

ENGR-355 Lab1

The goals of this lab are to:

- Install connectors on the NXP FRDM-KL25Z development board
- Prepare the Freedom board firmware (to allow downloading programs & debugging)
- Create your first Keil software development project
- Compile, download, and test a simple program on the Freedom board

For this lab we will use the Windows PCs in the digital lab that already have the Keil development software loaded on them. In the future you may wish to load the Keil software on your own computer as well.

Do the following:

- 1) Solder 4 connectors onto the FRDM-KL25Z board:

1ea 2x6 (12 position) socket

2ea 2x8 (16 position) socket

1ea 2x10 (20 position) socket

These sockets should be on the top side of the board and will be soldered from the back side of the board.

- 2) Prepare the Freedom board for use by downloading firmware needed to communicate with the Keil development software. On the class web page in the section titled NXP Processor and FRDM-KL25Z Development Board Documentation, refer to document [8] “Instructions for initializing a FRDM-KL25Z board (pdf)” and follow it.
- 3) Create a lab1 project using the Keil IDE (Integrated Development Environment) software. Keil is a company that has developed software for writing a program in C composed of one or more source files, compiling the program, linking, and downloading the completed program to the microcontroller. It also has functions for helping debug a program.

On the class web page in the section titled Keil software development manuals follow the instructions in the first document titled “Quick start guide to creating a uVision project & using Uvision”.

Within the Quick Start guide you will compile and download a simple example program to the Freedom board that repeatedly, and sequentially, turns on one color of the LED at a time.

Verbally report to your instructor the results of this lab, i.e. were you able to accomplish items 1 to 3 above and observe proper operation of the example program. No written report is required for this lab.