

# Enhanced MS2 Firmware Reflash Instructions

## \*\*\* Only for firmware 3.3.2 beta 5 \*\*\*

1. Download the latest firmware package from <http://www.mslabs.gr/332b5.zip> (or open the attachment if emailed).
2. Unzip to your Desktop. You should now have a folder on your desktop named "332b5".
3. Disconnect your coils. Leaving them connected while performing the upgrade may cause permanent damage to them.
4. Switch the ignition to ON.
5. Connect your laptop to the ECU, and open TunerStudio.
6. Go to Communications → Settings. Notice which COM port is used to communicate with the ECU (in this example, lets assume COM4). This will be needed in a few minutes.
7. Close TunerStudio.
8. Open the "332b5" folder on your desktop
9. Double click on the file "ms2loader\_win32".
10. A new window will appear.
11. Press the enter key 3 times
12. Answer the following questions as follows:
  - Debug options: Press **1**.
  - Do you want to scan your serial ports automatically? Press **y**
  - Do you want to use COM4? Press **y**
  - Auto-selected firmware file: microsquirt-module.s19 – ok? Press **y**
  - Preserve sensor calibrations (only for MS2/Extra)? Press **n**
13. Press Enter
14. The firmware upgrade will begin. It will take a couple of minutes, it should take no more than 5 minutes. Once it finishes, you will hear the fuel pump priming for 2 seconds.
15. Close the black window.
16. Switch the ignition off
17. Open TunerStudio and your project
18. Switch the ignition on.
19. Once connected, you will get a massive Difference Report. Choose "Send current TunerStudio settings".
20. Once all the data has been uploaded to the ECU, perform the following Calibrations:
  - Tools → Calibrated thermistor tables:
    1. Select Coolant temperature sensor
    2. Enter 2490 in the bias resistor value
    3. Select Celsius
    4. If your car is a 90-97, enter the following values:
      - -20    16150
      - 40     1150
      - 80     330
    5. If your car is a 99-05, enter the following values:

- 1 5900
  - 29 1700
  - 82 310
6. Click Write to controller
  7. Select Air temperature sensor
  8. If you have the GM air temperature sensor, select “GM” from the “Common sensor values” menu, otherwise, enter 2490 in the Bias resistor value, select Celsius and enter the following values:
    - -20 16150
    - 40 1150
    - 80 330
  9. If you have the smaller, Bosch-type sensor, then enter the following values:
    - 20 2350
    - 50 800
    - 80 340
  10. Click Write to controller
  11. Close this window
- Tools → Calibrate AFR table:
    - Select your wideband and click Write to controller. If you have an Innovate LC-1 or MTX-L and you haven't changed any of its settings, select “Innovate LC-1 default”.
21. Switch the ignition off.
  22. Connect the coils again.
  23. Switch the ignition on and wait 5 seconds.
  24. Verify TunerStudio goes online, and start the car.

This concludes the firmware reflash procedure. Please contact me should you have any questions or problems.