AWK-1131A Series

Entry-level industrial IEEE 802.11a/b/g/n wireless AP/client

Features and Benefits

- IEEE 802.11a/b/g/n AP/client support
- Millisecond-level Client-based Turbo Roaming[1]
- Integrated antenna and power isolation
- 5 GHz DFS channel support

Certifications

Introduction

The AWK-1131A industrial wireless AP/client meets the growing need for faster data transmission speeds by supporting IEEE 802.11n technology with a net data rate of up to 300 Mbps. The AWK-1131A 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. The AWK-1131A can operate on either the 2.4 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.

Improved Higher Data Rate and Channel Capacity

- High-speed wireless connectivity with up to 300 Mbps data rate
- MIMO technology to improve the capability of transmitting and receiving multiple data streams
- Increased channel width with channel bonding technology
- Supports flexible channel selection to build up wireless communication system with DFS

Specifications for Industrial-grade Applications

- Redundant DC power inputs
- Integrated isolation design with enhanced protection against environmental interference
- Compact aluminum housing, IP30-rated

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

Specifications

WLAN Interface

WLAN Standards	802.11a/b/g/n 802.11i Wireless Security
Modulation Type	DSSS OFDM MIMO-OFDM
Frequency Band for US (20 MHz operating channels)	2.412 to 2.462 GHz (11 channels) 5.180 to 5.240 GHz (4 channels)

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.

	5.260 to 5.320 GHz (4 channels)[2] 5.500 to 5.700 GHz (11 channels)[2] 5.745 to 5.825 GHz (5 channels)
Frequency Band for EU (20 MHz operating channels)	2.412 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)[2] 5.500 to 5.700 GHz (11 channels)[2]
Frequency Band for JP (20 MHz operating channels)	2.412 to 2.484 GHz (14 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)[2] 5.500 to 5.700 GHz (11 channels)[2]
Wireless Security	WEP encryption (64-bit and 128-bit) WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES) WPA/WPA2-Personal
Transmission Rate	802.11b: 1 to 11 Mbps 802.11a/g: 6 to 54 Mbps 802.11n: 6.5 to 300 Mbps
Transmitter Power for 802.11a	23±1.5 dBm @ 6 to 24 Mbps 21±1.5 dBm @ 36 Mbps 20±1.5 dBm @ 48 Mbps 18±1.5 dBm @ 54 Mbps
Transmitter Power for 802.11n (5 GHz)	23±1.5 dBm @ MCS0/8 20 MHz 18±1.5 dBm @ MCS7/15 20 MHz 23±1.5 dBm @ MCS0/8 40 MHz 17±1.5 dBm @ MCS7/15 40 MHz
Transmitter Power for 802.11b	26±1.5 dBm @ 1 Mbps 26±1.5 dBm @ 2 Mbps 26±1.5 dBm @ 5.5 Mbps 25±1.5 dBm @ 11 Mbps
Transmitter Power for 802.11g	23±1.5 dBm @ 6 to 24 Mbps 21±1.5 dBm @ 36 Mbps 19±1.5 dBm @ 48 Mbps 18±1.5 dBm @ 54 Mbps
Transmitter Power for 802.11n (2.4 GHz)	23±1.5 dBm @ MCS0/8 20 MHz 18±1.5 dBm @ MCS7/15 20 MHz 23±1.5 dBm @ MCS0/8 40 MHz 17±1.5 dBm @ MCS7/15 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
5 GHz (UNII-2e)	23 dBm	23 dBm	23 dBm
5 GHz (UNII-3)	23 dBm	–	–

Note: Based on regional regulations, the maximum transmission power allowed on the UNII bands is restricted in the firmware, as indicated above.

Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	Typ. -90 @ 6 Mbps Typ. -88 @ 9 Mbps Typ. -88 @ 12 Mbps Typ. -85 @ 18 Mbps Typ. -81 @ 24 Mbps Typ. -78 @ 36 Mbps

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.

	Typ. -74 @ 48 Mbps Typ. -72 @ 54 Mbps Note: Due to a limitation in the receiver sensitivity performance for channels 153 and 161, it is recommended to avoid using these channels in your critical applications.
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	Typ. -69 dBm @ MCS7 20 MHz Typ. -71 dBm @ MCS15 20 MHz Typ. -63 dBm @ MCS7 40 MHz Typ. -68 dBm @ MCS15 40 MHz Note: Due to a limitation in the receiver sensitivity performance for channels 153 and 161, it is recommended to avoid using these channels in your critical applications.
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ. -93 dBm @ 1 Mbps Typ. -93 dBm @ 2 Mbps Typ. -93 dBm @ 5.5 Mbps Typ. -88 dBm @ 11 Mbps
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	Typ. -88 dBm @ 6 Mbps Typ. -86 dBm @ 9 Mbps Typ. -85 dBm @ 12 Mbps Typ. -85 dBm @ 18 Mbps Typ. -85 dBm @ 24 Mbps Typ. -82 dBm @ 36 Mbps Typ. -78 dBm @ 48 Mbps Typ. -74 dBm @ 54 Mbps
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ. -70 dBm @ MCS7 20 MHz Typ. -69 dBm @ MCS15 20 MHz Typ. -67 dBm @ MCS7 40 MHz Typ. -67 dBm @ MCS15 40 MHz
WLAN Operation Mode	Access point, Client, Sniffer
Antenna	External, 2/2 dBi, Omni-directional
Antenna Connectors	2 RP-SMA female

Ethernet Interface

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.1X for authentication
10/100/1000BaseT(X) Ports (RJ45 connector)	1

Ethernet Software Features

Management	DHCP Server/Client, DNS, HTTP, IPv4, LLDP, Proxy ARP, SMTP, SNMPv1/v2c/v3, Syslog, TCP/IP, Telnet, UDP, VLAN, Wireless Search Utility, MXview, MXview Wireless, MXconfig
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, SIGNAL, WLAN, LAN

Input/Output Interface

Buttons	Reset button

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	58 x 115 x 70 mm (2.29 x 4.53 x 2.76 in)
Weight	307 g (0.68 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)

Power Parameters

Input Current	0.56 A @ 12 VDC, 0.14 A @ 48 VDC
Input Voltage	12 to 48 VDC
Power Connector	1 removable 4-contact terminal block(s)
Power Consumption	6.96 W (max.)
Reverse Polarity Protection	Supported

Environmental Limits

Operating Temperature	Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -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 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 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: 1 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF
Radio	EN 300 328, EN 301 489-1/17, EN 301 893, FCC ID SLE-WAPN008, MIC, NCC, RCM, SRRC, WPC, KC, RCM, ANATEL
Safety	EN 60950-1, UL 60950-1
Vibration	IEC 60068-2-6

MTBF

Time	749,476 hrs
Standards	Telcordia SR332

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

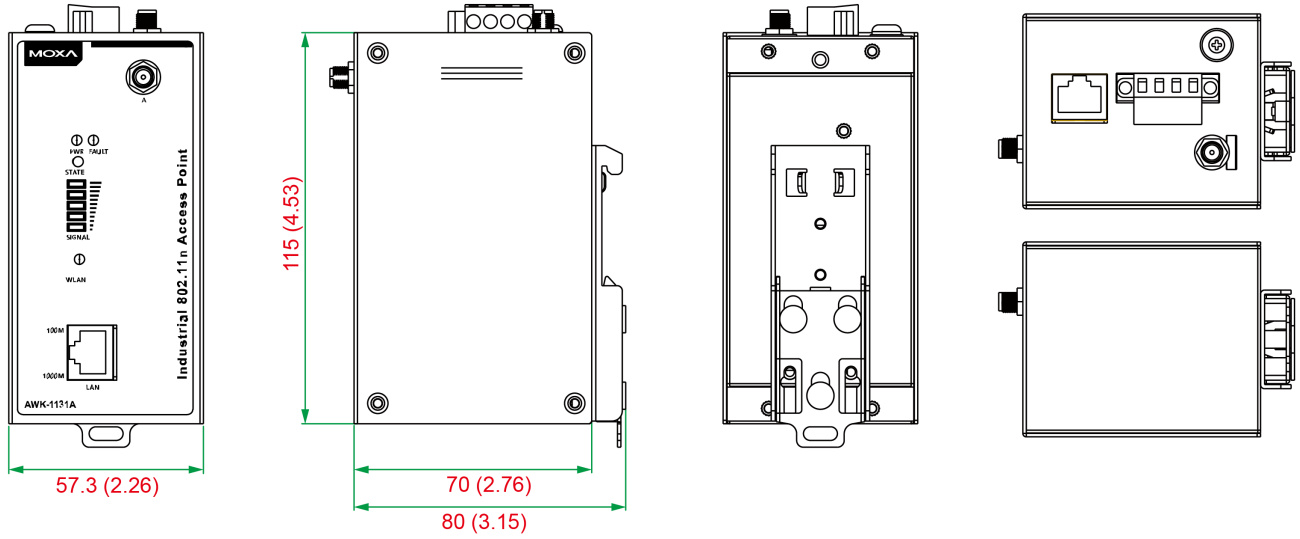
Package Contents

Device	1 x AWK-1131 Series wireless AP/client
Installation Kit	1 x cap, plastic, for RJ45 port 1 x DIN-rail kit

Antenna	2 x 2.4/5 GHz antenna
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Front View | Side View | Rear View | Top and Bottom Views

Ordering Information

Model Name	Band	Standards	Operating Temp.
AWK-1131A-EU	EU	802.11a/b/g/n	0 to 60°C
AWK-1131A-EU-T	EU	802.11a/b/g/n	-40 to 75°C
AWK-1131A-JP	JP	802.11a/b/g/n	0 to 60°C
AWK-1131A-JP-T	JP	802.11a/b/g/n	-40 to 75°C
AWK-1131A-US	US	802.11a/b/g/n	0 to 60°C
AWK-1131A-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-ANM-0306	3 dBi at 2.4 GHz or 6 dBI 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-RFRM-J1-60	RP-SMA (male) to RP-SMA (female) with JSF-141 cable, 0.6m
A-CRF-RFRM-R4-150	RF magnetic base, RP-SMA (male) to RP-SMA (female) RG-174/U cable, 1.5 m
A-CRF-RMNM-L1-300	N-type (male) to RP SMA (male) LMR-195 Lite cable, 3 m
A-CRF-RMNM-L1-600	N-type (male) to RP SMA (male) LMR-195 Lite cable, 6 m
A-CRF-RMNM-L1-900	N-type (male) to RP SMA (male) LMR-195 Lite cable, 9 m

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-RM	50-ohm terminating resistor with RP-SMA male connector

Wall-Mounting Kits

WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws