

Error-Checking

Produce functional PCBs the first time around.

DRC Checks

Begin here.

- Run a DRC. Does it report anything?
- Are there any errors aside from overlapping stabilizer/switch pads?

Physical Checks

These errors are easy to miss, since some are not scanned by DRC.

- Is the PCB the correct size?
- Is USB connector placed at its proper location?
- Are there any components so large that they will interfere with the chassis?
- Are the keys placed in correct layout?
- Are there overlapping parts?

Trace Checks

Correct routing is important.

- Do any traces overlap each other?
- Do any traces go through holes and/or pads?
- Do any traces fall off the PCB edge?
- Are there any pointless disconnected traces?
- Do any traces go so close to pads that they enter their no-mask zone?
 - This can result in shorted circuits after soldering, even if they pass an unsoldered electrical check.

Component Checks

Will the parts function?

- Is the pinout of the components correct?
 - Specifically, is the crystal, MCU, and USB connector pinouts correct?
 - Often, on a 4-pad crystal, the crystal pads and gnd pads are placed diagonally from each other.
 - If you have two adjacent same nets or an unconnected pad on crystal, you may have incorrect pinout!
 - Even identical footprint components sometimes have differing pinout.
 - Check the documentation for the parts for their correct pinout.
- Are you using the correct parts for the task?
- Are you using the correct footprints?
- Will the placement of parts cause nearby parts to fail?
 - Heat, EMI, etc.
- Are decoupling capacitors placed at their correct positions?
 - Near VCC/GND MCU pairs, close to crystal, close to RGB LED, etc.

Cross-Checking

More eyes is better.

- Load the gerber in a gerber viewer. Does it render as expected?
- Let peers error-check your project. Do they find anything suspicious?
- Does the PCB avoid pitfalls described in this wiki?

Aesthetic Checks

For beauty-oriented PCBs.

- Are there any component label silkscreen components that overlap pads or holes?
- Do any labels overlap other labels?
- Do silkscreen decorations or branding cover up critical component labels?

Revision #2

Created 25 January 2018 11:35:53 by ai03

Updated 25 January 2018 11:51:19 by ai03