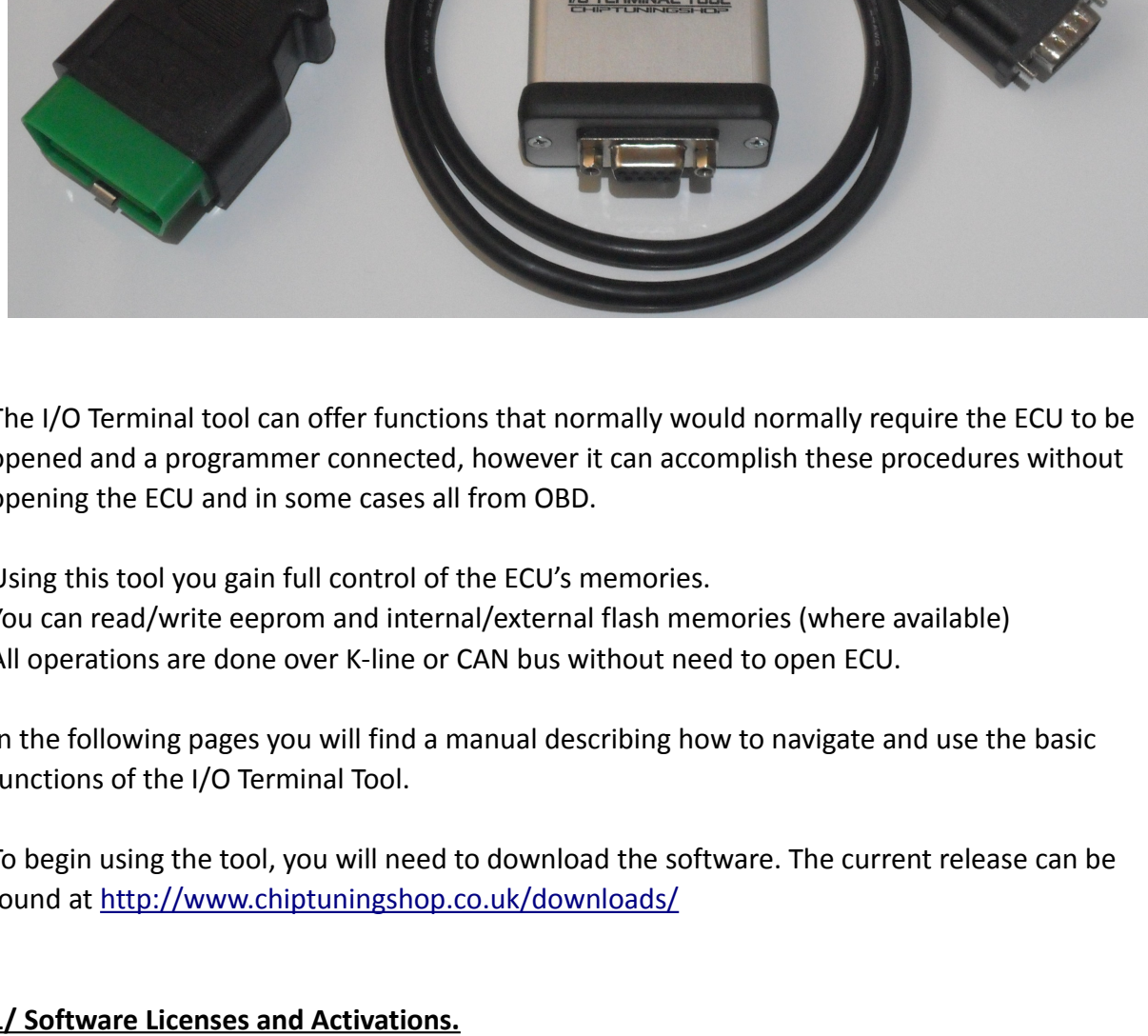


I/O Terminal Tool - Function Manual.



The I/O Terminal tool can offer functions that normally would normally require the ECU to be opened and a programmer connected, however it can accomplish these procedures without opening the ECU and in some cases all from OBD.

Using this tool you gain full control of the ECU's memories.
You can read/write eeprom and internal/external flash memories (where available)
All operations are done over K-line or CAN bus without need to open ECU.

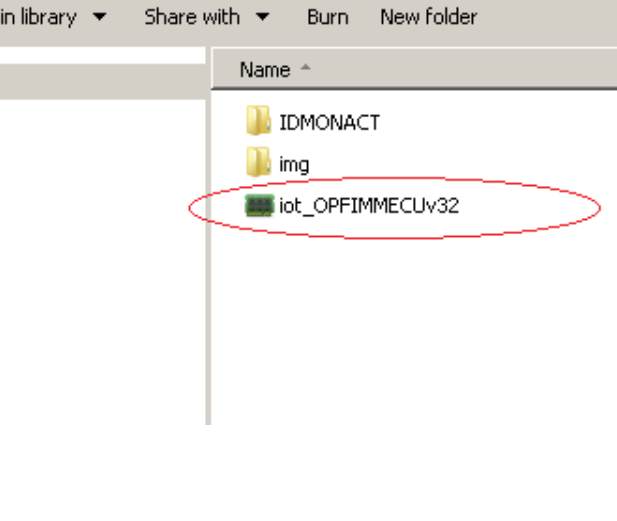
In the following pages you will find a manual describing how to navigate and use the basic functions of the I/O Terminal Tool.

To begin using the tool, you will need to download the software. The current release can be found at <http://www.chiptuningshop.co.uk/downloads/>

1/ Software Licenses and Activations.

Software licenses are held on security SIM cards.

You can access the SIM card by pressing the yellow button on the side of your device, which will release the SIM card tray as shown below:



Bosch, Siemens and Denso licenses must be held on their own individual SIM cards.

Marelli and Easytronic can be either added to a Siemens SIM card in the form of an activation file, or can be supplied on a separate card.

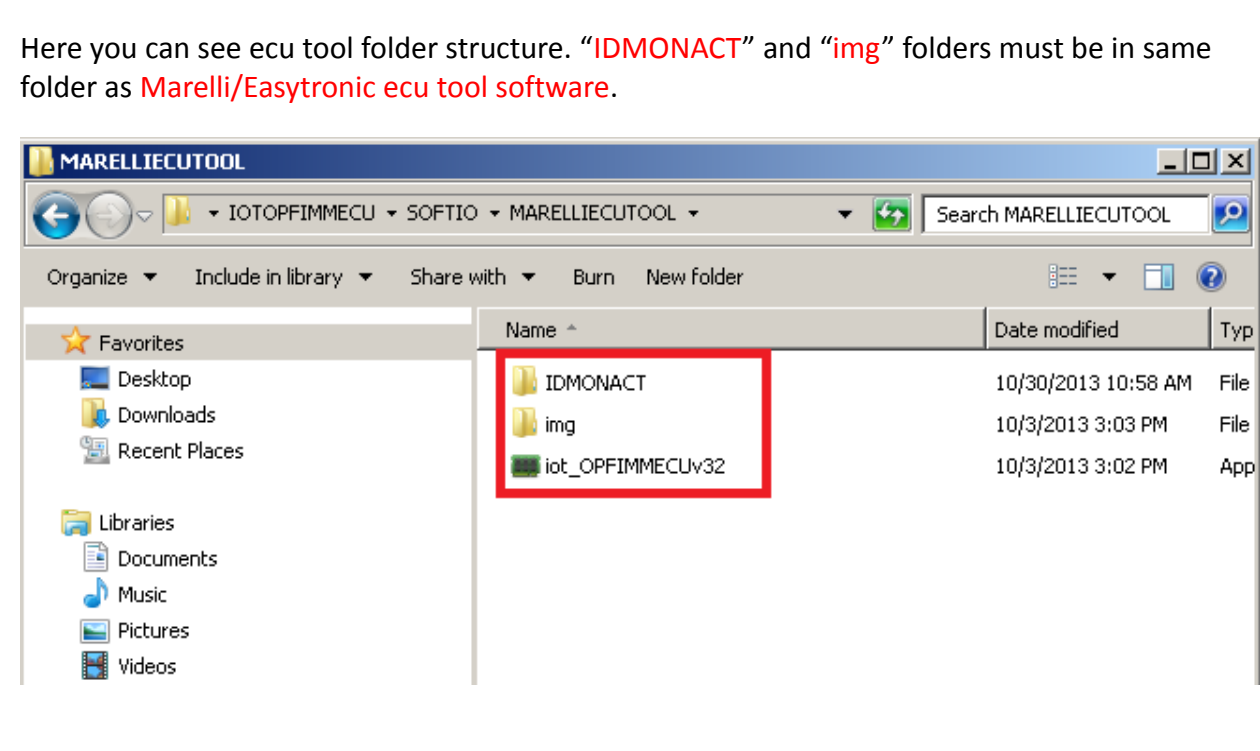
You must insert the corresponding SIM card when opening one of the I/O Terminal Tool software programs.

Adding new licenses via activation file.

Here is a short description of how to add extra activations to an existing SIM card.

First you must read your unit ID:

1. Launch Marelli/Easytronic ECU tool software.

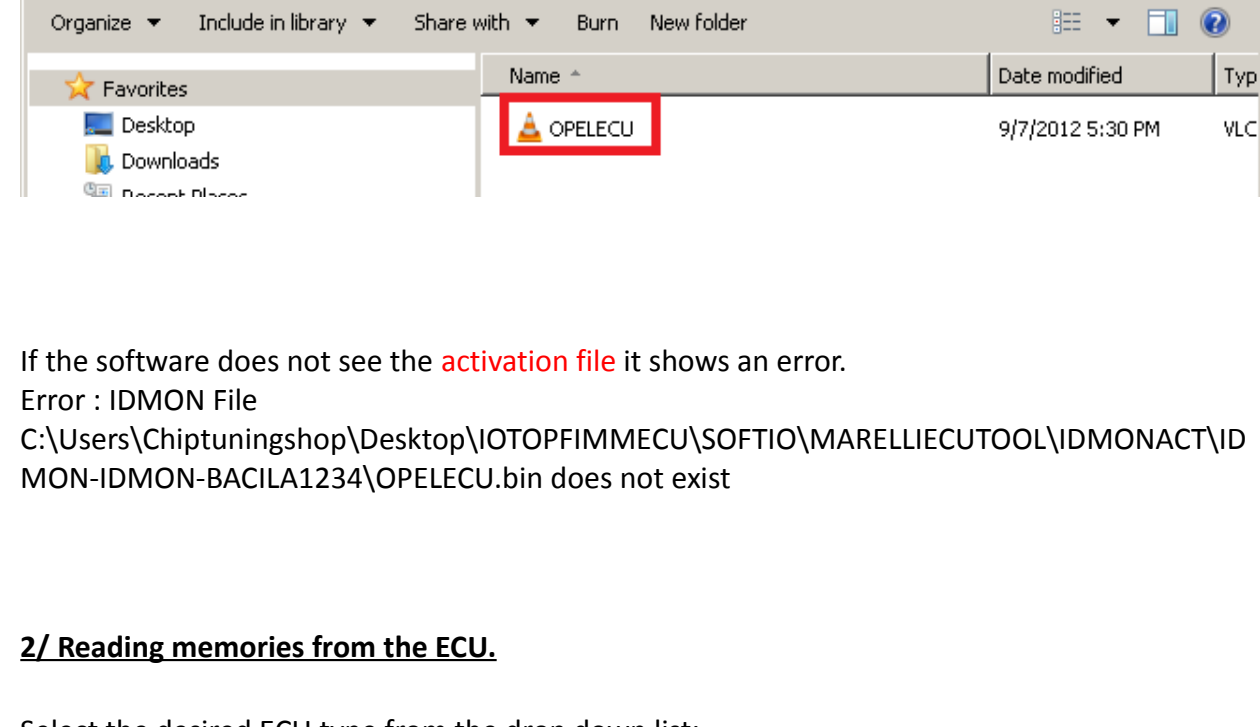


2. Select "Update" and then push "Get Device Info" button. In log window you will see your unit ID.

Send the ID to info@chiptuningshop.co.uk and request your desired activation. We will return you a file. Follow the instructions below to activate your new software licenses.

Marelli/Easytronic ECU TOOL folder structure overview.

Here you can see ECU tool folder structure. "IDMONACT" and "img" folders must be in same folder as **Marelli/Easytronic** ecu folder structure.

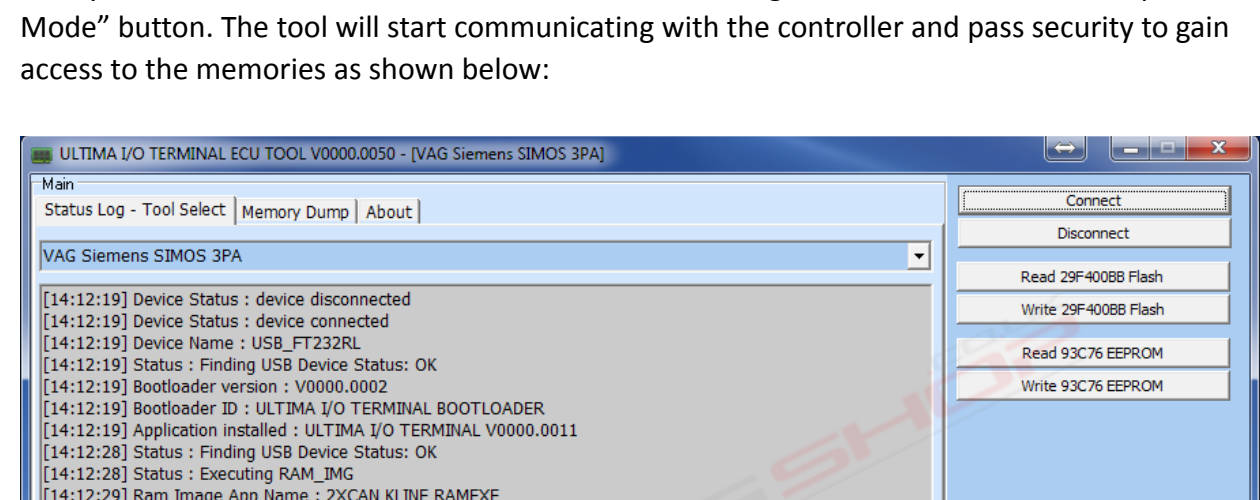


In "IDMONACT" folder you must have folder with your current **I/O TERMINAL** unit ID. In this folder all your activations are placed.



Here you can see in your **I/O TERMINAL** unit ID folder activation files.

OPELECU.bin is marelli ecu tool activation file.



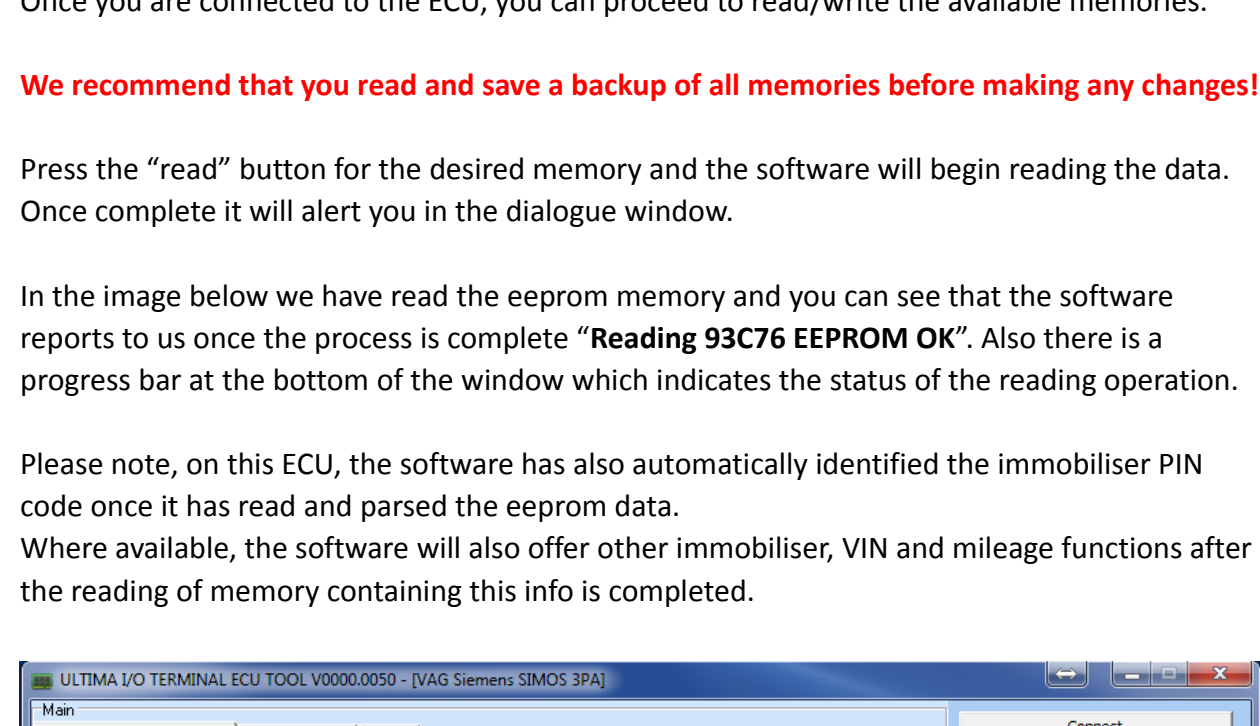
If the software does not see the activation file it shows an error.

Error: IDMON File

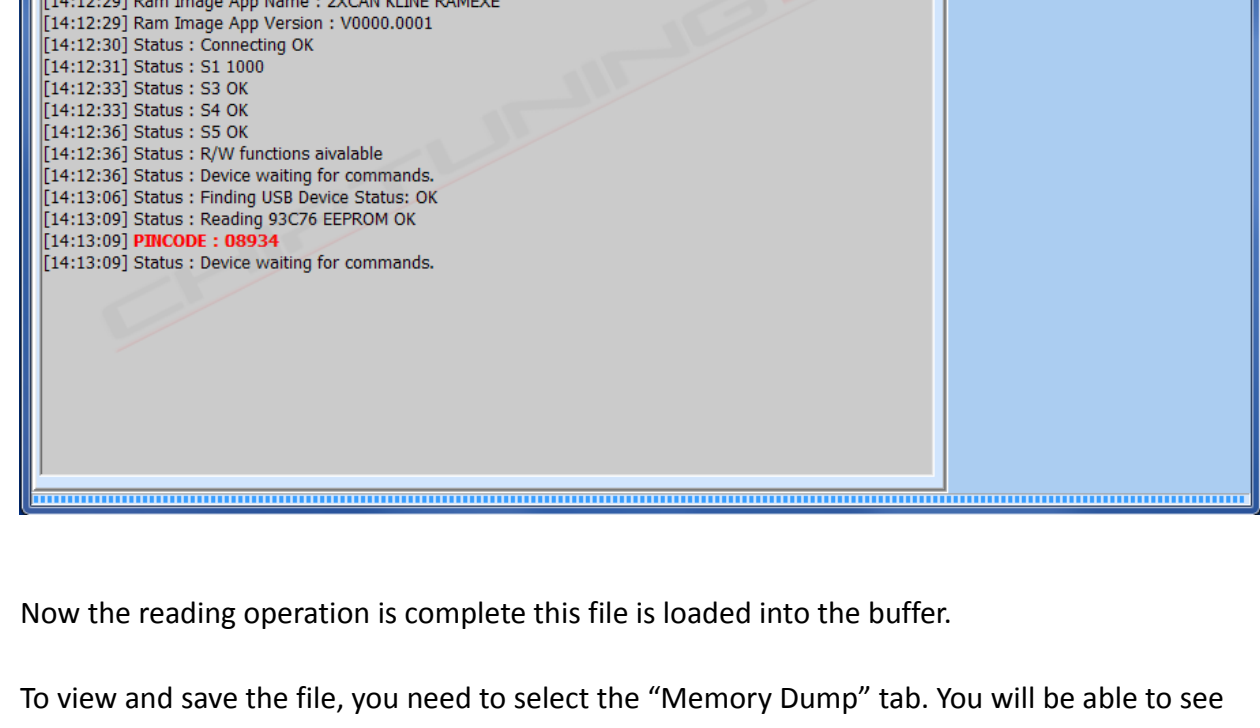
C:\Users\Chiptuningshop\Desktop\IOTOPFIMMECU\SOFTIO\MARELLIECUTOOL\IDMONACT\IDMON-IDMON-BAC1A1234\OPELECU.bin does not exist

2/ Reading memories from the ECU.

Select the desired ECU type from the drop down list:



Now you can establish communications with the ECU using the "Connect" or "Enter Superv. Mode" button. The tool will start communicating with the controller and pass security to gain access to the memories as shown below:



Once you are connected to the ECU, you can proceed to read/write the available memories.

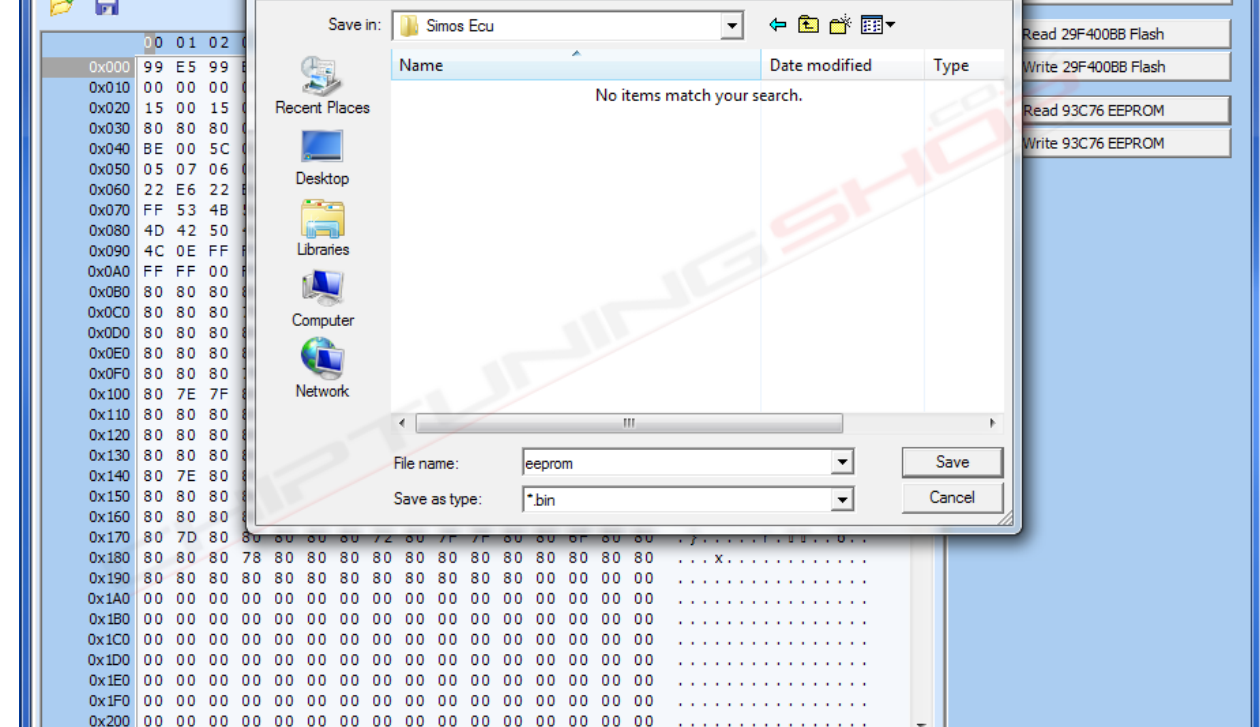
We recommend that you read and save a backup of all memories before making any changes!

Press the "read" button for the desired memory and the software will begin reading the data. Once complete it will alert you in the dialogue window.

In the image below we have read the eeprom memory and you can see that the software reports to us once the process is complete "Reading 93C76 EEPROM OK". Also there is a progress bar at the bottom of the window which indicates the status of the reading operation.

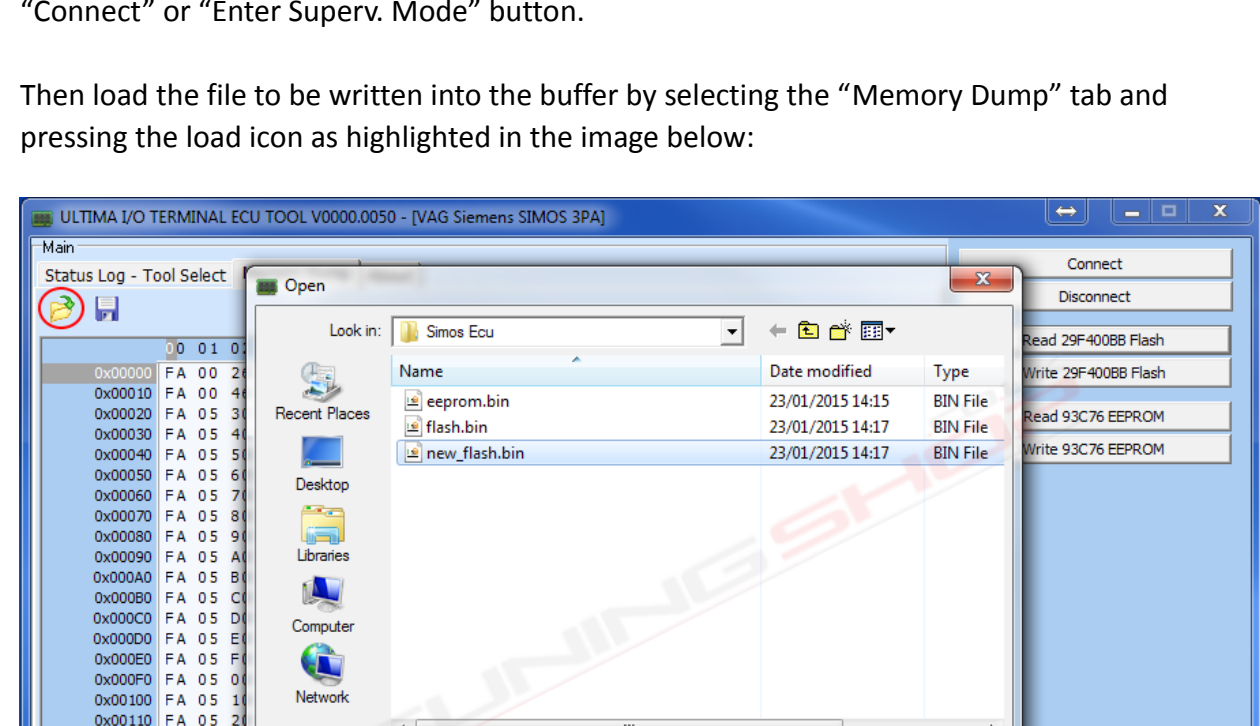
Please note, on this ECU, the software has also automatically identified the immobiliser PIN code once it has read and parsed the eeprom data.

Where available, the software will also offer other immobiliser, VIN and mileage functions after the reading of memory containing this info is completed.



Now the reading operation is complete this file is loaded into the buffer.

To view and save the file, you need to select the "Memory Dump" tab. You will be able to see the read file in this window. To save the file, click the save icon as highlighted in the image below and save a copy of the data.

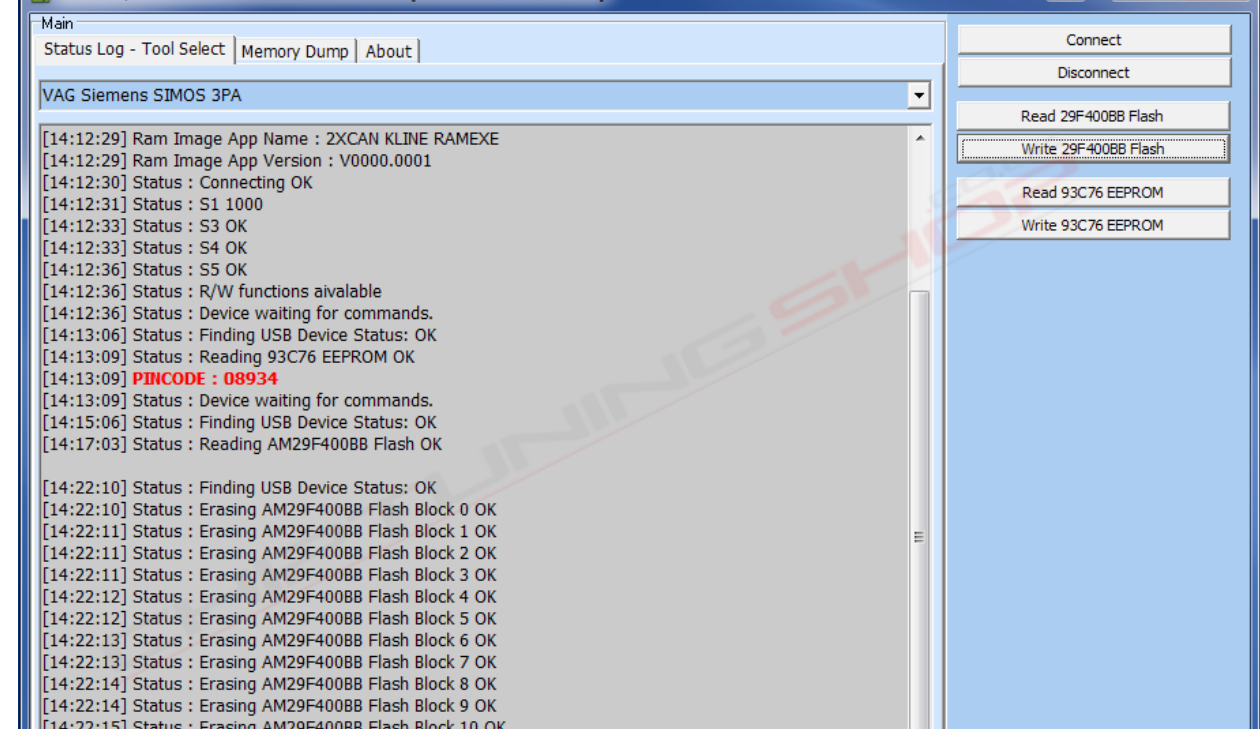


Once you have finished reading all desired memories press the "Disconnect" or "Exit Superv. Mode" button.

3/ Writing memories to the ECU.

Similar to the reading operation you will need to select the ECU and connect to it using the "Connect" or "Enter Superv. Mode" button.

Then load the file to be written into the buffer by selecting the "Memory Dump" tab and pressing the load icon as highlighted in the image below:

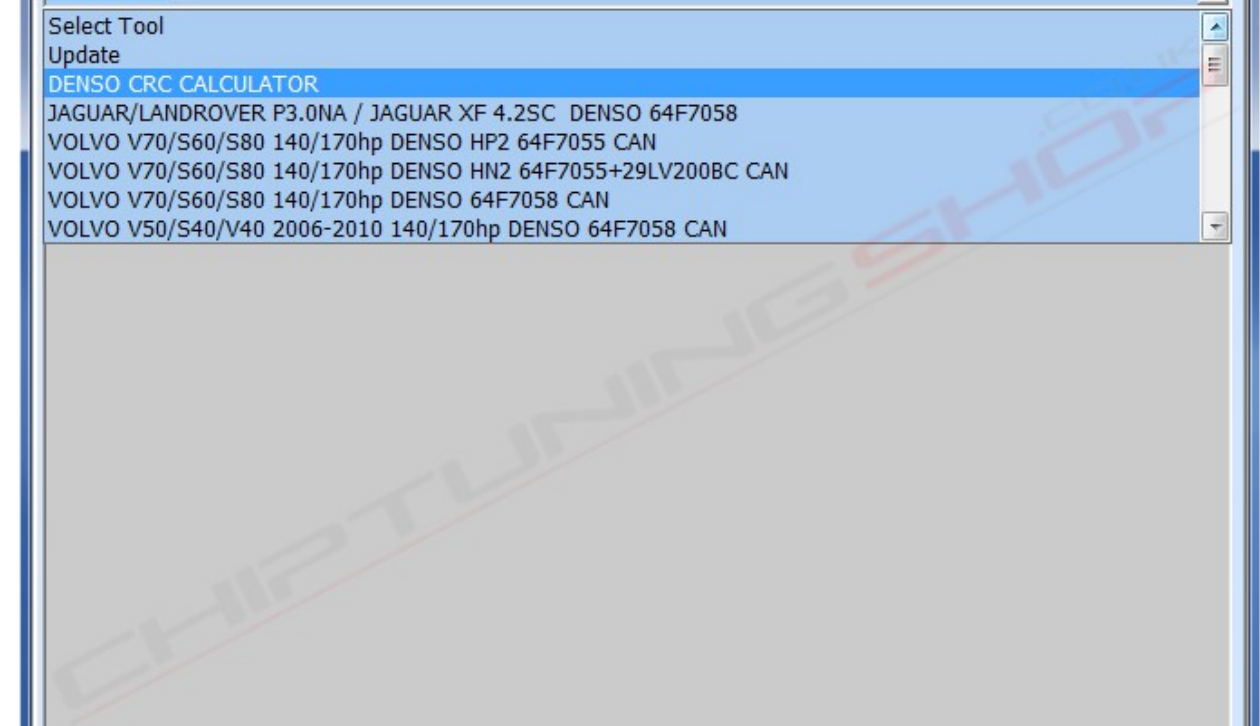


Select the desired file and switch to the main "Status Log - Tool Select" tab.

Press the "write" button for the desired memory and the software will begin writing the data into the ECU.

DO NOT INTERRUPT THE WRITING PROCESS!

The dialogue window will alert you of the status of the operation and the progress bar at the bottom of the window is also functional during the write period, as shown in the image below.



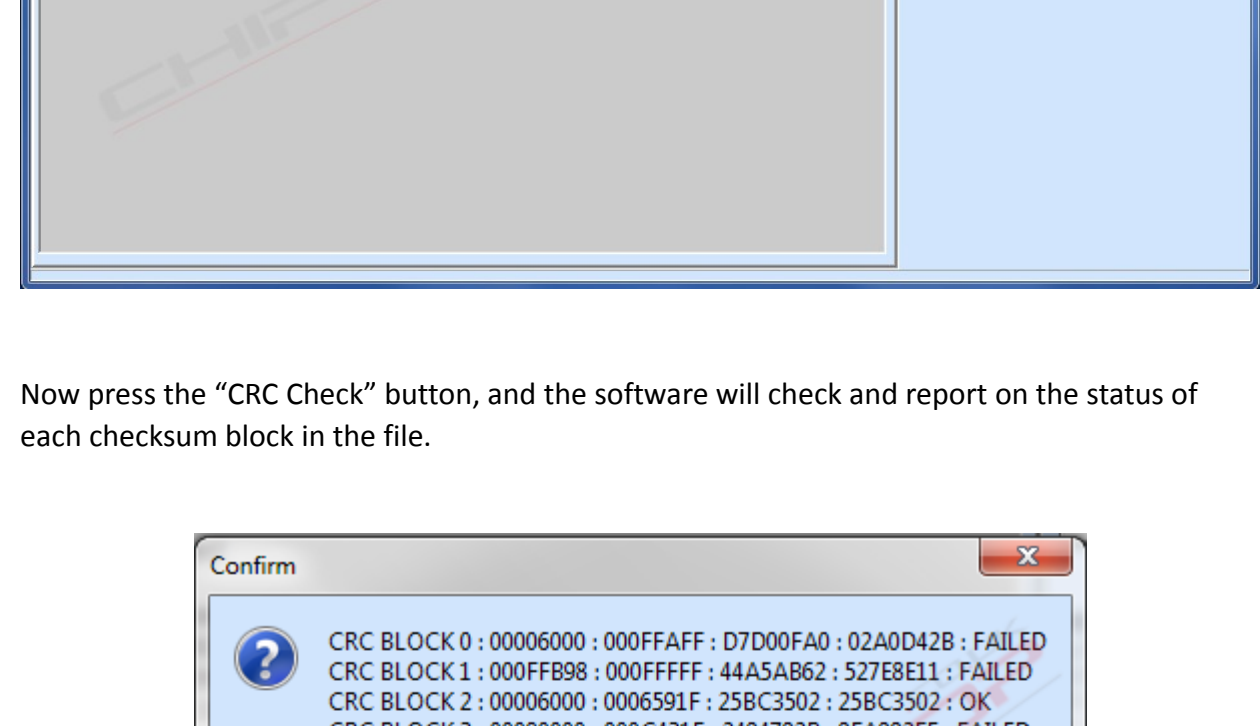
Once you have finished writing all desired memories press the "Disconnect" or "Exit Superv. Mode" button.

4/ Checksum Tool.

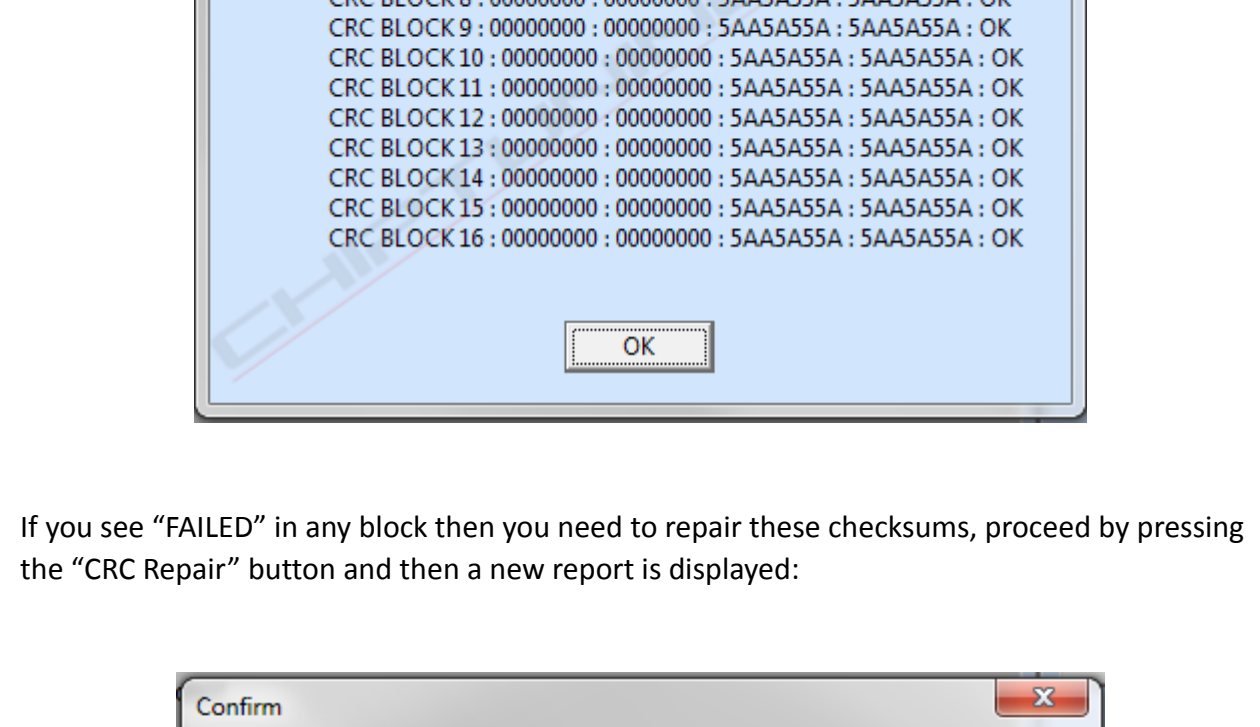
In the Denso software, there is a tool for correct checksums in the buffer memory.

To use this tool, you need to load the file to be repaired into the buffer as described in the previous operation.

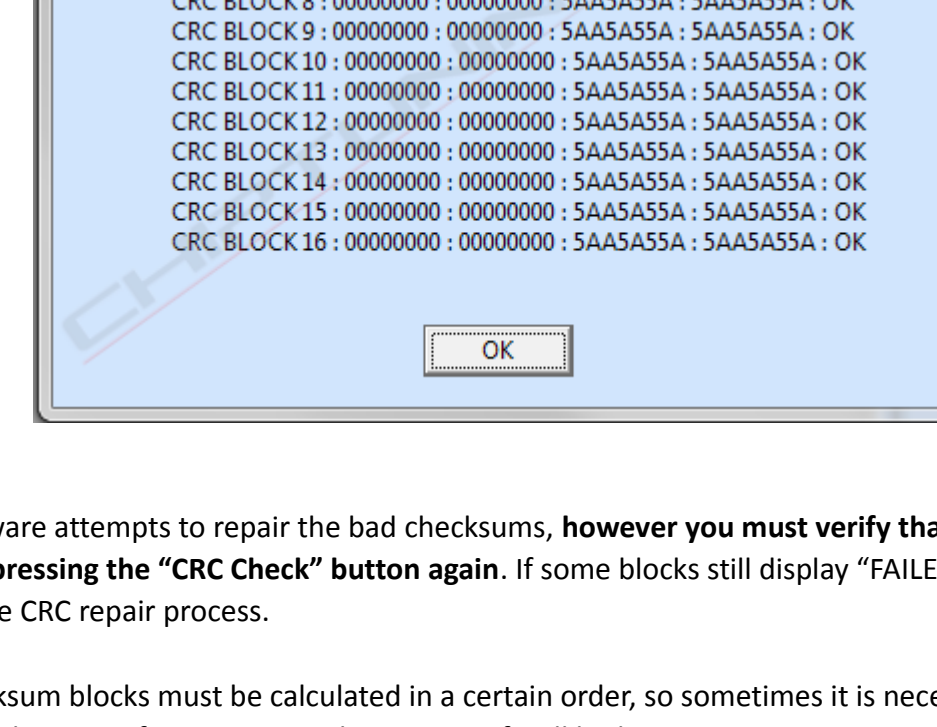
Then select the "DENSO CRC CALCULATOR" tool from the main menu.



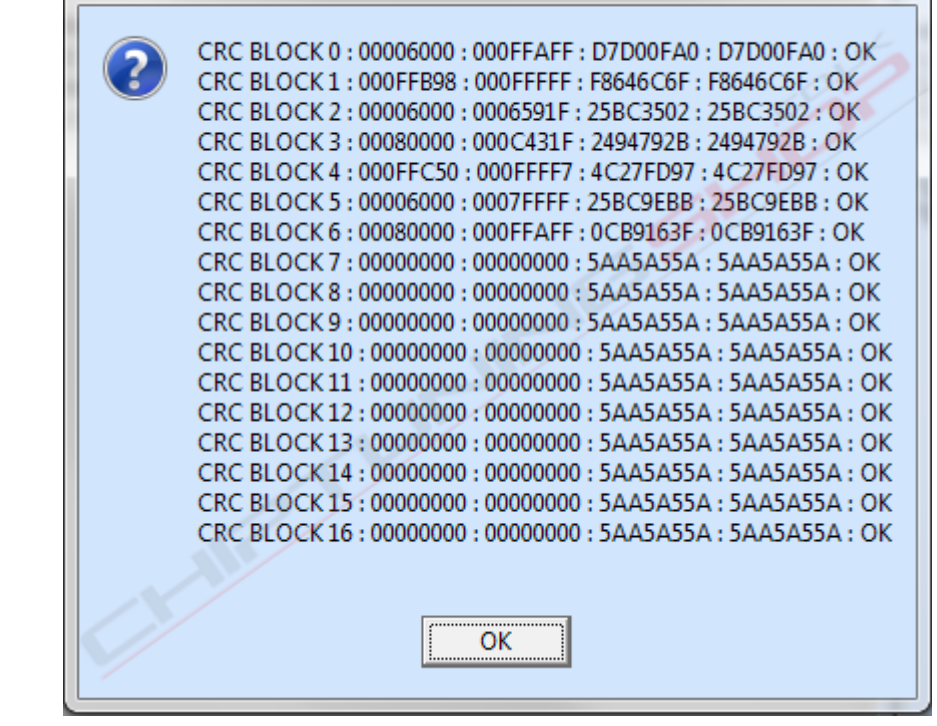
Select the ECU type from the drop down menu of the CRC tool.



Now press the "CRC Check" button, and the software will check and report on the status of each checksum block in the file.



If you see "FAILED" in any block then you need to repair these checksums, proceed by pressing the "Repair" button and then a new report is displayed:



The software attempts to repair the bad checksums, however you must verify that they are all fixed by pressing the "CRC Check" button again. If some blocks still display "FAILED" you must repeat the CRC repair process.

The checksum blocks must be calculated in a certain order, so sometimes it is necessary to carry out the repair function more than once to fix all bad sections.

Once all blocks show as OK the checksums have been repaired successfully, it will show you a window like the one below. You can now save the updated file, and then load this new file into the buffer when you are ready to write to the ECU.

Technical alterations reserved!

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