AWK-5232 Series

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
> 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)

Turbo Roaming
Seamless Wireless Connection

Dual RF

n 802.11

: 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 that is connected over a TCP/IP network. It provides a faster connection and wider range than 802.11g models, with the connection noticeably stronger at a 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's reliability, and 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 mulitplexed, 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 @ 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, 2 dBi, RP-SMA (male)
Connector for External Antennas: RP-SMA (female)
LAN Ports: 2, RJ45, 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

Management
Device Management: Wireless Search Utility, SNMP

Physical Characteristics
Housing: Metal, IP30 protection
Weight: 1320 g (2.91 lb)
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)
Input Current: 1.5 A @ 12 VDC
Connector: 10-pin removable terminal block
Power Consumption: 18 W
Reverse Polarity Protection: Present

Standards and Certifications
Safety: UL 60950-1, EN 60950-1
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class B
EMS:
IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV
IEC 61000-4-6 CS: 3 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.

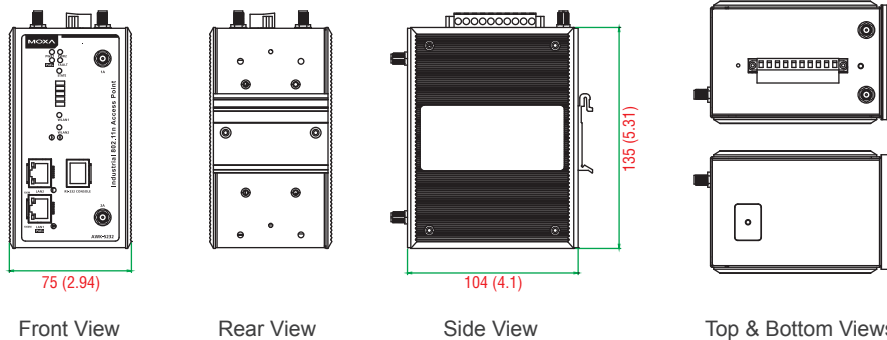### MTBF (mean time between failures)
Time: 290,422 hrs
Standard: Telcordia SR332

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

Dimensions

Unit: mm (inch)

75 (2.94)   104 (4.1)   135 (5.31)

Front View   Rear View   Side View   Top & Bottom Views

: Ordering Information

Available Models
AWK-5232-US: IEEE 802.11a/b/g/n dual-radio wireless AP/bridge/client, US band, -25 to 60°C operating temperature
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, -25 to 60°C operating temperature
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, -25 to 60°C operating temperature
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 optional wireless accessories and antennas available for Moxa's wireless products.

Package Checklist
• AWK-5232 wireless AP/bridge/client
• 4 2.4/5 GHz antennas: ANT-WDB-ARM-02
• DIN-rail kit
• 2 plastic RJ protective caps for LAN and Console ports
• Cable holder with 1 screw
• Documentation and software CD
• Quick installation guide (printed)
• Warranty card