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SPS100 configuration guide

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Revision history

Revision	Date	Author	Description
1.0	30/04/2024	Jasper Mariën	First release

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1.Prerequisites

We use the app: "NFC TagWriter" from NXP in this guide, and recommend using the same app.

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2.List of commands

We make a distinction between commands you can send without knowing the pin code, and those were you do need a pin code.

For the commands where you need a PIN, you need to send the command as following:

cmd=pinXXXXXXXX,[cmd]

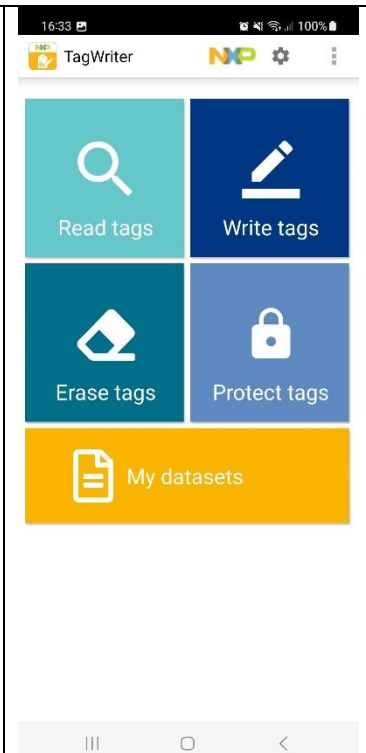where XXXXXXXX is the PIN code (default PIN is 12345678)

- List of commands you can send without needing a PIN code:
    - "on" : power on the device
    - "reset" : power cycle the device
    - "test": used as a ping to the device.
      You can see the response "testrsp" by reading the NFC tag again afterwards.
    - "status": request the status of the device.
      You can see the response by reading the NFC tag afterwards.
      Possible responses:
        - generic SIM error
        - SIM PIN required
        - no SIM PIN retries left
        - no network found
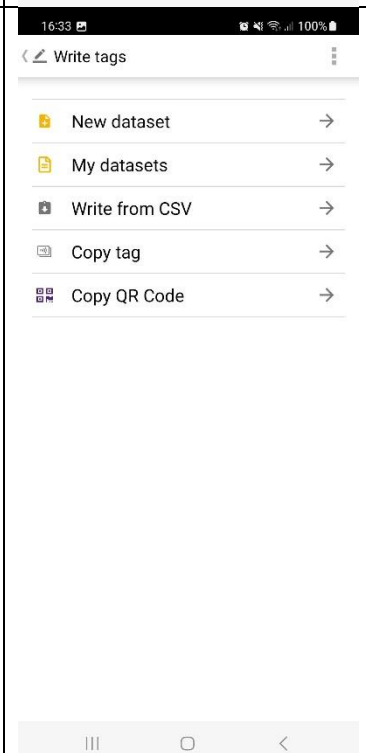   - NTP error
        - MQTT error

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- List of commands for which you need the PIN code:
  - "off": set the device in inactive state
  - "newpinxxxxxxxx": change the pin code to xxxxxxxx (Note, it is very important that you do not forget this pin code)
  - "clrpin": resets the pin to the default pin code (12345678)
  - "sim[PIN]:APN": set the APN.
    - Example:
      sim:"internet.proximus.be"
  - "sim?": request the configured APN settings
    You can see the response by reading the NFC tag afterwards.
    - Example:
      cmd=pin12345678,sim?
  - "ntp": set the NTP server:
    - Example:
      cmd=pin12345678,ntp10.20.30.40:123
  - "ntp?": request the currently configured NTP server:
    You can see the response by reading the NFC tag afterwards.
    - Example:
      cmd=pin12345678,ntp?
  - "mqtt": set the MQTT broker:
    - Format:
      IP:PORT:TOPIC:USERNAME:PASSWORD
      username and password are optional.
    - Example:
      cmd=pin12345678,mqtt10.20.30.40:1883:"spoton/devices/":"The Boss":"BornInTheUSA"
  - "mqtt?": request the currently configured MQTT broker:
    You can see the response by reading the NFC tag afterwards.
    - Example:
      Cmd=pin12345678,mqtt?

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3.How to write the NFC tag

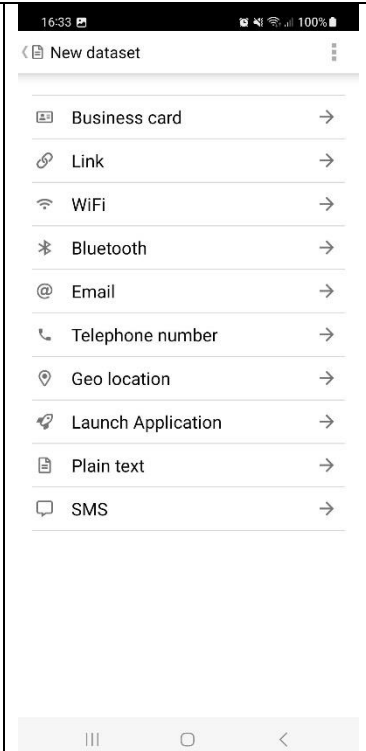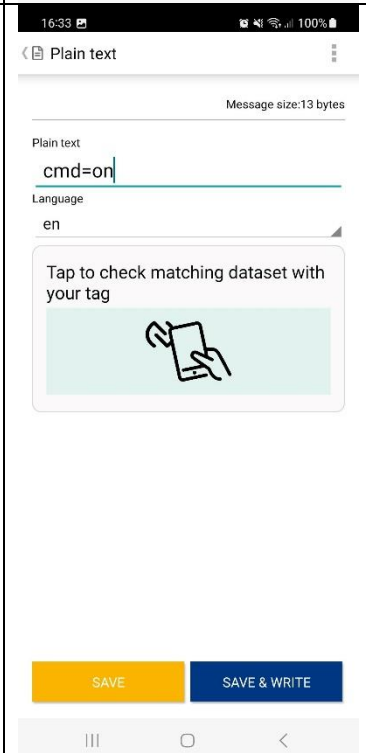|	
1. When you open the app you will see the following screen: 2. Press "Write tags" to write the tag and send a command.	
3. Press "New dataset".	

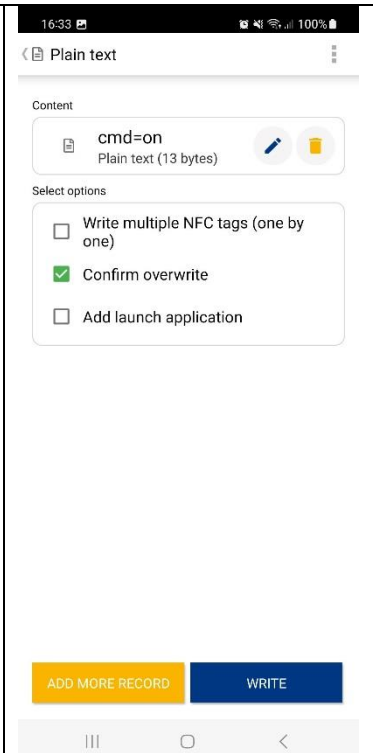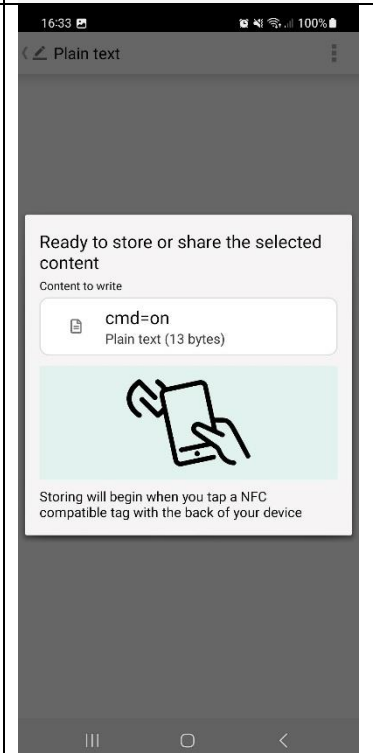|	
4. Press "Plain text".	**16:33** 100% ‹ ▤ New dataset ⋮ ▭ Business card → 🔗 Link → 📶 WiFi → ✳ Bluetooth → @ Email → 📞 Telephone number → 📍 Geo location → 🚀 Launch Application → ▤ Plain text → 💬 SMS → ᅵᅵᅵ ○ ‹
5. You can now type the command you wish to send in the text field, using the format as described above. 6. Press "Save & write" at the bottom of your screen.	**16:33** 100% ‹ ▤ Plain text ⋮ Message size:13 bytes Plain text cmd=on Language en Tap to check matching dataset with your tag SAVE SAVE & WRITE ᅵᅵᅵ ○ ‹

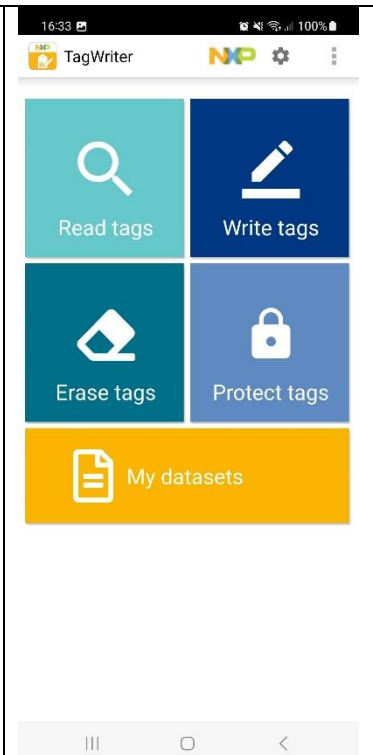|	
7. (optional: enable "confirm overwrite" if you want easy feedback on whether or not the write has been successful) 8. Press "Write".	**16:33** ⟨📄 Plain text ⋮ Content 📄 **cmd=on** Plain text (13 bytes) ✏️ 🗑️ Select options ☐ Write multiple NFC tags (one by one) ☑ Confirm overwrite ☐ Add launch application ADD MORE RECORD · WRITE
9. Tap the parking sensor with the back of your device. A screen will pop up when it is done. You can now tap again to see if the write was successful if you enabled this option.	**16:33** ⟨✎ Plain text ⋮ **Ready to store or share the selected content** Content to write 📄 **cmd=on** Plain text (13 bytes) Storing will begin when you tap a NFC compatible tag with the back of your device

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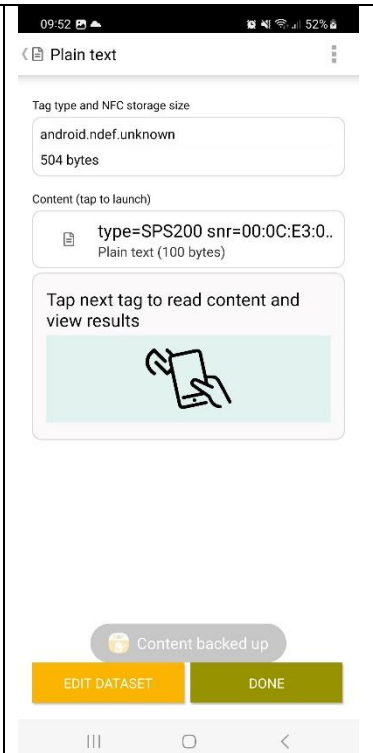## 4.How to read the NFC tag

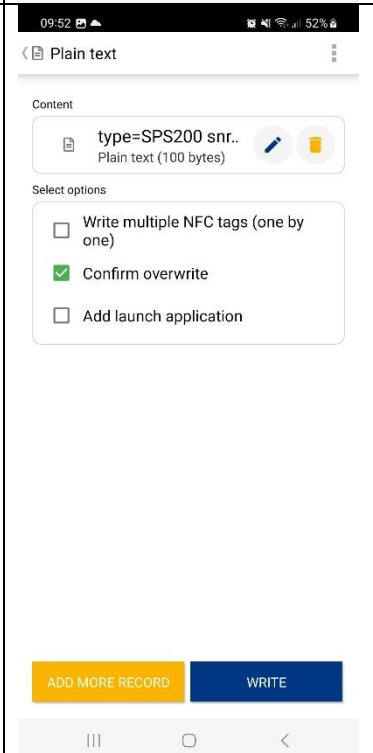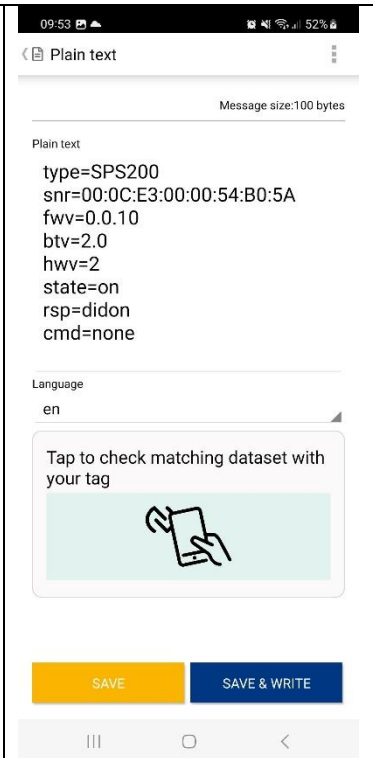|	
1. When you open the app you will see the following screen: 2. Press "Read tags" to read out the tag.	
3. Tap the parking sensor with the back of your device.	
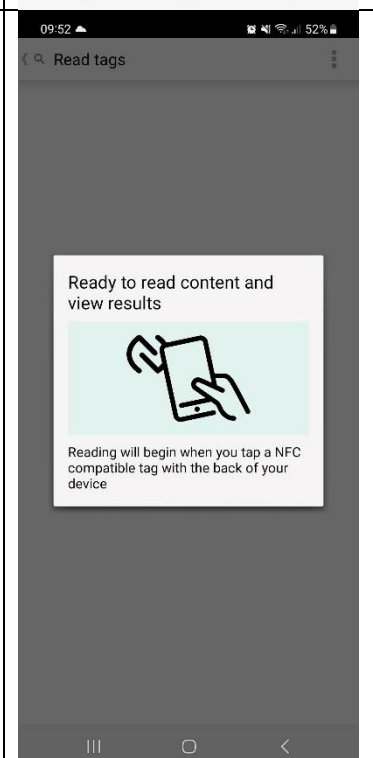
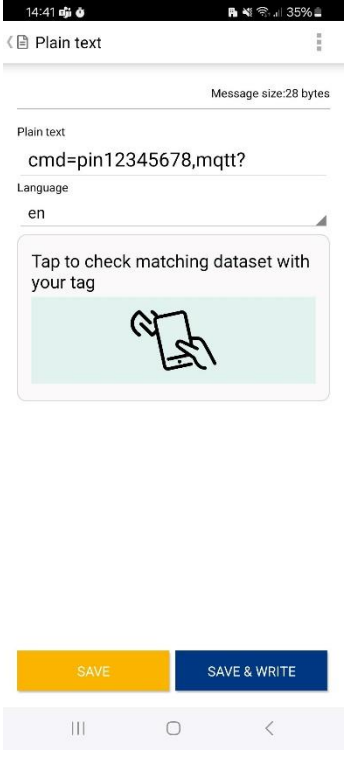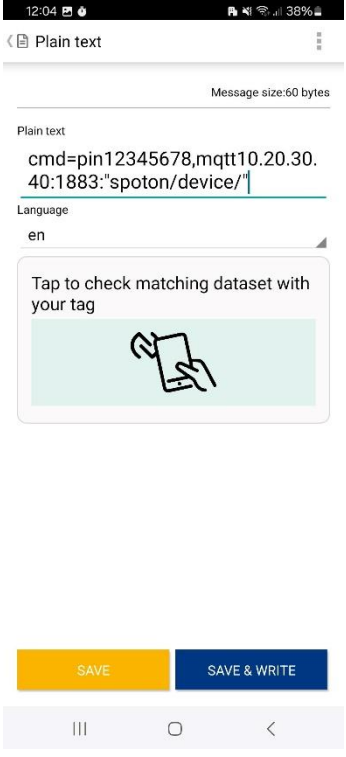|	
4. Press "Edit dataset". We're not going to edit anything , but this is the only way we can see the contents of this field fully.	09:52 **Plain text** Tag type and NFC storage size android.ndef.unknown 504 bytes Content (tap to launch) type=SPS200 snr=00:0C:E3:0.. Plain text (100 bytes) Tap next tag to read content and view results Content backed up EDIT DATASET DONE
5. Press the pencil in the plain text content field.	09:52 **Plain text** Content type=SPS200 snr.. Plain text (100 bytes) Select options ☐ Write multiple NFC tags (one by one) ☑ Confirm overwrite ☐ Add launch application ADD MORE RECORD WRITE

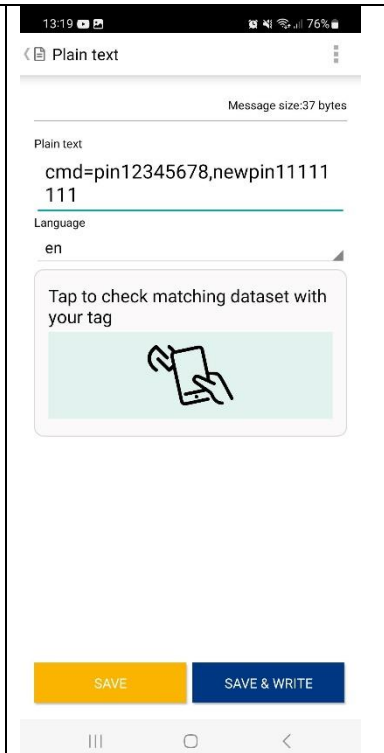6. You can now see the full content of this field:

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5.How to configure the device

Bellow you can find a step by step guide on what you should do to configure and turn on the device using the commands from section 2.

1. Check the current configuration of the device using the "sim?", "mqtt?" and "ntp?" commands. After sending this command, you can read the tag again to see response from the sensor.	14:41 · Plain text · Message size:28 bytes · Plain text · cmd=pin12345678,mqtt? · Language · en · Tap to check matching dataset with your tag · SAVE · SAVE & WRITE
2. [OPTIONAL] set the APN using the "sim" command as described in section 2. 3. [OPTIONAL] change the MQTT broker using the "mqtt" command as described in section 2. 4. [OPTIONAL] change the NTP server using the "ntp" command as described in section 2.	12:04 · Plain text · Message size:60 bytes · Plain text · cmd=pin12345678,mqtt10.20.30.40:1883:"spoton/device/" · Language · en · Tap to check matching dataset with your tag · SAVE · SAVE & WRITE

5. [OPTIONAL BUT RECOMMENDED] Change the pin using the "newpin" command. Make sure that you remember this pin as there is no convenient way of recovering/resetting this pin.	13:19 ⬛ ▶️ 🖼️ 🔋 📶 76% ‹ 📄 Plain text ⋮ Message size:37 bytes Plain text cmd=pin12345678,newpin11111 111 Language en Tap to check matching dataset with your tag SAVE SAVE & WRITE ‖‖‖ ◯ ‹
6. Turn on the device by using the command "on".	16:33 🖼️ 🔋 📶 100% ‹ 📄 Plain text ⋮ Message size:13 bytes Plain text cmd=on Language en Tap to check matching dataset with your tag SAVE SAVE & WRITE ‖‖‖ ◯ ‹