AWK-3252A 系列

工業級 Wi-Fi 5 (802.11ac) 無線 AP/橋接器/用戶端

特色與優點

- IEEE 802.11a/b/g/n/ac Wave 2 AP/橋接器/用戶端
- 同時雙頻 Wi-Fi，資料傳輸速率最高可達 1.267 Gbps
- 最新的 WPA3 加密技術可增強無線網路安全性
- 通用 (UN) 型號，帶有可配置的國家或地區代碼，部署更加靈活
- 透過網路位址轉譯 (NAT) 輕鬆設定網路
- 毫秒等級的用戶端 Turbo Roaming 漫遊[1]
- 內建 2.4 GHz 和 5 GHz 帶通濾波器，可實現更可靠的無線連接
- 整合式天線隔離
- 通過 IEC 62443-4-2 安全等級 1 認證
- -40 至 75°C 寬操作溫度範圍（-T 型號）

認證

〈Ex〉　WiFi CERTIFIED　CE　FC

簡介

AWK-3252A 系列三合一工業級無線網路 AP/橋接器/用戶端的設計支援 IEEE 802.11ac 技術，資料傳輸速率高達 1.267 Gbps，可滿足日益增長的資料傳輸速度需求。在操作溫度、電源輸入電壓、突波、ESD 和震動方面，AWK-3252A 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-3252A 可透過 PoE 獲得供電，布署更具彈性。AWK-3252A 可以在 2.4 和 5 GHz 頻段上同時操作，並相容現有的 802.11a/b/g/n 布署。

通過 IEC 62443-4-2 安全等級 1 認證

此系列產品的 US 和 UN 型號均通過 IEC 62443-4-2 安全等級 1 級認證 (FR_Cyber10095)，可協助客戶滿足安全工業網路設計的法規租尋要求。

先進 802.11ac 工業無線解決方案

- 802.11a/b/g/n/ac 相容的 AP/橋接器/用戶端，提供彈性的布署方式
- 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

- 基於用戶端的 Turbo Roaming 快速漫遊，達到無縫漫遊的目的。[1] 在 AP 間的漫遊復原時間 < 150 毫秒（用戶端模式）
- 透過 AeroMesh，可輕鬆建立可擴充且具有自癒能力的 Wi-Fi 網路

工業級耐用性

- 整合式天線隔離設計可提供防止外部電氣干擾的保護
- -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

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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。其他情況也有可能會影響漫遊的效能。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	2.4 GHz: 802.11b/g/n with 256 QAM support 5 GHz: 802.11a/n/ac Wave 2 with 256 QAM support WMM for QoS
Frequency Band for US (20 MHz operating channels)	AWK-3252A US Models Only: 2.412 to 2.462 GHz (11 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)[2] 5.500 to 5.700 GHz (11 channels)[2] 5.745 to 5.825 GHz (5 channels)
Frequency Band for UN (20 MHz operating channels)	AWK-3252A UN Models Only: 2.412 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)[2] 5.500 to 5.700 GHz (11 channels)[2] 5.745 to 5.825 GHz (5 channels) Available channels change depending on the selected country or region code.
Wireless Security	WPA/WPA2/WPA3-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES) WPA/WPA2/WPA3-Personal
Wireless Roaming	Turbo Roaming[3] 802.11r
Transmission Rate	2.4 GHz: 802.11b: 1 to 11 Mbps 802.11g: 6 to 54 Mbps 802.11n: 6.5 to 400 Mbps 5 GHz: 802.11a: 6 to 54 Mbps 802.11n: 6.5 to 300 Mbps 802.11ac: 6.5 to 867 Mbps
Transmitter Power for 802.11a (Dual Chain)	25±1.5 dBm @ 6 Mbps 23±1.5 dBm @ 54 Mbps
Transmitter Power for 802.11n (5 GHz, Dual Chain)	25±1.5 dBm @ MCS0 20 MHz 22±1.5 dBm @ MCS7 20 MHz 24±1.5 dBm @ MCS0 40 MHz 22±1.5 dBm @ MCS7 40 MHz
Transmitter Power for 802.11ac (Dual Chain)	25±1.5 dBm @ MCS0 20 MHz 22±1.5 dBm @ MCS8 20 MHz 24±1.5 dBm @ MCS0 40 MHz 21±1.5 dBm @ MCS9 40 MHz 23±1.5 dBm @ MCS0 80 MHz 20±1.5 dBm @ MCS9 80 MHz
Transmitter Power for 802.11b (Dual Chain)	29±1.5 dBm @ 1 Mbps 29±1.5 dBm @ 11 Mbps
Transmitter Power for 802.11g (Dual Chain)	29±1.5 dBm @ 6 Mbps 26±1.5 dBm @ 54 Mbps
Transmitter Power for 802.11n (2.4 GHz, Dual Chain)	28±1.5 dBm @ MCS0 20 MHz 25±1.5 dBm @ MCS7 20 MHz 28±1.5 dBm @ MCS0 40 MHz 25±1.5 dBm @ MCS7 40 MHz
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	Typ. -88 @ 6 Mbps Typ. -72 @ 54 Mbps

2. 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。
3. 此處所指出的快速漫遊復原時間是在最佳化條件下記錄的平均測試結果，其中包含無干擾的 20 MHz RF 頻道、WPA2-PSK 安全性和預設快速漫遊參數。用戶端設定為在 100 Kbps 流量負載下 3 個頻道漫遊。其他情況也有可能會影響漫遊的效能。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。

Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	Typ. -88 dBm @ MCS0 20 MHz Typ. -68 dBm @ MCS7 20 MHz Typ. -84 dBm @ MCS0 40 MHz Typ. -66 dBm @ MCS7 40 MHz
Receiver Sensitivity for 802.11ac	Typ. -88 dBm @ MCS0 20 MHz Typ. -65 dBm @ MCS8 20 MHz Typ. -85 dBm @ MCS0 40 MHz Typ. -60 dBm @ MCS9 40 MHz Typ. -81 dBm @ MCS0 80 MHz Typ. -55 dBm @ MCS9 80 MHz
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ. -96 dBm @ 1 Mbps Typ. -88 dBm @ 11 Mbps
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	Typ. -90 dBm @ 6 Mbps Typ. -74 dBm @ 54 Mbps
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ. -90 dBm @ MCS0 20 MHz Typ. -70 dBm @ MCS7 20 MHz Typ. -87 dBm @ MCS0 40 MHz Typ. -69 dBm @ MCS7 40 MHz
WLAN Operation Mode	Access point Client Client-Router Master Slave Sniffer Mesh
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 802.3at for PoE IEEE 802.3az for Energy-Efficient Ethernet IEEE 802.1Q for VLAN Tagging IEEE 802.1X for authentication
10/100/1000BaseT(X) Ports (RJ45 connector)	1
PoE Ports (10/100/1000BaseT(X), RJ45 connector)	1

Ethernet Software Features

Management	DHCP Server DHCP Client DNS HTTP IPv4/IPv6 LLDP SMTP SNMPv1/v2c/v3 Syslog TCP/IP Telnet UDP VLAN MXconfig
Routing	Port forwarding Static Route NAT

Security	HTTPS/SSL RADIUS SSH Certificate Management
Time Management	SNTP Client

Firewall

Filter	ICMP MAC address IP protocol Port-based Wi-Fi ACL Client Isolation

Serial Interface

Console Port	RS-232 8-pin RJ45

USB Interface

Storage Port	USB Type A

LED Interface

LED Indicators	PWR1, PWR2, PoE, SYS, 2.4G, 5G, LAN1, LAN2

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	45 x 130 x 100 mm (1.77 x 5.12 x 3.94 in)
Weight	700 g (1.5 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Power Parameters

Input Current	12-48 VDC, 2.2-0.5 A
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	28.4 W (max.)

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 EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 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: 10 V/m IEC 61000-4-8 PFMF: 30 A/m
Cybersecurity	IEC 62443-4-2 Security Level 1 EN 18031-1
Safety	IEC 62368-1 UL 62368-1
Hazardous Locations	ATEX Class I Division 2 IECEx
Road Vehicles	E mark E1
Vibration	IEC 60068-2-6
Radio	EN 300 328, EN 301 489-1/17, EN 301 893, FCC, MIC, NCC, RCM, SRRC, WPC, KC, NBTC, IC

MTBF

Time	653,801 hrs
Standards	Telcordia Standard SR-332

Warranty

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

Package Contents

Device	1 x AWK-3252A Series wireless AP/bridge/client
Installation Kit	1 x cap, for type A USB 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）

13 (0.51)
45 (1.77)
9.4 (0.37)
100 (3.94)
9.8 (0.39)
130 (5.12)
3.5 (0.14)
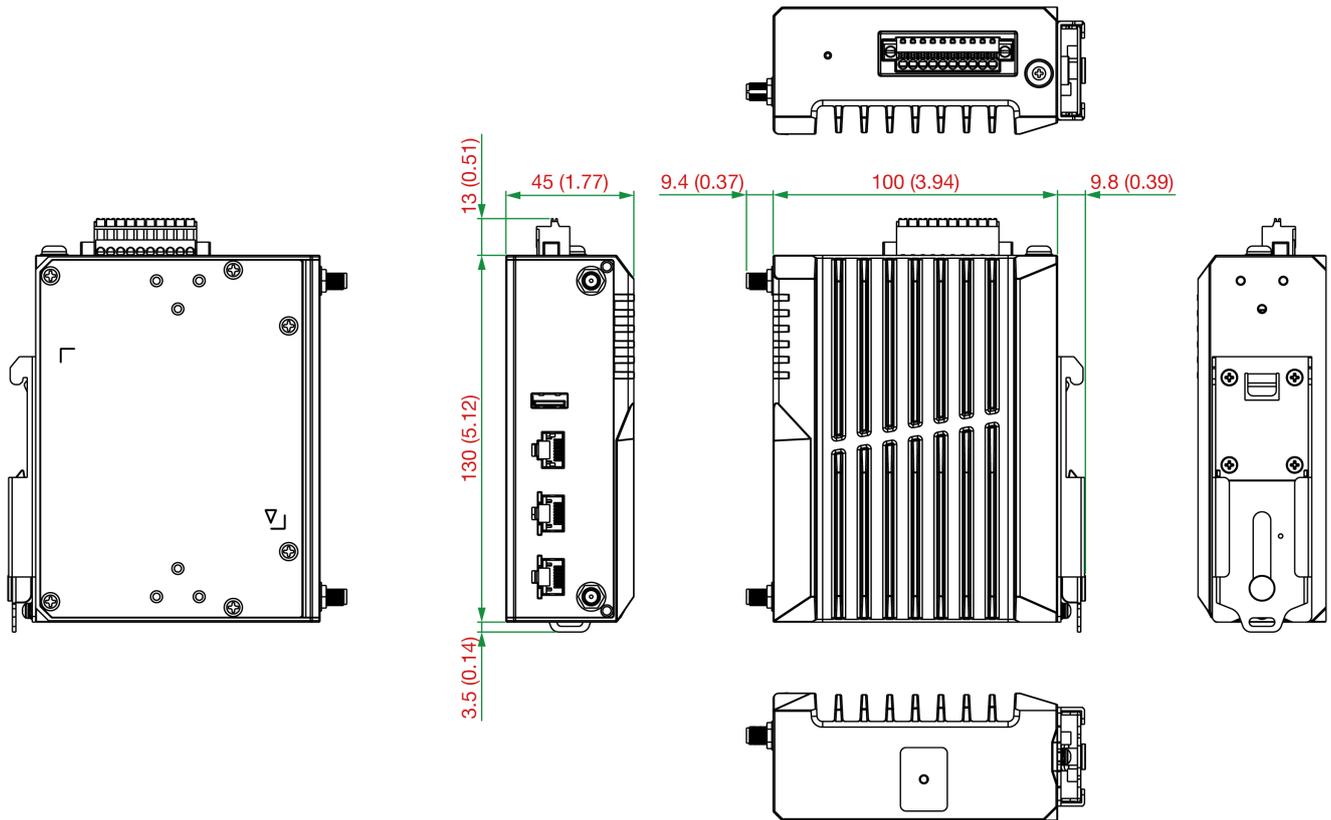
訂購資訊

Model Name	Band	Standards	Operating Temp.
AWK-3252A-UN	UN	802.11a/b/g/n/ac Wave 2	-25 to 60°C
AWK-3252A-UN-T	UN	802.11a/b/g/n/ac Wave 2	-40 to 75°C
AWK-3252A-US	US	802.11a/b/g/n/ac Wave 2	-25 to 60°C
AWK-3252A-US-T	US	802.11a/b/g/n/ac Wave 2	-40 to 75°C

配件（選購）

Antennas

ANT-WSB-PNF-12-02	12 dBi at 2.4 GHz, N-type (female), single-band directional antenna
ANT-WSB5-PNF-16	16 dBi at 5 GHz, N-type (female), single-band directional antenna
ANT-WDB-ONM-0707	07 dBi at 2.4 GHz and 07 dBi at 5 GHz, N-type (male), dual-band omnidirectional antenna
ANT-WDB-PNF-1011	10 dBi at 2.4 GHz and 11 dBi at 5 GHz, N-type (female), dual-band directional antenna
ANT-WDB-ONF-0709	7 dBi at 2.4 GHz or 9 dBi at 5 GHz, N-type (female), dual-band, omnidirectional antenna
ANT-WDB-ANM-0306	3 dBi at 2.4 GHz or 6 dBI at 5 GHz, N-type (male), omnidirectional antenna
ANT-WDB-ARM-02	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male) omnidirectional rubber-duck antenna
ANT-WDB-ARM-0202	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male), dual-band, omnidirectional antenna
ANT-WSB-AHRM-05-1.5m	5 dBi at 2.4 GHz, RP-SMA (male), omnidirectional/dipole antenna, 1.5 m cable
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-WDB-ANM-0502	5 dBi at 2.4 GHz or 2 dBI at 5 GHz, N-type (male), omnidirectional antenna

Wireless Antenna Cables

A-CRF-RFRM-R5-60	Wireless antenna cable with RP-SMA (female) to RP-SMA (male) connectors, RG-402 type, 0.6 m
A-CRF-RFRM-R4-150	Wireless antenna cable with RP-SMA (female) to RP-SMA (male) connectors, magnetic base, RG-174 type, 1.5 m
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

Surge Arrestors

A-SA-NMNF-02	0 to 6 GHz, N-type (male) to N-type (female) surge arrester
A-SA-NFNF-02	0 to 6 GHz, N-type (female) to N-type (female) surge arrester

Wireless Terminating Resistors

A-TRM-50-NM	50-ohm termination resistor with N-type male connector

Cables

CBL-RJ45F25-150	8-pin RJ45 to DB25 female serial cable, 1.5 m
CBL-RJ45F9-150	8-pin RJ45 to DB9 female serial cable, 1.5m

Wall-Mounting Kits

WK-35-05	Wall-mounting kit with 2 plates (35 x 44 x 2.5 mm), 6 NYLOK screws