

Kevin Tong - kyt259
17710

Lab 6 Report

Objectives

The objective of this lab is to learn how to use EAGLE to design a PCB layout for an embedded system. For this lab, we must familiarize ourselves on how to use EAGLE to design an embedded system that implements an analog signal generator using switches, potentiometers, Digital to Analog Converters, Operational amplifiers, and a 3.7V battery. We must also include a logic analyzer ports, testing pins, and LEDs for debugging purposes.

Hardware Design

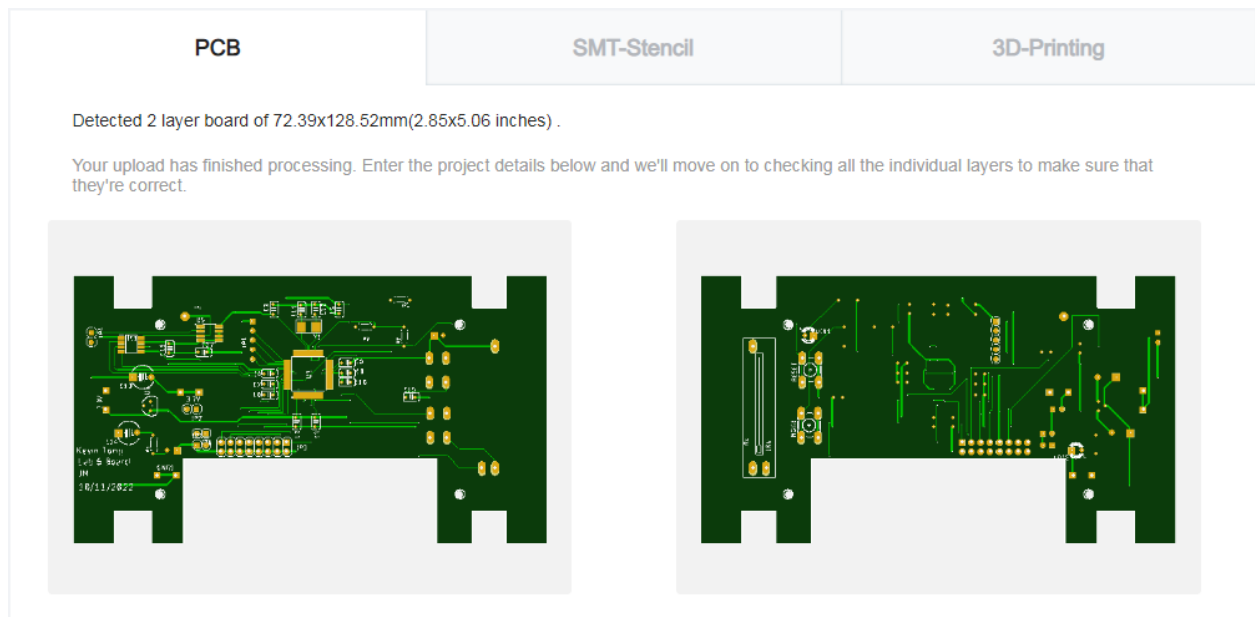
Final .sch file

On github: <https://github.com/EE445L-FALL-2022/lab-6-ktong314/tree/main/hw>

Final .brd file

On github: <https://github.com/EE445L-FALL-2022/lab-6-ktong314/tree/main/hw>

Screenshot of the JLC Order Screen

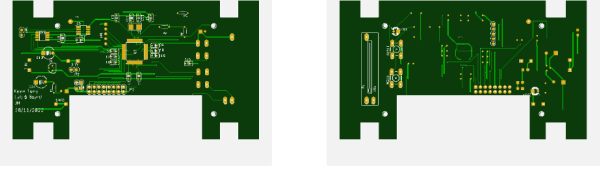


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PCB SMT-Stencil 3D-Printing

Detected 2 layer board of 72.39x128.52mm(2.85x5.06 inches) .

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Base Material ☐ FR-4 ☐ Aluminum

Layers ☐ 1 ☒ 2 ☐ 4 ☐ 6

Dimensions *

Charge Details

Engineering fee	\$4.00
Board	\$3.50
Build Time ⓘ	
PCB: 1-2 days	\$0.00
Calculated Price	\$7.50
Additional charges may apply for special cases	
Weight ⓘ	0.26kg
SAVE TO CART	
Shipping Estimate	
Charge: Choose destination country first	

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Measurement Data

Bill of Materials

Seperate Upload:

On github: <https://github.com/EE445L-FALL-2022/lab-6-ktong314#5-report>

Total cost of the system: \$48.22

Total Estimated Current: 13.265 mA

Analysis and Discussion

1. Estimate how long the system would run on the 2600mAh battery

$$2600 \text{ mAh} / 13.625 \text{ mA} = 190.826 \text{ hours}$$