

# AWK-4121 Series

## Industrial IEEE 802.11a/b/g outdoor wireless Access-Point/Bridge/Client



- > IEEE 802.11a/b/g compliant
- > Redundant power inputs with dual 24 VDC power and PoE
- > Higher security with WEP/WPA/WPA2/802.11X and powerful filter
- > Turbo Roaming™ for seamless wireless connections
- > Long-distance communication support
- > Wide operating temperature range and IP67-rated metal housing for hazardous environments

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.



### Introduction

The AWK-4121 outdoor wireless AP/Bridge/Client is an ideal 3-in-1 solution for industrial applications that are hard to wire, too expensive to wire, or use mobile equipment that connects to a TCP/IP network. The AWK-4121 can operate at temperatures ranging from -40 to 75°C, and its dust-tight and weatherproof design is IP67-rated and allows you to set up a WLAN, or extend existing wired networks to outdoor locations. In addition, the AWK-4121 is equipped with detachable antennas so it can give you the flexibility of choosing your own special-purpose antennas. The AWK-4121's two redundant DC power inputs increases the reliability of the power supply. It can also be powered via PoE and is easy to deploy.

### Ruggedized Design for Critical Environments

- IP67-rated metal housing
- Waterproof and dust-tight RJ45 connectors
- M12 connectors protect against shock and vibration
- Hardened mounting kit for flexible installation outdoors

### Specifications for Industrial-grade Applications

- Turbo Roaming™ for rapid handover during client roaming
- Long-distance data transmission over 10 km
- Integrated DI/DO for on-site monitoring and warning
- Signal strength LEDs for easy deployment and antenna alignment

### Specifications

#### WLAN

##### Standards:

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

802.11b DSSS with: DBPSK, DQPSK, CCK  
 802.11g: OFDM with BPSK, QPSK, 16QAM, 64QAM  
 802.11a: OFDM with BPSK, QPSK, 16QAM, 64QAM  
 64QAM @ 54 Mbps, CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps, DBSK @ 1 Mbps

##### Operating Channels:

US:  
 2.412 to 2.462 GHz (11 channels)  
 5.15 to 5.25 GHz (4 channels)  
 EU:  
 2.412 to 2.472 GHz (13 channels)  
 5.15 to 5.35 GHz (4 channels)  
 JP:  
 2.412 to 2.472 GHz (13 channels, OFDM)  
 2.412 to 2.484 GHz (14 channels, CCK)  
 5.15 to 5.25 GHz (4 channels for W52)

##### Security: SSID broadcast enable/disable

Firewall for MAC/IP/Protocol/Port-base filtering  
 64-bit and 128-bit WEP encryption, WPA /WPA2-Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES)

##### Data 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:  
 1 to 11 Mbps: Typ. 18±1.5 dBm  
 802.11g:  
 6 to 24 Mbps: Typ. 18±1.5 dBm  
 36 to 48 Mbps: Typ. 16±1.5 dBm  
 54 Mbps: Typ. 15±1.5 dBm  
 802.11a:  
 6 to 24 Mbps: Typ. 16±1.5 dBm  
 36 to 48 Mbps: Typ. 14±1.5 dBm  
 54 Mbps: Typ. 13±1.5 dBm

##### RX Sensitivity:

802.11b: -92 dBm @ 1 Mbps, -90 dBm @ 2 Mbps, -88 dBm @ 5.5 Mbps, -84 dBm @ 11 Mbps  
 802.11g: -87 dBm @ 6 Mbps, -86 dBm @ 9 Mbps, -85 dBm @ 12 Mbps, -82 dBm @ 18 Mbps, -80 dBm @ 24 Mbps, -76 dBm @ 36 Mbps, -72 dBm @ 48 Mbps, -70 dBm @ 54 Mbps  
 802.11a: -87 dBm @ 6 Mbps, -86 dBm @ 9 Mbps, -85 dBm @ 12 Mbps, -82 dBm @ 18 Mbps, -80 dBm @ 24 Mbps, -76 dBm @ 36 Mbps, -72 dBm @ 48 Mbps, -70 dBm @ 54 Mbps

## Protocol Support

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

**AP-only Protocols:** ARP, BOOTP, DHCP, dynamic VLAN-Tags for 802.1X-Clients, STP/RSTP (IEEE 802.1D/w)

## Interface

**Antenna:** 5 dBi, 2.4 GHz omni-directional antenna (N-type male)

**Connector for External Antenna:** N-type female

**LAN Port:** 10/100BaseT(X) auto negotiation speed (RJ45)

**Console Port:** RS-232 (RJ45)

**LED Indicators:** PWR, FAULT, STATE, WLAN, LAN

**Alarm Contact (Digital Output, M12 connector):** 1 relay output with current carrying capacity of 1 A @ 24 VDC

**Digital Inputs (M12 connector):** 2 electrically isolated inputs

- +13 to +30 V for state "1"
- -30 to -3 V for state "0"
- Max. input current: 8 mA

## Power Requirements

**Input Voltage:** 12 to 48 VDC, redundant dual DC power inputs or 48 VDC Power-over-Ethernet (IEEE 802.3af compliant)

**Connector:** M12 connector with A-coding

**Reverse Polarity Protection:** Present

## Physical Characteristics

**Housing:** Metal, IP67 protection

**Dimensions:** 224 x 147.7 x 66.5 mm (8.82 x 5.82 x 2.62 in)

**Weight:** 1.2 kg

**Installation:** DIN-Rail mounting (optional), wall mounting (standard), pole mounting (optional)

## Environmental Limits

**Operating Temperature:** -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)

## Regulatory Approvals

**Safety:** EN60950-1, UL60950-1, UL2043

**Radio:** EN300 328, EN301 893, ARIB STD-33/T66/T71 (Japan)

**EMC:** EN301 489-1/-17

**EMI:** FCC Part 15

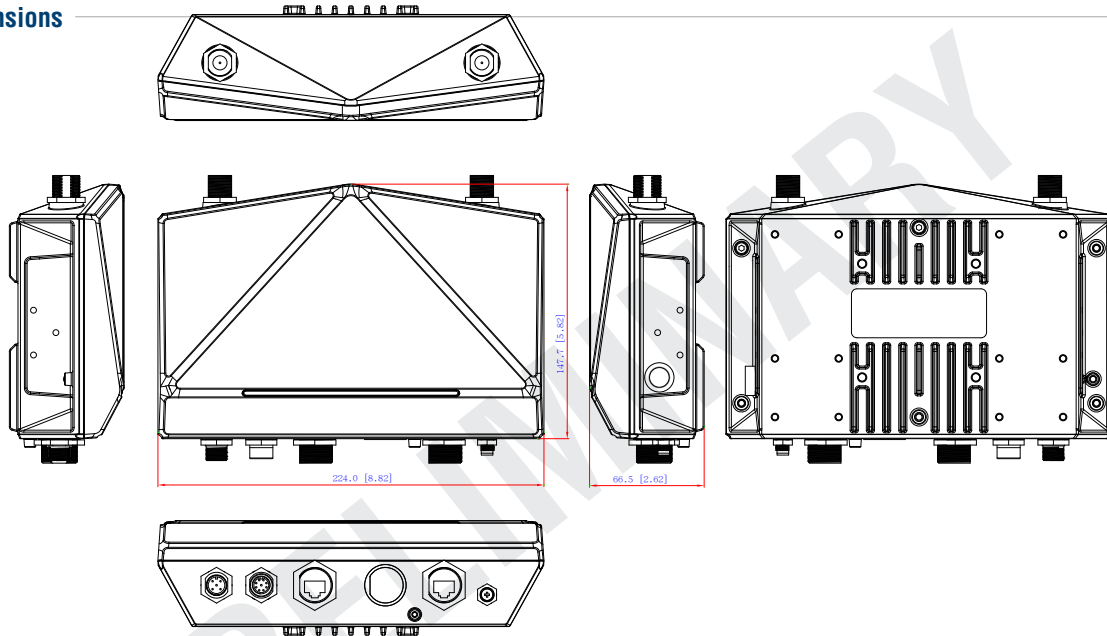
**Note:** Please check Moxa's website for the most up-to-date certification status.

## Warranty

**Warranty Period:** 5 years

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

## Dimensions



## Ordering Information

### Available Models

**AWK-4121-US-T:** IEEE 802.11a/b/g outdoor wireless AP/Bridge/Client, US band, -40 to 85°C

**AWK-4121-EU-T:** IEEE 802.11a/b/g outdoor wireless AP/Bridge/Client, EU band, -40 to 85°C

**AWK-4121-JP-T:** IEEE 802.11a/b/g outdoor wireless AP/Bridge/Client, JP band, -40 to 85°C

### Optional Accessories (can be purchased separately)

**DR-4524:** 45W/2A DIN-Rail 24 VDC power supply with universal 85 to 264 VAC input

**DR-75-24:** 75W/3.2A DIN-Rail 24 VDC power supply with universal 85 to 264 VAC input

**CRF-N0429N-3M:** CFD400 cable, N-type male to N-type male, 3 meters

**ANT-WSB-ANF-09:** 2.4 GHz, omni-directional, 9 dBi Antenna, N-type female connector

**ANT-WSB5-ANF-12:** 5 GHz, omni-directional, 12 dBi, N-type female connector

**WK-46:** Wall mounting kit