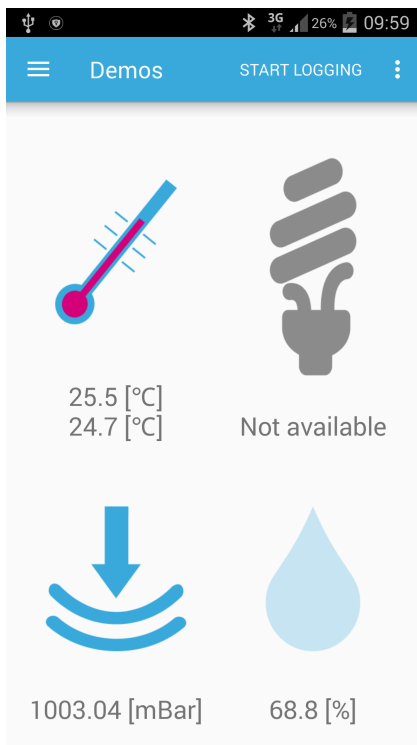


## BLE sensor application for Android and iOS



### Features

- Sensor data reception and command transmission over Bluetooth Low Energy (BLE)
- Support for multiple [STM32Cube](#) function packs and boards
- Available on Android and iOS app stores
- Cross-platform user interface and functionality
- Based on [BlueST-SDK](#) library
- Data logging support
- Data plotting support
- Included serial console (stdout/stdin/stderr) over Bluetooth
- Secure pairing (with pin) support
- Data publishing on the cloud support

### Description

[STBLESensor](#) application is available for Android and iOS and shows the data exported by a BLE device using the BlueST protocol.

The app shows different panels based on the data types exported by the firmware, including: environmental data, MEMS sensor fusion, plot, activity recognition, carry position, acceleration event, BlueVoice, speech to text, beamforming, sound source localization, pedometer, switch, motion intensity, compass, cloud logging, node status.

All the data received by the app can be logged in CVS files and exported by e-mail.

If the firmware supports the functionality, the application can also show a serial console to exchange string messages with the board. This functionality is also used to upgrade the board firmware.

Both Android and iOS applications support the Bluetooth secure pairing with pin.

For Android it is also possible to use an NFC tag to read the pin and trigger the connection with the node.

#### Product summary

BLE sensor application for Android and iOS	<a href="#">STBLESensor</a>
Bluetooth low energy and sensor technology SDK	<a href="#">BlueST-SDK</a>

## 1 Detailed description

The available panels shown by the application are:

- Environmental data: displays the data from the environmental sensors (temperature, pressure, humidity, light).
- MEMS sensor fusion: moves a cube using the quaternions computed by the sensor fusion library (if supported by the firmware).
- Plot: plots the available features.
- Activity recognition: shows the result of the activity recognition algorithm library (if supported by the firmware).
- Carry position: shows the result of the carry position recognition algorithm library (if supported by the firmware).
- Acceleration event: displays events like single tap, double tap, orientation, pedometer detected by the accelerometer component.
- BlueVoice: receives the audio from a MEMS microphone (if available).
- Beam forming: uses multiple omnidirectional microphones to create a directional one (if available).
- Speech to text: streams audio data to different speech to text cloud providers (if available).
- Source localization: localizes the sound source direction (if available).
- Pedometer: shows the output of the pedometer algorithm (if supported by the firmware).
- Switch: changes the LED status.
- Motion intensity: shows the output of the motion intensity detection library (if supported by the firmware).
- Compass: displays the board orientation with respect to the magnetic north (if supported by the firmware).
- Cloud: sends board data to a cloud provider using the MQTT protocol.
- Node status: shows the RSSI of a BLE signal and the battery level.
- FFT amplitude: shows the Fast Fourier transform computed by the board (if supported by the firmware)
- Level: shows the board inclination (if supported by the firmware)
- AI Data Log: configures the data acquisition and annotates the acquired data to train a neural network (if supported by the firmware)

## 2 Order codes

**Table 1. STBLESensor and BlueST-SDK order codes**

Order code	Description
STBLESensor-iOS	iOS demo application compatible with <a href="#">BlueST-SDK</a> protocol-based <a href="#">STM32Cube</a> function packs
STBLESensor-Android	Android demo application compatible with BlueST- SDK protocol-based STM32Cube function packs
BlueST-SDK-lpa	iOS version of BlueST-SDK library that permits easy access to the data exported by a Bluetooth low energy (BLE) device that implements the BlueST protocol.
BlueST-SDK-Aar	Android version of BlueST SDK library that permits easy access to the data exported by a Bluetooth low energy (BLE) device that implements the BlueST protocol.

## Revision history

**Table 2. Document revision history**

Date	Version	Changes
18-Oct-2018	1	Initial release.
22-May-2019	2	Updated <a href="#">Section 1 Detailed description</a> .

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