

LibrePCB



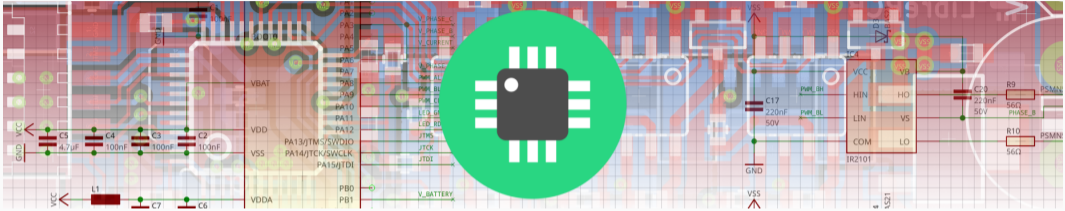
FOSDEM'24 Status Update

Urban Bruhin





February 4, 2024



About LibrePCB




Free (GPLv3) EDA suite, started in 2013

- Cross-platform:     | x86/ARM/M1
- Intuitive & easy-to-use UI, for beginners, hobbyists & professionals
- Powerful library concept, to save time and maximize reusability
- Human readable file format, optimized for version control
- Focus on usability and stability rather than bleeding-edge features



Behind the Scenes

- Working full-time on LibrePCB since end of 2022!

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FOUNDATION

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FOUNDATION
- New LibrePCB Fab manufacturing partner:  **PCBWay**

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- New LibrePCB Fab manufacturing partner: 
- New sponsors:  Turn-Key PCB Assembly  www.nextpcb.com   

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- Many donations & contributions (code, translations, libraries, ...)

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- New sponsors:     
- Many donations & contributions (code, translations, libraries, ...)
- Sponsorships & donations in 2023 (without NGI0): ~8k USD

Thank you! 

New Website, Documentation & Video Tutorials

End of 2022:

- Completely new website (made from scratch with Hugo & Bootstrap)
- New online documentation (made with AsciiDoc & Antora)

End of 2023:

- First official video tutorials

LibrePCB Tutorial
Design a PCB

1. Set Up Board
2. Place Devices
3. Draw Traces & Add Vias
4. Add Copper Planes
5. Work With Multiple Boards
6. Review Board & Run Checks
7. Order Through LibrePCB Fab
8. Generate Production Data

<https://librepcb.org> 25:17

LibrePCB Tutorial
Draw Schematics

1. Project Structure
2. Create a New Project
3. Add Components
4. Make Connections
5. Add Multiple Sheets
6. Specify Assembly Data
7. Work With Attributes
8. Run Checks & Export Data

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LibrePCB Tutorial
Set Up Workspace & Libraries

1. Workspace Concept
2. Create a Workspace
3. Install & Update Remote Libraries
4. Add Local Libraries
5. Put Libraries Under Version Control

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LibrePCB Walkthrough

1. Installation
2. Create a Workspace
3. Create a PCB Project
4. Draw the Schematic
5. Create the PCB Layout
6. Order the PCB

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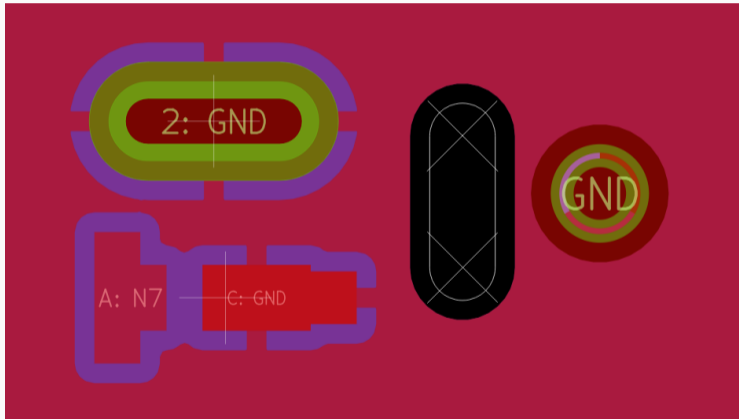
LibrePCB Tutorial 3: Design a PCB

LibrePCB Tutorial 2: Draw Schematics

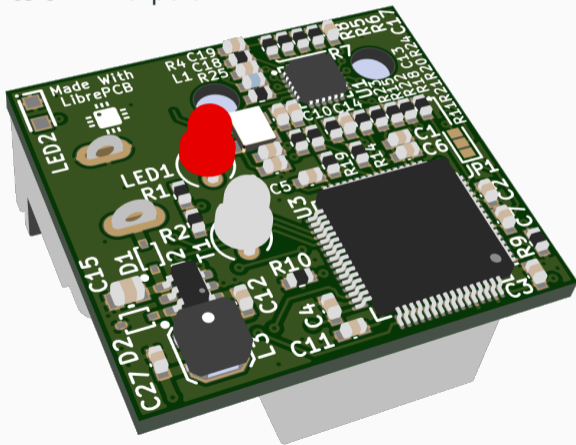
LibrePCB Tutorial 1: Set Up Workspace & Libraries

LibrePCB Walkthrough: From Download to PCB Order in 1...

- Advanced PCB features (thermal reliefs, blind & buried vias, slotted pads, ...)










- Advanced PCB features (thermal reliefs, blind & buried vias, slotted pads, ...)
- 3D PCB viewer & STEP export

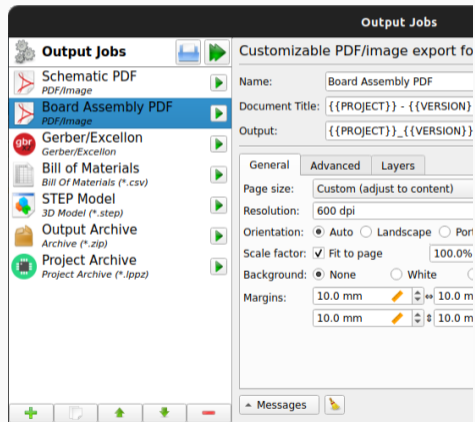


September 2023: LibrePCB 1.0.0

- Advanced PCB features (thermal reliefs, blind & buried vias, slotted pads, ...)
- 3D PCB viewer & STEP export
- Assembly variants & MPN management
 - Adding MPNs to libraries
 - Specifying MPNs in schematics
 - Alternate (second-source) MPNs
 - Different parts in each assembly variant
 - Separate BOM for each assembly variant








Board Device	Part Number	Manufacturer	Attributes	Mount	
 OSRAM LG R971-KN-1	 LG R971-KN-1	OSRAM		<input checked="" type="checkbox"/> AV1 <input type="checkbox"/> AV2	
↳ Alternative 1:	 MP-3014-1100-22-90	Luminus Devices	2200 K 90 white		  

- Advanced PCB features (thermal reliefs, blind & buried vias, slotted pads, ...)
- 3D PCB viewer & STEP export
- Assembly variants & MPN management
 - Adding MPNs to libraries
 - Specifying MPNs in schematics
 - Alternate (second-source) MPNs
 - Different parts in each assembly variant
 - Separate BOM for each assembly variant
- Output jobs
 - Unified export for any kind of production data
 - Highly customizable
 - 100% reproducible/portable
 - Runnable from GUI and CLI



Demo Time!

Project Status

Library Management		
Library Editor		
Schematic Editor		(except buses & hierarchical sheets)
Board Editor		(functional, but rather basic editing tools)
Data Import		
Data Export		
Available Libraries		

Short term:

- EAGLE project import as it is now abandoned by Autodesk
- Live part information (part status, stock availability, prices, ...)
- Under the hood: Qt6, C++17, 64-bit Windows binaries, ...

Long term (in arbitrary order):

- Improve trace routing tool (differential pairs, push&shove router, ...)
- Hierarchical schematics & buses
- Many UI improvements
- Extend part libraries
- Technology updates: OpenGL 2D renderer? QtQuick/QML? Rust?
- ...

It's a huge, very time consuming task to develop an EDA software. . .

If LibrePCB is useful for you, a donation would be greatly appreciated ❤️
It helps to keep full-time development ongoing, making it more and more powerful.

Other ways to contribute: <https://librepcb.org/contribute/>

Currenty looking for help:

- Wikipedia article: <https://en.wikipedia.org/wiki/Draft:LibrePCB>
- Share your feedback: <https://show.forms.app/librepcb/feedback>

Download

<https://librepcb.org/download/>

(or by package manager on Ubuntu, Arch Linux, NixOS, FreeBSD, ...)


Quickstart Video Tutorials

<https://www.youtube.com/@LibrePCB>

Quickstart Guide

<https://librepcb.org/docs/quickstart/>

Thank you!

 <https://librepcb.org>