Firmware Programmer

The USB Debug Adapter or Firmware Programmer as we call it in the manual, are used to download updated firmware or other firmware into the devices. This unit requires software to be installed and can be downloaded from www.spitronics.com. You may click on the bottom link to download the software.

Firmware Programmer Software
http://www.spitronics.com/downloads/Firmware Programmer/mcu_ide.exe

This manual can be found under the sub folders. One rule is **NEVER** press a button called "**Erase All Code Space**". This will wipe the unit completely and it will have to be returned to the factory. Read through the precautions part before attempting to program your device.

Introduction

Each product has a selection of firmware programs. These programs are the heart of the microprocessor that initialize the product to operate in a specific way. Each engine has different sensors and electrical accessories and requires different programs. The firmware programmer allows the users to change the Firmware program in the ECU for different engines or applications. The programmer 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 freeware after development. **Read the Precautions first to prevent damage.**
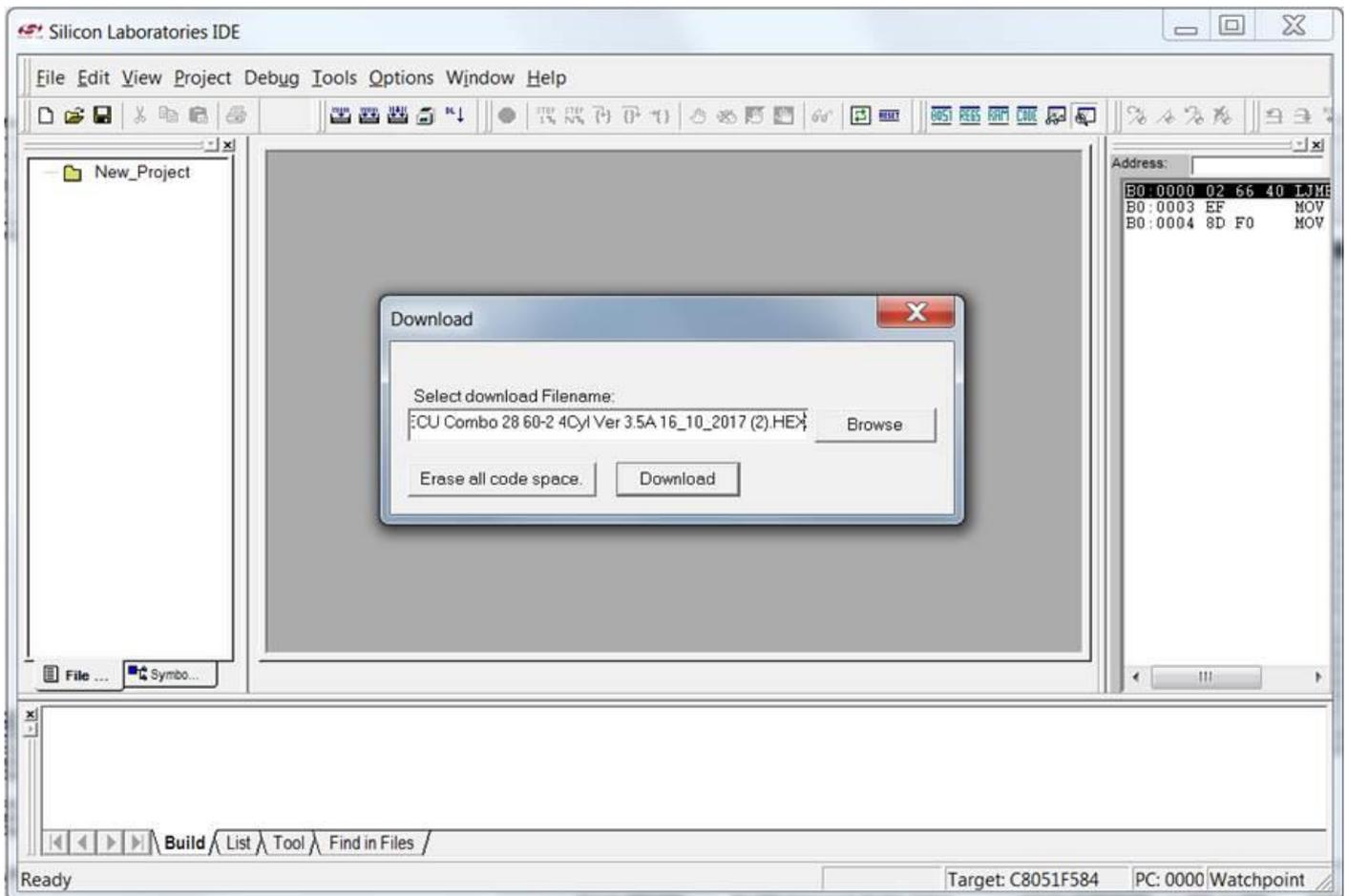
Precautions

Do **NOT** program the incorrect product firmware in your product. This could lock the microprocessor for operations and destroy the hardware. Each products firmware starts with the product name to minimize mistakes. Most of the firmware do have hardware lockout protection but the Test Programs and the older products do not have this protection feature. So do take care on this action.

Do **NOT** press the [Erase all code space.] button at any time in the Programmer Software. This will erase the product ID Code rendering it useless. This product will then have to be reprogrammed by the manufacturer resulting in courier charges and time loss.

Disconnect all the output harnesses from the product. The programmer will switch the outputs 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 into your product to prevent damage. Some agents may neglect or misunderstand you on your application. It is your responsibility to check for mistakes.

After programming check the information screen to see if the right firmware is loaded. Note the program number and description.

ECU Information	
Serial Number	990012
Hardware Release	Mercury2
Hardware Class	Ultimate
Product Release	Engine Control Unit
Firmware Class	Advance
Program Number	28 (60-2 4Cyl)
Protocol Version	3.5
Firmware Version	A
Program Restriction	No restrictions

Installation

After downloading the Firmware Programmer software run the file *mcu_ide.exe* to install the software program. Follow the onscreen instructions till you are asked for the following.

Click on Custom and uncheck Examples and Utilities.
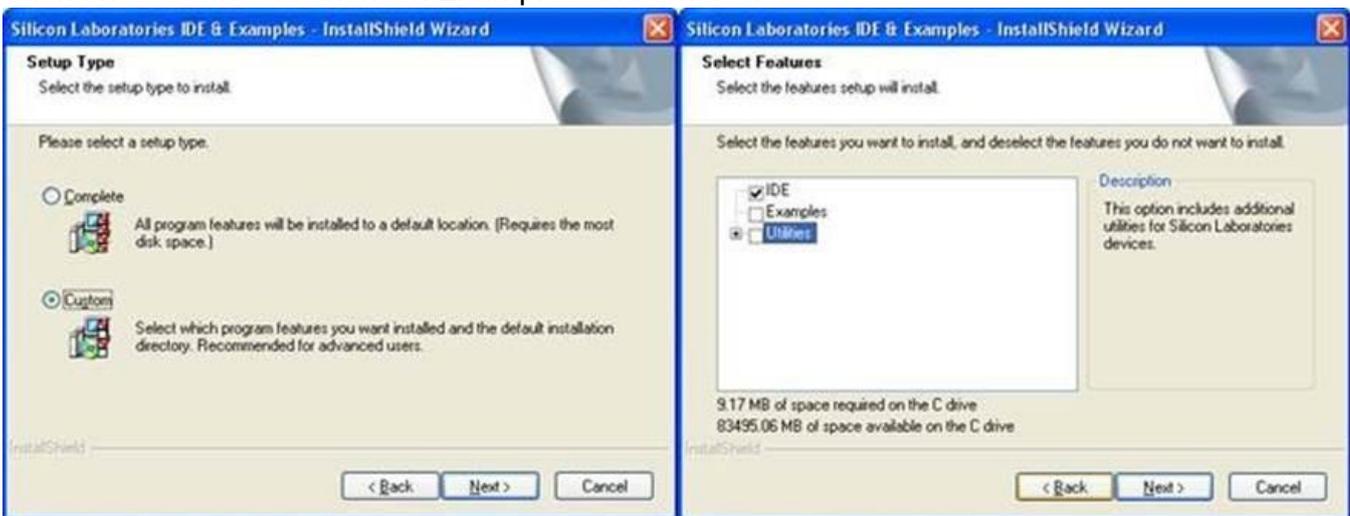
You will not need these and they will only take up unnecessary disk space. No harm if you install the complete programmer.

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.
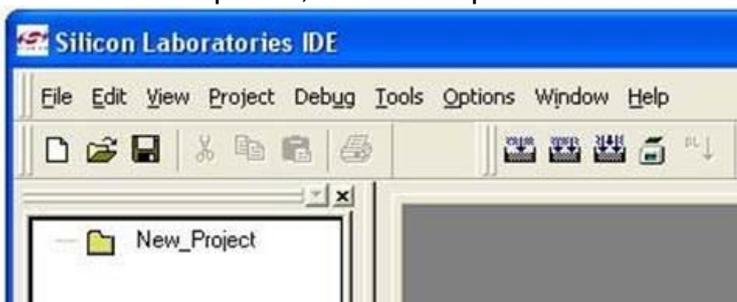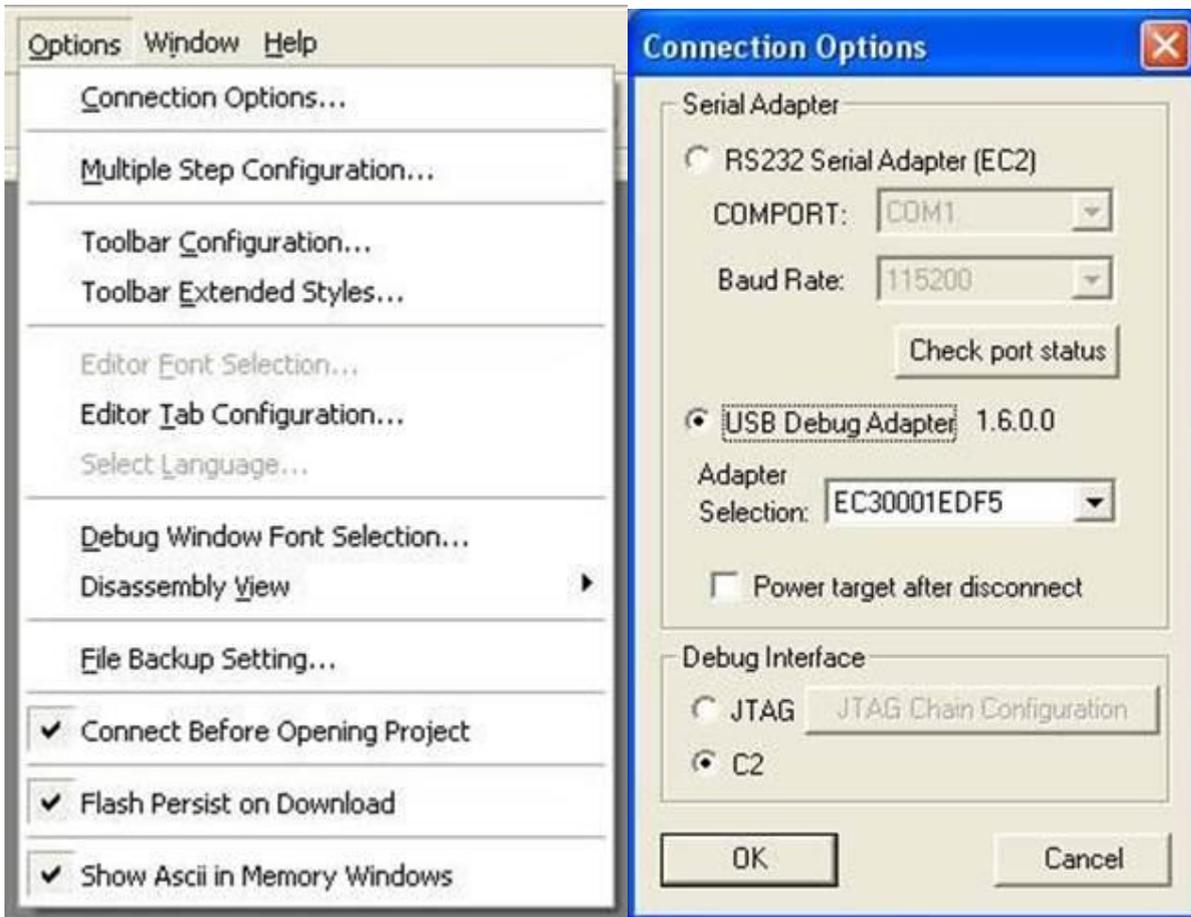
Click OK and you are all set to use the Programmer.

Operation

To program your Product, first connect the Programmer to the Product's Com Port. Connect **only** the P1

12-Way connector and earth the Product. Switch the ignition on. Click on the button to connect.
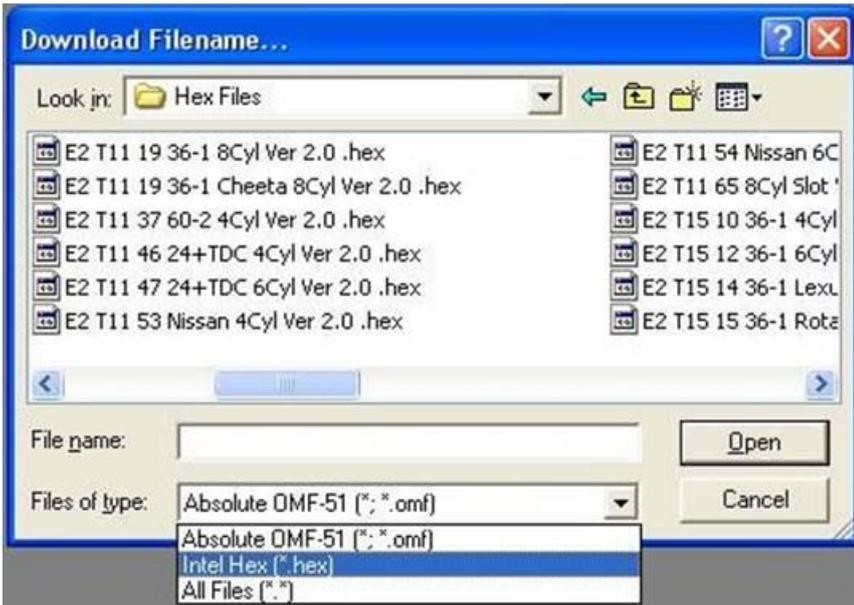

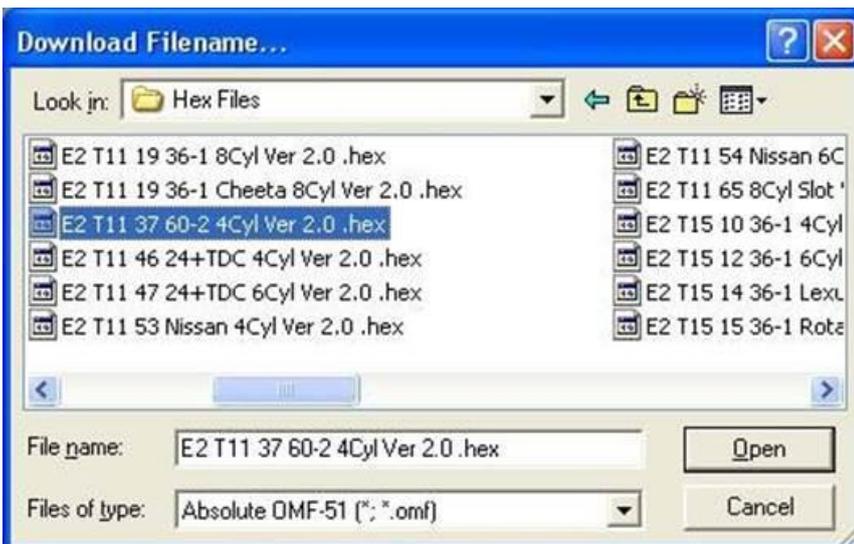The download button will become active, click on it.

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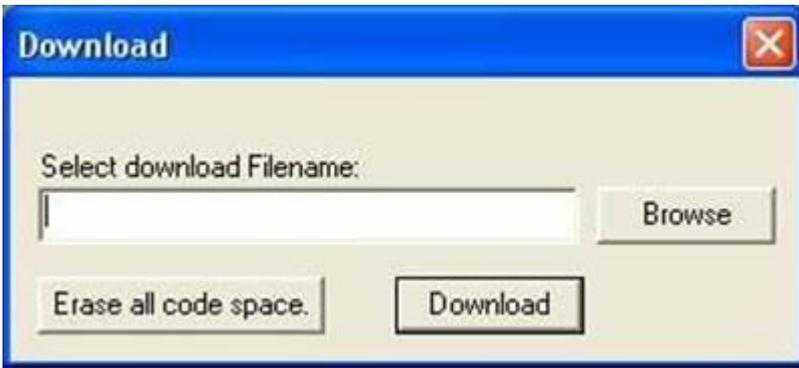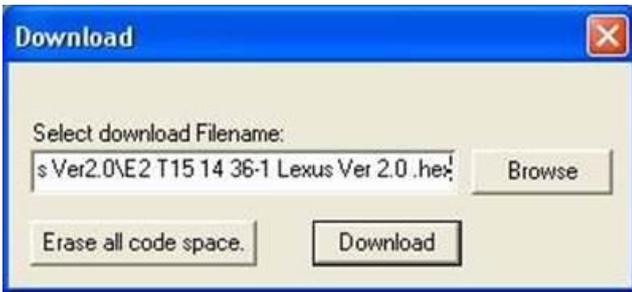
Select the *Files of Type* to be *Intel Hex (*.hex)* then go to *Look in:* to search for the correct file.

Click *Open* when it is selected.

Click *Download* to program the Product.

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

Error Messages

The Silicon Laboratories IDE Software display different messages when it cannot connect to the device or the Debug Adapter. Fast way to verify if the equipment is correct is to see if you can get connection to another device if you have one. Below is a description of the messages.

This message appears when the debug adapter Connection Options settings is incorrect. See the example below.
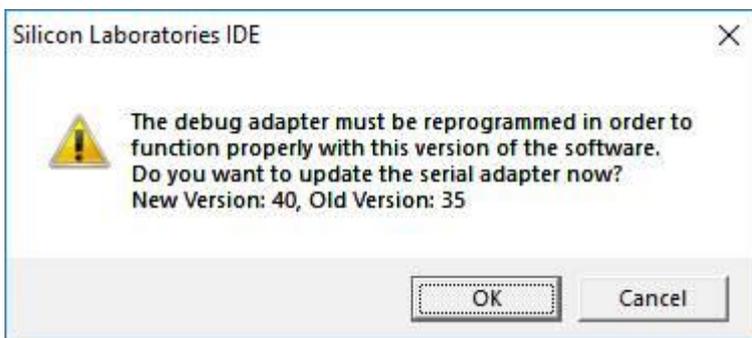
This message appears when the Silicon Laboratories IDE Software and the debug adapter are not the same version. If you press Ok it will be updated and never ask this question again until you load newer version Silicon Laboratories IDE software on the laptop.

This message appears if the debug adapter is not connected to the laptop. If it connects the Run and power LED's will light up on the debug adapter. It may also be a faulty debug adapter.

This message appears when the debug adapter is not connected to a Spitronics device. It may be a broken wire between the debug adapter and device. It may also be a faulty device. Usually when the Micro Processor of the device is blown. It may also be a damaged USB debug adapter. On some products the

programmer inputs have duel tasks. It is then selected via jumpers. Make sure the jumpers are set for program mode.

Silicon Laboratories IDE   ✕

⚠ **Target failed to respond.**
   System is being disconnected.

                OK

This message appears when the debug adapter makes only partial connection to the device. Usually a damaged Micro Processor of the device.