

Lab 06: PCB Layout

MedTech Prototyping Skills (BME290L)

2023-03-23

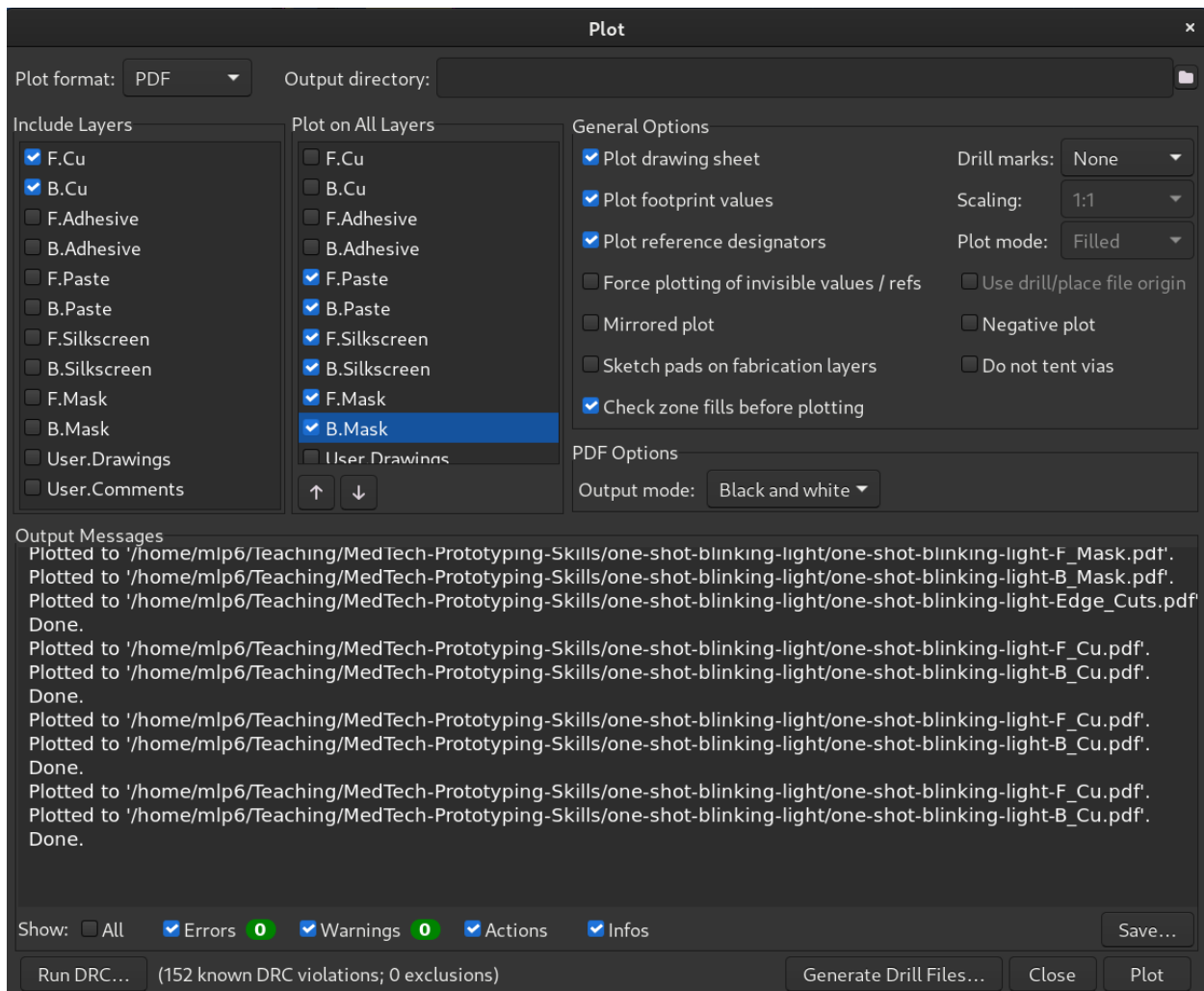
1 PCB Layout

You will be laying out a PCB of your circuit using the following guidelines:

- Be sure to update the PCB metadata in `Page Settings` (these are **not** inherited from the schematic).
- Be sure to setup your **Design Rules** as follows:
 - Signal trace widths should be ≥ 0.52 mm
 - Power traces widths should be ≥ 1.0 mm
 - Clearance on all traces should be ≥ 0.85 mm
 - All drill hole diameters (including vias) should be > 0.8 mm
- Your PCB can be two-sided.
- Remember that the traces for THT components should be on the opposite side of the component body.
- Utilize large `GND` pours.
- Make sure that your **Design Rules Checker** passes 100%.
- Add your full name or Net ID to one Cu layer of the board
- **Design Challenge**
 - Make the board as small as possible, maintaining 4 mounting holes.
 - Too small will make populating the board with components difficult. Remember, small doesn't win over function.
 - Be sure to place your testing points in convenient locations to verify function while populating the board with components and to do downstream functional analysis.

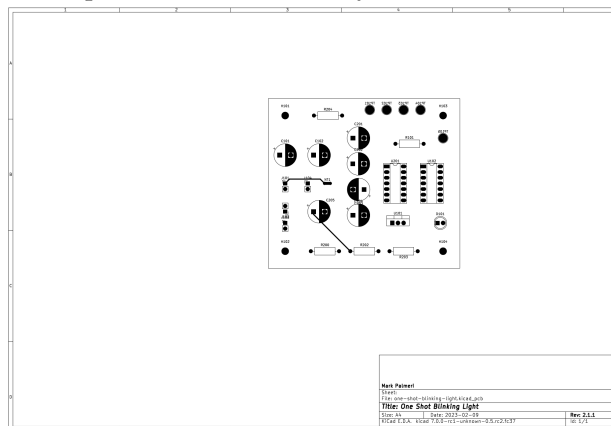
2 Generating PCB Layer PDFs

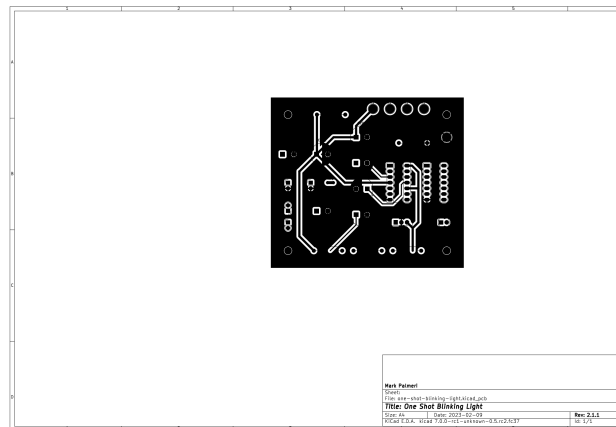
To generate a PDF of your front and back layers, use the `File -> Plot` command with the following options:



This will generate 2 PDF files (- [F, B]_Cu.pdf) with the relevant mask and silkscreen layers superimposed.

An example of a rendered (incomplete) front and back layers:





3 What to Submit

1. A single PDF to Gradescope containing:
 - View of front layer (make sure all zones filled)
 - View of back layer (make sure all zones filled)
 - Screenshot of 3D view
 - Export of your Design Rules Checker report (DRC . rpt).¹
2. Upload a zip archive of your entire project to your **Drop Box** on Sakai. Please use the following naming scheme for your zip file: LastNameFirstName_v3.X.X.zip.
For example: PalmeriMark_v3.0.0.zip

¹This report is an ASCII text file that can be converted to a PDF.