# AWK-3191 Series

## *Industrial 900 MHz wireless AP/bridge/client*

> **900 MHz transmission for long distance wireless communication**
> **AP/client and master/slave modes supported for point-to-point and point-to-multi-point connections**
> **QoS (WMM) and VLAN for efficient network traffic**
> **Maximum security with WEP/WPA/WPA2/802.11X and powerful filters**
> **Power and antenna isolation design for higher operation stability**
> **-40 to 75°C operating temperature range (T models)**

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## : Introduction

The AWK-3191 900 MHz wireless AP/bridge/client is Moxa's answer to long distance wireless communication for industrial applications. By combining the characteristics of the 33-centimeter band and the proven 802.11 standards, Moxa is able to provide a reliable long distance wireless solution. Unlike traditional point-to-point 900 MHz radios, the AWK-3191 supports both master/slave and AP/client operation modes to enable both point-to-point and point-to-multi-point communication for higher flexibility and lower total cost of ownership.

Furthermore, the AWK-3191 is designed to be deployed easily, but in case of external interference, Moxa also provides the ability to allow engineers to adjust their 900 MHz central frequency and bandwidth (5/10 MHz and 20 MHz) to optimize their wireless performance.

The AWK-3191 is rated to operate at temperatures ranging from -25 to 60°C for standard models and -40 to 75°C for wide temperature models, and with an industrial-oriented design, it is compliant with various standards and approvals, making it rugged enough for any harsh industrial environment.

### Advanced Security

• Enable/disable SSID broadcasts
• WPA/WPA2 (Wi-Fi Protected Access) and 802.11i support
• IEEE 802.1X / RADIUS support
• MAC/IP/protocol/port filtering for applications that require more restricted access control

### Specifications for Industrial-Grade Applications

• Long-distance data transmission over 30 km with directional antenna
• Power and isolation design for a complete separation between system ground, chase ground, and antenna system to protect against interference from unstable environmental factors
• Redundant DC power inputs
• Integrated DI/DO for on-site monitoring and warnings
• Signal strength LEDs for easy deployment and antenna alignment

## : Specifications

### WLAN Interface

**Standards:**
IEEE 802.11i for Wireless Security
IEEE 802.1Q for VLAN
IEEE 802.3af for Power-over-Ethernet
IEEE 802.1X for Security and Authentication
**Spread Spectrum and Modulation (typical):**
• OFDM with BPSK, QPSK, 16QAM, 64QAM
• 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps
**Operating Channels (central frequency):**
US: 902 to 928 MHz (ISM band)
• 915 MHz (BW = 20 MHz)
• 908.5, 915, 921.5 MHz (BW = 10 MHz)
• 905.25, 908.5, 911.75, 915, 918.25, 921.5, 924.75 MHz (BW = 5 MHz)
**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:**
6, 9, 12, 18, 24, 36, 48, 54 Mbps
**TX Transmit Power:**
• Typ. 24±1.5 dBm @ 6 to 24 Mbps
• Typ. 23±1.5 dBm @ 36 Mbps
• Typ. 22±1.5 dBm @ 48 Mbps
• Typ. 21±1.5 dBm @ 54 Mbps
**RX Sensitivity:**
• -90 dBm @ 6 Mbps
• -88 dBm @ 9 Mbps
• -87 dBm @ 12 Mbps
• -85 dBm @ 18 Mbps
• -81 dBm @ 24 Mbps
• -77 dBm @ 36 Mbps
• -73 dBm @ 48 Mbps
• -71 dBm @ 54 Mbps
**Channel Band Width:**
US: 5 MHz, 10 MHz, 20 MHz

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## Protocol Support

**General Protocols:** DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, DHCP

## Interface

**Connector for External Antennas:** RP-SMA (female)
**RJ45 Ports:** 1, 10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
**Console Port:** RS-232 (RJ45-type)
**Reset:** Present
**LED Indicators:** PWR1, PWR2, PoE, FAULT, STATE, signal strength, CLIENT MODE, BRIDGE MODE, WLAN, 10M, 100M
**Alarm Contact:** 1 relay output with current carrying capacity of 1 A @ 24 VDC
**Digital Inputs:** 2 electrically isolated inputs
• +13 to +30 V for state "1"
• +3 to -30 V for state "0"
• Max. input current: 8 mA

## Physical Characteristics

**Housing:** Metal, providing IP30 protection
**Weight:** 930 g
**Dimensions:** 53 x 135 x 105 mm (2.08 x 5.3 x 4.13 in)
**Installation:** DIN-rail mounting, wall mounting (with optional kit)

## Environmental Limits

**Operating Temperature:**
Standard Models: -25 to 60°C (-13 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 or 48 VDC Power-over-Ethernet (IEEE 802.3af compliant)
**Connector:** 10-pin removable terminal block
**Power Consumption:** 5.928 W (12 V / 0.494 A to 48 V / 0.121 A)
**Reverse Polarity Protection:** Present

## Standards and Certifications

**Safety:** UL 60950-1
**EMC:** FCC Part 15, Subpart B
**Radio:** FCC ID SLE-WFS001
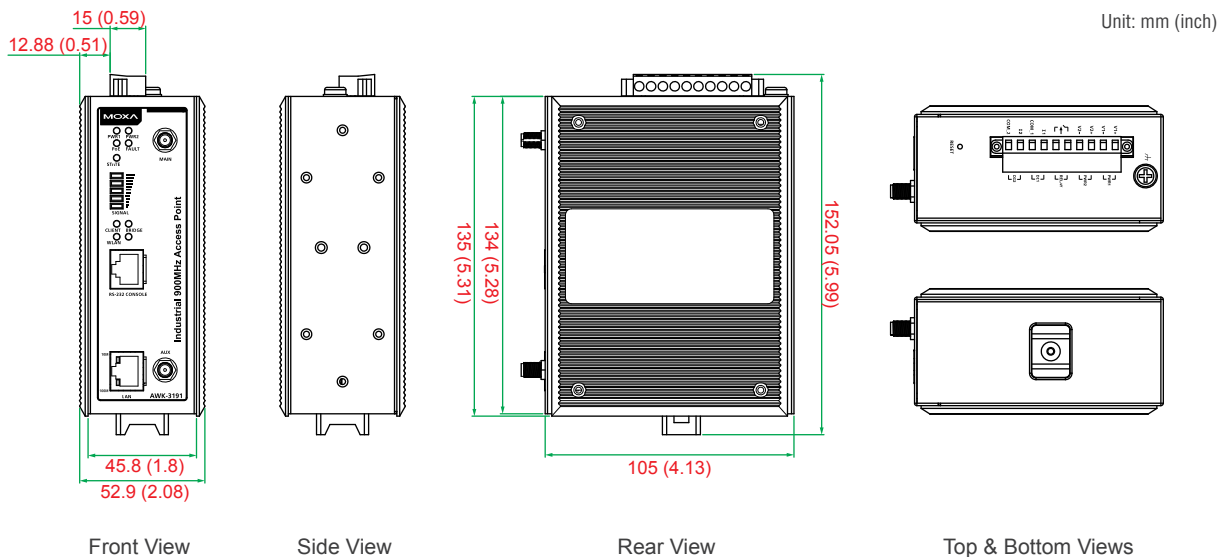Note: Please check Moxa's website for the most up-to-date certification status.

## Reliability

**MTBF (mean time between failures):** 484,469 hrs

## Warranty

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

## Dimensions



Unit: mm (inch)

Front View     Side View     Rear View     Top & Bottom Views

## : Ordering Information

### Available Models

**AWK-3191-US:** Industrial 900 MHz access point, US band (902 to 928 MHz)
**AWK-3191-US-T:** Industrial 900 MHz access point, US band (902 to 928 MHz), -40 to 75°C operating temperature

Note: Moxa's AWK-3191 does NOT include default antennas, so you will need to purchase external 900 MHz (902 to 928 MHz) antennas separately. Contact your local Moxa sales representative for local antenna vendor recommendations.

### Package Checklist

• AWK-3191
• 2 plastic RJ45 protective caps
• Cable holder with one screw
• Software CD
• Quick installation guide (printed)
• Warranty card