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MOXA WAC-2004A Series Rail Wireless Access Controller Installation Guide

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MOXA WAC-2004A Series Rail Wireless Access Controller

P/N: 1802020041011
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Overview
The goal of zero-latency roaming is to allow clients to seamlessly maintain their communications as they move from one access point to another. The advanced Moxa Wireless Access Controller, the WAC-2004A, together with controller-based Turbo Roaming technology, enables millisecond-level roaming over different IP subnets. The advanced roaming algorithm along with Mobile IP technology allow wireless clients to roam between APs in different IP subnets within milliseconds while upholding stringent security in demanding environments. The WAC-2004A is rated to operate at temperatures of 0 to 50°C and is rugged enough for on-site installation in any harsh industrial environment.

Package Checklist

The WAC-2004A Series wireless access controller is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative.

- WAC-2004A Series wireless controller
- 2 AC power cords (C13-type, US and EU)
- 1 serial console cable (DB9-type, female-to-female)
- 2 RJ45 connector protective caps
- Rackmount kit
- Quick installation guide (printed)
- Warranty card

Installation and Configuration

Before installing the WAC-2004A, verify that all items in the Package Checklist are in the box.
Note that the WAC-2004A must be configured before use. Refer to the WAC-2004A Series User's Manual for more details.
The WAC-2004A has a default IP address of 192.168.127.253, which you must use when connecting to the device via LAN 1 (LAN 2 is reserved for future expansion) for the first time. When configuring the WAC-2004A for the first time, use the following default username and password:

Username: admin
Password: moxa

ATTENTION

For security reasons, we strongly recommend changing the default password. To do so, select Maintenance Username/Password, and then follow the on-screen instructions.
To make the changes effective, you must click Save Configuration to save the changes (Restart to apply the changes).

Panel Layout of the WAC-2004A Series

Front Panel View
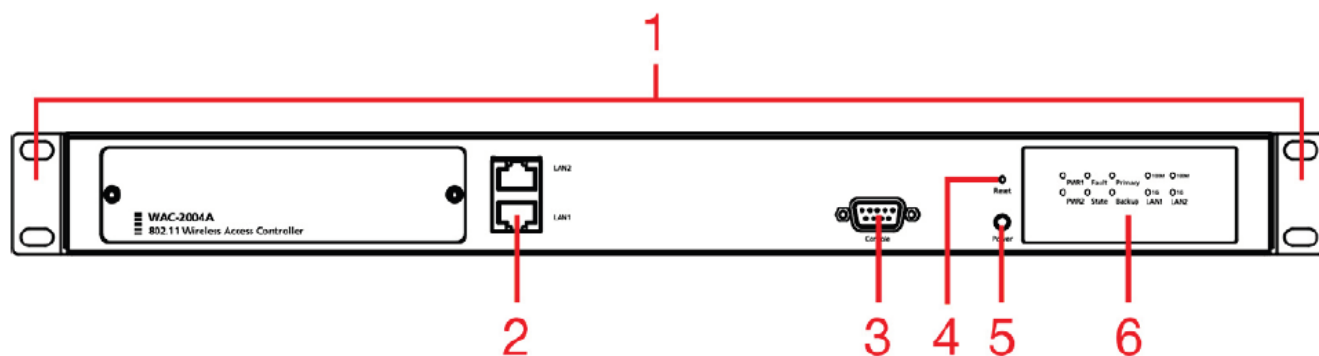
Back Panel View

1. Rackmount kit
2. LAN 1: 10/100/1000BaseT(X) (RJ45 type)

   LAN 2: Reserved for future expansion (RJ45 type)
3. RS-232 console port (DB9-type, male)
4. Reset button (reset power immediately)
5. Power button (long press to power off the device)
6. System LEDs: PWR1, PWR2, Fault, State, Primary, Backup, LAN1/2 LEDs: 100M/1G
7. Grounding screw
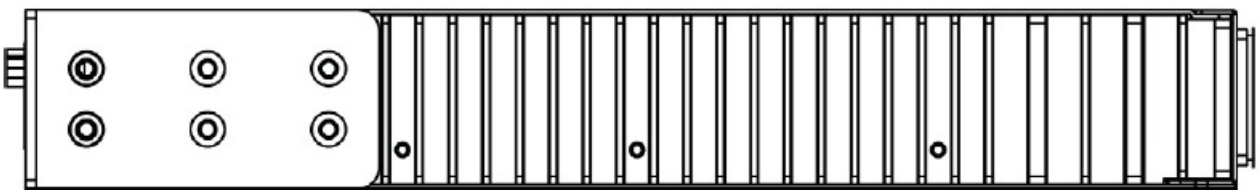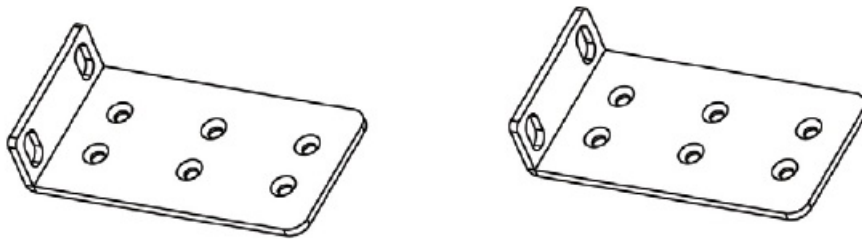8. Power sockets for AC power inputs, requires a power cord with a type C13 connector

Mounting Dimensions

Unit = mm (inch)

480 (18.9)

44 (1.73)

300 (11.81)

304 (11.97)

440 (17.32)

462.6 (18.21)

31.8 (1.25)

31.8 (1.25)

480 (18.9)
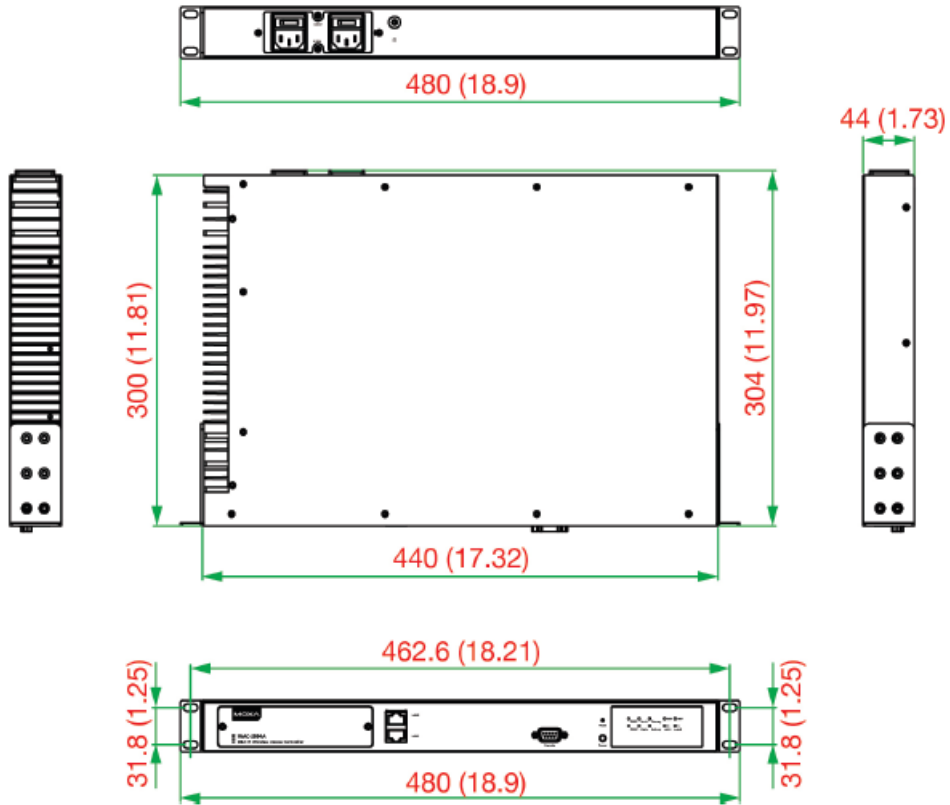
Rackmount

Use six screws to attach the WAC-2004A to a standard rack.

Grounding the WAC-2004A

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

Grounding Screw

Min. 18 AWG
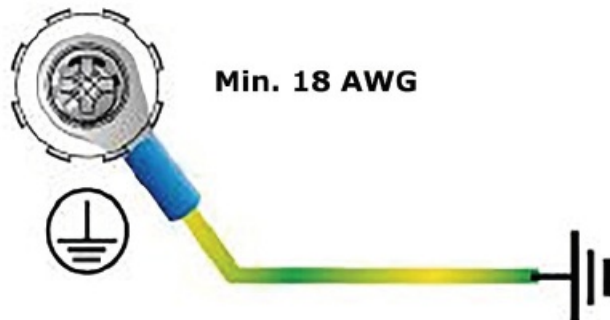
ATTENTION

If protective earthing is used as a safeguard, the instructions shall require connection of the equipment protective earthing conductor to the installation protective earthing conductor (for example, by means of a power cord connected to a socket outlet with earthing connection).

Connecting the Power Inputs

The WAC-2004A supports dual redundant power supplies: Power Supply 1 (PWR1) and Power Supply 2 (PWR2). The connections for PWR1 and PWR2 are located on the rear side (shown below). Be sure to use a standard power cord with an IEC C13 connector, which is compatible with the AC power inlet.

PWR2   PWR1
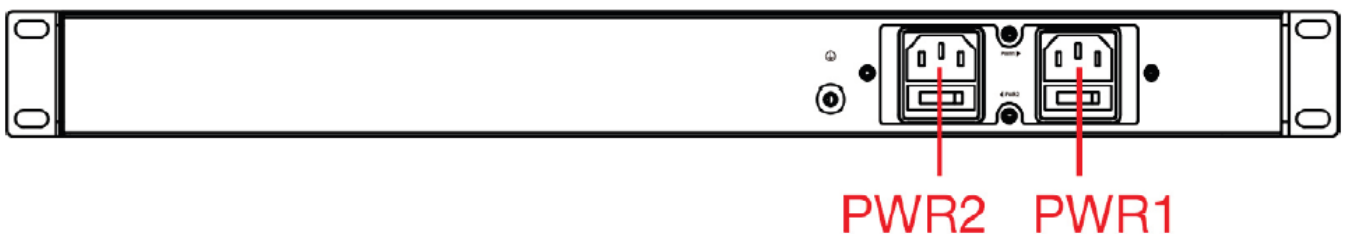
NOTE The WAC-2004A is powered up automatically once the AC power cord is connected and the switch on the power connector on the back panel is set in the On position.
To power off the WAC-2004A, press the Power button on the front panel for 5 to 10 seconds. Turn off the switch on the power connector and remove the power cord if necessary.
If the power connector switch is not turned off, the AC power is not disconnected, and the WAC-2004A was powered off using the Power button, the device can be powered back on by pressing the Power button again.

ATTENTION

Please make sure the switch on the PWR1 and PWR2 connectors on the back of the WAC-2004A are turned off before connecting the power cords and physically installing the device.

Pin Assignments
Gigabit Ethernet Port Connection
The WAC-2004A provides 1 Gigabit Ethernet connector (LAN 1) and 1 reserved Ethernet connector (LAN 2) for future expansion. When the cable is properly connected, the LEDs on the RJ45 connectors will glow to indicate a proper connection.
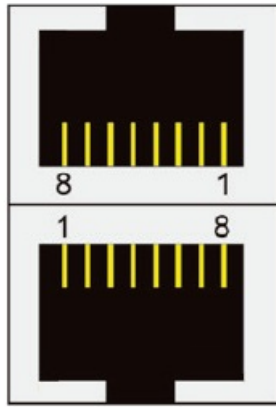
Pin	10/100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	–	TRD(2)+
5	–	TRD(2)-
6	ERx-	TRD(1)-
7	–	TRD(3)+
8	–	TRD(3)-

NOTE The pin numbers for the 8-pin RJ45 connectors (and ports) are typically not labeled on the connector (or port). Refer to the diagram above to see how the RJ45's pins are numbered.

Serial Console Connection

The WAC-2004A provides one serial port with a DB9 male connector for its console access. The pin assignments are shown in the following table:
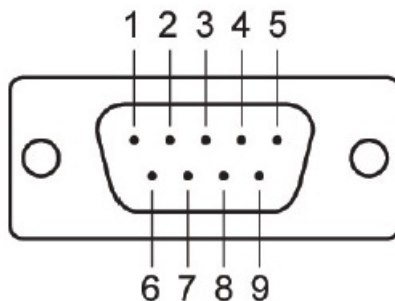
Pin	RS–232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	–

NOTE The pin numbers for the male DB9 connectors, and hole numbers for the female DB9 connectors are labeled on the connector. However, the numbers are typically very small, so you may need to use a magnifying glass to see the numbers clearly.

Front Panel LEDs

LED	Color	State	Description
Front Panel LED Indicators (System)			
PWR1	Green	On	Power is being supplied from power input 1.
		Off	Power is not being supplied from power input 1.
PWR2	Green	On	Power is being supplied from power input 2.
		Off	Power is not being supplied from power input 2.
Fault	Red	On	Booting; System Error.
		Blinking (fast)	IP address conflict (interval: 0.5 sec).
		Off	Normal status.
State	Green /Red	Green	Software is ready.
		Green (Blinking)	The WAC has been located by the Search Utility (interval: 1 sec).
		Red	Booting error.
Primary	Green	On	This WAC is operating as the primary roaming controller.
		Off	This WAC is NOT operating as the primary roaming controller.
Backup	Green	On	This WAC is operating as the backup roaming controller.
		Off	This WAC is NOT operating as the backup roaming controller.
LAN1/2 1G (2-reserved)	Green	On	The 1 Gbps LAN port is connected.
		Blinking	The WAC has been located by the Search Utility (interval: 1 sec).
		Off	The 1 Gbps LAN port is disconnected.
LAN1/2 100M (2-reserved)	Amber	On	The 100 Mbps LAN port is connected.
		Blinking	The WAC has been located by the Search Utility (interval: 1 sec).
		Off	The 100 Mbps LAN port is disconnected.

Specifications

Technology	
Standards	IEEE 802.11i for Wireless Security IEEE 802.3 for 10Base5 IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT
Security	WPA/WPA2 (IEEE 802.1X/RADIUS, TKIP and AES)
Protocol Support	
General Protocols	ARP, DNS, HTTP, HTTPS, ICMP, IP, LLDP, Proxy ARP, RADIUS, SMTP, S NMP, SNTP, SSH, SYSLOG, TCP, TELNET, TFTP, UDP
Interface	
AC Power Sockets	2 (C14 inlet)
Console	1, RS-232 (DB9-type, male)
LAN Port (LAN1)	1, 10/100/1000BaseT(X), auto negotiation speed (RJ45-type)
LAN Port (LAN2)	1, Reserved for future expansion (RJ45-type)
LED Indicators	PWR1, PWR2, Fault, State, Primary, Backup, LAN
Power Requirements	
Input Voltage	Dual AC inputs, 100 to 240 VAC/VDC auto- ranging, 47 to 63 Hz
Connector	IEC 60320 C14 inlet, required to connect to power cords with C13 type co nnectors.
Physical Characteristics	
Housing	SECC sheet metal (1 mm)
Dimensions	304 x 440 x 44 mm (11.97 x 17.32 x 1.73 in) (without rackmount ears)
Weight	4.55 kg (10.03 lbs)
Installation	Standard 19-inch rack mounting
Environmental Limits	
Operating Temperature	Standard models: 0 to 50°C (32 to 122°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Regulatory Approvals*	
Safety	IEC 60950-1, UL 62368-1, IEC 62368-1
EMC	EN 55032/35, EN 61000-6-2/-6-4
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 1000 MHz: 20 V/m
	IEC 61000-4-3 RS: 1400 MHz to 2000 MHz: 10 V/m
	IEC 61000-4-3 RS: 2000 MHz to 2700 MHz: 5 V/m
	IEC 61000-4-3 RS: 5100 MHz to 6000 MHz: 3 V/m
	IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV
	IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV

	IEC 61000-4-6 CS: 10 V
	IEC 61000-4-8 PFMF: 100 A/m
Green Product	RoHS, CRoHS, WEEE
*Please check Moxa's website for the most up-to-date certification status.	
WARRANTY	5 years See **http://www.moxa.com/warranty**

ATTENTION

The WAC-2004A is NOT designed for use by the general public. A well-trained technician is required to safely deploy the WAC-2004A.

ATTENTION

There is a risk of explosion if the wrong type of battery is used. To avoid this potential danger, always be sure to use the correct type of battery. Contact the Moxa RMA service team if you need to replace your battery.

CAUTION

There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions on the battery.

Documents / Resources

[**MOXA WAC-2004A Series Rail Wireless Access Controller**](#) [pdf] Installation Guide
WAC-2004A Series, Rail Wireless Access Controller, WAC-2004A Series Rail Wireless Access Controller, Access Controller

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