

Homework
Hello-the-world and GPP Interface Testing
HL

Import the sample GPIO project
<https://github.com/hualili/CMPE240-Adv-Microprocessors/blob/master/2018S-11-GPIO-2015-1-30.zip> to your MCUXpresso IDE, build circuit and modify the C program to realize the following functions:

1. Use p0.21 (j2-23) pin as an output pin and p2.13 (j2-27) pin as an input pin. Note: Please note the change of the GPP port pins for this homework.

Note, these pin numbers on connector J2 is based on the SCH LPCXpresso1769_CD_revD(1).pdf, if you have different version of LPC CPU module, then find the right connector pin for p0.21 and p2.13 accordingly.

2. Build a prototype circuit for GPIO input and output testing. Run GPP testing functions and modify this function to test GPP input and output.

Your output function should be able to turn on LED when CPU sending 1, and turn it off when CPU sending 0.

The input function should be able to read logic 1 when the testing circuit toggle the switch to connect to Vcc (3.3 V), and logic 0 when the testing circuit switch is toggled to the GND.

What to submit:

1. Exported project with all the settings, so it is ready to be executed;

2. Provide stand-alone source code in addition to the exported project file.

3. A photo of GPIO output testing result with LED on.

4. Submission to Canvas on line.

Note: If you are using CTI-One Board B for your implementation, you can use P0.2, P0.3 for GPIO testing. Or you can use any other GPP pins as they fit for the testing purpose. The CTI-One Board is shown in Figure 2 in Appendix A.

Appendix A. Reference in the Lecture.

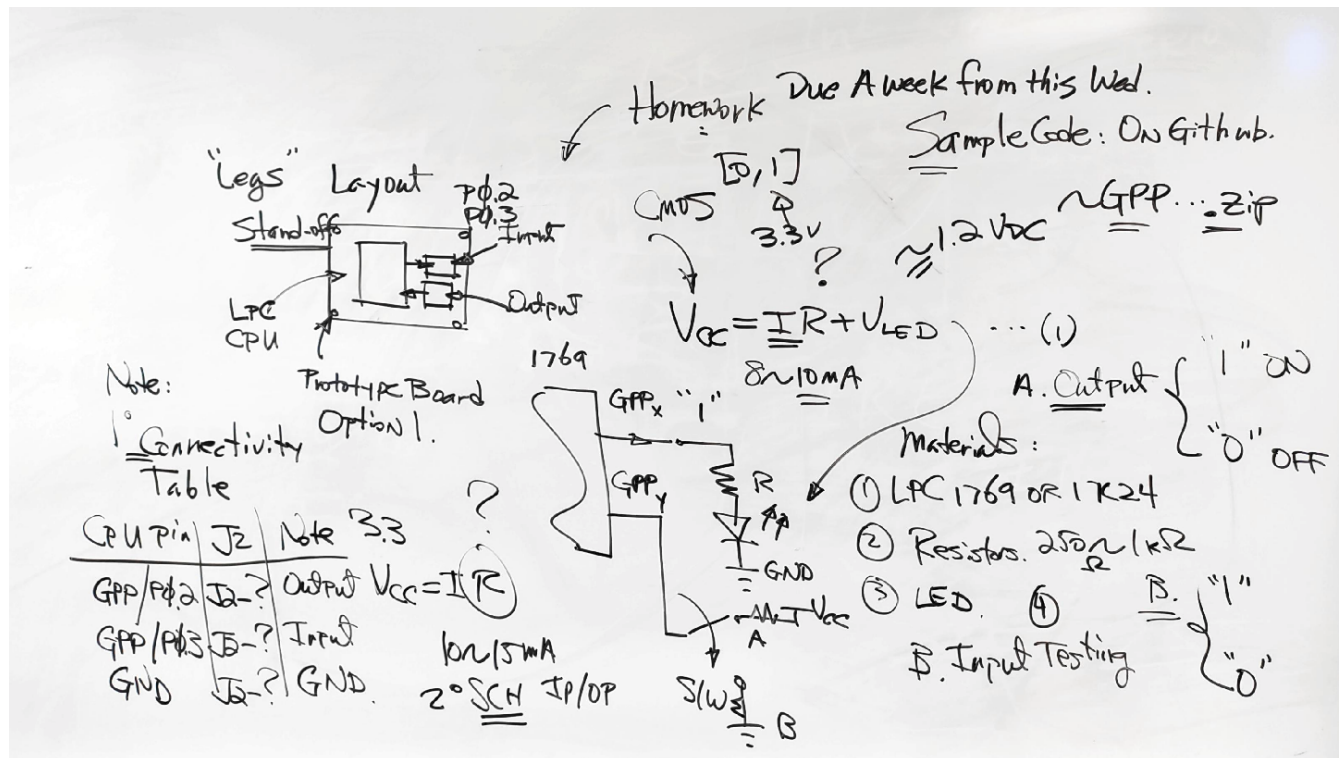


Figure 1. Lecture Notes (Sept. 12, Monday)

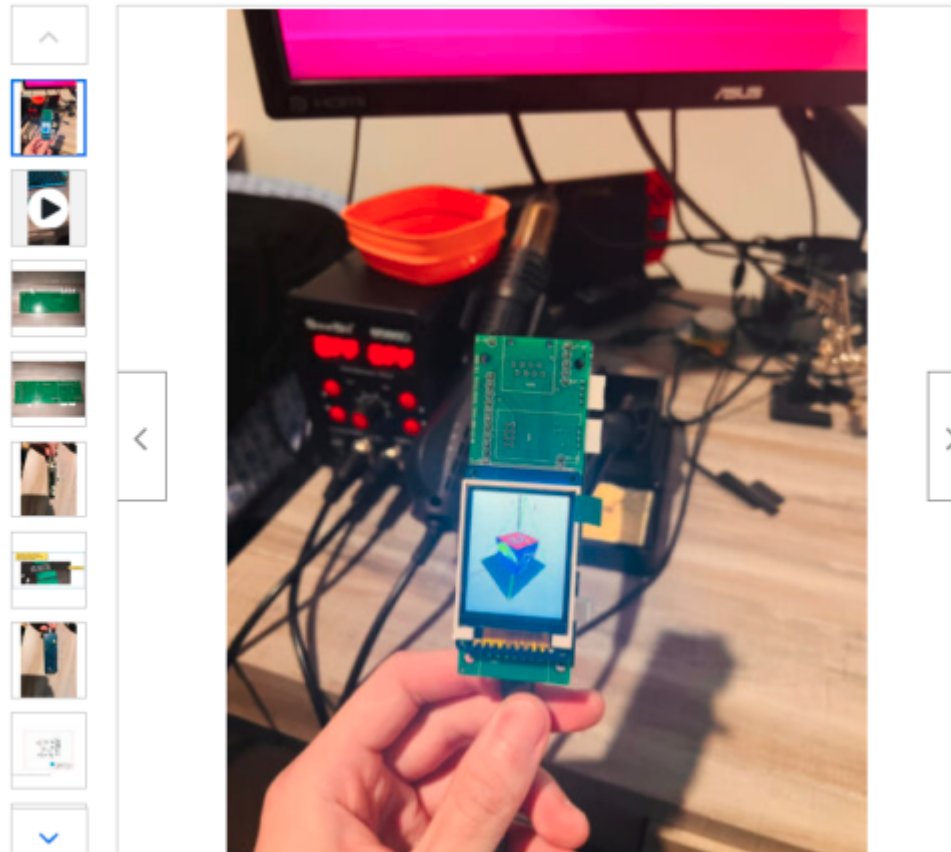
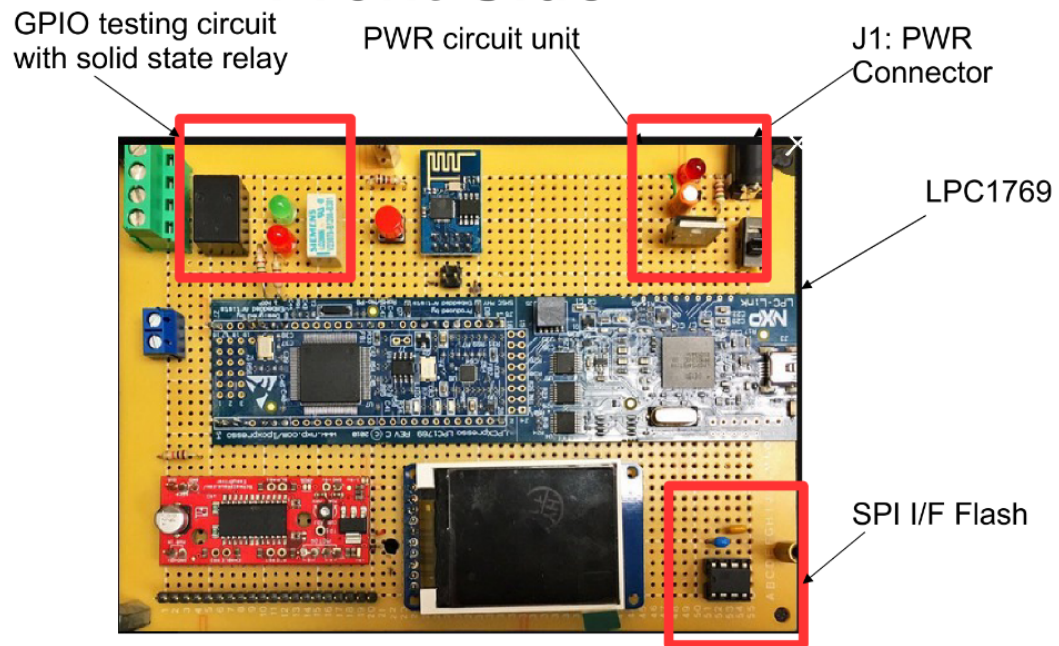


Figure 2. CTI-One Board B. (Optional choice)

<https://www.ebay.com/itm/175393431888?chn=ps&mkevt=1&mkcid=28>

System Layout Design Front Side



Dimension: 16 x 11 mm or 6.25 x 4.50 inch

Figure 3. System Layout Design with a Prototype Board. From my class github

<https://github.com/hualili/CMPE240-Adv-Microprocessors/blob/master/2018F/2018F-102-lecLayout%202018-8-29.pdf>

(END)