



Est. USA 1981

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SP+ External Modem QuickStart Manual



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Introduction

In this manual we will talk about the general features of the External Modem. We will not go into details of modem configuration or notification setup, as these are the same for other modems available for the sensorProbe+ family. Please refer to the manual of the SP+ Internal Modem for more information.



What is the External Modem?

This modem is available only for SPXN and SP2+ RevG units, which have a dedicated port for connecting an external modem. It is ideal for customers who require cellular communications as either primary or backup connection.

It supports SMS, e-mail alerts and voice calls* as well as access to the webUI or communications via VPN to AKCPro Server.

An optional GPS antenna (as seen on the picture above) can be added for mobile asset tracking and monitoring or automatic geo locating static sites on maps in AKCPro Server.

*voice calls are via third party e-mail to voice call gateway

What's the difference between the External Modem and the Internal Modem?

The Internal Modem can be selected as an option for any SP2+ or SPX+ units, and supports all modem functionality without restrictions.

The External Modem is available only for SPXN and SP2+ units, which have a dedicated port for connecting an external modem. It only supports voice calls via third party e-mail to voice call gateway.

How to identify SP2+ RevG model?

Only Revision G and newer SP2+ models support the External Modem.

You can identify the revision on the underside of the SP2+ case.



LED information for External Modem

LED behavior of SP2+ revG Port #1 and External Modem:

- If Port #1 is configured as a sensor port : Port #1 LED : OFF, EXT MODEM LED : OFF
- If Port #1 is configured as a modem port : Port #1 LED : blinking fast (When modem is not detected yet), EXT MODEM LED: steady ON
- If Port #1 is configured as a modem port : Port #1 LED : steady ON (When modem is detected), EXT MODEM LED: blinking
- If no SIM card is inserted or not detected: Port #1 LED : steady ON (When modem is detected), EXT MODEM LED: steady ON

LED behavior of SPXN+ with the dedicated modem port and External Modem:

- If the modem is not yet detected : EXT Modem LED : OFF
- If the modem is not yet detected : EXT Modem LED : Blinking
- Note: there is no LED for the EXT modem port on the SPXN+

Setting up the modem - physical connection

First you would need to insert the SIM card to the modem.

Note: Please make sure that the SIM does not require a PIN code.

To insert the SIM, you need to follow these steps:

#1 Take off the plastic cover.

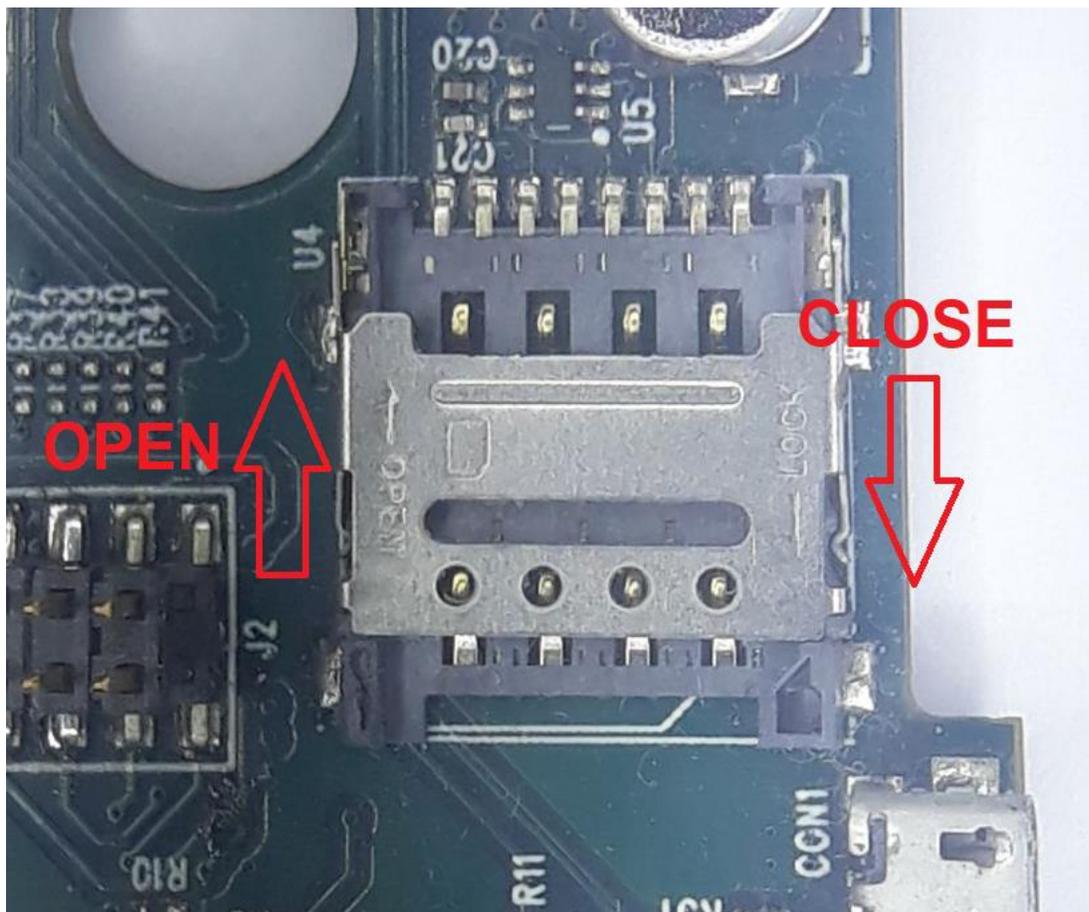
It is held on by a single screw at the bottom of the cover.





#2 Operate the SIM holder as follows:

Note: if you do not close and lock the SIM holder, the modem will not be able to use the SIM card.



#3 Place the SIM card in the holder:



#4 Close the SIM retainer to lock it in place:

Note: if you do not close and lock the SIM holder, the modem will not be able to use the SIM card.



Re-assemble the modem case and connect the GSM antenna to the modem, as shown on the picture below.



Connect the modem's power cable to the microUSB port.



Then finally connect the modem to the sensor port #1 of SP2+ RevG via RJ45 cable.



If your base unit is SPXN, locate the dedicated Modem Port and connect the modem here:



Important note: the maximum allowed length of the cable is 12 inches (305 mm).



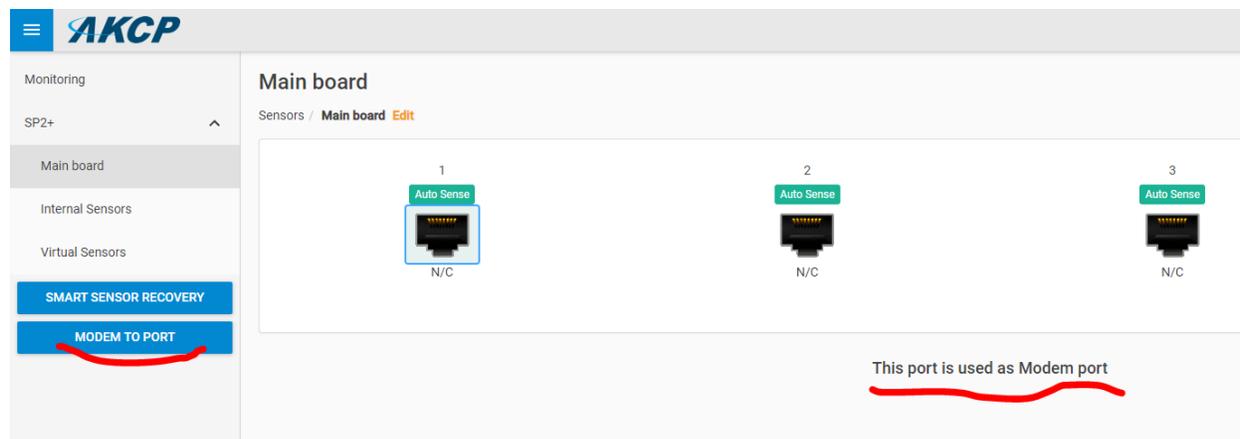
For SPXN units, you just need to plug the modem to the Ext. Modem port and reboot the SPXN; there is no need to set up any options on the WebUI.

If your base unit is SP2+ RevG, you will have to configure a few options before you can use the modem, as described in the next section.

Setting up the modem - software settings for SP2+ RevG

SP2+ units don't have a dedicated port for the modem.
Port #1 can be configured as a port for using the External Modem.

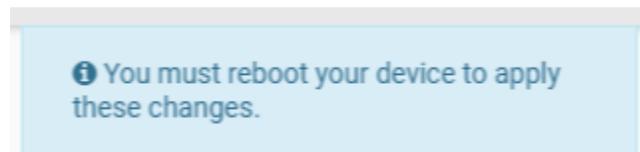
Connect to your base unit's WebUI and open the **Sensors** page.



Click on **Port #1**

On the left side menu, click the option **Port to Modem**

This will set the port in a mode that can work with the External Modem.



The system will display a popup warning: "You must reboot your device to apply these changes".

Reboot your unit by going to **Settings -> Maintenance -> System Reboot**

After the device has rebooted, go back to Sensors page and check Port #1: its status should now only show "This port is used as Modem port" and you will not see any sensor setting options.

After the modem has been configured, the LED statuses will change as follows:

Check Port #1 LED on the base unit: it will be steady ON

Check the External Modem LED: it will be blinking

About

System / About



System Description

SP2+ H7 1.0.5824 Jul 25 2022 05:14:37

Manufacturing Date

Friday, 1 July 2022

Manufacturer Name

AKCP

Product Name

SP2+

Product Code

SP2-POE

Ethernet MAC ID

00:0B:DC:02:02:03

Modem IMEI Number

862636050229226

Modem Version

SIM7600G22_V2.0

Total Number of Sensors

1

Finally, check the **About page** of the unit. The modem should be shown as detected and the unique IMEI number visible.

Change Modem port back to Sensor port

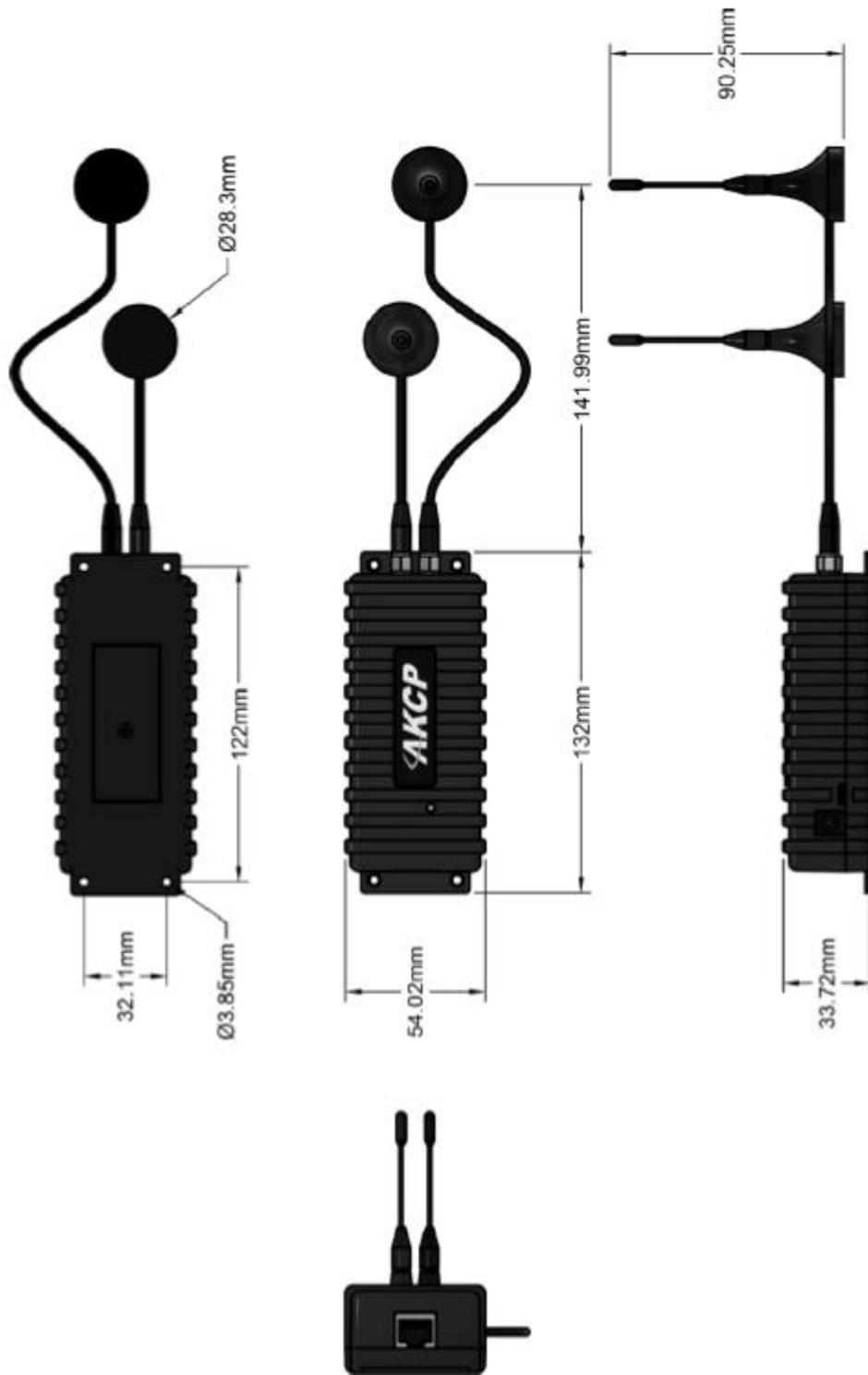
Doing these steps will revert the configured modem port back to a standard sensor port on the unit. Basically it's the same as configuring the port for using the modem.

1. Unplug the External Modem from Port #1 and remove its power connector
2. Go to **Sensors page** of the base unit
3. On the side menu option, click **Modem to Port** button
4. The unit will display a popup warning, and you must reboot to apply the changes
5. Reboot your unit
6. Check the LED status on Port #1: it should be OFF

Technical specifications

Frequencies	<ul style="list-style-type: none"> • LTE-TDD B34/B38/B39/B40/B41 • LTE-FDD B1/B2/B3/B5/B7/B8//B12/B13/B18/B19/B20/B25/B26/B28/B66 • UMTS/HSPA+ B1/B2/B4/B5/B6/B8/B19 • GSM/GPRS/EDGE \850/900/1800/1900 MHz
Category	CAT1
Data Transmission	HSPA+: up to 5.76 Mbps(UL), 42 Mbps(DL) LTE Category 1: up to 5 Mbps (UL), 10 Mbps (DL)
Transmitting Power	WCDMA: Class 3 (0.25W) LTE: Class 3 (0.25W)
Features	SMS Telephone Call with Text to Speech via 3rd party e-mail to phone gateway Internet (PPP) : email, VPN, cloud Optional GPS * + GNSS: GPS/GLONASS/Beidou/Galileo + GPS active antenna provided
SIM card	Standard SIM card size Support SAT class 3, GSM 11.14 Release 98
Antenna	3m External Antenna
Components	Manufactured using highly integrated, low power surface mount technology to ensure long term reliability.
Operating Environment	Temperature : Min. -20° C – Max.70° C Humidity: Min. 20% – Max. 80% (Non-Condensing)
Certification	<ul style="list-style-type: none"> • CE • RCM • FCC • IC • CCC US Version : <ul style="list-style-type: none"> • TELEC • PTCRB • JATE • RoHS • REACH

Technical drawing



Please contact support@akcp.com if you have any further technical questions or problems.

Thanks for Choosing AKCP!