

# AWK-3252A Series

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



### Features and Benefits

- IEEE 802.11a/b/g/n/ac Wave 2 AP/bridge/client
- Concurrent dual-band Wi-Fi with aggregated data rates up to 1.267 Gbps
- Latest WPA3 encryption for enhanced wireless network security
- Universal (UN) models with configurable country or region code for more flexible deployment
- Easy network setup with Network Address Translation (NAT)
- Millisecond-level Client-based Turbo Roaming<sup>1</sup>
- 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
- Developed according to the IEC 62443-4-1 and compliant with the IEC 62443-4-2 industrial cybersecurity standards

### Certifications



## Introduction

The AWK-3252A Series 3-in-1 industrial wireless AP/bridge/client is designed to meet the growing need for faster data transmission speeds through IEEE 802.11ac technology for aggregated data rates of up to 1.267 Gbps. The AWK-3252A is compliant with industrial standards and approvals covering operating temperature, power input voltage, surge, ESD, and vibration. The two redundant DC power inputs increase the reliability of the power supply, and the AWK-3252A can be powered via PoE to facilitate flexible deployment. The AWK-3252A can operate concurrently on both the 2.4 and 5 GHz bands and is backwards-compatible with existing 802.11a/b/g/n deployments to future-proof your wireless investments.

The AWK-3252A Series is compliant with the IEC 62443-4-2 and IEC 62443-4-1 Industrial Cybersecurity certifications, which cover both product security and secure development life-cycle requirements, helping our customers meet the compliance requirements of secure industrial network design.

### Advanced 802.11ac Industrial Wireless Solution

- 802.11a/b/g/n/ac compliant AP/bridge/client for flexible deployment
- DFS channel support allows a wider range of 5 GHz channel selection to avoid interference from existing wireless infrastructure

### Advanced Wireless Technology

- Seamless roaming with client-based Turbo Roaming<sup>1</sup> for < 150 ms roaming recovery time between APs (Client Mode)

### Industrial Ruggedness

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

## Specifications

### WLAN Interface

WLAN Standards	2.4 GHz: 802.11b/g/n with 256 QAM support 5 GHz: 802.11a/n/ac Wave 2 with 256 QAM support
Frequency Band for US (20 MHz operating channels)	AWK-3252A US Models Only:

1. The Turbo Roaming recovery time indicated herein is an average of test results documented, in optimized conditions, across APs configured with interference-free 20-MHz RF channels, WPA2-PSK security, and default Turbo Roaming parameters. The clients are configured with 3-channel roaming at 100 Kbps traffic load. Other conditions may also impact roaming performance. For more information about Turbo Roaming parameter settings, refer to the product manual.

	<p>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>2</sup>  5.500 to 5.700 GHz (11 channels)<sup>2</sup>  5.745 to 5.825 GHz (5 channels)</p>
Frequency Band for UN (20 MHz operating channels)	<p>AWK-3252A UN Models Only:  2.412 to 2.472 GHz (13 channels)  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>WPA/WPA2/WPA3-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES)  WPA/WPA2/WPA3-Personal</p>
Transmission Rate	<p>2.4 GHz:  802.11b: 1 to 11 Mbps  802.11g: 6 to 54 Mbps  802.11n: 6.5 to 400 Mbps</p> <p>5 GHz:  802.11a: 6 to 54 Mbps  802.11n: 6.5 to 300 Mbps  802.11ac: 6.5 to 867 Mbps</p>
Transmitter Power for 802.11a (Dual Chain)	<p>25±1.5 dBm @ 6 Mbps  23±1.5 dBm @ 54 Mbps</p>
Transmitter Power for 802.11n (5 GHz, Dual Chain)	<p>25±1.5 dBm @ MCS0 20 MHz  22±1.5 dBm @ MCS7 20 MHz  24±1.5 dBm @ MCS0 40 MHz  22±1.5 dBm @ MCS7 40 MHz</p>
Transmitter Power for 802.11ac (Dual Chain)	<p>25±1.5 dBm @ MCS0 20 MHz  22±1.5 dBm @ MCS8 20 MHz  24±1.5 dBm @ MCS0 40 MHz  21±1.5 dBm @ MCS9 40 MHz  23±1.5 dBm @ MCS0 80 MHz  20±1.5 dBm @ MCS9 80 MHz</p>
Transmitter Power for 802.11b (Dual Chain)	<p>29±1.5 dBm @ 1 Mbps  29±1.5 dBm @ 11 Mbps</p>
Transmitter Power for 802.11g (Dual Chain)	<p>29±1.5 dBm @ 6 Mbps  26±1.5 dBm @ 54 Mbps</p>
Transmitter Power for 802.11n (2.4 GHz, Dual Chain)	<p>28±1.5 dBm @ MCS0 20 MHz  25±1.5 dBm @ MCS7 20 MHz  28±1.5 dBm @ MCS0 40 MHz  25±1.5 dBm @ MCS7 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	<p>Typ. -88 dBm @ MCS0 20 MHz  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</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.

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
WLAN Operation Mode	Access point Client Client-Router Master Slave Sniffer Mesh
Antenna	External, 2/2 dBi Omni-directional
Antenna Connectors	2 RP-SMA female

### Ethernet Interface

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3af for PoE IEEE 802.3at for PoE 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
PoE Ports (10/100/1000BaseT(X), RJ45 connector)	1

### Ethernet Software Features

Management	DHCP Server DHCP Client DNS HTTP IPv4/IPv6 LLDP SMTP SNMPv1/v2c/v3 Syslog TCP/IP Telnet UDP VLAN MXconfig
Routing	Port forwarding Static Route NAT
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	PWR1, PWR2, PoE, SYS, 2.4G, 5G, LAN1, LAN2
<b>Input/Output Interface</b>	
Digital Inputs	2 Max. input current: 8 mA +13 to +30 V for state 1 +3 to -30 V for state 0
Alarm Contact Channels	Relay output with current carrying capacity of 1 A @ 24 VDC
Buttons	Reset button
<b>Physical Characteristics</b>	
Housing	Metal
IP Rating	IP30
Dimensions	45 x 130 x 100 mm (1.77 x 5.12 x 3.94 in)
Weight	700 g (1.5 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
<b>Power Parameters</b>	
Input Current	12-48 VDC, 2.2-0.5 A
Input Voltage	12 to 48 VDC Redundant dual inputs 48 VDC Power-over-Ethernet
Power Connector	1 removable 10-contact terminal block(s)
Power Consumption	28.4 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)

## Standards and Certifications

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: 2 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
Safety	IEC 60950-1 IEC 62368-1 UL 62368-1
Hazardous Locations	ATEX Class I Division 2 IECEX
Road Vehicles	E mark E1
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
Industrial Cybersecurity	IEC 62443-4-1 IEC 62443-4-2

## MTBF

Time	653,801 hrs
Standards	Telcordia SR332

## Warranty

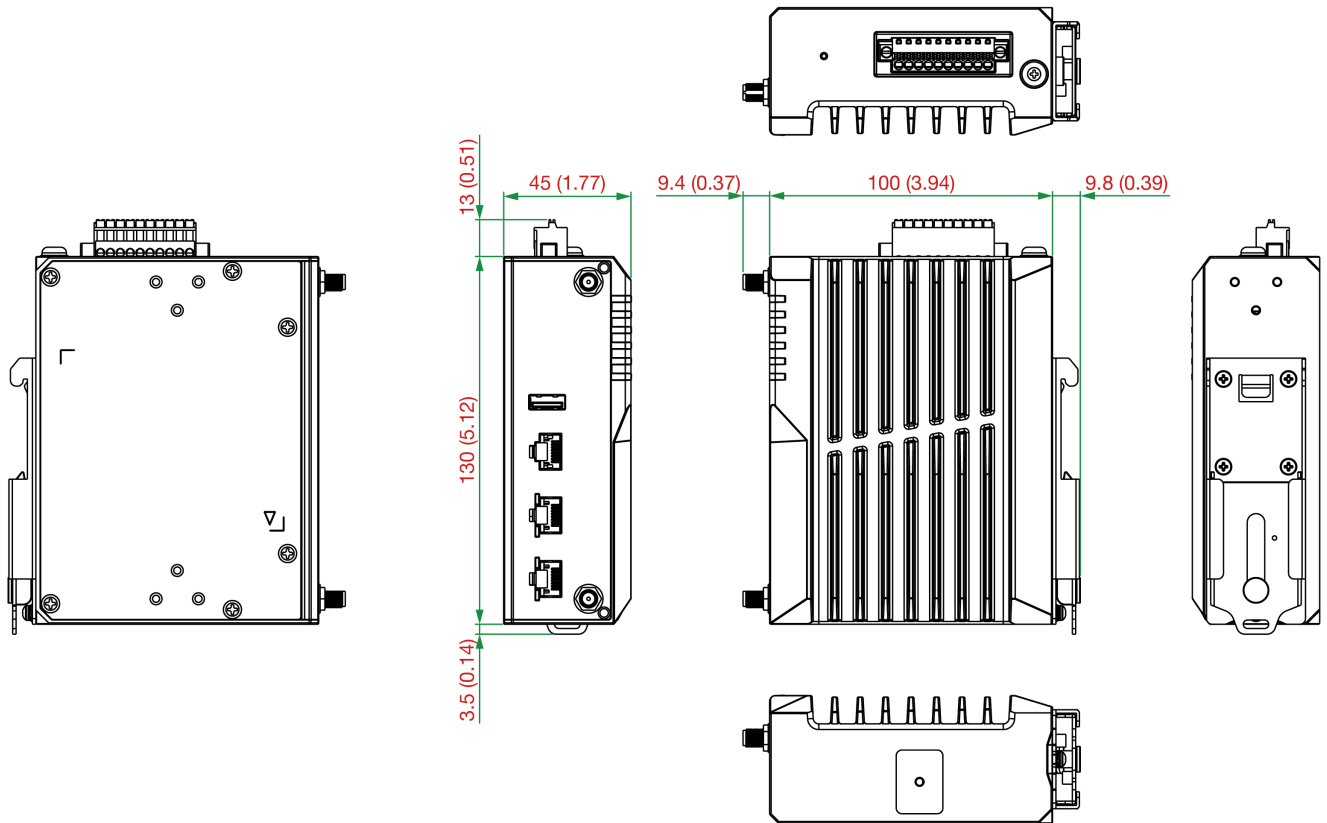
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x AWK-3252A Series wireless AP/bridge/client
Installation Kit	1 x cap, for type A USB port 1 x cable holder with screw 1 x DIN-rail kit
Antenna	2 x 2.4/5 GHz antenna
Documentation	1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Band	Standards	Operating Temp.
AWK-3252A-UN	UN	802.11a/b/g/n/ac Wave 2	-25 to 60°C
AWK-3252A-UN-T	UN	802.11a/b/g/n/ac Wave 2	-40 to 75°C
AWK-3252A-US	US	802.11a/b/g/n/ac Wave 2	-25 to 60°C
AWK-3252A-US-T	US	802.11a/b/g/n/ac Wave 2	-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
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## Cables

CBL-RJ45F25-150	8-pin RJ45 to DB25 female serial cable, 1.5 m
CBL-RJ45F9-150	8-pin RJ45 to DB9 female serial cable, 1.5m

## Wall-Mounting Kits

WK-35-05	Wall-mounting kit with 2 plates (35 x 44 x 2.5 mm), 6 NYLOK screws
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