

SBQuantum are using cutting edge science to enhance the way we use magnetic fields in order to 'Reveal the Invisible' for our clients. We are reinventing the way companies sense the world by innovating magnetics to provide solutions for problems to which this sensing modality was previously redundant. As a forerunner of Sherbrooke's nascent quantum hub, SBQ are prototyping a 'Magnetic Intelligence' platform, built around a novel diamond-based magnetometer. This platform will reveal hidden objects and enable improved navigation even in difficult environmental conditions. Magnetic fields are everywhere around us, let's make them central to how we sense the world.

Your mandate – Design the magnetometer's control circuit and satellite interface board

Designing complex electrical circuit is your passion? In close collaboration with the engineering team, you will be in charge of designing the new version of the magnetometer's control circuit. Multiples challenges are foreseen: this circuit will interface with a CubeSat satellite and must generate a minimal magnetic signature. You prefer analog circuits? No problem - you will also design circuits based on a laser, microwave generation and low noise analog electronics. Specifically, you will:

- Design the control circuit of the magnetometer (MCU, FPGA, CAN, GPS synchronization);
- Select required electrical components while minimizing their magnetic signature;
- Reduce magnetic signature of components by optimizing their layout on PCBs;
- Consider electrical current induced magnetic noise in your designs;
- Lead other digital and analog circuits allowing increase performances of the magnetometer;
- Program microcontrollers (inter-components communication, state machines, algorithms,...);
- Support the certification process of the prototype.

What you need to join our team!

SBQ are looking for candidates with a high degree of autonomy and rigor to develop a high-performance autonomous magnetic inspection solution that meets customer needs. We are not afraid to fail so long as we learn from it - it's part of the adventure. We are looking for:

- A strong ability to work in a cross-functional team. You will work in a multidisciplinary team of nine passionate people in Sherbrooke, QC so we are looking for examples of times you have excelled in a team environment be that at school or in an extra-curricular activity;
- Bachelor's degree in electrical engineering including 3+ years PCB design experience;
- Experience with Altium Designer software;
- Knowledge in C, C++;
- Agility to shape decisions to navigate ambiguity and adjust priorities;
- Responsiveness to criticism, ability to set clear and measurable goals;
- Our schedule is flexible and includes hybrid remote work when tasks allow;
- Bilingualism in French/English is an asset - most of our documentation is in English;

Do you want to take an active part in the deployment of quantum technology in the field taking our magnetometer performance to new heights? Contact us, our team wants to meet you!

Send your CV and cover letter to : info@sbquantum.com

As featured in: • Wired • The Economist • A case study • Graduation from the Creative Destruction Lab
• Institut quantique annual reports • The Quantum Daily • MagQuest Challenge

