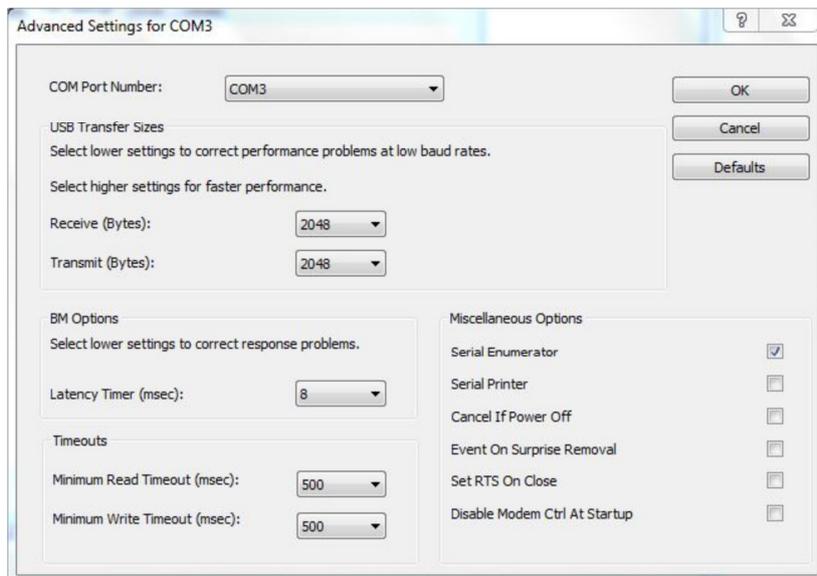# Geartronics GCU-3 firmware update instructions

IMPORTANT: When updating firmware, you must ensure that your laptop battery is fully charged or plugged into the AC adapter. Temporarily disable standby or hibernation modes until the update is complete. Updating firmware should never be performed immediately before an event. If the update fails, the GCU may be rendered inoperable, commonly referred to as 'bricked'. If this happens, the unit must be returned to Geartronics for re-programming.

From time to time, we will release software updates for our GCU-3 gearbox control unit. Updates will be issued for bug-fixes or to add additional features. As with most things, a good premise to work from is "if it isn't broken, don't fix it". Therefore, you should only update the firmware if you are either experiencing problems or we recommend you to do so. If you do need to upgrade then please follow these step-by-step instructions:

1. All firmware updates should be performed using serial (RS232) communication where possible. If you intend to use the on-board USB port or a USB to serial converter then we recommend that you edit the advanced port settings as below:

These settings relate to the on-board FTDI driver chip in the GCU, but external Prolific chips have similar properties. The latest Geartronics driver already has the above properties configured by default.

2. <u>Before</u> installing the latest PC software please open your existing software and save a copy of the current configuration. Before saving, ensure that the word "Modified" is not flashing on the status bar at the bottom of the software screen, if it is then press F5 to re-read the GCU configuration.

3. When upgrading the firmware to version 37 or later it's VERY IMPORTANT that you also save the CAN transmit and receive configurations separately to the main configuration file. The format of version 36 (and earlier) configuration files in respect to the CAN settings is NOT compatible with version 37 firmware and above.

4. Only after you have a saved copy of the configuration you can install the latest software which can be downloaded here: www.geartronics.co.uk/files/gcu3-setup.zip There are 2 files in a ZIP archive which should be extracted to a folder before running the 'setup.exe' file.

5. After installation, a new "Geartronics Paddleshift3" (silver gear) icon will be placed on your desktop, replacing the existing icon, along with an icon for the "Shiftview" data logging software.

6. Open the paddleshift program and verify that the correct version has installed correctly by clicking "Help" then "About". The latest version number is detailed at the bottom of our website support page, currently 3.38.2 as of June 2024.

7. When opening the new software for the first time, you may see a dialogue box informing you that the GCU firmware is out of date. If you receive this message, answer "Yes" to continue. If not then click "Settings" at the top of the page and then select "Update GCU Firmware". Only if you have saved the existing configuration as instructed in points 2 & 3 above, and you are sure you want to proceed then answer "Yes" to the subsequent questions.

8. The update will now start, and a progress bar will be displayed on-screen. The update usually takes about a minute. <u>Do not unplug your laptop from the GCU during the update process otherwise the GCU may be rendered inoperative!</u>

9. After the update is complete you may receive a message stating that the GCU is connected and do you wish to load all settings from the GCU. At this point answer "No", as answering yes will probably result in a firmware miss-match warning.

10. Press F12 on your keyboard, or click "Settings" and "Reset GCU". You can now read the GCU settings by pressing F5 or clicking the green box at the top of the screen "Load All Settings From GCU to PC".

11. If the update is minor, for example from 3.29.4 to 3.29.5, then the configuration should load OK. For more major changes, for example from 3.27 to 3.36 you will probably receive the error "Verification of sent data failed" or similar.

12. If you receive the above error you will need to load the configuration file that you saved before the update and then send to the GCU by pressing F8 or clicking the red box at the top of the screen "Save All Settings From PC To GCU". If you have upgraded to V3.37 or later then you will also need to separately re-load the CAN receive and transmit configurations as saved in point 3 above.

13. After sending the configuration to the GCU, check that the word "Modified" is not flashing in the status bar at the bottom of the page. If it is then try sending to the GCU again.

14. Finally, after the update has been completed, save a new version of the configuration file. It's also recommended that you add the appropriate comments on the "Vehicle Profile" page before saving.