



Sea Port Automation

Wireless broadband connectivity that assures unmatched performance for port automation applications.

To maintain a competitive edge, port terminals are looking for better ways to improve productivity. Handling more freight than any other type of terminals combined, ports require a cost-efficient way to increase operational efficiency by using remote connectivity.

Port automation systems consist of intelligent solutions that allow continuous and smooth operations of cranes, automated vehicles, automated containers, remotely monitored Rubber Tyred Gantry cranes (RTGs), Closed-Circuit Television (CCTV), Optical Character Recognition (OCR) and more. These systems transmit huge amounts of data in real time to the port control center, enabling port personnel to address and resolve operational issues in real-time, quickly and proactively.

These systems transmit huge amounts of data in real time to the port control center, therefore requiring ultra-high capacity and reliable wireless throughput to connect any type of fixed, nomadic, or mobile port application.

Network solutions for sea ports

JET Point-to-MultiPoint beamforming solution:

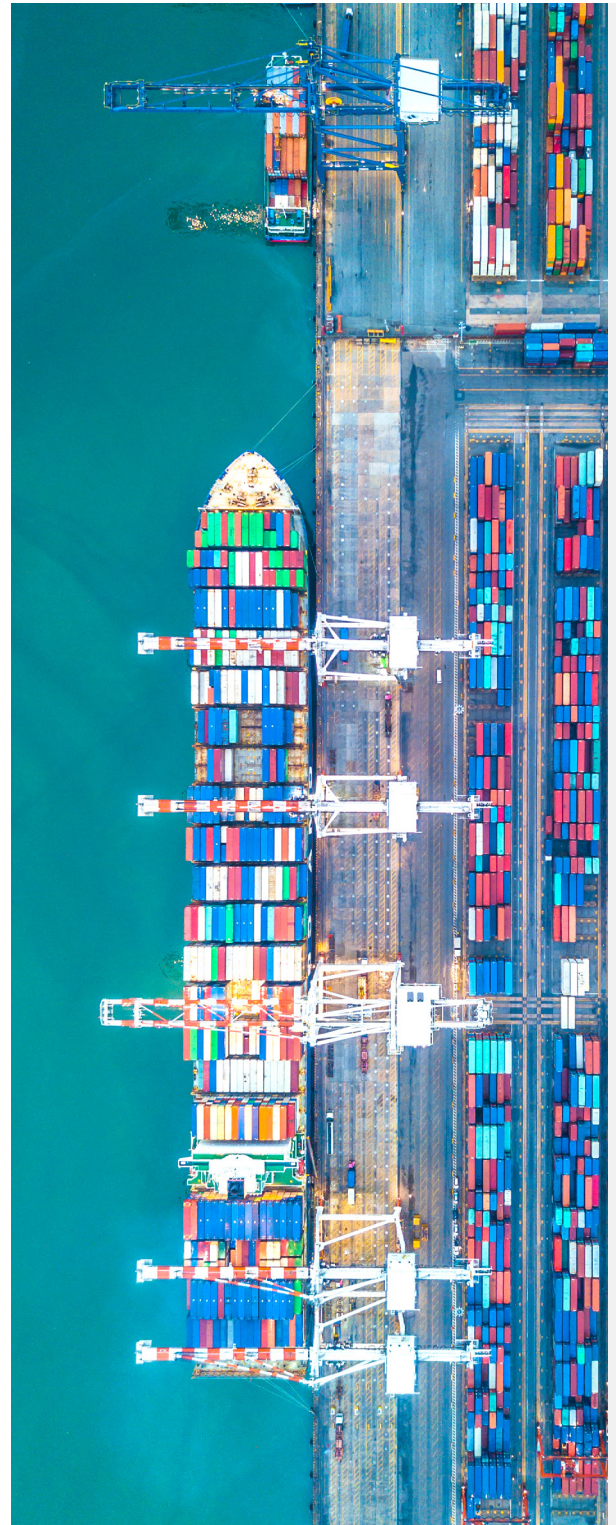
- » Dual carrier - up to 1.5Gbps per sector / 6Gbps per site
- » Dynamic carrier selection - optimized throughput
- » Bi-directional beamforming antenna
- » Innovative air interface
- » Support 4.9- 6.0 GHz unlicensed bands
- » Guaranteed SLA
- » Nomadic Support
- » High packets-per-second (PPS) for VoIP and CCTV
- » Up to 90% uplink traffic transmission
- » Dynamic channel bandwidth selection (D-CBS)

RADWIN FiberinMotion® mobility solution:

- » Up to 750Mbps
- » Up to 16 vehicles
- » Wide Area Coverage – up to 5 km
- » Multiband - 4.9 - 6.0 GHz
- » MiMo 3x3 /MiMo 2x2/ Diversity
- » Secured connectivity – AES128
- » High capacity Transportation Base Station (TBS) and Transportation Mobile Unit (TMU)

RADWIN Smart-Node all-in-one power and communication solution:

- » 5-Port gigabit PoE switch & SFP gigabit port
- » AC or DC input power options
- » Lithium-ion battery backup (UPS)
- » Unified power and networking management
- » Integration with IoT devices

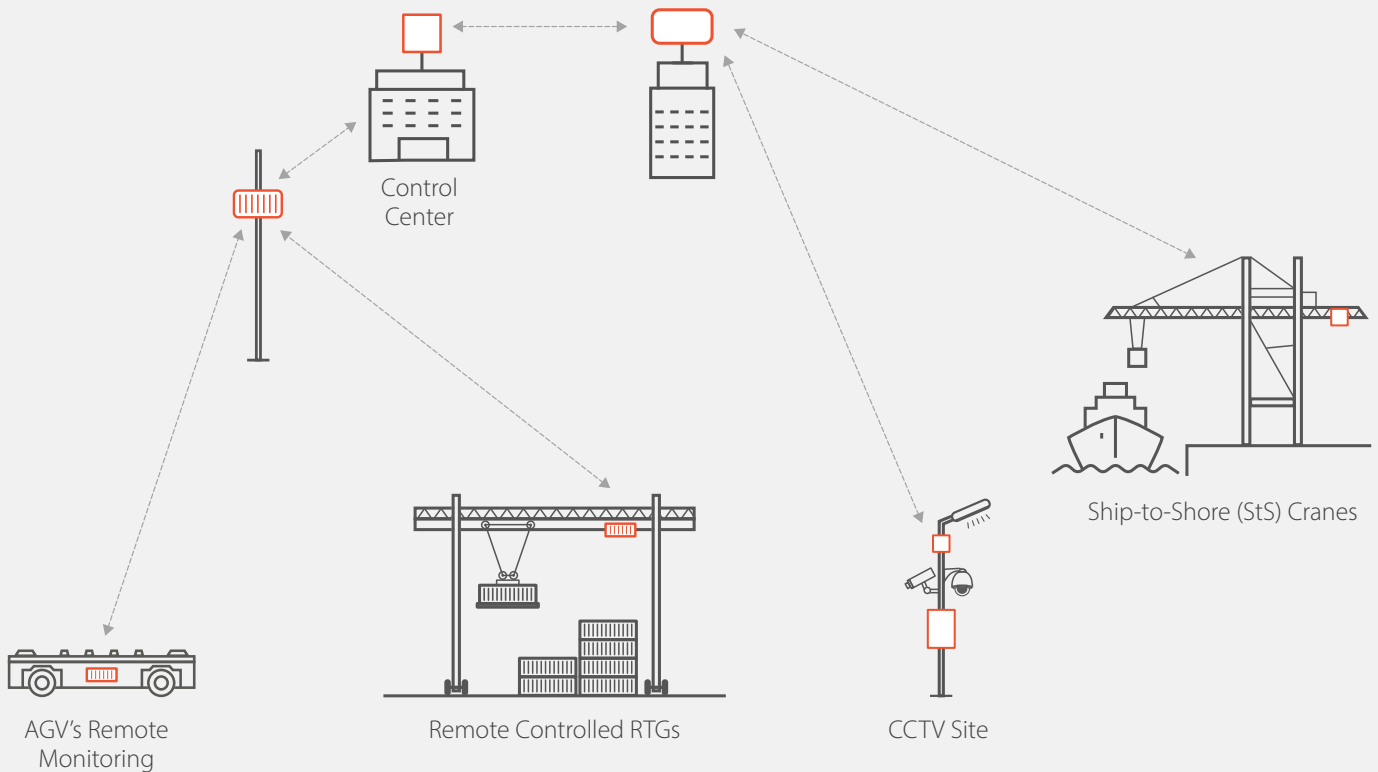


RADWIN advantages for Sea Port Automation

- » Highest capacity to support reliable substation connectivity, distribution automation and Advanced Metering Infrastructure (AMI) backhaul
- » Higher bandwidth and spectrum efficiency in the 5GHz unlicensed bands
- » Service Level Assurance (SLA)
- » Network redundancy and increased availability
- » Unified synchronization, eliminating self-interference
- » High durability with IP67 rated units

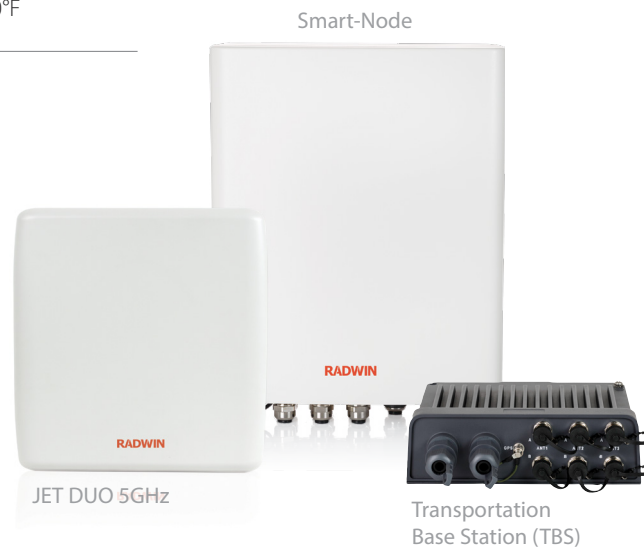
Applications:

- » AGV remote monitoring
- » Remote controlled RTG
- » Automated vehicles and containers
- » Ship-to-Shore crane connectivity
- » Reliable connectivity to Port systems for:
 - » Optical Character Recognition (OTC)
 - » Improved operational efficiency
 - » Real time security & safety control
 - » VoIP phones
- » Broadband Ship to Shore connectivity



Technical Data

	RADWIN JET DUO	RADWIN JET PRO	RADWIN 2000	FiberinMotion®
Type	Point-to-MultiPoint Beamforming	Point-to-MultiPoint Beamforming	Point-to-Point	Mobility
Net Aggregate Throughput	Up to 1.5Gbps	Up to 750Mbps	10Mbps up to 750Mbps	Up to 750Mbps
Range	Up to 40 km/25 miles	Up to 40 km/25 miles	Up to 120 km/75 miles	Up to 5km/3 miles
Frequency Multi-Band	4.9-6.0GHz	4.9-6GHz, 3.4-3.8GHz, 3.65 GHz (IC)	2.3-2.4GHz, 3.4-3.8GHz, 4.9-6.0GHz, 5.7-6.4GHz	4.9-6.0GHz
MIMO/Antenna Diversity	Supported	Supported	Supported	Supported
Latency	Constant per Subscriber Unit: Typical 4 to 10msec	Constant per Subscriber Unit: Typical 4 to 10msec	<3msec	Constant per Subscriber Unit: Typical 4 to 10msec
TDD Synchronization	Intra and Inter-Site Built-in GPS receiver	Intra and Inter-Site Built-in GPS receiver	Intra and Inter-Site	Intra and Inter-Site
Security	SNMPv1, SNMPv3, AES 128-bit encryption	SNMPv1, SNMPv3, AES 128-bit encryption	SNMPv1, SNMPv3, AES 128-bit encryption	SNMPv1, SNMPv3, AES 128-bit encryption
Bandwidth allocation	Guaranteed bandwidth per site and vehicle			
Operating Temperatures	-35°C to 60°C/ -31°F to 140°F			
Humidity	100% condensing, IP67			



RADWIN is the global provider of broadband wireless solutions that deliver blazing fast broadband with unparalleled reliability. Incorporating cutting-edge technologies, RADWIN's solutions are equipped with powerful OSS tools that support all operational aspects of the network lifecycle and enable operation in the toughest conditions including interference and nLOS.

Deployed in over 170 countries, RADWIN's solutions power applications including backhaul, access, private network connectivity and broadband on the move for rail and metro trains.

RADWIN

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