TI Software Installation Lab 1
How to Install Initial Software

Acknowledgements

Lab Summary

This is a lab for downloading and installing the software that will be used to perform the work associated with TI ARM based processors utilizing the Stellaris evaluation kit but with the optional Digilent daughter board. (Orbit) Although the hardware is not required to install software, this lab is written to prepare to use the hardware (lab 2).

Lab Goal

The goal of this lab is provide sufficient instruction and guidance so that individuals will be able to install the software and prepare for lab 2 where the hardware will be plugged in and a simple project will be accomplished.

Learning Objectives

N/A

Grading Criteria

N/A

Time Required

2-3 hours with a high speed Internet connection

Lab Preparation

N/A

Equipment and Materials

Access to Stellaris LM4F120 Launch Pad software via the Internet.

Software needed	Quantity
Download Stellaris LaunchPad™ software from the TI website, http://www.ti.com/tool/SW-EK-LM4F120XL	1

Additional References

This page is for general information:
http://www.ti.com/ww/en/launchpad/stellaris_head.html?DCMP=stellaris-launchpad&HQS=stellaris-launchpad

Lab Procedure 1: Download and Install Software and Drivers for LaunchPad

There are four parts to this procedure. They involve downloading and installing the following items: Code Composer (our compiler), Stellaris firmware, Drivers, and the flash programmer utility. All four downloads are located at one location.

Go to the following website:
http://www.ti.com/tool/SW-EK-LM4F120XL

This should take you to the website shown in Figure 1. If the link changes, search on google for the Stellaris LM4F120 LaunchPad Evaluation Board. It is recommended that the various links shown in Figure 1 (description, technical documents, support & Community) should be explored. To continue, click on the "Download" button for the second option. This is the EK-LM4F120XL CCS option.

Figure 1. Stellaris Options Page

As shown in Figure 2, the student will be required to create an account. This is a simple and free process that should only take a couple of minutes.

Figure 2. TI Account Creation

The next step involves unzipping a fairly large file. When the file is unzipped the student will be presented with an image similar to that in Figure 3.

2

Figure 3. Unzipped File

Remember where this is unzipped as you may need this location later in lab 2. Double click on the "index.html" file as shown in Figure 4. This will launch the website shown in Figure 5. This is not exactly a website. It is an HTML page that is saved on your hard drive. Click on the Software Selection.

Figure 4. Launching the TI Installed

Figure 5. Software Selection

Figure 6. Software Options

Figure 6 shows all four of the items that need to be accomplished (installed) in this lab. Right click on the CCS installer and chose run as administrator. The Code Composer installer will begin. If you are running certain antivirus programs, the student might be directed to temporarily turn off the antivirus firewall to allow the installation to continue.
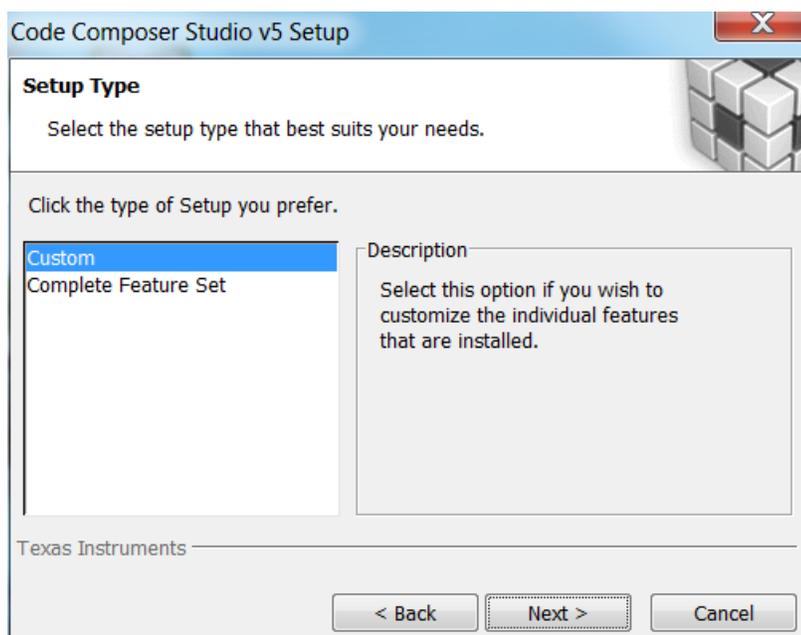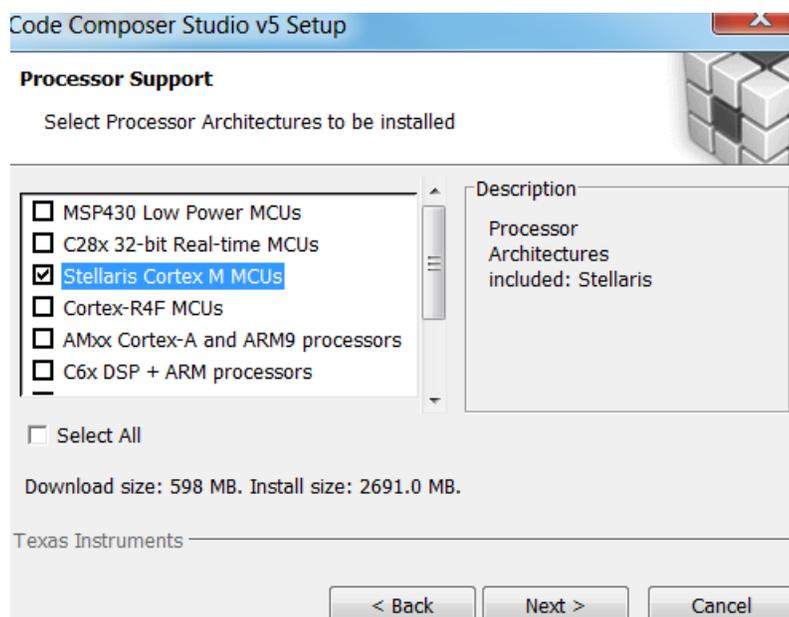
Figure 7. Setup Choices

The CCS installer will launch. Chose the Custom option. There is nothing wrong with choosing the Complete Feature Set. The only difference is that the complete set installs more than what you need.

The next few figures show the options that are to be chosen during a custom installation to install the minimum software to work with the hardware in this installation. As shown in Figure 8, the Stellaris Cortex M is the processor that will be used. The software being used is very high quality and is provided free of charge through an agreement with Texas Instruments.
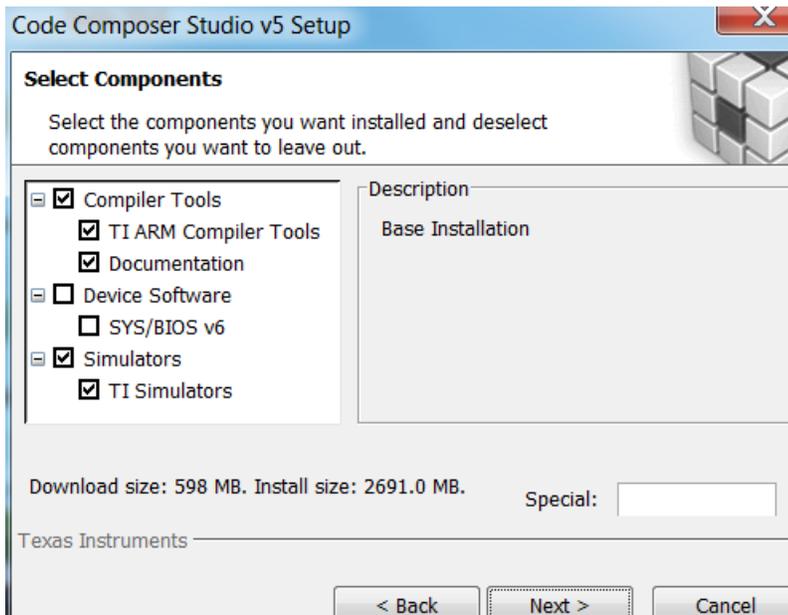
Figure 8. Cortex Selection

Figure 9. Component Selections

As shown in Figure 9, the next set of options that are chosen are related to the complier tools. Chose the selected options. As can be seen, the system is going to need to download approximately 600MB so ensure from this point forward that the computer has a high speed Internet connection.
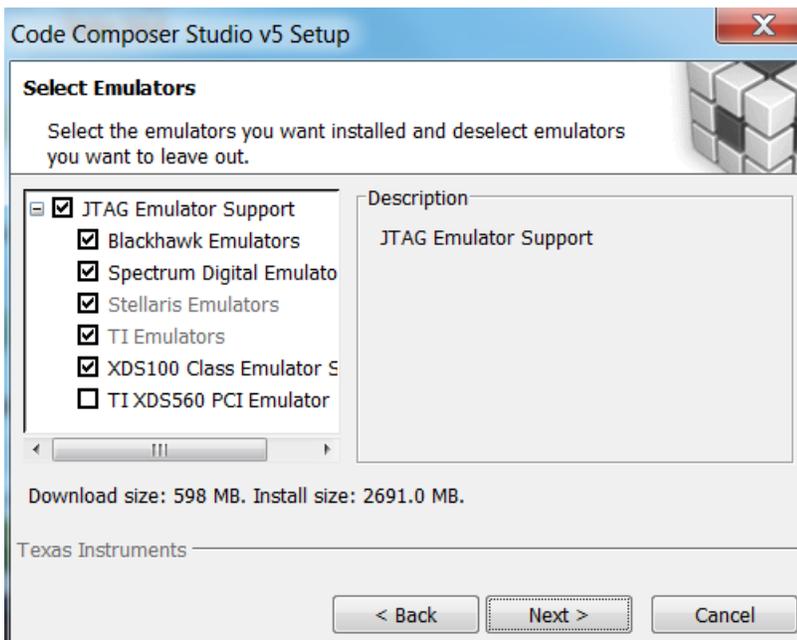

Figure 10. Emulator Selection

The next set of options shown in Figure 10 are related to the JTAG options. JTAG stands for Joint Test Acceptance Group and is and I EEE standard. It is the vehicle through which testing and communication with the process will be accomplished. Choose the options shown in Figure 10.

Once the Code Complier has finished installation, return to the main launch page shown in Figure 6. Right click on the Firmware Development Package and choose to run as administrator.

Figure 11. Firmware Installer

The installer will launch as shown in Figure 11. Allow this program to install. Once it has completed successfully, return to the main launch page shown in Figure 6 and chose to download the ICDI drivers as shown in Figure 12.

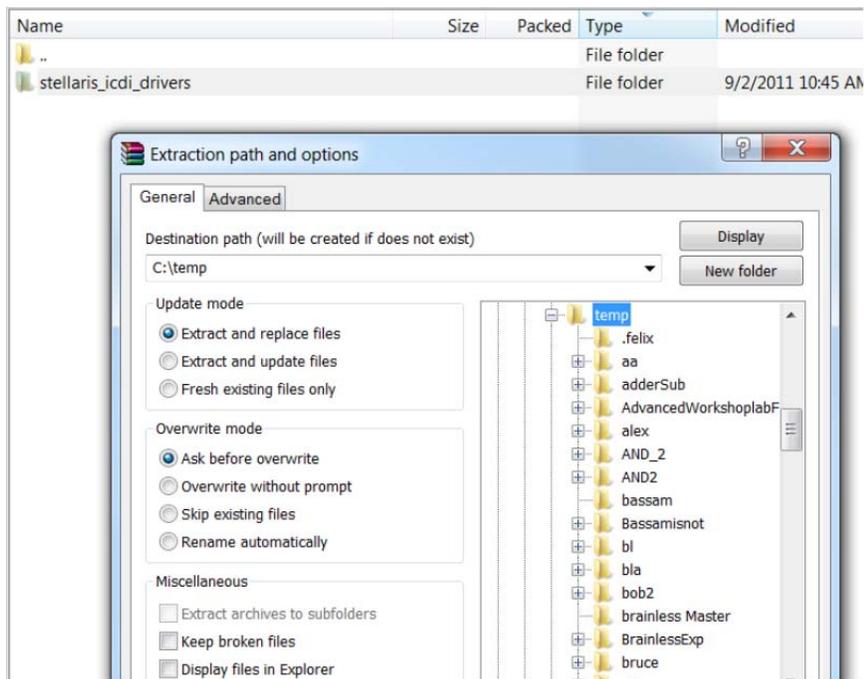For some Windows 7 users, you may have to reinstall using the "recommended setting" at the end of your installation.

Figure 12. ICDI Drivers

The ICDI drivers are the hardware interface files that will allow the computer to interface with the ARM processor. As shown in Figure 13, just unzip the files into a temporary directory. These drivers will be required the first time that the hardware is connected during lab 2. Once this is complete, return to the main launch page as shown in Figure 6.
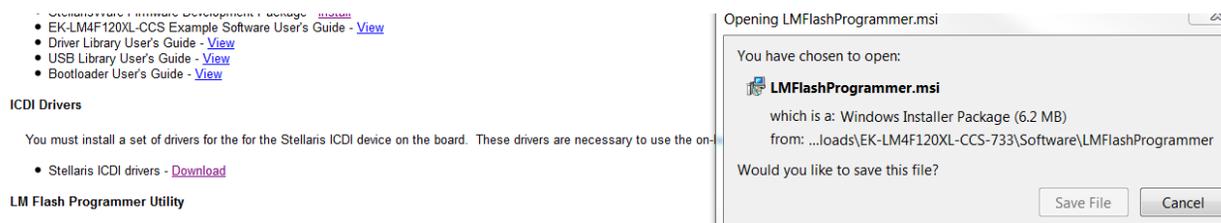
Figure 13. ICDI Driver Unzip

Figure 14. LM Programmer

The final step is the installation of the LM Flash Programmer Utility as shown in Figure 14. As with the other programs, run the installer as an administrator.
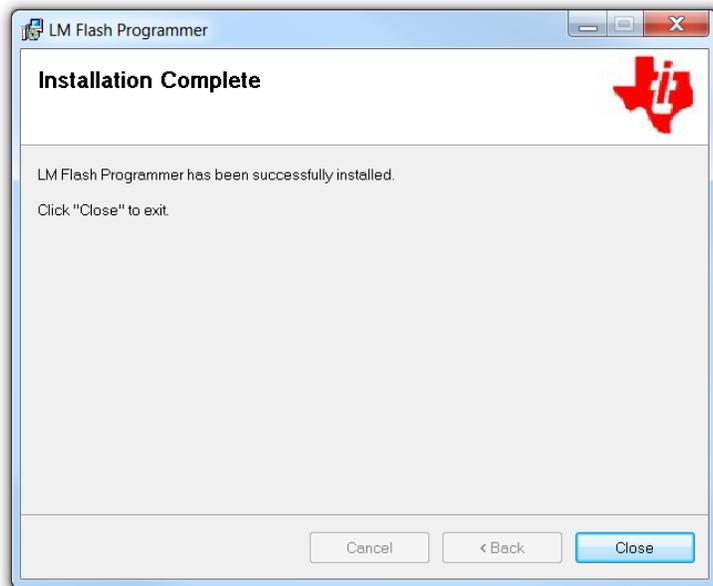
Figure 15. Flash Programmer Complete

Once the programmer installer is complete, the screen shown in Figure 15 is seen. At this point, all software required for future labs has been installed. Please proceed to lab 2.

Lab 2 will proceed through the process of connecting the hardware and performing a simple project.

Attachment 1: Block Diagram of the Pins Used in Projects