# AWK-1137C Series

*Entry-level industrial Wi-Fi 4 (802.11n) wireless clients*

## Features and Benefits

- IEEE 802.11n Wi-Fi 4 client
- Selectable dual-band Wi-Fi with data rates up to 300 Mbps
- AP-agnostic millisecond-level Client-based Turbo Roaming[1]
- Compact size for easy installation
- Easy network setup with Network Address Translation (NAT)
- Integrated antenna isolation to protect against external electrical interference
- Comprehensive interfaces with one serial port and two Ethernet LAN ports

## Certifications

## Introduction

The AWK-1137C Series is a range of specialized industrial wireless clients engineered to provide a dedicated and seamless connection for a single moving device. They are ideal for ensuring stable connections to AGVs, robotic arms, and other mobile machinery in dynamic production environments.

At the heart of the AWK-1137C Series' performance is the client-based Turbo Roaming technology, which achieves millisecond-level handovers between access points. This eliminates packet loss during transitions, maintaining continuous production, and enhancing operational efficiency. For maximum system flexibility, its AP-agnostic design ensures seamless interoperability with any brand of Wi-Fi access point.

With support for IEEE 802.11n selectable dual-band Wi-Fi and data rates up to 300 Mbps, the AWK-1137C Series delivers reliable wireless connectivity. Their -40 to 75°C wide operating temperature range and compact size, combined with integrated antenna isolation to protect against external electrical interference, ensure consistent performance and lasting reliability in harsh or space-constrained environments.

### Tailored Industrial Wireless Technology

- AP-agnostic seamless roaming with client-based Turbo Roaming[1] for sub-150 ms roaming recovery times between APs
- 2x2 MIMO technology for improved multi-stream data transmission and reception
- DFS channel support for a wider range of 5 GHz channels to avoid interference from existing wireless infrastructure
- Dedicated MXview Wireless network management software with dynamic topology view, interactive roaming history playback, and detailed device information and performance indicator charts

### Industrial Compliance and Certifications

- Compliant with EN 18031-1 to ensure both EU regulatory alignment and enhanced protection against cyberthreats

## Specifications

### WLAN Interface

| WLAN Standards | 2.4 GHz: 802.11n with 64 QAM support, 20/40 MHz<br>5 GHz: 802.11n with 64 QAM support,20/40 MHz<br>WMM for QoS |
| --- | --- |
| Frequency Band for US (20 MHz operating channels) | AWK-1137C-US models only:<br>2.412 to 2.462 GHz (11 channels)<br>5.180 to 5.240 GHz (4 channels)<br>5.260 to 5.320 GHz (4 channels)[2]<br>5.500 to 5.700 GHz (11 channels)[2]<br>5.745 to 5.825 GHz (5 channels) |

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1. The Turbo Roaming recovery time indicated herein is an average of test results documented, in optimized conditions, across APs configured with interference-free 20-MHz RF channels, WPA2-PSK security, and default Turbo Roaming parameters. The clients are configured with 3-channel roaming at 100 Kbps traffic load. Other conditions may also impact roaming performance. For more information about Turbo Roaming parameter settings, refer to the product manual.
2. DFS (Dynamic Frequency Selection) channel support: In AP mode, when a radar signal is detected, the device will automatically switch to another channel. However, according to regulations, after switching channels, a 60-second availability check period is required before starting the service.

| Frequency Band for EU (20 MHz operating channels) | AWK-1137C-EU models only:<br>2.412 to 2.472 GHz (13 channels)<br>5.180 to 5.240 GHz (4 channels)<br>5.260 to 5.320 GHz (4 channels)[3]<br>5.500 to 5.700 GHz (11 channels)[3] |
|---|---|
| Frequency Band for JP (20 MHz operating channels) | AWK-1137C-JP models only:<br>2.412 to 2.484 GHz (14 channels)<br>5.180 to 5.240 GHz (4 channels)<br>5.260 to 5.320 GHz (4 channels)[3]<br>5.500 to 5.700 GHz (11 channels)[3] |
| Wireless Security | WEP encryption (64-bit and 128-bit)<br>WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES)<br>WPA/WPA2-Personal |
| Wireless Roaming | Turbo Roaming[4] |
| Transmission Rate | 2.4 GHz: Up to 144.4 Mbps<br>5 GHz: Up to 300 Mbps |

**Transmitter Power**

|  | 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 |
| 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.

| Transmitter Power for 802.11a (Dual Chain) | 23±1.5 dBm @ 6 to 24 Mbps<br>21±1.5 dBm @ 36 Mbps<br>29±1.5 dBm @ 48 Mbps<br>18±1.5 dBm @ 54 Mbps |
|---|---|
| Transmitter Power for 802.11n (5 GHz, Dual Chain) | 23±1.5 dBm @ MCS0/8 20 MHz<br>18±1.5 dBm @ MCS7/15 20 MHz<br>23±1.5 dBm @ MCS0/8 40 MHz<br>18±1.5 dBm @ MCS7/15 40 MHz |
| Transmitter Power for 802.11b (Dual Chain) | 26±.1.5 dBm @ 1 Mbps<br>26±1.5 dBm @ 2 Mbps<br>26±1.5 dBm @ 5.5 Mbps<br>25±1.5 dBm @ 11 Mbps |
| Transmitter Power for 802.11g (Dual Chain) | 22±1.5 dBm @ 36 Mbps<br>19±1.5 dBm @ 54 Mbps<br>23±1.5 dBm @ 6 to 24 Mbps<br>20±1.5 dBm @ 48 Mbps |
| Transmitter Power for 802.11n (2.4 GHz, Dual Chain) | 23±1.5 dBm @ MCS0/8 20 MHz<br>17±1.5 dBm @ MCS7/15 20 MHz<br>23±1.5 dBm @ MCS0/8 40 MHz<br>17±1.5 dBm @ MCS7/15 40 MHz |
| Receiver Sensitivity for 802.11a (measured at 5.680 GHz) | Typ. -90 @ 6 Mbps<br>Typ. -88 @ 9 Mbps<br>Typ. -87 @ 12 Mbps<br>Typ. -85 @ 18 Mbps<br>Typ. -81 @ 24 Mbps |

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3. DFS (Dynamic Frequency Selection) channel support: In AP mode, when a radar signal is detected, the device will automatically switch to another channel. However, according to regulations, after switching channels, a 60-second availability check period is required before starting the service.
4. The Turbo Roaming recovery time indicated herein is an average of test results documented, in optimized conditions, across APs configured with interference-free 20-MHz RF channels, WPA2-PSK security, and default Turbo Roaming parameters. The clients are configured with 3-channel roaming at 100 Kbps traffic load. Other conditions may also impact roaming performance. For more information about Turbo Roaming parameter settings, refer to the product manual.

| | Typ. -78 @ 36 Mbps<br>Typ. -74 @ 48 Mbps<br>Typ. -73 @ 54 Mbps<br>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) | Typ. -69 dBm @ MCS7 20 MHz<br>Typ. -70 dBm @ MCS15 20 MHz<br>Typ. -64 dBm @ MCS7 40 MHz<br>Typ. -66 dBm @ MCS15 40 MHz<br>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<br>Typ. -89 dBm @ 2 Mbps<br>Typ. -89 dBm @ 5.5 Mbps<br>Typ. -88 dBm @ 11 Mbps |
| Receiver Sensitivity for 802.11g (measured at 2.437 GHz) | Typ. -88 dBm @ 6 Mbps<br>Typ. -88 dBm @ 9 Mbps<br>Typ. -88 dBm @ 12 Mbps<br>Typ. -87 dBm @ 18 Mbps<br>Typ. -84 dBm @ 24 Mbps<br>Typ. -81 dBm @ 36 Mbps<br>Typ. -77 dBm @ 48 Mbps<br>Typ. -75 dBm @ 54 Mbps |
| Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz) | Typ. -70 dBm @ MCS7 20 MHz<br>Typ. -70 dBm @ MCS15 20 MHz<br>Typ. -64 dBm @ MCS7 40 MHz<br>Typ. -65 dBm @ MCS15 40 MHz |
| WLAN Operation Mode | Client<br>Client-Router<br>Slave<br>Sniffer |
| Antenna | External, 2/2 dBi<br>Omni-directional |
| Antenna Connectors | 2 RP-SMA female |

### Ethernet Interface

| | |
|---|---|
| 10/100BaseT(X) Ports (RJ45 connector) | 2 |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.1Q for VLAN Tagging |

### Ethernet Software Features

| | |
|---|---|
| Management | DHCP Server/Client<br>HTTP<br>IPv4<br>LLDP<br>SMTP<br>SNMPv1/v2c/v3<br>Syslog<br>TCP/IP<br>Telnet<br>UDP<br>Proxy ARP<br>VLAN<br>Wireless Search Utility<br>MXconfig<br>MXview One<br>MXview Wireless<br>Turbo Roaming Analyzer |
| Routing | Port forwarding<br>Static Route |

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|  | NAT |
| --- | --- |
| Security | HTTPS/SSL<br>RADIUS<br>SSH |
| Time Management | NTP Client<br>SNTP Client |

### Firewall

| Filter | ICMP<br>MAC address<br>IP protocol<br>Port-based |
| --- | --- |

### 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, RxD, 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 |
| --- | --- |

### Input/Output Interface

| Buttons | Reset button |
| --- | --- |

### 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<br>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)<br>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<br>EN 55032/35 |
| EMI | CISPR 22, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Radio | EN 300 328<br>EN 301 489-1/17<br>EN 301 893<br>FCC ID SLE-1137C<br>MIC<br>NCC<br>SRRC<br>WPC<br>KC<br>RCM |
| Road Vehicles | E mark E1 |
| Safety | EN 62368-1<br>UL 60950-1 |
| Cybersecurity | EN 18031-1 |
| Vibration | IEC 60068-2-6 |

## MTBF

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

## Warranty

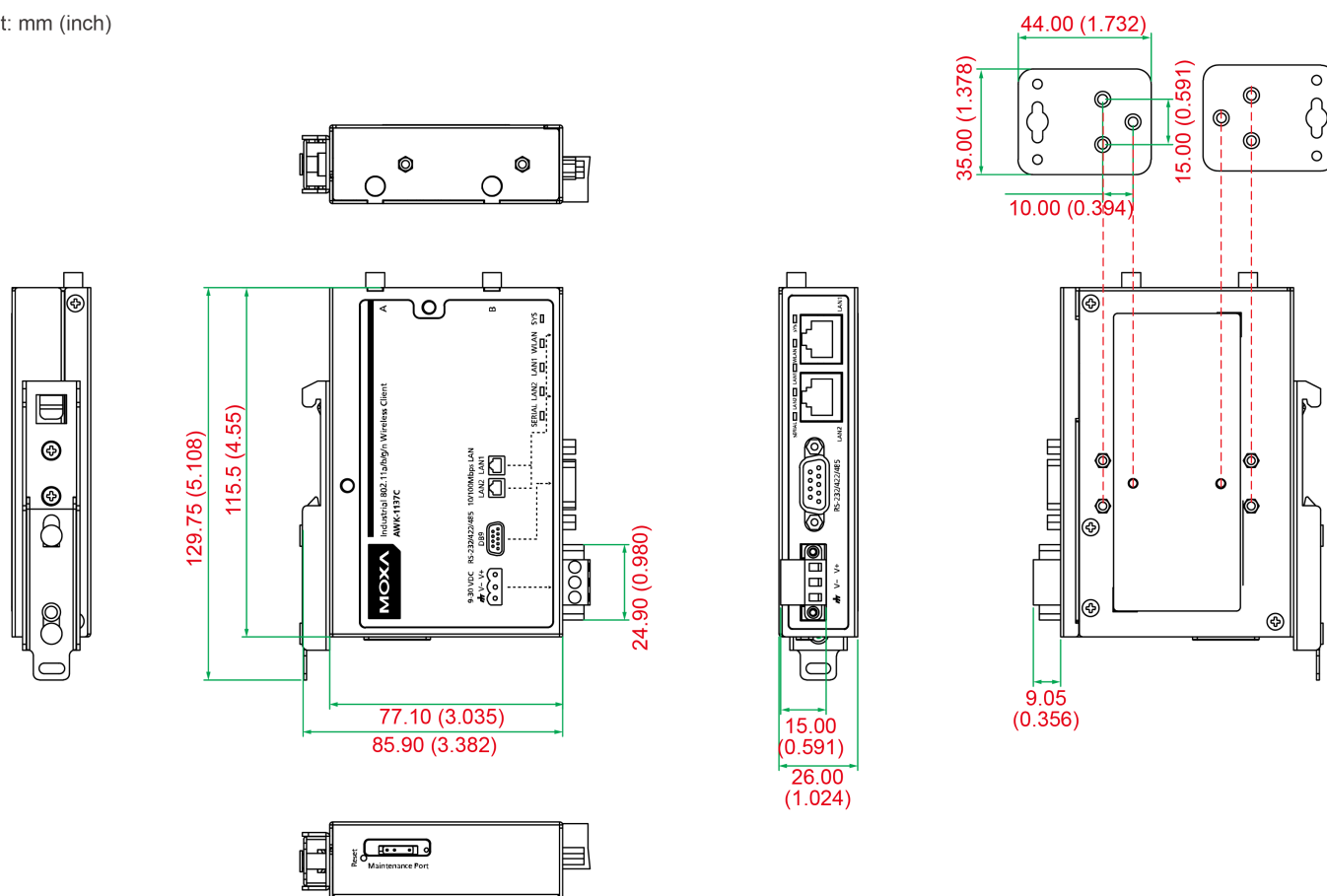| | |
|---|---|
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

## Package Contents

| | |
|---|---|
| Device | 1 x AWK-1137C Series wireless client |
| Installation Kit | 1 x DIN-rail kit |

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| Antenna | 2 x 2.4/5 GHz antenna |
|---|---|
| Documentation | 1 x quick installation guide<br>1 x warranty card |

## Dimensions

Unit: mm (inch)



## Ordering Information

| 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 |
| 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 |

## Accessories (sold separately)

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-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-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 |

### Wireless Terminating Resistors

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

### Wall-Mounting Kits

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