

# AWK-5232 Series

## Industrial IEEE 802.11n dual-radio wireless AP/bridge/client



- > IEEE 802.11a/b/g/n compliant
- > Dual-radio design for 2.4 GHz and/or 5 GHz bands
- > Redundant power inputs and PoE+
- > Industrial grade QoS (WMM) and VLAN supported
- > Supports client-based Turbo Roaming
- > -40 to 75°C operating temperature range (T models)



### 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 allows two independent wireless connections over different frequencies, and supports a great variety of wireless configurations and applications. The AWK-5232 is compliant with the industrial standards and approvals, 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 in each radio module
- MIMO technology improves data throughput via multiplexed, smart antenna transmissions and receptions
- Channel bonding technology for increased throughput or channel redundancy
- Dual DC power inputs and PoE+
- Immunity against disconnection caused by radio interference

### Specifications for Higher Security

- 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 (per connector):

- 802.11a/n (20/40 MHz):
  - MCS15 20 MHz: Typ. 13 dBm (± 1.5 dBm)
  - MCS15 40 MHz: Typ. 12 dBm (± 1.5 dBm)

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, SNMP, 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)

**Connector for External Antennas:** RP-SMA (female)

**RJ45 Ports:** 2, 10/100/1000BaseT(X), auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection

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

**Reset:** Present

**LED Indicators:** PWR1, PWR2, PoE+, FAULT, STATE, WLAN1, WLAN2, 100M, 1000M

**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:** 75 x 135 x 105 mm (2.9 x 5.3 x 4.1 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)

**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

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

**Reliability**

**MTBF (mean time between failures):** 290,422 hrs

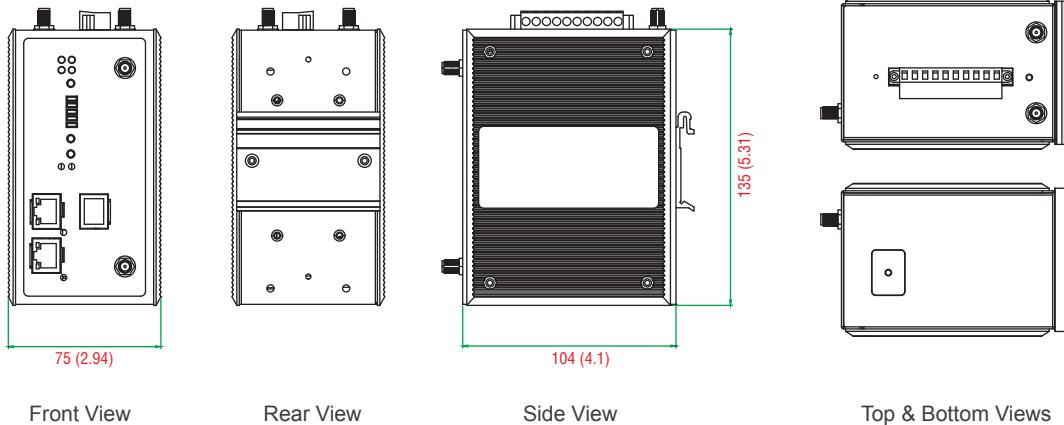
**Warranty**

**Warranty Period:** 5 years

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

**Dimensions**

Unit: mm (inch)



**Ordering Information**

**Available Models**

**AWK-5232-US:** IEEE 802.11a/b/g/n dual-radio wireless AP/bridge/client, US band

**AWK-5232-US-T:** IEEE 802.11a/b/g/n dual-radio wireless AP/bridge/client, US band, -40 to 75°C operating temperature

**AWK-5232-EU:** IEEE 802.11a/b/g/n dual-radio wireless AP/bridge/client, EU band

**AWK-5232-EU-T:** IEEE 802.11a/b/g/n dual-radio wireless AP/bridge/client, EU band, -40 to 75°C operating temperature

**AWK-5232-JP:** IEEE 802.11a/b/g/n dual-radio wireless AP/bridge/client, JP band

**AWK-5232-JP-T:** IEEE 802.11a/b/g/n dual-radio wireless AP/bridge/client, JP band, -40 to 75°C operating temperature

*Note: Please visit Moxa's website for a complete list of*

**Package Checklist**

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