AWK-1131A Series

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



- IEEE 802.11a/b/g/n AP/client support
- Seamless roaming with Turbo Roaming
- Integrated antenna and power isolation
- 5 GHz DFS channel support

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.

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

Specifications

WLAN Interface

Standards:
IEEE 802.11a/b/g/n for Wireless LAN
IEEE 802.11i for Wireless Security
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseT(X)
IEEE 802.3ab for 1000BaseT

Spread Spectrum and Modulation (typical):
• DSSS with DBPSK, DQPSK, CCK
• OFDM with BPSK, QPSK, 16QAM, 64QAM
• 802.11b: CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps, DBPSK @ 1 Mbps
• 802.11a/g: 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps
• 802.11n: 64QAM @ 300 Mbps to BPSK @ 6.5 Mbps (multiple rates supported)

Operating Channels (central frequency):
US:
2.412 to 2.462 GHz (11 channels)
5.180 to 5.240 GHz (4 channels)
5.260 to 5.320 GHz (4 channels)*
5.500 to 5.700 GHz (8 channels, excluding 5.600 to 5.640 GHz)*
5.745 to 5.825 GHz (5 channels)
EU:
2.412 to 2.472 GHz (13 channels)
5.180 to 5.240 GHz (4 channels)
5.260 to 5.320 GHz (4 channels)*
5.500 to 5.700 GHz (11 channels)*
JP:
2.412 to 2.484 GHz (14 channels, DSSS)
5.180 to 5.240 GHz (4 channels)
5.260 to 5.320 GHz (4 channels)*
5.500 to 5.700 GHz (11 channels)*

*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.

Security:
• SSID broadcast enable/disable
• Firewall for MAC/IP/Protocol/Port-based filtering
• 64-bit and 128-bit WEP encryption, WPA/WPA2-Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP, and AES)

Transmission Rates:
802.11b: 1, 2, 5.5, 11 Mbps
802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n: 6.5 to 300 Mbps (multiple rates supported)

TX Transmit Power:
802.11b:
Typ. 23±1.5 dBm @ 1 Mbps, Typ. 23±1.5 dBm @ 2 Mbps, Typ. 20±1.5 dBm @ 5.5 Mbps, Typ. 19±1.5 dBm @ 11 Mbps
802.11g:
Typ. 20±1.5 dBm @ 6 to 24 Mbps, Typ. 19±1.5 dBm @ 36 Mbps, Typ. 18±1.5 dBm @ 48 Mbps, Typ. 17±1.5 dBm @ 54 Mbps

802.11n (2.4 GHz):
Typ. 20±1.5 dBm @ MCS0/8 20 MHz,
Typ. 16±1.5 dBm @ MCS7/15 20 MHz
Typ. 20±1.5 dBm @ MCS0/8 40 MHz,
Typ. 16±1.5 dBm @ MCS7/15 40 MHz
802.11a:
Typ. 20±1.5 dBm @ 6 to 24 Mbps, Typ. 19±1.5 dBm @ 36 Mbps,
Typ. 16±1.5 dBm @ 48 Mbps,Typ. 15±1.5 dBm @ 54 Mbps
802.11n (5 GHz):
Typ. 19±1.5 dBm @ MCS0/8 20 MHz,
Typ. 14±1.5 dBm @ MCS7/15 20 MHz
Typ. 18±1.5 dBm @ MCS0/8 40 MHz,
Typ. 14±1.5 dBm @ MCS7/15 40 MHz
Note: Based on regional regulations, the maximum transmission power allowed on the UNII bands is restricted in the firmware, as indicated below:

	US	EU	JP
2.4 GHz	20 dBm	20 dBm	20 dBm
5 GHz (UNII-1)	17 dBm	20 dBm	20 dBm
5 GHz (UNII-2)	20 dBm	20 dBm	20 dBm
5 GHz (UNII-2e)	20 dBm	20 dBm	20 dBm
5 GHz (UNII-3)	20 dBm	20 dBm	20 dBm

RX Receive Sensitivity:
802.11b:
-90 dBm @ 1 Mbps, -88 dBm @ 2 Mbps,
-86 dBm @ 5.5 Mbps, -84 dBm @ 11 Mbps
802.11g:
-85 dBm @ 6 Mbps, -84 dBm @ 9 Mbps,
-83 dBm @ 12 Mbps, -82 dBm @ 18 Mbps,
-80 dBm @ 24 Mbps, -76 dBm @ 36 Mbps,
-70 dBm @ 48 Mbps, -70 dBm @ 54 Mbps
802.11n (2.4 GHz):
-70 dBm @ MCS7 20 MHz, -68 dBm @ MCS15 20 MHz
-65 dBm @ MCS7 40 MHz, -63 dBm @ MCS15 40 MHz
802.11a:
-92 dBm @ 6 Mbps, -89 dBm @ 9 Mbps,
-85 dBm @ 12 Mbps, -82 dBm @ 18 Mbps,
-80 dBm @ 24 Mbps, -76 dBm @ 36 Mbps,
-74 dBm @ 48 Mbps, -72 dBm @ 54 Mbps
802.11n (5 GHz):
-70 dBm @ MCS7 20 MHz, -67 dBm @ MCS15 20 MHz
-68 dBm @ MCS7 40 MHz, -66 dBm @ MCS15 40 MHz

Protocol Support
General Protocols: Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, DHCP, LLDP

Interface
Default Antennas: 2 dual-band omni-directional antennas, 2 dBi, RP-SMA (male)
Connector for External Antennas: RP-SMA (female)
LAN Ports: 1, RJ45, 10/100/1000BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
Console Port: RS-232 (RJ45-type)
Reset: Present
LED Indicators: PWR, FAULT, STATE, SIGNAL*, WLAN, 10/100/1000 (RJ45 port)
*signal strength indicator

Management
Device Management: Wireless Search Utility, MXconfig, SNMP
Network Monitoring: MXview

Physical Characteristics
Housing: Metal, IP30 protection
Weight: 307 g (0.68 lb)
Dimensions: 58 x 115 x 70 mm (2.29 x 4.53 x 2.76 in)
Installation: DIN-rail mounting (standard), wall mounting (optional)

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: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5% to 95% (non-condensing)

Power Requirements
Input Voltage: 12 to 48 VDC, redundant dual DC power inputs
Input Current: 0.56 A @ 12 VDC; 0.14 A @ 48 VDC
Connector: 4-pin removable terminal block, 500 V insulation
Power Consumption: 6.96 W
Reverse Polarity Protection: Present

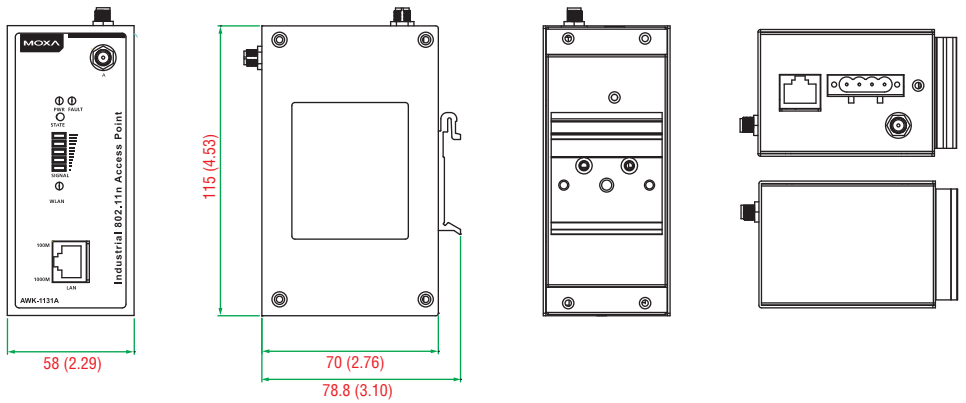
Standards and Certifications
Safety: UL 60950-1, EN 60950-1
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class B
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV
IEC 61000-4-6 CS: 3 V
IEC 61000-4-8
Radio: EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPN005
Note: Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)
Time: 810,022 hrs
Standard: Telcordia SR332

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

Dimensions

Unit: mm (inch)



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

Ordering Information

Available Models

AWK-1131A-US: IEEE 802.11a/b/g/n wireless AP/client, US band, 0 to 60°C operating temperature
AWK-1131A-US-T: IEEE 802.11a/b/g/n wireless AP/client, US band, -40 to 75°C operating temperature
AWK-1131A-EU: IEEE 802.11a/b/g/n wireless AP/client, EU band, 0 to 60°C operating temperature
AWK-1131A-EU-T: IEEE 802.11a/b/g/n wireless AP/client, EU band, -40 to 75°C operating temperature
AWK-1131A-JP: IEEE 802.11a/b/g/n wireless AP/client, JP band, 0 to 60°C operating temperature
AWK-1131A-JP-T: IEEE 802.11a/b/g/n wireless AP/client, JP band, -40 to 75°C operating temperature

Note: Please visit Moxa's website for a complete list of optional wireless accessories and antennas available for Moxa's wireless products.

Package Checklist

- AWK-1131A wireless AP/client
- 2 2.4/5 GHz antennas: ANT-WDB-ARM-02
- DIN-rail kit
- 1 plastic RJ45 protective cap
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

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