# 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

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

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

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

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| | Typ. -74 @ 48 Mbps<br>Typ. -72 @ 54 Mbps<br>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<br>Typ. -71 dBm @ MCS15 20 MHz<br>Typ. -63 dBm @ MCS7 40 MHz<br>Typ. -68 dBm @ MCS15 40 MHz<br>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<br>Typ. -93 dBm @ 2 Mbps<br>Typ. -93 dBm @ 5.5 Mbps<br>Typ. -88 dBm @ 11 Mbps |
| Receiver Sensitivity for 802.11g (measured at 2.437 GHz) | Typ. -88 dBm @ 6 Mbps<br>Typ. -86 dBm @ 9 Mbps<br>Typ. -85 dBm @ 12 Mbps<br>Typ. -85 dBm @ 18 Mbps<br>Typ. -85 dBm @ 24 Mbps<br>Typ. -82 dBm @ 36 Mbps<br>Typ. -78 dBm @ 48 Mbps<br>Typ. -74 dBm @ 54 Mbps |
| Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz) | Typ. -70 dBm @ MCS7 20 MHz<br>Typ. -69 dBm @ MCS15 20 MHz<br>Typ. -67 dBm @ MCS7 40 MHz<br>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

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

### Ethernet Software Features

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|---|---|
| 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

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| Filter | ICMP, MAC address, IP protocol, Port-based |

### Serial Interface

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| Console Port | RS-232, 8-pin RJ45 |

### LED Interface

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| LED Indicators | PWR, FAULT, STATE, SIGNAL, WLAN, LAN |

### Input/Output Interface

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| Buttons | Reset button |

## Physical Characteristics

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| 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

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| 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

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| Operating Temperature | Standard Models: 0 to 60°C (32 to 140°F)<br>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

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| EMC | EN 55032/24 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 V<br>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

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| Time | 749,476 hrs |
| Standards | Telcordia SR332 |

## Warranty

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

## Package Contents

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

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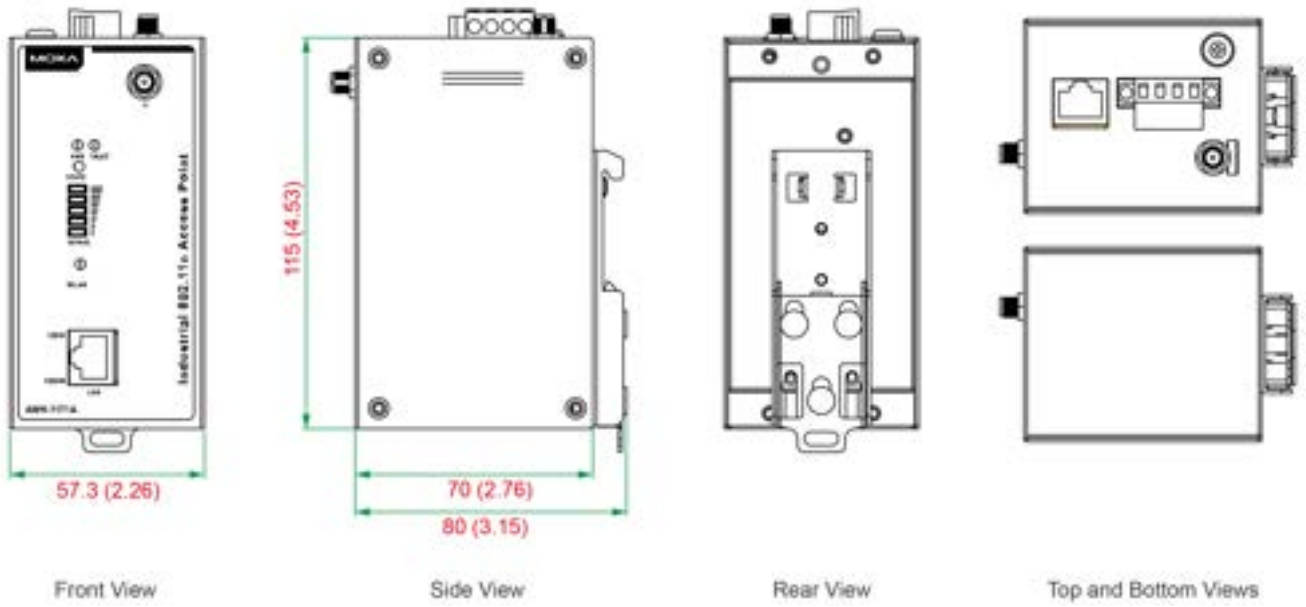
| Antenna | 2 x 2.4/5 GHz antenna |
| Documentation | 1 x quick installation guide<br>1 x warranty card |

## 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

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|---|---|
| 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

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|---|---|
| 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

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|---|---|
| A-ADP-RJ458P-DB9F-ABC01 | DB9 female to RJ45 connector for the ABC-01 Series |

### Wireless Terminating Resistors

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| A-TRM-50-RM | 50-ohm terminating resistor with RP-SMA male connector |

### Wall-Mounting Kits

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

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