AVCOMM™ 恩创®

Quick Installation Guide

Industrial Compact
LTE/ WIFI Router
AP222

www.avcomm.cn

· Overview

AP222 is a smart solution for smart city and IIoT applications as a LTE/WIFI dual radio field IIoT router. The router supports serial RS232/422/485 over LTE/WIFI communication for field sensor/, PLC to cloud data aggregation. The embedded MQTT and RESTful API enables public cloud integration such as AWS or Azure. The private cloud platform ATMS and ATMS OTA can also be setup for instant and secured access to receive data or manage devices remotely. To safeguard cyber security, security features such as Firewall, OpenVPN, GRE tunnel are also supported.

Model Name	Description
AP222-W-L	Industrial Wireless IIoT Field Routing Gateway, 2FE+1COM, SD, 802.11b/g/n WLAN, LTE-E, 1SIM, FDD B1/3/5/7/8/20, TDD B38/40/41,2个 10/100Base-TX RJ45, 1 WLAN+1 LAN, 1 DB9 RS232/422/485, 1×SIM＆1×MicroSD, 9~30VDC，-40°C~70°C，IP30
AP222-W	Industrial Wireless IIoT Field Routing Gateway, 2FE+1COM, SD, 802.11b/g/n WLAN, 2个 10/100Base-TX RJ45, 1 WLAN+1 LAN, 1 DB9 RS232/422/485, 1×SIM＆1×MicroSD, 9~30VDC，-40°C~70°C，IP30
	*LTE-AU/LTE-U/LTE-CN or other region by request *GPS support by request *Also apply to AP222.

· Package Checklist

- • 1 x Product Unit
- • 1 x 6-pin Removable Terminal Connector
- • 2 x LTE Antenna, Black + 2 x WIFI Antenna, White (by model)
- • 1 x DIN rail kit
- • 1 x Quick Installation Guide

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

· Installation

SIM Card Slot & Micro SD Card Slot

To install/uninstall SIM card:
1. Use screwdriver to loosen screws and remove SIM/SD 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/SD cover.

Top Side　**Hole**　**SIM**　**MicroSD**
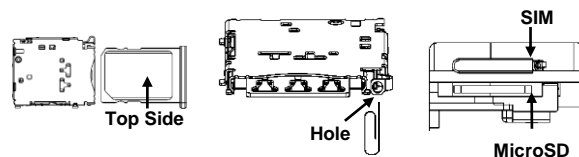
⚠️ **Warning**: *Sim tray is fool-proof design. Push tray in wrong direction into the SIM socket could cause damage to the device.*

To install/uninstall MicroSD card:
1. Plug MicroSD card into the socket. You will hear "click" when installed.
2. Push in on the SD card and then remove.

Wall mount

Two wall mounting plates are installed at the left and right side of the switch. Use the two hook holes at the corners of each wall mounting plate or the middle hole to hang the switch on the wall them then screw tightly.
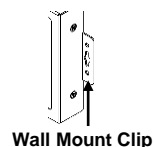
Wall Mount Clip

DIN Rail mount

For the DIN Rail mount, attach the DIN Rail Clip to the two wall mount plates. Please check the Optional Accessory list.

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.

Grounding Screw
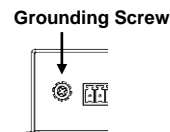
### No support negative power structure install

⚠️ **Warning**: *If power positive connects with device ground, it will short the power system and damage the device..*

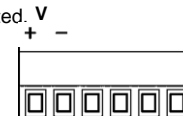## Wiring the Digital Input/ Digital Output

To wire the DI/DO on the Terminal block, use screwdriver to loosen screws, insert the positive and negative wires into the DI+/DO+ and DI-/DO-contact and then tighten screws after the DI wire is connected.
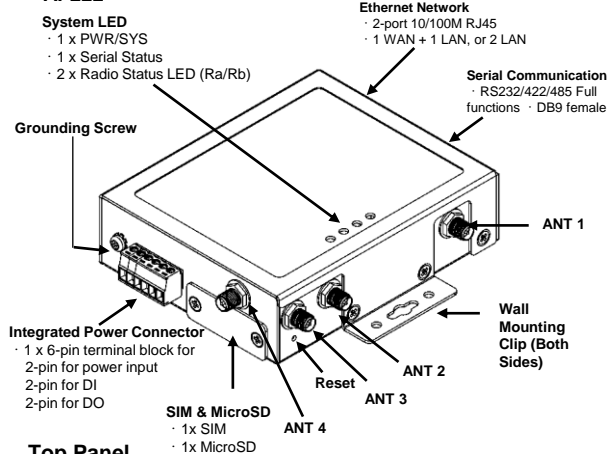DI: High: DC 2~30V   Low: DC 0~1V
DO: 0.1A/30V

DO　DI
+ − + −
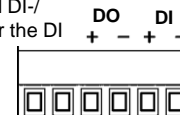
Wiring the Power Input (9~30V)

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

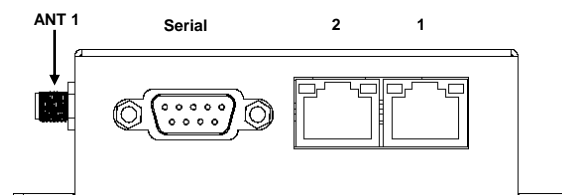**V**
+ −

· Appearance

AP222

System LED
· 1 x PWR/SYS
· 1 x Serial Status
· 2 x Radio Status LED (Ra/Rb)

Ethernet Network
· 2-port 10/100M RJ45
· 1 WAN + 1 LAN, or 2 LAN

Serial Communication
· RS232/422/485 Full functions · DB9 female

Grounding Screw

ANT 1

Wall Mounting Clip (Both Sides)

Integrated Power Connector
· 1 x 6-pin terminal block for
2-pin for power input
2-pin for DI
2-pin for DO

SIM & MicroSD
· 1x SIM
· 1x MicroSD

Reset

ANT 2　**ANT 3**　**ANT 4**

Top Panel

ANT 1　**Serial**　**2**　**1**

Bottom Panel

Grounding Screw　**SIM Card Slot**　**ANT 4**　**ANT 3**

6-pin Terminal block　**SD Card slot**

www.avcomm.cn

Serial Port
Full Pin RS232, RS422, RS485 DB9 socket.

DB9 Female
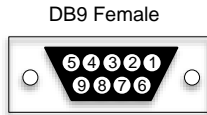
PIN	RS232	RS485-4w/422	RS485-2w
1	DCD	TX-	Data-
2	TXD	RX+	-
3	RXD	TX+	Data+
4	DSR	-	-
5	GND	GND	GND
6	DTR	RX-	-
7	CTS	-	-
8	RTS	-	-
9	RI	-	-

· LED Indication

PWR/SYS ○
Ra ○
Rb ○
Serial ○

LED	Status	Description
PWR/SYS	Green On	DC-IN Power is On
	Green Blinking	Booting (1sec period) Firmware Updating (300ms period)
	Off	No Power in DC-IN
Serial LED	Green Blinking	Packets transmitting/receiving
	Off	Link is inactive
Ethernet Port LED (Port 1~2)	Green On	Links established
	Green Blinking	Packets transmitting/receiving
	Green Off	Link is inactive

Radio LED

Radio	Status
Ra	4G/NBIoT Connection: Green On
	2/3G connection: Green Blinking
	Disconnected: Off
Rb	AP mode: Green On
	Station mode connected: Green Blinking
	Station mode/radio disable: Off

· Antenna

The device supports up to 4 antennas sockets. AVCOMM provides the optional accessories, where the antenna color is black for the LTE and white is for the WIFI.

	AP222-W	AP222-W-L	AP222-W-NB1-M1
ANT 1	WIFI 1	WIFI 1	WIFI 1
ANT 2	--	LTE-Main	LTE-NBIoT/M1
ANT 3	WIFI 2	WIFI 2	WIFI 2
ANT 4	--	LTE-Div	--

· Safety Precautions

➢ Turn off DC power input source before connecting the DC Power supply module to the terminal block connectors. Do not turn-on the source of DC power module and make sure all connections were well established, then power on the DC source to powering the device.
➢ Do make sure that models connect to the corresponding supply voltage. The device is to be supplied by Limited Power Supply.
➢ The router is designed for Industrial IoT, ITS, wayside surveillance application.
➢ Never install or work on/with the equipment or the cabling during the period of its lightning activity.

· 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, 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 username and password in login screen. The default username and password is **admin**.
• After you click Login, a page that request to change the password will appear. Then you can enter the new password. Click Submit to apply the changes. After you change the password, the welcome page of the web-based management interface will appear.

◆ 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.

◆ **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 sales@n-tron.com.cn 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 lightings, 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.