THORNHILL MEDICAL
Inspiring Innovation

Job Posting

Position:	Sr. Embedded Systems Designer
Reports to:	Engineering Manager
Position type:	Permanent Full-Time
Location:	North York, ON

ABOUT THORNHILL MEDICAL:

Thornhill Medical's ground-breaking products are designed to be used globally by emergency health care providers, humanitarian, and military medical teams. Thornhill's oxygen-focused research and applications are transforming patient care in extreme circumstances, while inspiring and enabling other new technologies to unlock vital life-saving solutions. Thornhill Medical's innovations are in 19+ countries including Ukraine. With a team committed to courage, collaboration and saving lives, Thornhill Medical leads the way in the nimble and precision-focused field of medical technologies.

POSITION SUMMARY:

The **Sr. Embedded Systems Designer** is responsible for designing, developing, and maintaining the embedded systems driving Thornhill's MADM and RespirAct product lines. The position is also involved in all parts of the medical device lifecycle for both product lines.

DUTIES & RESPONSIBILITIES:

Design, Development, and Sustaining:
- Performs embedded system development and maintenance activities on all products and accessories that make up the MADM and RespirAct product lines.
- Generates documentation for embedded designs in compliance with quality system requirements.
- Actively collaborates with:
  - electronics designer on hardware design and hardware/firmware integration;
  - manufacturing specialist and electronics designer on hardware sustaining activities;
  - test engineering on verification activities, including execution of safety and performance testing to satisfy applicable standards (e.g., IEC 60601-1).
- Maintains existing embedded designs to ensure conformance with state-of-the-art standards.
- Designs and develops prototypes for future products.

General Engineering:
- Prepares engineering change requests and change orders.
- Participates in design review process.

- Supports production and service teams by assisting with the resolution of technical issues encountered as well as by establishing effective testing and test benches.
- Interfaces with partners, suppliers, and subcontractors to address technical issues and requirements.
- Provides technical leadership to junior team members including co-op students.

Other:
- Considers quality in all aspects of the job and respects procedures and norms.
- Other duties as assigned.

EDUCATION & EXPERIENCE:

- Bachelor's degree in electrical/computer engineering or related field.
- 8-10 years of practical experience working in a regulated industry (e.g., medical device industry preferred).
- Experience with embedded system design, firmware development, circuit design, schematic capture, and PCB design using ECAD tools (e.g., Altium Designer).
- Proven experience with debugging techniques for embedded systems using soldering and common electronics tools (e.g., logic analyzers, microcontroller debuggers, oscilloscopes).
- Experience with revision control systems (e.g., Git/Gitlab).

SKILLS & KNOWLEDGE:

- Microcontroller embedded software development in C/C++.
- Familiarity with sensors and serial protocols (e.g., I2C, SPI, UART) common in embedded systems.
- Excellent problem solving, troubleshooting, and debugging skills, including use of common tools and techniques (e.g., logic analyzers, microcontroller debuggers, oscilloscopes).
- Aptitude in programming for reliability and testability.
- Strong organization skills with attention to detail, plus the ability and desire to create maintainable designs.
- Strong understanding of complex integrated electromechanical systems and embedded software.
- Knowledge of the following standards: IEC 62304, ISO 14971, and IEC 60601.
- Excellent interpersonal and communication skills (verbal and written).
- Self-starter that is highly motivated, creative, and able to work both independently and within a team environment.
- Ability to build strong relationships and work collaboratively with cross-functional teams to meet shared objectives.
- Drive to consistently achieve results, even under tough circumstances.
- Holds self and others accountable to meet commitments.
- Strong computer skills and proficiency with Microsoft Office suite products (Word, Excel, PowerPoint, Access).

- Development expertise with Microchip dsPIC and PIC32 microcontrollers.

OTHER REQUIREMENTS:

- Primarily office related requirements with exposure to production work rooms when required.
- Light lifting and bending.
- Some travel required.

Thornhill Medical welcomes and encourages applications from all qualified people, including those with disabilities. Accommodations are available on request for candidates taking part in all aspects of the selection process.

We thank all applicants for their interest, however, only those selected will be invited for an interview.