

# AWK-3121 Series

## Industrial IEEE 802.11a/b/g wireless AP/bridge/client



- > IEEE 802.11a/b/g compliant
- > QoS (WMM) and VLAN for efficient network traffic
- > Supports long-distance data transfer and client-based Turbo Roaming
- > Maximum security with WEP/WPA/WPA2/802.11X and powerful filters
- > -40 to 75°C operating temperature range (T models)



### Introduction

The AWK-3121 AP/bridge/client is ideal for industrial hard to wire applications, keeping wireless costs under control, and integrating with existing mobile equipment. The AWK-3121 is compliant with the industrial standards and approvals, covering operating temperature, power input voltage, surge, ESD and vibration. Installation is easy, with either DIN-Rail mounting or distribution boxes, and the DIN-Rail mounting capability, wide operating temperature range, and IP30 housing with LED indicators make the AWK-3121 a convenient yet reliable solution for any industrial wireless application.

### Advanced Security

- 64-bit and 128-bit WEP (Wired Equivalent Privacy)
- Enable/disable SSID broadcasts
- WPA/WPA2 (Wi-Fi Protected Access) and 802.11i support
- IEEE802.1X/RADIUS support
- Powerful filters for access control

### Specifications for Industrial-grade Applications

- Redundant DC power inputs
- Long-distance data transmission over 10 km
- Integrated DI/DO for on-site monitoring and warnings
- Signal strength LEDs for easy deployment and antenna alignment

### Specifications

#### WLAN Interface

##### Standards:

- IEEE 802.11a/b/g for Wireless LAN
- IEEE 802.11i for Wireless Security
- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseTX
- IEEE 802.3af for Power-over-Ethernet
- IEEE 802.1D for Spanning Tree Protocol
- IEEE 802.1w for Rapid STP

##### 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 @ 11 Mbps
- 802.11a/g: 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps

##### Operating Channels (central frequency):

- US:
  - 2.412 to 2.462 GHz (11 channels)
  - 5.18 to 5.24 GHz (4 channels)
- EU:
  - 2.412 to 2.472 GHz (13 channels)
  - 5.18 to 5.24 GHz (4 channels)
- JP:
  - 2.412 to 2.472 GHz (13 channels, OFDM)
  - 2.412 to 2.484 GHz (14 channels, DSSS)
  - 5.18 to 5.24 GHz (4 channels for W52)

#### 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

#### TX Transmit Power:

- 802.11b:
  - Typ. 23±1.5 dBm @ 1 to 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
- 802.11a:
  - Typ. 18±1.5 dBm @ 6 to 24 Mbps, Typ. 16±1.5 dBm @ 36 to 48 Mbps, Typ. 15±1.5 dBm @ 54 Mbps

#### RX Sensitivity:

- 802.11b:
  - 97 dBm @ 1 Mbps, -94 dBm @ 2 Mbps, -92 dBm @ 5.5 Mbps, -90 dBm @ 11 Mbps
- 802.11g:
  - 93 dBm @ 6 Mbps, -91 dBm @ 9 Mbps, -90 dBm @ 12 Mbps, -88 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -80 dBm @ 36 Mbps, -76 dBm @ 48 Mbps, -74 dBm @ 54 Mbps

802.11a:

-90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -89 dBm @ 12 Mbps, -85 dBm @ 18 Mbps, -83 dBm @ 24 Mbps, -79 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -74 dBm @ 54 Mbps

**Protocol Support**

**General Protocols:** Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, TCP, UDP, RADIUS, SNMP, PPPoE, DHCP

**Interface**

**Default Antennas:** 2 dual-band omni-directional antennas, 2 dBi, RP-SMA (male)

**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:** 850 g

**Dimensions:** 54 x 135 x 105 mm (2.14 x 5.4 x 4.14 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:** 12 to 48 VDC, 0.121 to 0.494 A

**Reverse Polarity Protection:** Present

**Standards and Certifications**

**Safety:** UL 60950-1, EN 60950-1

**Hazardous Location:** UL/cUL Class I Division 2, ATEX Zone 2

**EMC:** EN 301 489-1/17; FCC Part 15, Subpart B; EN 55022/55024

**Radio:** EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPA003

*Note: Please check Moxa's website for the most up-to-date certification status.*

**Reliability**

**MTBF (mean time between failures):**

392,209 hrs

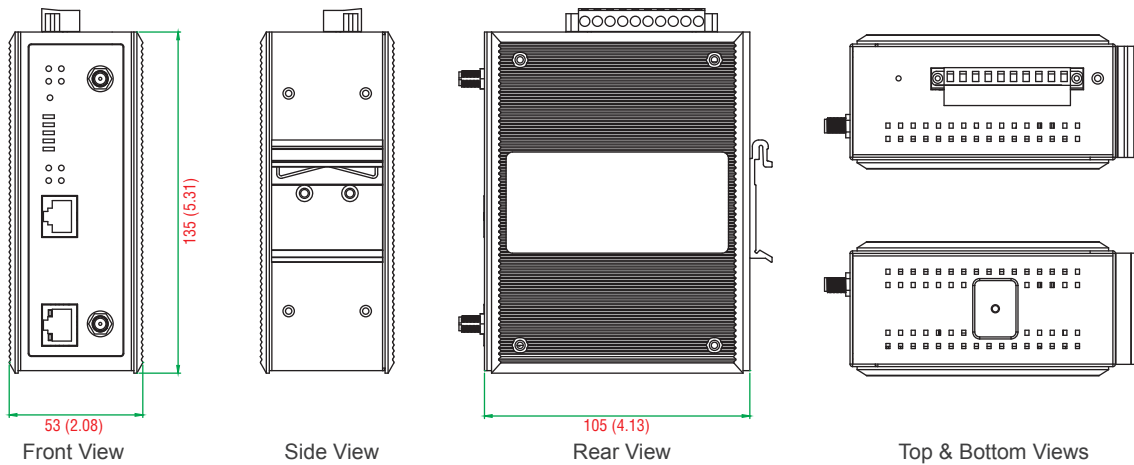
**Warranty**

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**

Unit: mm (inch)



**Ordering Information**

**Available Models**

**AWK-3121-US:** IEEE 802.11a/b/g wireless AP/bridge/client, US band

**AWK-3121-JP:** IEEE 802.11a/b/g wireless AP/bridge/client, JP band

**AWK-3121-US-T:** IEEE 802.11a/b/g wireless AP/bridge/client, US band, -40 to 75°C operating temperature

**AWK-3121-JP-T:** IEEE 802.11a/b/g wireless AP/bridge/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.*

**AWK-3121-EU:** IEEE 802.11a/b/g wireless AP/bridge/client, EU band

**AWK-3121-EU-T:** IEEE 802.11a/b/g wireless AP/bridge/client, EU band, -40 to 75°C operating temperature

**Package Checklist**

- AWK-3121 wireless AP/bridge/client
- 2 dual-band omni-directional antennas (2 dBi, RP-SMA, 2.4/5 GHz)
- DIN-rail kit
- 2 plastic RJ45 protective caps for console port
- Cable holder with one screw
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card