

# AWK-6232 Series

## Industrial IEEE 802.11n IP68 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
- > M12 anti-vibration connectors
- > Industrial grade QoS (WMM) and VLAN supported
- > Supports client-based Turbo Roaming
- > Rugged IP68-rated housing and -40 to 75°C operating temperature



### Introduction

Moxa's AWK-6232 3-in-1 outdoor wireless AP/bridge/client meets the growing need for faster data transmission speeds and wider coverage by supporting IEEE 802.11n technology with a net data rate of up to 300 Mbps per each radio module. The AWK-6232 provides a flexible and efficient way to deploy your wireless network with its dual 2.4/5 GHz RF modules, which allow two independent wireless connections over different frequencies. The AWK-6232 is compliant with the industrial standards and approvals, covering operating temperature, power input voltage, surge, ESD and vibration. In addition, the AWK-6232 is housed in an IP68 metal casing with M12 connectors for total protection against dust, water, vibration, and other environmental effects.

### Improved Higher Data Rate and Bandwidth

- High-speed wireless connectivity with up to 300 Mbps data rate per each radio module
- MIMO technology to improve the capacity of multiple data stream transmits and receives
- Increased channel width with channel bonding technology

### Features for Critical Environments

- IP68-rated metal housing and -40 to 75°C wide operating temperature
- Anti-vibration M12 design and waterproof/dust-tight RJ45 connectors
- Wall, DIN rail, and pole mounting options for versatile outdoor installation

### 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 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)

##### 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

**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 MIMO:**

802.11a/n:

-68 dBm @ MCS15 40 MHz, -70 dBm @ MCS7 40 MHz, -69 dBm @ MCS15 20 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, 5 dBi at 2.4 GHz, 2 dBi at 5 GHz, N-type (male)

**Connector for External Antennas:** N-type (female)

**M12 Ports:** 2, 10/100/1000BaseT(X), auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection (female)

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

**Reset:** Present

**LED Indicators:** PWR, FAULT, STATE, WLAN1, WLAN2, LAN1, LAN2

**Alarm Contact (digital output, M12 connector):** 1 relay output with current carrying capacity of 1 A @ 24 VDC

**Digital Inputs (M12 connector, male):** 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, IP68 protection

**Weight:** 1.8 kg

**Dimensions:** 224 x 148 x 67 mm (8.82 x 5.82 x 2.62 in)

**Installation:** Wall mounting (standard), DIN-Rail mounting (optional), pole mounting (optional)

**Environmental Limits**

**Operating Temperature:** -40 to 75°C (-40 to 167°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5% to 100% (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:** M12 male connector with A-coding

**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

**Radio:** EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPN001

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

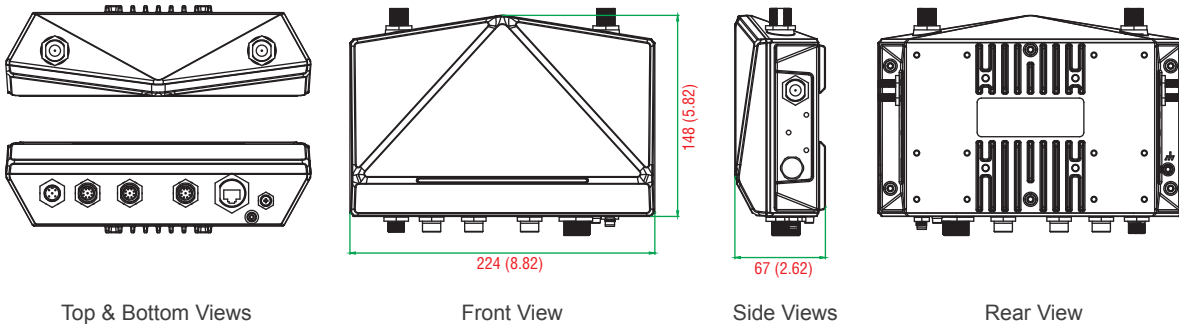
**Warranty**

**Warranty Period:** 5 years

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

**Dimensions**

Unit: mm (inch)



**Ordering Information**

**Available Models**

**AWK-6232-M12-US-T:** IEEE 802.11a/b/g/n IP68 dual-radio wireless AP/bridge/client, US band, -40 to 75°C operating temperature

**AWK-6232-M12-EU-T:** IEEE 802.11a/b/g/n IP68 dual-radio wireless AP/bridge/client, EU band, -40 to 75°C operating temperature

**AWK-6232-M12-JP-T:** IEEE 802.11a/b/g/n IP68 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 optional wireless accessories and antennas available for Moxa's wireless products.*

**Package Checklist**

- AWK-6232 wireless AP/bridge/client
- 4 dual-band omni-directional antennas (5/2 dBi, N-type male, 2.4/5 GHz)
- Wall mounting kit (includes 2 supports)
- Field-installable power plug
- Field-installable Ethernet plug
- 1 metal cap to cover RJ45 connector
- 1 metal cap to cover M12-female LAN connector
- 1 metal cap to cover M12-male DI/O connector
- 2 transparent plastic sticks for field-installable plugs
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card