XCOM RAN + Globalstar Band n53™ in Shipping Ports

Powering Smart Port Operations with Private Wireless

Modern shipping ports are fast-paced, high-stakes environments that handle massive volumes of cargo and people. Efficiency, safety, and real-time visibility are critical and must requirements, and that's where private wireless networks step in. By enabling secure, high-performance connectivity across vast, complex spaces, private networks lay the foundation for next-generation port operations.

From container tracking to autonomous equipment and worker safety, private wireless networks support a wide range of IoT-driven applications that help ports optimize throughput and reduce risk.

Key Use Cases at Shipping Ports

- **AGVs and AMRs** for container transport and yard operations
- **IoT-based asset tracking** for containers, cranes, and heavy equipment
- **Predictive maintenance** for machinery and infrastructure
- **Video surveillance and AI-vision cameras** for security and logistics

- **Environmental sensors** for emissions monitoring and compliance
- **Worker safety** wearables and emergency alerting systems
- **Digital twin systems** for real-time operational visibility
- **Gate and customs automation** for smoother cargo flow

The Limitations of Traditional Private Networks

While traditional private LTE and Wi-Fi networks have enabled early progress in port digitalization, they often fall short in dense, interference-prone outdoor environments:

- Struggles with RF interference caused by metal containers, cranes, and moving vehicles
- Coverage inconsistencies across large or complex layouts
- Latency issues that affect automation, robotics, and real-time analytics

- Difficulty scaling as IoT port density increases
- High deployment and spectrum costs for 5G mmWave or fragmented LTE

XCOM RAN and Band n53

Purpose-built connectivity for complex port operations

XCOM RAN is an advanced radio access network that unlocks higher performance than traditional private networks, coupled with Band n53, which is a licensed, interference-free spectrum approved by 3GPP and ideal for indoor and outdoor private networks.

XCOM RAN Advantages

- Measurable capacity gains over traditional private networks
- Eliminates handoff boundaries
- Designed for RF-dense, high-device-density environments
- Edge-based processing for ultra-low latency
- Flexible deployment – port-wide coverage from fewer radios
- Minimal RF planning – easy to deploy and scale

Band n53 Advantages

- Licensed, interference-free spectrum – no sharing with public traffic
- Mid-band 2.4 GHz – excellent outdoor reach and indoor penetration
- Globally harmonized and 3GPP standardized
- No prioritization for other applications (military) – no loss of connectivity

See it in Action

XCOM RAN and Band n53 help shipping ports achieve the highest-capacity connectivity and resilient private networking solutions.

Want to learn more?

- Talk to our sales team to discuss a custom port deployment
- Request a live product tour to experience XCOM RAN's breakthrough performance in action

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