



RADIO  
FREQUENCY  
SYSTEMS

## Case Study

# Secure and Safe Connectivity for a Manufacturing World Leader

**Taiwan | Arizona | Kumamoto, Japan**

TSMC is the world leader in semiconductor manufacturing and is one of the world's 10 largest companies, with a market cap of \$468 billion. To give an idea of scale, in 2022, TSMC served over 500 customers, manufacturing 12,698 products for multiple market sectors, including smartphones, Internet of Things (IoT), automotive, and digital consumer electronics. It is a huge player in the space with multiple manufacturing sites in Taiwan, China, US and Japan. TSMC needed a solution to deliver a highly secure network across all of its manufacturing and R&D facilities.

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# The challenges

Cybersecurity is high on the agenda of most organizations. For a high-profile organization like TSMC, which holds a huge quantity of sensitive data, it is critical. To prevent leaks of TSMC's IP-protected patent secrets and keep internal communications between fabrication plants and R&D centers secure, it needed a connectivity system with security at its center.

To meet these requirements, the most appropriate solution was an Enterprise-Grade Mobile Virtual Private Network (MVPN). This is a specialized Virtual Private Network (VPN) that enables secure, remote access to the company's private network, allowing secure access to company assets from multiple locations. After identifying the type of network needed to meet the needs of TSMC, the organization, needed the infrastructure to support this. The key requirements were:

- **Security:** The deployment needed equipment that would support the security needs of the overall system.
- **Fire safety:** Any technologies deployed needed to meet local fire-safety regulatory requirements to ensure site safety.
- **Futureproofing:** TSMC is rapidly growing its global footprint and needed a solution that would be able to expand to meet future requirements.

# The solution

RFS supplied the indoor coverage systems to support TSMC's MVPN network across multiple manufacturing facilities, its R&D center in Taiwan, a new \$12B fabrication plant in Arizona, USA, and newly opened Kumamoto semiconductor factory in Japan.

RFS was able to supply complete indoor coverage solutions, which comprised of RADIAFLEX radiating cable, fire-resistant cable, connectors, and passive components. This combination of solutions allowed RFS to build up a highly secured MVPN to meet the needs of TSMC.



- **Secure worldwide communication:** The system met all the security requirements of TSMC to ensure a network capable of handling highly sensitive data.
- **Best-in-class fire safety:** All solutions deployed achieved high-class fire safety certifications to ensure safety in both office and manufacturing environments.
- **Lifetime Connectivity:** All solutions provided by RFS were designed to evolve with changing network requirements, ensuring the system will serve TSMC for decades to come.

# The result

The success of the initial roll-out of RFS solutions across TSMC sites in 2021 has seen RFS continue to work in collaboration with TSMC on additional projects. The quality and ease of installation of the first phase led to further projects with the manufacturer, including phase two, which saw RFS deliver products to TSMC's new foundry in Arizona, USA and Kumamoto Japan.

*“Deploying the infrastructure to support an MVPN across multiple environments in multiple geographies can be a challenge. At RFS, the variety we have in our portfolio has made it possible to deliver appropriate solutions for each scenario without compromising on safety or security.”*

**Eric Wen, Regional Director - APAC North East at RFS**

*“RFS has worked as a one-stop shop for TSMC MVPN infrastructure requirements and has been able to deliver quality solutions efficiently and conveniently. TSMC continues to invest and produce semiconductors with mature and advanced processes, so they still need to build new factories around the world in the next few years. We look forward to continuing to work with RFS in the future on projects that are already in the pipeline.”*

**Scott Huang, Vice President of Hauman Co., as TSMC project leader**



R&D Center, Taiwan



Fabrication Plant, Arizona, USA



Semiconductor Factory,  
Kumamoto, Japan





# 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.

