WE'RE HIRING
FPGA Firmware Engineer

Company Profile

Rapid Mobile is a world-leading business-to-business supplier of HF and V/UHF digital radio communication technology. We are a privately-owned, mid-sized company that has been operating in the global defence and governmental markets since our establishment in 2001. Over the years, we became a trusted partner of choice for large international clients, including some of the world's foremost communication system integrators, radio makers and resellers who, in turn, serve navies, militaries and governments, as well as industrial, civil and commercial users around the world.

RapidM produces an extensive range of innovative data modems, embedded modules, tactical terminals, digital voice encryption solutions and software. These independently-developed products excel in some of the harshest environments on earth and deliver unsurpassed data speed, voice clarity and reach, while conforming with salient international industry standards to ensure widespread interoperability.

Our offices and production facilities are headquartered in Pretoria (also known as the Jacaranda City), South Africa. RapidM is home to a growing team of seasoned engineers, computer scientists, production technicians and supporting staff, led by an avid management team. We work in a supportive environment, focused strongly on mentorship and collaboration. Our team's dedication to continuous improvement has led us to be trailblazers in the field, enabling our clients to reach beyond boundaries.

Description of Position

RapidM is looking for an *FPGA Firmware Engineer* with knowledge of Hardware Description Languages (HDL) and Programmable Logic Devices (FPGA, CPLD), where you will be responsible for the design and development of embedded firmware relating to digital communication systems, with a focus on wireless communications and encryption. As part of the engineering team, you will work in an agile development environment with other software engineers, hardware engineers and R&D test engineers on multi-year international projects.

Minimum Requirements

- A degree in BEng Electronic Engineering or BEng Computer Engineering.
- 0 to 5 years of firmware or low-level embedded software development experience.

Main Responsibilities

- Implement various signal processing and cryptographic algorithms on FPGAs.
- Implement control and data interfaces between processors, DSPs and FPGAs.
- Implement and simulate custom and off-the-shelf IP blocks.
- Integrate and test firmware and software on custom electronic hardware platforms.
- Provide production support on developed firmware.
- Maintain and improve the RapidM FPGA build and development ecosystem.
- Develop firmware in accordance with relevant standards and specifications.

Specialised Knowledge, Skills and Experience Preferred

- A strong understanding of Synchronous Digital Design Principles.
- Experience with VHDL or Verilog development for FPGAs (Intel and Xilinx).
- Experience with FPGA timing analysis and timing closure.
- Experience with VHDL unit testing and simulation.
- Experience with HDL toolchains (Intel Quartus, Xilinx Vivado and, Siemens Modelsim).
- Experience with generating VHDL from the MATLAB toolchain.
- Experience in communication interfaces such as I2C, SPI, UART, McBSP, PCI Express and Gigabit ETHERNET.
- Experience with integration and testing of firmware, embedded software and electronic hardware systems.
- Experience with implementing interface drivers for FPGA components.
- Experience in developing embedded applications with C and C++.

Why Work at RapidM?

RapidM is shaped by a team of curious minds with different skill sets, working on ground-breaking digital radio communication technology. Developing our people is a key pillar of our culture and we promote a growth mindset at all experience levels. Our employees are empowered to assume further responsibility through a unique mix of opportunities, including on-the-job training, mentorship, skills development and assistance with post-graduate studies.

We offer challenging careers at the forefront of technology and seek to recruit and develop the most suitable and talented people from a diverse candidate pool. In taking this approach, our employment decisions are based on personal merit, individual qualifications, competence, job requirements and business needs, regardless of any protected characteristics. We work in a relaxed but professional environment, characterised by hard work and plenty of dedication, while still leading a well-balanced life.

Our leaders are deeply invested in the success of our people and believe in creating a positive, engaging environment where employees have the support to drive their professional development and reach their full potential. Whatever your passions, we are always seeking innovative and talented people to join our team.

Core Values

Our core values guide how we conduct ourselves and inform every decision we make. In our case, our core values are not nouns. They are verbs or behaviours. The ideal candidate is expected to operate in line with the following core values:

- **Be People-Focused:** We care about people. Those we work with and those we serve. That is why our colleagues and our clients are at the heart of our business. Curating an environment grounded in mutual respect, trust, personal growth and a shared purpose is crucial in empowering our people to be at their best. This allows us to build authentic, trust-based relationships with each other through which we can provide outstanding, personalised service and support.

- **Act with Integrity:** Acting with unwavering integrity forms part of the foundation upon which our relationships are built. In the face of adversity, we do the right thing, no matter who's watching. Clients rely on us to act with discretion at all times, from the first moment of contact and throughout our relationships. We always demonstrate honesty, trust and dependability and hold ourselves personally accountable and responsible for delivering on our commitments, both individually and as a team.

- **Deliver Quality:** We take pride in our work and seek to provide the highest standards in delivering quality products and services to our clients. To ensure we deliver on our promise of quality, we often take initiative, doing more than what is required and going beyond expectations. Our teams have strong work ethics and deliver quality through great diligence, rigorous quality control and assurance checks and attention to detail.

- **Reach Together:** We are a relatively small group of people doing complex work, leading us to have a natural bias toward teamwork. We understand there is power in individuals but believe that there is much greater power in working openly and reaching out across teams to develop our leading products and services. We see open communication and planning between each other as the most effective way to create a synthesis of diverse ideas to solve problems creatively. This collaborative mindset is also extended to our clients as we see it as an opportunity to work closely together, learn from each other and become indispensable partners.

- **Behave Boldly:** By behaving boldly, we bring our whole selves to every situation and engage with a spirit of confidence. We dare to reach beyond the boundaries of conventional thinking. Our flair for innovation and passion for what we do allows us to tackle industry-leading projects, even though they may take a while. We are, however, responsible risk-takers and do not mind taking a few steps backwards, trying new things without losing focus, to ultimately move forward.

- **Stay Curious:** We are curious and never rest in the belief that we have it all figured out. We know we can always be better, sparking an appetite and desire for lifelong learning. By staying curious, we ask more questions, explore new ground, find novel ways of doing our work and adapt to dynamic situations. This separates us from the stagnant and allows us to be the purpose-driven trailblazers we are.

REACHING
BEYOND
BOUNDARIES