ANYWAVES

SPACE, UNMUTED

JOB OFFER

Senior FPGA Engineer (M / F)

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About Anywaves

Anywaves is an international space technology company specialising in antennas, RF electronics, embedded software, avionics and integrated payload subsystems for satellite missions. Building on more than 25 years of engineering heritage, we bring together complementary expertise from our teams in Toulouse, France, Hautcharage, Luxembourg, and Austin, Texas. From design and project management to testing, industrialisation and production, we develop high-performance technologies for commercial and institutional customers worldwide. Our solutions support satellite communication, navigation, Earth observation and other demanding space applications, from individual products to complete RF payload subsystems.

With more than 120 employees representing a wide range of nationalities and technical backgrounds, Anywaves combines the agility and close collaboration of an entrepreneurial company with the capabilities of a growing international group. Joining Anywaves means contributing directly to ambitious space programmes, solving complex technical challenges and helping shape the next generation of satellite technology.

About the position

We are looking for a Senior FPGA Engineer to join our Software/Firmware team, within a company specializing in embedded electronics for the space industry. You will design, develop, and qualify FPGA based firmware for mission-critical space applications, working closely with our Electronics, RF, and Systems Engineering teams to deliver robust, radiation-tolerant embedded solutions for both client projects and our own product line. This is a senior, hands-on role with strong technical ownership: you will lead FPGA architecture decisions, mentor junior engineers, and act as the technical reference for firmware/FPGA topics across the company.

Key Responsibilities

Working closely with Electronics and Systems Engineering team in Luxembourg, you will play a critical role in the digital design and signal processing of our advanced space communication systems.

- Architecture & Conception: Define and implement complex logical architectures (VHDL/Verilog) on next-generation FPGA platforms (such as AMD Xilinx / Microchip) tailored for harsh space environments.
- Digital Signal Processing (DSP): Develop, simulate, and integrate DSP algorithm blocks directly into our SDR architecture (including modulators/demodulators, digital filtering, control loops, and custom communication protocols).
- Communication Interfaces & Storage: Design, implement, and validate high-speed communication and memory protocols, specifically handling SpaceWire, SpaceFiber,as well as high-reliability storage subsystems like NAND Flash and DDR memories.

- Integration & Validation: Actively participate in laboratory testing phases, hardware/software co-design validation on custom boards, and support environmental qualification campaigns.
- Resource Optimization: Maximize HDL design efficiency under strict NewSpace constraints, including low power consumption, optimized silicon area, and radiation-mitigation strategies (such as SEU/SET mitigation).
- Documentation: Author high-quality technical documentation compliant with European space industry standards (ECSS / EN9100).

Preferred skills

- Proficient in VHDL (or Verilog/SystemVerilog) and simulation tools (ModelSim, QuestaSim).
- Hands-on experience with hardware synthesis and implementation suites (Vivado, Libero).
- Direct familiarity with high-reliability protocols and interfaces (SpaceWire, SpaceFiber, JESD204B/C, NAND Flash, and DDR memories).
- Strong expertise in Error Correction Coding (ECC) and channel coding schemes, including Convolutional encoding/decoding, Reed-Solomon, BCH, Turbo codes, and LDPC.
- Practical laboratory experience using measurement equipment (oscilloscopes, spectrum analyzers).
- Strong Plus: Good knowledge and practical mastery of CCSDS standards (Consultative Committee for Space Data Systems) and a solid understanding of ECSS engineering standards (European Cooperation for Space Standardization).
- Strong Plus: Proficiency with HDL Coder and automated HDL code generation from MATLAB / Simulink models.

Profile required

- Communication Skills: Excellent written and oral communication skills to effectively convey technical information.
- Analytical and Problem-Solving Skills: Strong analytical skills and a proven ability to solve complex problems.
- Language Skills: Fluent in English; proficiency in French or German is a significant asset.
- Educational Background: Master’s degree or Engineering degree (Bac+5) in Digital Electronics, Embedded Systems, Telecommunications, or a related field.
- Experience: A first successful experience or a solid track record (7+ years) in FPGA design. Prior experience in the space sector (NewSpace / SDR) or RF communication systems is highly valued.
- Autonomy: Ability to strike the right balance between working fully autonomously

We invite you to submit your CV and cover letter, showcasing your motivation for the position and positive impacts to the company to fpga@anywaves.lu. Expose and demonstrate how your skills align with the job requirements to make a meaningful impact.

Start: as soon as possible
Contract type: Permanent
Location: Hautcharage, Luxembourg
Compensation: According to profile

In accordance with the General Data Protection Regulation (GDPR), your personal data will be processed solely for recruitment purposes. For any questions regarding the processing of your data or to exercise your rights, please contact dpo@anywaves.lu.