Department of Electrical and Electronic Engineering
Imperial College of Science, Technology and Medicine

EE3T Study Project: Real-Time Digital Signal Processing with TMS320C6000

Laboratory 1 – Getting Started with the C6x

Objectives

- To become familiar with Code Composer Studio and the DSP Starter Kit.

Lab Exercises

In this lab you will get an introduction to Code Composer Studio, the software tool you will use in future labs for developing and running C6x DSP programs. Code Composer Studio (CCS) has several excellent on-line tutorials that give an overview of its various features, although in this course we won't be considering all of the various features that CCS offers. Our focus in today's lab will be on Lessons 1 and 3 of the six on-line tutorials available. In the first tutorial you create and test a simple program that displays a hello world message, and introduces you to some of the key features of CCS. In the second tutorial (actually Lesson No. 3) you will look at some tools for debugging/analyzing algorithms.

1. When the DSK is turned on, it goes through a Power On Self-Test (POST) procedure in which the three LEDs count 1-7, and then all LEDs blink to show that the tests completed successfully.

2. The DSK will also go through this sequence when it is reset, by pushing the reset button through the hole in the plastic cover. Try this out. If this doesn't work (for whatever reason) remove power from the DSK and then turn it back on.

3. Start CCS by double-clicking the `CCS DSK 'C6000 1.23` icon on the desktop.

4. *NOTE: If you need to reset the DSK while CCS is running, go to* `Debug: Reset DSP`. *If this does not work for some reason, you will first have to close CCS, then perform the reset (probably by power cycling the DSK), then reopen CCS.*

5. Start the on-line tutorial by going to `Help:Tutorial: Code Composer Studio Tutorial`.

6. Carry out Steps 1-7 of Lesson 1: "Developing a Simple Program". For each of the following steps, rather than following the instructions in the on-line tutorial, you should carry out the following instructions instead (all of these changes are trivial, and just involve using different directories than the ones stated in the online tutorial):

   Step 1, 1) Create a folder called `lesson1` in your home directory on `h:`.
   Step 1, 2) Copy all files from `m:/labccsp/C6x/labs/lab1/lesson1` to this new folder.
   Step 2, 3) Add `hello_dsk.cmd` rather than `hello.cmd`.

Step 2, 4) Select `rts6701.lib` which is located in your folder `lesson1` on `h:`.

Step 4, 2) The program will be located in your folder `lesson1` on `h:` and will be called `myhello.out`.

7. Carry out Steps 1-6 of Lesson 3: "Testing Algorithms and Data From a File". For each of the following steps, rather than following the instructions in the on-line tutorial, you should carry out the following instructions instead

Step 1, 1) Create a folder called `lesson3` in your home directory on `h:`.

Step 1, 2) Copy all files from `m:/labccsp/C6x/labs/lab1/lesson3` to this new folder.

Step 1, 4) Select `volume_dsk67.mak`.

Step 1, 5) Ignore this, the mak file was modified to correctly located the library file.

Step 3, 2) The program will be located in your folder `lesson3` on `h:` and will be called `volume_dsk.out`.