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Getting Started Designing Custom PCBs in KiCad

Presented here are all the resources you need to layout and package a custom PCB design to be sent in for manufacturing.

What is a PCB?

- Read the “Overview” section on Wikipedia
- Read this article about different PCB layers
- Watch this video to see the manufacturing process

Some key points and terms to be familiar with:

- Traces, copper weights, and their current carrying capacities
- Thermal stresses
- Ground/power planes and their applications
- Silk screens, solder masks, vias, prepreg

	Soldermask
top layer →	High speed signal layer
	Prepreg
layer 2 →	GND plane
	Prepreg
layer 3 →	High speed signal layer
	Core
layer 4 →	GND plane
	Prepreg
layer 5 →	GND plane
	Core
layer 6 →	High speed signal layer
	Prepreg
layer 7 →	GND plane
	Prepreg
bottom layer →	High speed signal layer
	Soldermask

Figure 1 Layer Stack-up Example of An 8-layer PCB

How do I design one?

- Download KiCad
- Come up with an idea for a circuit
- Keep these tips in mind
- Use this trace width calculator
- Watch this video while following along with your own design

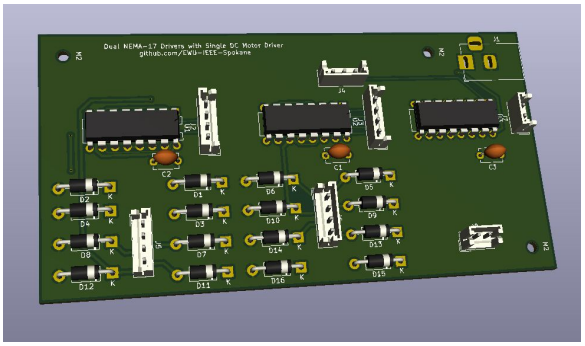

Fig. 2: 3D rendering of a KiCad PCB

Who do I send my design to?

- There are an uncountable number of manufacturers
- One cheap one I found is JLCPCB

Further Learning (feel free to add to this list)

- SparkFun electronics has a couple youtube videos with design tips