

# 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

ACKSYS\_RuggedAir1000\_US\_Rev A6\_24/11/21

## 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, M12 connector 4-pole A-coded & PoE 802.3af (15,4W)
<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 • Fire/smoke : EN 45545-2 (HL3) 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% • Storage : -40°C to +80°C
<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)

All the brand names mentioned in this document are trademarks. ACKSYS is constantly looking at ways to improve its products. The current specifications may therefore be modified without notice and the characteristics set out herein should be construed as creating any contractual obligation. All the featured herein are designed and manufactured in Europe.

ACKSYS\_RuggedAir1000\_US\_Rev A6\_24/11/21