

Senior Telecoms Design Engineer (Rail)

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About Us

We are the UK network service provider making digital infrastructure simple.

Whether indoors or outdoors, we make sure our customers can always connect their customers. We bring together mobile operators, central and local government, and real estate providers to work together in new ways using: Collaborative commercial models, combined real-estate and telecoms know-how, and global best practice.

We have 6000+ mast site locations, have connected 2000+ buildings and support 200+ outdoor networks. And our managed sites include some of the biggest, most challenging wireless environments in the UK, including railway stations, Canary Wharf, City of London and events like the London Olympics.

The Role

Freshwave Group is seeking a Senior Design Engineer to join Project Reach – our programme to deliver 4G/5G Distributed Antenna System (DAS) connectivity across major UK mainline rail stations and tunnels.

This is a standalone technical role at the heart of the programme. You will be the subject matter expert for RF design on Reach, working autonomously across a demanding live environment with multiple stakeholders including Network Rail, Mobile Network Operators (MNOs), and supply chain partners.

The right candidate will bring deep RF and DAS design capability, strong engineering judgement, and the practical mindset to find solutions that are technically sound, deliverable, and commercially sensible – often under time pressure and in complex build environments.

Key responsibilities

RF Design and Technical Solutions

- Own all RF and site solution design activity for Project Reach – from survey through to post-integration validation.
- Build and maintain a reference library of proven solutions, products, and design guidance spanning the range of station and tunnel environments on Reach — actively identifying, evaluating, and selecting



- appropriate equipment and design approaches to resolve Design and Build challenges
- Evaluate and select structural products, ancillary equipment, hardware (both DAS and Passive) appropriate to each site scenario, balancing performance, cost, and practicality.
 - Translate high-level coverage requirements into technically sound, buildable designs.
 - Apply value engineering principles throughout the design process – identifying where a pragmatic solution meets the requirement without unnecessary cost or complexity. Drive that approach within the supply chain.
 - Produce MNO Design Packs, Network Rail Telecoms Clearance submission and Post-Integration Reports to the required standard
 - Review and challenge/approve Supplier design submissions from Approval In Principle through to As Built and Handover Pack
 - Specify and coordinate RF and physical surveys; analyse survey data to inform and optimise designs.
 - Possess and apply deep knowledge of RF fundamentals including interference, PIM, VSWR, and path loss, with capability to diagnose and resolve complex RF issues.

Autonomous Technical Leadership

- Act as the primary technical authority for RF design within the programme – operating with a high degree of independence and initiative.
- Identify design risks and issues early; develop and implement solutions without reliance on escalation.
- Challenge existing design approaches where there is a better or more efficient solution, and drive adoption of improved methodologies.
- Develop programme-level standards for RF design tool usage, output quality, and design documentation.
- Specify, manage, and monitor testing criteria post-installation and through MNO network integration.

Supplier and Stakeholder Engagement

- Lead engagement with design and testing suppliers – setting performance expectations, conducting reviews, and managing quality of outputs.
- Interface directly with Network Rail and MNO stakeholders on design-related matters, providing clear and confident technical communication.
- Handle design-related escalations promptly, ensuring issues are resolved and communicated effectively.
- Support the evaluation and onboarding of new design suppliers or products where required.
- Ensure all designs comply with relevant safety and compliance standards, including ICNIRP guidelines and applicable rail standards.

Education and Knowledge

- Strong understanding of RF fundamentals: interference, PIM, VSWR, path loss, coverage prediction.
- Proficiency in iBwave (Level 2 certified) for system design and modelling, or similar software.
- Exposure to MNO integration processes and KPI sign-off.
- Familiarity with Network Rail processes, standards, and access requirements would be highly desirable but not essential for the right candidate.
- BEng / MEng in Electronic Engineering, Telecommunications, or related discipline (or equivalent demonstrable experience).



Skills and Experience

- Significant RF design experience in DAS and/or macro delivery environments.
- Demonstrable capability in antenna selection and equipment specification across varied site scenarios.
- Experience in UK rail or similarly complex/regulated environments.
- Experience engaging directly with MNOs or Network Rail at a technical level.
- Experience specifying and overseeing RF testing and post-integration validation.
- Ability to operate autonomously and make sound technical decisions without close supervision.

Personal Attributes

- Self-starter – comfortable owning a technical workstream end-to-end with limited day-to-day direction.
- Outcome-focused – motivated by delivery, not perfection for its own sake.
- Pragmatic problem-solver – finds a way through technical and practical constraints.
- Resilient and adaptable – able to manage competing priorities in a fast-paced programme environment.
- Collaborative communicator – confident working directly with suppliers, customers, and senior stakeholders.
- Flexible – willing to travel nationally to rail sites and adapt working patterns to programme demands, including out of hours where required.

Our Values

Our values are what set us apart from the rest. They are what enable us to bring assured connectivity wherever it's needed. We use these values to inform everything we do and the way we act as professionals – think of them as what's important to us collectively, as well as how we prefer to work.

The successful candidate will be aligned with our company commitments:

- Engineering excellence (we're engineering experts and the quality of our output is second to none)
- Do the right thing (we're neutral in our position, doing what's best for our people, our partners, our customers, society and the environment)
- Set the pace (we act quickly and work efficiently, setting the pace for our projects and industry standards)

Sustainability and CSR

We implement environmental, social, and corporate governance:

- Innovate for Impact:
 - We pride ourselves on many industry firsts, driven by both technical and commercial innovation. From access to assured connectivity indoors in hospitals to smarter cities, we'll continue to improve access to connectivity where it matters most.
- A thriving workforce:
 - We're nimble and fast-growing and our success relies on diverse talent from a range of backgrounds. From this running start in an industry with known diversity challenges, we're putting structure and focus around our diversity, equity and inclusion efforts.



- Embracing Net Zero:
 - This year we've baselined our carbon footprint. We choose to include key measures for the future like waste management and will be focused on our supply chain.

Diversity, Equity, Inclusion, and Belonging

We value an inclusive environment at Freshwave and commit to celebrating the enriching contributions and perspectives that people from differing backgrounds and experiences bring. Equal opportunities are not only the key to our recruitment and selection strategy, but also to every other aspect of our employment. We'll ensure that a level playing field is provided from which everybody, without exception, can thrive.

Reasonable Adjustments

Here at Freshwave, we're dedicated to making our recruitment process inclusive and comfortable. We recognise that applying for a new job can be daunting for some, so let us know if there is anything we can do to enable you to be yourself. We'll look to provide reasonable adjustments during our process to support all applicants.

To Apply for this role please include a copy of your CV to recruitment@freshwavegroup.com