



MOTOWI4 Manufacturing Solutions
Indoor and Outdoor Connectivity



MOTOWI⁴

Only Motorola understands wireless inside and out. The MOTOwi4™ portfolio of end-to-end wireless broadband solutions provide reliable, secure connectivity in the office, on the factory floor, in the field and on the road. These solutions help manufacturers maximize communications, improve operational efficiency, control costs, increase productivity and tighten security.



Helping Manufacturers Enhance Data Visibility, Worker Productivity and Operational Efficiency

Change is sweeping the manufacturing industry. Fewer qualified workers, tougher competition, more government regulation, decreasing margins, rising supply chain costs and more demanding customers are just a few. Manufacturers are responding by looking for new ways to streamline operations, increase worker productivity and improve internal and external communications.

That's where wireless broadband—and MOTOwi4 solutions—excel... adding value and positively impacting the bottom line.

MOTOwi4 SOLUTIONS

The MOTOwi4 portfolio of complementary high-speed wireless solutions enables process and discrete manufacturing environments to move and manage IP-based voice, video and data in real time. The result is streamlined operations and data visibility from virtually everywhere, decreased production and delivery inefficiencies, improved personal, premises and data security and strengthened supplier and customer relationships.

MOTOwi4 provides a robust, scalable, interference-tolerant industrial wireless broadband infrastructure that extends the mobile edge and provides real-time visibility into every part of the supply chain, delivering:

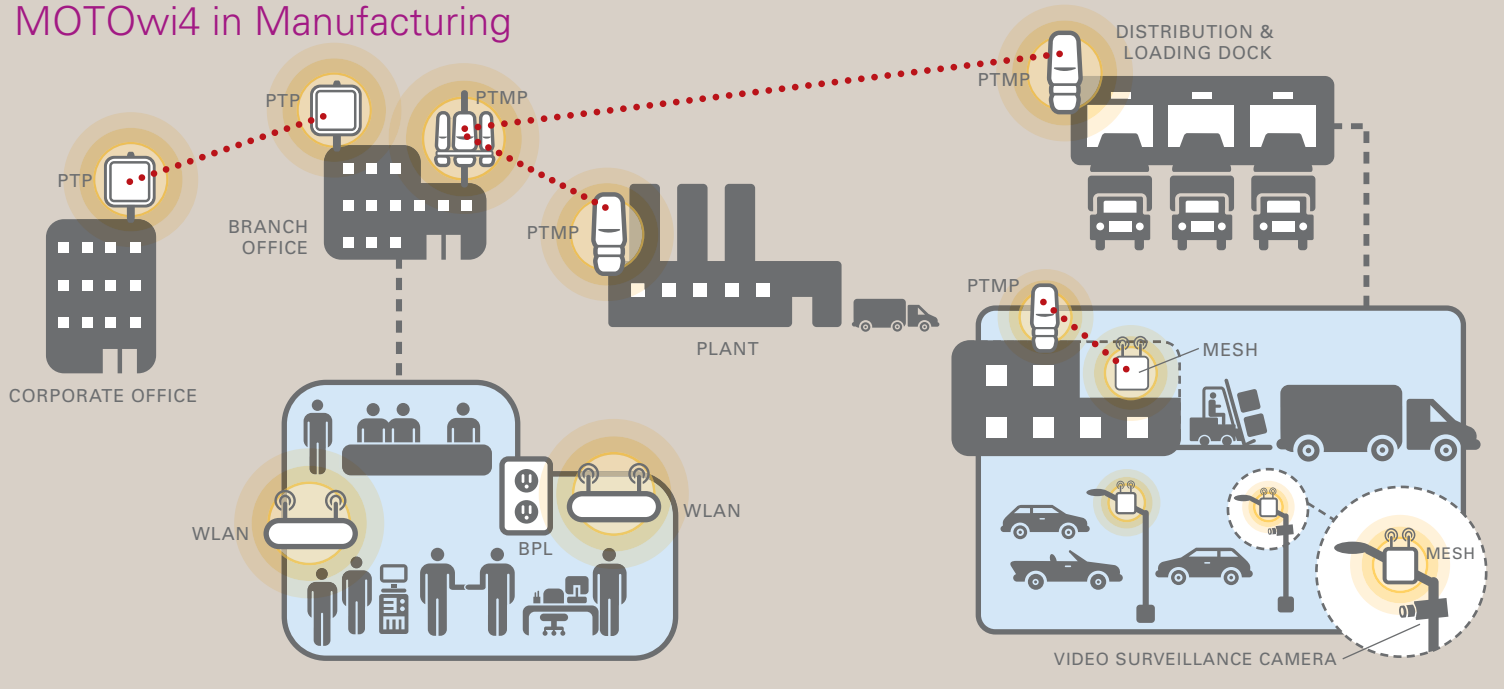
- **Enterprise-Wide Coverage and Connectivity.** MOTOwi4 solutions connect workers and functional areas throughout the organization—from indoor office space and plant floors to outdoor docks and remote sites like warehouses. The result? Improved communication and increased collaboration that can significantly strengthen competitive advantage.

- **Converged Networks.** Our solutions enable manufacturers to transmit voice, video and data on a single converged IP network. The MOTOwi4 network architecture integrates disparate legacy systems, and offers the industry's most flexible deployment options including fixed, portable, nomadic and mobile.
- **Improved Safety.** In today's increasingly security-conscious business environment, MOTOi4 digital video surveillance solutions help protect the safety of personnel and capital equipment. Any combination of mobile and fixed surveillance configurations is supported, helping manufacturers enhance safety at headquarters, in a single plant and at remote facilities.
- **Enhanced Network Security.** Employing a wide range of authentication protocols as well as DES and AES over-the-air encryption standards, MOTOwi4 multi-layered security solutions help manufacturers maintain the high levels of data confidentiality and integrity today's business and regulatory environments demand.
- **Business Continuity Management.** MOTOwi4 networks can be used as backup architectures to help manufacturers avoid costly downtime. In addition, they can be quickly deployed when disaster disrupts wired communications. Continuous availability of data also enables manufacturers to comply with regulatory requirements for product traceability and waste tracking, as well as adhere to ISO 9000 quality standards.

VNK: MAJOR EUROPEAN HERB PROCESSING COMPANY

VNK, a large herb processing company located in The Netherlands and in business for more than a half century, needed a system that would increase control and enhance visibility in their warehouse. The company chose to implement a wi4 Indoor WLAN, which allowed them to eliminate paper-based processes, enable real-time information collection, and offer real-time access to critical information throughout the firm's business operations. Results have been excellent, including increased productivity, enhanced throughput and virtually instant return on investment.

MOTOwi4 in Manufacturing



Manufacturing's End-to-End Wireless Broadband Ecosystem

Motorola Manufacturing Solutions combine wireless infrastructure, radio frequency identification (RFID), bar codes and mobile computing products to capture, move and manage data at the point of activity. Only MOTOwi4 provides manufacturers with a comprehensive high-speed ecosystem that delivers the secure, pervasive coverage and mobility that enables information to flow seamlessly inside the plant and warehouse and outside in the field, on the road and throughout the supply chain.

• **wi4 Indoor solutions:**

Enterprise WLAN is a complete portfolio of wireless switches, access points and bridges, combined with comprehensive network management and intrusion protection security solutions. WLAN enterprise-class infrastructure is optimized to make mobile workers more connected and more productive.

Broadband over Powerline (BPL) solutions offer access as close as any wall outlet, combining wireless broadband technologies with the ubiquitous access of the power grid to deliver high-speed data over existing powerline through a building's electrical system.

• **wi4 Fixed solutions:**

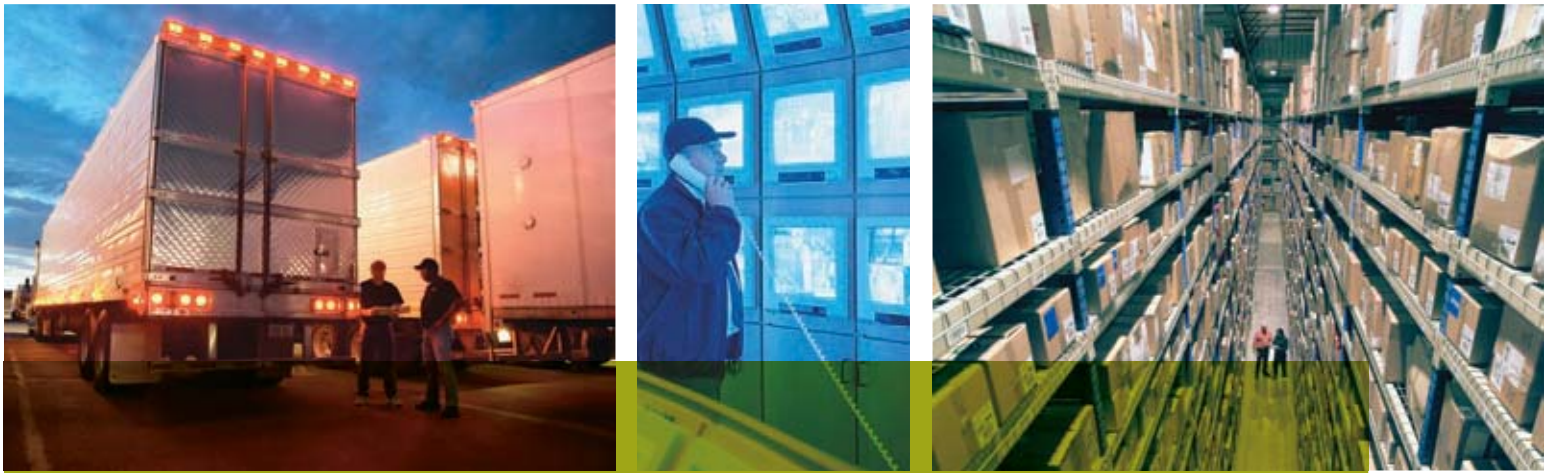
Point-to-Point solutions provide cost-effective connectivity between remote sites such as plants and warehouses, transmitting data with maximum reliability even in Non-Line-Of-Sight environments and other difficult conditions such as areas with high levels of interference, rough terrain or even bodies of water.

Point-to-Multipoint solutions—in licensed or unlicensed frequencies—create scalable and highly cost-effective connectivity between multiple plants and warehouses, enabling ubiquitous information access and the creation of highly efficient paperless work flow systems.

- **wi4 Mesh solutions** provide reliable, scalable wireless broadband solutions with the capability of enabling any combination of fixed, portable, nomadic and mobile IP coverage. wi4 Mesh technology can be quickly and easily deployed in manufacturing environments enabling sensor networks and other applications at an economical price.
- **wi4 WiMAX solutions** utilize a high performance, standards-based broadband access portfolio that enables manufacturers to expand coverage and capabilities, including extended IP access and new business applications.

CREAMLAND: LARGE AMERICAN DAIRY PRODUCTS MANUFACTURER

Creamland Dairy, a highly successful, fifty-year-old organization located in New Mexico, needed to establish secure, high-speed connectivity to a newly built warehouse complex. The company selected a MOTOwi4 Fixed point-to-multipoint solution for its reliability, its inherent security and its fast and simple installation and scalability to meet growing requirements in the future. Using milk silos as towers, the dairy implemented the solution quickly and easily, establishing ubiquitous connectivity between the corporate office and remote warehouses. The results have been outstanding, offering everyone who needs it real-time access to vital information. The company will soon augment the system to include transmission of barcode scans to keep inventory updates current.



MOTOwi4 Benefits Help Manufacturers Optimize Operations Performance and Productivity

Freedom from Wires. MOTOwi4 solutions let you deploy equipment to complement and complete your existing networks, even in areas where wiring is difficult or dangerous.

Monitoring. Our wi4 indoor and remote field monitoring solutions deliver real-time problem alerts and empower technicians to monitor machine performance and perform remote diagnostics.

Leased Line Replacement. Many manufacturers replace expensive T1 leased lines and leased PBX systems with more cost-efficient wireless IP connectivity.

Digital Video Surveillance. Our advanced video surveillance capabilities help manufacturers minimize loss, guard against intrusion and enhance personnel safety.

Real-Time Location Systems. Track personnel, equipment and other assets over the network in real time, providing for improved efficiency and increased safety.

Warehouse Management. Combine high-speed wireless LANs, handheld devices and RFID technology to enable cost-saving solutions such as just-in-time inventory in the warehouse and on the factory floor.

World Leadership in Design and Deployment

As the inventor of mobility and a leader in integrating disparate wireless and RF technologies, Motorola offers unsurpassed expertise in designing and deploying wireless broadband networks in virtually every type of manufacturing environment. We offer our customers comprehensive network management tools and support services that help them meet and master the formidable challenges of today's global manufacturing marketplace.



MOTOROLA

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