BioProg Enhanced
User's Manual

INDEX

1 Foreword 2
1.1 Copy-Protection 2
2 Installation 2
2.1 Software installation 2
2.1.1 User's Manual 3
2.1.2 Install BioProg Enhanced software 3
2.2 Activation of license 5
2.3 Serial port selection and check 6
3 Starting the software 8
4 "New Blank Key" Command 8
5 "Open from file" Command 11

Trademarks

Adobe Acrobat Reader is a trademark or registered trade mark of Adobe Systems Inc.
Windows is a trademark or registered trade mark of Microsoft Corporation.

1 Foreword

The BioProg Enhanced is a software to program Smart Keys from a PC, with an User Interface easier than what is available on the Full Gamma Generator and the Biostream Twin Module devices.
It can be used with a MonoProgrammer device, or with the PC link available in the Biostream Twin Module.
This software runs on a PC under the Windows Operating System. The software is supplied on a self-installing CD.
The graphics shown in this manual may differ from those displayed by the PC, depending on Windows Operating System version and settings.

1.1 Copy-Protection

The software is copy protected.
During the software installation Your PC has to be connected to INTERNET to receive automatically the activation code that will enable Your license.
In case of damage on Your PC, please contact info@lpselectronics.it to restore Your license for one more installation. In the email You must insert all the data requested by the software during the installation. This service is not free; furthermore it will be available for one time only.

IMPORTANT: Do not install this software on a computer, knowing that the definitive computer You will be using is a different one.

2 Installation

ATTENTION: Do not connect hardware before having successfully installed the software!

The hardware supplied with this product (if requested), may connected using an USB port of the computer:

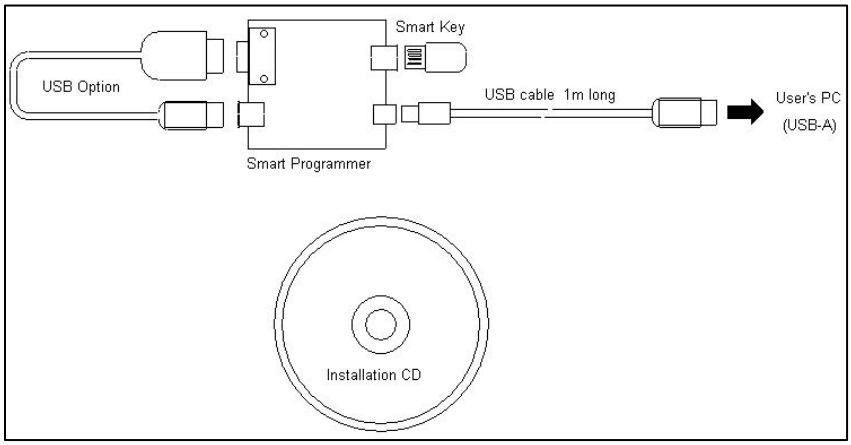


Fig. 1 – Components supplied with the Smart Key Programmer Hardware

2.1 Software installation

Insert the supplied Installation CD into Your computer: the installation procedure will automatically start.
The following screen will be displayed (actual image may differ slightly, depending on Windows version and settings):

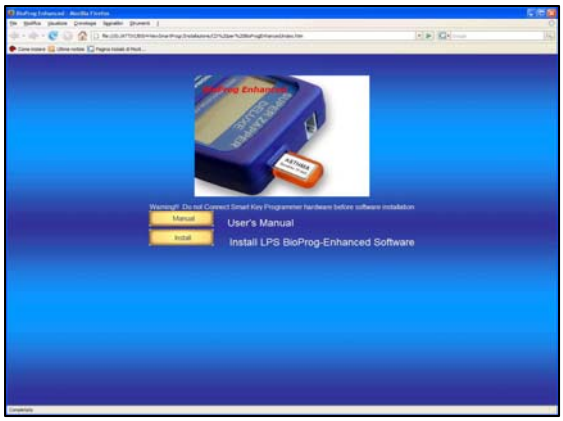


Fig. 2– Software installation, main menu

The *Manual* button brings You in a menu in which You can install the program required to display and print this manual (Adobe Acrobat Reader), and preview the manual

The *Install* button brings You in a menu in which You install the driver for the USB-to-serial-port converter and install the ***BioProg Enhanced*** software.

2.1.1 User's Manual

This manual is supplied in the Adobe Acrobat Reader (.pdf) format.
In order to be able to display on Your screen any .pdf file (this manual included) and eventually print it, you must have the Adobe Acrobat Reader software installed on Your computer.
You may have this software already installed (check the icons on Your desktop); in this case You do not need to re-install it (unless You have an older version and You want to upgrade it).
Clicking on the *Manual* button in Fig. 2: the following screen will be displayed:

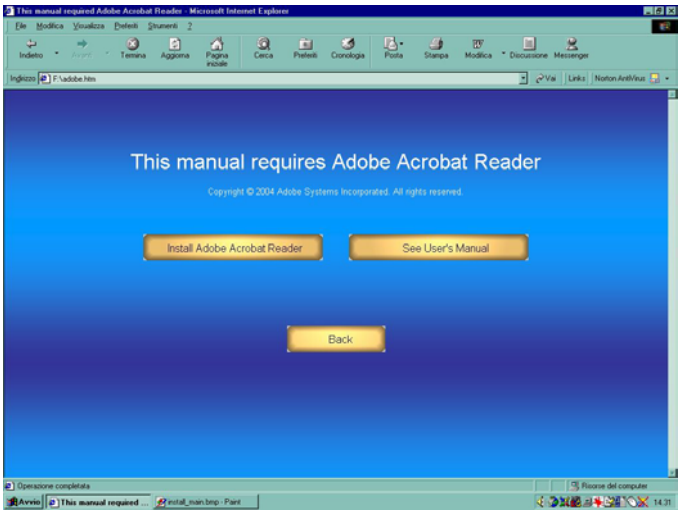


Fig. 3– Manual–related menu

- **Install Adobe Acrobat Reader** – click on this to install the software needed to view and print this manual (as well as all .pdf files). You must click this choice if You do not have this software already installed in Your computer.
  Assuming You have clicked this choice, the Windows operating system will display a warning (the actual screen image depends on Windows version) saying that you are going to download the file `AcroReader505_UK.exe` from `D:\`. Click on *Run application from current position*, then click the *OK* (or the *Open*) button. Follow the instruction supplied by the installation procedure.
- **See User's Manual** – click on this to preview this manual. The software will open the Adobe Acrobat Reader, and the Reader will turn to display this manual. You can browse the manual, as well as print it (clicking on the printer icon), When You have finished with the manual, click the Back button of Your browser to return to the Fig. 4 – Manual–related menu.
- **Back** – click on this to return to the Installation main menu (Fig. 3). You may prefer to return clicking on the back button of your browser.

2.1.2 Install BioProg Enhanced software

We suggest to install first the driver for USB, second the dot net framework 2.0 of Microsoft and then the software BioProg Enhanced.
Clicking on the *Install* button in Fig. 2, the following screen will be displayed:

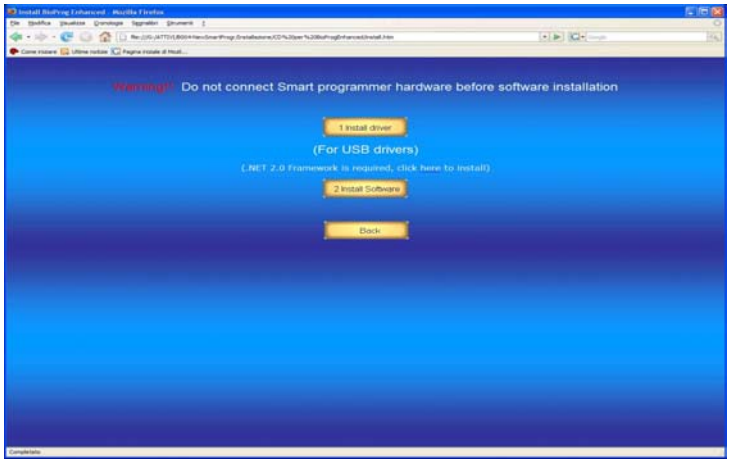
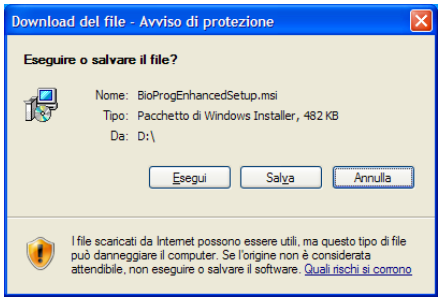


Fig. 4 – Install Software Menu

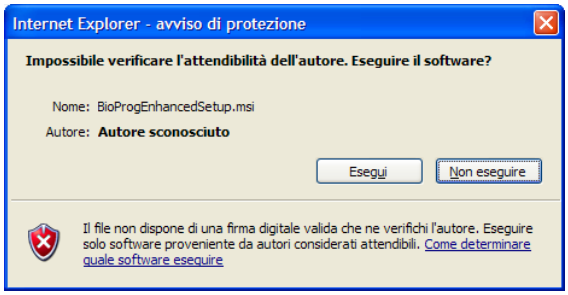
- **Install Driver** – click on this to install the USB-to-Serial-Port Driver.
  Assuming You have clicked this choice, the Windows operating system will display a warning (the actual screen image depends on Windows version) saying that You are going to download the file `PL-23-3 Driver Installer.exe` from `D:\ .` If present, click on *Run application from current position*, then click the *OK* (or the *Open*) button. Sometime, Windows will tell you that

  ```
  Author cannot be determined because of the following problems:
  Authenticode digital signature not found
  ```

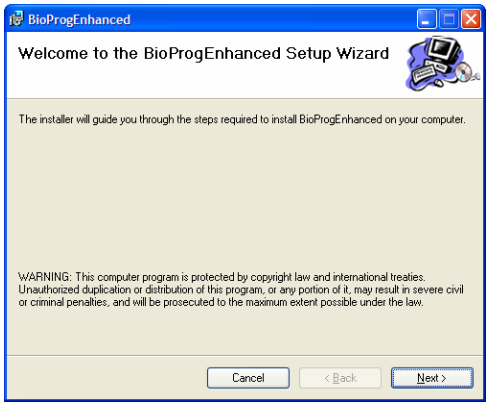
  Disregard this message clicking on the *OK* button, and follow the instructions supplied by the installation procedure.
- **Install Software** – click on this to install the BioProg Enhanced software
  Assuming you have clicked this choice, the Windows operating system will display a warning (the actual screen image depends on Windows version)



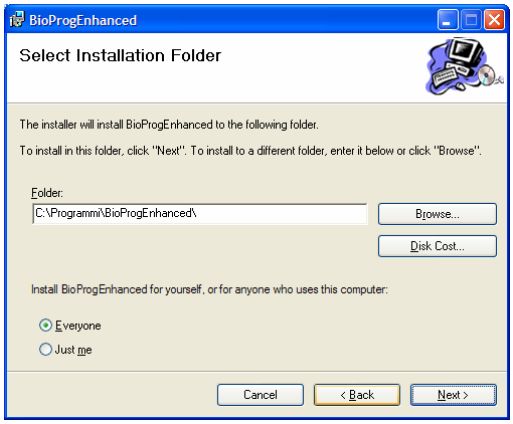
Click on Execute, depending on windows version may be displayed the following panel.



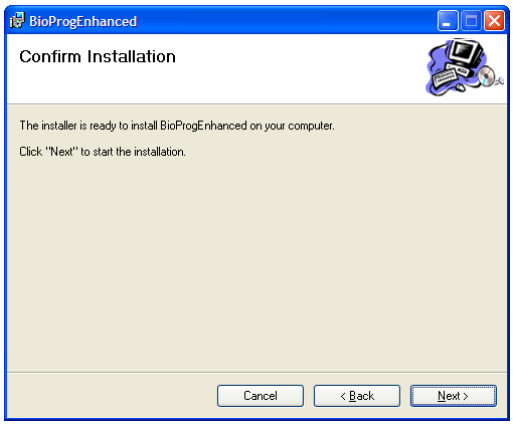
Click on Execute Button:



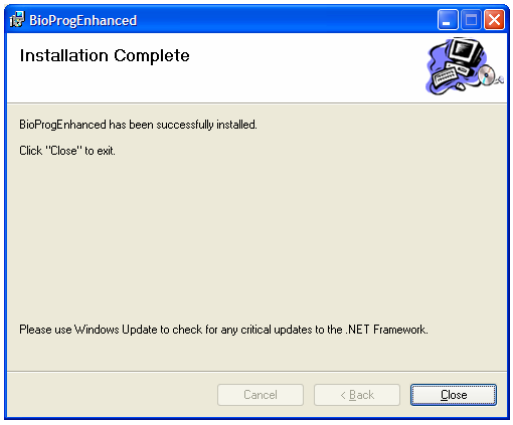
Click on Next button:



Click on Next button:



Click on Next button

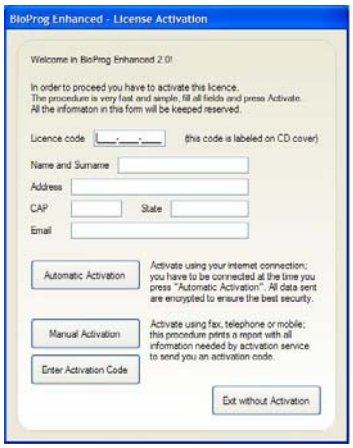


Click on Close button.
The installation is finished. To activate the software click on Start, programs in the folder LPS You will find BioProgEnhanced icon. If You like You can activate a connection directly onto desktop.

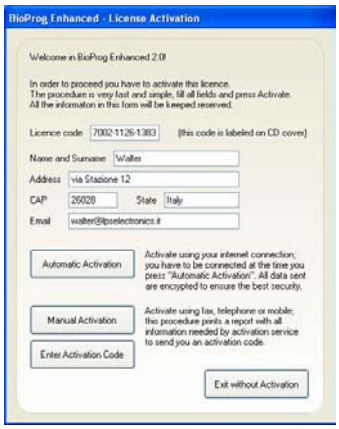


2.2 Activation of license

Be sure to be connected to internet during this operation. Click on BioProgEnhanced icon, only for the first time it will appear the following panel



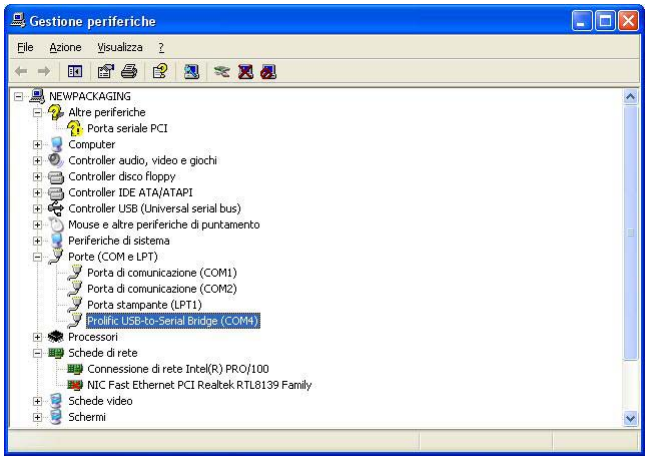
Fill in all the data requested as in the below panel



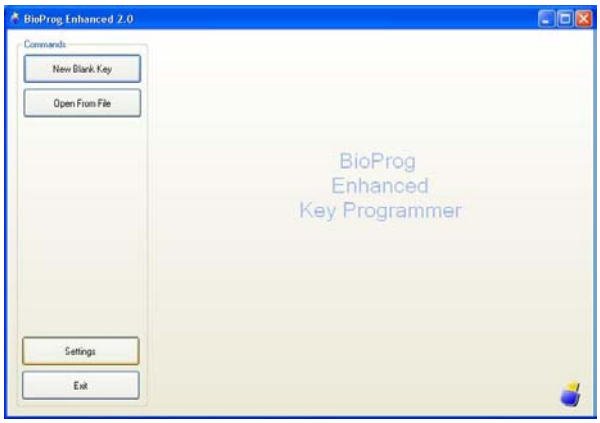
The license code is labeled on CD cover, click before on the “Manual Activation” button: a report will be plot onto PC where all the instruction for how to handle a manual activation are explained, with all data filled in. You can print this report and keep it in a safe place, because you need this data in case of need to restore the license on a new PC (for serious damage on the PC where BioProg Enhanced was installed). Print the report and close the panel. Now if you have connection to internet click on to “Automatic Activation” button, the activation procedure is completely automatic. A message will prompt that the activation is successfully done.
If you don’t have internet, follow the instruction on to report and when you get the activation code enter it clicking on the button “Enter Activation Code”.

2.3 Serial port selection and check

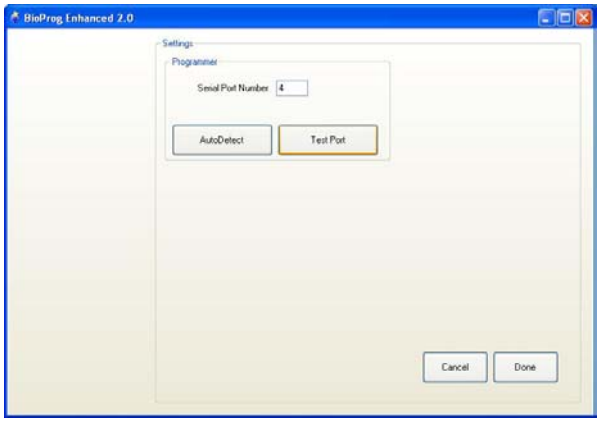
Be sure to have properly connected the Smart Key Programmer to your computer, as shown in Fig. 1
Click on Start, Settings, Control panel, System, Hardware, Peripheral Management, Com Port and see on witch com port is “Profilic USB-to-Serial Bridge” driver: in the below example the COM4 was selected.



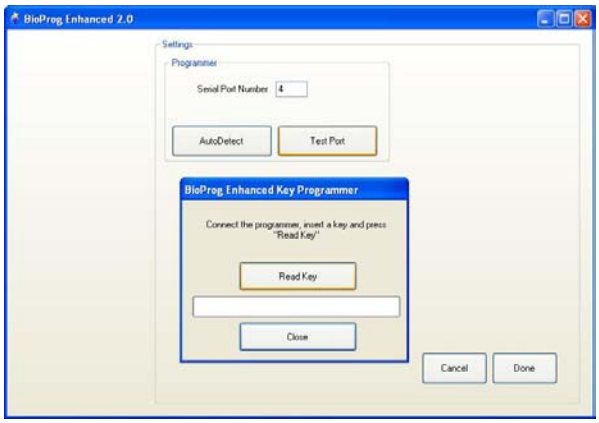
Click on the BioProgEnhanced icon and on the button “Settings”



Define the correct serial port selected by Profilic USB drivers: in this case 4:



Click on the button “Test Port ” it will appear a new panel shown below:



Before to click on the button “Read Key ” put a Smart Key in the proper connector of the Smart Programmer tool, and then click on the button “Read Key ”, it will appear a new panel shown below:



If the hardware it is working and the port selected is corrected it will appear this message:
In case of problems contact the service through email at info@lpselectronics.it.
Otherwise now you are ready to use the BioProg Enhanced software.



3 Starting the software

Click on the desktop icon “BioProg Enhanced” to start.
The software will directly bring to the following window:

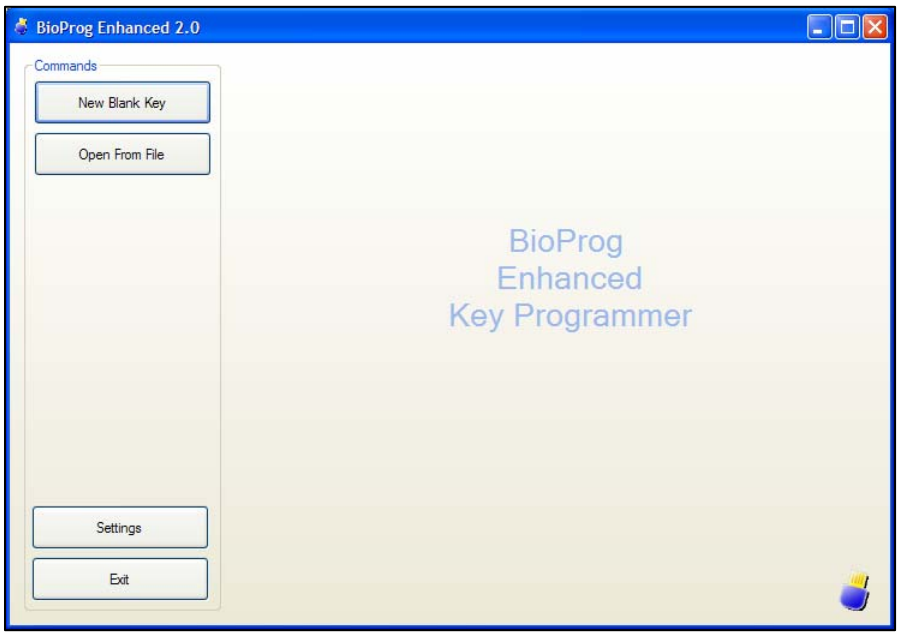


Fig. 5– Main Window

The Commands are:

- **New Blank Key**: to create and save a new SmartKey (Sine –Square- TENS- ZAPPER) with the parameters decided by You
- **Open from file**: to open an already saved file a a SmartKey to modify and/or write it
- **Setting**: to set and/or test the Serial Port Number
- **Exit:** to close the Program

4 “New Blank Key” Command

The “New Blank Key” Command is for create and define a new Smart Key (Sine, Square, TENS or ZAPPER).
Clicking on the “New Blank Key” button, the next window is:



Fig. 6: Choice Menu for the type of SmartKey

Choose to create:

- A “New Sine Key”: this key type is for the Full Gamma Generator and the Biostream Twin Module devices, and is reserved for the sine waveshape (sine wave with variable positive offset). By convention, the key color is violet.
- A “New Square Key”: this key type is for the Full Gamma Generator and the Biostream Twin Module devices, and is reserved for the 'Clark' type waveshape (square wave with fixed positive offset of 0.25V). By convention, the key color is green.
- A “New TENS Key” : this key type is for the LCD Super Zapper, Full Gamma Generator and the Biostream Twin Module devices (LCD Super Zapper and Full Gamma Generator need the BioxTENSion accessory to generate this waveshape), and is reserved for the TENS waveshape (Transcutaneous Electric Nerve Stimulation). By convention, the key color is light gray.
- A “New Zapper Key”: this key type is for the LCD Super Zapper device, and is also compatible with the Full Gamma Generator and the Biostream Twin Module devices. By convention, the key color is amber.

Click on the button of the chosen SmartKey type; the next window is (in this case we have chosen a Sine Key):

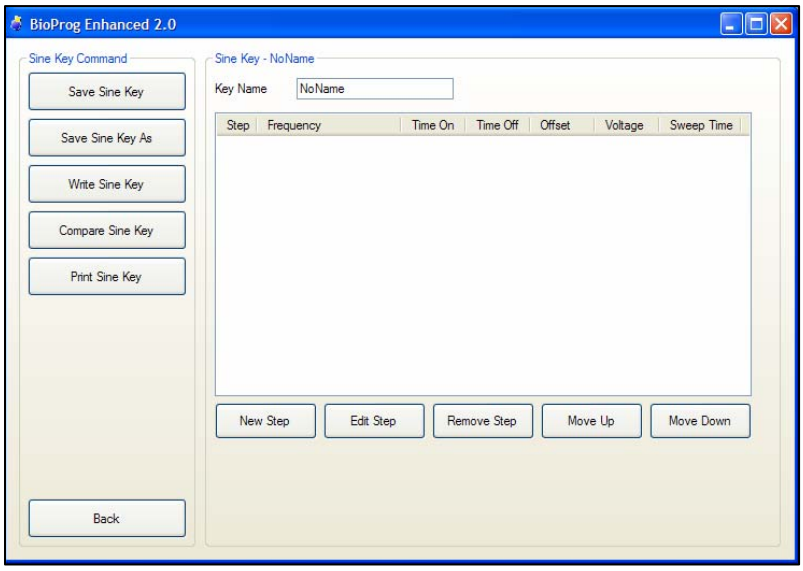


Fig. 7: General Window to define a SmartKey

Define each step of the program to create Your SmartKey: click on the “New Step” button to create the first step; the next window is:

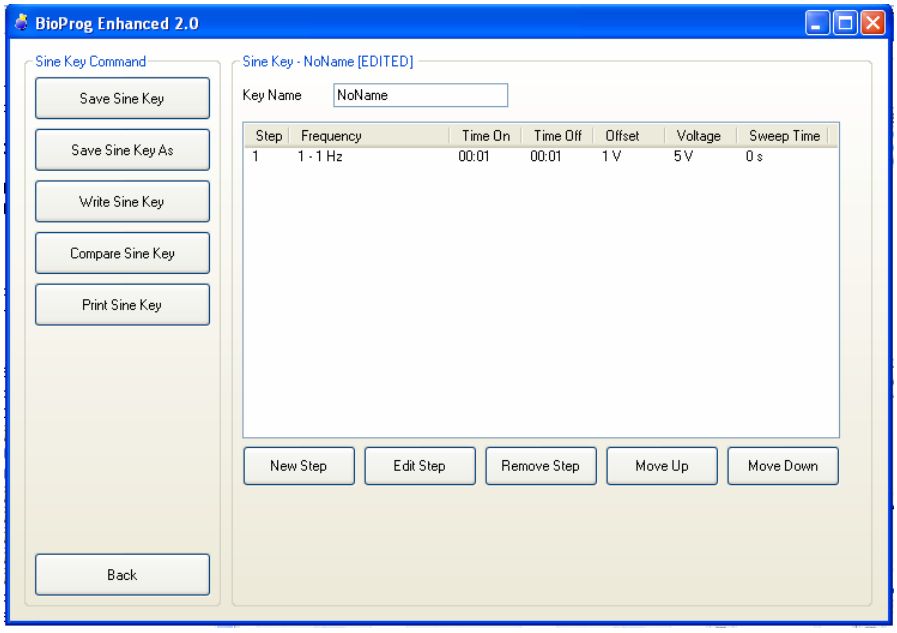


Fig. 8: Creation of the first step

Click on the line of the step and click the “Edit Step” button to define the parameters of this step; the next window is:

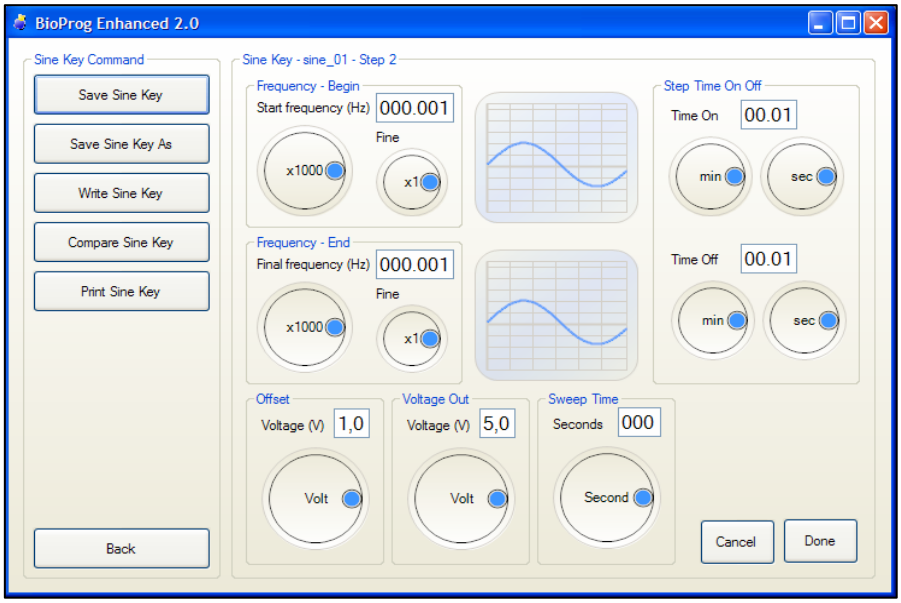


Fig. 9: Panel for define/modify the parameters

You can define:

- **For a SINE KEY:**
  - ⇒ The Start Frequency: from 000.001 Hz till to 999.999 Hz; it is the lower frequency in the step
  - ⇒ The Final Frequency: from 000.001 Hz till to 999.999 Hz; the Final Frequency cannot be less than the Start Frequency; it is the upper frequency in the step; when StartFreq and FinalFreq are equal, there is no sweep, and a static frequency will be output
  - ⇒ The Offset; from 0V till to 4.5V; it is for the displacement of the mean of the sine wave from the 0V level. When above 1V, the wave ampliture limits are reset from 5 to 9V.
  - ⇒ The Voltage Out; from 5V till to 9.4V; it is the output voltage
  - ⇒ The Sweep Time: from 0 till to 999 seconds; it is for the frequency step used to increment the output frequency every tenth of second, when sweeping the frequency from StartFreq to FinalFreq and back to StartFreq. It will be preloaded with 0 when StartFreq = FinalFreq.
  - ⇒ Step Time On: from 1 second till to 59 minutes and 59 seconds; it is the time during which there is voltage on output; it is the time during which there is voltage on output
  - ⇒ Step Time Off: from 1 second till to 59 minutes and 59 seconds; it is the pause time (no output) before the next step.

- **For a SQUARE Key:**
  - ⇒ The Start Frequency: from 000.001 Hz till to 999.999 Hz; it is the lower frequency in the step
  - ⇒ The Final Frequency: from 000.001 Hz till to 999.999 Hz; the Final Frequency cannot be less than the Start Frequency; it is the upper frequency in the step; when StartFreq and FinalFreq are equal, there is no sweep, and a static frequency will be output
  - ⇒ Duty Cycle: from 25% till to 50%; it is the percentage of the time there is a voltage in output with respect to the period of the wave
  - ⇒ Voltage Out: from 8V till to 15V; it is the output voltage
  - ⇒ Sweep Time: from 0 till to 999 seconds; it is for the frequency step used to increment the output frequency every tenth of second, when sweeping the frequency from Freq. Min to Freq. Max and back to Min, in Hz. It will be preloaded with 0 when StartFreq = FinalFreq.
  - ⇒ Step Time On: from 1 second till to 59 minutes and 59 seconds; it is the time during which there is voltage on output; it is the time during which there is voltage on output
  - ⇒ Step Time Off: from 1 second till to 59 minutes and 59 seconds; it is the pause time (no output) before the next step; it is the pause time (no output) before the next step

- **For a TENS Key:**
  - ⇒ Frequency: from 5Hz till to 150Hz;
  - ⇒ Step Time On: from 1 second till to 59 minutes and 59 seconds; it is the time during which there is voltage on output; it is the time during which there is voltage on output
  - ⇒ Step Time Off: from 1 second till to 59 minutes and 59 seconds; it is the pause time (no output) before the next step; it is the pause time (no output) before the next step
  - ⇒ Pulse Width: from 50 µsec till to 200 µsec; it is the time each single pulse of the biphasic pulse lasts

⇒ Sweep Time: from 0 till to 250 seconds; it is the time the system waits, before incrementing the pulse frequency of 1 Hz, used by the device during the sweep: the device goes from StartFreq to an upper frequency limit which depends on the Start Freq value, as below:
  - 25 Hz for starting frequencies less than 25 Hz,
  - 70 Hz for starting frequencies less than 70 Hz,
  - 150 Hz for starting frequencies less than 150 Hz.

⇒ Burst Time On: from 1 second till to 250 seconds; it is the time the voltage is outputted in the so-called "burst mode"

⇒ Burst Time Off: from 0 till to 250 seconds; it is the time during which there is no voltage on output in the so-called "burst mode"

⇒ It is possible to flag the Continuous box

- **For a ZAPPER Key:**

⇒ Start Frequency: from 28 KHz till to 999,5 KHz;

⇒ Final Frequency: from 28 KHz till to 999,5 KHz; the Final Frequency cannot be less than the Start Frequency; if you want a static (not sweeped) frequency, enter the same frequency under Start and Final

⇒ Voltage Out: from 8v till to 15V; it is the output voltage

⇒ Sweep Time: from 0 till to 60 seconds; it is the time it takes to the frequency to increase from StartFreq to FinalFreq, then return back to StartFreq

⇒ Step Time On: from 1 till to 59 minutes and 59 seconds; it is the time during which there is voltage on output

⇒ Step Time Off: from 1 till to 59 minutes and 59 seconds; it is the pause time (no output) before the next step

Click and drag on the potentiometer the blue knob to modify the parameter: in the clockwise sense to increase it and in the anticlockwise sense to decrease it. You will see to change the parameter in its proper box.

When You have completed to define each parameter, click on the “Done” button to confirm. Otherwise, click the “Cancel” button to null the definition and go back to the previous window.

It is possible also to:

- “Remove Step”: click on the line of the step and click on the proper button to remove it
- “Move Up”: click on the line of the step and click on the proper button to move up it
- “Move down”: click on the line of the step and click on the proper button to move down it

To define an other Step, click “New Step” button and continue the procedure like described above, until the last Step that You want (the maximum quantity of Step is 16).

It is possible to modify a Step already defined in every time, like it follows:

- Click on the line of the step
- Click the “Edit Step” button
- Modify the parameters
- Click the “Done” button to confirm

When You have finished to define a Key (Sine, Square, TENS or ZAPPER), You can:

- “Write Key”: click on the proper button to store the program in a Key: follow the suggested instructions;
- “Compare Key”: click on the proper button to read a program stored in a Key: follow the suggested instructions;
- “Print Key”: click on the proper button to print the file of a program: follow the suggested instructions

After to have defined one Step at least, in every time You can:

- Go back to the previous window clicking the “Back” button;
- Insert a name to the program in the proper area of “Key Name” ;
- “Save Key”: click on the proper button to save a program with a name or to save the modifies of a program already saved, in a preferred folder;
- “Save Key As”: click on the proper button to save a program with a name in a preferred folder.

5 “Open from file” Command

The “Open from File” Command allows to open a file already saved in a proper folder of Your PC.
The file type suffix used by the BioProg Enhanced Software are:

- `.skg` LCD Super Zapper
- `.ski` Gamma Sine
- `.skj` Gamma Square
- `.skh` TENS