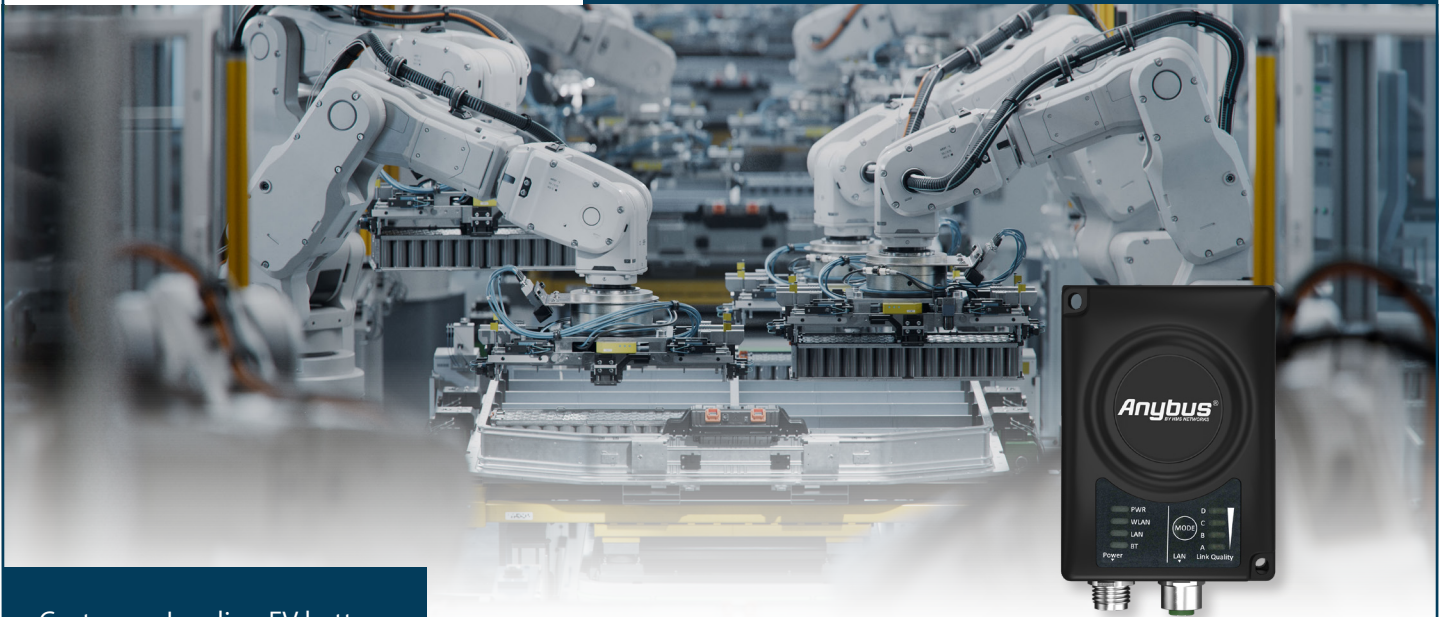




Customer: Leading EV battery manufacturer
Industry: New energy / EV batteries
Location: China
Product: Anybus Wireless Bridge II

Key Benefits

- Point-to-point wireless bridging that completely replaces physical Ethernet cables
- Industrial-grade design with IP66/IP67 protection
- Greater robot flexibility and improved assembly efficiency
- Proven solution deployed in high production volumes

Remove cables, increase reliability

How Anybus Wireless Bridge II helped modernize an EV battery production line

A leading EV battery manufacturer needed a reliable way to connect Siemens PLCs with robot-mounted tooling on an automated battery assembly line. Frequent robot movement caused Ethernet cable wear, resulting in maintenance issues and limiting production flexibility. By replacing wired Ethernet with the Anybus Wireless Bridge II, the company eliminated cable-related failures, improved robot mobility, and created a more flexible production environment.



The Challenge

In one of its EV battery module assembly lines, robots perform precise pick-and-place and assembly tasks. The robot tooling incorporates valve islands and remote I/O modules, while control commands originate from Siemens PLCs installed along the production line. Reliable, real-time communication between the PLC and the robot tooling is essential to ensure accurate and consistent operation.

The limitations of wired Ethernet

Initially, communication between the PLC and the robot tooling was achieved using Ethernet cables. However, as the production line continued to operate, several challenges emerged.

Frequent failures affecting production

Continuous robot movement caused repeated cable bending, resulting in cable wear, broken conductors, and loose connections. Troubleshooting and replacing damaged cables required production interruptions and reduced overall efficiency.

Limited robot movement and reduced flexibility

The physical presence of Ethernet cables restricted the movement of the robotic arms. Some motion paths that could have improved assembly efficiency could not be implemented due to cable constraints, making future production line upgrades more difficult.

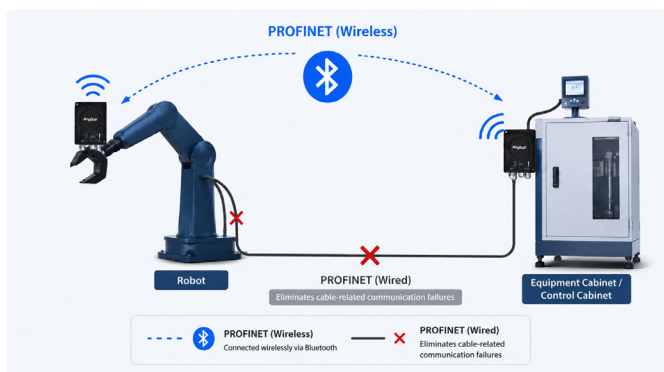
The solution: Anybus Wireless Bridge II

After evaluating reliability, deployment costs, and real-world performance, the EV battery manufacturer selected the Anybus Wireless Bridge II from HMS Networks as its preferred solution. By replacing the physical Ethernet cable with an industrial-grade wireless link, the company addressed the main challenges affecting production reliability and flexibility.



Eliminate cable-related failures

Using point-to-point wireless bridging technology, the Anybus Wireless Bridge II established a stable wireless connection between the PLC and the robot tooling, completely replacing the original Ethernet cable. This removed the root cause of unplanned downtime associated with cable wear, breakage, and connector failures.



Industrial-grade reliability

Designed specifically for industrial environments, the Anybus Wireless Bridge II features IP66/IP67 protection and a wide operating temperature range. The solution is built to withstand vibration and electromagnetic interference commonly found in production environments. The communication link also meets industrial safety requirements such as PROFIsafe, ensuring low-latency, real-time communication.

Greater flexibility and improved efficiency

Removing the ethernet cable eliminated movement restrictions on the robotic arm, allowing robot motions to be optimized for greater assembly efficiency. The wireless solution also simplified future production line modifications, as equipment could be moved or production layouts changed without the need for new cabling.

Results

The solution is now operating reliably on multiple EV battery module assembly lines, with annual deployments reaching thousands of units.

1. Improved production reliability

By replacing Ethernet cables with a wireless connection, the manufacturer significantly reduced the risk of communication failures caused by cable wear, breakage, or loose connectors. This improved production continuity and reduced maintenance requirements.

2. Increased production flexibility

Without cable constraints, robots gained greater freedom of movement, enabling more efficient motion paths and supporting future production line upgrades. Equipment relocation and layout changes could be completed without costly rewiring.

3. Proven scalability

The solution has been successfully deployed across multiple production lines and has reached annual usage volumes of thousands of units, demonstrating both reliability and scalability in demanding manufacturing environments.

Why HMS?

Proven wireless expertise

Anybus wireless products are used in manufacturing applications worldwide, from automotive production lines in Europe to EV battery factories in China.

Reliable products and support

The Anybus Wireless Bridge II combines industrial-grade reliability with plug-and-play simplicity, backed by HMS wireless specialists who supported the project from testing through deployment.

Conclusion

As manufacturers continue to increase production flexibility and automation, wireless communication is becoming an attractive alternative to traditional cabling. By replacing Ethernet cables with Anybus Wireless Bridge II, this EV battery manufacturer improved reliability, increased operational flexibility, and simplified future production line upgrades.

Learn more at www.hms-networks.com/anybus