

AWK-1137C 系列

工業級 802.11a/b/g/n 無線用戶端



特色與優點

- 符合 IEEE 802.11a/b/g/n 標準的用戶端
- 全方位介面，提供一個序列埠和兩個乙太網路 LAN 連接埠
- 毫秒等級的用戶端 Turbo Roaming 漫遊¹
- 透過 AeroMag 輕鬆設定與布署
- 2x2 MIMO 未來技術
- 透過網路位址轉譯 (NAT) 輕鬆設定網路
- 整合耐用的天線和電源隔離能力
- 抗震動設計
- 小巧尺寸，適合您的工業應用

認證



簡介

AWK-1137C 是工業無線行動應用程式的理想用戶端解決方案。此產品可為乙太網路和序列裝置提供無線區域網路連線，並符合工業標準和認證，涵蓋操作溫度、電源輸入電壓、突波、ESD 及震動。AWK-1137C 可以在 2.4 或 5 GHz 頻段上操作，並相容現有的 802.11a/b/g 布署。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。

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
- -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

行動導向設計

- 基於用戶端的 Turbo Roaming 快速漫遊，² 在 AP 間的漫遊復原時間 < 150 毫秒
- MIMO 技術可確保在外出時的傳輸及接收能力
- 防震效能 (參考 IEC 60068-2-6)

輕鬆整合

- 半自動設定降低布署成本
- 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
- 各種通訊介面，可連接不同類型的裝置
- 一對多 NAT 可簡化您的機器設定

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。

2. 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 100 Kbps 流量負載的 3 頻道漫遊。其他情況也可能會影響漫遊效能。如需有關「快速漫遊」參數設定的詳細資訊，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 18±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 22±1.5 dBm @ 36 Mbps 20±1.5 dBm @ 48 Mbps 19±1.5 dBm @ 54 Mbps																						
Transmitter Power for 802.11n (2.4 GHz)	23±1.5 dBm @ MCS0/8 20 MHz 17±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	<table border="1"> <thead> <tr> <th></th><th>US</th><th>EU</th><th>JP</th></tr> </thead> <tbody> <tr> <td>2.4 GHz</td><td>26 dBm</td><td>18 dBm</td><td>18 dBm</td></tr> <tr> <td>5 GHz (UNII-1)</td><td>23 dBm</td><td>23 dBm</td><td>23 dBm</td></tr> <tr> <td>5 GHz (UNII-2)</td><td>23 dBm</td><td>23 dBm</td><td>23 dBm</td></tr> <tr> <td>5 GHz (UNII-2e)</td><td>23 dBm</td><td>23 dBm</td><td>23 dBm</td></tr> </tbody> </table>				US	EU	JP	2.4 GHz	26 dBm	18 dBm	18 dBm	5 GHz (UNII-1)	23 dBm	23 dBm	23 dBm	5 GHz (UNII-2)	23 dBm	23 dBm	23 dBm	5 GHz (UNII-2e)	23 dBm	23 dBm	23 dBm
	US	EU	JP																				
2.4 GHz	26 dBm	18 dBm	18 dBm																				
5 GHz (UNII-1)	23 dBm	23 dBm	23 dBm																				
5 GHz (UNII-2)	23 dBm	23 dBm	23 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。

	<table><tr><th></th><th>US</th><th>EU</th><th>JP</th></tr><tr><td>5 GHz (UNII-3)</td><td>23 dBm</td><td>–</td><td>–</td></tr></table> Note: Based on regional regulations, the maximum transmission power allowed on the UNII bands is restricted in the firmware, as indicated above.		US	EU	JP	5 GHz (UNII-3)	23 dBm	–	–
	US	EU	JP						
5 GHz (UNII-3)	23 dBm	–	–						
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	Typ. -90 @ 6 Mbps Typ. -88 @ 9 Mbps Typ. -87 @ 12 Mbps Typ. -85 @ 18 Mbps Typ. -81 @ 24 Mbps Typ. -78 @ 36 Mbps Typ. -74 @ 48 Mbps Typ. -73 @ 54 Mbps Note: Due to a limitation in the receiver sensitivity performance for channels 153 and 161, it is recommended to avoid using these channels in your critical applications.								
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	Typ. -69 dBm @ MCS7 20 MHz Typ. -70 dBm @ MCS15 20 MHz Typ. -64 dBm @ MCS7 40 MHz Typ. -66 dBm @ MCS15 40 MHz Note: Due to a limitation in the receiver sensitivity performance for channels 153 and 161, it is recommended to avoid using these channels in your critical applications.								
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ. -89 dBm @ 1 Mbps Typ. -89 dBm @ 2 Mbps Typ. -89 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. -88 dBm @ 9 Mbps Typ. -88 dBm @ 12 Mbps Typ. -87 dBm @ 18 Mbps Typ. -84 dBm @ 24 Mbps Typ. -81 dBm @ 36 Mbps Typ. -77 dBm @ 48 Mbps Typ. -75 dBm @ 54 Mbps								
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ. -70 dBm @ MCS7 20 MHz Typ. -70 dBm @ MCS15 20 MHz Typ. -64 dBm @ MCS7 40 MHz Typ. -65 dBm @ MCS15 40 MHz								
WLAN Operation Mode	Client Client-Router Slave Sniffer								
Antenna	External, 2/2 dBi Omni-directional								
Antenna Connectors	2 RP-SMA female								
Ethernet Interface									
10/100BaseT(X) Ports (RJ45 connector)	2								
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.1Q for VLAN Tagging								

Ethernet Software Features

Management	DHCP Server/Client HTTP IPv4 LLDP SMTP SNMPv1/v2c/v3 Syslog TCP/IP Telnet UDP Proxy ARP VLAN Wireless Search Utility MXview MXview Wireless MXconfig
Routing	Port forwarding Static Route NAT
Security	HTTPS/SSL RADIUS SSH
Time Management	NTP Client SNTP Client

Firewall

Filter	ICMP MAC address IP protocol Port-based
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Serial Interface

Connector	DB9 male
Serial Standards	RS-232, RS-422/485, RS-232/422/485
Operation Modes	Disabled, Real COM, RFC2217, TCP Client, TCP Server, UDP
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	None, RTS/CTS, XON/XOFF
Baudrate	75 bps to 921.6 kbps
Serial Data Log	256 KB

Serial Signals

RS-232	TxD, Rx D, RTS, CTS, DCD, GND, DTR, DSR
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

LED Interface

LED Indicators	SYS, LAN1, LAN2, WLAN, Serial
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Input/Output Interface

Buttons	Reset button
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Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	77.1 x 115.5 x 26 mm (3.04 x 4.55 x 1.02 in)
Weight	470 g (1.03 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Power Parameters

Input Voltage	9 to 30 VDC
Power Connector	1 removable 3-contact terminal block(s)
Power Consumption	11.7 W (max.)
Reverse Polarity Protection	Supported

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 (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 55032/24
EMI	CISPR 22, 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: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Radio	EN 300 328 EN 301 489-1/17 EN 301 893 FCC ID SLE-1137C MIC NCC SRRC WPC KC RCM
Road Vehicles	E mark E1
Safety	EN 60950-1 UL 60950-1
Vibration	IEC 60068-2-6

MTBF

Time	1,125,942 hrs
Standards	Telcordia Standard SR-332

Warranty

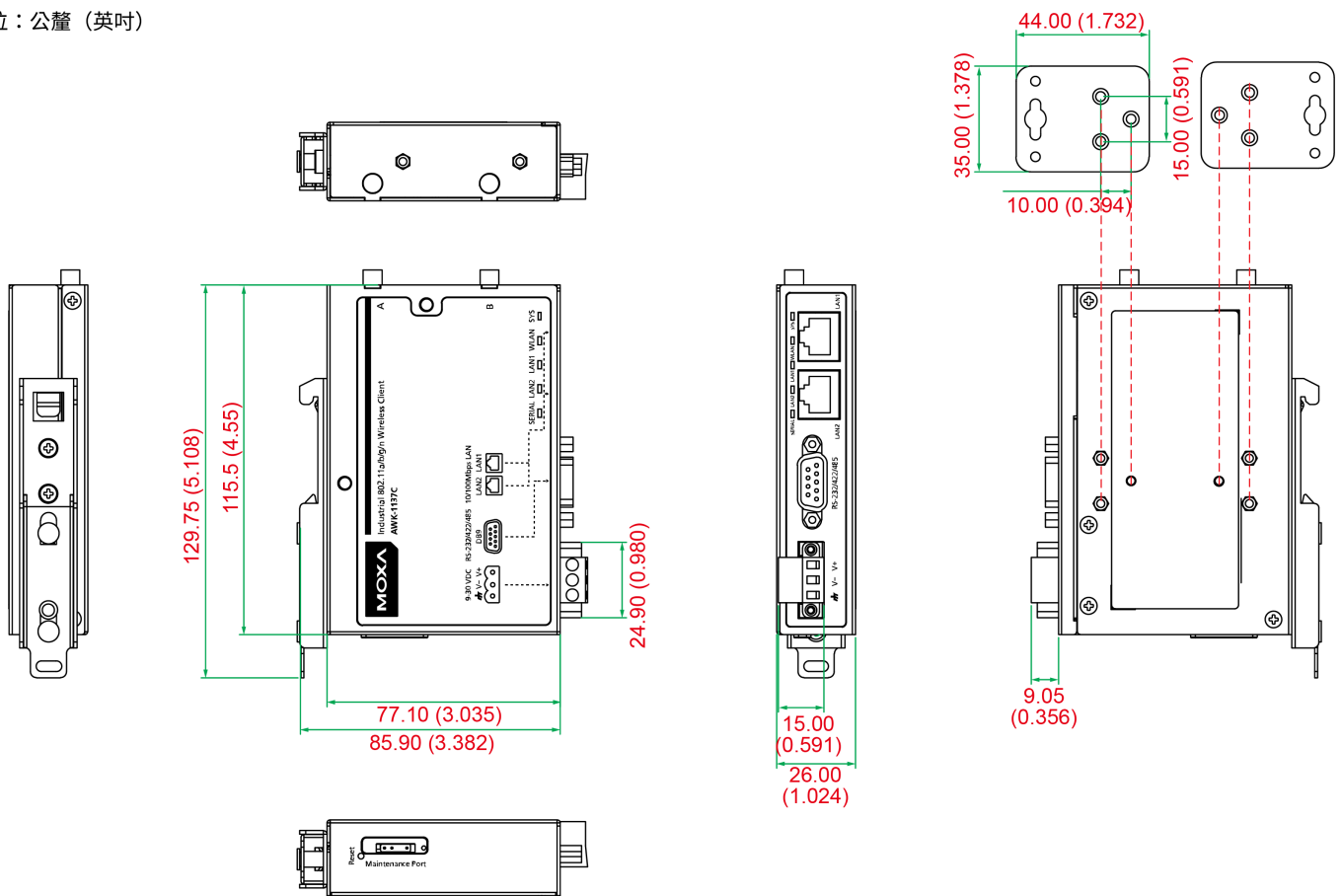
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x AWK-1137C Series wireless client
Installation Kit	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）



訂購資訊

Model Name	Band	Standards	Operating Temp.
AWK-1137C-EU	EU	802.11a/b/g/n	0 to 60°C
AWK-1137C-EU-T	EU	802.11a/b/g/n	-40 to 75°C
AWK-1137C-JP	JP	802.11a/b/g/n	0 to 60°C

Model Name	Band	Standards	Operating Temp.
AWK-1137C-JP-T	JP	802.11a/b/g/n	-40 to 75°C
AWK-1137C-US	US	802.11a/b/g/n	0 to 60°C
AWK-1137C-US-T	US	802.11a/b/g/n	-40 to 75°C

配件 (選購)

Antennas

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-ONM-0707	07 dBi at 2.4 GHz and 07 dBi at 5 GHz, N-type (male), dual-band omnidirectional antenna
ANT-WDB-ANM-0502	5 dBi at 2.4 GHz or 2 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-WDB-PNF-1011	10 dBi at 2.4 GHz and 11 dBi at 5 GHz, N-type (female), dual-band directional antenna
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-PNF-16	16 dBi at 5 GHz, N-type (female), single-band directional antenna
ANT-WSB-PNF-12-02	12 dBi at 2.4 GHz, N-type (female), single-band directional antenna
ANT-WSB-AHRM-05-1.5m	5 dBi at 2.4 GHz, RP-SMA (male), omnidirectional/dipole antenna, 1.5 m cable

Wireless Antenna Cables

A-CRF-RFRM-J1-60	RP-SMA (male) to RP-SMA (female) with JSF-141 cable, 0.6m
A-CRF-RFRM-R4-150	RF magnetic base, RP-SMA (male) to RP-SMA (female) RG-174/U cable, 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-NFNF-02	0 to 6 GHz, N-type (female) to N-type (female) surge arrester
A-SA-NMNF-02	0 to 6 GHz, N-type (male) to N-type (female) surge arrester

Wireless Adapters

A-ADP-RJ458P-DB9F-ABC01	DB9 female to RJ45 connector for the ABC-01 Series
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Wireless Terminating Resistors

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

WK-35-01	Wall-mounting kit with 2 plates (35 x 44 x 2.5 mm) and 6 screws
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