Aymen Dhaker

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English / French https://aymendhaker.com/

PROFILE

Hardware Design Engineer with 6+ years of experience in **schematic design, PCB layout, board bring-up, and hands-on hardware validation** for embedded and industrial systems. My background combines analog/digital circuit design, power distribution, and close collaboration with firmware and mechanical teams.

ADVANCED SELF-STUDY

Advanced Self-Study – Switch-Mode Power Supplies (2024 – Present)

- Studying advanced topics in power electronics: Flyback, Forward, Half-Bridge, Full-Bridge topologies.
- Small- and Large-signal models, RHPZ, current- and voltage-mode control, and Type-II/III compensator design.
- Hands-on simulation with Qspice, LTspice, MATLAB/Simulink, and FEMM
- Deep focus on magnetics design, control loop compensation, Small-Signal modeling, and EMC/PCB layout.

TECHNICAL SKILLS

- Test equipment proficiency
- Programming languages: C/C++, Python, SPICE, Perl, VHDL
- Tools: Qspice, LTspice, MATLAB/Simulink, INCA, BUSMASTER, KiCad, Altium Designer, PADS, Cadence.
- Wrike, SVN, Jira, Jenkins
- Microsoft Office Suite: Word, Excel, PowerPoint
- Excellent communication and active listening
- Adaptability in dynamic environments
- Methodical and organized mindset
- Analytical thinking to solve complex problems
- Leadership and strong team collaboration

Work Authorization:
Canadian citizen – TN visa eligible under Engineer category (no sponsorship required)

EDUCATION

Bachelor of Engineering (B.Eng.) – Microelectronics / Electrical Engineering *09/2017*
Université Du Québec À Montréal, Montréal, QC

PROFESSIONAL EXPERIENCE

Hardware Design Engineer (Consultant) *09/2021 to PRESENT*

MERKUR | Brossard, QC

PCB AND EMBEDDED DESIGNER *09/2025 to PRESENT*

GANOTEC | Brossard, QC

- Developed an automated insulation and continuity test system using 2 customs 4-layer PCBs (Master and Slave) featuring dedicated 1 kV isolation zones, STM32 control architecture, isolated RS-485 communication, and solid-state relay switching.
- Implemented the power subsystem including USB-C power-path management, Li-ion battery-charging circuitry, and 3.3 V regulation, along with the embedded firmware driving automated test sequences.
- Designed the complete hardware stack: detailed schematics, PCB layout, connector selection, high-voltage creepage/clearance spacing, and full system integration.

EV ELECTRICAL TEST ENGINEER *01/2022 to 01/2025*

BRP | Valcourt, QC

- Validated EV power systems including DC-DC converters, traction batteries (8.9 kWh / 25 kWh), and control electronics under extreme thermal and vibration environments.
- Performed system-level electrical measurements: ripple, transient response, power quality, and EMC performance.
- Conducted HALT testing (thermal shock, vibration, and environmental stress), improving field reliability for off-grid and harsh-environment applications.
- Authored engineering documentation: test plans, load-case profiles, fault analysis, and compliance verification reports aligned with IEC/ISO standards.
- Collaborated across electrical, firmware, and mechanical teams to resolve integration issues and validate energy subsystems end-to-end

FIRMWARE VALIDATION DEVELOPER *09/2021 to 12/2021*

VENMAR | Drummondville, QC

- Validated firmware for range hoods with Wifi, Bluetooth, voice control
- Provided design improvement suggestions for new product features

EMBEDDED SOFTWARE DEVELOPER *03/2018 to 11/2019*

ASTUS | Longueuil, QC

- Developed and debugged embedded C code on ARM microcontrollers
- Designed and implemented communication protocols (CAN, UART, SPI, ADC)
- Performed reverse engineering and decoded CAN Bus frames (OBD2/J1939)
- Improved test infrastructure and software robustness
- Integrated firmware into onboard weighing systems and spreaders