

AWK-3131A 系列

工業級 IEEE 802.11a/b/g/n 無線 AP/橋接器/用戶端



特色與優點

- IEEE 802.11a/b/g/n 標準 AP/橋接器/用戶端
- 透過 AeroMag 輕鬆設定與部署
- 毫秒等級的用戶端 Turbo Roaming 漫遊¹
- AeroLink 完整備援保護
- 透過網路位址轉譯 (NAT) 輕鬆設定網路
- 整合式天線與電源隔離能力
- -40 至 75°C 寬操作溫度範圍 (-T 型號)
- 支援 5 GHz DFS 頻道

認證



簡介

AWK-3131A 三合一工業無線 AP/橋接器/用戶端支援 IEEE 802.11n 技術，資料傳輸速率高達 300 Mbps，滿足日益增長的資料傳輸需求。在操作溫度、電源輸入電壓、突波、ESD 和振動方面，AWK-3131A 符合工業標準及規定。兩個備援直流電源輸入提升電源的可靠性，而且 AWK-3131A 可透過 PoE 獲得供電，部署更方便。AWK-3131A 可以在 2.4 或 5 GHz 頻段上操作，並相容現有的 802.11a/b/g 部署。MxView 網路管理工具程式的無線附加元件能夠以視覺化的方式呈現 AWK 的無線連線，確保整體的 Wi-Fi 連線能力。

先進 802.11n 工業無線解決方案

- 802.11a/b/g/n 相容的 AP/橋接器/用戶端，提供彈性的部署方式
- 軟體針對長距離無線通訊進行最佳化，具有高達 1 公里無障礙距離及外部高增益天線 (僅適用於 5 GHz)
- 支援 60 個用戶端同時連線
- DFS 頻道支援提供更廣泛的 5 GHz 頻道選擇，避免現有無線基礎設施的干擾

先進無線技術

- AeroMag 支援自動配對更新設定，可用於工業應用的基本無線區域網路初始設定
- 基於用戶端的 Turbo Roaming 快速漫遊，達到無縫漫遊的目的。² 在 AP 間的漫遊復原時間 < 150 毫秒 (用戶端模式)
- 支援 AeroLink 防護，在 AP 與其用戶端之間建立備援無線連結 (< 300 毫秒回復時間)

工業級耐用性

- 整合式天線和電源隔離設計可提供 500 V 絕緣保護，防止外部電氣干擾
- 無線通訊通過 Class I Div. II 及 ATEX Zone 2 認證
- -40 至 75°C 的寬廣操作溫度型號 (-T) 可在惡劣環境中提供順暢的無線通訊

透過 MXview Wireless 進行無線網路管理

- 動態拓撲視圖一目了然顯示無線連結狀態及連線變化
- 視覺化的互動式漫遊播放功能，可檢閱用戶端的漫遊記錄
- 個別 AP 和用戶端裝置的詳細裝置資訊及效能指標圖表

1. 此處所指的 Turbo Roaming 快速漫遊復原時間是在最佳狀態下，配置無干擾 20 MHz RF 頻道、WPA2-PSK 安全性和預設的 Turbo Roaming 快速漫遊參數，所得到的測試結果平均值。用戶端設定為在 100 Kbps 流量負載下 3 個頻道漫遊。其他情況也有可能影響漫遊的效能。若想了解更多關於 Turbo Roaming 快速漫遊的參數設定，請參閱產品手冊。

2. 此處所指的 Turbo Roaming 快速漫遊復原時間是在最佳狀態下，配置無干擾 20 MHz RF 頻道、WPA2-PSK 安全性和預設的 Turbo Roaming 快速漫遊參數，所得到的測試結果平均值。用戶端設定為在 100 Kbps 流量負載下 3 個頻道漫遊。其他情況也有可能影響漫遊的效能。若想了解更多關於 Turbo Roaming 快速漫遊的參數設定，請參閱產品手冊。

規格

WLAN Interface

WLAN Standards	802.11a/b/g/n 802.11i Wireless Security			
Modulation Type	DSSS OFDM MIMO-OFDM			
Frequency Band for US (20 MHz operating channels)	2.412 to 2.462 GHz (11 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) ³ 5.500 to 5.700 GHz (11 channels) ³ 5.745 to 5.825 GHz (5 channels)			
Frequency Band for EU (20 MHz operating channels)	2.412 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) ³ 5.500 to 5.700 GHz (11 channels) ³			
Frequency Band for JP (20 MHz operating channels)	2.412 to 2.484 GHz (14 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) ³ 5.500 to 5.700 GHz (11 channels) ³			
Wireless Security	WEP encryption (64-bit and 128-bit) WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES) WPA/WPA2-Personal			
Transmission Rate	802.11b: 1 to 11 Mbps 802.11a/g: 6 to 54 Mbps 802.11n: 6.5 to 300 Mbps			
Transmitter Power for 802.11a	23±1.5 dBm @ 6 to 24 Mbps 21±1.5 dBm @ 36 Mbps 20±1.5 dBm @ 48 Mbps 18±1.5 dBm @ 54 Mbps			
Transmitter Power for 802.11n (5 GHz)	23±1.5 dBm @ MCS0/8 20 MHz 18±1.5 dBm @ MCS7/15 20 MHz 23±1.5 dBm @ MCS0/8 40 MHz 17±1.5 dBm @ MCS7/15 40 MHz			
Transmitter Power for 802.11b	26±1.5 dBm @ 1 Mbps 26±1.5 dBm @ 2 Mbps 26±1.5 dBm @ 5.5 Mbps 25±1.5 dBm @ 11 Mbps			
Transmitter Power for 802.11g	23±1.5 dBm @ 6 to 24 Mbps 21±1.5 dBm @ 36 Mbps 19±1.5 dBm @ 48 Mbps 18±1.5 dBm @ 54 Mbps			
Transmitter Power for 802.11n (2.4 GHz)	23±1.5 dBm @ MCS0/8 20 MHz 18±1.5 dBm @ MCS7/15 20 MHz 23±1.5 dBm @ MCS0/8 40 MHz 17±1.5 dBm @ MCS7/15 40 MHz			
Transmitter Power		US	EU	JP
	2.4 GHz	26 dBm	18 dBm	18 dBm
	5 GHz (UNII-1)	23 dBm	21 dBm	21 dBm
	5 GHz (UNII-2)	23 dBm	21 dBm	21 dBm
	5 GHz (UNII-2e)	23 dBm	23 dBm	23 dBm

3. 支援 DFS (動態頻率選擇) 頻道：在 AP 模式下，當設備偵測到一個雷達信號，會自動切換到另一個頻道。然而，根據規定，當頻道切換後，若要重啟服務，需要 60 秒的可用性檢查期。

	US	EU	JP
5 GHz (UNII-3)	23 dBm	–	–
Note: Based on regional regulations, the maximum transmission power allowed on the UNII bands is restricted in the firmware, as indicated above.			
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	Typ. -90 @ 6 Mbps Typ. -88 @ 9 Mbps Typ. -88 @ 12 Mbps Typ. -85 @ 18 Mbps Typ. -81 @ 24 Mbps Typ. -78 @ 36 Mbps Typ. -74 @ 48 Mbps Typ. -72 @ 54 Mbps Note ⁴		
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	Typ. -69 dBm @ MCS7 20 MHz Typ. -71 dBm @ MCS15 20 MHz Typ. -63 dBm @ MCS7 40 MHz Typ. -68 dBm @ MCS15 40 MHz Note ⁴		
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ. -93 dBm @ 1 Mbps Typ. -93 dBm @ 2 Mbps Typ. -93 dBm @ 5.5 Mbps Typ. -88 dBm @ 11 Mbps		
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	Typ. -88 dBm @ 6 Mbps Typ. -86 dBm @ 9 Mbps Typ. -85 dBm @ 12 Mbps Typ. -85 dBm @ 18 Mbps Typ. -85 dBm @ 24 Mbps Typ. -82 dBm @ 36 Mbps Typ. -78 dBm @ 48 Mbps Typ. -74 dBm @ 54 Mbps		
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ. -70 dBm @ MCS7 20 MHz Typ. -69 dBm @ MCS15 20 MHz Typ. -67 dBm @ MCS7 40 MHz Typ. -67 dBm @ MCS15 40 MHz		
WLAN Operation Mode	Access point, Client, Client-Router, Master, Slave, Sniffer		
Antenna	External, 2/2 dBi, Omni-directional		
Antenna Connectors	2 RP-SMA female		

Ethernet Interface

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3af for PoE IEEE 802.1Q for VLAN Tagging IEEE 802.1X for authentication IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol
PoE Ports (10/100/1000BaseT(X), RJ45 connector)	1

Ethernet Software Features

Management	DHCP Server/Client, DNS, HTTP, IPv4, LLDP, Proxy ARP, SMTP, SNMPv1/v2c/v3, Syslog, TCP/IP, Telnet, UDP, VLAN, Wireless Search Utility, MXview, MXview Wireless, MXconfig
Routing	Port forwarding, Static Route, NAT

4. 頻道 153 和 161 因為在接收靈敏度上有限制，建議在嚴苛應用下，盡量避免使用這些頻道。

Redundancy Protocols	RSTP, STP
Security	HTTPS/SSL, RADIUS, SSH
Time Management	SNTP Client

Firewall

Filter	ICMP, MAC address, IP protocol, Port-based
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Serial Interface

Console Port	RS-232, 8-pin RJ45
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LED Interface

LED Indicators	PWR1, PWR2, PoE, FAULT, STATE, SIGNAL, WLAN, LAN
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Input/Output Interface

Digital Inputs	2 Max. input current: 8 mA +13 to +30 V for state 1 +3 to -30 V for state 0
Alarm Contact Channels	Relay output with current carrying capacity of 1 A @ 24 VDC
Buttons	Reset button

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	52.7 x 135 x 105 mm (2.08 x 5.32 x 4.13 in)
Weight	860 g (1.9 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)

Power Parameters

Input Current	0.6 A @ 12 VDC, 0.15 A @ 48 VDC
Input Voltage	12 to 48 VDC, Redundant dual inputs, 48 VDC Power-over-Ethernet
Power Connector	1 removable 10-contact terminal block(s)
Power Consumption	7.2 W (max.)
Reverse Polarity Protection	Supported

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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 61000-6-2/-6-4
EMI	CISPR 32, 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 PFMF
Hazardous Locations	ATEX, Class I Division 2, IECEx
Radio	EN 300 328, EN 301 489-1/17, EN 301 893, FCC ID SLE-WAPN008, ANATEL, MIC, NCC, RCM, SRRRC, WPC, KC, RCM
Safety	EN 60950-1, UL 60950-1
Vibration	IEC 60068-2-6

MTBF

Time	570,854 hrs
Standards	Telcordia SR332

Warranty

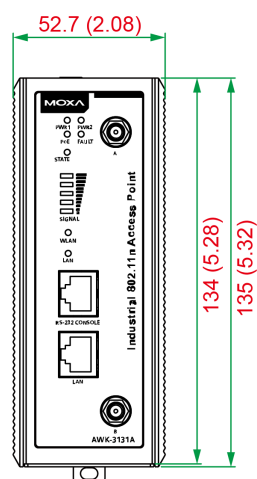
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

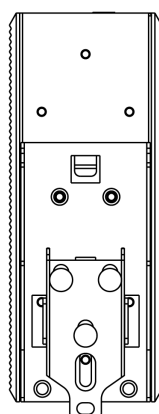
Device	1 x AWK-3131A Series wireless AP/bridge/client
Installation Kit	2 x cap, plastic, for RJ45 port 1 x cable holder with screw 1 x DIN-rail kit
Antenna	2 x 2.4/5 GHz antenna
Documentation	1 x quick installation guide 1 x warranty card

尺寸

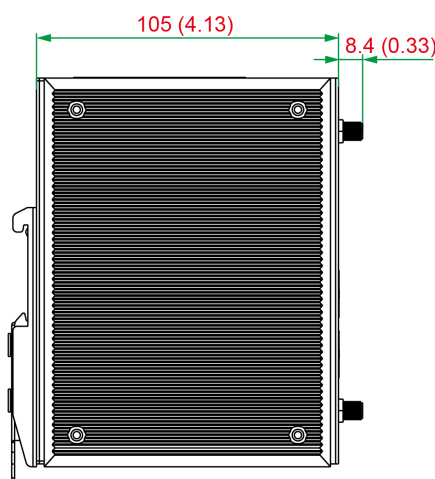
單位：公釐（英吋）



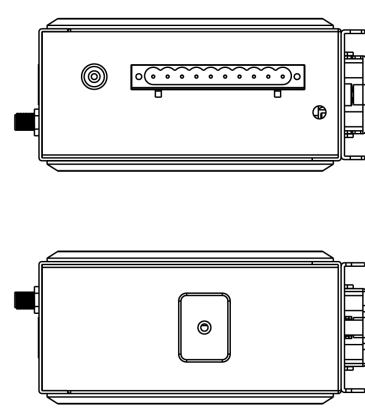
Front View



Rear View



Side View



Top and Bottom Views

訂購資訊

Model Name	Band	Standards	Operating Temp.
AWK-3131A-EU	EU	802.11a/b/g/n	-25 to 60°C
AWK-3131A-EU-T	EU	802.11a/b/g/n	-40 to 75°C
AWK-3131A-JP	JP	802.11a/b/g/n	-25 to 60°C
AWK-3131A-JP-T	JP	802.11a/b/g/n	-40 to 75°C
AWK-3131A-US	US	802.11a/b/g/n	-25 to 60°C
AWK-3131A-US-T	US	802.11a/b/g/n	-40 to 75°C

配件 (選購)

Antennas

ANT-WDB-ANF-0407	2.4/5 GHz, omni-directional antenna, 4/7 dBi, N-type (female)
ANT-WDB-ANF-0609	2.4/5 GHz, omni-directional antenna, 6/9 dBi, N-type (female)
ANT-WDB-ANM-0306	2.4/5 GHz, omni-directional antenna, 3/6 dBi, N-type (male)
ANT-WDB-ANM-0407	2.4/5 GHz, dual-band omni-directional antenna, 4/7 dBi, N-type (male)
ANT-WDB-ANM-0502	2.4/5 GHz, omni-directional antenna, 5/2 dBi, N-type (male)
ANT-WDB-ANM-0609	2.4/5 GHz, omni-directional antenna, 6/9 dBi, N-type (male)
ANT-WDB-ARM-02	2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male)
ANT-WDB-ARM-0202	2.4/5 GHz, panel antenna, 2/2 dBi, RP-SMA (male)
ANT-WDB-PNF-1518	2.4/5 GHz, panel antenna, 15/18 dBi, N-type (female)
MAT-WDB-CA-RM-2-0205	2.4/5 GHz, ceiling antenna, 2/5 dBi, MIMO 2x2, RP-SMA-type (male)
MAT-WDB-DA-RM-2-0203-1m	2.4/5 GHz, desktop antenna, 2/3 dBi, MIMO 2x2, RP-SMA-type (male), 1 m cable
MAT-WDB-PA-NF-2-0708	2.4/5 GHz, panel antenna, 7/8 dBi, MIMO 2x2, N-type (female)
ANT-WSB5-ANF-12	5 GHz, omni-directional antenna, 12 dBi, N-type (female)
ANT-WSB5-PNF-18	5 GHz, directional panel antenna, 18 dBi, N-type (female)
ANT-WSB-ANF-09	2.4 GHz, omni-directional antenna, 9 dBi, N-type (female)
ANT-WSB-PNF-12	2.4 GHz, directional panel antenna, 12dBi, N-type (female)
ANT-WSB-PNF-18	2.4 GHz, directional panel antenna, 18 dBi, N-type (female)
ANT-WSB-AHRM-05-1.5m	2.4 GHz, omni-directional/dipole antenna, 5 dBi, RP-SMA (male), 1.5 m cable

Wireless Antenna Cables

A-CRF-RFRM-R4-150	RF magnetic stand, RP-SMA (male) to RP-SMA (female), RG-174/U cable, 1.5 m
A-CRF-RFRM-S2-60	SS402 cable, RP-SMA (male) to RP-SMA (female)
A-CRF-RMNM-L1-300	N-type (male) to RP SMA (male), LMR-195 Lite cable, 3 m
A-CRF-RMNM-L1-600	N-type (male) to RP SMA (male), LMR-195 Lite cable, 6 m
A-CRF-RMNM-L1-900	N-type (male) to RP SMA (male), LMR-195 Lite cable, 9 m
CRF-N0117SA-3M	N-type (male) to RP SMA (male), CFD200 cable, 3 m

Surge Arrestors

A-SA-NMNF-01	Surge arrester, N-type (female) to N-type (male)
A-SA-NFNF-01	Surge arrestor, N-type (female) to N-type (female)

Wireless Terminating Resistors

A-TRM-50-NM	Terminating Resistor, 50 ohm, RP-SMA Male
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Wireless Adapters

A-ADP-RJ458P-DB9F-ABC01

DB9 female to RJ45 connector for the ABC-01

Wall-Mounting Kits

WK-51-01

Wall-mounting kit, 2 plates, 6 screws, 51.6 x 67 x 2 mm

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