

AWK-1132C Series Quick Installation Guide

Moxa AirWorks

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Technical Support Contact Information
www.moxa.com/support



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Overview

The AWK-1132C industrial Wi-Fi client meets the growing need for faster data transmission speeds and wider coverage by supporting IEEE 802.11n technology with a net data rate of up to 300 Mbps. The AWK-1132C combines two adjacent 20 MHz channels into a single 40 MHz channel to deliver a potent combination of greater reliability and more bandwidth. The AWK-1132C can operate on either the 2.4 GHz or the 5 GHz band and is backward compatible with existing 802.11a/b/g deployments.

Hardware Setup

This section covers the hardware setup for the AWK-1132C.

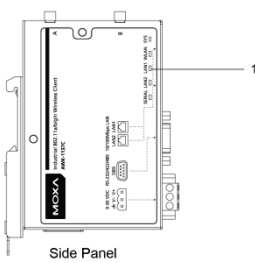
Package Checklist

Before installing the AWK-1132C, verify that the package contains the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

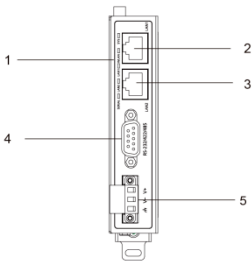
- 1 AWK-1132C wireless client
- 2 2.4/5 GHz omnidirectional antennas: ANT-WDB-ARM-0202
- DIN-rail kit
- Quick installation guide (printed)
- Warranty card

Panel Layout of the AWK-1132C

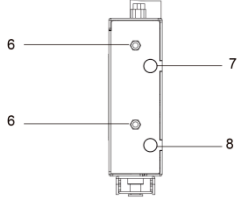
Front Panel



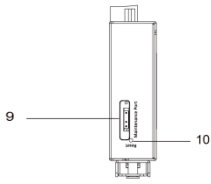
Side Panel



Top Panel



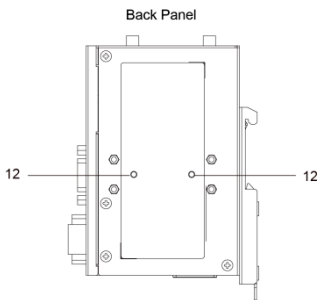
Bottom Panel



Rear Panel



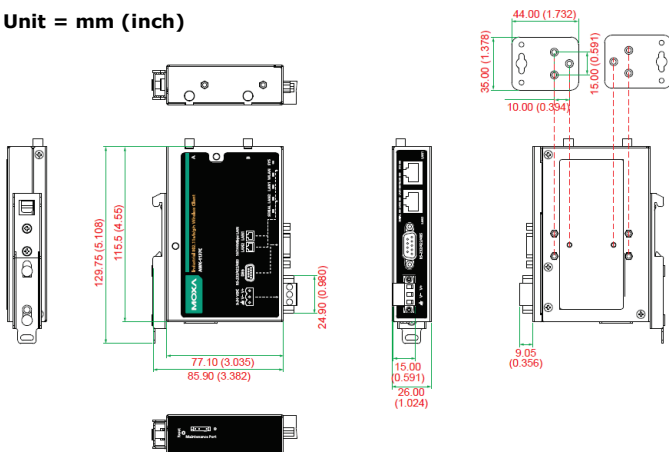
- 1. System LEDs: SYS, WLAN, LAN1, LAN2, and SERIAL
- 2. LAN1: 10/100 BaseT(X) RJ45 port
- 3. LAN2: 10/100 BaseT(X) RJ45 port
- 4. RS-232/422/485 DB9 serial port
- 5. 3-pin terminal block (ground/-/+)
- 6. M3 screw holes for antenna bracket
- 7. Antenna B RP-SMA
- 8. Antenna A RP-SMA
- 9. 3-pin maintenance port for engineers
- 10. Reset button
- 11. Screw holes for DIN-rail mounting kit



12. Screw holes for wall-mounting kit

Mounting Dimensions

Unit = mm (inch)



DIN-Rail Mounting

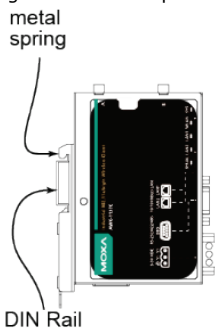
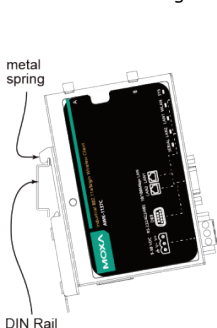
When shipped, the metal DIN-rail mounting kit is fixed to the back panel of the AWK-1132C. Mount the AWK-1132C on the corrosion-free mounting rail that adheres to the EN 60715 standard.

STEP 1:

Insert the upper lip of the DIN-rail kit into the mounting rail.

STEP 2:

Press the AWK-1132C towards the mounting rail until it snaps into place.



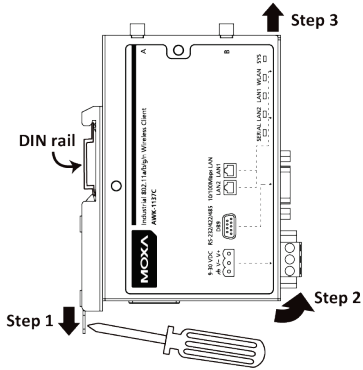
To remove the AWK-1132C from the DIN rail, do the following:

STEP 1:

Pull down the latch on the DIN-rail kit with a screwdriver.

STEP 2 & 3:

Slightly pull the AWK-1132C forward and lift it up to remove it from the mounting rail.

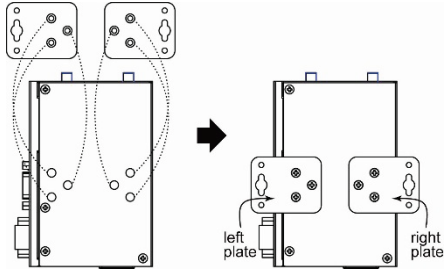


Wall Mounting (Optional)

For some applications, it may be more convenient to mount the AWK-1132C to a wall, as illustrated below:

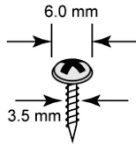
STEP 1:

Remove the aluminum DIN-rail attachment plate from the AWK-1132C, and then attach the wall-mounting plates with M3 screws, as shown in the adjacent diagrams.



STEP 2:

Mounting the AWK-1132C to a wall requires two screws. Use the AWK-1132C device, with wall-mounting plates attached, as a guide to mark the correct locations of the two screws. The heads of the screws should be less than 6.0 mm in diameter, and the shafts should be less than 3.5 mm in diameter, as shown in the figure on the right.

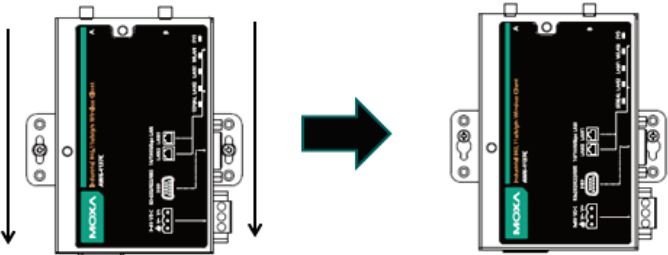


Do not drive the screws in all the way—leave a space of about 2 mm to allow room for sliding the wall-mounting panel between the wall and the screws.

NOTE Test the screw head and shank size by inserting the screws into one of the keyhole-shaped apertures of the wall-mounting plates before they are fixed to the wall.

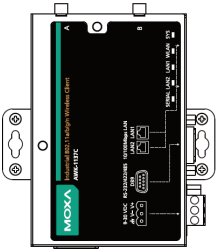
STEP 3a:

Once the screws are fixed into the wall, insert the two screw heads through the large opening of the keyhole-shaped apertures, and then slide the AWK-1132C downwards, as indicated to the right. Tighten the two screws for added stability.



STEP 3b:

Alternatively, insert four screws directly through the AWK-1132C into the wall.



WARNING

- This equipment is intended to be used in a Restricted Access Location, such as a dedicated computer room where only authorized service personnel or users can gain access. Such personnel must be instructed about the fact that the metal chassis of the equipment is extremely hot and may cause burns.
- Service personnel or users have to pay special attention and take special precautions before handling this equipment.
- Only authorized, well-trained professionals should be allowed to access the Restricted Access Location. Access should be controlled by the authority responsible for the location with a lock and key or a security identity system.
- **External metal parts are hot!!** Pay special attention or use special protection before handling this equipment.

Wiring Requirements



WARNING

Safety First!

Be sure to disconnect the power cord before installing and/or wiring your Moxa AWK-1132C.
Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes that dictate the maximum current allowed for each wire size. If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

You should also pay attention to the following items:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.

NOTE Do not run signal or communications wiring and power wiring in the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.

- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring with similar electrical characteristics can be bundled together.
- Keep input wiring and output wiring separate.
- It is strongly advised that you label wiring to all devices in the system when necessary.



ATTENTION

This product is intended to be supplied by a UL-listed power adapter suitable for use at a Thermomechanical Analysis (TMA) of 75 degree Celsius, which output meets SELV circuit and LPS standards; output rated 9 to 30 VDC, 1.3A min. or 24 VDC, 0.49A min.



ATTENTION

Make sure the external power adapter (includes power cords and plug assemblies) provided with the unit is certified and suitable for use in your country.

Grounding the Moxa AWK-1132C

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices.

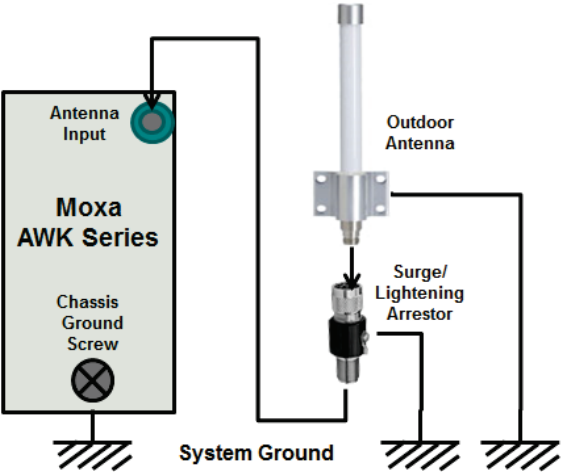


ATTENTION

This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel. There must be no electrical potential difference between any two grounding points; otherwise, there is a risk that the device could be destroyed.

Installing Cable Extended Antennas for Outdoor Applications

If the antenna or the AWK device is installed outdoors or in an open-air setting, proper lightning protection is required to prevent direct lightning strikes on the AWK device. In order to prevent coupling currents from nearby lightning strikes, a lightning arrester should be installed as part of your antenna system. Ground the device, antenna, as well as the arrester properly to provide maximum outdoor protection for the device.



Arrester Accessories

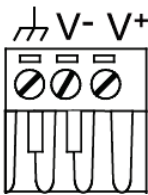
- **SA-NMNF-01:** Surge arrester, N-type (male) to N-type (female)
- **SA-NFNF-01:** Surge arrester, N-type (female) to N-type (female)

Wiring the Power Input

The 3-contact terminal block connector on the AWK-1132C's side panel is used for the AWK-1132C's DC input. The top and front views of the terminal block connector are shown below:



STEP 1:
Insert the negative/positive DC wires into the V- /V+ terminals.



STEP 2:
To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

STEP 3:
Insert the plastic terminal block connector prongs into the terminal block receptor, which is located on the AWK-1132C's side panel.

NOTE Input Terminal Block (CN1) is suitable for wire size range of 12-28 AWG (3.31-0.0804 mm²) and a torque value of 4.5 lb-in (0.51 Nm)



ATTENTION
If the AWK-1132C is connected to a motor or other similar type of equipment, be sure to use power isolation protection. Before connecting the AWK-1132C to the DC power inputs, make sure the DC power source voltage is stable.

Using the Reset Button

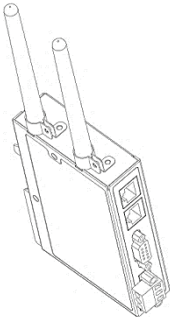
The **Reset** button is used to load the factory default settings. Use a pointed object to hold the **Reset** button down for five seconds to load the factory defaults.

Installing the Antenna-locking Clamp

Use the antenna-locking clamp to secure the antennas to the AWK-1132C for added stability when you install the device in a high-vibration environment.

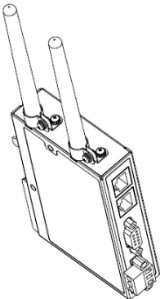
STEP 1:

Slide the locking clamps through the antenna ports.



STEP 2:

Use screws to fix the clamps to the side panel of the AWK-1132C as shown below:



Communication Connections

10/100BaseT(X) Ethernet Port Connection

The 10/100BaseT(X) ports located on the AWK-1132C's front panel are used to connect to Ethernet-enabled devices.

The pinouts for both the MDI (NIC-type) and MDI-X (HUB/switch-type) ports as shown below:

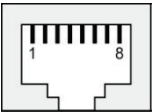
MDI Port Pinouts

Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-

MDI-X Port Pinouts

Pin	Signal
1	Rx+
2	Rx-
3	Tx+
6	Tx-

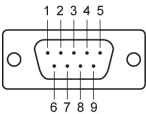
8-pin RJ45



RS-232/422/485 Serial Port

The AWK-1132C has 1 RS-232/422/485 serial port with DB9 connector for serial-to-WLAN connectivity. The pin assignments for the serial ports are shown below:

Pin	RS-232	RS-422/485 (4W)	RS-485 (2W)
1	DCD	TxD-(A)	-
2	RxD	TxD+(B)	-
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	-	-	-



LED Indicators

The front and side panel of the Moxa AWK-1132C contains several LED indicators. The function of each LED is described in the table below:

LED	Color	State	Description
SYS	Green	On	System start up complete and the system is in operation
		Blinking + Beeps (Interval: 1 second)	Device has been located by the Wireless Search Utility
	Red	On	System is booting or a system booting error has occurred
		Blinking (Interval: 0.5 second)	IP address conflict
		Blinking (Interval: 1 second)	Cannot obtain an IP address from the DHCP server
WLAN	Green	On (RSSI > 35)	WLAN interface has connected
		Blinking	Data communication via WLAN
	Amber	On (RSSI < 35)	WLAN interface has connected
		Blinking	Data communication via WLAN
LAN1	Green	On	Ethernet LAN 1 interface has connected
		Blinking	Data communication via Ethernet LAN 1
LAN2	Green	On	Ethernet LAN 2 interface has connected
		Blinking	Data communication via Ethernet LAN 2
Serial	Amber	Blinking	Data Transmission via serial data port

Specifications

Power Input	9 to 30 VDC
Power Consumption	11.7 W
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)



ATTENTION

- The AWK-1132C is **NOT** a portable mobile device and should be located at least 20 cm away from the human body.
- The AWK-1132C is **NOT** designed for the general public. A well-trained technician is required to deploy AWK-1132Cs and safely establish a wireless network.



ATTENTION

Use the antennas correctly: The 2.4 GHz antennas are needed when the AWK-1132C operates in IEEE 802.11b/g/n. The 5 GHz antennas are needed for operation in IEEE 802.11a/n. Make sure that the antennas are installed in a safe area, which is covered by a lightning protection or surge arrest system.



ATTENTION

Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, because they may cause serious injury or death. For proper installation and grounding of the antenna, refer to national and local codes (for example, U.S.: NFPA 70; National Electrical Code (NEC) Article 810; Canada: Canadian Electrical Code, Section 54).

NOTE For installation flexibility, you may select either antenna A or antenna B on the top panel. Make sure the antenna connection matches the antennas configured in the AWK-1132C web interface.

To protect the connectors and RF module, all radio ports should be terminated by either an antenna or a terminator. We strongly recommend using resistive terminators for terminating the unused antenna ports.

Software Setup

This section covers the software setup for AWK models in general.

How to Access the AWK

Before installing the AWK device (AWK), make sure that all items in the package checklist are provided in the product box. You will also need access to a notebook computer or PC equipped with an Ethernet port.

- **Step 1: Select a suitable power source and plug in the AWK.**
The AWK can be powered by DC power ranging from **9 VDC to 30 VDC**.
- **Step 2: Connect the AWK to the notebook or PC via the AWK's LAN port.**

The LED indicator on the AWK's LAN port will light up when a connection is established.



NOTE If you are using an Ethernet-to-USB adapter, follow the instructions in the user's manual provided with the adapter.

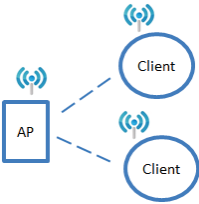
- **Step 3: Set up the computer's IP address**
Choose an IP address for the computer that is on the same subnet as the AWK. Since the AWK's default IP address is **192.168.127.253**, and the subnet mask is **255.255.255.0**, set the IP address to **192.168.127.xxx**, where xxx is a value between 1 and 252.
- **Step 4: Access the homepage of the AWK.**
Open your computer's web browser and type **http://192.168.127.253** in the address field to access the AWK's homepage. Log in using the following default username and password:
Default Username: **admin**
Default Password: **moxa**
Click the **Login** button to access the homepage of the AWK device.

First-Time Quick Configuration

After successfully accessing the AWK, refer to the appropriate subsection below to quickly set up a wireless network.

NOTE Ensure that there are no IP address conflicts when you configure more than one AWK on the same subnet.

Point-to-Multipoint Scenario (Client Mode)



Configuring the AWK as a Client

- Step 1: Set the operation mode of the AWK to Client mode.**
Go to **Wireless LAN Setup** → **Operation Mode**, select **Client** and click **Submit** to apply the change.

NOTE The default operation mode for the AWK is **Client**.

Operation Mode

Wireless

☒ Enable ☐ Disable

Operation mode

Client

Submit

- Step 2: Link to an existing SSID.**
Go to **Wireless LAN Setup** → **WLAN** → **Basic WLAN Setup** and click **Site Survey** to select an existing SSID, or directly enter an existing SSID in the text field.

Basic WLAN Setup

Operation mode

Client

RF type

B/G/N Mixed

Channel width

20 MHz

SSID

MOXA

Site Survey

Submit

The default **SSID** is MOXA.

- Step 3: Set the RF type and Channel settings for the AWK.**
On the **Wireless LAN Setup** → **WLAN** → **Basic WLAN Setup** page, edit the RF type and Channel settings.

Basic WLAN Setup

Operation mode

Client

RF type

B/G/N Mixed

Channel width

20 MHz

SSID

MOXA

Site Survey

Submit

Click **Submit** to apply the changes and restart the AWK in client mode to complete the configuration process.