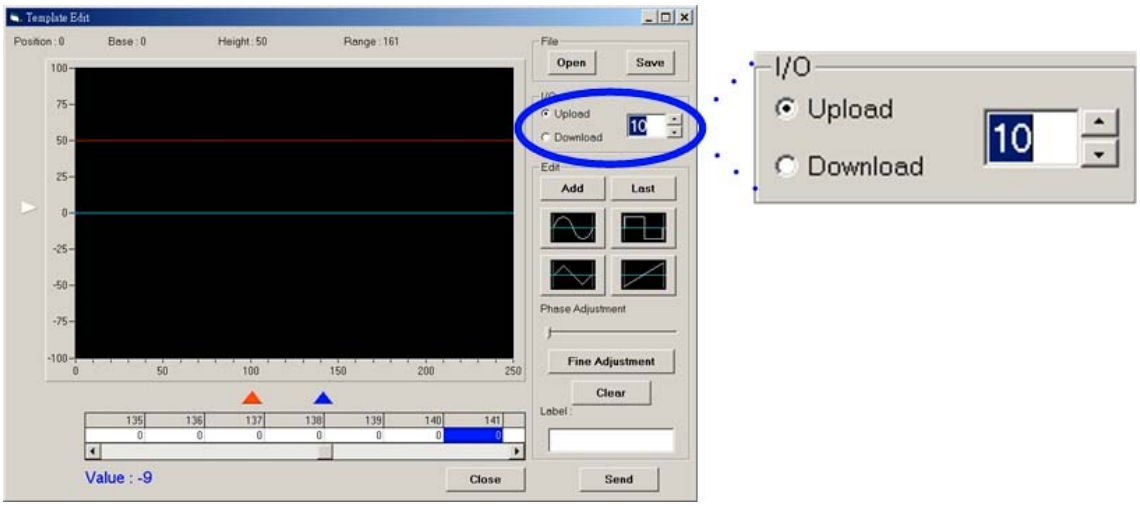


5. **Send/Read**: Press “Send/Read” button will send/read the current waveform template to/from the specific oscilloscope’s template storage location.

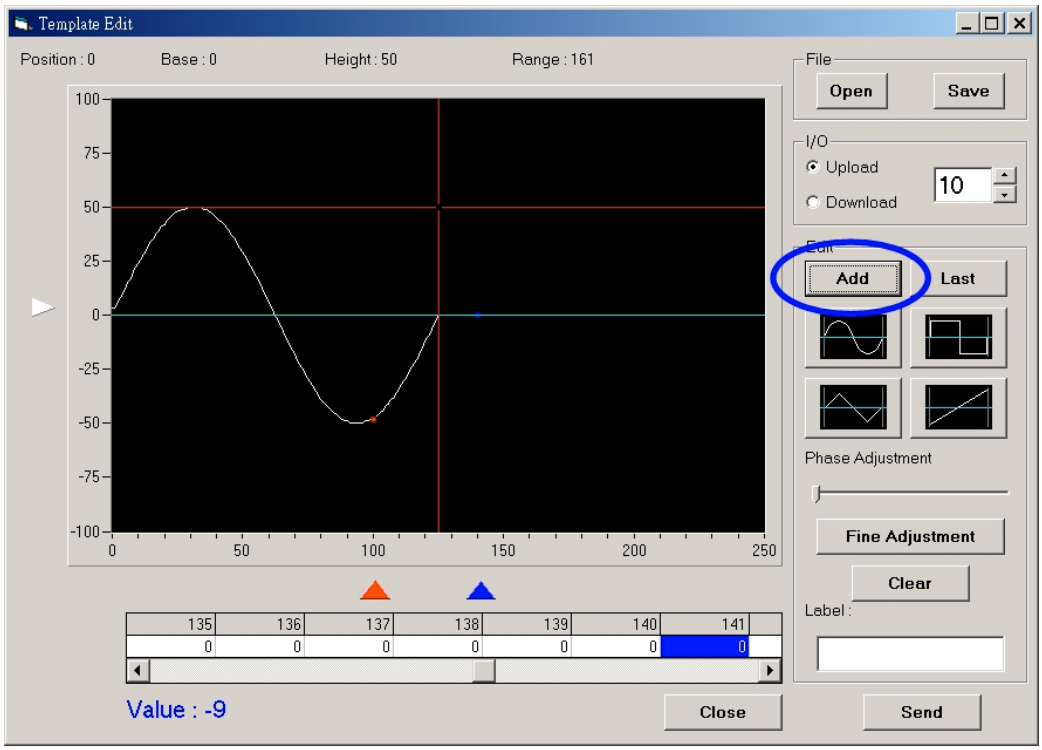
6. **Close**: Close the “Template Edit” window. If another template editing is necessary, please close “Template Edit” window and press the “Template Edit” button again.

Example 1: Edit an arbitrary waveform template and transfer to the oscilloscope.

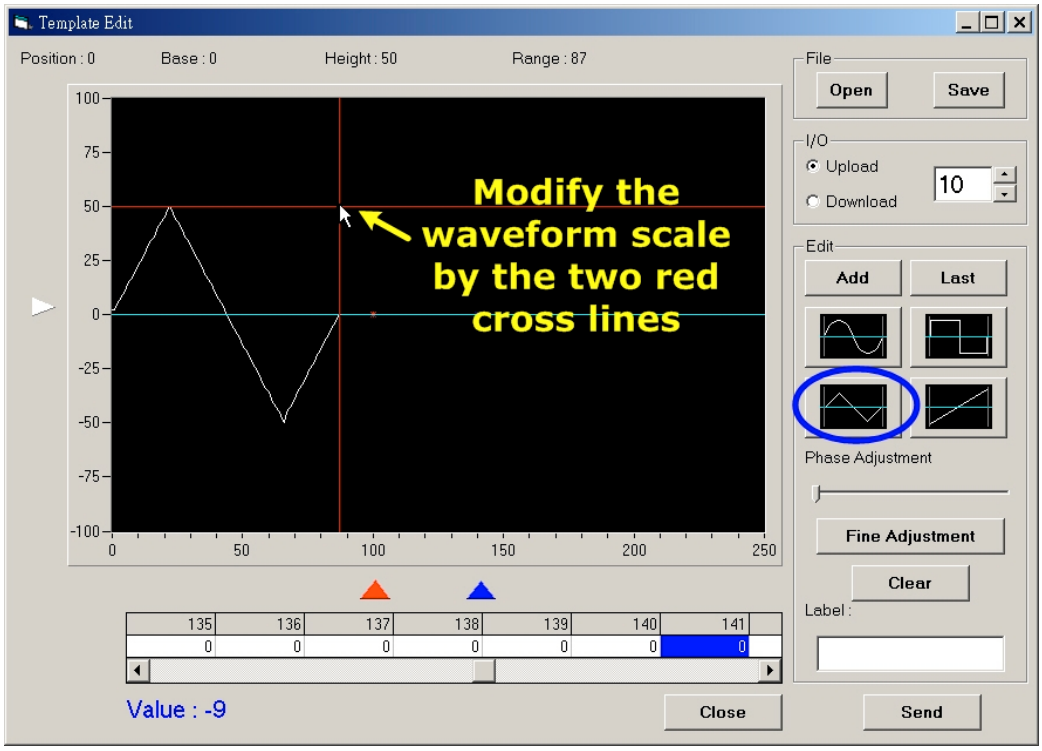
1. Open oscilloscope and setup all communication settings.
2. Open “FreeCapture” and check the “I/O” settings.
3. Click “Template” button and “Template Edit” window opened.
4. Click the “upload” box from “I/O” function and select the preferred oscilloscope’s storage location (1~100). We select location “10” here.



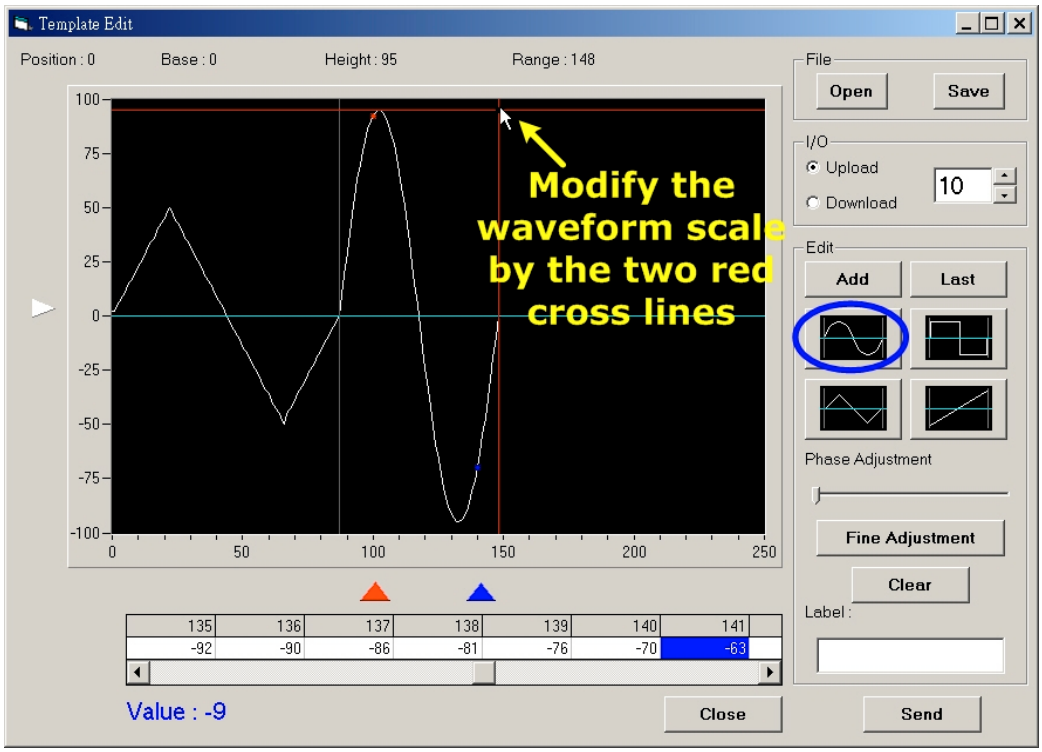
5. Click “Add” button, the default waveform is a sine wave.



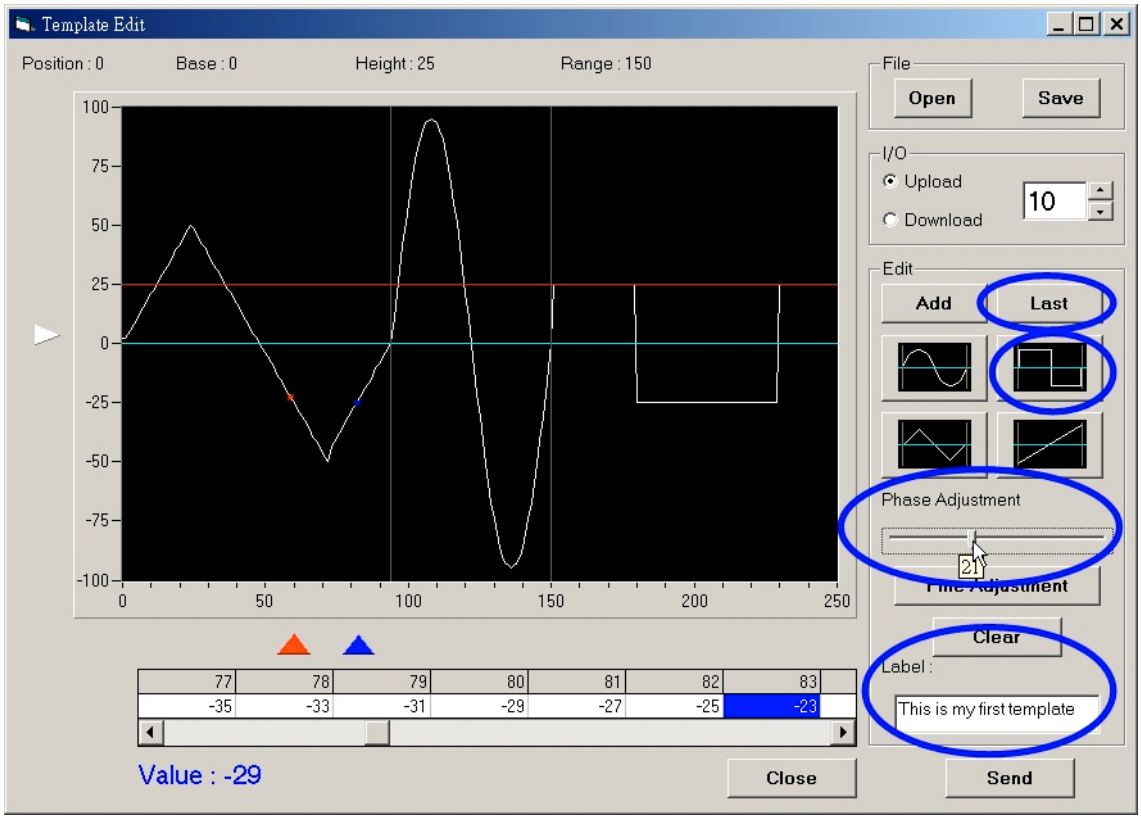
6. However, we select a triangle waveform by click the triangle waveform pattern. The triangle waveform can be modified the scale by move the two cross red line.



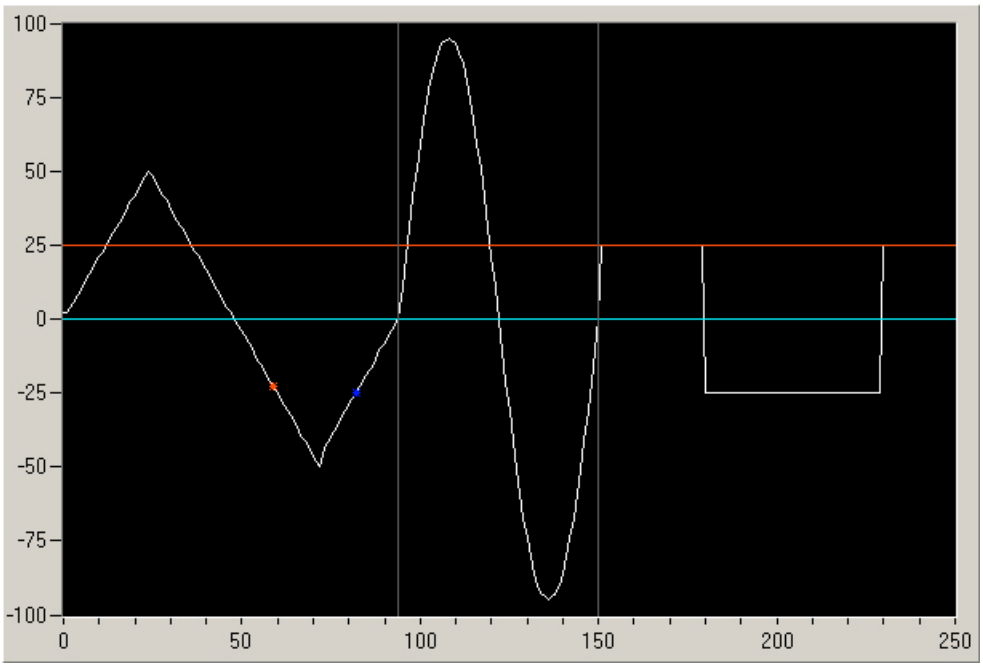
7. Just click “Add” button again in order to add another new pattern after the first pattern is ready. We select the sine waveform here. The sine waveform can also be modified the scale by move the two cross red line too.



8. Click the “Last” button for the final pattern. We pick square waveform here and change the phase a little. We can input some comment here, the sentence “This is my first template” is typed.



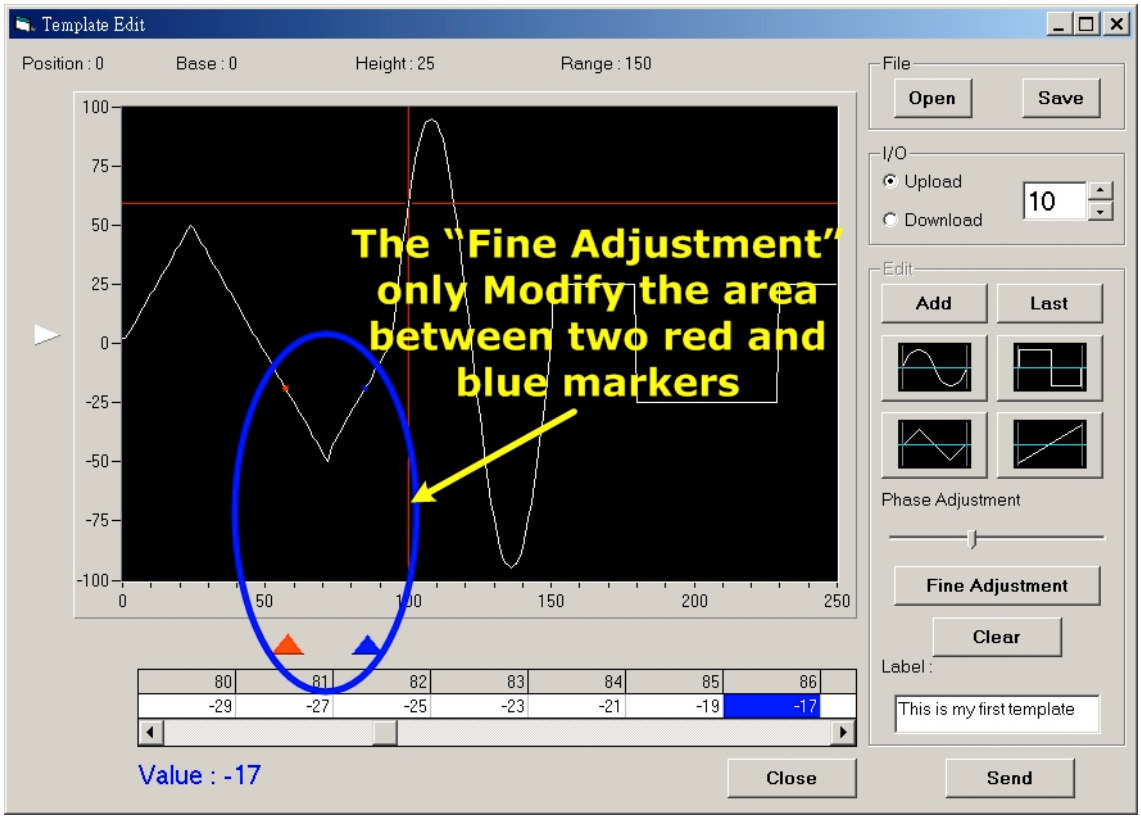
The final template waveform is below:



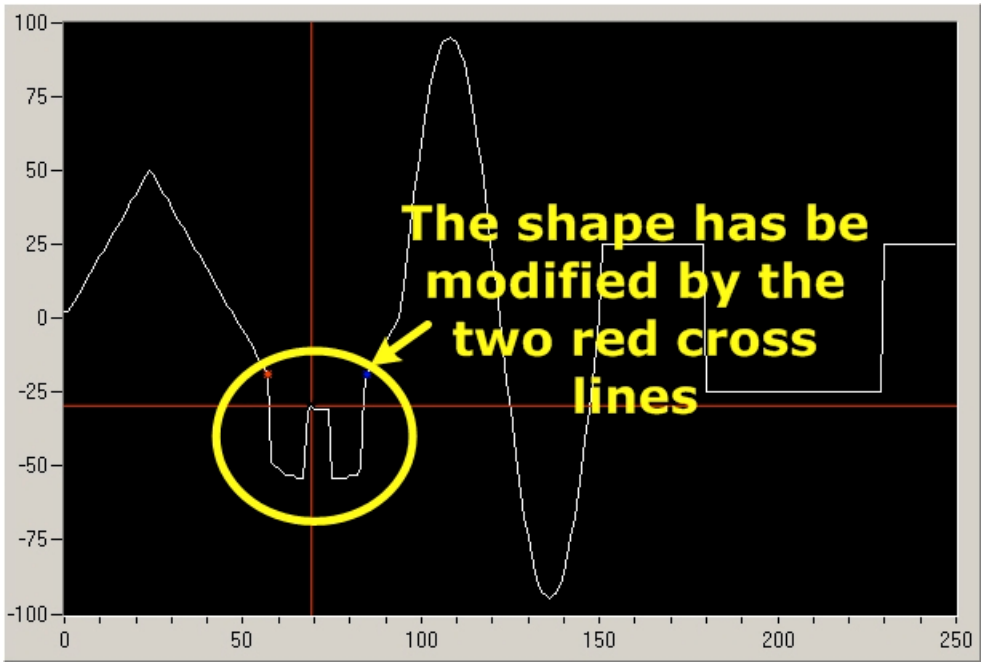
9. Unfortunately, this template waveform is not perfect. Therefore we click the “Fine Adjustment” button and revise the waveform slightly.

   a. Click the “Fine Adjustment” button and shift the two red and blue triangle markers to the preferred position in advance. There two red and blue dots are also relative to the two triangle markers which shown on the template waveform area.

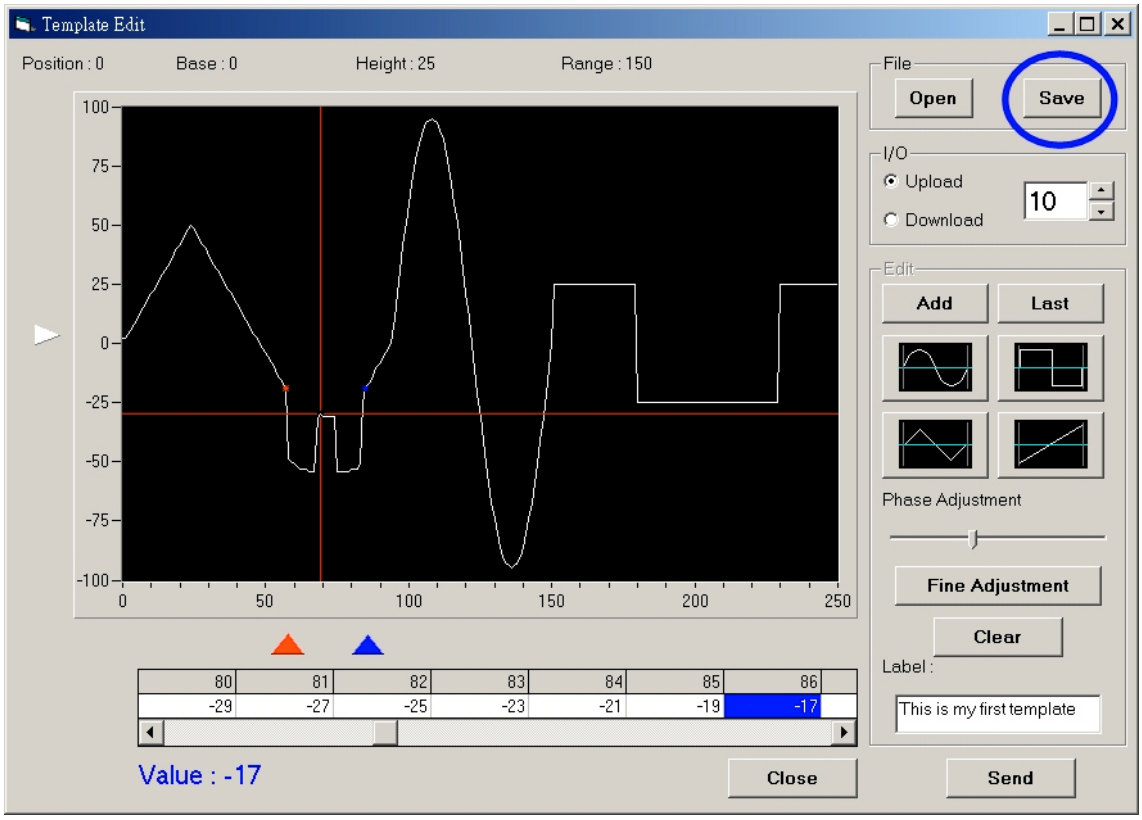
Note: the “Fine Adjustment” only modifies waveform area between the area of two red and blue triangle markers



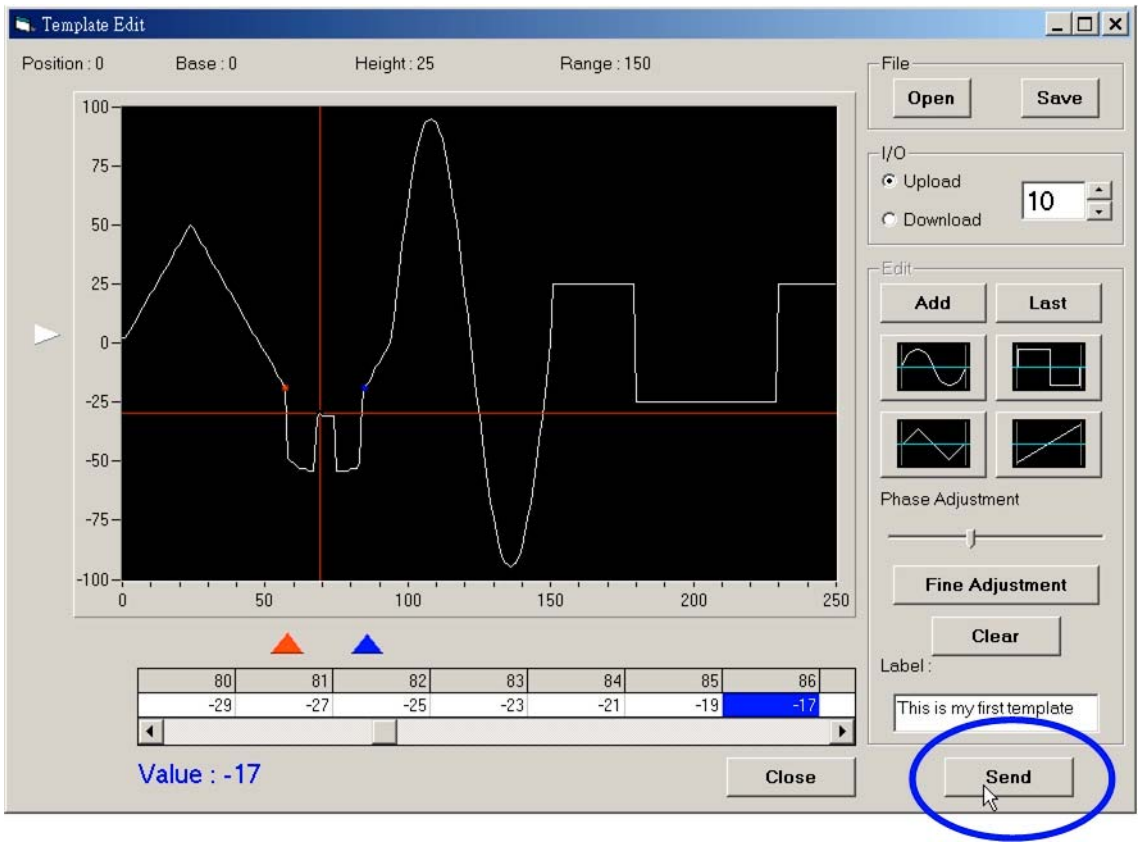
b. We can modify the shape of waveform manually now. Just move the two cross red line to the area between two red and blue markers and modify the shape as we like.



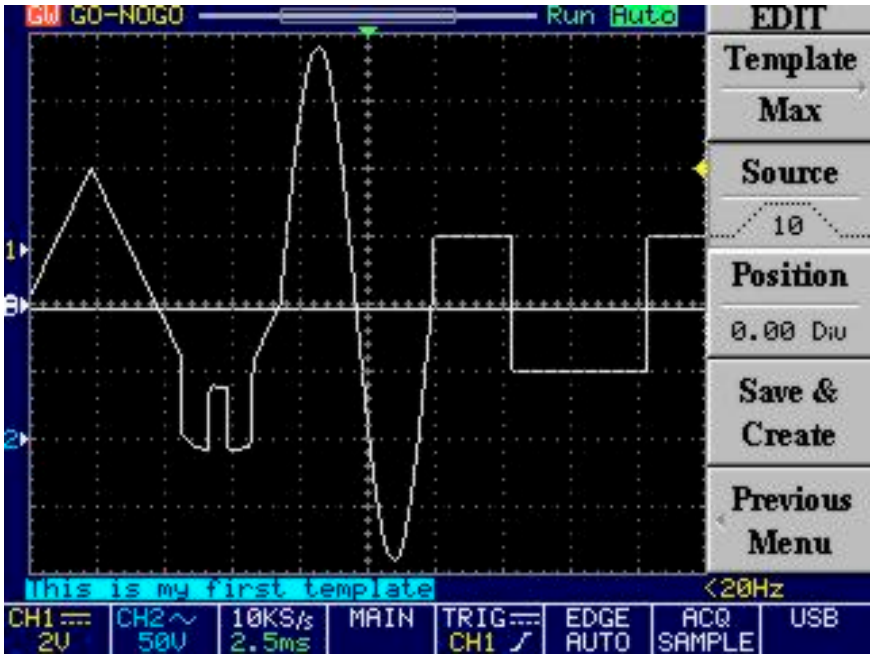
10. The template waveform is perfect now. We save the template waveform as file in the first place. Click the “Save” button and save to preferred directory.



11. We can send the final template waveform to the oscilloscope by click “Send” button now.



12. Check the oscilloscope, press **UTILITY**→**F5** (More) →**F3** (Go-No Go Menu) →**F1** (Template Edit) →**F2** (Source) →rotate the **VARIABLE** knob to number 10.



The template waveform has been complete transferred to oscilloscope!