

Firmware Update Procedure for USB I/O 24

Parts required

- SX-Key
(<http://www.parallax.com/Store/Microcontrollers/SXTools/tabid/139/ProductID/494/List/1/Default.aspx?SortField=ProductName,ProductName>)
- SX-Key IDE
(<http://www.parallax.com/Portals/0/Downloads/sw/sx/Setup-SX-Key-Editor-v3.2.92h-BETA.exe.zip>)
- USB Serial Cable for connection between PC an SX-Key
- 50Mhz Resonator
(<http://www.parallax.com/Store/Components/ResonatorsCrystals/tabid/153/List/1/ProductID/360/Default.aspx?SortField=ProductName%2cProductName>)
- 0805 100k ohm resistor

Hardware Installation for USB I/O 24

Two components (50Mhz resonator and 0805 100k ohm Resistor) will need to be loaded onto the PCB in order to update the clock frequency. These are soldered onto the board in the locations shown in the diagrams below.

The 50Mhz resonator is placed in footprint X1 as circled in diagram 1 below. The orientation of the resonator is not critical and can be placed in either direction

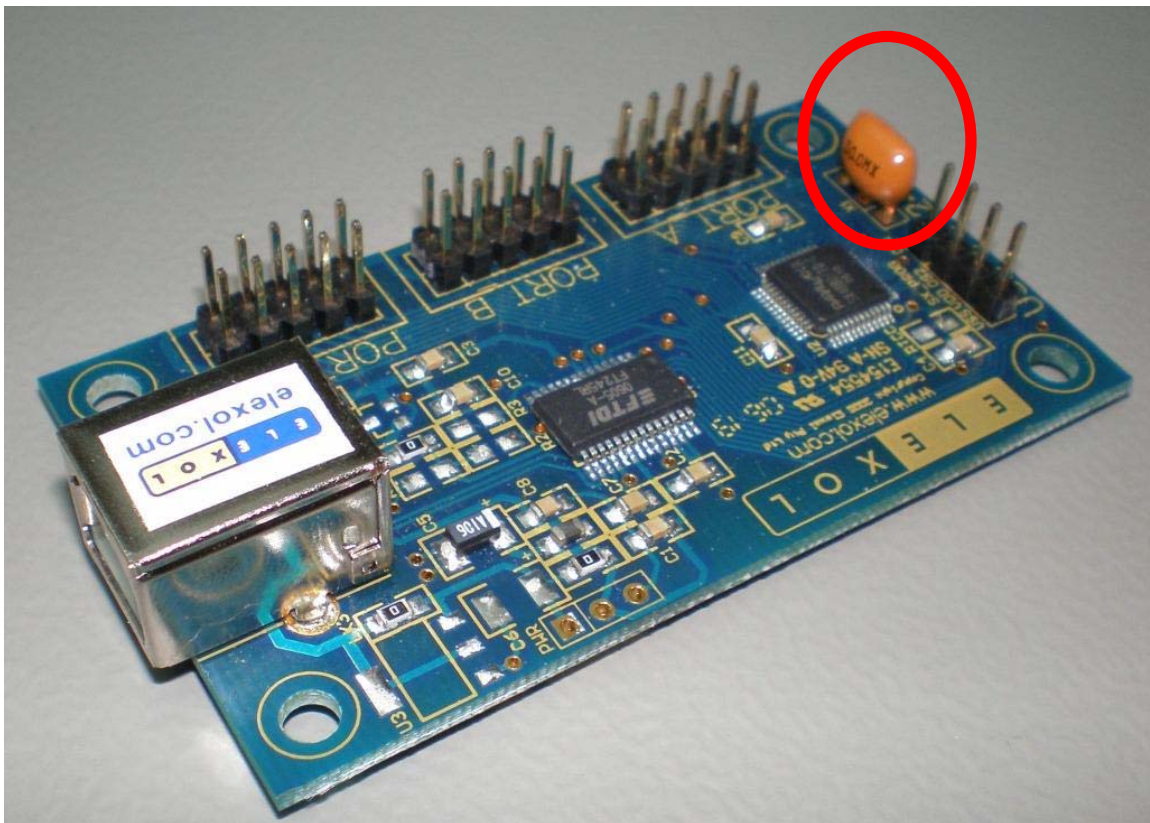


Diagram 1: Location of 50 Mhz Resonator

The 0805 100k resistor is placed on the underside of the board as circled in diagram 2. This footprint doesn't have a silk screen to identify the part.

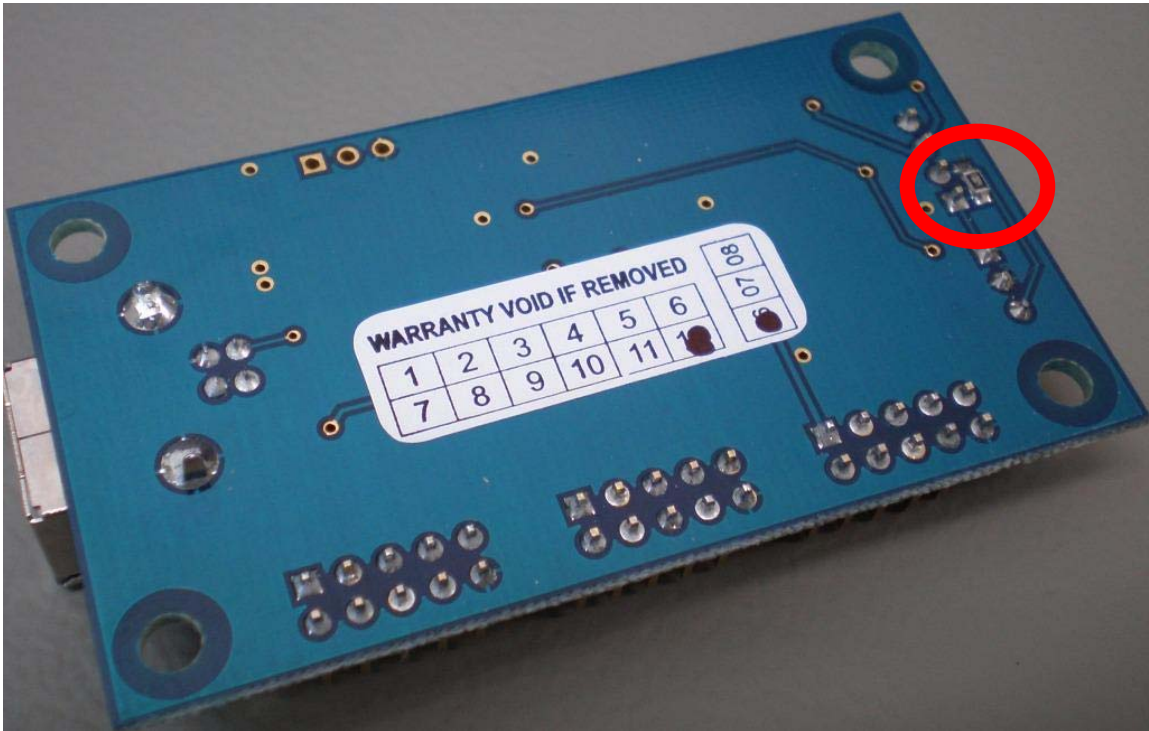


Diagram 2: Location of 0805 100k Resistor

This completes the hardware installation, now the firmware for the device needs to be updated.

Firmware Update for USB I/O 24

The SX-Key will need to be connected to the PC via a serial cable or USB to serial adapter. Pictured below in diagram 3 is the SX Key programmer. This programmer is required to program the firmware in the SX48. These can be purchased from Parallax.

(<http://www.parallax.com/Store/Microcontrollers/SXTools/tabid/139/ProductID/494/List/1/Default.aspx?SortField=ProductName,ProductName>)



Diagram 3: SX Key Programmer/Debugger

Download and install the SX-Key IDE software from the link provided on the first page. Once successfully installed, open the software.

The COM port that the SX key is connected too will have to be configured in the SX IDE software. This option is located under the RUN menu and then the CONFIGURE option as shown in diagram 4; the assembler may also have to be configured so that the IRC is set to slowest.

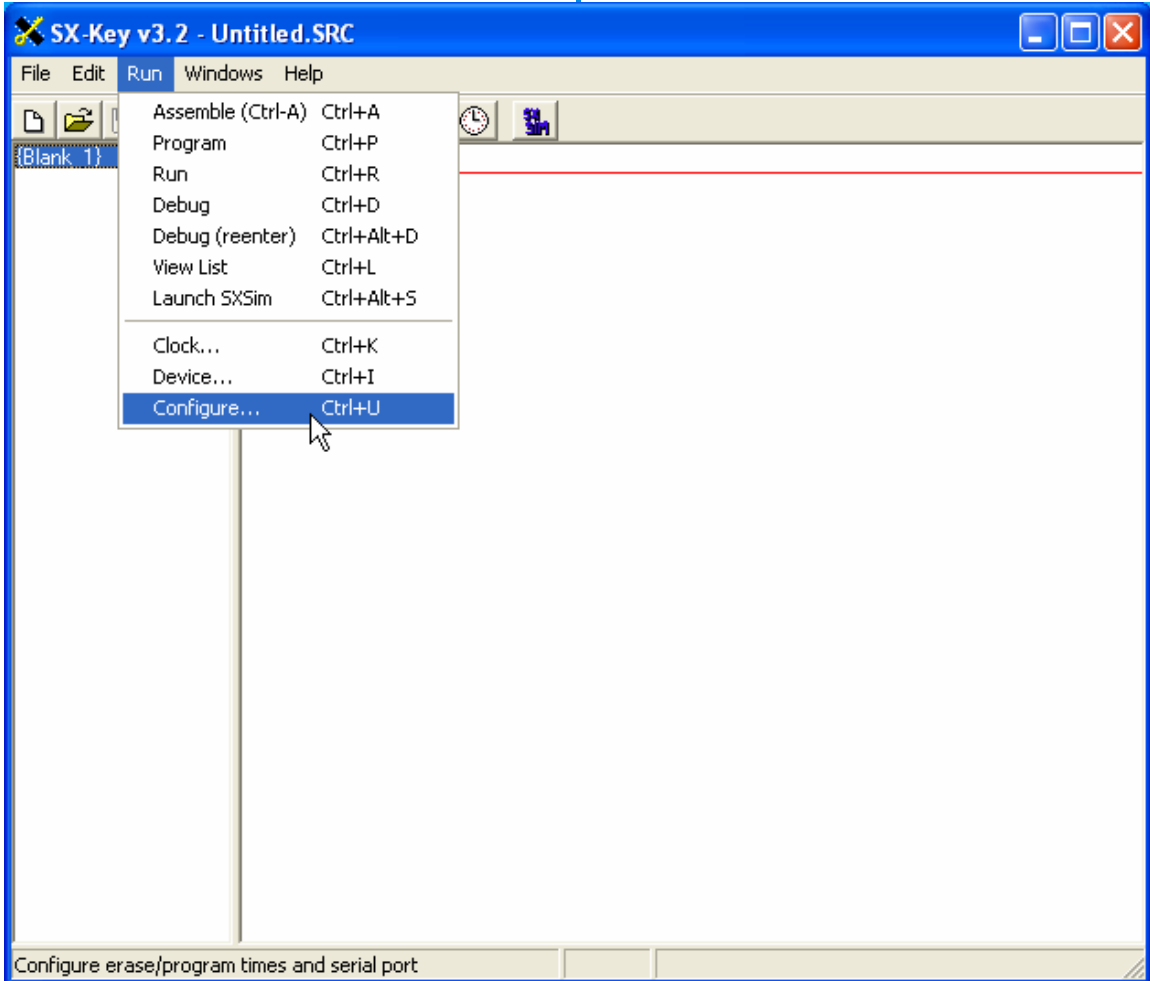


Diagram 4: Configuration option drop down menu

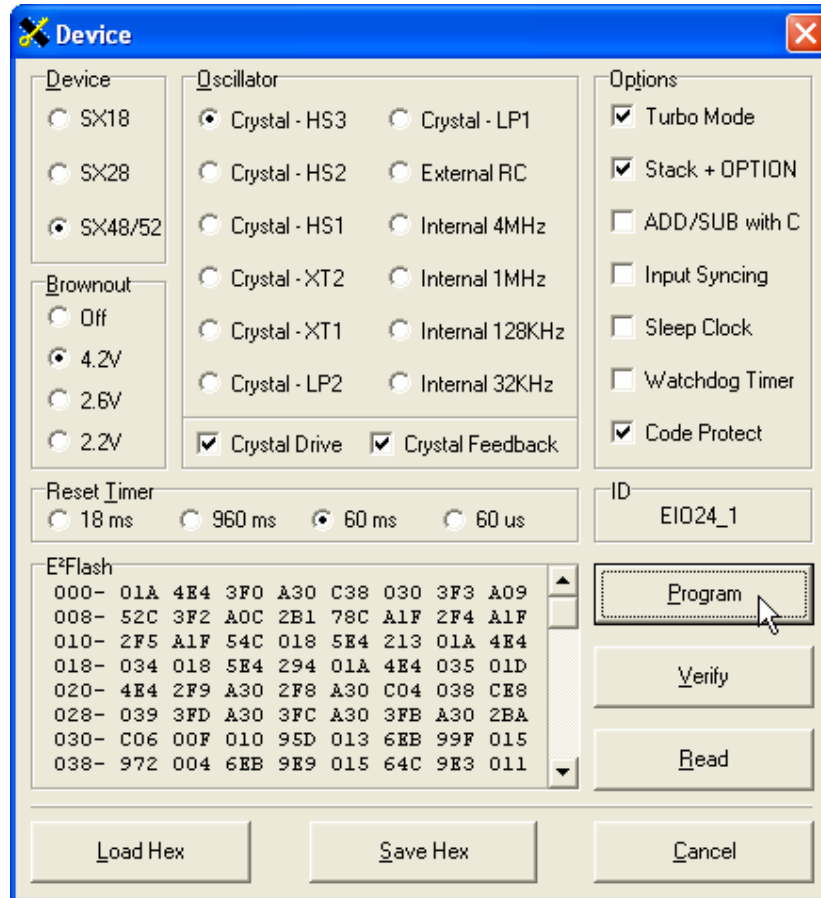
Once the configuration is completed, the source code for the device can be loaded and assembled.

The SX-Key can be connected to the programming header on the USB I/O board as shown in Diagram 5 below.

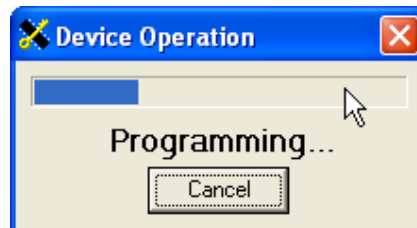


Diagram 5: Orientation of SX Key to program the USB I/O 24.

Once successfully assembled the device can be programmed via the RUN>PROGRAM option or RUN>DEVICE can be opened and the program button can be pushed.



A Device operation window will appear to say that the device is currently programming. Do NOT remove the SX-Key from the programming header until this window disappears.



When this window disappears and the SX-Key has been removed, the new firmware will run.