


12. Firmware Programmer

The firmware programmer allows the agents or users to change the Firmware program in the **TITAN** ECU for different engines. This is also used for upgrading to the latest version of the manufacturers firmware. The programmer is bought optional and not a requirement. It is very useful if the agent is far from the manufacturer. The firmware software is free as it is developed. ***Read the Precautions below to prevent damage.***

12.1 NB! Precautions

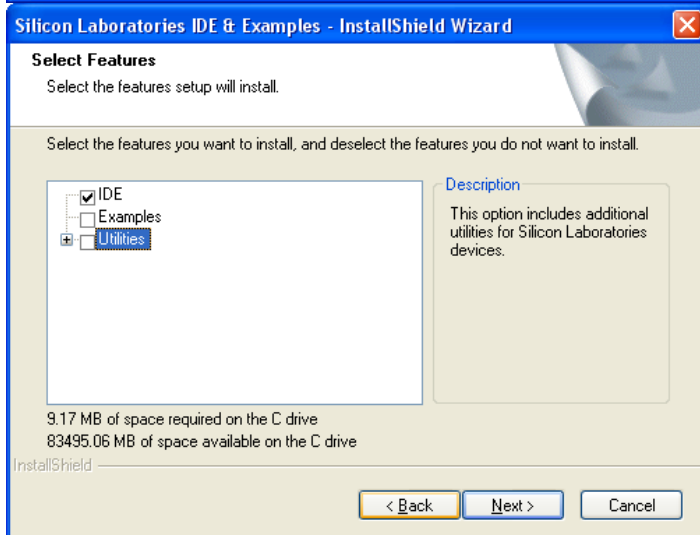
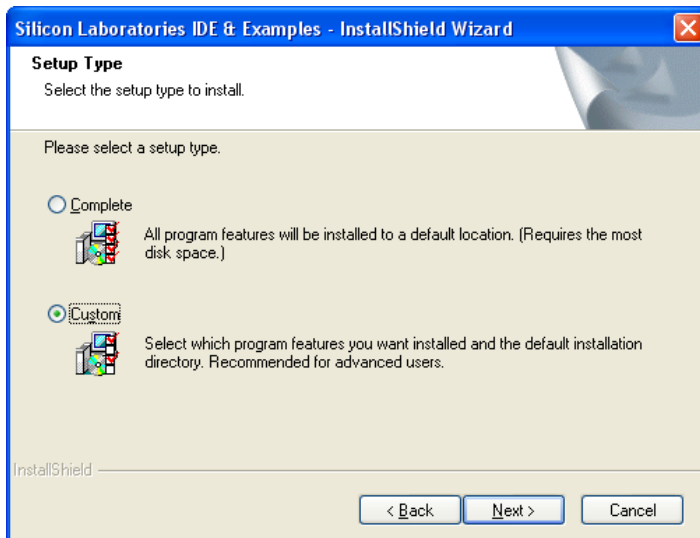
- Note however that you may not program firmware into an EMU or ECU or TCU if it was not written for that specific electronic hardware. The setup of the micro processors is different and you may connect inputs to outputs that will damage the processor or the electronics. E1 Firmware is for EMU and E2 Firmware is for **TITAN** ECU.
- A Type 3 or Standard ECU can only take T3 firmware programs. If you load T11 or T15 in, the Yellow LED will flash twice when you switch it on and will not allow you to save the data maps.
- A Type 11 or Intermediate ECU can take T11 and T3 firmware programs. If you load T15 in, the Yellow LED will flash twice when you switch it on and will not allow you to save the data maps.
- A Type 15 or Advance ECU can take T15, T11 and T3 firmware programs. This will allow the user any combination as this ECU is the top of the range.
- Never press the  button in the Programmer Software. This will erase the ECU ID Code and then it will not work. The Yellow LED will flash three times when you switch it on and hang the processor. This ECU will have to be reprogrammed by the manufacturer.
- Always disconnect the 10 Way output harness from the ECU. When the programmer is connected all the outputs are switch to the high state which means that coils and injectors will be switched on. This may damage the coil drivers or coils and fill the engine with fuel.
- Follow the [Startup Procedure](#) to make sure that the right firmware and settings is loaded to prevent damage.

12.2 Installation

On the CD in the *Firmware Programmer File* run the setup file mcu_ide.exe to install the software program. If you do not have the programmer software you may download the latest version from the internet at the following link:

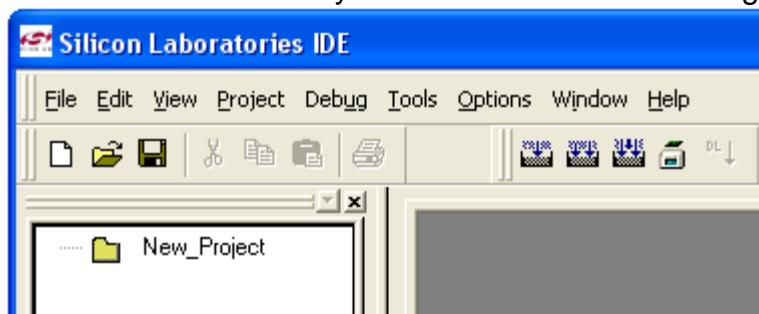
http://www.silabs.com/Support%20Documents/Software/mcu_ide.exe

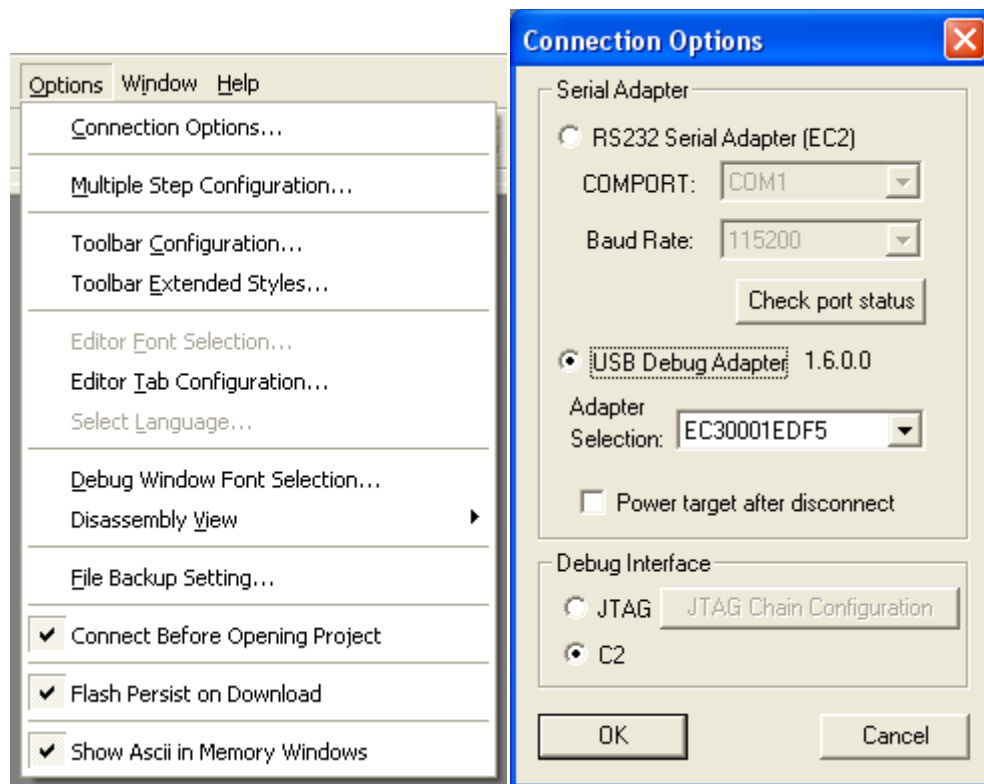
Follow the onscreen instructions till you are asked for the following. Click on Custom and uncheck Examples and Utilities.



You will not need these and they will only take up unnecessary disk space. No harm if you install the complete programmer. Connect the USB programmer to the PC only and start the program at the start button, activate Silicone Laboratories and click on Silicone Laboratories IDE.


Now click on Options, Connect Options and select USB Debug Adapter and also C2 interface. Click OK and you are all set to use the Programmer.






12.3 Operation

To program the **TITAN** ECU first connect the Programmer to the ECU Com Port. Connect only the 12 Way connector and earth the ECU. Switch the ignition on. Click on

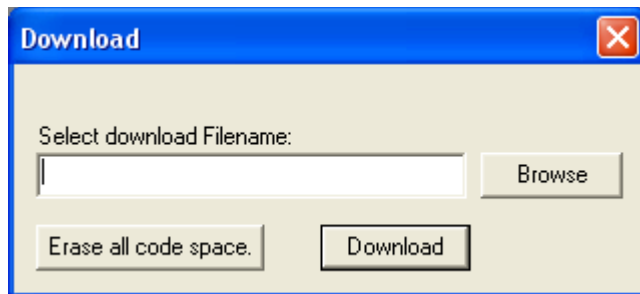
the  button to connect.



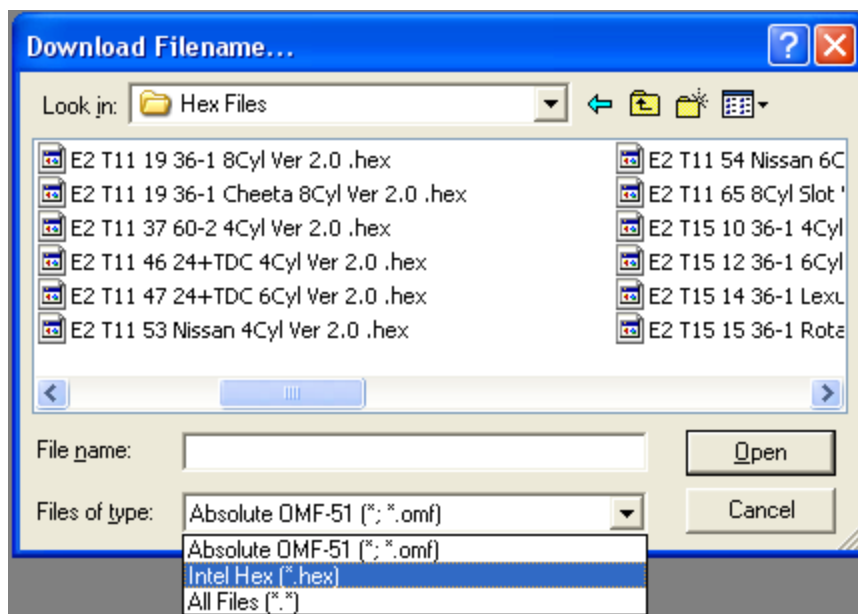
The download  button will become active, click on it.



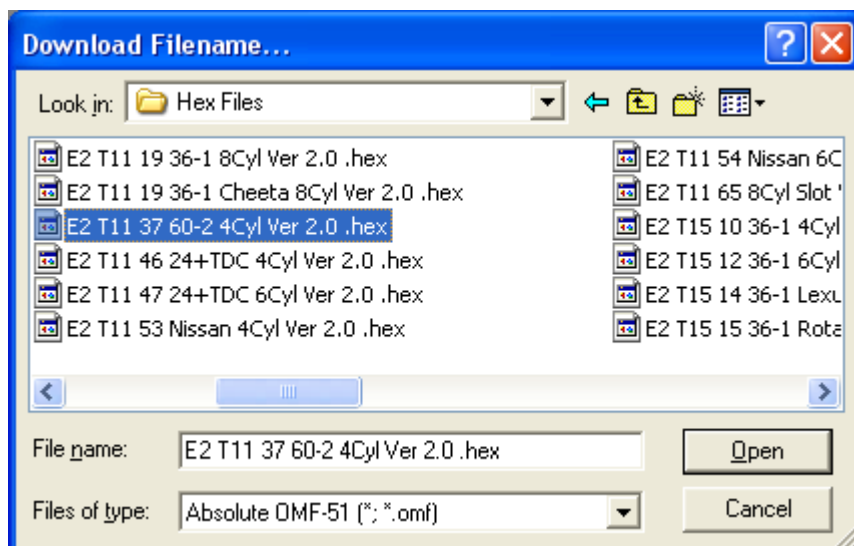
Now use the **Browse** button to select the correct HEX file on the hard disk or CD. Do not at any stage press the **Erase all code space button**.



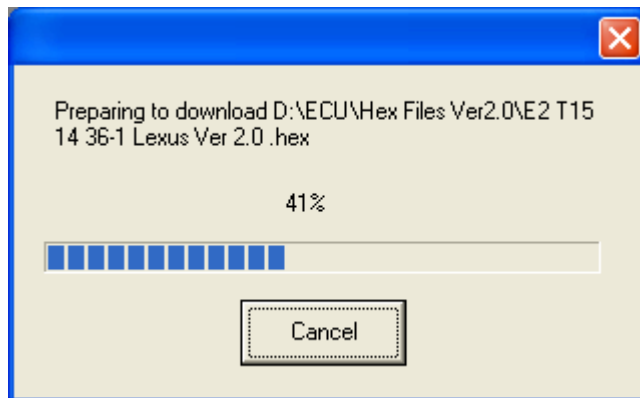
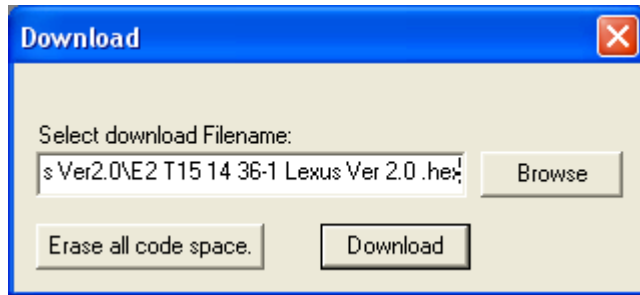
Select the **Files of Type** to be **Intel Hex (*.hex)** then go to **Look in:** to search for the correct file.




Click **Open** when it is selected.



Click **Download** to program the ECU.



Click the disconnect  button when it is finished and switch the ignition off. Disconnect the programmer and connect the USB to RS232 Converter cable. Do not connect the 10 Way cable before you run through the startup procedure. This will ensure that load the right firmware and not to damage the ECU.