ARS-7234-AC-T

Industrial IEEE 802.11a/b/g/n/ac Dual Radio Wireless AP/Client/Bridge/Repeater

Version 1.0

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User Manual

www.antaira.com

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FCC Notice

This equipment has been tested and found to comply with the limits for a Class-A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

CE Mark Warning

This is a Class-A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Industrial Ethernet Wireless APs

Hardware Manual

This manual supports the following models:

- ARS-7234-AC-T

Please check our website (www.antaira.com) for any updated manual or contact us by e-mail (support@antaira.com).

Table of Contents

1. Overview

Antaira Technologies' ARS-7234-AC-T is designed for industrial and enterprise wireless access applications. Embedded with the Qualcomm IPQ4029 Quad-Core chipset, it boasts network robustness, stability, and wider network coverage. Based on IEEE 802.11a/b/g/n/ac, the access point supports high-speed data transmission of up to 867Mbps.

The ARS-7234-AC-T is capable of operating in different modes, which makes it suitable for a wide variety of wireless applications including long-distance deployments. The unit also allows the user to position the wireless antenna in a better signal-broadcasting location for improved wireless coverage and signal strength or simply in a more convenient location.

1.1 Key Features

- System Interface/Performance
  - Quad-core, 4x ARM Cortex A7, 717MHz
  - WAN 1*10/100/1000Tx
  - LAN 1*10/100/1000Tx
  - WLAN supports concurrent 2.4G/5GHz Wi-Fi
- Power Input
  - DC 9~24V a 2-pin removal terminal block
- Operating Temperature
  - Extended operating temperature model (–T): -40°C ~ 70°C
- Case/Installation
  - IP-30 protection
  - DIN-Rail and wall mount design

1.2 Package Contents

- 1 - Quick Installation Guide
- 1 - ARS-7234-AC-T
- 1 - Wall Mounting Bracket Set with Screws
- 1 – Terminal Block

1.3 Safety Precaution

Attention

If the DC voltage is supplied by an external circuit, please use a protection device on the power supply input. Supply by UL Listed industrial use power. The industrial wireless AP's (access point) hardware specs, ports, cabling information, and wiring installation will be described within this user manual.

Warning Labels

The caution label means that you should check the certain information on user manual when working with the device. (Shown in *Figure 1*)

Figure 1: Caution Label

2. Hardware Description

2.1 Physical Dimensions

Figure 2.1, below, shows the physical dimensions of ARS-7234-AC-T

(W x H x D) is **46mm x 162mm x 110mm**

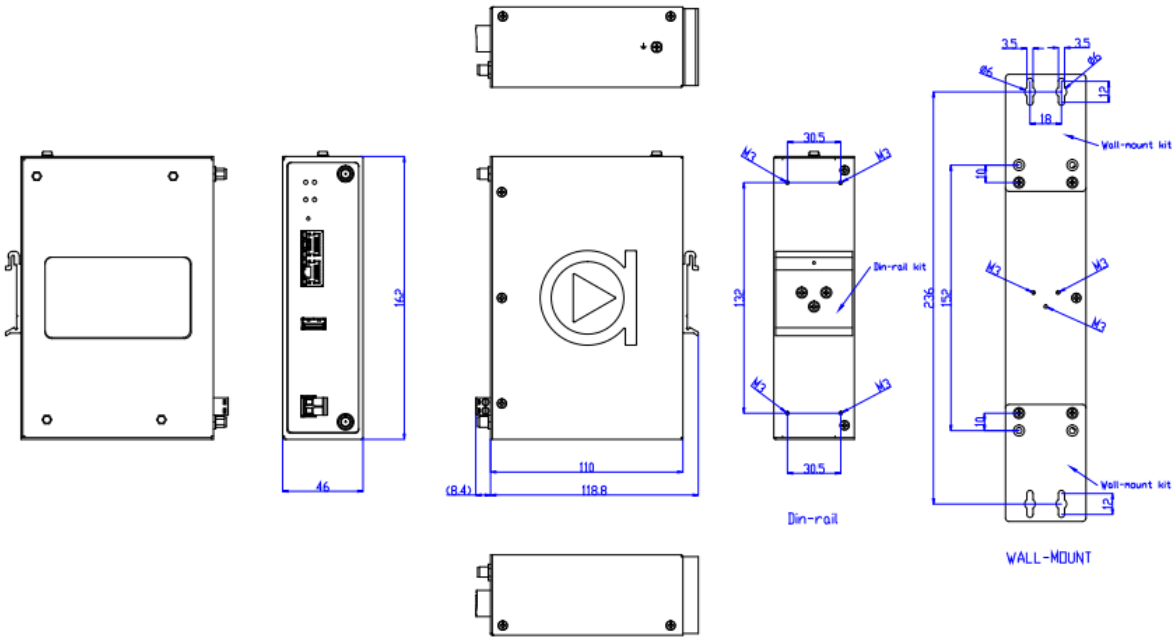

Figure 2.1

Physical dimensions of ARS-7234-AC-T

2.2 Front Panel

The front panel of the ARS-7234-AC-T can be seen below (*Figure 2.2)*.

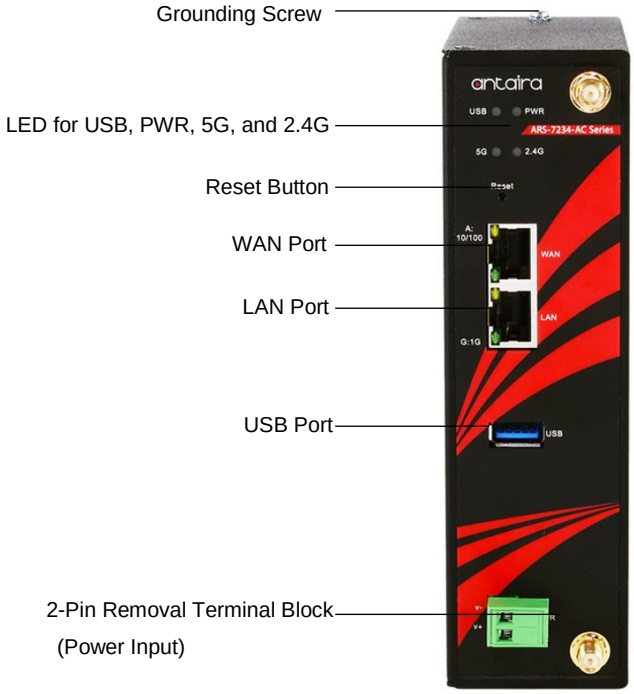

Figure 2.2
Front Panel

2.3 Top View

ARS-7234-AC-T's top panel is equipped with a grounding screw.

2.4 LED Indicators

There are LED light indicators located on the front panel of the industrial wireless AP that displays the network, power, and USB status. Each LED indicator has its own specific meaning, see below in *Table 2.4*.

LED	Color	Description	
Power	Green	On	Power input is active
		Off	Power input is inactive
2.4G	Green	On	Linked to 2.4GHz radio
		Flashing	Networking is active
		Off	2.4GHz radio is off / not enabled
5G	Green	On	Linked to 5GHz radio
		Flashing	Networking is active
		Off	5GHz radio is off / not enabled
USB	Green	On	Linked to USB
		Flashing	TXD / RXD
		Off	Connection is off / not enabled
WAN Port / LAN Port	Green (1G) Amber(10/100M)	On	Link Up
		Flashing	Networking is active
		Off	No Link

Table 2.1

LED Indicators

Press and hold the **Reset** button for less than 5 seconds to reboot the device. Press and hold the **Reset** button for more than 5 seconds to Factory Reset the device.

2.5 Ethernet Ports

- **RJ-45 Ports**

RJ-45 Ports (Auto MDI/MDIX): The RJ-45 port is auto-sensing for 10/100Base-Tx or 1000Base-Tx device connections. Auto MDI/MDIX means that the wireless AP can connect to another switch or workstation without changing the straight-through or crossover cabling. See the figures shown below for the straight-through and crossover cabling schematics.

Pin	Label
1	TP0+
2	TP0-
3	TP1+
4	TP2+
5	TP2-
6	TP1-
7	TP3+
8	TP3-

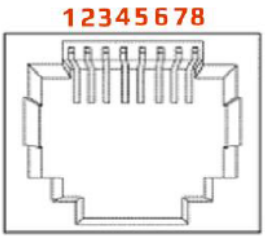

Figure 2.3
RJ-45 Ethernet Port Pin

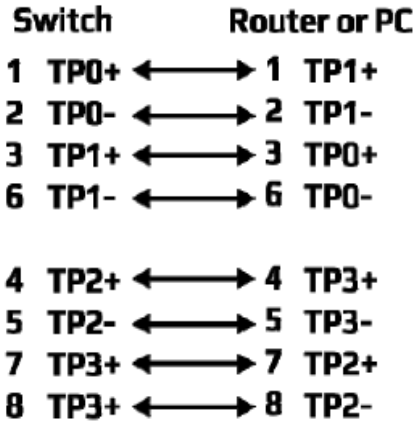

Figure 2.4
Straight-Through Cables Schematic

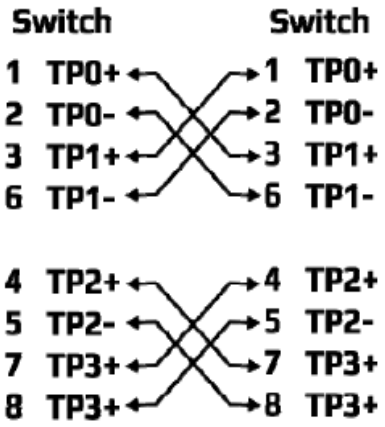

Figure 2.5
Crossover Cables Schematic

2.6 Cabling

- Twisted-pair segments can be connected with an Unshielded Twisted Pair (UTP) or Shielded Twisted Pair (STP) cable. The cable between the equipment and the link partner (wireless AP, switch, hub, workstation, etc.) must be less than 100 meters (328 ft.) long.

2.7 Wireless Antenna

The 2.4GHz/5GHz antennas are connected with SMA-Type connectors. Other external antennas can be used.

2.8 Wiring the Power Inputs

Please follow the steps below to insert the power wire.

1. Insert the positive and negative wires into the V+, V- contacts on the terminal block connector as shown below in *Figure 2.8*.

Figure 2.8

Power Terminal Block

2. Tighten the wire-clamp screws to prevent the wires from loosening, as shown below in *Figure 2.9*.

Figure 2.9

Power Terminal Block

2.9 Grounding Note

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. The grounding screw symbol is shown blow in *Figure 2.10*.

Figure 2.10
Grounding screw

Caution: Using a shielded cable achieves better electromagnetic compatibility.

3. Mounting Installation

3.1 DIN-Rail Mounting

The DIN-Rail is pre-installed on the industrial wireless AP from the factory. If the DIN-Rail is not on the product, please refer to *Figure 3.1* to learn how to install the DIN-Rail on the product.

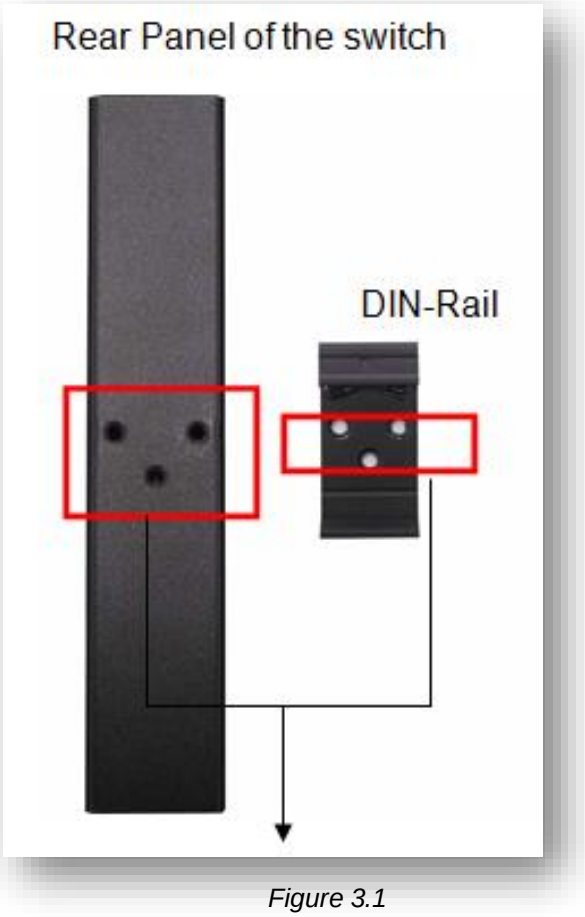

Figure 3.1

The Rear Side of the wireless AP and DIN-Rail Bracket

Follow the steps below to learn how to hang the industrial wireless AP.

1. Use the screws to install the DIN-Rail bracket on the rear side of the industrial wireless AP.

   Caution: The torque for tightening the screws on the device is 3.5 in-lbs.

2. To remove the DIN-Rail bracket, do the opposite from step 1.
3. After the DIN-Rail bracket is installed on the rear side of the wireless AP, insert the top of the DIN-Rail onto the track as shown below in *Figure 3.2*.

Figure 3.2

Insert on the DIN-Rail

4. Lightly pull down the bracket onto the rail as shown below in *Figure 3.3*.

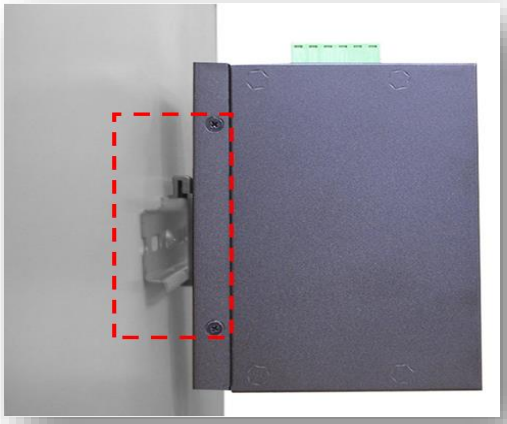

Figure 3.3

Secure on to the DIN-Rail

5. Check if the bracket is mounted tightly on the rail.
6. To remove the industrial wireless AP from the rail, do the opposite from the above steps.

3.2 Wall Mounting

Follow the steps below to mount the industrial wireless AP using the wall mounting bracket as shown below in *Figure 3.4*.

Caution: "Wall" means industrial control panel wall.

1. Remove the DIN-Rail bracket from the industrial wireless AP by loosening the screws.
2. Place the wall mounting brackets on the top and bottom of the industrial wireless AP.
3. Use the screws to screw the wall mounting bracket on the industrial wireless AP.

Caution: The torque for tightening the screws on the device is 3.5 in-lbs.

4. Use the hook holes at the corners of the wall mounting bracket to hang the industrial wireless AP on the wall.

5. To remove the wall mount bracket, do the opposite from the steps above.

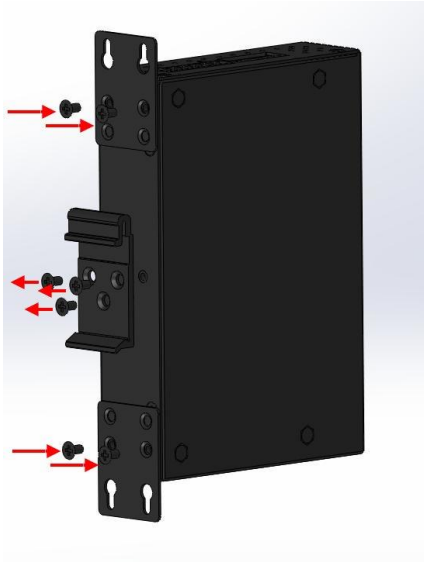

Figure 3.4

Remove DIN-Rail Bracket

Below, in *Figure 3.5* are the dimensions of the wall mounting bracket.

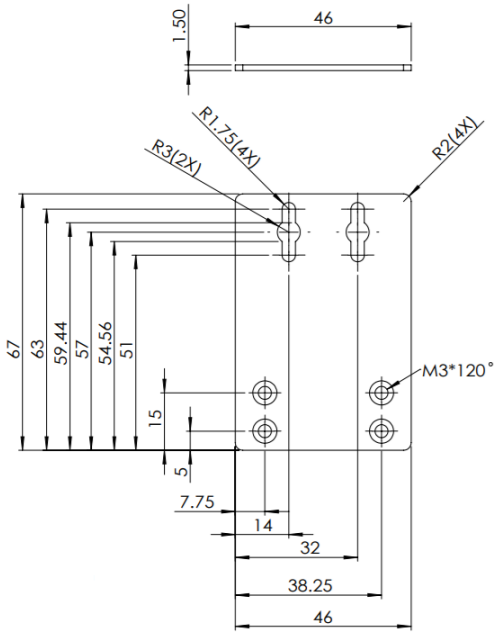

Figure 3.5

Wall Mounting Bracket Dimensions

4. Hardware Installation

4.1 Installation Steps

This section will explain how to install Antaira Technologies' ARS-7234-AC-T.

Caution:

1. This device is intended for use indoor and at altitudes up to 2000 meters.
2. This device is intended to be installed in an industrial control enclosure and panel.

Installation Steps

1. Unpack the industrial wireless AP from the original packing box.
2. Check if the DIN-Rail bracket is screwed on the industrial wireless AP.
    a. If the DIN-Rail is not screwed on the industrial wireless AP, please refer to the **DIN-Rail Mounting** section for DIN-Rail installation.
    b. For wall mounting, please refer to the **Wall Mounting** section for wall mounting installation.
3. For DIN-Rail or wall mounting, please refer to the **Mounting Installation** section.
4. Power on the industrial wireless AP and then the power LED light will turn on.
    a. For wiring power, please refer to the **Wiring the Power Inputs** section.
    b. Please refer to the **LED Indicators** section for LED light indication.
5. Prepare the twisted-pair, straight-through category 5 cable for Ethernet connection.
6. Insert one side of the RJ-45 cable into the wireless AP's Ethernet port and on the other side into the networking device's Ethernet port, e.g. switch, PC, or server. The Ethernet port's (RJ-45) LED on the industrial wireless AP will turn on when the cable is connected to the networking device.
    a. Please refer to the **LED Indicators** section for LED light indication information.
7. When all connections are set and the LED lights all show normal, the installation process is complete.

4.2 Maintenance and Service

- If the device requires servicing of any kind, the user is required to disconnect and remove it from its mounting. The initial installation should be done in a way that makes this as convenient as possible.
- Voltage/power lines should be properly insulated as well as other cables. Be careful when handling them so as to not trip over.

- Do not under any circumstance insert foreign objects of any kind into the heat dissipation holes located in the different faces of the device. This may not only harm the internal layout, but might cause harm to user as well.
- Do not under any circumstance open the device for any reason. Please contact your dealer for any repair needed or follow the instructions within the manual.
- Clean the device with dry soft cloth.

5. Troubleshooting

- Always verify the right power cord or adapter is being used. Never use a power supply or adapter with a non-compliant DC output voltage or it will burn the equipment.
- Select the proper UTP or STP cable in order to construct the network. Use an Unshielded Twisted-Pair (UTP) or Shield Twisted-Pair (STP) cable for RJ-45 connections: 100Ω Category 5e for 10/100/1000Mbps. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).
- **Diagnosing LED Indicators:** To assist in identifying problems, the wireless AP can be easily monitored with the LED indicators which help to identity if any problems exist.
    - Please refer to the **LED Indicators** section for LED light indication information.
- If the power indicator LED does not turn on when the power cord is plugged in, the user may have a problem with the power cord. Check for loose power connections, power losses, or surges at the power outlet.
    - Please contact Antaira for technical support if the problem cannot be resolved.
- If the industrial wireless AP LED indicators are normal and the connected cables are correct but the packets still cannot transmit, please check the system's Ethernet devices' configuration or status.

6. Technical Specifications

Table 6.1 has the technical specifications for Antaira Technologies' ARS-7234-A-T:

Standards	IEEE 802.11a/b/g/n/ac	
	IEEE 802.3	10Base-T Ethernet
	IEEE 802.3u	100Base-TX Fast Ethernet
	IEEE 802.3ab	1000Base-T Gigabit Ethernet
WLAN Operation Mode	AP/Client/Bridge/Repeater	
Protocol	IP, TCP, UDP, ARP, BOOTP, ICMP, HTTP, HTTPS, DNS Proxy, NAPT, SNTP, RADIUS, Dynamic DNS, SMTP, SNMP	
WiFi Encryption	WEP, WPA, WPA2, TKIP, AES	
Port Interface	Ethernet (RJ45) Port	WAN: 10/100/1000Mbps LAN: 10/100/1000Mbps
	WLAN	Dual Radio 2.4GHz/5GHz concurrent
	Antenna	Two External SMA Antennas: 3dBi for 2.4GHz, 5dBi for 5GHz (MIMO support, Dual 2Tx/2Rx)
Frequency Range	IEEE 802.11b/g/n (2.4GHz)	US/TW : 2.412G~2.462GHz EU/AU/NZ : 2.412G~2.472GHz
	IEEE 802.11a/n/ac (5GHz)	US/AU/NZ : 5.15G~5.25GHz, 5.725G~5.85GHz EU : 5.15G~5.25GHz TW : 5.15G~5.35GHz , 5.725G~5.85GHz
Mechanical Characteristics	Housing	Metal, IP30 protection
	Dimension	46 x 162 x 110 mm (W x H x D)
	Weight	Unit Weight: 1.622 lbs. Shipping Weight: 2.336 lbs.
	Mounting	DIN-Rail Mounting, Wall Mounting
Power Requirement	Input Voltage	9~24VDC Redundant Input
	Power Connection	1 removable 2-contact terminal block
	Reverse Polarity Protection	Present
	Power Consumption	18.9 Watts
Environmental Limits	Operating Temperature	EOT: -40 to 70˚C (-40 to 158°F)
	Operating Humidity	5% to 95% (Non-Condensing)
	Storage Temperature	-40 to 85˚C (-40 ~ 185°F)
Regulatory Approvals	EMI	FCC Part 15 Subpart B CE EN 55032, EN301489-1/-17 FCC Part 15 subpart B CNS13438 AS/NZS CSIPR 32
	EMS	CE EN 55024 IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS),

		IEC61000-4-8 (Magnetic Field) IEC61000-4-11
	RF	FCC Part 15 Subpart C/E CE-RED EN300328 EN301893 EN301489-1/-17 LP0002 AS/NZS 4268
	RF Radiation Exposure	EN62311 FCC Part 2.1091
	Safety	EN60950-1 CNS14336-1
	Green	RoHS Compliant
	Certifications	FCC, CE, NCC, RCM

Table 6.1

Technical Specifications

Antaira Customer Service and Support

(Antaira US Headquarter) + 844-268-2472

(Antaira Europe Office) + 48-22-862-88-81

(Antaira Asia Office) + 886-2-2218-9733

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