

AWK-5222 Series

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



- > IEEE 802.11a/b/g compliant
- > Dual-RF design for redundant wireless communication and high-performance wireless bridging
- > RSTP for dual Ethernet redundancy
- > Supports 100 ms redundant roaming
- > Industrial grade QoS (WMM) and VLAN supported
- > -40 to 75°C operating temperature range (T models)



Introduction

Moxa's new generation wireless redundancy technology allows you to set up independent wireless connections to avoid interruptions in transmission, even if interference occurs on one of the supported frequencies. The AWK-5222 is equipped with the newest proprietary wireless redundancy technology, which has two independent RF modules, and supports a greater variety of wireless configurations and applications. The redundant wireless connections increase the reliability of the entire wireless network. For reliability beyond wireless redundancy, Moxa's AWK-5222 has two Ethernet ports, and supports RSTP (Rapid Spanning Tree Protocol). The AWK-5222 is rugged enough to help you establish the most robust wireless connection for critical industrial wireless applications.

Redundancy to Increase System Reliability

- Dual DC power inputs and PoE
- Dual RF design with 2.4 or 5 GHz dual-band operation for redundant WLAN connections
- Redundant roaming for fast and stable handoff
- Ethernet redundancy via RSTP

Specifications for Industrial-grade Applications

- Industrial-grade QoS and VLAN for efficient data traffic management
- Long-distance wireless transmission over 10 km
- Integrated DI/DO for on-site monitoring and warnings
- Signal strength LEDs for easy deployment and antenna alignment

Specifications

WLAN Interface

Standards:

- IEEE 802.11a/b/g for Wireless LAN
- IEEE 802.11i for Wireless Security
- IEEE 802.3u for 10/100Base(T)X
- IEEE 802.3af for Power-over-Ethernet
- 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
- 64QAM @ 54 Mbps, 16QAM @ 24/36 Mbps, QPSK @ 12/18 Mbps, CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps, DBSK @ 1 Mbps
- 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

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

TX Transmit Power:

- 802.11b:
 - Typ. 23±1.5 dBm @ 1 to 11 Mbps
- 802.11g:
 - Typ. 20±1.5 dBm @ 6 to 24 Mbps, Typ. 19±1.5 dBm @ 36 Mbps, Typ. 18±1.5 dBm @ 48 Mbps, Typ. 17±1.5 dBm @ 54 Mbps
- 802.11a:
 - Typ. 18±1.5 dBm @ 6 to 24 Mbps, Typ. 16±1.5 dBm @ 36 to 48 Mbps, Typ. 15±1.5 dBm @ 54 Mbps

RX Sensitivity:

- 802.11b:
 - 97 dBm @ 1 Mbps, -94 dBm @ 2 Mbps, -92 dBm @ 5.5 Mbps, -90 dBm @ 11 Mbps

802.11g:

-93 dBm @ 6 Mbps, -91 dBm @ 9 Mbps, -90 dBm @ 12 Mbps, -88 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -80 dBm @ 36 Mbps, -76 dBm @ 48 Mbps, -74 dBm @ 54 Mbps

802.11a:

-90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -89 dBm @ 12 Mbps, -85 dBm @ 18 Mbps, -83 dBm @ 24 Mbps, -79 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -74 dBm @ 54 Mbps

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:

AWK-5222: 2 dual-band omni-directional antennas, 2 dBi, RP-SMA (male)

Connector for External Antennas:

AWK-5222: RP-SMA (female)

AWK-5222-M12: QMA (female)

RJ45 Ports: 2, 10/100BaseT(X), auto negotiation speed

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

Console Port: RS-232 (RJ45-type)

LED Indicators: PWR1, PWR2, PoE, FAULT, STATE, WLAN1, WLAN2, 10M, 100M (TP port), LAN1, LAN2 (M12 port)

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: 1.1 kg

Dimensions: 62.05 x 135 x 105 mm (2.44 x 5.31 x 4.13 in)

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

Environmental Limits

Operating Temperature:

Standard Models: 0 to 60°C (32 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 (IEEE 802.3af compliant)

Connector: 10-pin removable terminal block

Power Consumption: 12 to 48 VDC, 800 mA (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.

Reliability

MTBF (mean time between failures): 291,367 hours

Warranty

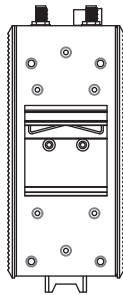
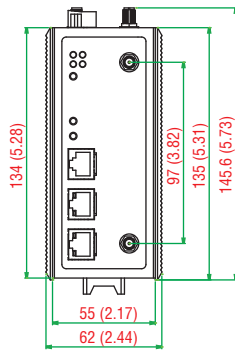
Warranty Period: 5 years

Details: See www.moxa.com/warranty

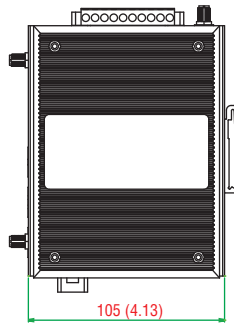
Dimensions

Unit: mm (inch)

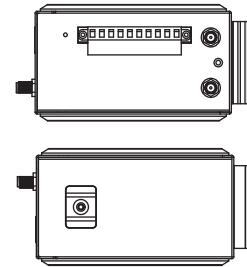
AWK-5222



front & rear view

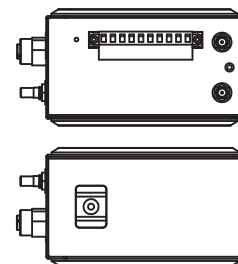
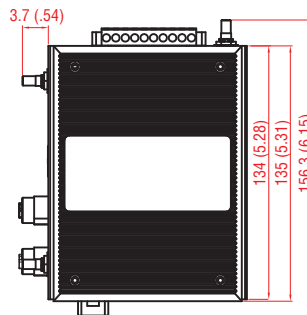
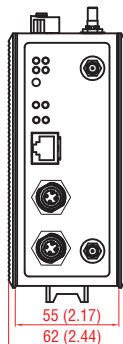


side view



top & bottom view

AWK-5222-M12



Ordering Information

Available Models

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

Note:

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

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-5222 wireless AP/bridge/client
- Cable holder with one screw
- 2 protective caps
- DIN-Rail kit
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Note: 2 dual-band omni-directional antennas only available for AWK-5222 model.