

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
- > Maximum security with WEP/WPA/WPA2/802.11X and powerful filters
- > Integrated antenna and power isolation
- > -40 to 75°C operating temperature range (T models)



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 antenna isolation design for a complete separation between system ground, chassis 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*

*Hardware Rev. 3.0.0 supports PoE; hardware Rev. 2.0.0 does not support PoE.

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

Transmitter 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

Receiver 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

Protocol Support

General Protocols: Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, TCP, UDP, RADIUS, SNMP, DHCP, VLAN, STP/RSTP

Interface

Default Antennas: N/A, antenna purchase separately

Connector for External Antennas: RP-SMA (female), 500 V insulation

LAN Ports: 1, RJ45, 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 (Hardware Rev. 3.0.0 supports PoE; hardware Rev. 2.0.0 does not support PoE.), FAULT, STATE, SIGNAL*, CLIENT MODE, BRIDGE MODE, WLAN, 10M, 100M

*signal strength indicator

Alarm Contact (digital output): 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

Management

Device Management: Wireless Search Utility, SNMP

Physical Characteristics

Housing: Metal, IP30 protection

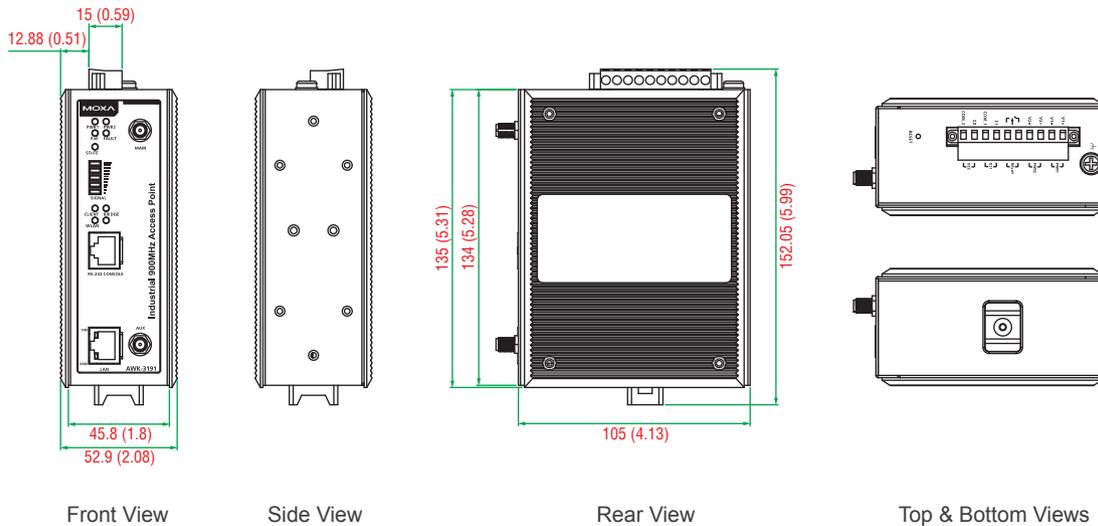
Weight: 930 g (2.05 lb)

Dimensions: 53 x 135 x 105 mm (2.08 x 5.31 x 4.13 in)

Installation: DIN-rail mounting (standard), wall mounting (optional)

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

AWK-3191-US: Industrial 900 MHz wireless AP/bridge/client, US band (902 to 928 MHz), -25 to 60°C operating temperature

AWK-3191-US-T: Industrial 900 MHz wireless AP/bridge/client, US band (902 to 928 MHz), -40 to 75°C operating temperature

Note: Moxa's AWK-3191 does NOT include default antennas; refer to the following information to choose a suitable antenna system

Optional Accessories (can be purchased separately)

A-CRF-RMNM-L1-X00: N-type (male) to RP SMA (male), LMR-195 Lite RF cable, available in lengths of 3 m, 6 m, and 9 m

ANT-WSB0.9-YNF-12: 900 MHz, Yagi antenna for point-to-point applications, 12 dBi, N-type (female)

ANT-WSB0.9-ANF-09: 900 MHz, omni-directional antenna for point-to-multi-point applications, 9 dBi, N-type (female)

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-3191 wireless AP/bridge/client
- DIN-rail kit
- 2 plastic RJ45 protective caps
- Cable holder with one screw
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card