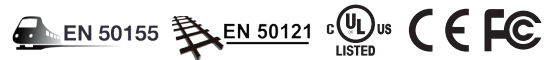# AWK-5232 Series

Industrial IEEE 802.11a/b/g/n dual-RF wireless AP/bridge/client

> IEEE 802.11a/b/g/n compliant
> Dual-RF design: 2.4 GHz and/or 5 GHz RF bands
> Redundant power inputs and PoE+
> Compliant with essential sections of EN 50155
> -40 to 75°C operating temperature range (T models)

n 802.11   Dual RF

EN 50155   EN 50121   c UL us LISTED   CE   FC

: Introduction

The AWK-5232 Industrial a/b/g/n Wireless AP/Bridge/Client is an ideal wireless solution for hard-to-wire situations and all mobile equipment which is connected over a TCP/IP network. It can provide a faster connection and wider range than 802.11g models, especially a noticeably stronger connection at distance. With two independent RF modules, the AWK-5232 supports a great variety of wireless configurations and applications, and the redundant wireless connections increase the reliability of the entire wireless network. The AWK-5232 is compliant with the essential sections of EN 50155, covering operating temperature, power input voltage, surge, ESD and vibration. The AWK-5232's two DC power inputs increases the power supply reliability, and it can also be powered via PoE+ for easier deployment.

Higher Data Rate and Greater Bandwidth
• High-speed wireless connectivity with up to 300 Mbps data rate
• MIMO technology improves data throughput via mulitplexed, smart antenna transmissions and receptions
• Channel bonding technology for increased throughput or channel redundancy

Redundancy to Increase System Reliability
• Dual DC power inputs and PoE+
• Immunity against disconnection caused by radio interference

Specifications for Industrial-grade Applications
• 64-bit and 128-bit WEP (Wired Equivalent Privacy)
• Enable/disable SSID broadcasts
• Power filters for access control
• IEEE/802.11X/RADIUS supported
• WPA/WPA2/802.11i supported

: Specifications

WLAN Interface
Standards:
IEEE 802.11a/b/g/n for Wireless LAN
IEEE 802.11i for Wireless Security
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseTX
IEEE 802.3ab for 1000BaseT
IEEE 802.3at for Power-over-Ethernet Plus
IEEE 802.1D for Spanning Tree Protocol
IEEE 802.1w for Rapid STP
IEEE 802.1Q for VLAN
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
• 802.11n: 64QAM @ 300 Mbps to BPSK @ 6.5 Mbps (multiple rates supported)
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
802.11n: 6.5 to 300 Mbps (multiple rates supported)
TX Transmit Power:
802.11b:
1 to 11 Mbps: Typ. 18 dBm (± 1.5 dBm)
802.11g:
6 to 24 Mbps: Typ. 18 dBm (± 1.5 dBm)
36 to 48 Mbps: Typ. 17 dBm (± 1.5 dBm)
54 Mbps: Typ. 15 dBm (± 1.5 dBm)
802.11a:
6 to 24 Mbps: Typ. 17 dBm (± 1.5 dBm)
36 to 48 Mbps: Typ. 16 dBm (± 1.5 dBm)
54 Mbps: Typ. 14 dBm (± 1.5 dBm)
TX Transmit Power MIMO:
802.11a/n (20/40 MHz):
MCS15 20 MHz: Typ. 13 dBm (± 1.5 dBm)
MCS15 40 MHz: Typ. 12 dBm (± 1.5 dBm)

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802.11g/n (20 MHz):
MCS15 20 MHz: Typ. 14 dBm (± 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
RX Sensitivity MIMO:
802.11a/n:
-68 dBm @ MCS15 40 MHz, -69 dBm @ MCS15 20 MHz,
-70 dBm @ MCS7 40 MHz, -71 dBm @ MCS7 20 MHz
802.11g/n:
-69 dBm @ MCS15 20 MHz, -71 dBm @ MCS7 20 MHz

Protocol Support
General Protocols: Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, PPPoE, DHCP
AP-only Protocols: ARP, BOOTP, DHCP, STP/RSTP (IEEE 802.1D/w)

Interface
Default Antennas*: 4 dual-band omni-directional antennas, 2 dBi, RP-SMA (male)
*Only available with the AWK-5232 model.
Connector for External Antennas:
AWK-5232: RP-SMA (female)
AWK-5232-M12: QMA (female)
RJ45 Ports: 2, 10/100/1000BaseT(X), auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection (AWK-5232 only)
M12 Ports: 2, 10/100/1000BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection (AWK-5232-M12 only)
Console Port: RS-232 (RJ45-type)

LED Indicators: PWR1, PWR2, PoE+, FAULT, STATE, WLAN1, WLAN2, 100M, 1000M (TP Ports), LAN1, LAN2 (M12 Ports)
Alarm Contact (Digital Output): 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, IP30 protection
Weight: 1.2 Kg
Dimensions: 74.55 x 135 x 105 mm (2.94 x 5.31 x 4.13 in)
Installation: DIN-Rail mounting (standard), wall mounting (optional)

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 Plus (IEEE 802.3at compliant)
*Compliant with EN 50155 on 24 VDC
Connector: 10-pin removable terminal block
Power Consumption: 12 to 48 VDC, 1.5 A (max.)
Reverse Polarity Protection: Present

Standards and Certifications
Safety: UL 60950-1, EN 60950-1
EMC: EN 301 489-1/17, FCC Part 15 Subpart B, EN 55022/55024, IEC 61000-6-2/4
Radio: EN 300 328, EN 301 893
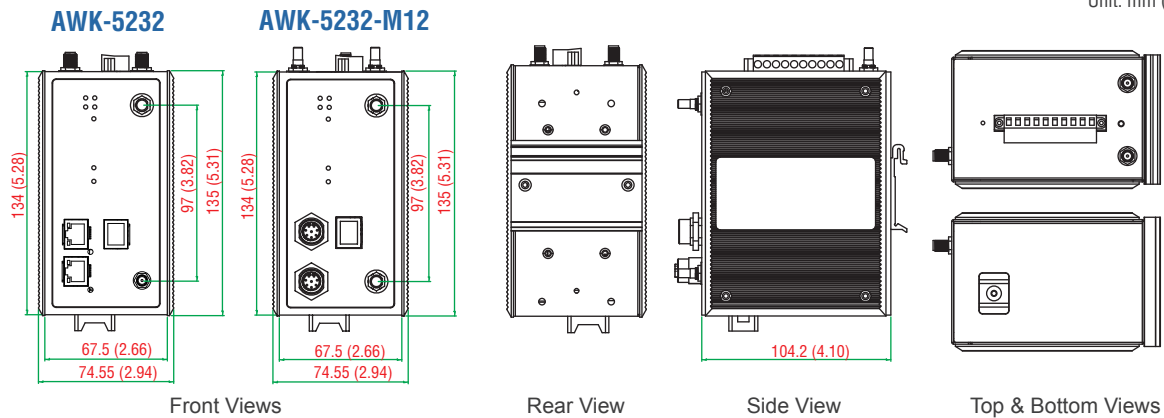**Rail Traffic:** EN 50155, EN 50121-1/4
Note: Please check Moxa's website for the most up-to-date certification status.

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

Dimensions

Unit: mm (inch)

AWK-5232 — 134 (5.28), 97 (3.82), 135 (5.31), 67.5 (2.66), 74.55 (2.94)
AWK-5232-M12 — 134 (5.28), 97 (3.82), 135 (5.31), 67.5 (2.66), 74.55 (2.94)
Side View — 104.2 (4.10)

Front Views | Rear View | Side View | Top & Bottom Views

Ordering Information

Model Name	Available Models		Port Interface		Antenna Interface	
	Standard Temperature (-25 to 60°C)	Wide Temperature (-40 to 75°C)	2, 10/100BaseT(X)		RP-SMA	QMA
			RJ45	M12		
AWK-5232						
AWK-5232-US	✓	–	✓	–	✓	–
AWK-5232-EU	✓	–	✓	–	✓	–
AWK-5232-JP	✓	–	✓	–	✓	–
AWK-5232-US-T	–	✓	✓	–	✓	–
AWK-5232-EU-T	–	✓	✓	–	✓	–
AWK-5232-JP-T	–	✓	✓	–	✓	–
AWK-5232-M12						
AWK-5232-M12-US	✓	–	–	✓	–	✓
AWK-5232-M12-EU	✓	–	–	✓	–	✓
AWK-5232-M12-JP	✓	–	–	✓	–	✓
AWK-5232-M12-US-T	–	✓	–	✓	–	✓
AWK-5222-M12-EU-T	–	✓	–	✓	–	✓
AWK-5232-M12-JP-T	–	✓	–	✓	–	✓

Package Checklist
• AWK-5232 wireless AP/bridge/client
• Cable holder with 1 screw
• 2 plastic RJ45 protective caps for LAN & Console ports
• 1 plastic M12-female protective cap (AWK-5232-M12 only)
• DIN-rail kit
• Documentation and software CD
• Quick installation guide (printed)
• Warranty card

Note:
US: USA band
EU: Europe band
JP: Japan band

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