Ait Ouahmane Abderrahmane
Hardware Design Engineer

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Hardware Design Engineer with 2+ years of experience in high-speed and mixed-signal PCB development for industrial and embedded systems. Skilled in schematic capture, multilayer PCB layout, power delivery optimization, and FPGA-based system design. Adept at meeting EMC/SI requirements and collaborating across teams to deliver reliable, production-ready hardware.

PROFESSIONAL EXPERIENCES

Hardware Engineer | Silicone-Signal Technologies | Meknes, Morocco　　　　**November 2023 – Present**
Hardware Design and Layout of Printed Circuit Boards.
- Design and deliver multiple 2–6 layer mixed-signal PCBs for IoT Devices, from concept to layout, ensuring compliance with IPC-2221/2222 standards and company DFM/EMC guidelines.
- Create block diagrams and validate circuits with LTspice simulations.
- Select and qualify components to balance cost, reliability, and availability, reducing sourcing issues during production.
- Build and maintain IPC-compliant libraries, improving reuse and minimizing errors.
- PCB layouts using Altium Designer, defining stack-ups and manufacturer rules to ensure manufacturability and signal integrity.
- Coordinate part procurement and prototype assembly, including soldering and board bring-up.
- Validate designs using oscilloscopes and lab equipment, meeting performance specs.

End of Studies Internship | Lear Corporation | Rabat, Morocco　　　　**February– July 2023**
SWEET500 BCM Evaluation board with the new Microcontroller Aurix TC387
- Analyzed RFQ schematics and block diagrams for the Renault–Nissan–Mitsubishi Alliance.
- Captured and refined schematics in line with automotive and company design guidelines.
- Performed worst-case condition analysis (WCCA) to ensure compliance with reliability standards.
- Designed PCB layouts in Xpedition, following automotive-grade EMC and DFM rules.

End of Year Internship | Moussa-soft | Agadir, Morocco　　　　**July– August 2022**
Development in embedded electronics
- Developed a programmable logic controller (PLC) for industrial automation based on ATmega2560.
- Designed a PCB with multiple high-current I/Os, incorporating proper sizing, protection, and thermal considerations.
- Built a working prototype including PCB and enclosure, enabling functional demonstration.
- Programmed the controller and developed a mobile app (App Inventor) for system interaction.

EDUCATION

National School of Applied Sciences | Hassan I University | Morocco　　　　**2020 - 2023**
State Engineering Degree
- Option: Aeronautics (Electronics and embedded systems)

Higher School of Technology | Ibn Zohr University | Morocco　　　　**2018 - 2020**
Technical University degree (DUT)
- Option: Electrical engineering

TECHNICAL SKILLS

Hardware Design	: Analog/digital circuit design, Prototyping, Oscilloscopes, Multilayer PCB layout, IoT
Protocols	: I2C, UART, SPI, CAN, LIN, Wi-Fi, BLE, MQTT
Programming Languages	: Embedded C, C++, Python, VHDL
Development Boards	: Raspberry Pi, STM32, ESP32, Arduino, Xilinx FPGAs
Tools & Environments	: Altium, Xpedition, Kicad, LTspice, Matlab/Simulink, Vs Code, Git, Office.

SOFT SKILLS

Report Writing | Team Collaboration | Knowledge Sharing | Problem Solving | Attention to Detail | Proactive | Efficient multitasking | Deadline-driven | Technical documentation

Languages: Arabic (Native), English (Professional), French (Conversational)

CERTIFICATIONS

Complete Electronics Hardware Design Course　　: https://www.udemy.com/certificate/UC-166d258c
Signal Integrity Basics to Advanced & Simulations : https://www.udemy.com/certificate/UC-76672285

LINKS

LinkedIn　　　　　　　　　　　　　　　　: https://www.linkedin.com/in/ait-ouahmane/