AirWave

Ultra-compact WiFi 6 client/AP with fast roaming, designed for seamless connectivity in AGVs and industrial applications

- All-in-one : Client/router/AP/Mesh

- 2 concurrent radios 2.4GHz and 5 Ghz

- Fast data rates up to 1.2 Gbps - **WiFi 6** - MU-MIMO 2T2R - 2.4/5 GHz

- Micro-SD card slot for configuration and logs storage

- Built-in Cybersecurity according to EN18031 with secure boot, secured access, VPN encryption, native firewall...

- Monitoring, deployment, and management made easier with WaveManager (NMS) cloud or on-premise, SNMP, MQTT, CLI, or HTTPS

- **Fast roaming** and **mesh** functions for industrial mobile applications

- Industrial design :
  - 7 to 48VDC power supply and PoE 802.3af
  - Compact metal enclosure, wall or DIN rail mounting
  - Enhanced ESD protection and shock/vibration resistance

APPLICATIONS
AGVs, AMRs, Robots...
Industrial automation
Remote access

Introduction

AirWave is an ultra-compact WiFi 6 router/client, expertly designed for AGVs and cutting-edge industrial environments.

Equipped with fast roaming and mesh capabilities, this device ensures uninterrupted connectivity by maintaining a seamless link without dropouts, even with mobility in severe and/or heavily metallic industrial environments.

Combining next-generation wireless speeds, enhanced capacity, and rock-solid reliability in a compact form factor, it's the perfect solution for intensive, mission-critical operations. Whether optimizing factory workflows or scaling logistics, ACKSYS AirWave guarantees the performance and stability you need to excel in the era of Industry 4.0.

Advanced WiFi 6 connectivity
- High-Speed connectivity: Delivers ultra-fast data rates to support demanding industrial operations.
- OFDMA and MU-MIMO: Enables simultaneous communication with multiple devices, reducing latency and increasing efficiency in high-density environments.
- Enhanced bandwidth: Optimized for real-time data transfer, including video streams and command signals.

Fast roaming for seamless mobility
- The possibility of using remote antennas, its resistance to shocks & vibrations and its particular fast-roaming performances make it the ideal product for integration in mobile equipment.

Ultra-compact and industrial-grade design
- Compact and practical: its small footprint, mounting system (wall or DIN rail) and wide power supply range make it easy to integrate into electrical cabinets or tight spaces without compromising performance. It's the perfect solution for machines, logistics vehicles or PLCs manufacturers.
- Compatibility with ACKSYS WiFi infrastructure and third-party APs.

All-in-one multifunction product
- Client to enable a continuous and secure connectivity of fixed and mobile equipment
- Routing functions facilitating mass deployments (e.g. machines, AGVs...), industrial cabinets
- Access point to provide a local wireless access around a machine
- MESH capabilities providing multipath routing, self-healing and maintaining wireless connectivity by circumventing obstacles, blind spots...
- It supports any type of Ethernet protocol such as Modbus/TCP, EtherNet/IP, Safe Ethernet, PROFINET...

Enhanced security
AirWave integrates the latest cyber security standard EN18031 :
- WPA3 Support: Provides robust encryption for secure industrial communications.
- Network isolation: Facilitates secure segmented networks for critical systems.

Centralized administration
WaveManager tool (Windows or Linux) to configure, monitor, troubleshoot and manage network deployments of ACKSYS devices (on premise and cloud versions available).

Technical characteristics overview

Ethernet interface	1-port 2.5 Gigabit Ethernet Base TX auto-sensing, auto MDI/MDIX cross-over (10/100/1000/2500), RJ45 Ethernet interface
WiFi interface	2 concurrent radios WiFi6 (IEEE 802.11 ax) 2.4 GHz and 5 GHz, MIMO 2T2R, ANI (Adaptive Noise Immunity)
WiFi radio data rate	1201Mbps @ 5GHz, 573.5 Mbps @ 2.4GHz
Operating frequencies	ISM : 2.4-2.483 GHz (up to 14 channels) UNII : 5.15-5.25 GHz (up to 4 channels) UNII-2 : 5.25-5.35 GHz (up to 4 channels) UNII-2 ext : 5.470-5.725 GHz (up to 11 channels) UNII-3 : 5.725-5.825 GHz (up to 4 channels) Supports DFS and TPC
Output power	2.4 GHz: up to 25 dBm (aggregate) / 5 GHz : up to 23 dBm (aggregate)
Sensitivity max.	2.4 GHz : -83 dBm / 5 GHz : -91 dBm
Radio connectors	2 x RP-SMA
Security	EN18031 with firewall, DoS, https, MAC filtering, WPA/WPA2/WPA3-Personal & Enterprise (IEEE 802.1X/RADIUS), tunnels L2 (GRE), VPN (OpenVPN, IPsec), SNMP V3, Rogue AP detector, Secure BOOT
WiFi modes	Access point, client, router, Rogue AP detector, advanced mesh (optional)
WiFi services	Fast roaming, hot Spot 2.0, Wireless Load Balancing (Load balancing, band steering, client roaming control), WMM QoS
Ethernet networking	IPv4/IPv6 compliance, frames filtering, bridging, repeater, STP/RSTP, VLAN, DHCP (server & client), DNS relay
Ethernet routing	Multicast (PIM), IP redundancy (VRRP), static routes, NAT 1:1, NAT router, router
Administration	http, https, MQTT, SNMP agent (V1, V2C, V3), CLI Micro-SD card : save/ restore configuration and logs storage WaveManager On premise or Cloud administration tool
LEDs Signaling	Radio : status | Ethernet : status - activity | Power : on-off | SD card status
Power supply	+7VDC to +48VDC, 3-pin Phoenix connector & PoE 802.3af
Consumption	IDLE mode: 4 W/ Maximum average: 10 W / Recommended power supply: 15 W
Dimensions & weight	Compact case L : 103 x l : 87 x h : 21 mm without rail DIN
Standards and certifications	**CE (RED) :** Safety : EN 62368-1:2014+A11, EN62311 EMC : EN 301-489-1, EN 301-489-17 Radio : EN 300 328 2.1.1 (2.4 GHz), EN 301 893 2.1.1 (5 GHz, DFS) Cybersecurity : EN 18031 Environmental : Shocks and vibrations EN 61373 (CAT 1 CLASS B) **FCC :** Radio : FCC ID xxx-xxx USA (UL 62368-1, Ed. 3) Canada (CAN/CSA C22.2 No. 62368-1-19) Korea (KCC) Brazil (ANATEL) Japan (MIC Giteki)
Environment	IP30 Operating temperature: -20°C to +60°C , storage: -40°C à +85°C, humidity: 0% to 99% (non-condensing)
MTBF	TBD
Warranty	5 years

Ordering references

AirWave	Compact all-in-one industrial WiFi 11ax router (client, access point, repeater, router + optional advanced mesh), concurrent dual radios 2.4 GHz and 5 Ghz, one 2.5 GbE port. Delivered with antennas.

Optional accessories

PWS12-UNI-PH3	AC (110V / 220V) to 12VDC power adapter with cable terminated by a 3-pin Phoenix terminal block
WL-FIX-RD2	Din rail fixing kit
SOCLE-RPS/RPS-1.5M	Magnetic base for RP-SMA antenna 1.5m cable (RP-SMA plug)

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