AWK-4131A Series

Outdoor industrial IEEE 802.11a/b/g/n wireless AP/bridge/client



Features and Benefits

- 2x2 MIMO 802.11a/b/g/n AP/bridge/client
- Millisecond-level Client-based Turbo Roaming¹
- · Easy setup and deployment with AeroMag
- Wireless redundancy with AeroLink Protection
- · Easy network setup with Network Address Translation (NAT)
- · Rugged industrial design with integrated antenna and power isolation
- IP68-rated weatherproof housing designed for outdoor applications and -40 to 75°C wide operating temperature range
- · Avoid wireless congestion with 5 GHz DFS channel support

Certifications



Introduction

The AWK-4131A IP68 outdoor industrial AP/bridge/client meets the growing need for faster data transmission speeds by supporting 802.11n technology and allowing 2X2 MIMO communication with a net data rate of up to 300 Mbps. The AWK-4131A is compliant with industrial standards and approvals covering operating temperature, power input voltage, surge, ESD, and vibration. The two redundant DC power inputs increase the reliability of the power supply, and the AWK-4131A can be powered via PoE to make deployment easier. The AWK-4131A can operate on either the 2.4 GHz or 5 GHz bands and is backwards-compatible with existing 802.11a/b/g deployments to future-proof your wireless investments. The Wireless add-on for the MXview network management utility visualizes the AWK's invisible wireless connections to ensure wall-to-wall Wi-Fi connectivity.

Advanced 802.11n Industrial Wireless Solution

- 802.11a/b/g/n compliant AP/bridge/client for flexible deployment
- Software-optimized for long-distance wireless communication with up to 1 km line of sight and external high-gain antenna (available only on 5 GHz)
- · Supports 60 clients connected concurrently
- DFS channel support allows a wider range of 5 GHz channel selection to avoid interference from existing wireless infrastructure

Advanced Wireless Technology for Mission-critical Applications

- Seamless roaming with client-based Turbo Roaming¹ for < 150 ms roaming recovery time between APs (Client mode)
- AeroMag support for error-free setup of your industrial applications' basic WLAN settings
- Supports AeroLink Protection for creating a redundant wireless link (< 300 ms recovery time) between APs and their clients

Industrial Ruggedness

- Integrated antenna and power isolation designed to provide 500 V insulation protection against external electrical interference
- · IP68-rated metal casing for complete ingress protection for any outdoor weather
- -40 to 75°C wide operating temperature models available for smooth wireless communication in harsh environments

Wireless Network Management With MXview Wireless

- Dynamic topology view shows the status of wireless links and connection changes at a glance
- Visual, interactive roaming playback function to review the roaming history of clients
- · Detailed device information and performance indicator charts for individual AP and client devices

^{1.} The Turbo Roaming recovery time indicated herein is an average of test results documented, in optimized conditions, across APs configured with interference-free 20-MHz RF channels, WPA2-PSK security, and default Turbo Roaming parameters. The clients are configured with 3-channel roaming at 100 Kbps traffic load. Other conditions may also impact roaming performance. For more information about Turbo Roaming parameter settings, refer to the product manual.



Specifications

WLAN Interface

WLAN Interface				
	802.11a/b/g/n 802.11i Wireless Se	ecurity		
	DSSS OFDM MIMO-OFDM			
	2.412 to 2.462 GHz 5.180 to 5.240 GHz 5.260 to 5.320 GHz 5.500 to 5.700 GHz 5.745 to 5.825 GHz	(4 channels) (4 channels) ² (11 channels) ²		
	2.412 to 2.472 GHz 5.180 to 5.240 GHz 5.260 to 5.320 GHz 5.500 to 5.700 GHz	(4 channels) (4 channels) ²		
	2.412 to 2.484 GHz 5.180 to 5.240 GHz 5.260 to 5.240 GHz 5.500 to 5.700 GHz	(4 channels) (4 channels) ²		
	WEP encryption (64 WPA/WPA2-Enterp WPA/WPA2-Persor	orise (IEEE 802.1X/RAD	IUS, TKIP, AES)	
	802.11b: 1 to 11 Mb 802.11a/g: 6 to 54 M 802.11n: 6.5 to 300	Vibps		
	23±1.5 dBm @ 6 to 21±1.5 dBm @ 36 M 20±1.5 dBm @ 48 M 18±1.5 dBm @ 54 M	/bps /bps		
	23±1.5 dBm @ MCS 18±1.5 dBm @ MCS 23±1.5 dBm @ MCS 17±1.5 dBm @ MCS	S7/15 20 MHz S0/8 40 MHz		
	26±1.5 dBm @ 1 Mb 26±1.5 dBm @ 2 Mb 26±1.5 dBm @ 5.5 M 25±1.5 dBm @ 11 M	bps Mbps		
	23±1.5 dBm @ 6 to 21±1.5 dBm @ 36 M 19±1.5 dBm @ 48 M 18±1.5 dBm @ 54 M	/bps /bps		
	23±1.5 dBm @ MCS 18±1.5 dBm @ MCS 23±1.5 dBm @ MCS 17±1.5 dBm @ MCS	S7/15 20 MHz S0/8 40 MHz		
Transmitter Power		US	EU	JP
	2.4 GHz	26 dBm	18 dBm	18 dBm
	5 GHz (UNII-1)	23 dBm	21 dBm	21 dBm
	5 GHz (UNII-2)	23 dBm	21 dBm	21 dBm

^{2.} DFS (Dynamic Frequency Selection) channel support: In AP mode, when a radar signal is detected, the device will automatically switch to another channel. However, according to regulations, after switching channels, a 60-second availability check period is required before starting the service.



		US	EU	JP
	5 GHz (UNII-3)	23 dBm	-	-
		egional regulations, the restricted in the firmwa		
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)		s s s s		
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)		CS15 20 MHz CS7 40 MHz		
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ93 dBm @ 1 Typ93 dBm @ 2 Typ93 dBm @ 5. Typ88 dBm @ 11	Mbps 5 Mbps		
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	Typ88 dBm @ 6 J Typ86 dBm @ 9 J Typ85 dBm @ 12 Typ85 dBm @ 12 Typ85 dBm @ 24 Typ85 dBm @ 24 Typ82 dBm @ 36 Typ78 dBm @ 54	Mbps Mbps Mbps Mbps Mbps Mbps Mbps		
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ70 dBm @ M Typ69 dBm @ M Typ67 dBm @ M Typ67 dBm @ M	CS15 20 MHz CS7 40 MHz		
WLAN Operation Mode	Access point, Clier	nt, Client-Router, Maste	r, Slave, Sniffer	
Antenna	External, 3/6 dBi, 0	Omni-directional		
WLAN Antenna Connector	2 N-type female			
Ethernet Interface				
Standards		0BaseT(X) 000BaseT(X) bE for Spanning Tree Proto apid Spanning Tree Proto		
PoE Ports (10/100/1000BaseT(X), RJ45 connector)	1			
Ethernet Software Features				
Management		nt, DNS, HTTP, IPv4, LLi Inet, UDP, VLAN, Wirele		
Routing	Static Route, NAT,	Port forwarding		
Redundancy Protocols	RSTP, STP			



Security	HTTPS/SSL, RADIUS, SSH
Time Management	SNTP Client
Firewall	
Filter	ICMP, MAC address, IP protocol, Port-based
Serial Interface Console Port	RS-232, 8-pin RJ45
LED Interface	
LED Indicators	PWR, FAULT, STATE, WLAN, LAN
Input/Output Interface	
Alarm Contact Channels	Relay output with current carrying capacity of 1 A @ 24 VDC
Buttons	Reset button
Digital Inputs	+13 to +30 V for state 1 +3 to -30 V for state 0 Max. input current: 8 mA
Physical Characteristics	
Housing	Metal
IP Rating	IP68
Dimensions	224 x 147.7 x 66.5 mm (8.82 x 5.82 x 2.62 in)
Weight	1,400 g (3.09 lb)
Installation	Wall mounting (standard), DIN-rail mounting (optional), Pole mounting (optional)
Power Parameters	
Input Current	0.64 A @ 12 VDC, 0.16 A @ 48 VDC
Input Voltage	12 to 48 VDC, Redundant dual inputs, 48 VDC Power-over-Ethernet
Power Connector	M12 A-coded 5-pin male connector
Power Consumption	7.68 W (max.)
Reverse Polarity Protection	Supported
Environmental Limits	
Operating Temperature	-40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
EMC	EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class B
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF

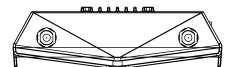


Radio	EN 300 328, EN 301 489-1/17, EN 301 893, FCC ID SLE-WAPN008, ANATEL, MIC, NCC, RCM, SRRC, WPC, KC
Safety	EN 60950-1, UL 60950-1
Vibration	IEC 60068-2-6
MTBF	
Time	440,764 hrs
Standards	Telcordia SR332
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x AWK-4131A Series wireless AP/bridge/client
Installation Kit	1 x cap, female, metal, for M12 port 1 x cap, metal, for RJ45 port 1 x field-installable power plug 1 x field-installable RJ45 plug 1 x stick, transparent plastic, for field-installable plug 2 x wall-mounting kit
Antenna	2 x 2.4/5 GHz antenna
Documentation	1 x quick installation guide 1 x warranty card

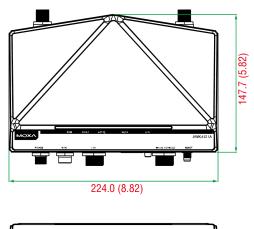


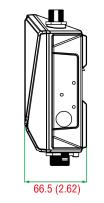
Dimensions

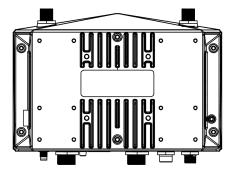
Unit: mm (inch)











Side View

Front, Top, and Rear Views

0 🔾

 \bigcirc \bigcirc \bigcirc

Side View

Bottom View

Ordering Information

Model Name	Band	Standards	Operating Temp.
AWK-4131A-EU-T	EU	802.11a/b/g/n	-40 to 75°C
AWK-4131A-JP-T	JP	802.11a/b/g/n	-40 to 75°C
AWK-4131A-US-T	US	802.11a/b/g/n	-40 to 75°C

Accessories (sold separately)

Antennas

ANT-WDB-ONF-0709	7 dBi at 2.4 GHz or 9 dBi at 5 GHz, N-type (female), dual-band, omnidirectional antenna
ANT-WDB-ONF-0709	r ubi at 2.4 GHz of 9 ubi at 5 GHz, N-type (remale), duarband, ommunectional antenna
ANT-WDB-ANM-0306	3 dBi at 2.4 GHz or 6 dBl at 5 GHz, N-type (male), omnidirectional antenna
ANT-WDB-ONM-0707	07 dBi at 2.4 GHz and 07 dBi at 5 GHz, N-type (male), dual-band omnidirectional antenna
ANT-WDB-ANM-0502	5 dBi at 2.4 GHz or 2 dBI at 5 GHz, N-type (male), omnidirectional antenna
ANT-WDB-ARM-02	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male) omnidirectional rubber-duck antenna
ANT-WDB-ARM-0202	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male), dual-band, omnidirectional antenna
ANT-WDB-PNF-1011	10 dBi at 2.4 GHz and 11 dBi at 5 GHz, N-type (female), dual-band directional antenna
MAT-WDB-CA-RM-2-0205	2.4/5 GHz, ceiling antenna, 2/5 dBi, MIMO 2x2, RP-SMA-type (male)
MAT-WDB-DA-RM-2-0203-1m	2.4/5 GHz, desktop antenna, 2/3 dBi, MIMO 2x2, RP-SMA-type (male), 1 m cable
MAT-WDB-PA-NF-2-0708	2.4/5 GHz, panel antenna, 7/8 dBi, MIMO 2x2, N-type (female)
ANT-WSB5-PNF-16	16 dBi at 5 GHz, N-type (female), single-band directional antenna
ANT-WSB-PNF-12-02	12 dBi at 2.4 GHz, N-type (female), single-band directional antenna



ANT-WSB-AHRM-05-1.5m	5 dBi at 2.4 GHz, RP-SMA (male), omnidirectional/dipole antenna, 1.5 m cable
Wireless Antenna Cables	
A-CRF-NMNM-LL4-300	N-type (male) to N-type (male) LMR-400 Lite cable, 3 m
A-CRF-NMNM-LL4-600	N-type (male) to N-type (male) LMR-400 Lite cable, 6 m
A-CRF-NMNM-LL4-900	N-type (male) to N-type (male) LMR-400 Lite cable, 9 m
Wireless AP Connector Cables	
M12A-8PFF-IP68	Field-installation A-coded M12 screw-in 8-pin connector, female connector female PIN
M12A-8PMM-IP68	Field-installation A-coded screw-in Gigabit Ethernet connector, 8-pin male M12 connector, IP68-rated
A-PLG-WPRJ	Field-installation RJ-type plug
Wireless Connector Caps	
A-CAP-N-M	A-CAP-N-M
A-CAP-WPRJ45-MC	Metal cap with chain for RJ45 connector
Surge Arrestors	
A-SA-NFNF-02	0 to 6 GHz, N-type (female) to N-type (female) surge arrester
A-SA-NMNF-02	0 to 6 GHz, N-type (male) to N-type (female) surge arrester
Wireless Adapters	
A-ADP-RJ458P-DB9F-ABC01	DB9 female to RJ45 connector for the ABC-01 Series
Wireless Terminating Resistors	
A-TRM-50-NM	50-ohm termination resistor with N-type male connector
Wall-Mounting Kits	
WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws
Wireless AP Mounting Kits	
WK-55	Wall mounting kit with 2 plates (55 x 34.5 x 2.5 mm) and 6 screws
© Moxa Inc. All rights reserved. Update	ad Feb 25, 2022

© Moxa Inc. All rights reserved. Updated Feb 25, 2022.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.

