

Volta

Volta builds AI agents for the physical world by rethinking how electrical engineers design the circuits that power modern technology. We create tools that make PCB design faster, more accurate, and accessible to everyone. Our goal is to power the next wave of hardware innovation, from embedded systems to AI-enabled devices, by replacing repetitive manual work with intelligent design automation and giving every engineer the capabilities of a top-tier hardware team.

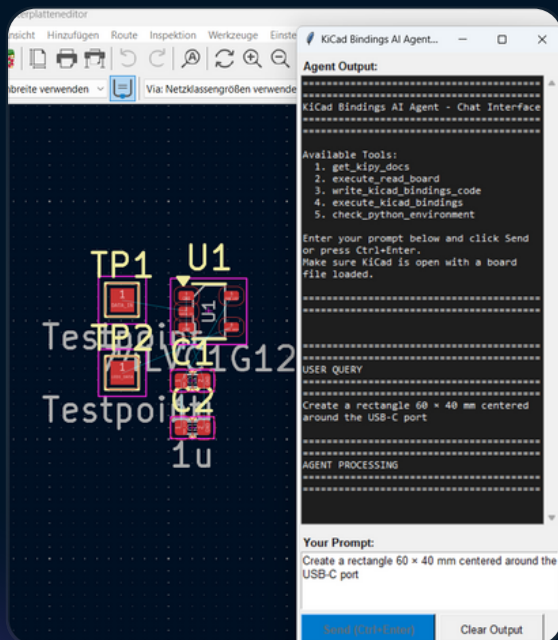
The challenge we tackle

The demand for custom electronics has surged, but OEMs and EMS companies struggle to meet timelines because PCB design cycles still take months. The core issue is the slow, manual nature of schematic cleanup, footprint alignment, routing adjustments, and manufacturability verification. These repetitive steps limit throughput far more than the boards themselves. With recent advances in AI and 2D structural reasoning, it has finally become feasible to automate significant parts of the PCB design process and remove this bottleneck.

Our Solution

Volta is a Copilot that assists engineers directly inside their PCB tools. It understands schematics, constraints, and layouts, and suggests improvements to placement, routing, and design structure. We begin by integrating into existing workflows for easy adoption and to avoid competing directly with the network effects of legacy design software, while also training our models on real, high-value design data, enabling us to later launch a standalone platform that automates the entire PCB design process through superior product quality.

Product



Technology:

Our first prototype is built in Python and connects to board data through the KiCad API and command-line tools, which became available this year.

We started with KiCad because many German EMS companies rely on it.

Our engine combines rule-based checks, manufacturability scripts, and an LLM planning model to propose accurate design actions.

It runs locally through a KiCad plugin and CLI, and we are currently integrating Volta into Altium as well, with a full GUI also in development.