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Quick Installation Guide

Embedded Smart City Box
AP422-SCB

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· **Overview**

The AP422-SCB are fully integrated communication systems within an IP67 for Smart City and Industrial Internet of Thing (IIoT) applications. The Gigabit 802.3bt ultra PoE /802.3at PoE plus ports, Fiber SFP, Serial, Voice, DI, DO are protected by weatherproof cable gland connectors. It is greatly flexible with different power input/output, internal USB, SD , Ethernet and mCPIe socket for wireless expansion. Comparing with traditional cabinets, the AP422-SCB save a lot of time and cost for system integration. The embedded MQTT and RESTful API enables public cloud integration such as AWS or Azure. The private cloud platform ATMS can also be deployed for instant and secured access to for surveillance and IIOT management. With the versatile AC/DC/Solar power sources, you can easily install the box on roadside power tower, streetlight or wall mount on the wall/roof in the field.

Model Name	Description
AP422-SCB	Industrial Wireless IIoT Smart City Box, IP67, 4GT PoE + 2GF, 1GT WAN, IIoT interfaces, DC or AC Input (IIoT Interfaces: External 1xCOM,2xDI,2xDO,Voince; Internal 1GT WAN, 1xCOM, 1xUSB, 1xSD)

· **Package Checklist**

- 1 x Product Unit (without SFP transceiver)
- 1 x Quick installation Guide
- 1 x Pole Mounting kit
- 1 x Cable Gland Assembly Pack
- *10 xM20 + 2 xM25 Fiber Cable Glands for AP422-SCB package including the Sealing Insert, Clamping Claw, Sealing Nut*
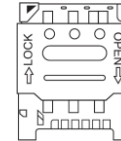
· **Installation**

Nano SIM Card Slot
There are two SIM Card Slots are used to insert the cellular card, they are located under the AP422-SCB cover. The SIM card is supported redundant SIM.
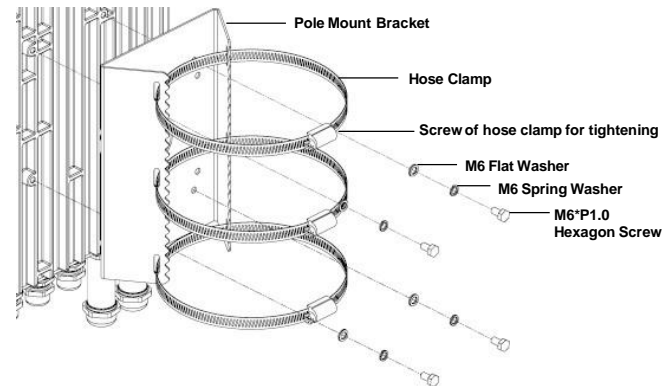
⚠ *Warning: Be careful when install the SIM Card, wrong installation procedure will cause damage. Make sure the SIM card facing the correct position.*

POLE MOUNTING
The AP422-SCB has been designed to operate in a vertical position with the antennas are facing up and all of the connectors are facing down.
1.Attach the pol mount bracket to the Smart City Box using the Hexagon screws. Screws provided are for general use and could not be valid for every surface. Screw all of the screws tightly.
2. Attach the bracket to the mast or pole by using the hose clamps.

- Pole Mount Bracket
- Hose Clamp
- Screw of hose clamp for tightening
- M6 Flat Washer
- M6 Spring Washer
- M6*P1.0 Hexagon Screw

WIRING THE POWER INPUT & OUTPUT
1.Insert positive and negative wires into V+ and V-contacts respectively of the M12 connector (Plug-side).
2. Tighten the nuts to prevent the loosening of the M12 connectors.
3.Power input supports power redundancy and polarity-reverse protection functions.

Power Input
AC :100~240V AC

Male M12 Connector	Pin	Description
PWR Input L/V+ — N/V-	1	V+
	2	
	3	V-
	4	

Power Output
24VDC, 1.25A max.

Female M12 Connector	Power	Pin	Description
DC24V Output	1	2	V+
		3	V-
	2	1	V+
		4	V-

CABLE INSTALLATION
Since AP422-SCB uses the M20 waterproof interface. Open the M20 interface, pass the cable through the M20 interface and user can start install the cable. This procedure must be applied to install all of the cables such as RJ-45, RJ-12, SFP transceiver, and etc.

WIRING THE SERIAL PORT
This device also equipped with serial port which are RS232/422/485 ports that able to connect to local serial devices. To wire the serial device, we may use the RJ-45 Connector, M20 Cable Grand for external   installation (Refer to the Appearance part).

| RJ45		RS-232	RS-422/485 (4 wire)	RS-485 (2 wire)
	1	DSR		
	2	RTS		
	3		GND	GND
	4	TxD	RX+	
	5	RxD	TX+	Data+
	6	DCD	TX-	Data-
	7	CTS		
	8	DTR	RX-	

WIRING THE AUDIO CONNECTOR
AP422-SCB is provided with audio feature. The audio connector, it uses the RJ12 for any kind of audio adapter. To use this feature connect the RJ12 to the Voice Port. (refer to the Appearance part).

| Pin	Description
1	AGND
2	Mic L
3	Speaker Amp
4	Speaker
5	Mic R
6	Not Used

WIRING THE DIGITAL OUTPUT

0.5A/24VDC

Attached two wires 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 and triggered the alarm on.

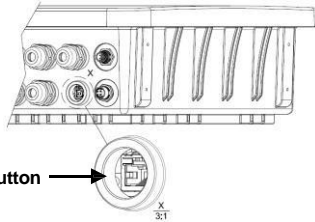**DO1 DO2**
+ - + -
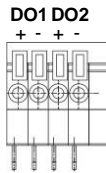
WIRING THE DIGITAL INPUT

Low: 0~10V, High: 11~30V

4-pin terminal block is provided to wire the DI, the push lock connection is supported for installing the wire easily. Push the orange panel to open the contact, insert the positive and negative wires into the + and - contact and release it to lock the wire after the DI wire is inserted.

DI1 DI2
+ - + -
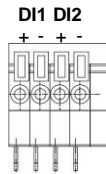
· Reset Button

A reset button has been provided in the event that a full hardware reset of the device is required. The reset button is located inside the port 1 M20 interface near the 1GbE port. Open the interface so the reset button would be appeared. For more detail please see the Appearance section.
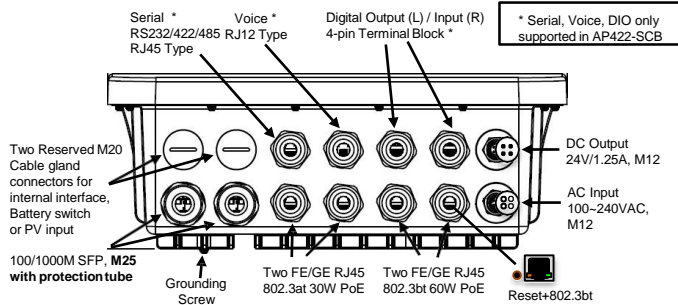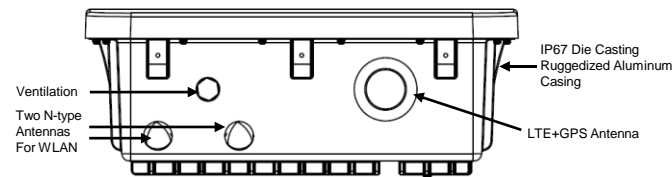
Reset Button

· Appearance

AP422-SCB

Front Panel

Serial *
RS232/422/485
RJ45 Type

Voice *
RJ12 Type

Digital Output (L) / Input (R)
4-pin Terminal Block *

* Serial, Voice, DIO only supported in AP422-SCB

Two Reserved M20 Cable gland connectors for internal interface, Battery switch or PV input

100/1000M SFP, **M25 with protection tube**

Grounding Screw

Two FE/GE RJ45 802.3at 30W PoE

Two FE/GE RJ45 802.3bt 60W PoE

Reset+802.3bt

DC Output 24V/1.25A, M12

AC Input 100~240VAC, M12

NOTE: The grounding screw is located on the bottom side of the AP422-SCB. 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.

Back Panel

Ventilation

Two N-type Antennas For WLAN

IP67 Die Casting Ruggedized Aluminum Casing

LTE+GPS Antenna

*Antenna and module are Optional Accessories (for detailed information please refer to the Datasheet).

· LED Indicator

LED	Status	Description
Ethernet Port (Port1-4)	Green On	Links established
	Green Blinking	Packets transmitting/receiving
	Green Off	Link is inactive
Serial	Green Blinking	TX/RX transmission

· Beeper Indicator

Beep	Description
Continuous Di/Da Short Beep	Power On & System Boot
Continuous Beep over 1 minute	System Boot FAILURE

· Safety Precautions

➢ The major power input is AC. Turn off AC power input source before connecting the Power supply module to M12 power connectors.

➢ Do make sure that models connect to the corresponding supply voltage. The device is to be supplied by Limited Power Supply. The relay contact supports 0.5 A current, DC 24V.

➢ Please make sure all of the installations are done, before connecting the Power Supply.

➢ The device can be installed on roadside power tower, light tower or wall mount on the wall/roof in the field.

➢ For ventilation, if the customer needs to install the AP412-SCB underwater, paste the silicone paste for vent or replace the airtight ventilation cover. **For more information please contact our sales.**

➢ Do not open the cover or install Wireless/LTE module without the original manufacturer's consent.

· 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.

• 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 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.

• 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

· 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