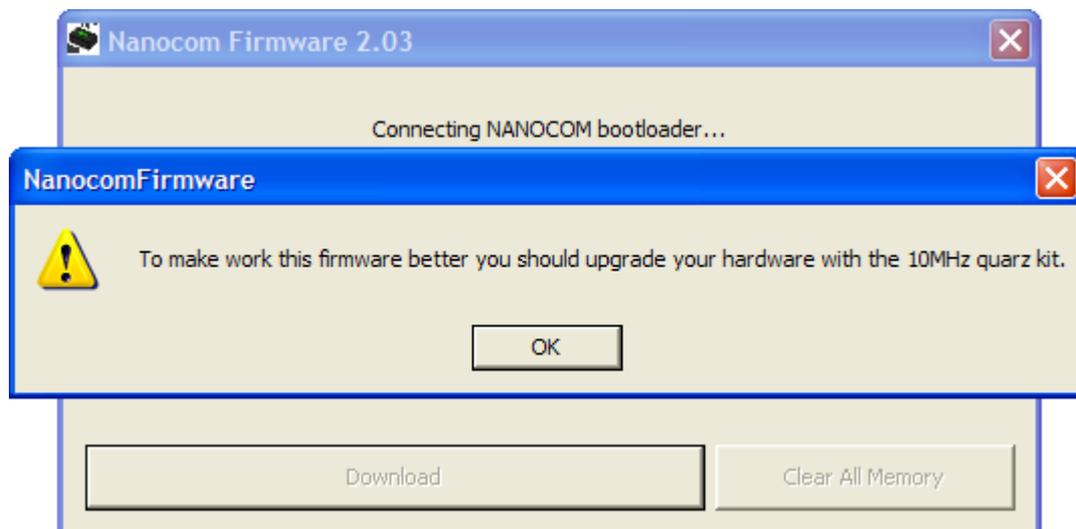


NANOCOM 10MHz QUARTZ HARDWARE UPGRADE KIT INSTALLATION MANUAL

WHICH NANOCOMS REQUIRE THE HARDWARE UPGRADE?

We suggest to install the hardware upgrade on all units of the first series with the COM port, to which the following message is shown during the installation of the firmware 2.00 or higher.



WHY UPGRADING THE NANOCOM HARDWARE?

The Hardware upgrade allows the units of the first series to work properly with all firmwares from the 2.00 up to the latest upgrades. These units can work with the those firmwares even without the hardware upgrade, because they are compatible, but in this case the units can become instable. This instability can create dangerous situations if the unit stops working during a critical diagnostic function.

Note: once you have installed the hardware upgrade, the Nanocom can work only with firmwares 2.00 or higher.

HOW TO INSTALL THE NANOCOM HARDWARE UPGRADE

BY YOURSELF:

The hardware upgrade is easy to install and it doesn't require any special tool, you only need a screw driver, pincers, a USB cable type AB (printer) and a 25W welder with a small amount of solder wire and 15 minutes of your time. The installation procedure is described in the next section. You also need a small experience with the soldering, and if you don't feel confident enough you can ask for help to any household appliances technician.

Those who want to upgrade the unit by themselves must buy the Kit that can be ordered directly on our site. The price of the Kit is 23 euro, shipment included. The kit is very small and will be sent by priority mail, so the shipment time depends on the destination.

This way you don't need to send us the Nanocom to be upgraded, thus sparing more expensive shipment costs and avoiding all risks.

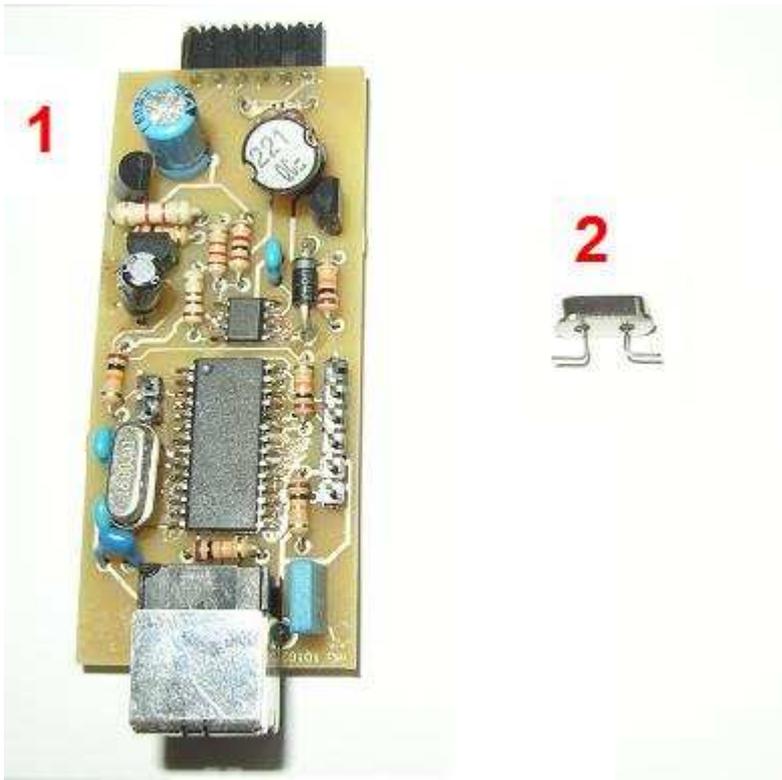
Those who buy the kit and upgrade the unit by themselves will have an extra warranty time of 6 months starting from the kit shipment date.

IN OUR WORKSHOP:

The upgrade can be installed by us in our workshop for free. The customer has to pay all shipment costs of the unit. In this case the customer will **NOT have the extra warranty time.**

COMPONENTS OF THE KIT

- 1) Boot sector programmer
- 2) Quartz 10MHz



TOOLS NOT INCLUDED IN THE KIT

- 1) Welder
- 2) Solder wire
- 3) Screw driver
- 4) Pincers
- 5) USB cable type AB (printer)



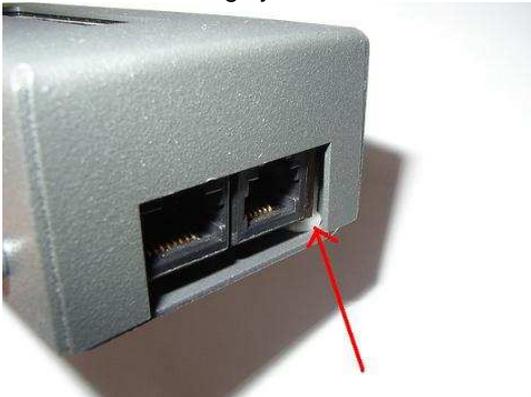
HARDWARE UPGRADE INSTALLATION PROCEDURE

The hardware upgrade is made in three steps:

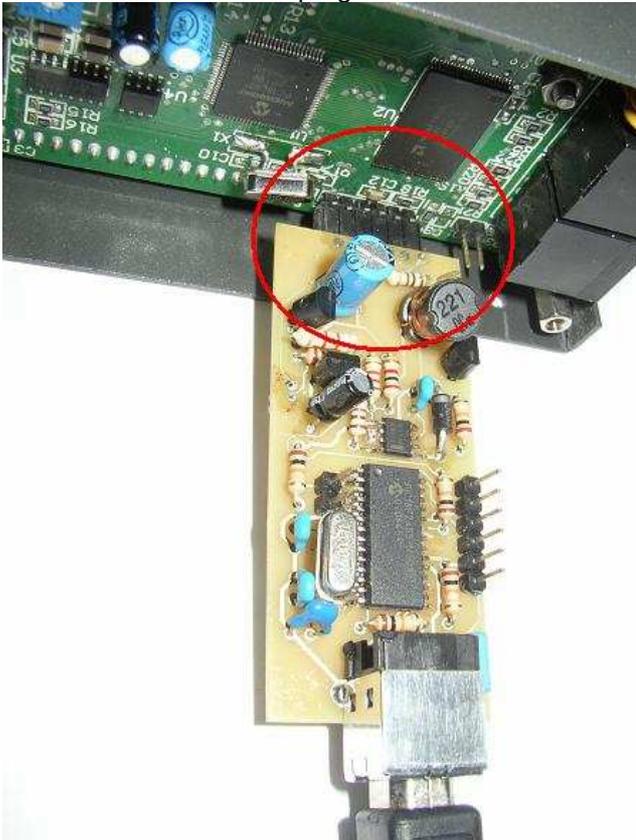
- 1) Boot sector programming
- 2) Replacement of the component X1 16MHz quartz with a 10MHz quartz
- 3) Firmware loading

BOOT SECTOR PROGRAMMING:

- 1- Download from the restricted area of the web site www.nanocom.it the software related to the kit, NANOCOM_UPGRADE_KIT_Software.zip and extract the files.
- 2- Remove the bottom cover of the Nanocom box unscrewing the 4 screws on that cover and the 4 screws on either sides. Be careful: some Nanocoms has 4 nylon washers between the bottom cover and the board fixing cylinders



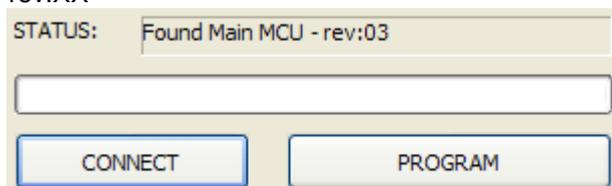
- 3- Connect the Boot sector programmer as shown in the picture



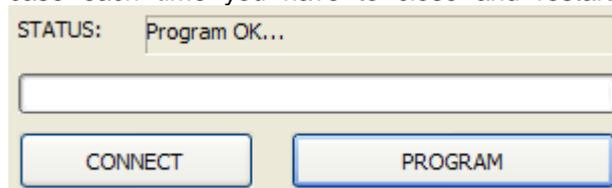
- 4- Give power to the Nanocom
- 5- Connect the Boot sector programmer to the PC with the USB cable
- 6- The computer will ask you to install the driver for the Boot sector programmer. The driver files are located in the folder NCUKDriver extracted from the NANOCOM_UPGRADE_KIT_SOFTWARE.zip file downloaded from the site.
- 7- Once the driver is installed, launch the NCUK.exe application extracted from the NANOCOM_UPGRADE_KIT_SOFTWARE.zip downloaded from the site.
- 8- The application must show the following message "Found interface on COM XX" a few seconds after the application is started



- 9- Select the button COM 10MHz
- 10- Click the CONNECT button. The application must show the following message "Found main MCU – rev:XX"



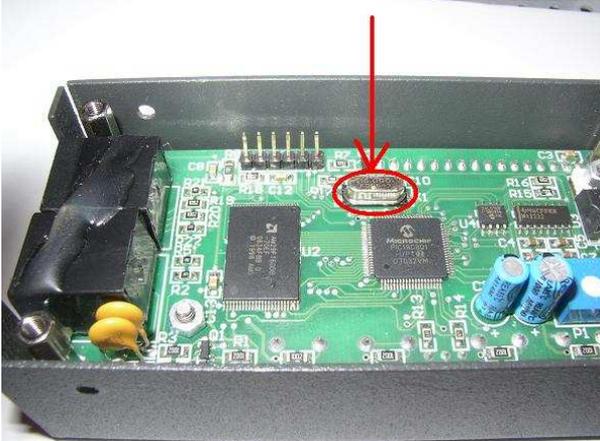
- 11- Click the PROGRAM button. About half of the area of the progress bar will get coloured during the erasing operation, and then it will get completely coloured during the programming operation. The unit is programmed when the "Program OK" message will appear. It might happen that you need try more than once before the Boot sector programmer complete the programming operation: in this case each time you have to close and restart the application without turning the power off.



- 12- Turn the Nanocom off, and disconnect the Boot sector programmer.
- 13- Turn the Nanocom on and verify if it runs.
- 14- Turn the Nanocom off

QUARTZ RESONATOR REPLACEMENT:

15- Find the component (see the picture)



16- Remove the quartz (see the picture) holding it with the pincers on its metallic cover and rotating it alternately with small movements until it is completely disconnected from the board (the big dimension of the soldering pads should prevent any board damage caused by the rotation of the component, but please be careful and apply little strength when you rotate the quartz).



17- Once the quartz is removed, clean up the pads with the welder and add a little amount of soldering.



- 18- Place the quartz on the pads keeping it with the pincers.(The quartz can be mounted in any direction because it doesn't have any polarity)



- 19- Weld one of the two pins heating together the pin and the pad with the welder, until the soldering is completely liquefied and wraps the pin as well. Put down the welder and wait until the soldering hardens. Repeat the operation for the second pin .



- 20- Turn the Nanocom on and verify if it runs.
21- Mount the bottom cover of the Nanocom box

FIRMWARE LOADING:

- 22- Download from the restricted area of the web site www.nanocom.it the latest upgrade of the firmware available NanocomFirmwareX_XX.zip and extract the files.
23- Install the latest firmware downloaded from the web site like any normal firmware upgrade (see related FAQ on the web site)