

Copyright: Jungheinrich AG

Solution: Anybus Wireless Bridge II Internal Antenna, Anybus Wireless Access Point Wi-Fi-6 IP67

Country: Germany

Company: Jungheinrich AB

Benefits of HMS partnership

- Reliable wireless expertise. Deterministic wireless architecture that keeps shuttles moving safely and continuously.
- Faster, lower-risk deployment. Proven products and expert support in complex environments.
- Future-ready scalability. A wireless foundation built for growth, security, and compliance.

"We're really pleased with the collaboration with HMS. It's helped us achieve the robust wireless connectivity required for our state-of-the-art automated container storage system."

Carlos de Almeida

Head of Software Development,
Jungheinrich

Jungheinrich's PowerCube: Meeting the demands of modern logistics

How Jungheinrich and HMS are shaping the future of automated storage with speed, safety, and connectivity.

About Jungheinrich

Jungheinrich is a global leader in intralogistics solutions, headquartered in Hamburg, Germany. With decades of experience in material handling and warehouse automation, the company helps businesses optimize space and improve efficiency.

As a global leader, Jungheinrich knows it must anticipate tomorrow's needs. With e-commerce booming and customers expecting faster deliveries, they recognized that warehouses need a smarter, fully automated way to process goods while making the most of limited space. This insight led to the development of an innovative solution that redefines automated storage: the PowerCube, an automated compact container storage system.

"Our customers need a way to use limited space efficiently while meeting growing demands for faster order processing," explains Carlos de Almeida, Head of Software Development at Jungheinrich.

Meet the PowerCube

The PowerCube was designed with one clear goal, to improve efficiency. By maximizing storage density and accelerating order processing, it helps warehouses handle more goods in less space and time.

At the heart of the system is Jungheinrich's own Warehouse Control System (WCS), which controls automated shuttles via Ethernet communication to ensure they move quickly and safely within a high-density storage grid. These shuttles operate on the entire bottom level in two dimensions, leveraging the full vertical space above the system for maximum storage capacity.

Benefits of the PowerCube:

- Unique use of space: Up to four times higher storage density compared to conventional shelving.



- High system height: Vertical storage up to 12 meters.
- Scalable design: Flexible throughput, container capacity, and shuttle count.
- Powerful performance: Each shuttle can carry two containers at once, up to 50 kg per container.
- Easy integration: Short assembly times and simple IT connections, no need for floor milling.

“We wanted a system that combines speed, safety, and scalability. PowerCube delivers all three,” says Carlos de Almeida.

Enter HMS Networks

Keeping shuttles moving safely in two dimensions is no easy task, it demands reliable and deterministic wireless communication. Any delay or disruption stops a shuttle, blocks access to storage areas, and can halt the entire line, leading to costly delays.

Cables were not an option because the shuttles need complete freedom to move across the bottom level without restrictions.

Recognizing the need for reliable connectivity, Jungheinrich turned to HMS Networks. As Carlos puts it, “we’re experts in logistics, not networking, so we contacted HMS for help.”

To ensure reliability, HMS recommended the following robust wireless setup:

- Anybus Wireless Access Points installed throughout the installation for full signal coverage. Dual-band segmentation using 5 GHz for communication with tablets and maintenance devices, and 2.4 GHz for shuttle control and safety communication.
- Anybus Wireless Bridge II, with its integrated antenna and compact IP67 form factor, for a space-saving installation on each shuttle.
- Point-to-multipoint architecture allows shuttles to roam freely between APs with continuous Ethernet connectivity wherever they are in the system.
- IP67-rated hardware ensures durability in harsh environments, including cold storage where condensation is a risk.

“We really appreciated HMS’ support and guidance. The Bridges and Access Points are working well, but it wasn’t just about the products. Their Wireless & Infrastructure Implementation Assistance service made a big difference, helping us overcome the challenges of deploying wireless connectivity in a dense, metallic structure. Using their expertise and analysis tools, HMS designed the best layout for access points to ensure reliable performance in every



Jungheinrich’s PowerCube improves efficiency, enabling customers to meet growing demands for faster order processing.

installation. In some cases, we even asked HMS to join us at our customer’s warehouse to perform a site survey and validate signal coverage,” adds Carlos.

First deployments in the field

The PowerCube is now entering real-world applications, proving its efficiency and reliability in multiple installations. “It’s great to see PowerCube out in the field solving issues. Fastbolt, for example, wanted faster order processing and better space utilization. And that’s exactly what the PowerCube is providing,” enthuses Carlos.

The future of automated storage

With the PowerCube, Jungheinrich is setting a new benchmark for automated storage systems. And with HMS providing the wireless backbone that keeps shuttles moving, this partnership is paving the way for smarter, more efficient warehouses worldwide.

But the journey doesn’t stop here. Jungheinrich plans to scale the PowerCube to larger deployment systems with increasing storage surface and numbers of shuttles, a move that will require advanced wireless design and continuous network monitoring. At the same time, meeting cybersecurity requirements and complying with regulations such as RED, CRA, and NIS2, along with optimizing safety architecture for the upcoming EU Machinery Regulations (2027), will be critical.

“We’re really pleased with the collaboration with HMS. It’s helped us achieve the required robust connectivity, and as we expand and meet cybersecurity and safety requirements, our partnership with HMS will become even more valuable. This is only the start!” concludes Carlos.

Learn more at www.jungheinrich.co.uk/automation/powercube or www.hms-networks.com/anybus