# IQRF: Revolutionizing Wireless Mesh Technology – Visit Us at Embedded World 2025!

For over two decades, engineers at **MICRORISC** and **IQRF Tech** have been developing **IQRF®**, a cutting-edge wireless mesh technology, open standard, and ecosystem designed for seamless and reliable communication in **Internet of Things (IoT)** applications. With its unparalleled **mesh routing reliability**, **robust message transmission**, and **industrial-grade security**, IQRF enables manufacturers and integrators to effortlessly design and deploy **wireless products and systems** across large networks.

Explore how IQRF is reshaping the embedded landscape at **Embedded World 2025**.

## What Makes IQRF® Stand Out?

### 1. Industry-Leading Mesh Network Reliability

IQRF excels in environments where **communication reliability** is a top priority. Its **IQMESH® protocol** ensures that networks with **up to 255 hops** and thousands of nodes operate without interruptions, even in **RF-congested** industrial spaces and urban environments.

The protocol guarantees **deterministic, collision-free message delivery**, making it ideal for **industrial automation**, **smart cities**, and **building management systems**.

Thanks to **native healing** and **redundant communication pathways**, IQRF networks become more robust as more nodes are added, a unique advantage over traditional mesh protocols.

### 2. IQRF True Low Power® Technology

Energy efficiency is a critical factor for **battery-powered IoT devices**. IQRF's **True Low Power®** technology minimizes energy consumption through advanced power modes, including **deep sleep (<100 nA)** and **eXtra Low Power (XLP)** receiving mode (**15 µA**). Devices can operate for **years on a single AA battery**, ensuring cost-effective and sustainable deployments in remote and hard-to-access locations.

This efficiency makes IQRF a preferred choice for **wireless environmental monitoring**, **temperature control**, and other low-maintenance applications.

### 3. Open Standard and Interoperability

IQRF® recently introduced a **royalty-free open standard**, giving manufacturers access to decades of innovation. This ensures **independence** in mass production and promotes **interoperability** between devices from different vendors. Products integrated with IQRF adhere to the **IQRF Interoperability Standard**, allowing users to combine devices seamlessly within a unified ecosystem.

Whether integrating **wireless modules** or building complex systems, developers can rely on a broad range of compatible **hardware**, **firmware**, and **cloud services**.

## 4. Security and Network Protection

Security is a cornerstone of IQRF technology. The system incorporates **AES-128 encryption**, **device authentication**, and **replay protection**. These features safeguard communication from unauthorized access and ensure secure device onboarding.

This makes IQRF suitable for **industrial control**, **healthcare**, and **mission-critical infrastructure** applications, where security and reliability are paramount.

## 5. Simplified Integration and Development Tools

IQRF's modular architecture and extensive ecosystem make product development and integration straightforward. The **IQRF IDE 5.x** offers powerful tools for **configuration**, **debugging**, and **diagnostics**, while pre-certified modules eliminate regulatory compliance headaches.

Engineers benefit from:

- A library of guides, examples, and tutorials.
- Development kits for quick prototyping.
- Ongoing technical support from IQRF's R&D team.

# What's New?

At Embedded World 2025, we'll showcase **new IQRF modules** designed for enhanced performance and extended range to ensure robust communication in crowded RF environments. Our live demos will feature:

- **Scalable mesh network management**.
- **Advanced diagnostics** for real-time performance monitoring.
- Real-world applications across **smart cities**, **industrial automation**, and more.

# Visit Us at Embedded World 2025!

📍 **Hall 3, Booth 628**
📅 **March 11 - 13, 2025**

Join us to experience the power of IQRF's **Wireless Mesh Ecosystem**. Discover how IQRF can elevate your **IoT**, **automation**, and **embedded** projects with its blend of **reliability**, **energy efficiency**, and **security**.

Schedule a meeting or learn more at **www.iqrf.org**.

**Let's shape the future of wireless innovation together!**

- **MICRORISC LinkedIn:** MICRORISC LinkedIn Profile
- **IQRF Tech & Alliance:** IQRF LinkedIn Profile