

AWK-3131A-RCC 系列

工業級 IEEE 802.11a/b/g/n 無線 AP/client



特色與優點

- 專門為軌道的車廂間通訊而設計
- 符合 IEEE 802.11a/b/g/n 規範
- 高達 300 Mbps 的資料傳輸速率
- M12 防震連接器
- MIMO 技術可增加資料吞吐量與範圍
- 符合所有 EN 50155 規範強制性測試項目¹
- 提供寬溫度型號，適合 -40 至 75°C 的作業環境
- 支援自動車廂間連線功能

認證



EN 50121-4



簡介

AWK-3131A-RCC 系列工業級 802.11n 無線 AP/client 是極為理想的無線解決方案，適用於車載旅客資訊系統以及車廂間無線骨幹網路的應用，原因在於它可提供比 802.11g 設備更快的資料傳輸速率。自動車廂連線 (ACC) 功能可輕鬆部署無線設備並且增加無線車廂骨幹網路的可靠性。AWK-3131A-RCC 系列針對旅客 Wi-Fi 服務進行了優化，符合 EN 50155 規格部分項目，涵蓋操作溫度、電源輸入電壓、突波、ESD 和震動，使此產品適用於多種工業應用。AWK-3131A-RCC 系列也可以透過 PoE 連接埠供電以簡化部署。

高資料傳輸速率和頻寬

- 高速無線連接，擁有高達 300 Mbps 的資料傳輸速率
- MIMO 技術可提升傳輸及接收多組資料串流的能力
- 通道集成技術增加通道寬度

為工業級應用所設計

- 工業級 QoS 與 VLAN 可提供有效的資料流量管理
- 整合 DI/DO 可提供現場監控與告警
- 訊號強度 LED 可用於簡易部署以及天線校準

規格

WLAN Interface

WLAN Standards	802.11a/b/g/n 802.11i Wireless Security
Modulation Type	DSSS OFDM 802.11b: CCK @ 11/5.5 Mbps 802.11b: DQPSK @ 2 Mbps 802.11b: DBPSK @ 1 Mbps 802.11a/g: 64QAM @ 54/58 Mbps 802.11a/g: 16QAM @ 36/24 Mbps 802.11a/g: QPSK @ 18/12 Mbps 802.11a/g: BPSK @ 9/6 Mbps 802.11n: 64QAM @ 300 Mbps to BPSK @ 6.5 Mbps

1. 此產品適用於符合 EN 50155 標準所定義的所有軌道車輛應用。若需更詳細的說明，請參照：www.moxa.com/doc/specs/EN_50155_Compliance.pdf

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) ² 5.500 to 5.700 GHz (8 channels) excluding 5.600 to 5.640 GHz ² 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) ² 5.500 to 5.700 GHz (11 channels) ²
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) ² 5.500 to 5.700 GHz (11 channels) ²
Wireless Security	SSID broadcast enable/disable WEP encryption (64-bit and 128-bit) WPA/WPA2-Personal WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES)
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 20 MHz 20±1.5 dBm @ MCS1 20 MHz 20±1.5 dBm @ MCS2 20 MHz 20±1.5 dBm @ MCS3 20 MHz 19±1.5 dBm @ MCS4 20 MHz 18±1.5 dBm @ MCS5 20 MHz 18±1.5 dBm @ MCS6 20 MHz 18±1.5 dBm @ MCS7 20 MHz 23±1.5 dBm @ MCS8 20 MHz 20±1.5 dBm @ MCS9 20 MHz 20±1.5 dBm @ MCS10 20 MHz 20±1.5 dBm @ MCS11 20 MHz 19±1.5 dBm @ MCS12 20 MHz 19±1.5 dBm @ MCS13 20 MHz 18±1.5 dBm @ MCS14 20 MHz 18±1.5 dBm @ MCS15 20 MHz 23±1.5 dBm @ MCS0 40 MHz 20±1.5 dBm @ MCS1 40 MHz 20±1.5 dBm @ MCS2 40 MHz 20±1.5 dBm @ MCS3 40 MHz 19±1.5 dBm @ MCS4 40 MHz 18±1.5 dBm @ MCS5 40 MHz 18±1.5 dBm @ MCS6 40 MHz 18±1.5 dBm @ MCS7 40 MHz 23±1.5 dBm @ MCS8 40 MHz 20±1.5 dBm @ MCS9 40 MHz 20±1.5 dBm @ MCS10 40 MHz 20±1.5 dBm @ MCS11 40 MHz 19±1.5 dBm @ MCS12 40 MHz 19±1.5 dBm @ MCS13 40 MHz 18±1.5 dBm @ MCS14 40 MHz 18±1.5 dBm @ MCS15 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

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。

	<p>19±1.5 dBm @ 48 Mbps 18±1.5 dBm @ 54 Mbps</p>
Transmitter Power for 802.11n (2.4 GHz)	<p>23±1.5 dBm @ MCS0 20 MHz 21±1.5 dBm @ MCS1 20 MHz 21±1.5 dBm @ MCS2 20 MHz 21±1.5 dBm @ MCS3 20 MHz 20±1.5 dBm @ MCS4 20 MHz 19±1.5 dBm @ MCS5 20 MHz 18±1.5 dBm @ MCS6 20 MHz 18±1.5 dBm @ MCS7 20 MHz 23±1.5 dBm @ MCS8 20 MHz 21±1.5 dBm @ MCS9 20 MHz 21±1.5 dBm @ MCS10 20 MHz 21±1.5 dBm @ MCS11 20 MHz 20±1.5 dBm @ MCS12 20 MHz 19±1.5 dBm @ MCS13 20 MHz 18±1.5 dBm @ MCS14 20 MHz 18±1.5 dBm @ MCS15 20 MHz 23±1.5 dBm @ MCS0 40 MHz 20±1.5 dBm @ MCS1 40 MHz 20±1.5 dBm @ MCS2 40 MHz 20±1.5 dBm @ MCS3 40 MHz 19±1.5 dBm @ MCS4 40 MHz 19±1.5 dBm @ MCS5 40 MHz 18±1.5 dBm @ MCS6 40 MHz 17±1.5 dBm @ MCS7 40 MHz 23±1.5 dBm @ MCS8 40 MHz 20±1.5 dBm @ MCS9 40 MHz 20±1.5 dBm @ MCS10 40 MHz 20±1.5 dBm @ MCS11 40 MHz 20±1.5 dBm @ MCS12 40 MHz 19±1.5 dBm @ MCS13 40 MHz 18±1.5 dBm @ MCS14 40 MHz 17±1.5 dBm @ MCS15 40 MHz</p>
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	<p>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. -74 @ 54 Mbps Note³</p>
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	<p>Typ. -88 dBm @ MCS0 20 MHz Typ. -85 dBm @ MCS1 20 MHz Typ. -82 dBm @ MCS2 20 MHz Typ. -79 dBm @ MCS3 20 MHz Typ. -76 dBm @ MCS4 20 MHz Typ. -71 dBm @ MCS5 20 MHz Typ. -70 dBm @ MCS6 20 MHz Typ. -69 dBm @ MCS7 20 MHz Typ. -95 dBm @ MCS8 20 MHz Typ. -91 dBm @ MCS9 20 MHz Typ. -87 dBm @ MCS10 20 MHz Typ. -80 dBm @ MCS11 20 MHz Typ. -78 dBm @ MCS12 20 MHz Typ. -74 dBm @ MCS13 20 MHz Typ. -72 dBm @ MCS14 20 MHz Typ. -71 dBm @ MCS15 20 MHz Typ. -84 dBm @ MCS0 40 MHz Typ. -81 dBm @ MCS1 40 MHz Typ. -77 dBm @ MCS2 40 MHz Typ. -75 dBm @ MCS3 40 MHz Typ. -71 dBm @ MCS4 40 MHz Typ. -67 dBm @ MCS5 40 MHz Typ. -64 dBm @ MCS6 40 MHz Typ. -63 dBm @ MCS7 40 MHz Typ. -90 dBm @ MCS8 40 MHz</p>

3. 頻道 153 和 161 因為在接收靈敏度上有限制，建議在關鍵應用下，盡量避免使用這些頻道。

	<p>Typ. -85 dBm @ MCS9 40 MHz Typ. -82 dBm @ MCS10 40 MHz Typ. -81 dBm @ MCS11 40 MHz Typ. -77 dBm @ MCS12 40 MHz Typ. -73 dBm @ MCS13 40 MHz Typ. -71 dBm @ MCS14 40 MHz Typ. -68 dBm @ MCS15 40 MHz Note⁴</p>
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	<p>Typ. -93 dBm @ 1 Mbps Typ. -93 dBm @ 2 Mbps Typ. -93 dBm @ 5.5 Mbps Typ. -88 dBm @ 11 Mbps</p>
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	<p>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</p>
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	<p>Typ. -89 dBm @ MCS0 20 MHz Typ. -85 dBm @ MCS1 20 MHz Typ. -85 dBm @ MCS2 20 MHz Typ. -82 dBm @ MCS3 20 MHz Typ. -78 dBm @ MCS4 20 MHz Typ. -74 dBm @ MCS5 20 MHz Typ. -72 dBm @ MCS6 20 MHz Typ. -70 dBm @ MCS7 20 MHz Typ. -95 dBm @ MCS8 20 MHz Typ. -90 dBm @ MCS9 20 MHz Typ. -87 dBm @ MCS10 20 MHz Typ. -83 dBm @ MCS11 20 MHz Typ. -80 dBm @ MCS12 20 MHz Typ. -74 dBm @ MCS13 20 MHz Typ. -71 dBm @ MCS14 20 MHz Typ. -69 dBm @ MCS15 20 MHz Typ. -87 dBm @ MCS0 40 MHz Typ. -83 dBm @ MCS1 40 MHz Typ. -83 dBm @ MCS2 40 MHz Typ. -80 dBm @ MCS3 40 MHz Typ. -76 dBm @ MCS4 40 MHz Typ. -73 dBm @ MCS5 40 MHz Typ. -69 dBm @ MCS6 40 MHz Typ. -67 dBm @ MCS7 40 MHz Typ. -93 dBm @ MCS8 40 MHz Typ. -88 dBm @ MCS9 40 MHz Typ. -85 dBm @ MCS10 40 MHz Typ. -82 dBm @ MCS11 40 MHz Typ. -78 dBm @ MCS12 40 MHz Typ. -73 dBm @ MCS13 40 MHz Typ. -69 dBm @ MCS14 40 MHz Typ. -67 dBm @ MCS15 40 MHz</p>
WLAN Operation Mode	Access point, Client, Client-Router, Sniffer
Antenna Connectors	QMA

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

Ethernet Interface

PoE Ports (10/100/1000BaseT(X), M12 A-coded 8-pin female connector)	1
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT IEEE 802.3af for PoE IEEE 802.1Q for VLAN Tagging
10/100/1000BaseT(X) Ports (M12 A-coded 8-pin female connector)	1, M12 A-coded 8-pin female connector, 10/100/1000BaseT(X) auto negotiation speed, F/H duplex mode, auto MDI/MDI-X connection

Ethernet Software Features

Management	General: Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, TCP, UDP, RADIUS, SNMP, DHCP AP-only: ARP, BOOTP, DHCP
Security	RADIUS

Firewall

Filter	MAC/IP Protocol/Port-based
--------	----------------------------

Serial Interface

Console Port	RS-232 (RJ45-type)
--------------	--------------------

LED Interface

LED Indicators	PWR1, PWR2, PoE, FAULT, STATE, SIGNAL, Client, WLAN, LAN
----------------	--

Input/Output Interface

Digital Inputs	2 +13 to +30 V for state 1 +3 to -30 V for state 0 Max. input current: 8 mA
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	52.9 x 151.9 x 127.4 mm (2.08 x 5.98 x 5.02 in)
Weight	850 g (1.87 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Protection	AWK-3131A-M12-RCC-US-CT-T: PCB conformal coating AWK-3131A-M12-RCC-JP-CT-T: PCB conformal coating AWK-3131A-M12-RCC-EU-CT: PCB conformal coating AWK-3131A-M12-RCC-JP-CT: PCB conformal coating AWK-3131A-M12-RCC-US-CT: PCB conformal coating AWK-3131A-M12-RCC-EU-CT-T: PCB conformal coating

Power Parameters

Input Current	0.67 A @ 12 VDC, 0.17 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	Maximum 8.03 W
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 55032/24
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: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Railway	EN 50155, EN 50121-4
Railway Fire Protection	EN 45545-2
Radio	EN 300 328, EN 301 893, MIC, FCC ID SLE-WAPN008, IDA
Safety	UL 60950-1, IEC 60950-1, EN 60950-1 (LVD)

MTBF

Time	742,649 hrs
Standards	Telcordia SR332

Warranty

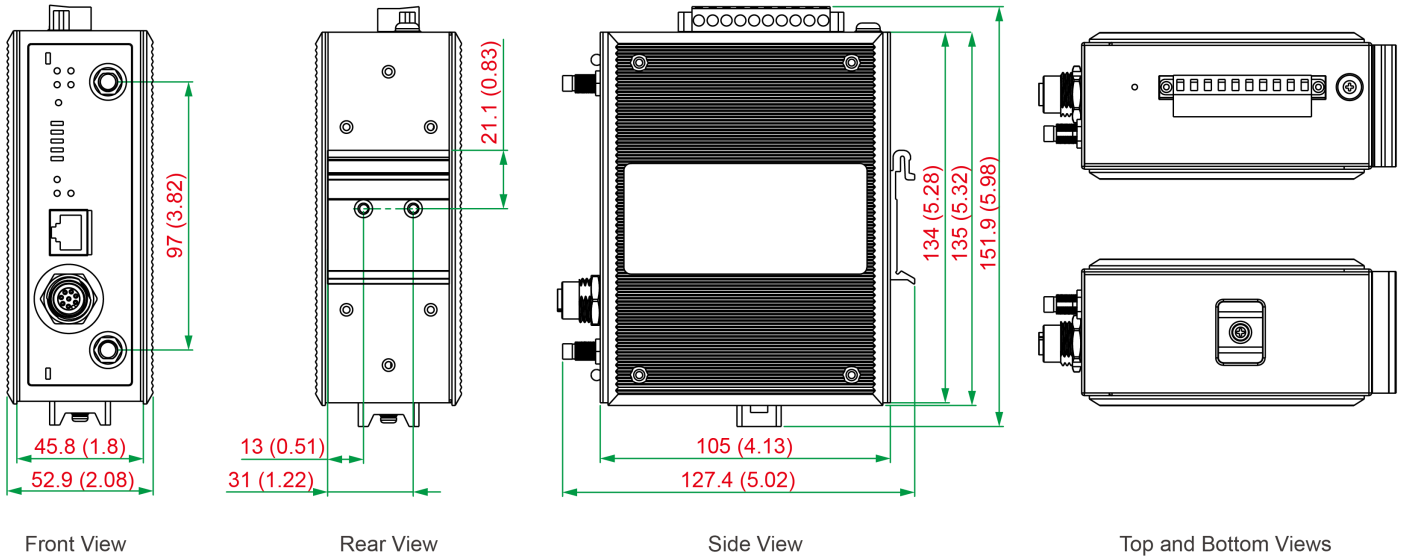
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x AWK-3131A-M12-RCC wireless AP/client
Installation Kit	1 x DIN-rail kit 2 x cap, plastic, for RJ45 port 1 x cable holder with screw
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	Operating Temperature (-40 to 75°C)	Conformal Coating
AWK-3131A-M12-RCC-US	US	-25 to 60°C	-
AWK-3131A-M12-RCC-EU	EU	-25 to 60°C	-
AWK-3131A-M12-RCC-JP	JP	-25 to 60°C	-
AWK-3131A-M12-RCC-US-T	US	-40 to 75°C	-
AWK-3131A-M12-RCC-EU-T	EU	-40 to 75°C	-
AWK-3131A-M12-RCC-JP-T	JP	-40 to 75°C	-
AWK-3131A-M12-RCC-US-CT	US	-25 to 60°C	P
AWK-3131A-M12-RCC-EU-CT	EU	-25 to 60°C	P
AWK-3131A-M12-RCC-JP-CT	JP	-25 to 60°C	P
AWK-3131A-M12-RCC-US-CT-T	US	-40 to 75°C	P
AWK-3131A-M12-RCC-EU-CT-T	EU	-40 to 75°C	P
AWK-3131A-M12-RCC-JP-CT-T	JP	-40 to 75°C	P

配件（選購）

Wall-Mounting Kits

WK-51-01 Wall-mounting kit, 2 plates, 6 screws, 51.6 x 67 x 2 mm

© Moxa Inc. 版權所有. 2019年8月20日更新。

未經 Moxa Inc. 明確書面許可，不得以任何方式複製或使用本文件及其任何部分。產品規格如有變更，恕不另行通知。請至本公司官網了解最新的產品資訊。