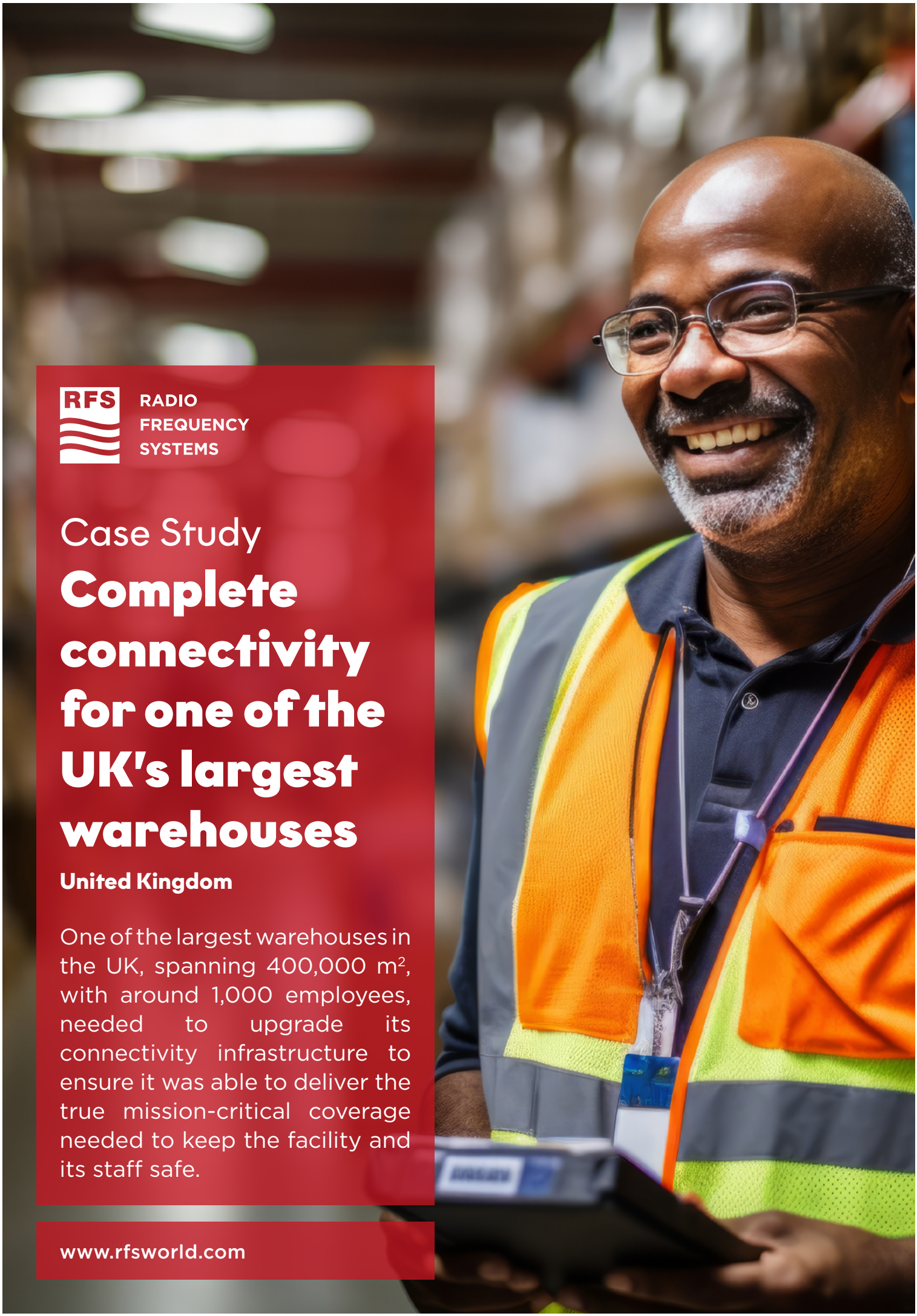


RADIO FREQUENCY SYSTEMS

Case Study

Complete connectivity for one of the UK's largest warehouses

United Kingdom

One of the largest warehouses in the UK, spanning 400,000 m^2, with around 1,000 employees, needed to upgrade its connectivity infrastructure to ensure it was able to deliver the true mission-critical coverage needed to keep the facility and its staff safe.

www.rfsworld.com

The challenges

To meet fire safety standards, the customer needed to deploy a mission-critical network that would give total coverage across the entire warehouse site. However, the physical barriers in the warehouse made this a more challenging deployment. The site comprised of two large open loading spaces and a densely packed storage area. Within the storage area of the warehouse, 27 aisles of floor-to-ceiling racking, housing thousands of products presented a physical barrier to achieving complete wireless coverage.

In addition, one of the big challenges faced by warehouse operators is meeting the environmental need for an energy-efficient building and delivering the in-building connectivity needed to run a safe and efficient operation. Energy-efficient building materials like low-emissivity (low-E) glass and foil-backed plasterboard are needed for insulation, but they also block wireless coverage, adding another consideration when selecting infrastructure.

Finally, the solution needed to be fitted with minimal disruption to ongoing operations while keeping Total Cost of Ownership (TCO) at a minimum.

The solution

With the building materials proving a barrier to reliable commercial wireless coverage, the customer needed an in-building solution that covered the entire site. To deliver the most effective and efficient option, RFS designed a two-part approach that would use different technologies in different areas to deliver the desired result while being mindful of TCO.

Inbound and outbound loading bays

To provide complete coverage in the wide-open spaces of the warehouse loading bays was easily achieved using RFS's Distributed Antenna System (DAS) solution. A DAS system works by installing cables and relatively small repeater antennas throughout a building connected to a single central controller to deliver coverage in multiple spaces. Perfectly suited to the loading bay environment, DAS offered the most efficient way to flood this area with coverage.

Warehouse storage

With 67 aisles, each 127m long, of floor-to-ceiling racking, the warehouse storage area presented a different challenge that needed a different solution. The metal racking is particularly disruptive to RF signal propagation, and so a DAS system would need a significant volume of additional equipment to be reliable in this space. Instead, RFS designed a solution that used RADIAFLEX radiating cable to provide contoured coverage down each aisle for complete and reliable connectivity. RFS's industry-leading RADIFLEX radiates coverage across the entire length of the cable. This allows the customer to overvome the challenges of signal propagation and ensure the reliability needed for the mission-critical coverage.

The result

By blending a cost-effective DAS system with a radiating cable solution that was ideal for addressing the specific challenges of delivering coverage in a densely packed area, RFS was able to meet all the deployment requirements set out by the customer.

Full Site coverage

Using two types of systems allowed RFS to ensure the complete site coverage that was a key requirement of the customer.

Mission Critical

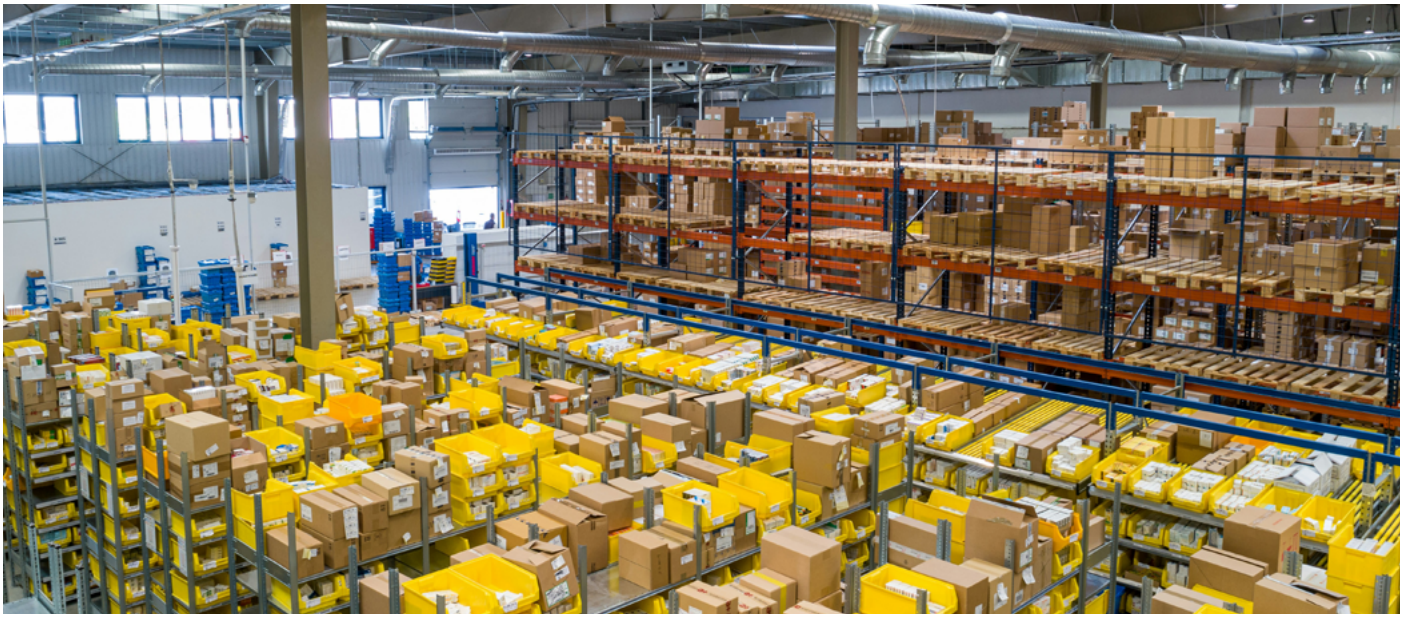
As specialists in delivering mission-critical coverage in challenging environments, RFS was able to ensure the reliability and back-up mechanisms for true Mission-Critical coverage.

Lower TCO

To use the radiating cable solution that was needed in the storage area across the whole site would have significantly increased TCO. By identifying areas where a more cost-effective solution could deliver the required performance, the project costs were minimized.

> *"**This project is a prime example of the benefits of working with a specialist when it comes to deploying mission-critical coverage** in an environment like a warehouse. Firstly, it ensures there are no weak points in the system, that are often the case where solutions have been patched together without an overarching strategy for mission-critical coverage. Secondly, our experience allows us to **identify the most cost-effective solution for every environment** allowing the TCO to be lowered without compromising on quality of coverage."*

Steve Cass, Regional Sales Manager at RFS



Lifetime Connectivity

At RFS we specialize in the design and manufacture of premium, future-ready cable solutions for customers across the globe. With over 120 years of heritage in the industry, we build reliable and long service life connectivity systems. **Because we care about our collective future.**

- We design innovative cable solutions that deliver best-in-class connectivity while tackling network pain points and offering a lower Total Cost of Ownership.
- We bring passion and expertise at every stage, from R&D to installation, to meet our business partners' expectations.
- We deliver the communications foundation for digital transformation across a range of industries including oil & gas, mining, and rail.
- We are changing the perception that all cable is created equal and demonstrating the potential of premium solutions.
- We offer a dynamic and stimulating working environment that promotes diversity and fosters personal and collective accomplishments.
- We are committed to sustainability with greener manufacturing processes and designing long-life equipment with low-energy consumption to support our customers' climate goals.