LibrePCB
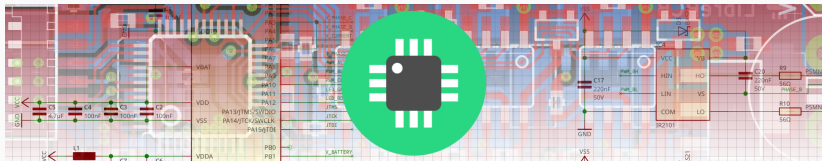
A new, powerful and intuitive EDA tool for everyone

Urban Bruhin

February 1, 2020

About LibrePCB
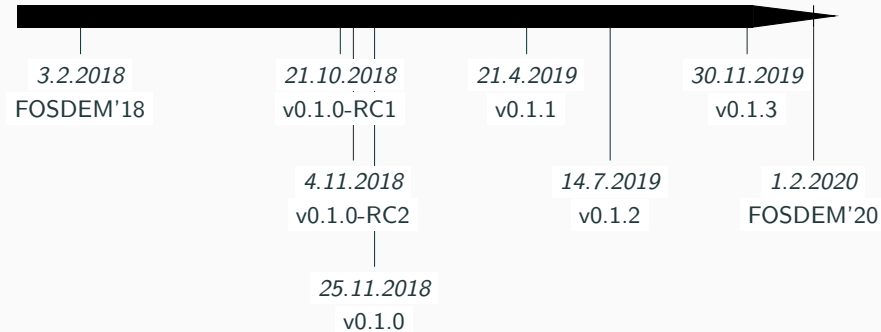

Free/OpenSource EDA Suite

- Multiplatform λ ⊞
- Written from scratch in C++11/Qt5
- Development started in 2013
- Website: https://librepcb.org/
- GitHub: https://github.com/LibrePCB/LibrePCB

Timeline

2018   2020

3.2.2018
FOSDEM'18

21.10.2018
v0.1.0-RC1

21.4.2019
v0.1.1

30.11.2019
v0.1.3

4.11.2018
v0.1.0-RC2

14.7.2019
v0.1.2

1.2.2020
FOSDEM'20

25.11.2018
v0.1.0

Library Editor Rule Check

Like a DRC, but for library elements (symbols, footprints, . . .).

CLI for Libraries

Use-Cases

- Use CI to make sure all library elements are valid
- Check pull requests for library convention violations (ToDo)

Usage

```
$ librepcb-cli open-library --all --strict MyLibrary.lplib
Open library 'MyLibrary.lplib'...
Process 86 component categories...
Process 44 package categories...
Process 37 symbols...
Process 492 packages...
Process 34 components...
Process 37 devices...
SUCCESS
```

CLI for Libraries
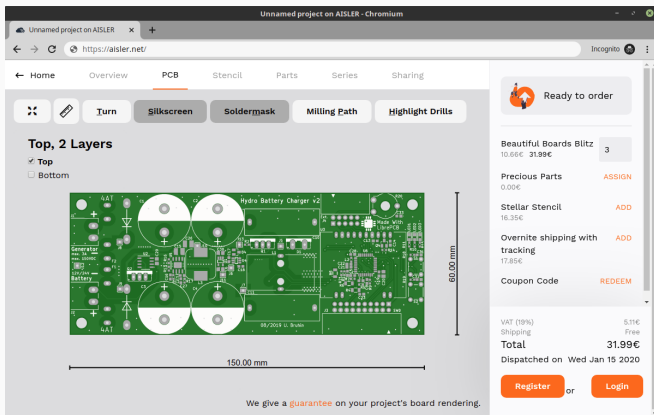
CLI for Projects

Use-Cases

- Use CI to make sure there are no ERC/DRC issues
- Automatically generate output files (Gerber, BOM, PDF, . . .)

Usage

```
$ librepcb-cli open-project --erc --export-pcb-fabrication-data MyProject.lpp
Open project 'MyProject.lpp'...
Run ERC...
  Approved messages: 7
  Non-approved messages: 2
    - [WARNING] Net signal connected to less than two pins: "CAN_RX"
    - [WARNING] Net signal connected to less than two pins: "JTCK"
Export PCB fabrication data...
  Board 'default':
    => 'output/v1/gerber/MyProject_DRILLS-PTH.drl'
    => 'output/v1/gerber/MyProject_OUTLINES.gbr'
    => 'output/v1/gerber/MyProject_COPPER-TOP.gbr'
    => 'output/v1/gerber/MyProject_COPPER-BOTTOM.gbr'
    => 'output/v1/gerber/MyProject_SOLDERMASK-TOP.gbr'
    => 'output/v1/gerber/MyProject_SOLDERMASK-BOTTOM.gbr'
    => 'output/v1/gerber/MyProject_SILKSCREEN-TOP.gbr'
    => 'output/v1/gerber/MyProject_SILKSCREEN-BOTTOM.gbr'
Finished with errors!
```

AISLER Supports LibrePCB

- You can upload LibrePCB projects to `https://aisler.net`
- For every order of a LibrePCB project, AISLER makes a donation to LibrePCB!

Getting Started

Download

https://librepcb.org/download/

- Windows: Installer, ZIP archive
- Linux: Installer, Flatpak, AppImage, binary archive
  - Arch Linux: AUR packages
    - NixOS: Nix package
  - OpenPandora (ARMv7): PND package
    - macOS: Installer, Bundle
      - BSD: FreeBSD port

Documentation

https://docs.librepcb.org/getting_started/

Demo Time!

Project Status

Library Management	🙂	
Library Editor	🙂	
Schematic Editor	🙂	(except missing copy&paste)
Board Editor	😐	(usability, no 3D viewer, . . .)
Export (e.g. Gerber)	🙂	
Available Libraries	😐	

Next Steps

Priority 1: Improve usability

- Add various small features (custom pad shape, blind/buried vias, slotted holes/pads, . . .)
- Improve board editor (usability issues, push&shove router, . . .)
- Clipboard ✂ ⎘ ⎗ in schematic-/board editors
- Extend part libraries

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Priority 2: Add more functionality

- Part management (MPN, assembly variants, . . .)
- 3D models in library / 3D board viewer / MCAD export
- Hierarchical sheets
- . . .

Contributors welcome!

https://github.com/LibrePCB/LibrePCB/blob/master/CONTRIBUTING.md

IRC: #librepcb on Freenode

- **Participate in issues**
- **Open pull requests**
- **Improve documentation**
- **Donate (Patreon, GitHub Sponsors, . . .)**

Thank you!

https://librepcb.org

Why not contributing to KiCad?

- **Very different underlying concepts**
  - Mindset/opinions often can't be changed by contributors
  - Fundamentally changing concepts is *very* hard since an upgrade mechanism needs to be provided

- **Different priorities / target audience**
  - KiCad: Feature-rich, professional-grade, flexibility (can do everything)
  - LibrePCB: Usability, intuitive UI, portability, stability, version controlability