

Redefine Scalable Manufacturing Connectivity The Connectivity Backbone for Future Proofing

Manufacturing operations are evolving toward smart factories, where IoT, AI, automation, and Industry 4.0 initiatives place unprecedented demands on converged IT/OT networks across plants and sites. These environments require infrastructure capable of supporting high-density sensors, real-time robotics, and edge analytics at scale.

Many existing cabling and connectivity environments were designed for earlier manufacturing needs. As data volumes rise and operations scale, gaps in uptime, plant-wide visibility, and scalability can emerge, impacting productivity and operational resilience.

Black Box addresses this challenge with resilient, industrial-grade infrastructure, combining structured cabling, DAS, Wi-Fi 6/7, private 5G/LTE, and cloud-managed networking. This modernization establishes a stable foundation for operational efficiency, cyber resilience, and sustainable growth, enabling smart factories to perform reliably today and scale confidently for what comes next.

IT/OT Convergence Imperatives

Challenges in Factory Environments

- **Disconnected Systems:** Siloed IT/OT infrastructures create data silos, slow decision-making, and increase cyber risks.
- **Operational Blind Spots:** Lack of centralized control delays incident response and exposes mission-critical environments.
- **Harsh Conditions:** Standard networking gear fails under extreme temperatures and heavy AI-driven data loads.

Outcomes with Black Box

- **Unified Architecture:** Scalable solutions deliver encrypted communications, instant incident alerts, and centralized management.
- **Smarter Operations:** Real-time asset monitoring, predictive maintenance, and workforce mobility reduce downtime and boost productivity.
- **Industrial-Grade Reliability:** Hardened switches, fiber, and high-speed copper cabling ensure performance in demanding environments.

Core Connectivity for Smart Factories



Structured Cabling

Deploy future-ready CAT6A/7 and fiber networks designed to scale with IoT and robotics. Implemented by certified experts, these deployments minimize disruption while supporting both single-site and multi-site growth through end-to-end planning and ongoing maintenance.



DAS + Wi-Fi 6/7

Enable factory-wide wireless coverage to support seamless device connectivity, real-time tracking, and mobile operations. Designed to integrate with existing systems, it delivers increased capacity and low-latency performance in high-density industrial environments.



Private 5G/LTE

Power secure, high-speed wireless for RTLS, edge computing, and automation control, delivering dedicated bandwidth with proven low latency for mission-critical applications, backed by comprehensive deployment expertise.



Cloud-Managed Networking

Centralize network control with built-in analytics, rapid provisioning, and integrated security. This simplifies hybrid environments, improves end-to-end visibility, and enables agile scaling as smart factory requirements evolve.

These solutions create resilient foundations: Reliable communications power automation, unified security protects assets, and scalable designs future-proof investments. Black Box's global expertise ensures turnkey execution from assessment to 24/7 support.

Reasons Manufacturers Choose Black Box

- Proven delivery across connectivity, cybersecurity, control rooms, collaboration, and managed services, all aligned to the realities of industrial operations.
- Global expertise with strong local presence, deployment capability, and SLAs that support production critical environments.
- End-to-end lifecycle support covering strategy, design, deployment, optimization, and 24/7 operations.



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