AWK-6222 Series

Industrial IEEE 802.11a/b/g IP68 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
> EN 50155 and EN 50121-1/4 compliant
> Rugged IP68-rated housing and -40 to 75°C operating temperature

Turbo Roaming   Dual RF

EN50155   EN50121   c UL us LISTED   RoHS   CE FC

: Introduction

Moxa's AWK-6222 outdoor wireless AP/bridge/client avoids interruptions in WLAN transmissions with its dual 2.4/5 GHz RF modules, which allow two independent wireless connections over different frequencies. To maximize wireless and wired network availability, the AWK-6222 can incorporate Ethernet redundancy using RSTP, and power redundancy using dual DC power inputs and PoE. In addition, the AWK-6222 is housed in an IP68 metal casing with M12 connectors for total protection against dust, water, vibration, and other environmental effects. This rugged unit supports seamless roaming to achieve ultra-reliable and redundant wireless networks under challenging outdoor, mobile conditions. These industrially hardened features let you set up a rock-solid WLAN to ensure that your entire network will always be in service.

Redundancy to Increase System Reliability

• PoE and dual DC power inputs
• 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

Industrial and Outdoor Rated Features for Critical Environments

• IP68-rated metal housing and -40 to 75°C wide operating temperature
• Long-distance wireless transmission over 10 km
• 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 for Wireless LAN
IEEE 802.11i for Wireless Security
IEEE 802.3u for 10/100BaseT(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
• 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: 2 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, 10/100BaseT(X), auto negotiation speed (waterproof RJ45-type)
Console Port: RS-232 (waterproof RJ45-type)
LED Indicators: PWR, FAULT, STATE, WLAN1, WLAN2, LAN1, LAN2
Alarm Contact (digital output, M12 female connector): 1 relay output with current carrying capacity of 1 A @ 24 VDC
Digital Inputs (M12 female connector): 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 147.7 x 64.5 mm (8.82 x 5.82 x 2.54 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 (IEEE 802.3af compliant)
Connector: M12 male connector with A-coding
Power Consumption:
• 12 to 48 VDC, 800 mA (max.)
• 12 to 48 VDC, 1.066 to 0.312 A
Reverse Polarity Protection: Present

Standards and Certifications
Safety: UL 60950-1, EN 60950-1
Hazardous Location: UL/cUL Class I Division 2, ATEX Zone 2 (Pending)
EMC: EN 301 489-1/17, FCC Part 15 Subpart B Class B, EN 55022/55024
Radio: EN 300 328, EN 301 893, DSPR (Japan)
Rail Traffic: EN 50155, EN 50121-1/4
Note: Please check Moxa's website for the most up-to-date certification status.

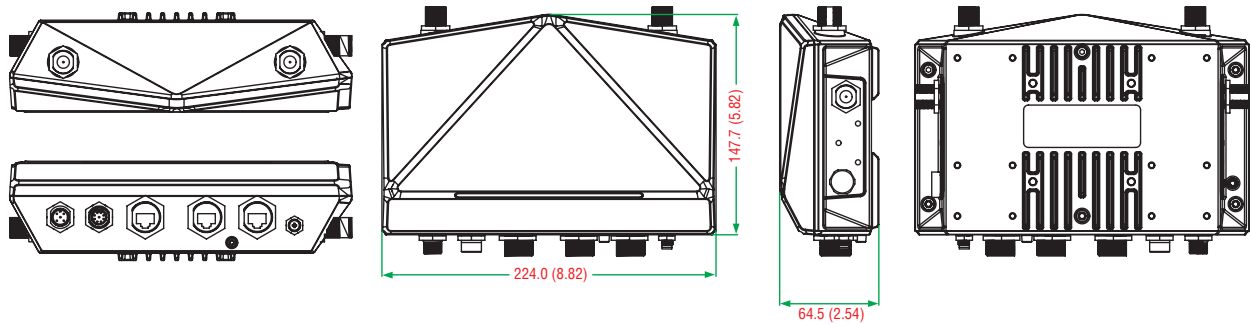### Reliability
MTBF (mean time between failures): 284,072 hours

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

Dimensions

Unit: mm (inch)

147.7 (5.82)
224.0 (8.82)
64.5 (2.54)

: Ordering Information

Available Models
AWK-6222-US-T: IEEE 802.11a/b/g IP68 dual-RF wireless AP/bridge/client, US band, -40 to 75°C operating temperature
AWK-6222-EU-T: IEEE 802.11a/b/g IP68 dual-RF wireless AP/bridge/client, EU band, -40 to 75°C operating temperature
AWK-6222-JP-T: IEEE 802.11a/b/g IP68 dual-RF 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-6222 wireless AP/bridge/client
• 2 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 RJ45 plug
• Metal cap to cover M12-female DI/O connector
• 2 metal caps to cover RJ45 connectors
• 2 metal caps to cover N-type connectors
• Documentation and software CD
• Quick installation guide (printed)
• Warranty card