

## Product Datasheet - Technical Specifications



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# AirBox

Industrial dual WiFi access point (11n + 11ac), dual band (2.4 or 5 GHz)



- WiFi access point, client or repeater modes
- Mesh function to wirelessly interconnect access points
- Optional 4G router + positioning (GNSS)
- Advanced security (Firewall, VPN, radius ...)
- High availability : 2 redundant Ethernet ports, redundant wide range power supply input (+9 to +48 VDC) & PoE 802.3af (from model V2)
- Compact case, wall or DIN Rail mounting
- Centralized administration and configurations management
- 2 isolated inputs + 2 isolated outputs



## Introduction

Available in dual WiFi radio version (11n + 11ac), AirBox fits directly into the era of Industry 4.0 by offering dual band (2.4 / 5GHz) connectivity to objects (IIoT, PLCs, tablets ...) and strengthening the communication between machines (M2M). AirBox supports up to 80 clients connected simultaneously (@ 2Mbps) in AP mode and can be integrated in electrical cabinets as in tight spaces (antenna fitted externally).

The single radio model (WiFi 11n) can be used in client mode to remotely connect any Ethernet equipment or PLCs as well as mobile devices (trolleys, AGVs) to the factory wireless infrastructure.

AirBox advantageously leverages MIMO technology to strengthen the radio link and features a high-performance roaming algorithm (<30ms) to ensure seamless communication in motion, even in environments with very high density of AP.

AirBox embedded intelligence simplifies the network design and does not require any wireless LAN controller. Administration is centralized via ACKSYS WaveManager software.

Network is secured thanks to AirBox high level of security (Firewall, VPN, 802.1X ...).

Two pairs of digital I/O are controllable with the SNMP protocol to operate remote equipment or read the logic state of a signal.

## Technical characteristics overview

<b>Ethernet interface</b>	2-port Gigabit Ethernet 10/100/1000 auto-sensing, Base TX, auto MDI/MDIX, RJ45 Ethernet interface		
<b>Cellular interfaces + Navigation</b>	Not available on these models, please refer to the AirBox LTE datasheet.		
<b>Cellular radio data rate</b>	Not available on these models, please refer to the AirBox LTE datasheet.		
<b>Cellular operating frequencies</b>	Not available on these models, please refer to the AirBox LTE datasheet.		
<b>WiFi interfaces</b>	2.4 / 5 GHz, ANI (Adaptive Noise Immunity) AirBox/10 : 1 radio : 802.11n (MIMO 2T2R, 300 Mbps) AirBox/12 : 2 radios : • Radio 1 802.11n (MIMO 2T2R, 300 Mbps) • Radio 2 : 802.11ac (MIMO 3T3R, 1.3 Gbps)		
<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, 2 streams (6.5 to 300 Mbps) 802.11ac: MCS0-9, 3 streams (6.5 Mbps to 1.3 Gbps) [only available on AirBox/12]		
<b>WiFi operating frequencies</b>	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		
<b>Output power</b>	AirBox/10	-	• up to 23.5 dBm (aggregate) at 2.4 GHz • up to 21 dBm (aggregate) at 5 GHz
	AirBox/12	WiFi 1 : WiFi 2 :	• up to 23.5 dBm (aggregate) at 2.4 GHz • up to 21 dBm (aggregate) at 5 GHz • up to 23.8 dBm (aggregate) at 2.4 GHz • up to 22.8 dBm (aggregate) at 5 GHz
<b>Sensitivity max.</b>	AirBox/10	-	• -94 dBm at 2.4 GHz • -96 dBm at 5 GHz
	AirBox/12	WiFi 1 : WiFi 2 :	• 94 dBm at 2.4 GHz • -96 dBm at 5 GHz • -94 dBm at 2.4 GHz • -95 dBm at 5 GHz
<b>Radio connectors</b>	• AirBox/10 : 2 x RP-SMA • AirBox/12 : 2 x RP-SMA (WiFi 1) + 3 x RP-SMA (WiFi 2)		
<b>Security</b>	Firewall, DoS, https, MAC filtering, WPA/WPA2-Personal & Enterprise (IEEE 802.1X/RADIUS), WEP, tunnels L2 (GRE), VPN (OpenVPN), SNMP V3, client isolation in AP mode		
<b>WiFi modes</b>	AP, client, MESH (IEEE 802.11s), infrastructure, AD-HOC, fast roaming (less than 30 ms), WMM QoS		
<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		
<b>Administration</b>	http, https, SNMP agent (V1, V2C, V3), WaveManager administration software		
<b>I/O</b>	- 2 solid state relay output warnings (with configurable action), 1 Form A, 60VDC 80mA max - 2 inputs for external device control 24VDC max		
<b>LEDs Signaling</b>	Radios : activity - status   Ethernet : 10/100/1000 link - activity   GPS : status   Power : on-off (x2)		
<b>Power supply</b>	+9VDC to +48VDC (redundant, 5-pin Phoenix connector) or PoE 802.3af powered device (from model V2)		
<b>Consumption</b>	• AirBox/10 : 6 W typical - 7 W max • AirBox/12 : 11 W typical - 15 W max		
<b>Dimensions &amp; weight</b>	Compact case L : 141.2 x l : 99 x h : 35 mm, weight without accessories : • /10 = 318g • /12 = 348g		
<b>Standards and certifications</b>	CE (RED)	Safety : EN 62368-1:2014+A11, EN62311 EMC : EN301-489-1, EN301-489-17 Radio : EN 300 328 2.1.1 (2.4 GHz), EN 301 893 2.1.1 (5 GHz, DFS)	
	FCC	Radio : • WiFi 1 : FCC ID Z9W-RMB • WiFi 2 : FCC ID TK4WLE900VX	
	E-marking	ECE R10	
	Environmental	Shocks & vibrations : EN 61373 (CAT 1 CLASS B)	
<b>Environment</b>	• IP30 • Operating temperature: -20°C to +60°C , storage: -40°C à +85°C, humidity: 0% to 99% (non-condensing)		
<b>Warranty</b>	5 years		

## Ordering references

AirBox/10	WiFi access point, client, repeater (WDS) & MESH point (802.11n), RJ45 Ethernet interface 10/100/1000
AirBox/12	WiFi access point, client, repeater (WDS) & MESH point (802.11n + 802.11ac), RJ45 Ethernet interface 10/100/1000

### Additional 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

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# AirBox LTE

## Industrial cellular router (2G/3G/4G) + WiFi (802.11n)



- 2G/3G/4G cellular router with auto-fallback
- ITS application-ready (LTE band 38 support)
- 802.11n WiFi interface (MIMO 2T2R), 2.4/5 GHz
- Advanced security (VPN, Firewall, radius ...)
- Automatic Cellular <-> WiFi switching
- WiFi fast roaming (< 30ms)
- Shocks & vibrations proof (EN61373)
- Redundant wide range power supply input (+9 to +48 VDC)
- Compact case, wall or DIN Rail mounting
- 2 isolated inputs + 2 isolated outputs



## Introduction

AirBox LTE is a cellular router (2G/3G/4G LTE) equipped with a dual-band WiFi interface (2.4 / 5 GHz), a GNSS interface (GPS, Galileo, GLONASS, Beidou), 2 Gigabit Ethernet ports and 2 isolated inputs/2 isolated outputs. It is designed for industrial applications (industry 4.0) and mobility (buses, vehicles ...).

**M2M and IIoT :** AirBox LTE has WiFi and cellular wireless interfaces to ensure maximum flexibility for industrial applications. It allows a remote access to all your devices (maintenance, control for non-critical applications, remote I/O...). Its WiFi interface, configured in access point mode, also offers local access to the network from a tablet or a smartphone. It supports all kind of Ethernet flows (video, Modbus TCP, EtherNet/IP, Profinet...) and its 4 GPIOs make it possible to remotely control equipment or to read the logic state of an input signal. AirBox LTE ensures the integrity of data and network thanks to its onboard services (VPN, Firewall, WPA-ENTERPRISE...).

**Mobility :** AirBox LTE is equipped with high-speed wireless technologies for transmitting data to and from vehicles. For bus applications, AirBox LTE makes it possible to pool all data streams (SAE, ticketing, PIS, CCTV...) on a single router. Its WiFi roaming capabilities (<30 ms) ensure continuous data transmission as buses move to the depot. Its automatic switching capabilities between WiFi and 4G ensure service continuity when they go into operation. AirBox LTE allows vehicles tracking with its GNSS feature. It is also rugged (shock and vibration proof), E-marked ECE R10 and maintenance-free.

**High availability :** its multiple redundant interfaces (2 Ethernet ports, 2 power inputs, 2 SIM cards) and its integrated watchdog guarantee a perfect continuity of operation.

**Administration and product monitoring :** can be achieved directly from a web browser or from WaveManager, the centralized administration software provided by ACKSYS. Besides, its advanced routing and filtering functions make it easy to deploy large fleets of vehicles.

## Technical characteristics overview

<b>Ethernet interface</b>	2-port Gigabit Ethernet 10/100/1000 auto-sensing, Base TX, auto MDI/MDIX, RJ45 Ethernet interface
<b>Cellular interfaces + navigation</b>	1 LTE radio category 4, 3GPP E-UTRA release 10, MIMO DL with Rx diversity Dual SIM LTE, UMTS/HSPA+, GSM/GPRS/EDGE (worldwide) Multi-constellation GNSS (GPS, Galileo, GLONASS, Beidou). Requires an active antenna.
<b>Cellular radio data rate</b>	150 Mbps ↓ & 50 Mbps ↑ (maximum radio data rate)
<b>Cellular operating frequencies</b>	FDD LTE: B1/B3/B5/B7/B8/B20 TDD LTE: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800
<b>WiFi interface</b>	802.11n (MIMO 2T2R), 300 Mbps, 2.4 / 5 GHz, ANI (Adaptive Noise Immunity)
<b>WiFi radio data rate</b>	802.11a: 6, 9, 12, 18, 24, 36, 48 & 54 Mbps 802.11b/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 & 54 Mbps 802.11n: MCS0-7, 2 streams (6.5 to 300 Mbps)
<b>WiFi operating frequencies</b>	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
<b>Output power</b>	WiFi • 2.4 GHz : up to 23.5 dBm (aggregate) • 5 GHz : up to 21 dBm (aggregate) LTE • GSM : up to 33 dBm
<b>Sensitivity max.</b>	WiFi : • 2.4 GHz : -94 dBm • 5 GHz : -96 dBm LTE WCDMA B5/B8 receiver : -110.5 dBm
<b>Radio connectors</b>	• WiFi : 2 x RP-SMA • LTE : 2 x SMA (female) • GNSS : 1 x SMA (female)
<b>Security</b>	Firewall, DoS, https, MAC filtering, WPA/WPA2-Personal & Enterprise (IEEE 802.1X/RADIUS), WEP, tunnels L2 (GRE), VPN (OpenVPN), SNMP V3, client isolation in AP mode
<b>WiFi modes</b>	AP, client, MESH (IEEE 802.11s), infrastructure, AD-HOC, fast roaming (less than 30 ms), WMM QoS
<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
<b>Administration</b>	http, https, SNMP agent (V1, V2C, V3), WaveManager administration software
<b>I/O</b>	- 2 solid state relay output warnings (with configurable action), 1 Form A, 60VDC 80mA max - 2 inputs for external device control 24VDC max
<b>LEDs Signaling</b>	Radios : activity - status   Ethernet : 10/100/1000 link - activity   GPS : status   Power : on-off (x2)
<b>Power supply</b>	+9VDC to +48VDC, redundant, 5-point Phoenix connector
<b>Consumption</b>	9.6 W typical - 12 W maximum
<b>Dimensions &amp; weight</b>	Compact case L : 141.2 x l : 99 x h : 35 mm, weight without accessories : 347g
<b>Standards and certifications</b>	CE (RED) Safety : EN 62368-1:2014+A11, EN62311 EMC : • WiFi : EN301-489-1, EN301-489-17 • LTE : EN 301 489 [-19], [-52] Radio : • WiFi : EN 300 328 2.1.1 (2.4 GHz), EN 301 893 2.1.1 (5 GHz, DFS) • LTE : EN 301 908 [-1, -2, -13], EN 301 511, EN 303 413 FCC Radio : • WiFi : FCC ID Z9W-RMB • LTE : FCC ID XMR201708EC25E E-marking ECE R10 Environmental Shocks & vibrations : EN 61373 (CAT 1 CLASS B)
<b>Environment</b>	IP30 • Operating temperature: -20°C to +60°C , storage: -40°C à +85°C, humidity: 0% to 99% (non-condensing)
<b>Warranty</b>	5 years

## Ordering references

AirBox/14	WiFi router (802.11n) + 4G/LTE (EMEA, Korea, Thailand, India) + multi-constellation GNSS interface, 2-port Gigabit Ethernet, 2 DI + 2 DO, shipped with 2 WiFi antennas (WL-ANT-2458 / 3- ORPS) and 2 cellular antennas (ANT727 / 20SM)
AirBox/17	WiFi router (802.11n) + 4G/LTE (world) + multi-constellation GNSS interface, 2-port Gigabit Ethernet, 2 DI + 2 DO, shipped with 2 WiFi antennas (WL-ANT-2458 / 3- ORPS) and 2 cellular antennas (ANT727 / 20SM)
<b>Additional accessories:</b>	
WL-ANT-2458/3-ORPS	Flat & swivel omnidirectional antenna, 2.4GHz (3dBi) / 5GHz (4dBi), RPSMA
ANT727/20SM	Omni, cellular antenna, 2dBi, SMA, 700-960 / 1700-2170 / 2300-2700 MHz
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

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