

QiQuac Update Firmware Procedure

There are two different procedures for updating the firmware depending on the version of QiQuac. Part 1) is common to both procedures:

1. Setup of Flashing Software and Hardware
 - 1.1. Download Flash Magic (<http://www.flashmagictool.com/download.html>)
 - 1.2. A special USB to Female RS232 cable is required. Pins 4 and 9 must not be connected. Fathom Scientific will provide the cable. Plug the cable into your computer and wait for it to install the drivers. To ensure the drivers were correctly installed, go to Device Manager in Windows and look for Ports. Find the port number associated with the USB-cable.
 - 1.3. Ensure your QiQuac battery is fully charged.
2. Flash Magic Setup

Options>Advanced Options>Hardware Config

- 2.1. Check "Use DTR and RTS to control RST and SIP pin and "Keep RTS asserted while COM Port open. Leave default values of T1: 50 ms and T2 100 ms.

Step 1 – Communications

- 2.2. Select ARM 7>LPC2148
- 2.3. Select your COM port
- 2.4. Use a Baud Rate of 38400
- 2.5. Interface None (ISP)
- 2.6. Oscillator (MHz) 12

Step 2 - Erase

- 2.7. Check "Erase all Flash+Code Rd Prot

Step 3 – Firmware

- 2.8. Select the *.hex file downloaded from Fathom Scientific. There are two versions of the *.hex file: the *_PWR_MNG.hex and *Button.hex.
 - 2.8.1.*PWR_MNG.hex files are for newer QiQuacs that DO NOT have the big power button below the dial.
 - 2.8.2.*Button.hex files are for the Older QiQuacs that DO have the big power button.

Step 4 -Options

- 2.9. Check "Verify after programming"

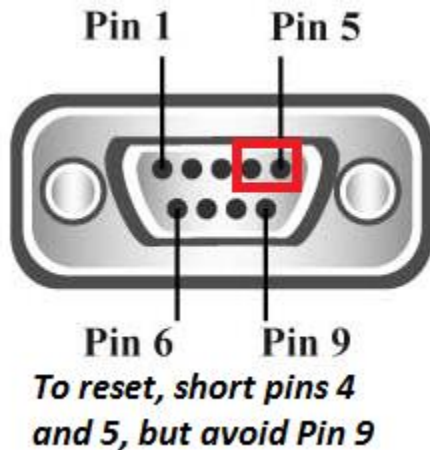
Step 5 -Start!

- 2.10. Before continuing, ensure you know what kind of QiQuac you have, as described in step 2.8. The method to program will depend on the type of QiQuac. In both cases, plug in the RS232 cable and ensure the unit is powered down.
 - 2.10.1. For a newer QiQuacs (*PWR_MNG.hex files) select "Start" and then push the dial button. The programming should begin.

2.10.2. For an older QiQuac (*Button.hex files) push and hold down the dial while pushing the power button to power on the QQ. Nothing should show up on the screen, but the blue power button should be lit. Now push the “Start” button. The programming should begin.

3. Verification

3.1. For a newer QiQuac, push and release the button and turn the dial either direction to wake. If it does not wake after multiple attempts, it may need to be reset. To reset, use a flathead screwdriver and short Pins 4 and 5 being careful not to touch Pin 9. Attempt to wake the QiQuac again.



3.2. For an older QiQuac, simply turn off and on the unit.

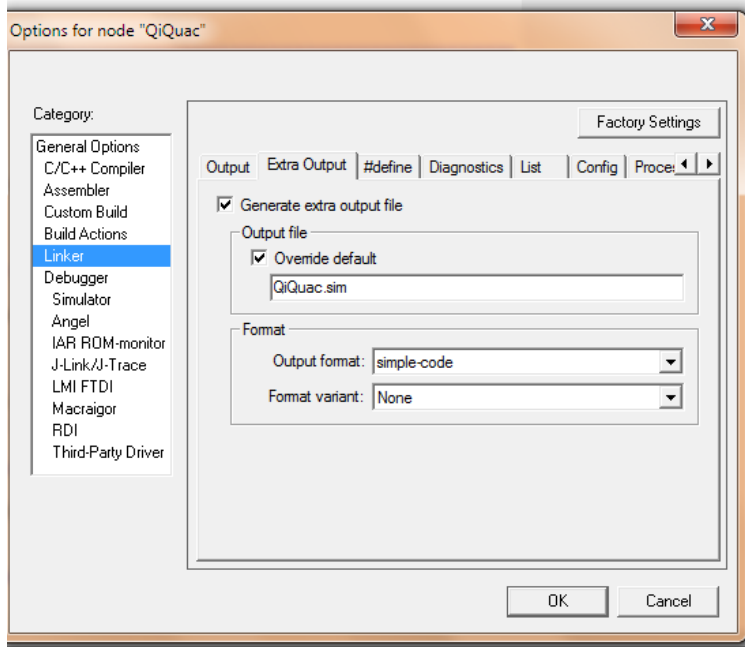
3.3. The settings will have been erased if programming was successful. The screen backlight will be off and a message stating “NVRAM Corrupt. Restoring Defaults.” Turning the dial in the menu should reignite the backlight and the unit should be ready for use. User Settings will need to be restored if they are different than the default.

3.4. Restarting the QQ should show the splash screen quickly with the unit S/N and the Firmware number. Use a phone video to record to look at all values.

IAR Setup (For Fathom Use Only)

Set the Serial Number and PWR_MNG in QCalculator.h

For IAR J-Link programming



For Flash Magic- ISP programming

