Senior Digital Designer (Spacecraft Systems)

Umbra Lab, Inc. is a technology company in Santa Barbara, California. Umbra operates in a dynamic, fast-paced environment and is offering competitive industry salaries with equity options for driven individuals. Umbra is looking for a talented, mission-driven professional to work closely with a multidisciplinary engineering team as a Senior Digital Designer (Space Systems), developing HDL based digital designs supporting next-generation space radar systems. The individual filling this position will collaborate with the electrical engineering team to develop, analyze, manufacture, and test microwave subsystems.

Key Responsibilities

- Develop FPGA-based digital designs for radar, electronic warfare, and wireless communications.
- Work with electrical and systems engineers to integrate Xilinx 7-Series based hardware with high speed data converters and associated microwave transmitter and receiver chains.
- Continuously collaborate with the payload engineering team to address mechanical, thermal and power subsystems and interfaces.
- Rapidly develop prototypes and iteratively improve hardware and firmware.
- Prepare engineering documentation, reports, and test plans.
- Interface with vendors as the technical representative and subcontracts manager.

Basic Qualifications

- Bachelor of Science in relevant discipline such as physics or electrical engineering.
- Knowledge of foundational physics, electrical engineering and digital design concepts.
- 5+ years of relevant experience in digital design with FPGA and SoC devices.
- Development experience with Xilinx 7-Series devices and Xilinx Vivado.
- Expertise in C programming language and Python.
- Working knowledge of modern FPGA architectures and external interfaces, including high speed converters, DDR RAM, and Solid State NAND and NOR based storage.
- Familiarity with standard physical layers for digital communication (UART, SPI, LVDS).

Desired Qualifications

- Advanced degree in relevant technical discipline.
- Knowledge of digital communication systems and modulations (QPSK, 8-PSK).
- Experience developing FPGA based hardware for the space environment.
- Experience with analog and RF circuit design from baseband through X-band.
- Experience developing MCU and SoC firmware in the C programming language.

Additional Requirements

To conform to U.S. Government space technology export regulations, the applicant must be a U.S. citizen, a lawful permanent resident of the U.S., protected individual as defined by 8 U.S.C. 1324b(a)(3), or eligible to obtain the required authorizations from the U.S. Department of State. Learn more about ITAR here: https://www.pmddtc.state.gov/?id=ddtc_kb_article_page&sys_id=24d528fddbfc930044f9ff621f961987.

Benefits

- Professional Work Environment
- Flexible Vacation / Paid Time Off Policy
- Medical, Dental and Vision

About Umbra Lab, Inc.

Umbra Lab, Inc. is a venture-backed space company developing next-generation space systems. We are looking for mission-driven professionals to join Umbra Lab. We are building a bold, experienced team of payload developers and spacecraft systems engineers to aggressively expand the state-of-the-art for commercial remote sensing. Join our team to embark on an exciting, innovative and meaningful career. Every team member will have a significant and essential impact, and career growth is unlimited. The industry is just beginning meteoric growth – this is a chance to change how humans and machines use data.