

# RuggedAir1000

11ac WiFi access point for industrial applications in harsh environment and railway



- AP/client/repeater/Mesh (\*) WiFi 802.11ac (2.4/5 GHz)
- Advanced security, VPN, firewall...
- Easy configuration: http, https, SNMP V3, WaveManager & WaveViewer administration software
- Operating System: WaveOS
- Rugged device: shocks & vibrations proof, redundant input (24V EN50155 compliant) or PoE, wide temperature range -40°C to +70°C
- Fast roaming (in client mode) (\*)
- Alarm output



## Introduction

RuggedAir1000 is an "all-in-one" (multifunction product: access point, client, repeater, router & Mesh\*) designed for industrial applications in harsh environment : railway, industry 4.0...

> **Public transportation:** It can be used on the ground to create a WiFi coverage at the depot or on board to connect vehicles to the ground network (trams, subways), for car-to-car communication and as an access point for passengers.

> **Industry 4.0:** it allows high-speed data transmission indoors and outdoors thanks to its extended WiFi coverage and/or from a connected mobile device.

- **High performances:** high-speed 802.11ac, 1.3 Gbps (radio data rate), MIMO 3T3R...
- **Robustness:** waterproof, IP66, with M12 connectors, 24 VDC or PoE power supply and 3 antennas to improve throughputs and enhance the quality of the radio link.
- **Mobility:** its roaming performances (<30 ms) and shock/vibration resistance (EN61373) make it easy to integrate into trams, subways, trains, various machines, bridge cranes...
- **Ease of deployment:** RuggedAir1000 can be easily administered from WaveManager and WaveViewer. Embedded, it can be configured directly from the onboard computer via SNMP or a web browser. It also has a C-Key (save / restore configuration key) for instantaneous replacement on site.

It integrates advanced security standards (WPA2-Enterprise (Radius), DoS, Firewall ...) as well as routing and filtering functions to facilitate mass deployments.

\* MESH point and fast roaming function to come

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## Technical characteristics overview

<b>Ethernet interface</b>	2-port Gigabit Ethernet 10/100/1000 auto-sensing base T, auto MDI/MDIX cross-over, M12 X-coded connectors
<b>WiFi interface</b>	1 radio 802.11ac (MIMO 3T3R, 1.3 Gbps), ANI (Adaptive Noise Immunity)
<b>WiFi radio data rate</b>	802.11a: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps 802.11b/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps 802.11n: MCS0-7, 3 streams (6.5 to 450 Mbps) 802.11ac: MCS0-9, 3 streams (6.5 Mbps to 1.3 Gbps)
<b>Operating frequencies</b>	ISM : 2.4-2.483 GHz (up to 14 channels) UNII : 5.15-5.25 GHz (up 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
<b>Output power</b>	WiFi : 2.4 GHz : up to 23.8 dBm (3 RF channels) / 5GHz : up to 22.8 dBm (3 RF channels)
<b>Radio connectors</b>	3 type N connectors
<b>Security</b>	Firewall, DoS, https, MAC filtering, WPA/WPA2-Personal & Enterprise (IEEE 802.1X/RADIUS), WEP, tunnels L2 (GRE), VPN (OpenVPN), SNMP V3
<b>WiFi modes</b>	AP, client, MESH (IEEE 802.11s) (*), infrastructure, AD-HOC, fast roaming (less than 30 ms) (*), WMM QoS, SRCC coupler
<b>Ethernet networking</b>	Frames filtering, bridging, repeater, STP/RSTP, VLAN, DHCP (server & client), DNS relay
<b>Ethernet routing</b>	Multicast (PIM), IP redundancy (VRRP), static routes, NAT router, router, carriage coupling system (SRCC)
<b>Administration</b>	http, https, SNMP agent (V1, V2C, V3), WaveManager and WaveViewer administration software, save / restore configuration key (C-Key)
<b>I/O</b>	A 3-pin Waterproof M8 connector with : - one solid state relay output warning (with configurable action), 1 Form A, 60VDC 80mA max - one input for external device control 24VDC max
<b>LEDs Signaling</b>	Radio : activity - status   Ethernet : link10/100/1000 - activity   Power : on-off   C-Key : activity
<b>Power supply</b>	+12VDC to +36VDC isolated (24V EN50155 nominal), redundant, PoE (at type 1), M12 connector 4-pole A-coded
<b>Consumption</b>	IDLE mode : 2.7 W / Maximum average : 8.4 W / Recommended : 12 W
<b>Dimensions &amp; weight</b>	Compact enclosure L: 175 x l: 80 x h: 75 mm (without connectors), 850g
<b>Standards and certifications</b>	CE (RED) Safety : EN 62368-1:2014+A11, EN62311 EMC : EN 301 489 [-1], [-17] Radio : EN 300 328 (2.4 GHz), EN 301 893 (5 GHz, DFS) FCC Radio : FCC ID TK4WLE900VX Railway EMC : EN 50155, EN 50121-3-2 Environmental : • Shocks & vibration : EN 61373 (CAT 1 CLASS B) • Climatic : EN60068-2 [-1, -2, -30]
<b>Environment</b>	• IP66 • Operating: -40°C to +70°C, HR: 0-99%
<b>Warranty</b>	5 years

\* MESH point and fast roaming function to come

## Ordering references

RuggedAir/2B	WiFi access point, client, repeater (WDS) and MESH point (802.11ac), 10/100/1000 M12 Ethernet interface. Shipped without cable or antenna
<b><u>Included accessories</u></b>	
C-Key_M1	Save / Restore configuration key
WL-PLT-1	4-point fixing plate with ground lug
<b><u>Other accessories</u></b>	
WL-M12U/8X-ETH-2M	SPEEDCON Ethernet cable, 8pts X-coded M12 to RJ45, 10 Gbps 2 meters
WL-M12U/8X-ETH-5M	SPEEDCON Ethernet cable, 8pts X-coded M12 to RJ45, 10 Gbps 5 meters
WL-M12U/8X-ETH-10M	SPEEDCON Ethernet cable, 8pts X-coded M12 to RJ45, 10 Gbps 10 meters
WLg-M12U-PWR-2M	Ultra-Lock waterproof 4-point M12 power supply cable, 2 meters
WLg-M12U-PWR-5M	Ultra-Lock waterproof 4-point M12 power supply cable, 5 meters
WLg-M12U-PWR-10M	Ultra-Lock waterproof 4-point M12 power supply cable, 10 meters
WL-ANT-2458/2-ONM	Dual band (2.4 / 5 Ghz) 2 dBi omni-directional antenna
RGA1000-SET	Connecting set (1 x 2m M12 4-point Power cable, 1 x 2m M12 4-point Ethernet cable, 3 x 2 dBi omnidirectional N-type antennas)

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