

AWK-1121/1127 Series

Industrial IEEE 802.11a/b/g wireless client



AWK-1121

AWK-1127

- > IEEE 802.11a/b/g compliant
- > Redundant 12 to 48 VDC power inputs
- > 100 ms client-based Turbo Roaming
- > PoE 802.11af compliant (PoE model Only)
- > Maximum security with WEP/WPA/WPA2/802.11X and powerful filters
- > -40 to 75°C operating temperature range (T models)



Introduction

The AWK-1121/1127 WLAN client is ideal for industrial hard to wire applications, keeping wireless costs under control, and integrating with existing mobile equipment. The AWK-1121 enables WLAN connection to Ethernet devices, while the AWK-1127 offers an additional serial port for serial device connectivity. The AWK-1121/1127 is rated to operate at temperatures ranging from 0 to 60°C for standard models and -40 to 75°C for wide temperature models, and is rugged enough for any harsh industrial environment. Installation is easy, with either DIN rail or wall mounting capability, wide operating temperature ranges, and IP30 housing with LED indicators make the AWK-1121/1127 a convenient yet reliable solution for any industrial wireless application.

Advanced Security

- 64-bit and 128-bit WEP (Wired Equivalent Privacy)
- WPA/WPA2 (Wi-Fi Protected Access) and 802.11i support
- Enable/disable SSID broadcasts
- IEEE802.1X/RADIUS support
- Powerful packet filters for access control

Specifications for Industrial-grade Applications

- Redundant DC power inputs
- Power over Ethernet support
- IP30 compact size aluminum housing
- 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 802.3 for 10BaseT
- IEEE 802.3u for 100BaseTX
- 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:

- 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. 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 Mbps, Typ. 16±1.5 dBm @ 48 Mbps, Typ. 16±1.5 dBm @ 54 Mbps
- 802.11a:
 - Typ. 18±1.5 dBm @ 6 to 24 Mbps, Typ. 16±1.5 dBm @ 36 Mbps, Typ. 15±1.5 dBm @ 48 Mbps, Typ. 14±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:

-88 dBm @ 6 to 24 Mbps, -85 dBm @ 36 Mbps, -75 dBm @ 48 Mbps,
-70 dBm @ 54 Mbps

802.11a:

-88 dBm @ 6 to 24 Mbps, -85 dBm @ 36 Mbps, -75 dBm @ 48 Mbps,
-70 dBm @ 54 Mbps

Protocol Support

General Protocols: Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, TCP, UDP, RADIUS, SNMP, PPPoE, DHCP

Interface

Default Antennas:

1 RP-SMA (male), 2 dual-band omni-directional antenna, 2 dBi, RP-SMA (male)

Connector for External Antennas:

RP-SMA (female)

RJ45 Ports: 1, 10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection

Serial Port: 1, RS232/422/485, DB9 male connector (AWK-1127 only)

Console Port: RS-232 (RJ45-type)

LED Indicators: PWR, FAULT, STATE, SIGNAL, WLAN, LAN

Serial Communication Parameters (AWK-1127 Only)

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF

Baudrate: 50 bps to 921.6 Kbps

Serial Data Log: 256 KB

Serial Signals (AWK-1127 Only)

RS-232 : DSR, RTS, GND, TxD, RxD, DCD, CTS, DTR

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485 (2-wire): Data+, Data- and GND

RS-485 (4-wire): Tx+, Rx+, Tx-, Rx+ and GND

Physical Characteristics

Housing: Metal, providing IP30 protection

Weight: 400 g

Dimensions: 50 x 115 x 70 mm (1.97 x 4.53 x 2.76 in)

Installation: DIN-Rail mounting, wall mounting (with optional kit)

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)*

*PoE is only available for the AWK-1121-PoE and AWK-1127-PoE

Connector: 4-pin removable terminal block

Power Consumption: 12 to 48 VDC, 0.16 to 0.55 A

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 Class B, EN 55022/55024

Radio: EN 300 328, EN 301 893, DSPR (Japan)

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

Reliability

MTBF (mean time between failures):

392,209 hrs

Warranty

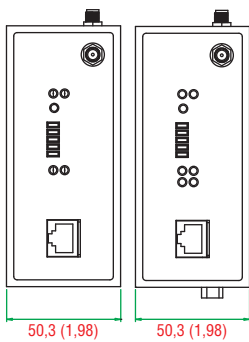
Warranty Period: 5 years

Details: See www.moxa.com/support/warranty.aspx

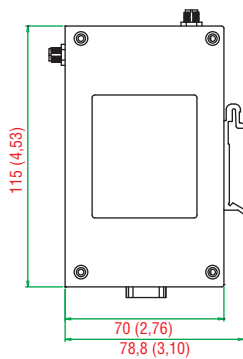
Dimensions

Unit: mm (inch)

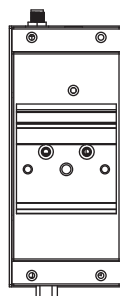
AWK-1121 AWK-1127



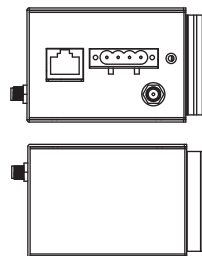
Front Views



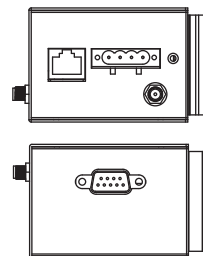
Side View



Rear Views



Top & Bottom Views (AWK-1121)



Top & Bottom Views (AWK-1127)

Ordering Information

Available Models			Port Interface		
Model Name	Standard Temperature (0 to 60°C)	Wide Temperature (-40 to 75°C)	10/100BaseT(X)	RS-232/422/485	PoE Support
AWK-1121					
AWK-1121-US	✓	–	✓	–	–
AWK-1121-EU	✓	–	✓	–	–
AWK-1121-JP	✓	–	✓	–	–
AWK-1121-US-T	–	✓	✓	–	–
AWK-1121-EU-T	–	✓	✓	–	–
AWK-1121-JP-T	–	✓	✓	–	–
AWK-1121-PoE-EU	✓	–	✓	–	✓
AWK-1121-PoE-US	✓	–	✓	–	✓
AWK-1121-PoE-JP	✓	–	✓	–	✓
AWK-1121-PoE-EU-T	–	✓	✓	–	✓
AWK-1121-PoE-US-T	–	✓	✓	–	✓
AWK-1121-PoE-JP-T	–	✓	✓	–	✓
AWK-1127					
AWK-1127-EU	✓	–	✓	✓	–
AWK-1127-US	✓	–	✓	✓	–
AWK-1127-JP	✓	–	✓	✓	–
AWK-1127-EU-T	–	✓	✓	✓	–
AWK-1127-US-T	–	✓	✓	✓	–
AWK-1127-JP-T	–	✓	✓	✓	–
AWK-1127-PoE-EU	✓	–	✓	✓	✓
AWK-1127-PoE-US	✓	–	✓	✓	✓
AWK-1127-PoE-JP	✓	–	✓	✓	✓
AWK-1127-PoE-EU-T	–	✓	✓	✓	✓
AWK-1127-PoE-US-T	–	✓	✓	✓	✓
AWK-1127-PoE-JP-T	–	✓	✓	✓	✓

Package Checklist

- AWK-1121/1127 Industrial Client
- 2dBi dual band antenna
- Console protective cap
- Resistive Terminator
- Quick Installation Guide (printed)
- Document and Software CD
- Warranty card

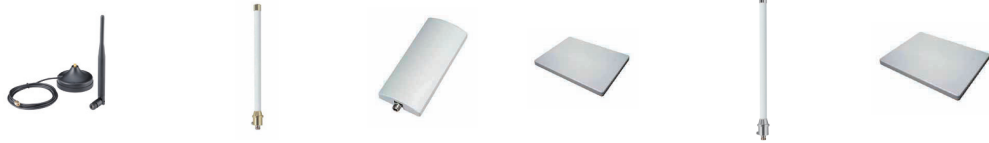
Note:

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.

Wireless Antenna Selection Guide

IEEE 802.11b/g 2.4 GHz Wireless Antennas



	ANT-WSB-AHRM-05-1.5m	ANT-WSB-ANF-09	ANT-WSB-PNF-12	ANT-WSB-PNF-18	ANT-WSB5-ANF-12	ANT-WSB5-PNF-18
Frequency Range	2.4 to 2.5 GHz				5.1 to 5.9 GHz	
Antenna Type	$\lambda/4$ Dipole	Omni-directional	Directional, Panel	Directional, Panel	Omni-directional	Directional, Panel
Typical Antenna Gain	5 dBi	9 dBi	12 dBi	18 dBi	12 dBi	18 dBi
Description	2.4 GHz, omni-directional/dipole antenna, 5 dBi	2.4GHz, omni-directional antenna, 9 dBi, N-type (female)	2.4 GHz, panel antenna, 12 dBi, N-type (female)	2.4 GHz, panel antenna, 18 dBi, N-type (female)	5 GHz, omni-directional antenna, 12 dBi, N-type (female)	5 GHz, panel antenna, 18 dBi, N-type (female)
Impedance	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms
Polarization	Vertical	Linear	Linear	Linear	Linear	Linear
HPBW/Horizontal	360°	360°	50°	30°	360°	10°
HPBW/Vertical	–	10°	30°	20°	6°	10°
V.S.W.R.	2.0	1 : 1.3 Max.	1 : 1.5 Max.	1 : 1.5 Max.	1 : 1.3 Max.	1 : 1.5 Max.
Power Handling	–	15 W Max.	10 W Max.	15 W Max.	10 W Max.	10 W Max.
Connector(s)	RP-SMA (male)	N-type (female)	N-type (female)	N-type (female)	N-type (female)	N-type (female)
Operating Temperature	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
IP rating	–	IP65	IP65	IP65	IP65	IP65
Antenna Profile	–	420 mm length	215 x 90 x 30 mm	270 x 205 x 15 mm	420 mm length	270 x 205 x 15 mm
Weight	300 g	430 g	560 g	310 g	430 g	990 g
Related Products	AWK-1121/1127, AWK-3121, AWK-3121-SSC, AWK-3131, AWK-5222, AWK-5232, NPort W2150/2250 Plus, NPort W2004					

IEEE 802.11a/b/g 2.4/5 GHz Dual-band Antennas



	ANT-WDB-ANM-0502	ANT-WDB-ANM-0407	ANT-WDB-ANF-0407	ANT-WDB-ANM-0609	ANT-WDB-ANF-0609	ANT-WDB-PNF-1518
Frequency Range	2.4 to 2.5 / 5.1 to 5.9 GHz					
Antenna Type	Omni-directional	Omni-directional	Omni-directional	Omni-directional	Omni-directional	Directional, Panel
Typical Antenna Gain	2/5 dBi	4/7 dBi	4/7 dBi	6/9 dBi	6/9 dBi	15/18 dBi
Description	2.4/5 GHz, dual-band omni-directional antenna, 2/5 dBi, N-type (male)	2.4/5 GHz, dual-band omni-directional antenna, 4/7 dBi, N-type (male)	2.4/5 GHz, dual-band omni-directional antenna, 4/7 dBi, N-type (female)	2.4/5 GHz, dual-band omni-directional antenna, 6/9 dBi, N-type (male)	2.4/5 GHz, dual-band omni-directional antenna, 6/9 dBi, N-type (female)	2.4/5 GHz, dual-band panel antenna, 15/18 dBi, N-type (female)
Impedance	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms	50 ± 5 ohms
Polarization	Linear	Linear	Linear	Linear	Linear	Linear
HPBW/Horizontal	360°	360°	360°	360°	360°	50/10°
HPBW/Vertical	65°	10/8°	10/8°	10/8°	10/8°	30/10°
V.S.W.R.	1 : 2.0 Max.	1 : 1.5 Max.	1 : 1.5 Max.	1 : 1.5 Max.	1 : 1.5 Max.	1 : 1.5 Max.
Power Handling	2 W Max.	10 W Max.	10 W Max.	10 W Max.	10 W Max.	20 W Max.
Connector(s)	N-type (male)	N-type (male)	N-type (female)	N-type (male)	N-type (female)	N-type (female)
Operating Temperature	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
IP rating	IP67	IP65	IP65	IP65	IP65	IP65
Antenna Profile	220 mm length	220 mm length	260 mm length	632 mm length	660 mm length	270 x 205 x 15 mm
Weight	72 g	115g	155 g	238 g	286 g	1020±10 g
Related Products	AWK-4121, AWK-4131, AWK-6222, AWK-6232		AWK-1121/1127, AWK-3121, AWK-3131, AWK-4121, AWK-4131, AWK-5222, AWK-5232, AWK-6222, AWK-6232, NPort W2150/2250 Plus, NPort W2004		AWK-4121, AWK-4131, AWK-6222, AWK-6232	

Wireless Accessories Selection Guide

Cables											
	CRF-N0117SA-3M	CRF-N0429N-3M	A-CRF-NMNM-LL4-300	A-CRF-NMNM-LL4-600	A-CRF-NMNM-LL4-900	A-CRF-RMNM-L1-300	A-CRF-RMNM-L1-600	A-CRF-RMNM-L1-900	A-CRF-RFRM-S1-060	A-CRF-QMAMNM-R2-50	A-CRF-RFQMAM-R2-50
	CFD200 cable, N-type (male) to RP SMA (male), 3 m	CFD400 cable, N-type (male) to N-type (male), 3 m	LMR-400 Lite cable, N-type (male) to N-type (male), 3 m	LMR-400 LITE cable, N-type (male) to N-type (male), 6 m	LMR-400 LITE cable, N-type (male) to N-type (male), 9 m	LMR-195 Lite cable, N-type (male) to RP SMA (male), 3 m	LMR-195 Lite cable, N-type (male) to RP SMA (male), 6 m	LMR-195 Lite cable, N-type (male) to RP SMA (male), 9 m	S141 cable, RP-SMA (male) to RP-SMA (female), 0.6 m	RG316 cable, QMA (male) to N-type (male)	RG316 cable, QMA (male) to RP-SMA (female)
Cable Type	CFD200	CFD400	LMR-400Lite	LMR-400 Lite	LMR-400 Lite	LMR-195 Lite	LMR-195 Lite	LMR-195 Lite	S141	RG316	RG316
Connector Type	N-type male to RP SMA male	N-type male to N-type male	N-type male to N-type male	N-type male to N-type male	N-type male to N-type male	N-type male to RP SMA male	N-type male to RP SMA male	N-type male to RP SMA male	RP-SMA male to RP-SMA female	QMA male to N-type male	QMA male to RP-SMA female
Cable Length	3 m	3 m	3 m	6 m	9 m	3 m	6 m	9 m	0.6 m	0.5 m	0.5 m
Outer Dimension	5 mm	10.3 mm	10.29 mm	10.29 mm	10.29 mm	4.95 mm	4.95 mm	4.95 mm	5 mm	2.54 mm	2.54 mm
Min. Bend Radius	12.7 mm	24.5 mm	25.4 mm	25.4 mm	25.4 mm	12.7 mm	12.7 mm	12.7 mm	12.7 mm	15 mm	15 mm
	55.4@2.5 GHz 86.5@5.8 GHz	22.2@2.5 GHz 35.5@5.8 GHz		22.2@2.5 GHz 35.5@5.8 GHz	22.2@2.5 GHz 35.5@5.8 GHz	62.4@2.5 GHz 98.1@5.8 GHz	62.4@2.5 GHz 98.1@5.8 GHz	62.4@2.5 GHz 98.1@5.8 GHz	75.4@3 GHz 98.4@5 GHz	206@2.4 GHz 345@6 GHz	206@2.4 GHz 345@6 GHz
Related Products	AWK-	AWK-4121, AWK-4131, AWK-6222, AWK-6232-M12				AWK-1121/1127, AWK-3121, AWK-3121-SSC, AWK-3131, AWK-5222, AWK-5232				AWK-3121-M12, AWK-3131-M12, AWK-5222-M12, AWK-5232-M12	

Termination Resistors



	A-TRM-50-NM	A-TRM-50-RM
Description	Termination resistor, 50 ohms, N-type (male)	Termination resistor, 50 ohms, RP-SMA (male)
Related Products	AWK-4121, AWK-4131, AWK-6222, AWK-6232	AWK-1121/1127, AWK-3121, AWK-3121-SSC, AWK-3131, AWK-5222, AWK-5232

Power Amplifiers



	A-WPA-2410gM-IDU	A-WPA-5410aM-IDU
Description	Wireless power amplifier	Wireless power amplifier
Signal Type	2.4 GHz band antenna (included)	5 GHz band antenna (included)
Connector Type	RP-SMA connector	RP-SMA connector
Power Output	1 W	1 W
Power Consumption	12 VDC	12 VDC
Power Cable	Power plug to power jack cable (included)	Power plug to power jack cable (included)
Dimensions	92 x 60 x 31 mm	92 x 60 x 31 mm
Related Accessories	<ul style="list-style-type: none"> N-type male to RP-SMA male cable RP-SMA male to RP-SMA female cable 	<ul style="list-style-type: none"> N-type male to RP-SMA male cable RP-SMA male to RP-SMA female cable
Related Products	AWK-1121/1127, AWK-3121, AWK-3121-SSC, AWK-3131, AWK-5222, AWK-5232	AWK-1121/1127, AWK-3121, AWK-3121-SSC, AWK-3131, AWK-5222, AWK-5232

Arrestors



	A-SA-NMNF-01
Frequency	0-6 GHz
Connector Type	N-type female to N-type male
Related Products	AWK-1121/1127, AWK-3121, AWK-3131, AWK-4121, AWK-4131, AWK-5222, AWK-6222

Adaptors



	A-ADP-RJ458P-DB9F-ABC01	A-ADP-QMAM-RF
Description	RJ45-to-DB9 adaptor for the ABC-01	QMA(male) to RP-SMA (female) adaptor for antenna
Related Products	All AWK series	AWK-3121-M12, AWK-3131-M12, AWK-5222-M12, AWK-5232-M12

Note: The actual product may vary in physical appearance, but the functionality will be the same.