

AWK-1151C Series

Industrial IEEE 802.11a/b/g/n/ac wireless client



Features and Benefits

- IEEE 802.11a/b/g/n/ac Wave 2 wireless client
- Selectable dual-band Wi-Fi with data rates up to 867 Mbps
- 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 Roaming¹
- 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-1151C Series industrial wireless client is designed to meet the growing need for faster data transmission speeds through IEEE 802.11ac technology for data rates of up to 867 Mbps. The AWK-1151C 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 connectivity. The AWK-1151C can operate on the 2.4 or 5 GHz band and is backwards-compatible with existing 802.11a/b/g/n deployments to future-proof your wireless investments.

Advanced 802.11ac Industrial Wireless Solution

- 802.11a/b/g/n/ac compliant 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 Roaming¹ 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-1151C 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) ² 5.500 to 5.700 GHz (11 channels) ² 5.745 to 5.825 GHz (5 channels)

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.

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.

Frequency Band for UN (20 MHz operating channels)	<p>AWK-1151C UN Models Only:</p> <p>2.412 to 2.484 GHz (14 channels)</p> <p>5.180 to 5.240 GHz (4 channels)</p> <p>5.260 to 5.320 GHz (4 channels)³</p> <p>5.500 to 5.700 GHz (11 channels)³</p> <p>5.745 to 5.825 GHz (5 channels)</p> <p>Available channels change depending on the selected country or region code.</p>
Wireless Security	<p>WEP encryption (64-bit and 128-bit)</p> <p>WPA/WPA2/WPA3-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES)</p> <p>WPA/WPA2/WPA3-Personal</p>
Transmission Rate	<p>2.4 GHz:</p> <p>802.11b: 1 to 11 Mbps</p> <p>802.11g: 6 to 54 Mbps</p> <p>802.11n: 6.5 to 400 Mbps</p> <p>5 GHz:</p> <p>802.11a: 6 to 54 Mbps</p> <p>802.11n: 6.5 to 300 Mbps</p> <p>802.11ac: 6.5 to 867 Mbps</p>
Transmitter Power for 802.11a (Dual Chain)	<p>25±1.5 dBm @ 6 Mbps</p> <p>23±1.5 dBm @ 54 Mbps</p>
Transmitter Power for 802.11n (5 GHz, Dual Chain)	<p>25±1.5 dBm @ MCS0 20 MHz</p> <p>22±1.5 dBm @ MCS7 20 MHz</p> <p>24±1.5 dBm @ MCS0 40 MHz</p> <p>22±1.5 dBm @ MCS7 40 MHz</p>
Transmitter Power for 802.11ac (Dual Chain)	<p>25±1.5 dBm @ MCS0 20 MHz</p> <p>22±1.5 dBm @ MCS8 20 MHz</p> <p>24±1.5 dBm @ MCS0 40 MHz</p> <p>21±1.5 dBm @ MCS9 40 MHz</p> <p>23±1.5 dBm @ MCS0 80 MHz</p> <p>20±1.5 dBm @ MCS9 80 MHz</p>
Transmitter Power for 802.11b (Dual Chain)	<p>29±1.5 dBm @ 1 Mbps</p> <p>29±1.5 dBm @ 11 Mbps</p>
Transmitter Power for 802.11g (Dual Chain)	<p>29±1.5 dBm @ 6 Mbps</p> <p>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</p> <p>25±1.5 dBm @ MCS7 20 MHz</p> <p>28±1.5 dBm @ MCS0 40 MHz</p> <p>25±1.5 dBm @ MCS7 40 MHz</p>
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	<p>Typ. -89 @ 6 Mbps</p> <p>Typ. -72 @ 54 Mbps</p>
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	<p>Typ. -89 dBm @ MCS0 20 MHz</p> <p>Typ. -69 dBm @ MCS7 20 MHz</p> <p>Typ. -85 dBm @ MCS0 40 MHz</p> <p>Typ. -66 dBm @ MCS7 40 MHz</p>
Receiver Sensitivity for 802.11ac	<p>Typ. -88 dBm @ MCS0 20 MHz</p> <p>Typ. -65 dBm @ MCS8 20 MHz</p> <p>Typ. -85 dBm @ MCS0 40 MHz</p> <p>Typ. -60 dBm @ MCS9 40 MHz</p> <p>Typ. -81 dBm @ MCS0 80 MHz</p> <p>Typ. -55 dBm @ MCS9 80 MHz</p>
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	<p>Typ. -96 dBm @ 1 Mbps</p> <p>Typ. -88 dBm @ 11 Mbps</p>
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	<p>Typ. -90 dBm @ 6 Mbps</p> <p>Typ. -74 dBm @ 54 Mbps</p>

3. 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 802.11n (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	Client Client-Router Slave Sniffer
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 802.1Q for VLAN Tagging IEEE 802.1X for authentication
10/100/1000BaseT(X) Ports (RJ45 connector)	1

Ethernet Software Features

Management	DHCP Client DNS HTTP IPv4 LLDP SMTP SNMPv1/v2c/v3 Syslog TCP/IP Telnet UDP VLAN MXconfig
Routing	Port forwarding Static Route NAT
Security	HTTPS/SSL RADIUS SSH
Time Management	SNTP Client

Firewall

Filter	ICMP MAC address IP protocol Port-based
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Serial Interface

Console Port	RS-232 8-pin RJ45
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USB Interface

Storage Port	USB Type A
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LED Interface

LED Indicators	PWR, WLAN, SYSTEM
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Input/Output Interface

Buttons	Reset button
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Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	100 x 130 x 22 mm (3.94 x 5.12 x 0.87 in)
Weight	436 g (0.96 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Power Parameters

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.)

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 (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: 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 60950-1 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, IC

MTBF

Time	1,144,888 hrs
Standards	Telcordia SR332

Warranty

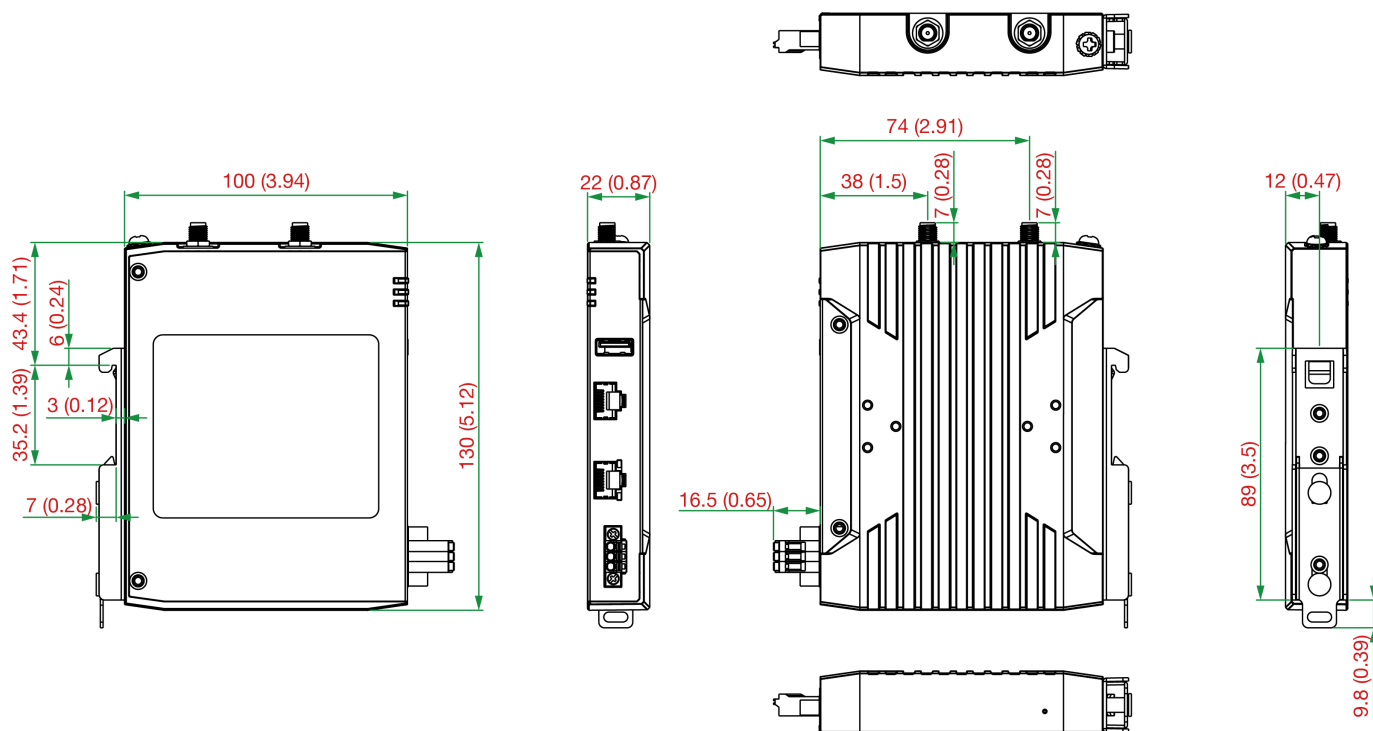
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x AWK-1151C Series wireless client
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

Unit: mm (inch)



Ordering Information

Model Name	Band	Standards	Operating Temp.
AWK-1151C-UN	UN	802.11a/b/g/n/ac Wave 2	-25 to 60°C
AWK-1151C-UN-T	UN	802.11a/b/g/n/ac Wave 2	-40 to 75°C
AWK-1151C-US	US	802.11a/b/g/n/ac Wave 2	-25 to 60°C
AWK-1151C-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	RF magnetic base, RP-SMA (male) to RP-SMA (female) RG-174/U cable, 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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Wall-Mounting Kits

WK-35-01	Wall-mounting kit with 2 plates (35 x 44 x 2.5 mm) and 6 screws
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