

YO**SENSI**.IO

Reference Manual

yosensi-cli-tool ver 1.4.0

1 Release notes

Date	Version	Changes
April 2021	1.0.0	Initial version
April 2021	1.1.0	<ol style="list-style-type: none"> 1. New functionality was added (subcommand 'sensor_calibration') to calibrate sensors in YO PurePro devices. 2. Fixed optional argument '-m' and 'devParam' in list subcommand. 3. Changed the display of the parameter list of YOPurePro devices (sensor calibration settings are hidden). 4. Changed name of subcommands and help message: <ol style="list-style-type: none"> a. 'list_ble_char' to 'list_dev_params'; b. 'change_dev_param' to 'change_dev_parmas';
April 2021	1.1.1	<ol style="list-style-type: none"> 1. Added support for device version LNAA-1.0.4. 2. The parameter list display for YOPurePro devices has been changed. 3. Fixed names for Seal Tracker devices (LNNA -> LNAA). 4. Fixed encoding of data (string/ASCII) to be sent via Bluetooth. 5. Fixed bug the display of eg '700002E5' as 'exp' and large value as 'inf' in subcommand 'list_dev_params'.
May 2021	1.2.0	<ol style="list-style-type: none"> 1. Added support for device version: LNPP-1.0.2, LNPP-1.0.7. 2. Added column 'valid value' to the 'list_dev_params' subcommand. 3. Changed the way the file is checked for compatibility with the device. 4. Changed the argument name 'version_to_upload' to 'actual_version' and the help description of the 'firmware_upload' subcommand.
June 2021	1.3.0	<ol style="list-style-type: none"> 1. Added support for: LNAN-1.0.7, LNPW-1.0.7, LNAG-1.0.8, LNFD-1.0.8, HWCM-1.0.7 and LNMP-1.0.8. 2. Added response when writing data to Bluetooth characteristics. 3. Changed message when connecting to the device. 4. Changed description of 'ntry' parameter in column 'Valid value'. 5. Changed discover and connect function to run faster. 6. Fixed display Bluetooth MAC address for bootloader. 7. Fixed subcommand 'factory_reset' - reboot device. 8. Fixed unnecessary first '0' in the parameter decimals values given with the 'change_dev_params' subcommand.
July 2021	1.3.1	<ol style="list-style-type: none"> 1. Added support for: LNPT-1.0.8. 2. Fixed the display of parameters for LNPT devices.

August 2021	1.4.0	<ol style="list-style-type: none">1. The tool has been adapted for macOS 10.15 systems.2. Changed message to display help if no subcommand is given.
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3 Reference Manual

The following reference manual describes how to use the yosensi-cli-tool from the subcommand line. To launch the command line interface on Windows10 or macOS 10.15, you need to have bluetooth on (cli also works with external bluetooth modems).

CLI command descriptions

Description of the command syntax used when working with the tool:

```
.\yosensi_cli_tool.exe subcommand_name value_of_positional_arg -optional_arg value ....
```

<i>subcommand_name</i>	name of the subcommand used
<i>value_of_positional_arg</i>	argument required, the order of the arguments is important do not change it. Following arguments are given after the 'space' without any prefixes or quotation marks
<i>-optional_arg value</i>	optional argument, may or may not be provided. It is preceded by a prefix, e.g. '-r' means to pass a new RSSI level value.

Display of all supported subcommands by the tool and the tool version:

```
.\yosensi-cli-tool_v1.4.0_WIN.exe --help
usage: yosensi-cli-tool [-h] [-v]

{list,list_dev_params,change_dev_params,factory_reset,firmware_upload,sensor_calibration}
...

optional arguments:
  -h, --help            show this help message and exit
  -v, --version         show program's version number and exit

Subcommands list:
  {list,list_dev_params,change_dev_params,factory_reset,firmware_upload,sensor_calibration}
  list                 list node(s)/gateway(s) by name or bluetooth MAC
  list_dev_params      display a list of device parameters
  change_dev_params    change device parameters
  factory_reset        restore device to factory settings
  firmware_upload      uploading device firmware from a file
  sensor_calibration   sensor calibration in the device

.\yosensi-cli-tool_v1.4.0_WIN.exe --version
1.4.0
```

list subcommand

This subcommand allows you to look for all Yosensi devices which are in Bluetooth range. After the search is complete, a list of found devices with their name, RSSI level and public MAC address will be displayed. The public MAC address from the table will be needed when using next subcommands and it's the same as on the 'macBLE' nameplate.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe list --help
usage: yosensi-cli-tool list [-h] [-m [MAC]] [-n [NAME]]

optional arguments:
  -h, --help  show this help message and exit
  -m [MAC]    Bluetooth public MAC address
  -n [NAME]   node/gateway name
```

OPTIONAL ARGUMENTS

-h	display help
-m	bluetooth public MAC address of the device you are looking for. The MAC address can be written with a colon (:) and without e.g. 80:e1:26:1d:2a:33 or 80e1261d2a33
-n	the name of the device to be found. This subcommand allows you to look for a specific group of devices by their name, e.g. LNPP-1.0.5

Examples of use:

```
.\yosensi-cli-tool_v1.4.0_WIN.exe list
Discovery Bluetooth devices takes 30s, please wait ...
+-----+-----+-----+
| Name   | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPC013200 | -55 | 80:e1:26:07:b5:bd |
+-----+-----+-----+
| LNTP013200 | -78 | 80:e1:26:1a:39:93 |
+-----+-----+-----+
| LNPW-1.0.5 | -68 | 80:e1:26:1d:2a:33 |
+-----+-----+-----+
| LNAP-1.0.6 | -58 | 80:e1:26:1d:2b:07 |
+-----+-----+-----+
| LNPW-1.0.6 | -63 | 80:e1:26:1d:2a:df |
+-----+-----+-----+

.\yosensi-cli-tool_v1.4.0_WIN.exe list -n LNPW
Discovery Bluetooth devices takes 30s, please wait ...
+-----+-----+-----+
| Name   | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPW-1.0.6 | -73 | 80:e1:26:1d:2a:df |
+-----+-----+-----+
```

```

| LNPW-1.0.5 | -57 | 80:e1:26:1d:2a:33 |
+-----+-----+-----+
.\yosensi-cli-tool_v1.4.0_WIN.exe list -m 80:e1:26:1d:2a:33
Discovery Bluetooth devices takes 30s, please wait ...
+-----+-----+-----+
| Name | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPW-1.0.5 | -80 | 80:e1:26:1d:2a:33 |
+-----+-----+-----+

```

list_dev_params subcommand

This subcommand is used to read and display the settings stored in the device. If the device is available a list will be displayed containing the parameter name, description, value and the write/read flag.

```

.\yosensi-cli-tool_v1.4.0_WIN.exe list_dev_params --help
usage: yosensi-cli-tool list_dev_params [-h] mac

positional arguments:
  mac          Bluetooth public MAC address

optional arguments:
  -h, --help  show this help message and exit

```

REQUIRED ARGUMENTS

mac	bluetooth public MAC address of the device you want to display the parameters for; the MAC address can be written with a colon (:) and without e.g. 80:e1:26:1d:2a:33 or 80e1261d2a33
------------	---

OPTIONAL ARGUMENTS

-h	display help
-----------	--------------

Examples of use:

```

.\yosensi-cli-tool_v1.4.0_WIN.exe list_dev_params 80:e1:26:1d:2a:33
It will take up to 120s to find the device and read all the values from the bluetooth characteristics, please wait ...
Searching for a device ...
Trying to connect to the device LNPP-1.0.5...

```

Name	Description	Valid value	READ / WRITE	Current value
devname	Device name	-	R	LNPP
conntype	Connection type OTAA/ABP	0 - OTAA, 1 - ABP	R / W	1
deveui	Device address EUI	Hexadecimal value: 8 bytes	R / W	544e500d00400018
appkeyotaa	OTAA application EUI key	Hexadecimal value: 8 bytes	R / W	be7a00000000688
keyotaa	OTAA key	Hexadecimal value: 16 bytes	R / W	18004000d504e544131322001209504
ntry	Number of trials for the join request	Reserved	R / W	1
addrabp	ABP device address	Hexadecimal value: 4 bytes	R / W	70000392
nwkskey	Network Session Key	Hexadecimal value: 16 bytes	R / W	0495200120323141544e500d00400018
appskey	Application Session Key	Hexadecimal value: 16 bytes	R / W	18004000d504e544131322001209504
powtxble	Bluetooth transmit power	Reserved	R / W	0
advble	Bluetooth advertising interval	Decimal value: 1 - 9999, value = t[ms] * 1.6	R / W	1600
measinter	Measuring interval in seconds	Decimal value: 1 - 999999	R / W	0120
tempminalert	Alert for the minimum temperature value in celsius	Decimal value: 0 - 99	R / W	12
tempmaxalert	Alert for the maximum temperature value in celsius	Decimal value: 0 - 99	R / W	32
humminalert	Alert for the minimum humidity value in percentage	Decimal value: 0 - 99	R / W	15
hummaxalert	Alert for the maximum humidity value in percentage	Decimal value: 0 - 99	R / W	80
lightminalert	Alert for the minimum light value in lux	Decimal value: 0 - 83000	R / W	0

lightmaxalert	Alert for the maximum light value in lux	Decimal value: 0 - 83000	R / W	0
coalert	Alert for CO value in ppm	Decimal value: 0 - 1000	R / W	50
co2alert	Alert for CO2 value in ppm	Decimal value: 0 - 5000	R / W	1000
co	Calibration factor for the CO sensor	Decimal value: 0 - 9999	R	0640
co2	Calibration factor for the CO2 sensor	Decimal value: 0 - 5000	R	0400

NOTE The number of displayed parameters depends on the model/version of the device. LoRa and Bluetooth configuration parameters are always displayed.

If parameters described as 'Unknown' appear in the table, it means that the model/version of the device is not compatible with the CLI version. In this case you need to download the latest version of CLI.

change_dev_params subcommand

The subcommand is used to change device settings. Several parameters can be reconfigured in one step. The parameters should be specified after the MAC address in the following form 'name=value name=value ...'. The name of the parameter is in the first column of the displayed device settings, while the specified value will be stored in the device.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe change_dev_params --help
usage: yosensi-cli-tool change_dev_params [-h] mac dev_param [dev_param ...]

positional arguments:
  mac          Bluetooth public MAC address
  dev_param    device parameter(s) name and value, in format 'name=value'

optional arguments:
  -h, --help  show this help message and exit
```

REQUIRED ARGUMENTS

mac	bluetooth public MAC address of the device you want to reconfigure. The MAC address can be written with a colon (:) and without e.g. 80:e1:26:1d:2a:33 or 80e1261d2a33
dev_param	parameters to be reconfigured with the new values. Multiple parameters can be specified. The parameters should be written in the following form: 'name=value name=value ...' e.g. "conntype=0 measinter=1000"

OPTIONAL ARGUMENTS

-h	display help
-----------	--------------

Example of use:

```
.\yosensi-cli-tool_v1.4.0_WIN.exe change_dev_param 80:e1:26:1d:2a:33 conntype=0 measinter=1000
It will take up to 120s to find and write new device param(s) into memory, please wait ...
Searching for a device ...
Trying to connect to the device LNPP-1.0.5...
Updated 'conntype' device parameter: SUCCESS
Updated 'measinter' device parameter: SUCCESS
```

NOTE Parameters not accepted by the device are skipped during the reconfiguration process and an appropriate message is displayed in the console.

factory_reset subcommand

The subcommand is used to restore the factory settings. All individual user settings will be permanently deleted and overwritten with default values.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe factory_reset --help
usage: yosensi-cli-tool factory_reset [-h] mac

positional arguments:
  mac          Bluetooth public MAC address

optional arguments:
  -h, --help  show this help message and exit
```

REQUIRED ARGUMENTS

mac	bluetooth public MAC address of the device you want to restore to factory settings; the MAC address can be written with a colon (:) and without e.g. 80:e1:26:1d:2a:33 or 80e1261d2a33
------------	--

Example of use:

```
.\yosensi-cli-tool_v1.4.0_WIN.exe factory_reset 80:e1:26:1d:2a:33
It will take up to 120s to find and restore to factory settings the device, please wait ...
Searching for a device ...
Trying to connect to the device LNPP-1.0.5...
Factory reset: SUCCESS
```

firmware_upload subcommand

Command is used to upload firmware to the device. This process is done in two steps. In the first step, CLI makes three attempts to connect to the device and launch the bootloader (which removes the current firmware to free up memory). If the three attempts fail, uploading firmware on that device will not begin. In the second step, the program is uploaded via bluetooth. This process takes some time. During the upload process progress is displayed in the console. CLI makes three attempts to upload the firmware, if all fails the device will stay in bootloader mode. Then you have to start the process from the beginning.

NOTE The device should not be disconnected from supply, reset or moved.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload --help
usage: yosensi-cli-tool firmware_upload [-h] [-r [RSSI]]
                                         version_to_upload file mac_list
                                         [mac_list ...]
```

positional arguments:

```
actual_version  device(s) with this name and version will have new firmware
loaded
file            firmware file name
mac_list        Bluetooth public MAC address list
```

optional arguments:

```
-h, --help      show this help message and exit
-r [RSSI]       acceptable RSSI level for upload, default value -75 [dBm]
```

REQUIRED ARGUMENTS

actual_version device(s) with this name and version will have new firmware loaded; the name of the device, e.g. LNPP-1.0.5, contains the model name and firmware version

NOTE It is necessary to check the compatibility of the updated device with the uploaded file.

file the name of the firmware file to be uploaded to the device. The latest firmware is provided on Yosensi.io in the support section.

mac in order to initialize the upload process, you need to specify a list of public MAC addresses of the devices to be updated or enter the keyword 'all'. If 'all' is entered, all devices whose names match the 'version_to_upload' argument will take in the update process. Accepted MAC address format: '80:e1:26:1d:2a:33' or '80e1261d2a33'

OPTIONAL ARGUMENTS

-r acceptable RSSI level required to start the firmware upload. The default value is set to -75 dBm. **It is not recommended to set a low RSSI value because it may have a negative impact on the firmware upload process**

-h display help

Example of use:

```
.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload LNPW-1.0.5 .\LNPW-1.0.6_EU868.bin 80e1261d2a33
Searching for a device ...
Found 1 reachable LoRa devices:
+-----+-----+-----+
| Name | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPW-1.0.5 | -58 | 80:e1:26:1d:2a:33 |
+-----+-----+-----+

Applying new firmware to reachable devices (RSSI > -75 [dBm])...
  1. macBLE: 80:e1:26:1d:2a:33
    Erase memory: attempt 1/3
        SUCCESS
    Uploading new firmware: attempt 1/3
        Firmware size: 233692
        Numbers of packages to send via ble: 11685
        Package 11685 of 11685
        Send all packages
        SUCCESS
    SUCCESS applying firmware '.\LNPW-1.0.6_EU868.bin' on device
        macBLE: 80:e1:26:1d:2a:da
        devEUI: 544e500d00400018

.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload LNPW-1.0.5 .\LNPW-1.0.6_EU868.bin all
Searching for a device ...
Found 2 reachable LoRa devices:
+-----+-----+-----+
| Name | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPW-1.0.5 | -37 | 80:e1:26:1d:2a:da |
+-----+-----+-----+
| LNPW-1.0.5 | -47 | 80:e1:26:1d:2a:33 |
+-----+-----+-----+

Applying new firmware to reachable devices (RSSI > -75 [dBm])...
  1. macBLE: 80:e1:26:1d:2a:da
    Erase memory: attempt 1/3
        SUCCESS
    Uploading new firmware: attempt 1/3
        Firmware size: 233692
        Numbers of packages to send via ble: 11685
        Package 11685 of 11685
        Send all packages
        SUCCESS
    SUCCESS applying firmware '.\LNPW-1.0.6_EU868.bin' on device
        macBLE: 80:e1:26:1d:2a:da
        devEUI: 544e500d00400018
  2. macBLE: 80:e1:26:1d:2a:33
    Erase memory: attempt 1/3
        SUCCESS
    Uploading new firmware: attempt 1/3
        Firmware size: 233692
        Numbers of packages to send via ble: 11685
        Package 11685 of 11685
        Send all packages
        SUCCESS
```

```

                SUCCESS applying firmware '.\LNPW-1.0.6_EU868.bin' on device
                macBLE: 80:e1:26:1d:2a:33
                devEUI: 544e500d003d0026

.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload LNPW-1.0.5 .\LNPW-1.0.6_EU868.bin
80:e1:26:1d:2a:da 80:e1:26:1d:2a:33
Searching for a device ...
Found 2 reachable LoRa devices:
+-----+-----+-----+
|   Name   | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPW-1.0.5 | -39 | 80:e1:26:1d:2a:da |
+-----+-----+-----+
| LNPW-1.0.5 | -51 | 80:e1:26:1d:2a:33 |
+-----+-----+-----+

Applying new firmware to reachable devices (RSSI > -75 [dBm])...
    1. macBLE: 80:e1:26:1d:2a:da
(...)
```

Firmware update process

To better explain the firmware update process, let's assume that we have a 'YOPower' device that currently has firmware version 'LNPW-1.0.5' and we want to update it to version 'LNPW-1.0.6'.

1. Download 'yosensi-cli-tool' for Windows 10
2. Download the latest firmware version for your device model 'LNPW-1.0.6_EU868'.
3. Put the downloaded firmware into the CLI tool folder.

```
PS C:\yo-CLI\yosensi-cli-tool\dist> ls
```

```
Directory: C:\yo-CLI\yosensi-cli-tool\dist
```

Mode	LastWriteTime	Length	Name
-a----	3/29/2021 1:12 PM	233692	LNPW-1.0.6_EU868.bin
-a----	3/30/2021 3:38 PM	11598807	yosensi-cli-tool_v1.4.0_WIN.exe

4. Open a system console such as cmd or PowerShell and then go to the folder with the saved CLI tool.
5. Update devices must be turned on and be within Bluetooth range.
6. Enter the subcommand to upload the firmware and specify its arguments:

```
.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload LNPW-1.0.5 .\LNPW-1.0.6_EU868.bin 80e1261d2a33
```

- actual_version: **LNPW-1.0.5**
- file: **.\LNPW-1.0.6_EU868.bin**
- mac: **80e1261d2a33**

7. After the subcommand is run, the CLI tool will start to look for devices with the specified parameters and then start the upload process. The process steps are displayed in the console.
8. Verify the status of the software transfer process.
 - 8.1. If everything was successful, the device will automatically run with the new firmware.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload LNPW-1.0.5 .\LNPW-1.0.6_EU868.bin 80e1261d2a33
Searching for a device ...
Found 1 reachable LoRa devices:
+-----+-----+-----+
|   Name   | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPW-1.0.5 | -47  | 80:e1:26:1d:2a:33  |
+-----+-----+-----+

Applying new firmware to reachable devices (RSSI > -75 [dBm])...
  1. macBLE: 80:e1:26:1d:2a:33
      Erase memory: attempt 1/3
          SUCCESS
      Uploading new firmware: attempt 1/3
          Firmware size: 233692
          Numbers of packages to send via ble: 11685
          Package 11685 of 11685
          Send all packages
          SUCCESS
      SUCCESS applying firmware '.\LNPW-1.0.6_EU868.bin' on device
      macBLE: 80:e1:26:1d:2a:33
      devEUI: 544e500d003d0026
```

In our case CLI in the first attempt managed to bootload and clear the memory and then in the first attempt started the upload process, which was successful. In addition, the data of the device being updated is displayed.

- 8.2. If the bootloader is successfully started and the memory is erased, but all attempts to upload the firmware fail, the device will stay running in bootloader mode.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload LNPW-1.0.5 .\LNPW-1.0.6_EU868.bin 80e1261d2a33
Searching for a device ...
Found 1 reachable LoRa devices:
+-----+-----+-----+
|   Name   | RSSI | Public MAC Address |
+-----+-----+-----+
| LNPW-1.0.5 | -58  | 80:e1:26:1d:2a:33  |
+-----+-----+-----+

Applying new firmware to reachable devices (RSSI > -75 [dBm])...
  1. macBLE: 80:e1:26:1d:2a:33
      Erase memory: attempt 1/3
          SUCCESS
      Uploading new firmware: attempt 1/3
          Firmware size: 233692
```

```

Numbers of packages to send via ble: 11685
Package 11685 of 11685
Send all packages
FAIL
Uploading new firmware: attempt 2/3
Uploading new firmware: attempt 3/3
FAILED applying firmware '.\LNPW-1.0.6_EU868.bin' on device
macBLE: 80:e1:26:1d:2a:33
devEUI: 544e500d003d0026

```

Then you have to change the subcommand arguments and make another attempt to upload the firmware.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe firmware_upload STM_OTA .\LNPW-1.0.6_EU868.bin 80e1261d2a33
```

- actual_version: **STM_OTA**
- file: **.\LNPW-1.0.6_EU868.bin**
- mac: **80e1261d2a33**

In this case, we have specified that we want to upload the program 'LNPW-1.0.6' to the device with MAC address '80e1261d2a33', which is in bootloader mode.

NOTE In this case, there is no way to verify the compatibility of the device with the uploaded firmware.

```

.\yosensi-cli-tool_v1.3.0_WIN.exe firmware_upload STM_OTA .\LNPW-1.0.6_EU868.bin 80e1261d2a33
*** WARNING ***
You are trying to upload the firmware 'LNPW-1.0.6_EU868.bin' to a device with a bootloader.
In this case, checking compatibility is not possible. Please be careful what you do.
Are you sure? (y/n)y
Searching for a device ...
Found 1 reachable LoRa devices:
+-----+-----+-----+
| Name   | RSSI  | Public MAC Address |
+-----+-----+-----+
| STM_OTA | -52   | 80:e1:26:1d:2a:33  |
+-----+-----+-----+

Applying new firmware to reachable devices (RSSI > -75 [dBm])...
  1. macBLE: 80:e1:26:1d:2a:34
    Uploading new firmware: attempt 1/3
      Firmware size: 233692
      Numbers of packages to send via ble: 11685
      Package 11685 of 11685
      Send all packages
      SUCCESS
    SUCCESS applying firmware '.\LNPW-1.0.6_EU868.bin' on device
      macBLE: 80:e1:26:1d:2a:34
      devEUI: UNKNOWN

```

The upload process was successful. In this case, the summary does not include the 'devEUI' of the device.

sensor_calibration subcommand

The subcommand is used to initialize the sensor calibration process. Some devices can be equipped with calibrated sensors e.g. YOPurePro has two calibrated sensors, 'CO' and 'CO2'. The subcommand only starts the calibration process. When the subcommand is completed, the device resets and starts the calibration process. The calibration process takes approximately 1 minute. After this time the device will again do a reset and the LEDs will inform about the calibration status. Additionally, you can read the device's parameters with the 'list_dev_params' subcommand and check if the new values were stored in the memory.

```
.\yosensi-cli-tool_v1.4.0_WIN.exe sensor_calibration --help
usage: yosensi-cli-tool sensor_calibration [-h] mac sensor

positional arguments:
  mac          Bluetooth public MAC address
  sensor       sensor name to which the new calibration value is to be saved,
              in format 'name=value'

optional arguments:
  -h, --help  show this help message and exit
```

REQUIRED ARGUMENTS

mac	the public Bluetooth MAC address of the device where the sensor calibration process is to be started. Accepted MAC address format: '80:e1:26:1d:2a:33' or '80e1261d2a33'
sensor	the name of the sensor to be calibrated and the calibration value. This parameter should be written in the form 'sensor_name=value' e.g. 'co=20'

OPTIONAL ARGUMENTS

-h	display help
-----------	--------------

Examples of use:

```

.\yosensi-cli-tool_v1.4.0_WIN.exe list_dev_params 80:e1:26:1d:2a:33
It will take up to 120s to find the device and read all the values from the bluetooth characteristics, please wait ...
Searching for a device ...
Trying to connect to the device LNPP-1.0.5...

```

Name	Description	Valid value	READ / WRITE	Current value
devname	Device name	-	R	LNPP
conntype	Connection type OTAA/ABP	0 - OTAA, 1 - ABP	R / W	1
deveui	Device address EUI	Hexadecimal value: 8 bytes	R / W	544e500d00400018
appkeyotaa	OTAA application EUI key	Hexadecimal value: 8 bytes	R / W	be7a00000000688
keyotaa	OTAA key	Hexadecimal value: 16 bytes	R / W	18004000d504e544131322001209504
ntry	Number of trials for the join request	Reserved	R / W	1
addrabp	ABP device address	Hexadecimal value: 4 bytes	R / W	70000392
nwkskey	Network Session Key	Hexadecimal value: 16 bytes	R / W	0495200120323141544e500d00400018
appskey	Application Session Key	Hexadecimal value: 16 bytes	R / W	18004000d504e544131322001209504
powtxble	Bluetooth transmit power	Reserved	R / W	0
advble	Bluetooth advertising interval	Decimal value: 1 - 9999, value = t[ms] * 1.6	R / W	1600
measinter	Measuring interval in seconds	Decimal value: 1 - 999999	R / W	0120
tempminalert	Alert for the minimum temperature value in celsius	Decimal value: 0 - 99	R / W	12
tempmaxalert	Alert for the maximum temperature value in celsius	Decimal value: 0 - 99	R / W	32
humminalert	Alert for the minimum humidity value in percentage	Decimal value: 0 - 99	R / W	15
hummaxalert	Alert for the maximum humidity value in percentage	Decimal value: 0 - 99	R / W	80
lightminalert	Alert for the minimum light value in lux	Decimal value: 0 - 83000	R / W	0

Name	Description	Valid value	READ / WRITE	Current value
lightmaxalert	Alert for the maximum light value in lux	Decimal value: 0 - 83000	R / W	0
coalert	Alert for CO value in ppm	Decimal value: 0 - 1000	R / W	50
co2alert	Alert for CO2 value in ppm	Decimal value: 0 - 5000	R / W	1000
co	Calibration factor for the CO sensor	Decimal value: 0 - 9999	R	0640
co2	Calibration factor for the CO2 sensor	Decimal value: 0 - 5000	R	0400

```
.\yosensi-cli-tool_v1.4.0_WIN.exe sensor_calibration 80:e1:26:1d:2a:33 co=123
```

It will take up to 120s to find and start the sensor calibrating in the device, please wait ...

Searching for a device ...

Trying to connect to the device LNPP-1.0.5...

Sensor calibration process started 'co': SUCCESS

```
.\yosensi-cli-tool_v1.4.0_WIN.exe list_dev_params 80:e1:26:1d:2a:33
```

It will take up to 120s to find the device and read all the values from the bluetooth characteristics, please wait ...

Searching for a device ...

Trying to connect to the device LNPP-1.0.5...

Name	Description	Valid value	READ / WRITE	Current value
devname	Device name	-	R	LNPP
conntype	Connection type OTAA/ABP	0 - OTAA, 1 - ABP	R / W	1
deveui	Device address EUI	Hexadecimal value: 8 bytes	R / W	544e500d00400018
appkeyotaa	OTAA application EUI key	Hexadecimal value: 8 bytes	R / W	be7a00000000688
keyotaa	OTAA key	Hexadecimal value: 16 bytes	R / W	180040000d504e544131322001209504
ntry	Number of trials for the join request	Reserved	R / W	1
addrabp	ABP device address	Hexadecimal value: 4 bytes	R / W	70000392
nwkskey	Network Session Key	Hexadecimal value: 16 bytes	R / W	0495200120323141544e500d00400018
appskey	Application Session Key	Hexadecimal value: 16 bytes	R / W	180040000d504e544131322001209504
powtxble	Bluetooth transmit power	Reserved	R / W	0

advble	Bluetooth advertising interval	Decimal value: 1 - 9999, value = t[ms] * 1.6	R / W	1600
measinter	Measuring interval in seconds	Decimal value: 1 - 999999	R / W	0120
tempminalert	Alert for the minimum temperature value in celsius	Decimal value: 0 - 99	R / W	12
tempmaxalert	Alert for the maximum temperature value in celsius	Decimal value: 0 - 99	R / W	32
humminalert	Alert for the minimum humidity value in percentage	Decimal value: 0 - 99	R / W	15
hummaxalert	Alert for the maximum humidity value in percentage	Decimal value: 0 - 99	R / W	80
lightminalert	Alert for the minimum light value in lux	Decimal value: 0 - 83000	R / W	0
lightmaxalert	Alert for the maximum light value in lux	Decimal value: 0 - 83000	R / W	0
coalert	Alert for CO value in ppm	Decimal value: 0 - 1000	R / W	50
co2alert	Alert for CO2 value in ppm	Decimal value: 0 - 5000	R / W	1000
co	Calibration factor for the CO sensor	Decimal value: 0 - 9999	R	0123
co2	Calibration factor for the CO2 sensor	Decimal value: 0 - 5000	R	0400

4 Revision history

Date	Version	Changes
06.08.2021	1.0.5	Changed version 1.3.1 to 1.4.0. Added "macOS 10.15" to the "Reference Manual" description.
07.07.2021	1.0.4	Changed version 1.3.0 to 1.3.1.
30.06.2021	1.0.3	Changed version 1.2.0 to 1.3.0. Changed message when connecting to a device (added device names). Changed description of parameter 'ntry' in column 'valid value' of subcommand 'list_dev_params' to 'Reserved'. Changed in description of 'firmware_upload' subcommand: listing of an example of how to use the subcommand, the word throughout the listing 'block' to 'package', and the MAC address of the STM_OTA.
27.05.2021	1.0.2	Changed description of 'list_dev_params' section. Changed parameter name from 'version_to_upload' to 'actual_version' in section 'firmware_upload subcommand'.
8.04.2021	1.0.1	Added 'sensor_calibration' section. Changed section name and subcommand name from 'list_ble_char' to 'list_dev_params' and from 'change_dev_param' to 'change_dev_parmas'.
01.04.2021	1.0.0	Initial version.