

Marek Cummings

Automotive PCB Design Engineer

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SUMMARY

Enthusiastic Automotive PCB Design Engineer with over five years' experience in designing embedded electronics for automotive systems. Expertise includes multilayer PCB layout, thermal management, and circuit analysis. Track record of effective collaboration with cross-functional teams to deliver high-quality solutions that enhance vehicle performance. Proven leadership in conducting DFMEA and design reviews, ensuring compliance and high product reliability. Committed to innovation, efficiency, and quality improvements throughout the design process, utilizing tools such as Altium and LTSpice.

EXPERIENCE

Automotive PCB Design Engineer

Tech Innovators Inc. 📅 June 2022 - Present 📍 Lansing, MI

Oversee complex multilayer PCB designs for electric vehicles, enhancing functionality while meeting rigorous industry standards. Lead collaborative efforts with mechanical engineering teams to optimize interfaces, balancing innovative design with practical constraints.

- Successfully led the design of intricate PCBs managing substantial industry safety standards.
- Conducted DFMEA to pinpoint vulnerabilities, effectively minimizing the risk of critical failures post-deployment.
- Worked collaboratively with multiple departments to ensure seamless integration between PCBs and mechanical components, solidifying product efficacy.
- Implemented circuit simulations using LTSpice, validating design stability before hardware execution.
- Facilitated essential schematic and layout reviews, nurturing growth among junior engineers through mentorship.
- Documented layer stack-up and design rules, significantly boosting team efficiency and project clarity.

Junior PCB Design Engineer

ElectroTech Solutions 📅 January 2020 - May 2022 📍 Kalamazoo, MI

Engaged in essential PCB design and testing, enhancing automotive products' compliance and reliability. Actively supported cross-functional teams in troubleshooting issues arising during prototyping phases while contributing fresh methodologies for greater design success.

- Assisted in completing robust PCBs focused on EMI/EMC adherence, enriching the overall design reliability.
- Streamlined schematic capture and layout processes using Altium, leading to a notable reduction in design time.
- Optimized analog and digital circuit performance through detailed analyses addressing client-specific requirements.
- Coordinated with diverse teams to resolve design problems, ensuring projects returned to schedule efficiently.
- Contributed to creating innovative design protocols that boosted product manufacturability.
- Produced thorough documentation for stakeholders, providing transparency and insightful metrics on progress.

Intern PCB Designer

Innovative Electronics Group 📅 June 2018 - December 2019 📍 Ann Arbor, MI

Supported senior engineers in conceptualizing PCB layouts for prototypes, gaining practical knowledge of the automotive design workflow and regulatory requirements. Participated actively in design sessions and validation processes for improved functionalities.

- Contributed to generating PCB layouts under expert guidance, embracing learning opportunities inherent to supportive environments.
- Executed comprehensive validation tests confirming safety and performance standards related to embedded electronics.
- Helped develop clear specifications and testing protocols, facilitating effective project communication.
- Participated in brainstorming workshops aimed at tackling design challenges creatively, contributing positively to team dynamics.
- Actively involved in design review meetings structured around constructive feedback for enhanced practices.
- Collaborated with the testing division to conduct important thermal and EMI assessments on developed PCBs.

LEADERSHIP & AWARDS

- Certified PCB Design Specialist (2025)
- LTSpice Simulation Certification (2023)

EDUCATION

Bachelor's Degree in Electrical Engineering

Michigan State University 🎓 GPA: 3.5 📅 2018 📍 East Lansing, MI

Coursework: Circuit Analysis, Electronic Design, Embedded Systems, Signals and Systems

CERTIFICATIONS

- Certified PCB Design Specialist 📅 2025
- LTSpice Simulation Certification 📅 2023

TECHNICAL SKILLS

- **PCB Design Tools:** Altium, Eagle, KiCAD
- **Simulation Software:** LTSpice, PSpice, MultiSim
- **Testing Equipment:** Oscilloscope, Multimeter, Spectrum Analyzer
- **Communication Protocols:** ETH, CAN FD, LIN, LVDS
- **Circuit Design Standards:** IPC, ISO, ANSI
- **Thermal Management Techniques:** Heat Sinks, Thermal Pads, Ventilation Design
- **Yield Enhancements:** DFM, DFT, Fault Tolerance Methods
- **Schematic Capture Software:** OrCAD, DipTrace, CircuitMaker
- **Engineering Collaboration Tools:** JIRA, Trello, Confluence
- **Leadership Skills:** Project Management, Mentorship, Team Coordination

SKILLS

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|----------------------|----------------------|---------------------------------------|-------------------------------|
| • PCB Design | • EMI/EMC Compliance | • Collaboration | • Mechanical Interface Design |
| • Circuit Simulation | • Thermal Management | • Analog and Digital Circuit Analysis | • Prototype Testing |
| • DFMEA | • Design Reviews | • Vehicle Bus Communication | • Documentation |
| • Altium Designer | • Embedded Systems | • Layer Stack-Up Development | |

PROFESSIONAL AFFILIATIONS

- Member of the Institute of Electrical and Electronics Engineers (IEEE)
- Active participant in Women in Engineering outreach programs

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST