



Principal Electrical Engineer (Boston)

Top Flight Technologies (www.topflighttech.com) – the first commercial UAV manufacturer to utilize a hybrid propulsion engine for extended flight and enhanced payloads is seeking Senior Electrical Engineer(s) to be part of its engineering team. We are looking for individuals that have core electrical engineering and problem-solving expertise, and that can work individually and on team project assignments. The work environment is centered on agile development, where designs are quickly tested, problems resolved, ideas improved, products built and tested. Candidates should have a passion for building innovative product solutions.

Yes, this is a well-funded startup; the work is demanding, and also really fun grasping new skills while working with other bright and energetic engineers and team members.

Essential Functions/ Job Duties

Responsibilities:

- Lead the architecture and design of electronic systems.
- Play a key role in all phases of the product development cycle (requirement/definition, design and development, verification and validation).
- Design power, avionics and mixed signal systems for high reliability hybrid power systems.
- Design enhanced motor control systems for BLDC and PMSM motors with diagnostics and motor reporting functionality.
- Maintain knowledge of new component developments and emerging technologies relevant to UAV, drones, robotics and controls.
- Implement design best practices and collaborate with cross functional engineering team to new products.
- Experience interfacing with procurement and manufacturing as well as external suppliers to ensure proper implementation of product designs.
- Ability to work effectively in a fast-paced, dynamic environment as part of a multi-disciplinary team; Ability to multi-task.
- Coach and mentor junior engineers.
- Team player with very good collaboration skills, fostering knowledge sharing with multi-functional team members.

Qualifications:

- BSEE, MSEE preferred from an accredited university.
- 10+ years of experience in power electronic circuit and system development.
- 10+ years electrical engineering design experience in product development.
- 10+ years of experience with robotics or complex electro/mechanical systems.
- 10+ years of experience performing electrical system-level and board-level design.
- Strong knowledge and experience in a wide range of Analog and Digital circuit design.

Required Skills:

- Comprehensive understanding of circuit board design for power electronics application, such as analog signal processing and gate driver circuits.
- Component-level such as a AC/DC, DC/DC, regulators.
- Design and development of power electronics hardware such as power converters, power conditioners, and linear regulators.
- Experience with sensors, analog and digital electronics, thermal management and electronics packaging.
- Perform circuit card design, including layout and routing and wiring harness fabrication techniques.
- Lead product schematic and layout design reviews and provide clear layout constraints (PC board stack-up, component placement, high speed routing, etc.).
- Electrical system diagnostic skills, including the ability to operate diagnostic equipment such as oscilloscopes, spectrum analyzers, etc.
- Experience with environmental qualification testing is strongly desired .
- Implement EMI best-practices.
- Experience with regulatory requirements such as UL, CE, FCC.
- Experience with power electronics and motor control technologies.
- Experience with unmanned systems (Fixed wing & VTOL platforms), flight controllers, power systems, sensors, navigation, communications, and RC based solutions all a plus.
- Experience developing embedded and real-time systems in C, C++ or FPGA Design (Verilog and/or VHDL).
- Experience with designing embedded systems (microcontrollers, processors, high-speed busses), sensors, power systems (DC-DC converters, power distribution), and motor control.
- Experience with current battery technologies and battery charging systems.
- High Speed PCB design experience including Power Distribution Network (PDN) design and analysis experience is desired.
- Hands-on with devices, prototyping, and troubleshooting and performing root cause analysis and identifying cost-effective solutions.
- Experience with electrical safety design (interlock design) is a plus.
- Modeling and simulation using PSpice, MATLAB/Simulink, or similar tools.
- Experience with Altium Designer skills.
- Experience with the design, build, integration and/or test of complex electronic systems.
- A demonstrable ability to perform trade studies and tradeoff analyses.
- Experience designing products for low volume/high mix and high-volume production, documentation control, BOM structures, and ECO processes.

- Experience with the following protocols: I2C, SPI, PCI, PCIe, USB, CAN, Ethernet.
- Experience with early prototyping, DOE, and testing of design concepts to root out issues prior to production.
- Experience with technologies such as high speed SOCs, DRAM, flash, microcontrollers, CAN, Ethernet, LIADR, GPS, WiFi, cell modems, radio tuners, USB, displays, and linear and switching power supplies.
- Knowledgeable on the use of electrical test equipment including oscilloscopes, signal generators, spectrum analyzers, network analyzers, and multimeters.
- Excellent written and verbal presentation skills to facilitate communications with team members, customers, and senior leadership.

What's in it for you?

- Work side by side with a world-class technology and business leadership team that is defining new markets in the growing domain space of unmanned systems and where the solutions are recognized as industry leaders
- Tremendous growth opportunity; competitive compensation package including base salary, plus bonus, stock options and benefits.

You must be authorized to work in the United States on a full-time basis for any employer.

Please forward cover letter and resume to jobs@topflighttech.com for consideration.

No agencies please.