

# 3 CLIO INSTALLATION

## 3.1 MINIMUM PC CONFIGURATION

The CLIO PB4281 PC board (and its companion SC-02 Signal Conditioner) running the CLIO software can be installed in any personal computer with the following minimum system requirements:

- Pentium III processor (suggested minimum 450 MHz)
- One free PCI slot
- One free USB port
- 128 MB RAM
- 1024x768 video adapter
- Microsoft Windows 2000 or XP
- Adobe Acrobat Reader

## 3.2 HARDWARE INSTALLATION

### 3.2.1 INSTALLING THE PCI CARD

To install the CLIO PB4281 card in your computer you should follow the instructions given below:

- 1) Disconnect the mains power cable from the PC.
- 2) Open the computer cabinet.
- 3) With the motherboard in front of you, identify a free **PCI** slot. Note that it is preferable to install the CLIO board as far away as possible from the video adapter.
- 4) Insert the CLIO board in the slot and screw it down firmly.
- 5) Close the cabinet.
- 6) Reconnect the mains cable but still **don't** connect the SC-02 Signal Conditioner. This topic will be covered in 3.3.3.

## 3.3 INSTALLING WINDOWS DRIVERS

The hardware registration procedure is started automatically the first time you switch your computer on, after you have physically installed the CLIO PB4281 PCI card.

At the end of this procedure you will deal with SC-02 connections and USB drivers installation.

If you are installing under:

- Windows 2000 go to section 3.3.1.
- Windows XP go to section 3.3.2.

### 3.3.1 PB4281 REGISTRATION UNDER WINDOWS 2000

*The procedures described refer specifically (and are described with examples and figures) to the Windows 2000 Professional operating system, English version, they can be applied with appropriate translations to all languages.*

## LET'S NOW SWITCH THE PC ON!

As soon as Windows is started the 'Found New Hardware Wizard' automatically detects the CLIO card:

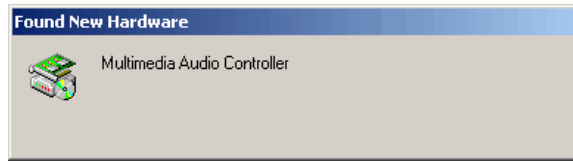


Figure 3.1

You will then be prompted with the dialog boxes in Fig.3.2. Press 'Next' and then select 'Search for a suitable driver for my device (Recommended)'.

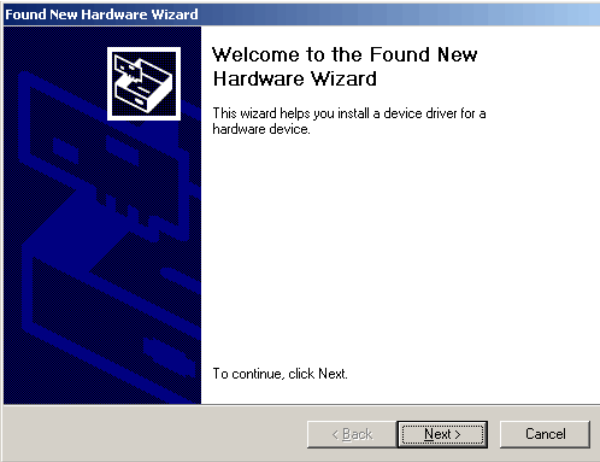


Figure 3.2

At the successive prompt Select 'Specify a location', then insert the CLIO CD-ROM in the CD-ROM drive and press the 'Browse...' button. Choose the CLIO2K.INF file inside the \INF2K directory inside the CD-ROM (see Fig.3.3).

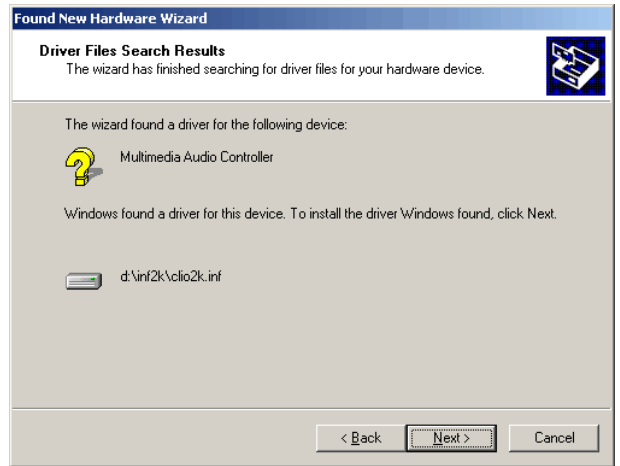
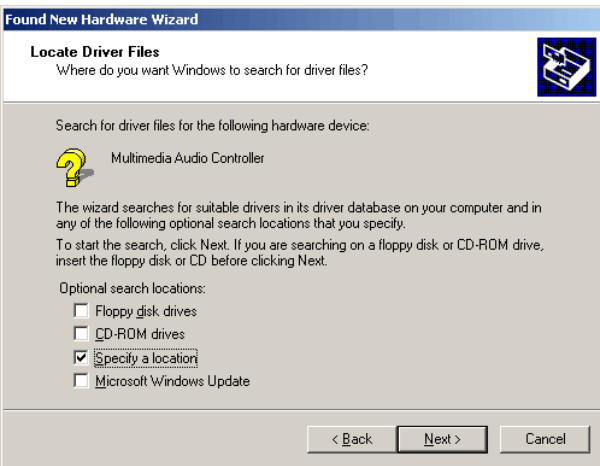


Figure 3.3

**Ignore** Microsoft's warning message about Digital Signature, answer 'Yes' to the prompt and reach the end of the wizard.

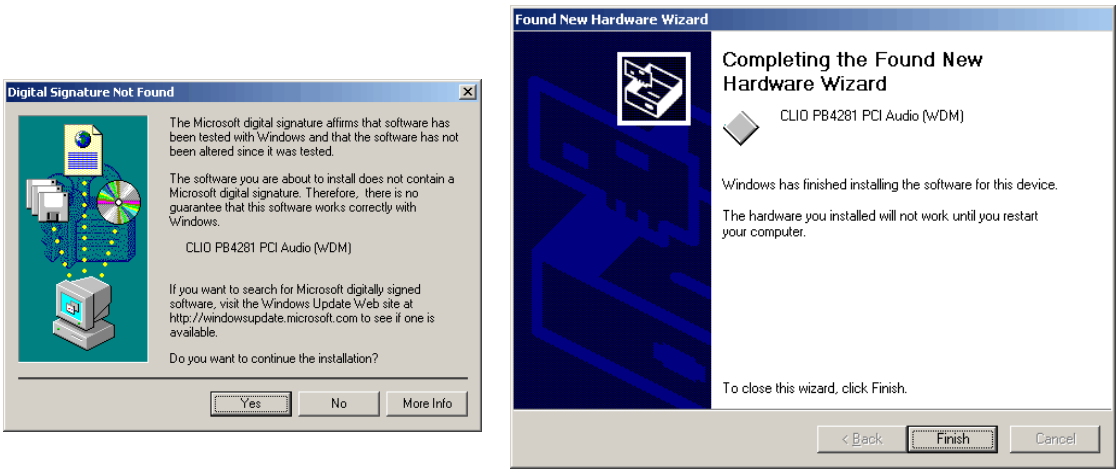


Figure 3.4

Let's now verify that the hardware installation and registration is OK.

Click with the **right** mouse button on the 'My Computer' icon on the Windows desktop. Then click 'Properties', select the 'Hardware' tab and press the 'Device Manager' button as in Fig. 3.5.

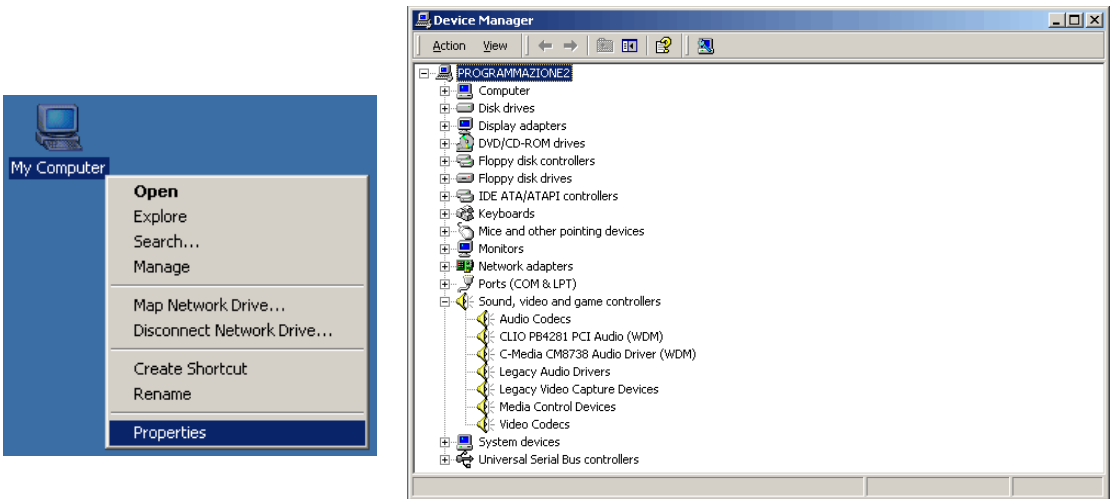


Figure 3.5

The presence of the 'CLIO PB4281 PCI Audio (WDM)' under 'Sound, video and game controllers' confirms the correct installation.

### 3.3.2 PB4281 REGISTRATION UNDER WINDOWS XP

The procedures described refer specifically (and are described with examples and figures) to the Windows XP Professional operating system, English version, they can be applied with only minor modifications and appropriate translations to all languages and to Windows XP Home.

#### LET'S NOW SWITCH THE PC ON!

As soon as Windows is started the 'Found New Hardware Wizard' automatically detects the CLIO card:



Figure 3.6

Windows XP is the only operating system that is able to install a driver for the CLIO card, the problem is that **it is not the correct one and needs to be updated.**

Let's now check what driver XP installed. Click with the **right** mouse button on the 'My Computer' icon on the Windows desktop. Then click 'Properties', select the 'Hardware' tab and press the 'Device Manager' button as in Fig. 3.7.

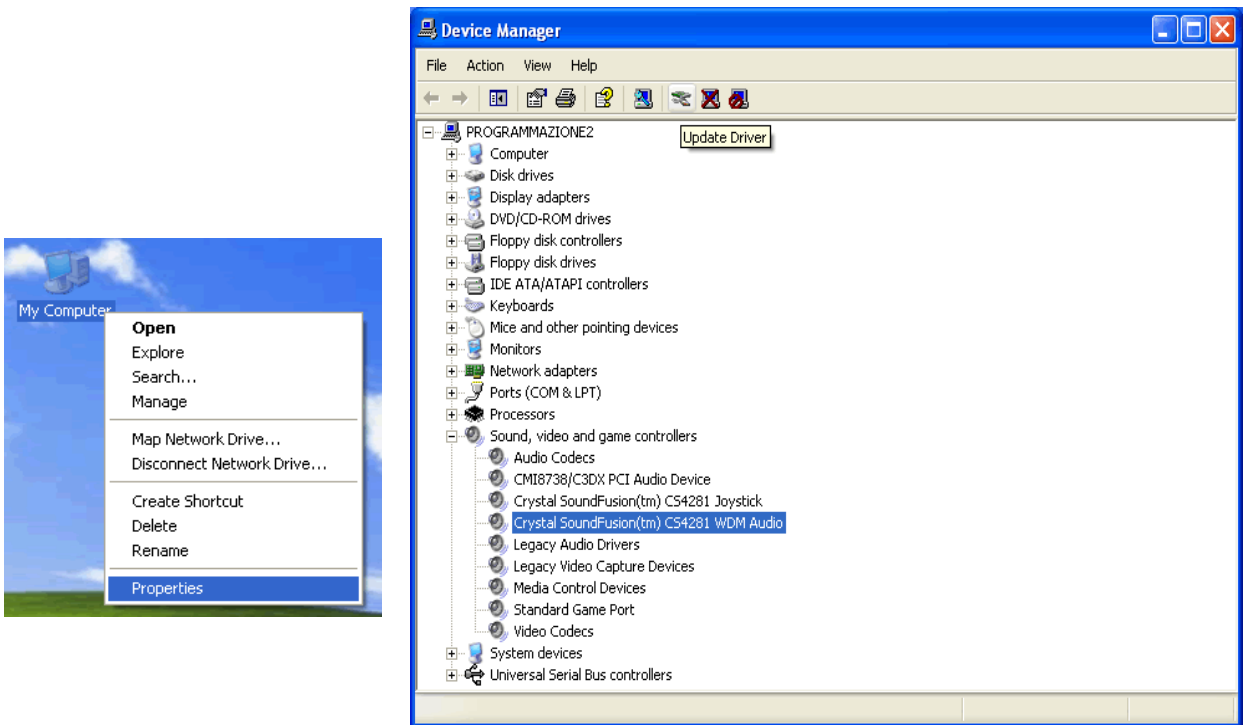


Figure 3.7

XP installed a driver for the Crystal hardware accelerator that the CLIO PB4281 card is using. Press the 'Update Driver' button and enter the 'Hardware Update Wizard' (Fig. 3.8).

Select 'Install from a list or specific location (Advanced)' and click 'Next'; then select 'Don't search. I will choose the driver to install' and click 'Next' again.

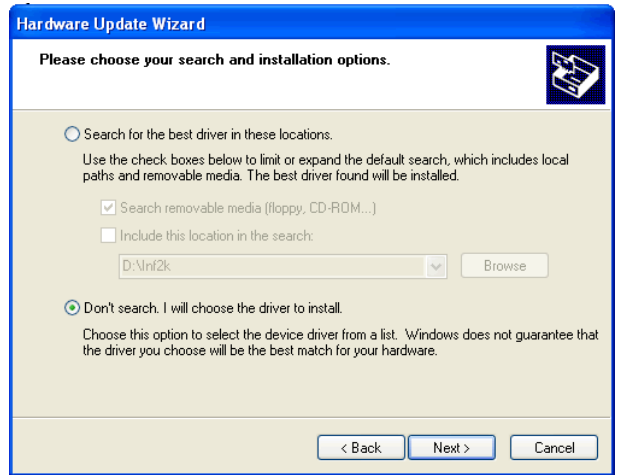
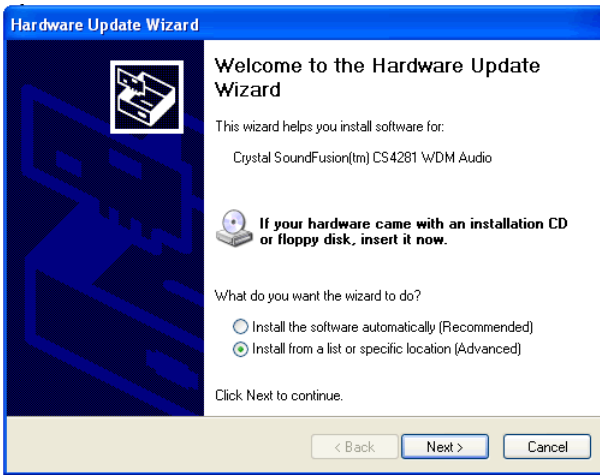


Figure 3.8

Insert the CLIO CD-ROM, press 'Have Disk' and choose the CLIO2K.INF file inside the \INF2K directory of the CD-ROM (see Fig. 3.9).

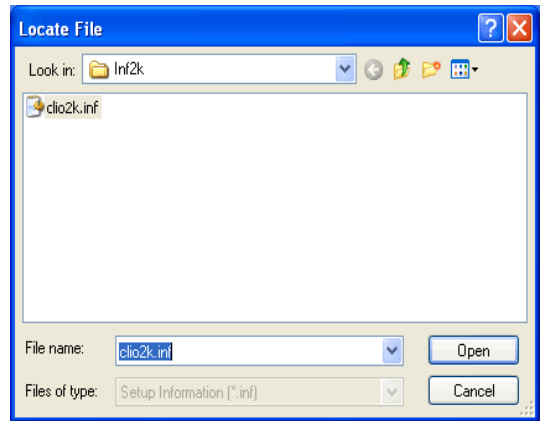
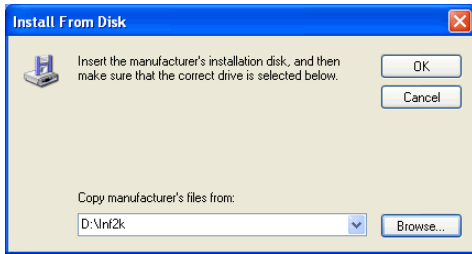


Figure 3.9

**Ignore** the message 'This driver is not digitally signed!', press 'Next'; **ignore** the subsequent message about Windows Logo testing, press 'Continue Anyway' (Fig. 3.10).

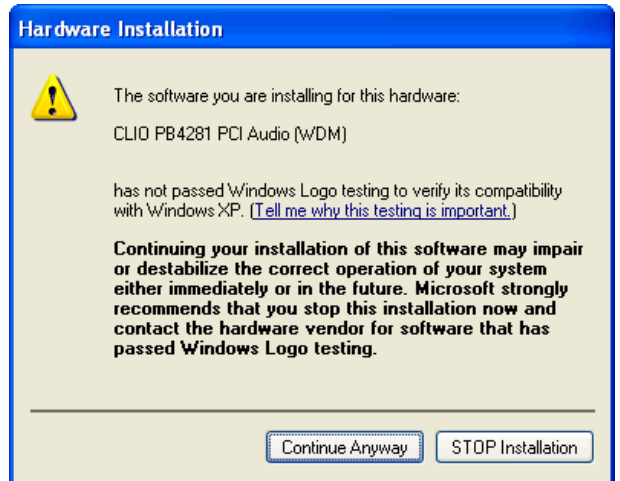
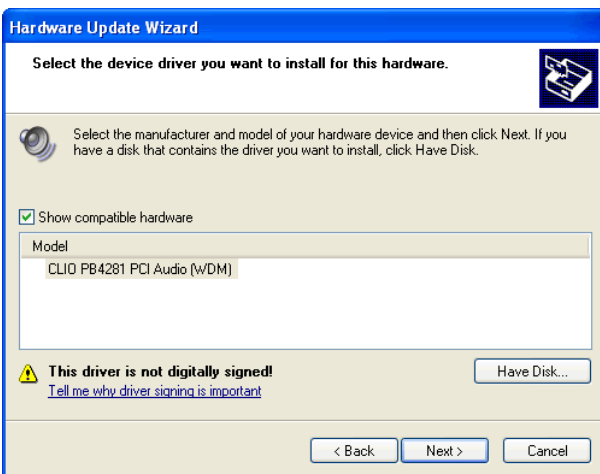


Figure 3.10

You should be prompted by the following success message.

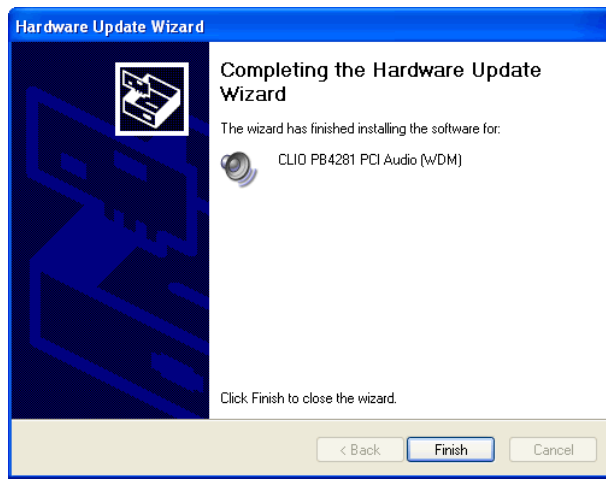


Figure 3.11

Let's now verify that the hardware installation and registration is OK.

Click with the **right** mouse button on the 'My Computer' icon on the Windows desktop. Then click 'Properties', select the 'Hardware' tab and press the 'Device Manager' button as in Fig. 3.12.

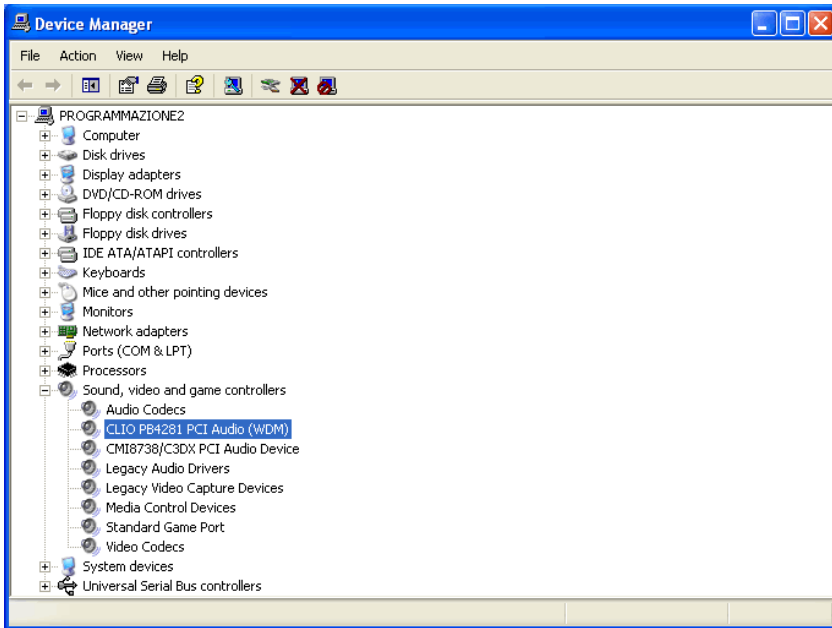


Figure 3.12

The presence of the 'CLIO PB4281 PCI Audio (WDM)' under 'Sound, video and game controllers' (in place of the previously installed Crystal driver) confirms the correct installation.

### 3.3.3 CONNECTING THE SC-02 UNIT & USB DRIVERS INSTALLATION

To connect the SC-02 Signal conditioner to your PC you need the following cables:

- 1) 2 x Stereo mini jack to two RCA plugs (red plus white) audio cable.
- 2) 1 x USB cable.



Figure 3.13

First connect the SC-02 Signal Conditioner to the PB4281 card:

- 1) Connect one audio cable from the card 'Line Out' plug to the two RCA plugs on the rear panel of SC-02 labeled 'FROM PC'; red plug channel B, white plug channel A.
- 2) Connect one audio cable from the card 'Line In' plug to the two RCA plugs on the rear panel of SC-02 labeled 'TO PC'; red plug channel B, white plug channel A.

The figure shows the audio and dc connections as they should be used.



Figure 3.14

Now connect the USB cable from the SC-02 to one free USB port of your computer.

**Be ready to install USB drivers!**



Figure 3.15

You will be prompted with the dialog boxes in Fig.3.16. Select 'No. Not this time' and then select 'Install from a list or specific location (Advanced)'.

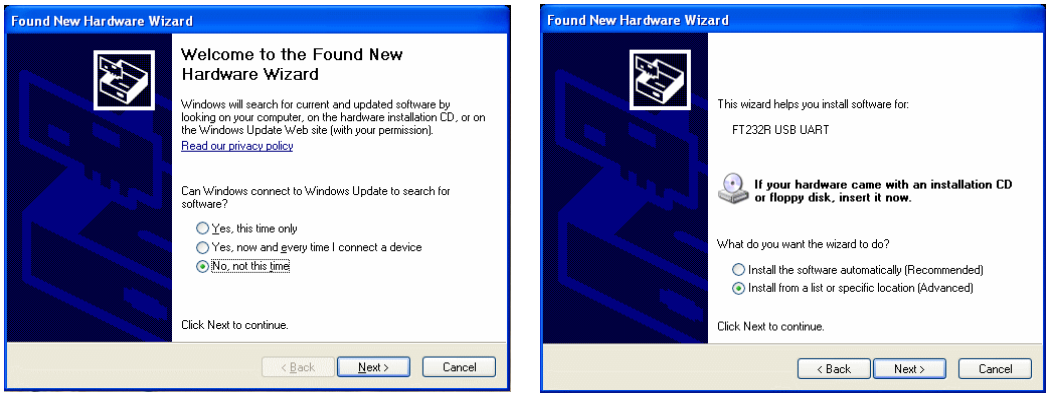


Figure 3.16

At the successive prompt Select 'Search for the best driver in these locations' and press the 'Browse...' button. Choose the 'USB Drivers' folder inside CD-ROM (see Fig.3.17). It will be installed the **USB Serial Converter**.

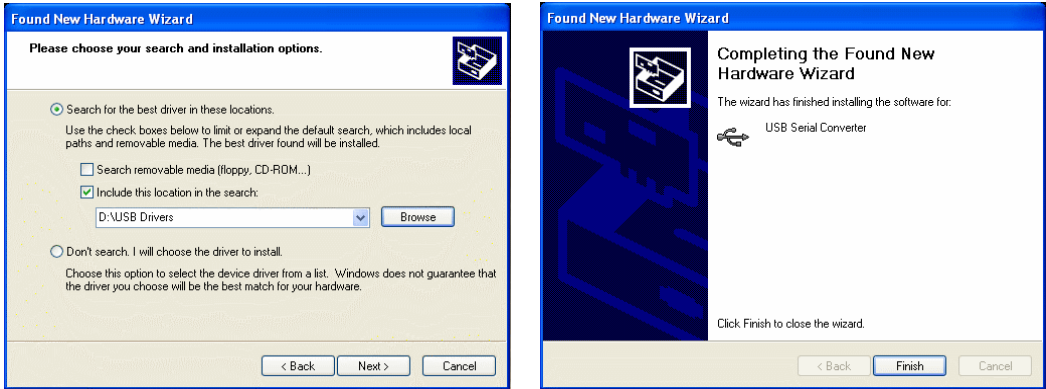


Figure 3.17

You will be prompted again to install the second USB device: repeat the same procedure to install the **USB Serial Port** (Fig.3.18).

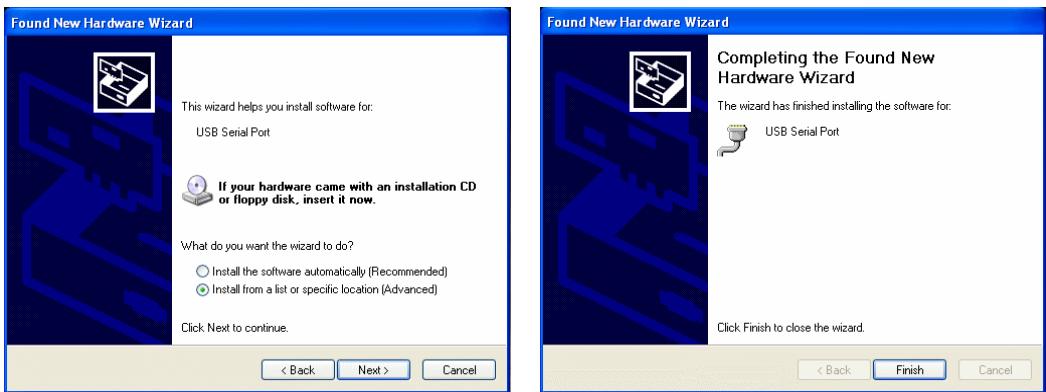
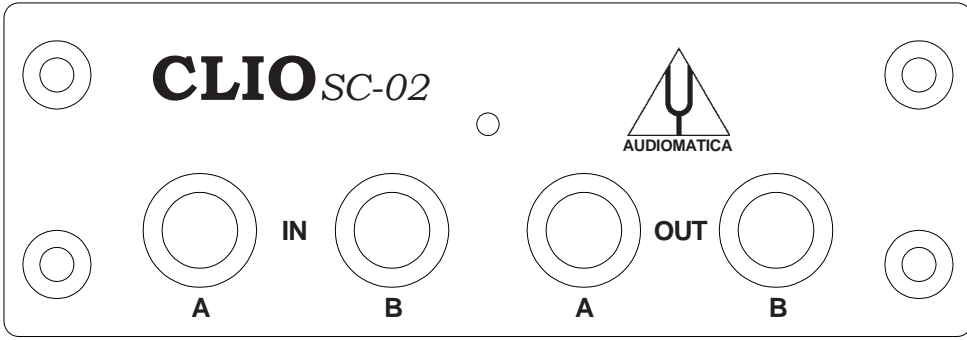


Figure 3.18

Windows drivers installation is now finished and your CLIO system ready to be used. The last step is software installation covered in 3.4.



The connections between the PB4281, SC-02 and your PC **shouldn't normally be changed**; in every day work you will always use the SC-02 front panel connectors.



### 3.3.4 IMPORTANT ADVICE

If your computer has another sound card fitted in addition to the CLIO Card ensure that this card and NOT the CLIO Card is chosen as the preferred card. This will ensure that all system sounds will be played by the other device. Open the audio properties under the Control Panel and select the second card as the preferred. The example in Fig. 3.23 refers to a VIA audio device under Windows XP Professional (refer also to Fig.3.15 for a device map of the same PC).



Figure 3.23

### 3.4 SOFTWARE INSTALLATION

This paragraph deals with **software installation**.

The CLIO software is provided either on its own CD-ROM or, in electronic format, as a single, self-extracting, executable file.

Figure 3.24

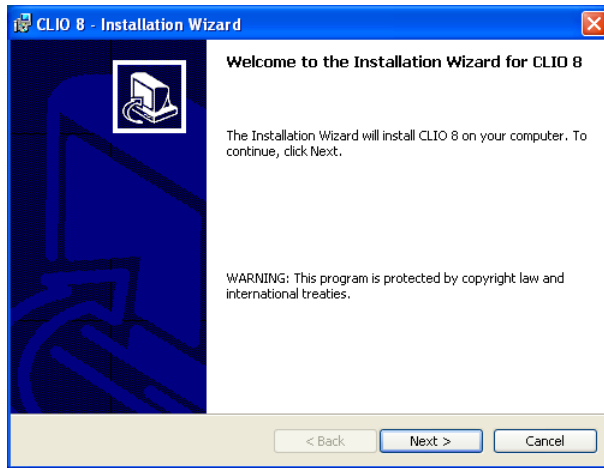


In the first case the CD-ROM root will contain a file named **setup.exe** while in the second the file will be named with your system's serial number (**win8\_1019070024.exe** as in Fig. 3.24); click on these files to start the software installation (Fig.3.25).

**While installing be sure to have administrative rights.**

The procedure is completely automatic and will only request you to accept the Software End User's License Agreement and input some information in order to correctly install CLIO; the software installer will also check your operating system version and, in certain cases, will request you to restart Windows in order to finalize the installation.

Figure 3.25



After successfully completing this procedure take note of the installation directory of CLIO (usually C:\Program Files\Audiomatica\CLIO 8).

### 3.5 THE 'CLIO BOX'

A few words about the SC-02 Signal Conditioner.



Figure 3.26

This unit is needed to correctly interface analog signals to the PB-4281 PC card; it is also important as it has an internal reference used to calibrate the system and also stores the system's serial number inside its internal EEPROM; Fig.3.27 shows how to find your CLIO system serial number and SC-02 firmware release (after you have removed the upper cover).

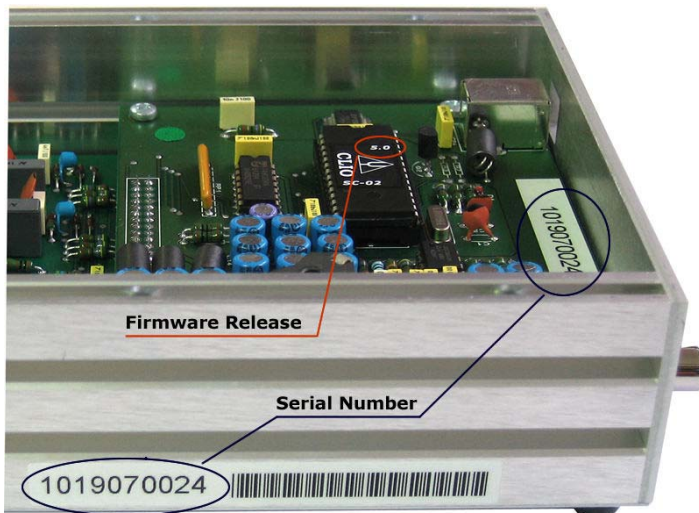


Figure 3.27

The serial number is very important and should be mentioned each time you get in contact with Audiomatica, either for technical support or for software upgrade.

When using your CLIO system you will normally use the SC-02 front connectors; the connections between the SC-02 and the PB-4281 card are normally left untouched. As you'll become extremely familiar with this hardware unit we are going to give it a nickname: from now on we will call it **'the CLIO Box'**. Also the CLIO software refers to it with this nickname.

## 3.6 RUNNING CLIO FOR THE FIRST TIME

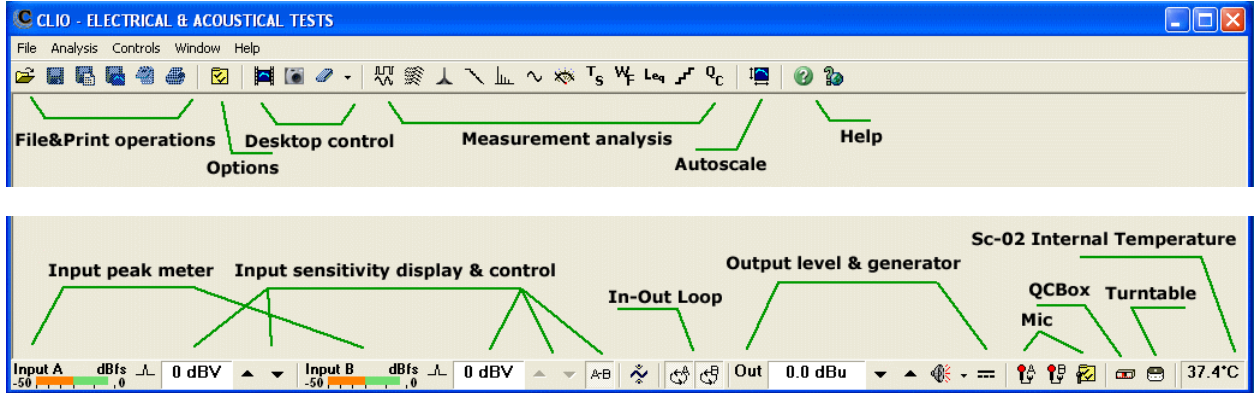
If you have completed the preceding installation procedure, you are ready to run CLIO!

The following steps will guide you through a complete verification of the system performance and operation.

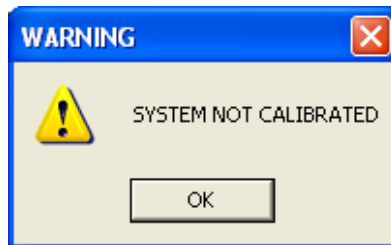
From the **Start Menu** choose **Programs**, then **CLIO 8** and click on the CLIO icon.



The program should start smoothly and present the main desktop.




If the the system is not calibrated, as the first time you run it, you will receive the following message.




Should CLIO display an error message take note of it and go to the troubleshooting section (3.9).

### 3.6.1 INITIAL TEST

Let's now execute our first test measurement - play and capture a 1kHz sinusoid.

First of all click on the In-Out Loop  button for channel A; in this way the CLIO Box connects output A with input A with an internal relay. This connection is very important as it lets you capture and analyze a signal generated by CLIO without the need for an external connecting cable.

Then click on the generator icon  to play the 1kHz sinusoid (1031.25Hz to be exact; more on this later, it's the default signal). Then press the **F4** keystroke to invoke the Multi-Meter as in Fig.3.28.

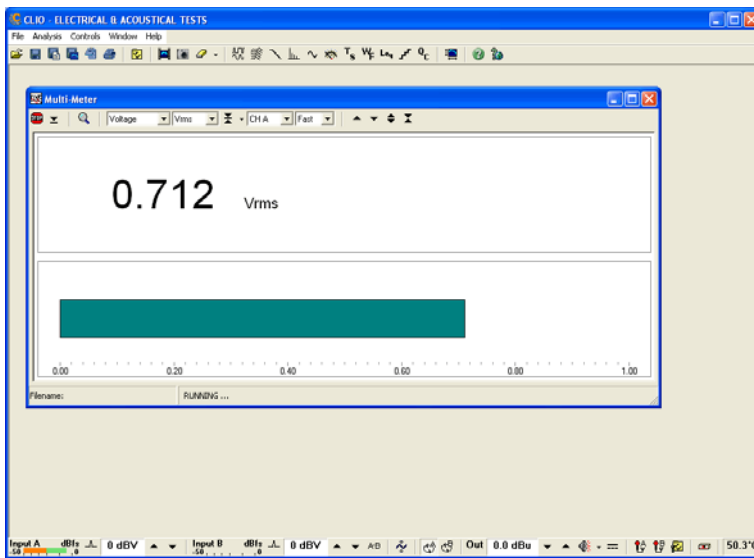


Figure 3.28

If everything is OK you should obtain a reading of circa 0.7V, variable between a minimum of 0.6V and a maximum of 0.9V, which is the mean output level of a sinusoidal signal when the system is not calibrated.

To conclude your initial test, execute the calibration procedure described in the following section.

Repeating the test described after the system has been calibrated you should get the reading of 0.77V (-2.2dBV) which is the calibrated output level of a sinusoidal signal.

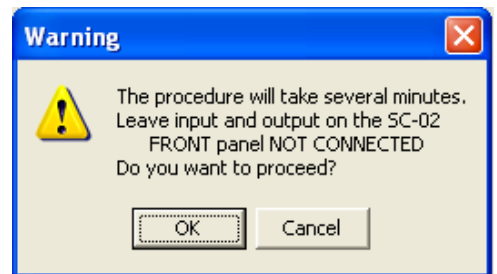
### 3.7 SYSTEM CALIBRATION

This section describes how to perform the system calibration.

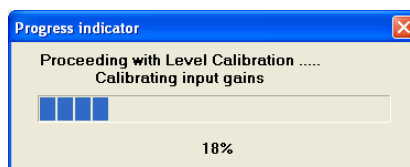
Be sure that, any time you perform a calibration, the system has warmed up for, at least 15-20 minutes.

Select **Calibration** from the **File** menu (5.6);

**Leave the CLIO Box front plugs unconnected.**



Answer **OK** to the initial prompt; this will run an automatic procedure that will last several minutes. The calibration procedure is completely automatic and several progress indicators will accompany all the executed measurements. At the end of it your CLIO system should be calibrated and ready to carry out measurements.



At the end of the calibration process it is always mandatory to verify the calibration itself; this is done by two simple measurements as described in the following section.

## 3.7.1 CALIBRATION VALIDATION

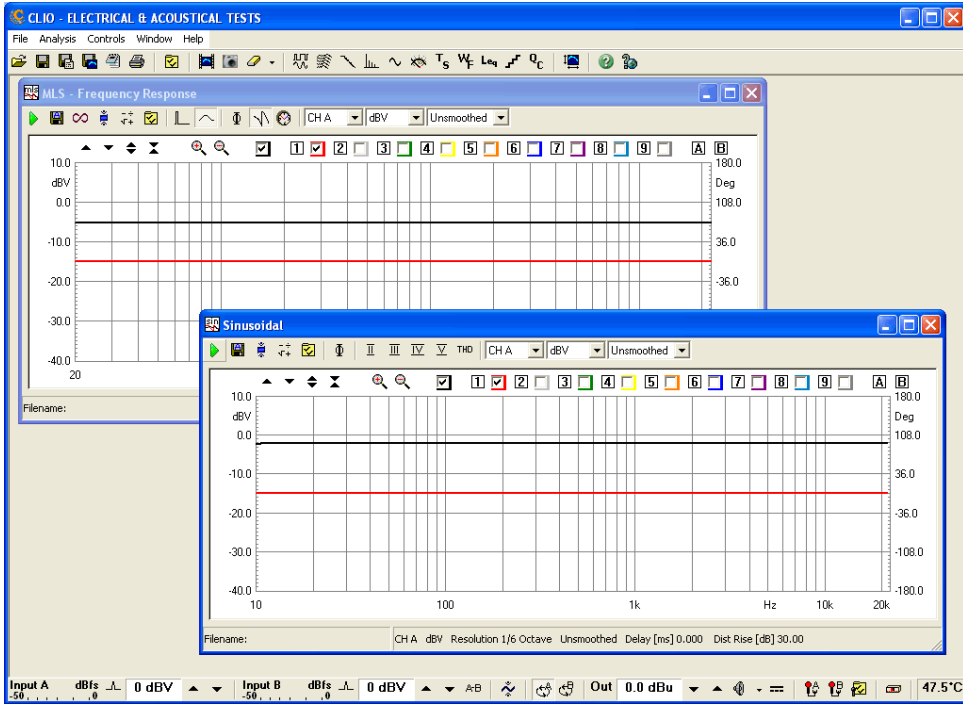








Figure 3.29

To verify the calibration first check that the generator output level is set to 0dBu (refer to 5.4.3 for details).

Press the channel A In-Out Loop button .

Then click on the MLS button  to invoke the MLS control panel. Press the Go  button to execute an MLS frequency response measurement; after about **1 second** you should obtain the desired result, a straight line (black) as in Fig.3.29. You can click on the graph and inspect the amplitude of the measured signal: you should obtain a reading around -5.2dBV, this is the correct output level of the MLS signal with the generator output set to 0dBu.

Now click on the Sinusoidal button  to invoke the Sinusoidal control panel as in Fig.3.29. Press the Go  button to execute a Sinusoidal frequency response measurement; after about **5 seconds** you should obtain the desired result, again a straight line (black) as in Fig.3.29. You can click on the graph and inspect the amplitude of the measured signal: you should obtain a reading around -2.2dBV, this is the correct output level of the sinusoidal signal with the generator output set to 0dBu.

To ensure a 100% correct calibration you also need to inspect the phase responses of both measurements. To do this press the phase button  and verify that you obtain a straight line (red curves in Fig.3.29) the readings in this case should be around zero degrees in both cases.

As a final test repeat the 1kHz tone test described in 3.5.1. The expected result is shown in Fig.3.30.

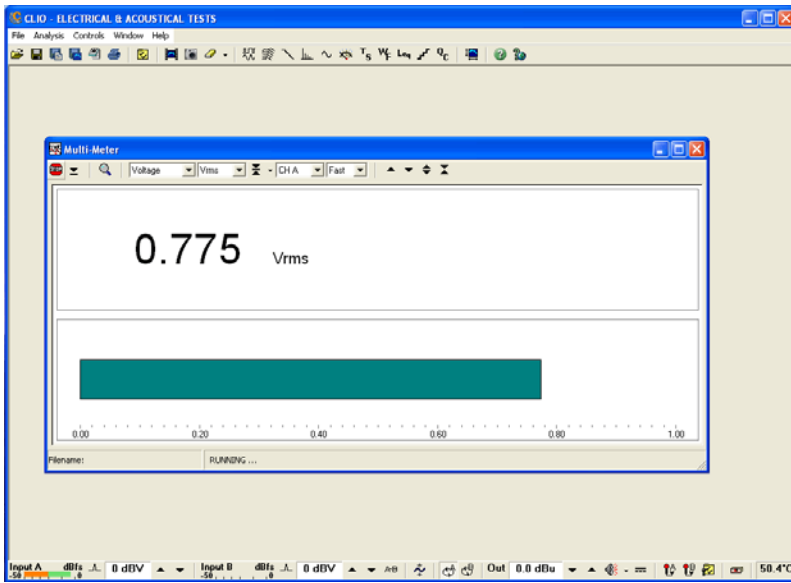


Figure 3.30

### 3.8 CLIO SERIAL NUMBER AND DEMO MODE

Each CLIO system has its own **serial number** which plays an important role since the CLIO software is hardware protected and relies on a correct serialization in order to run.

Refer to 3.5 to identify your system's serial number.

If the CLIO software doesn't find a CLIO Box with a correct serial number it gives a warning message and enters what is called **DEMO mode**; in this way it is possible to run CLIO in a PC where the CLIO hardware is not installed while still allowing you to perform post-processing and other off line jobs.

### 3.9 TROUBLESHOOTING CLIO INSTALLATION

To receive assistance please contact Audiomatica at [info@audiomatica.com](mailto:info@audiomatica.com) or connect to our website [www.audiomatica.com](http://www.audiomatica.com).