

# Embedded Software Engineer

## Job Summary

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Novocomms Limited (“NVC”) – Birmingham (Potentially London)

**NVC is looking for full-time Embedded Software Engineer (Ref: 2024ESE02)** with ability, experience and knowledge in the definition, design, development, and testing of software in our new beam steering wireless systems. This role is required to work closely with most of our technical teams.

## Duties & Responsibilities

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- **System Design and Software Development:** Define and design the software architecture for beam-steering antenna arrays and baseband processing in wireless user terminals. Develop and implement software that integrates seamlessly with hardware to enable high-performance mmWave communication.
- **Cross-functional Collaboration:** Work closely with RF engineering, hardware design, and system integration teams to develop software solutions that enhance beam steering and signal processing across different subsystem architectures. Ensure software compatibility and optimization with antenna designs and RF front-end modules.
- **Algorithm Development:** Innovate and develop advanced algorithms for the calibration, testing, and operational efficiency of beam-steering antennas and baseband processing units. Focus on signal integrity, data throughput optimization, and power efficiency.
- **Testing and Validation:** Design comprehensive test plans and methodologies to validate the functionality and performance of software systems. Conduct simulation and real-world testing to ensure compliance with technical specifications and performance criteria.
- **Technical Troubleshooting:** Provide expert technical support to identify, diagnose, and resolve software and integration issues in development, manufacturing, and field deployment stages. Collaborate with quality assurance teams to address defects and ensure the reliability of the product.
- **Documentation and Reporting:** Prepare detailed technical documentation, including design specifications, testing protocols, and user manuals. Document software development processes, algorithm descriptions, and system integration guidelines for internal and external stakeholders.
- **Continuous Improvement:** Engage in continuous learning and research to stay abreast of the latest developments in mmWave technology, software engineering practices, and industry standards. Propose and implement improvements to software processes and product designs to enhance performance and user experience.
- **Additional Responsibilities:** Perform related duties as assigned, which may include participating in new technology evaluation, contributing to patent applications, and supporting customer demonstrations.

## Essential Knowledge & Skills:

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- **Educational and Professional Experience:** Candidates must possess a Bachelor’s degree complemented by a minimum of 10 years of relevant industry experience, or a Master’s degree with at least 8 years of related experience, ideally in the development of wireless communication systems or similar technologies.

- **Programming and Development Expertise:** Proficiency in C/C++ for embedded systems is crucial, with extensive experience in embedded Linux environments on ARM microprocessors. Familiarity with software version control systems, such as Git, is expected to facilitate collaborative development efforts.
- **Embedded System Skills:** Demonstrated ability in debugging, analysis, and testing on embedded platforms, with a keen understanding of real-time constraints. A solid background in standard communication interfaces and protocols including RS-232, RS-422, Ethernet, SPI, UART, I2C, and FSK is required.
- **Hardware Proficiency:** Experience with bench test equipment (oscilloscopes, spectrum analyzers, signal generators, etc.) is essential. Candidates should also have expertise in circuit schematic design and PCB layout techniques.
- **Wireless Communication Systems:** A deep understanding of digital wireless communication principles, with specific knowledge of beam steering antenna arrays and modern wireless standards (e.g., IEEE 802.11, 3GPP). Experience in real-time software development for antenna tracking and digital communication systems will be highly valued.
- **Signal Processing:** Knowledge of signal processing algorithms and proficiency in tools such as MATLAB or Python (NumPy, SciPy) for the simulation and analysis of communication systems.
- **Regulatory Knowledge:** Familiarity with international regulatory standards and compliance requirements for wireless systems (e.g., FCC, ETSI) is important for ensuring product designs meet global market standards.
- **Analytical and Problem-Solving Skills:** Strong analytical skills and the ability to solve complex problems are essential. Candidates should be adept at troubleshooting system-level issues in embedded and wireless systems.
- **Teamwork and Communication:** Excellent teamwork and communication skills are required, with the ability to work effectively in a cross-functional team environment. This includes collaborating with hardware engineers, RF engineers, and project managers to achieve project goals.
- **Continuous Learning:** A commitment to continuous professional development, with a willingness to stay abreast of the latest advancements in embedded systems, wireless communications, and mmWave technologies.

## Essential Attributes:

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- Excellent written and oral communication skills
- Excellent interpersonal skills
- Exceptionally self-motivated and directed
- Ability to prioritize, schedule, and execute activities to efficiently accomplish tasks
- Ability to multitask and manage more than one project at the time

**Salary:** Exceptional compensation package (£55k to £120k per annum depends on experience), including competitive salary, share options, pension and bonus.

**Location:** NVC has its current R&D headquarters in Birmingham; NVC is considering opening an office in London.

**Closing Date:** 29/02/2024; **Number of Positions:** 3; **Experience** – 10 year minimum

To apply for this position please send your CV with a covering letter explaining how do you meet selection the criteria to: [HRUK@novocomms.com](mailto:HRUK@novocomms.com). You will only hear from us if you have been shortlisted.

## About the Company

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Novocomms Limited (NVC) was founded to deliver innovative new technology coming from British academia in the field of antenna design. The team have designed, developed and patented a pioneering antenna technology. The market for this highly scalable technology is the global digital wireless appliance market. NVC's remarkable innovation has led to the creation of a significant number of patent applications, both filed and in process.