

# AWK-1161A Series

## Entry-level 1-port industrial IEEE 802.11ax wireless APs



### Features and Benefits

- High-speed IEEE 802.11ax Wi-Fi
- Selectable dual-band Wi-Fi with data rates up to 1,201 Mbps
- Latest WPA3 encryption for enhanced wireless network security
- Universal (UN) models with configurable country or region code for more flexible deployment
- Built-in 2.4 GHz and 5 GHz band pass filter for more reliable wireless connections
- -40 to 75°C wide operating temperature range (-T models)
- Integrated antenna isolation

### Certifications



## Introduction

The AWK-1161A Series industrial wireless AP is designed to meet the growing need for faster data transmission speeds while servicing more clients through IEEE 802.11ax (Wi-Fi 6) technology. The AWK-1161A is compliant with industrial standards and approvals covering operating temperature, power input voltage, surge, ESD, and vibration. The compact form factor with DIN-rail or optional wall mounting easily fits into industrial machines or control cabinets, offering reliable wireless services. The AWK-1161A supports selectable 2.4 and 5 GHz bands and is backwards compatible with existing 802.11a/b/g/n/ac deployments to future-proof your wireless investments.

### Advanced 802.11ax Industrial Wireless Solution

- 802.11ax Wi-Fi 6 compliant access point backwards compatible with Wi-Fi 4/ Wi-Fi 5 for flexible deployment
- DFS channel support allows a wider range of 5 GHz channel selection to avoid interference from existing wireless infrastructure
- Wi-Fi 6 OFDMA (Orthogonal Frequency-Division Multiple Access) technology enables concurrent communication with multiple clients for improved network efficiency
- Wi-Fi 6 TWT (Target Wake Time) technology facilitates better scheduling and longer battery life for connected devices

### Advanced Wireless Technology

- AP-based client disconnection mechanism to help wireless clients without roaming intelligence obtain optimal AP services

### Industrial Ruggedness

- Integrated antenna isolation designed to provide protection against external electrical interference
- -40 to 75°C wide operating temperature (-T) models for smooth wireless communication in harsh environments

## Specifications

### WLAN Interface

WLAN Standards	2.4 GHz: 802.11ax with 1024 QAM support, 20/40 MHz 5 GHz: 802.11ax with 1024 QAM support, 20/40/80 MHz
Frequency Band for US (20 MHz operating channels)	AWK-1161A-US models only: 2.412 to 2.462 GHz (11 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) <sup>1</sup> 5.500 to 5.700 GHz (11 channels) <sup>1</sup> 5.745 to 5.825 GHz (5 channels)
Frequency Band for UN (20 MHz operating channels)	AWK-1161A-UN models only: 2.412 to 2.472 GHz (13 channels)

1. 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.

	<p>5.180 to 5.240 GHz (4 channels)  5.260 to 5.320 GHz (4 channels)<sup>2</sup>  5.500 to 5.700 GHz (11 channels)<sup>2</sup>  5.745 to 5.825 GHz (5 channels)  Available channels change depending on the selected country or region code.</p>
Wireless Security	<p>WEP encryption (64-bit and 128-bit)  WPA/WPA2/WPA3-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES)  WPA/WPA2/WPA3-Personal</p>
Transmission Rate	<p>2.4 GHz:  Up to 573.5 Mbps</p> <p>5 GHz:  Up to 1,201 Mbps</p>
Transmitter Power for 802.11a (Dual Chain)	<p>18±1.5 dBm @ 6 Mbps  18±1.5 dBm @ 54 Mbps</p>
Transmitter Power for 802.11n (5 GHz, Dual Chain)	<p>18±1.5 dBm @ MCS0 20 MHz  18±1.5 dBm @ MCS7 20 MHz  18±1.5 dBm @ MCS0 40 MHz  18±1.5 dBm @ MCS7 40 MHz</p>
Transmitter Power for 802.11ac (Dual Chain)	<p>18±1.5 dBm @ MCS0 20 MHz  18±1.5 dBm @ MCS8 20 MHz  18±1.5 dBm @ MCS0 40 MHz  18±1.5 dBm @ MCS9 40 MHz  18±1.5 dBm @ MCS0 80 MHz  18±1.5 dBm @ MCS9 80 MHz</p>
Transmitter Power for 802.11ax (Dual Chain)	<p>18±1.5 dBm @ MCS0 20 MHz  17±1.5 dBm @ MCS11 20 MHz  18±1.5 dBm @ MCS0 40 MHz  17±1.5 dBm @ MCS11 40 MHz  18±1.5 dBm @ MCS0 80 MHz  17±1.5 dBm @ MCS11 80 MHz</p>
Transmitter Power for 802.11b (Dual Chain)	<p>18±1.5 dBm @ 1 Mbps  18±1.5 dBm @ 11 Mbps</p>
Transmitter Power for 802.11g (Dual Chain)	<p>18±1.5 dBm @ 6 Mbps  18±1.5 dBm @ 54 Mbps</p>
Transmitter Power for 802.11n (2.4 GHz, Dual Chain)	<p>18±1.5 dBm @ MCS0 20 MHz  18±1.5 dBm @ MCS7 20 MHz  18±1.5 dBm @ MCS0 40 MHz  18±1.5 dBm @ MCS7 40 MHz</p>
Transmitter Power for 802.11ac (2.4 GHz, Dual Chain)	<p>18±1.5 dBm @ MCS0 20 MHz  18±1.5 dBm @ MCS8 20 MHz  18±1.5 dBm @ MCS0 40 MHz  18±1.5 dBm @ MCS7 40 MHz</p>
Transmitter Power for 802.11ax (2.4 GHz, Dual Chain)	<p>18±1.5 dBm @ MCS0 20 MHz  18±1.5 dBm @ MCS11 20 MHz  18±1.5 dBm @ MCS0 40 MHz  18±1.5 dBm @ MCS11 40 MHz</p>
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	<p>Typ. -88 @ 6 Mbps  Typ. -72 @ 54 Mbps</p>
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	<p>Typ. -88 dBm @ MCS0 20 MHz  Typ. -68 dBm @ MCS7 20 MHz  Typ. -84 dBm @ MCS0 40 MHz  Typ. -66 dBm @ MCS7 40 MHz</p>
Receiver Sensitivity for 802.11ac (5 GHz)	<p>Typ. -88 dBm @ MCS0 20 MHz</p>

2. 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.

	Typ. -65 dBm @ MCS8 20 MHz Typ. -85 dBm @ MCS0 40 MHz Typ. -60 dBm @ MCS9 40 MHz Typ. -81 dBm @ MCS0 80 MHz Typ. -55 dBm @ MCS9 80 MHz
Receiver Sensitivity for 802.11ax (5 GHz)	Typ. -88 dBm @ MCS0 20 MHz Typ. -59 dBm @ MCS11 20 MHz Typ. -85 dBm @ MCS0 40 MHz Typ. -56 dBm @ MCS11 40 MHz Typ. -81 dBm @ MCS0 80 MHz Typ. -52 dBm @ MCS11 80 MHz
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ. -96 dBm @ 1 Mbps Typ. -88 dBm @ 11 Mbps
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	Typ. -90 dBm @ 6 Mbps Typ. -74 dBm @ 54 Mbps
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ. -90 dBm @ MCS0 20 MHz Typ. -70 dBm @ MCS7 20 MHz Typ. -87 dBm @ MCS0 40 MHz Typ. -69 dBm @ MCS7 40 MHz
Receiver Sensitivity for 802.11ac (2.4 GHz)	Typ. -90 dBm @ MCS0 20 MHz Typ. -66 dBm @ MCS6 20 MHz Typ. -87 dBm @ MCS0 40 MHz Typ. -63 dBm @ MCS9 40 MHz
Receiver Sensitivity for 802.11ax (2.4 GHz)	Typ. -90 dBm @ MCS0 20 MHz Typ. -59 dBm @ MCS11 20 MHz Typ. -87 dBm @ MCS0 40 MHz Typ. -56 dBm @ MCS11 40 MHz
WLAN Operation Mode	Access point Master Sniffer
Antenna	External, 2/2 dBi Omni-directional
Antenna Connectors	2 RP-SMA female
<b>Ethernet Interface</b>	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3az for Energy-Efficient Ethernet IEEE 802.1Q for VLAN Tagging IEEE 802.1X for authentication
10/100/1000BaseT(X) Ports (RJ45 connector)	1

## Ethernet Software Features

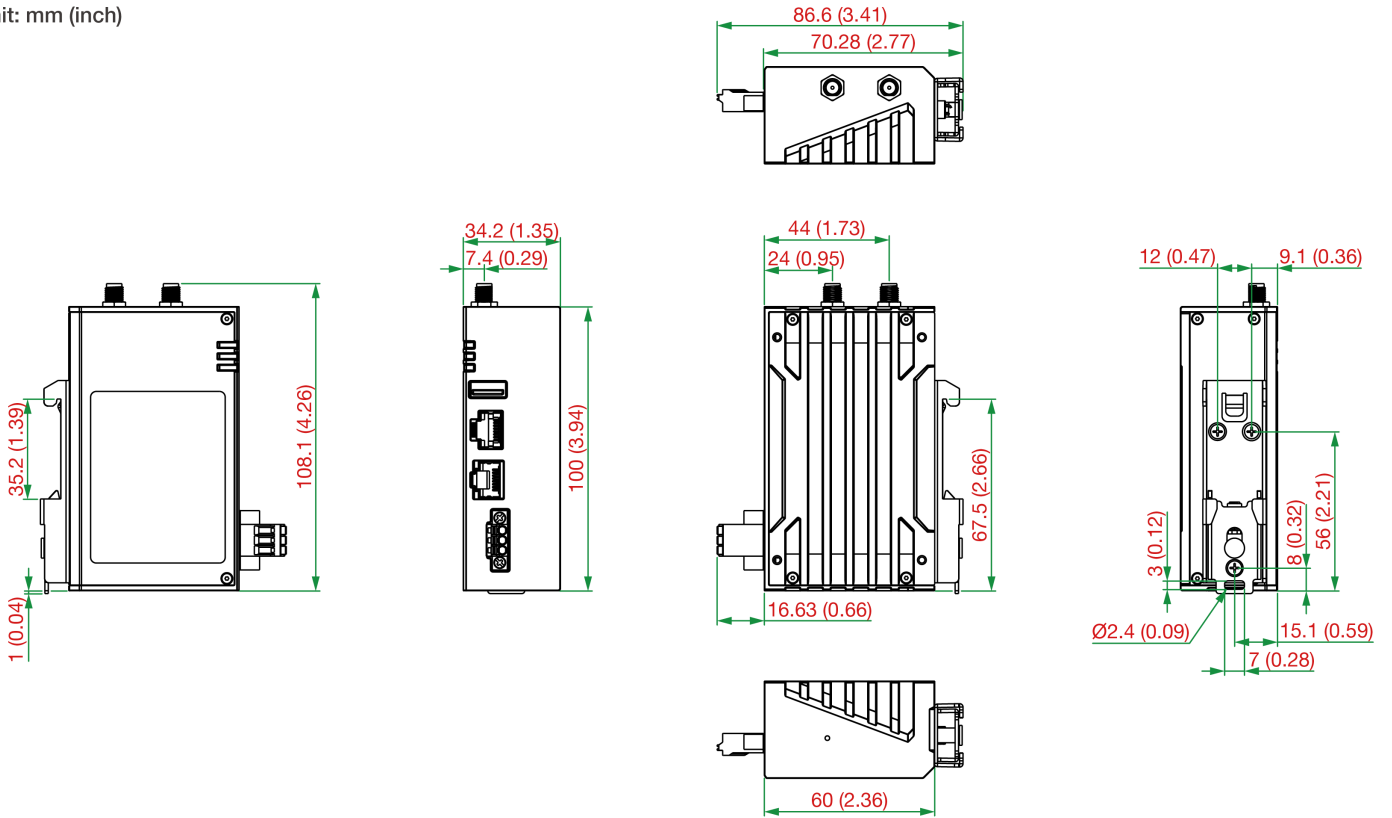
Management	DHCP Server DHCP Client DNS HTTP IPv4 LLDP SMTP SNMPv1/v2c/v3 Syslog TCP/IP Telnet UDP VLAN MXconfig
Security	HTTPS/SSL RADIUS SSH Certificate Management
Time Management	SNTP Client
<b>Firewall</b>	
Filter	ICMP MAC address IP protocol Port-based Wi-Fi ACL Client Isolation
<b>Serial Interface</b>	
Console Port	RS-232 8-pin RJ45
<b>USB Interface</b>	
Storage Port	USB Type A
<b>LED Interface</b>	
LED Indicators	PWR, WLAN, SYSTEM
<b>Input/Output Interface</b>	
Buttons	Reset button
<b>Physical Characteristics</b>	
Housing	Metal
IP Rating	IP30
Dimensions	AWK-1161A models: 60 x 100 x 34.2 mm (2.36 x 3.94 x 1.35 in) AWK-1161A-T models: 60 x 100 x 47.2 mm (2.36 x 3.94 x 1.86 in)
Weight	AWK-1161A models: 330 g (0.73 lb) AWK-1161A-T models: 387.5 g (0.85 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
<b>Power Parameters</b>	
Input Current	9 to 30 VDC, 1.57 to 0.47 A
Input Voltage	9 to 30 VDC

Power Connector	1 removable 3-contact terminal block(s)
Power Consumption	14 W (max.)
<b>Environmental Limits</b>	
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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
<b>Standards and Certifications</b>	
EMC	EN 61000-6-2/-6-4 EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 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: 10 V/m IEC 61000-4-8 PFMF: 30 A/m
Road Vehicles	E mark E1
Safety	IEC 62368-1 UL 62368-1
Vibration	IEC 60068-2-6
Radio	EN 300 328, EN 301 489-1/17, EN 301 893, ANATEL, FCC, MIC, NCC, RCM, SRRC, WPC, KC, NBTC, IC
<b>MTBF</b>	
Time	4,002,106 hrs
Standards	Telcordia SR332
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>Package Contents</b>	
Device	1 x AWK-1161A Series wireless AP
Installation Kit	1 x DIN-rail kit
Antenna	2 x 2.4/5 GHz antenna
Documentation	1 x quick installation guide 1 x warranty card

# Dimensions

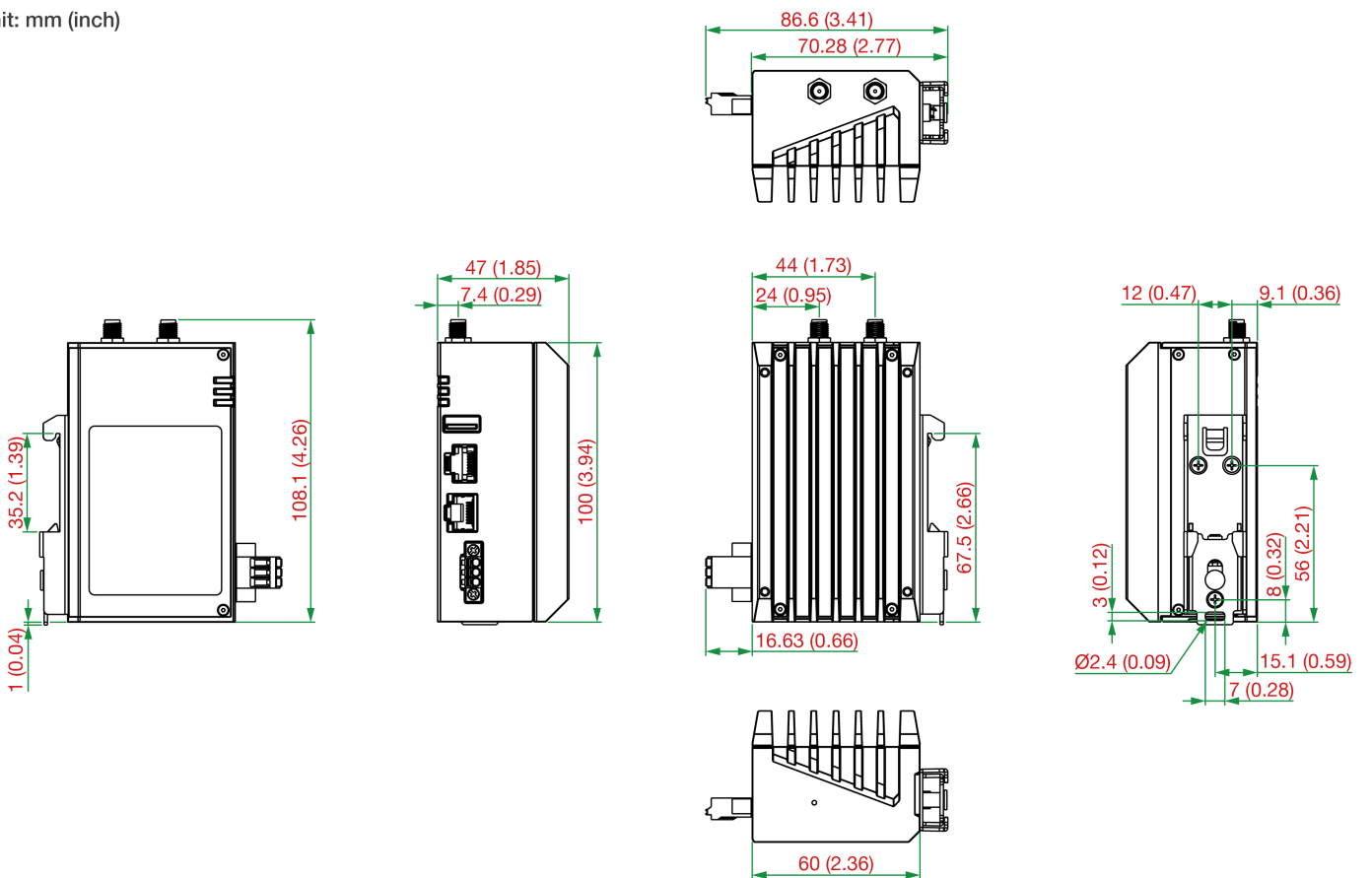
## Standard Models

Unit: mm (inch)



## Wide Temperature (-T) Models

Unit: mm (inch)



## Ordering Information

Model Name	Band	Standards	Operating Temp.
AWK-1161A-UN	UN	802.11ax (Wi-Fi 6)	-25 to 60°C
AWK-1161A-UN-T	UN	802.11ax (Wi-Fi 6)	-40 to 75°C
AWK-1161A-US	US	802.11ax (Wi-Fi 6)	-25 to 60°C
AWK-1161A-US-T	US	802.11ax (Wi-Fi 6)	-40 to 75°C

## Accessories (sold separately)

### Antennas

ANT-WSB-PNF-12-02	12 dBi at 2.4 GHz, N-type (female), single-band directional antenna
ANT-WSB5-PNF-16	16 dBi at 5 GHz, N-type (female), single-band directional antenna
ANT-WDB-ONM-0707	07 dBi at 2.4 GHz and 07 dBi at 5 GHz, N-type (male), dual-band omnidirectional antenna
ANT-WDB-PNF-1011	10 dBi at 2.4 GHz and 11 dBi at 5 GHz, N-type (female), dual-band directional antenna
ANT-WDB-ONF-0709	7 dBi at 2.4 GHz or 9 dBi at 5 GHz, N-type (female), dual-band, omnidirectional antenna
ANT-WDB-ANM-0306	3 dBi at 2.4 GHz or 6 dBi at 5 GHz, N-type (male), omnidirectional antenna
ANT-WDB-ARM-02	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male) omnidirectional rubber-duck antenna
ANT-WDB-ARM-0202	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male), dual-band, omnidirectional antenna
ANT-WSB-AHRM-05-1.5m	5 dBi at 2.4 GHz, RP-SMA (male), omnidirectional/dipole antenna, 1.5 m cable
MAT-WDB-CA-RM-2-0205	2.4/5 GHz, ceiling antenna, 2/5 dBi, MIMO 2x2, RP-SMA-type (male)
MAT-WDB-DA-RM-2-0203-1m	2.4/5 GHz, desktop antenna, 2/3 dBi, MIMO 2x2, RP-SMA-type (male), 1 m cable
MAT-WDB-PA-NF-2-0708	2.4/5 GHz, panel antenna, 7/8 dBi, MIMO 2x2, N-type (female)
ANT-WDB-ANM-0502	5 dBi at 2.4 GHz or 2 dBi at 5 GHz, N-type (male), omnidirectional antenna

### Wireless Antenna Cables

A-CRF-RFRM-R4-150	Wireless antenna cable with RP-SMA (female) to RP-SMA (male) connectors, magnetic base, RG-174 type, 1.5 m
A-CRF-RMNM-L1-300	N-type (male) to RP SMA (male) LMR-195 Lite cable, 3 m
A-CRF-RMNM-L1-600	N-type (male) to RP SMA (male) LMR-195 Lite cable, 6 m
A-CRF-RMNM-L1-900	N-type (male) to RP SMA (male) LMR-195 Lite cable, 9 m

### Surge Arrestors

A-SA-NMNF-02	0 to 6 GHz, N-type (male) to N-type (female) surge arrester
A-SA-NFNF-02	0 to 6 GHz, N-type (female) to N-type (female) surge arrester

### Wireless Terminating Resistors

A-TRM-50-NM	50-ohm termination resistor with N-type male connector
-------------	--

### Wall-Mounting Kits

WK-56-01	Wall-mounting kit with 2 plates (56 x 33.3 x 2 mm) and 4 screws
----------	---

© Moxa Inc. All rights reserved. Updated Jun 21, 2024.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.