

# AWK-6232 Series

## Outdoor industrial IEEE 802.11a/b/g/n 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 for 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 for 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 @ 1 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)

##### Transmitter Power:

802.11b:  
 Typ. 18±1.5 dBm @ 1 to 11 Mbps  
 802.11g:  
 Typ. 18±1.5 dBm @ 6 to 24 Mbps,  
 Typ. 17±1.5 dBm @ 36 to 48 Mbps,  
 Typ. 15±1.5 dBm @ 54 Mbps  
 802.11n (2.4 GHz):  
 Typ. 14±1.5 dBm @ MCS15 20 MHz  
 802.11a:  
 Typ. 17±1.5 dBm @ 6 to 24 Mbps,  
 Typ. 16±1.5 dBm @ 36 to 48 Mbps,  
 Typ. 14±1.5 dBm @ 54 Mbps  
 802.11n (5 GHz):  
 Typ. 13±1.5 dBm @ MCS15 20 MHz,  
 Typ. 12±1.5 dBm @ MCS15 40 MHz

##### Receiver 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

802.11n (2.4 GHz):

- 69 dBm @ MCS15 20 MHz,
- 71 dBm @ MCS7 20 MHz

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

802.11n (5 GHz):

- 68 dBm @ MCS15 40 MHz, -69 dBm @ MCS15 20 MHz,
- 70 dBm @ MCS7 40 MHz, -71 dBm @ MCS7 20 MHz

**Protocol Support**

**General Protocols:** Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, DHCP, VLAN, STP/RSTP

**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)

**LAN Ports:** 2, 8-pin M12 A-coded (female), 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):** 8-pin M12 A-coded (male), 1 relay output with current carrying capacity of 1 A @ 24 VDC

**Digital Inputs:** 8-pin M12 A-coded (male), 2 electrically isolated inputs

- +13 to +30 V for state "1"
- +3 to -30 V for state "0"
- Max. input current: 8 mA

**Management**

**Device Management:** Wireless Search Utility, SNMP

**Physical Characteristics**

**Housing:** Metal, IP68 protection

**Weight:** 1699 g (3.75 lb)

**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 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)

**Input Current:** 1.5 A @ 12 VDC

**Connector:** 5-pin M12 A-coded (male)

**Power Consumption:** 18 W

**Reverse Polarity Protection:** Present

**Standards and Certifications**

**Safety:** UL 60950-1, EN 60950-1

**EMC:** EN 55032/24

**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: 4 kV; Signal: 2 kV

IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV

IEC 61000-4-6 CS: 10 V

IEC 61000-4-8

**Radio:** EN 301 489-1/17, 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.*

**MTBF** (mean time between failures)

**Time:** 317,948 hrs

**Standard:** Telcordia SR332

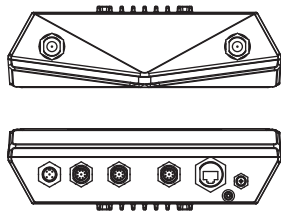
**Warranty**

**Warranty Period:** 5 years

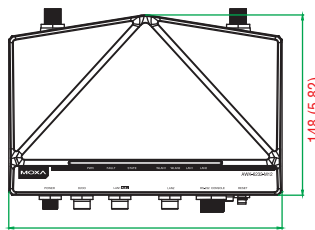
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**

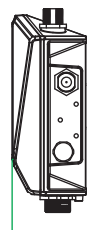
Unit: mm (inch)



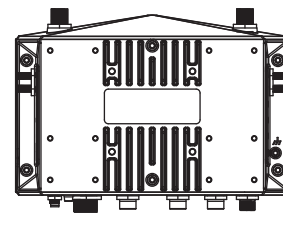
Top & Bottom Views



Front View



Side Views



Rear View

**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 2.4/5 GHz antennas: ANT-WDB-ANM-0502
- 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