



Quick Installation Guide

Industrial Secure Cellular Router AP322

www.avcomm.us

Overview

AP322 is a smart solution for smart city and IIoT applications as a LTE/NBLoT Wi-Fi dual radio field router, or simply a single high speed Wi-Fi AP. The router supports LTE/NBLoT to Wi-Fi redundancy and auto offload to guarantee high speed. RS232/422/485 port is able to connect to local serial devices over cellular and Ethernet network. To safeguard cyber security, security features such as Firewall, OpenVPN, GRE tunnel are supported. The embedded MQTT and RESTful API enables public cloud integration such as AWS or Azure.

Model Name	Description
AP322-LTE	Industrial Wireless IIoT Secure Routing Gateway, 1GE WAN+1GE LAN, 2x COM, 1x USB, 1x SD, 1x SIM, LTE Cat.4, 12~48VDC
AP322-LTE-D	Industrial Wireless IIoT Secure Routing Gateway, 1GE WAN+1GE LAN, 2x COM, 1x USB, 2x SIM, GPS, LTE Cat.4, 12~48VDC
AP322-WLAN	Industrial Wireless IIoT Secure Routing Gateway, 1GE WAN+1GE LAN, 2x COM, 1x USB, 1x SD, Wi-Fi 2.4G 11n/5G 11ac, 12~48VDC
AP322R-WLAN-LTE	Industrial Wireless IIoT Secure Routing Gateway, 1GE WAN+1GE LAN, 2x COM, 1x USB, 1x SD, LTE, Wi-Fi 2.4G 11n/5G 11ac, 12~48VDC

Package Checklist

- 1 x Product Unit
- 1 x 6-pin Removable Terminal Connector
- 2 x LTE Antenna, Black + 2 x WIFI Antenna, White
- 1x Din Clip
- 1 x Quick Installation Guide

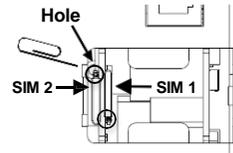
Optional Accessory (for detailed information please refer to the Datasheet)

Installation

SIM Card Slot

To install/uninstall SIM card:

1. Use screwdriver to loosen screws and remove SIM cover.
2. Insert a paper clip or a SIM-eject tool into the hole beside the SIM socket. Push in towards the device, but don't force it.
3. (When install) Draw out SIM tray and install SIM card on top side of tray (When uninstall) Draw out SIM tray and uninstall SIM card
4. Insert tray back to SIM socket and reattach SIM cover.



Warning: Be careful when install the SIM Card, wrong installation procedure will cause damage. Make sure the SIM Card is facing the correct position.

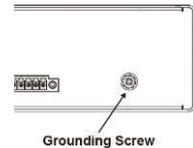
DIN Rail mount

To mount the router on the DIN Rail track, insert the upper end of the DIN-Rail clip into the back of the DIN-Rail track from its upper side and lightly push the bottom of the DIN-Rail clip into the track. The DIN Rail should comply with DIN EN50022 standard. Using wrong DIN rail may cause unsafe installation.



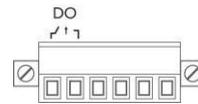
Grounding Screw

The grounding screw is located on the bottom side of the router. For avoiding system damage by noise or electric shock, establish a direct connection between the ground screw and the grounding surface prior to connecting devices.



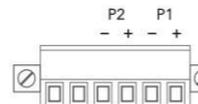
Wiring the Relay Output

The relay output of the 2-pin terminal block connector are used to detect user-configured events. The two wires attached to the fault contacts form a close circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains opened.



Wiring the Power Input

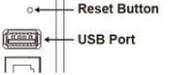
- 1) Insert the positive and negative wires into the V+ and V- contact on the terminal block connector.
- 2) Tighten screws when the wire is connected.
- 3) Connect the power wires to suitable DC Switching type power supply.



USB Port (Not available for C Series)

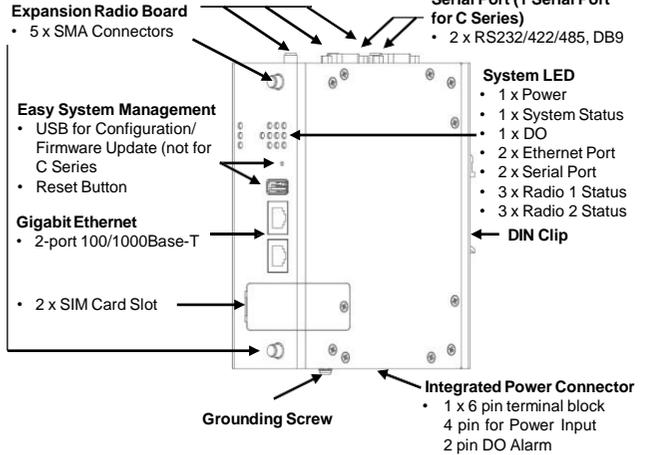
Use the USB port in order to save or restore the configuration and upload the firmware upgrade file.

For further configurations, please refer to User Manual.

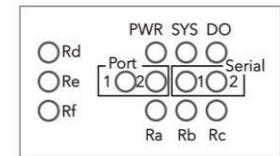


Appearance

AP322



LED Indication



LED	Status	Description
PWR	Green On	DC-IN Power is On
	Off	No Power in DC-IN
System LED	Green On	Ready
	Off	Not Ready
Alarm (DO)	Red On	Any failures in port link by SW control
	Off	No failure occurs
Giga Ethernet	Green On	Links established
	Green Blinking	Packets transmitting/receiving
	Off	Link is inactive
Serial 1	Green Blinking	Packets transmitting/receiving
Serial 2	Green Blinking (C Series: Off)	Packets transmitting/receiving (C Series: Reserved)

Radio LED

LED		LTE Status	WLAN Status
Radio 1	Ra	-	AP: Green On Disable/Station: Off Connected: Green Blinking
	Rb	-	Reserved
	Rc	-	Reserved
Radio 2	Rd	SIM detected: Green On SIM not detected: Off	-
	Re	4G connection: Green On 2G/3G connection: Green Blinking Disconnection: Off	-
	Rf	Base station connected: Green Blinking On for 2 second period Base station disconnected: Green Blinking Off for 2 second period	-

• Antenna

The device supports up to 5 antennas sockets. AVCOMM provides the optional accessories, where the black antenna belongs to LTE and the white antenna belongs to Wi-Fi. Below is the placement of antennas.

	AP322-LTE	AP322R-WLAN+LTE
ANT 1	LTE-Main	Wi-Fi 1
ANT 2	LTE-Diversity/ GPS (by model)	Wi-Fi 2
ANT 3	-	LTE-Main
ANT 4	-	GPS (by model)
ANT 5	-	LTE-Diversity

• Safety Precautions

- **Statement regarding restricted access:**  The equipment is intended to be used in a restricted access location. **Only operate the device at the specified ambient temperature and humidity.**
- **Switch ON Notice:** Only switch on the supply voltage while the housing is closed, the input voltage is correct and the terminal blocks are wired correctly.
- **Power Specification:** Follow the power installing instruction of the user manual, it indicates the available input voltage range, V+/- pin assignment, power consumption and other notice.

- Connecting power with reserve polarity or using the wrong type of power supply may damage the equipment. Make sure that the power supply is connected correctly and of the recommended type.
- Never install or work on/with the equipment or the cabling during the period of its lightning activity.
- **Grounding:** The well grounding is important for EMC protection and make sure everything is done correctly before power on the system.

• Management

This device supports both in-band and out-of-band network management. The user can either configure the device through the user friendly Web/HTTPS management or remotely manage the device through the network Telnet/SSH.

1. Preparation for **Web management:** First of all, verify that device is properly installed in the network and that every PC of this network can access the router through the web browser (Google Chrome, Internet Explorer, Mozilla Firefox).
 - Type http://IP_address in your browser (the default IP address is <http://192.168.10.1/>)
 - Key in the user name and password in login screen. The default user name and password is admin.
 - After you click OK, the Welcome page of the web-based management interface will appear.
 - On the left side you can see the list of software features, on the right side – available settings.
- ◆ To link with the device, please make sure that the IP Address of the PC is located in the same subnet (**192.168.10.x**).
2. Preparation for **Telnet/SSH management:** You can connect to the device by Telnet and the command lines. Below are the steps to open Telnet connection to the router.
 - Start -> Open Command prompt ->Enter
 - Type the Telnet 192.168.10.1 (or the IP address of the router). And then press Enter.

SSH (Secure Shell)

The device also supports SSH console. You can remotely connect to the router to access command line interface. The SSH connection can secure all the configuration commands you sent to the switch.

SSH is a client/server architecture while the Router is the SSH server. When you want to make SSH connection with the switch, you should download the SSH client tool first.

SSH Client

There are many free, sharewares, trials or charged SSH clients you can find on the internet.

- ◆ **For further feature configurations, please refer to User Manual.**

• Support

At AVCOMM, you can use the online service forms to **request the support**. The submitted forms are stored in server for AVCOMM team member to assign tasks and monitor the status of your service. Please feel free to write to info@avcomm.us if you encounter any problems.

• Warranty

5-year Global warranties are available for AVCOMM products assuring our customers that the products shall remain free from defects in workmanship or materials and conform in all material respects to AVCOMM specifications, or Purchaser's supplied and accepted specifications. The warranty is limited to the repair and/or replacement, at AVCOMM' sole discretion, of the defective product during its warranty period. The customer must obtain a **Return Merchandise Authorization (RMA)** approval code prior to returning the defective Product to AVCOMM for service. The customer agrees to prepay shipping charges, to use the original shipping container or equivalent, and to ensure the Product or assume the risk of loss or damage in transit. Repaired or replaced products are warranted for ninety (90) days from the date of repair or replacement, or for the remainder of the original product's warranty period, whichever is longer.

• Disclaimer

AVCOMM reserves the right to make changes to this QIG or to the product hardware at any time without notice. It is the user's responsibility to determine whether there have been any such updates or amendments herein. Defects, malfunctions, or failures of the warranted Product(s) caused by damage resulting from unforeseeable incidents (such as lightnings, floods, fire, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances and surge, host computer malfunction and virus, incorrect power input, or incorrect cabling, incorrect grounding and damages caused by misuse, abuse and unauthorized alteration or repair are not warranted.