WizzDev IoT Basic
Getting Started Guide for AWS IoT Core

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1   Document information

1.1   Document revision history

Version	Date	Author	Comment
1.0.0	15.06.2023	P.Belka	Initial Version
2.0.0	29.06.2023	P.Belka	Updated

1.2   Applicable operating systems for this guide
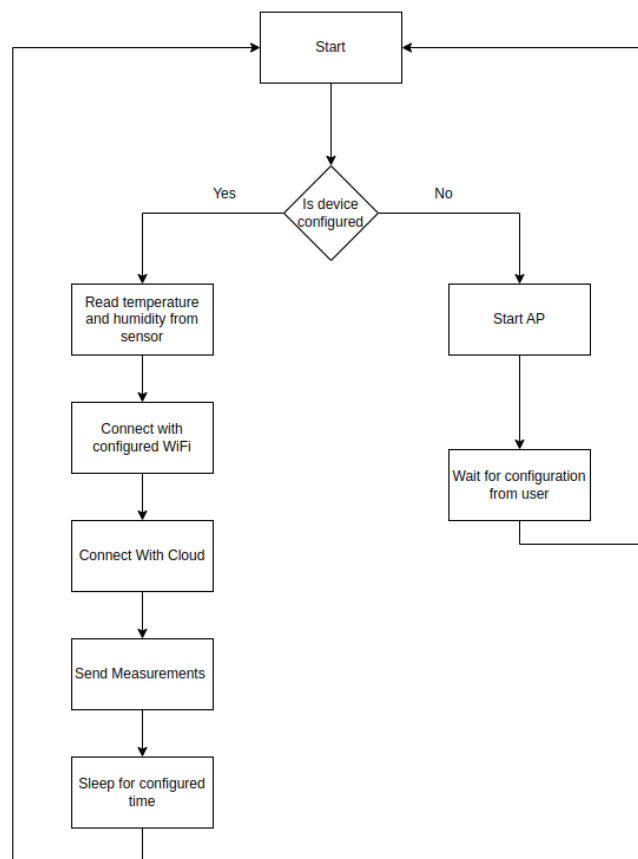
Linux, Windows, iOS, Android

2   Overview

The Wizzdev IoT Basic is a device which includes an ESP32 control unit, a temperature and humidity sensor and power supply with Li-Ion battery charger.

The device connects with the delivered AWS IoT Cloud environment.

The working cycle of the configured device is:

• Wake up

• Take temperature and humidity measurement

• Connect to WiFi

• Connect to Cloud

• Send measurements

• Go to sleep

```
                              ┌──────────┐
                    ┌────────▶│  Start   │◀────────┐
                    │         └──────────┘         │
                    │              │               │
                    │              ▼               │
                    │          ◇Is device◇         │
              Yes   │         ◇configured ◇   No    │
          ┌─────────┘          ◇         ◇         └─────────┐
          ▼                                                   ▼
  ┌──────────────┐                                    ┌──────────────┐
  │Read temperature│                                  │   Start AP   │
  │and humidity from│                                 └──────────────┘
  │    sensor     │                                          │
  └──────────────┘                                           ▼
          │                                          ┌──────────────┐
          ▼                                          │Wait for configuration│
  ┌──────────────┐                                   │  from user   │
  │Connect with   │                                  └──────────────┘
  │configured WiFi│
  └──────────────┘
          │
          ▼
  ┌──────────────┐
  │Connect With Cloud│
  └──────────────┘
          │
          ▼
  ┌──────────────┐
  │Send Measurements│
  └──────────────┘
          │
          ▼
  ┌──────────────┐
  │Sleep for configured│
  │    time       │
  └──────────────┘
```

3 Hardware description

3.1 Datasheet

You can download the datasheet [here](#).

3.2 Standard kit contents

The Wizzdev IoT Basic contains a PCB board with all the required components and comes with pre-flashed firmware.

3.3 User-provided items

The user needs to provide a power source for the device.

Depending on the version of the owned board, AA batteries, Li-Ion Cells, a USB cable or a 3.3V power supply is required.
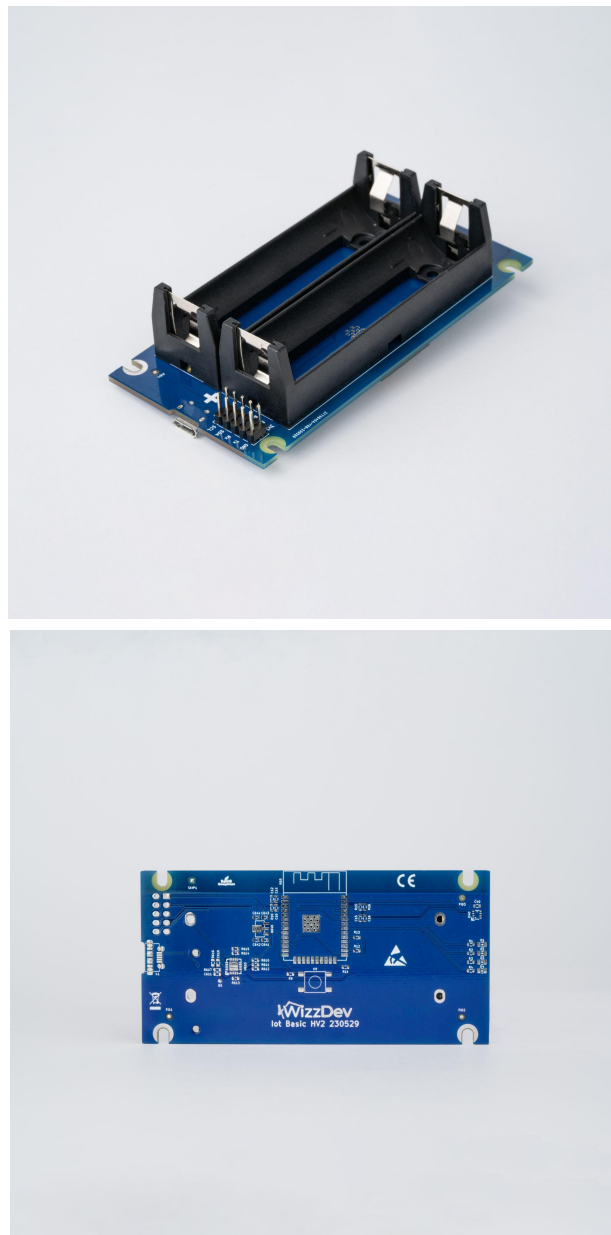
3.4 3rd party purchasable items

Not applicable.
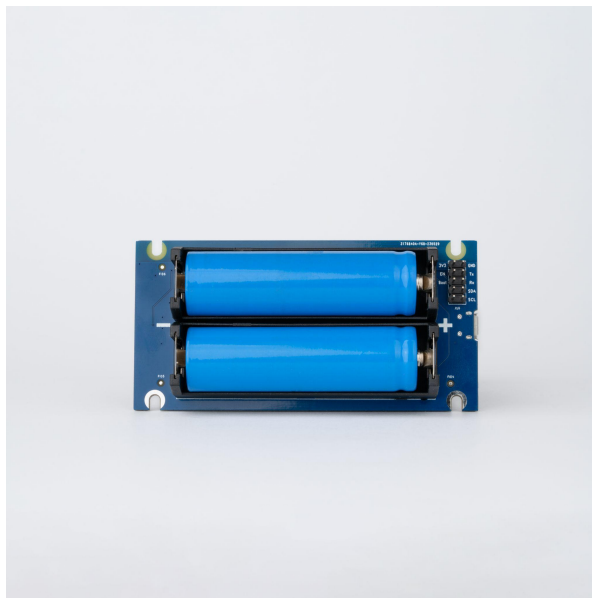
4 Set up your development environment

4.1 Tools installation (IDEs, Toolchains, SDKs)

Not applicable

5 Set up device hardware

There is a micro USB connector located on the board for charging the batteries. There is also a button for waking up and factory resetting. To reset the Wi-Fi credentials and to set them up again, push and hold the button for 5 seconds, all four diodes should blink 3 times if the reset was triggered successfully.

By default, status LED diodes are turned off due to energy saving. They can be configured to indicate the presence of power voltage or working status if required when ordering the board.

6 Set up your AWS account and permissions

Customer would receive configured IAM account from WizzDev PSA.

7 Create resources in AWS IoT

All resources will be created by WizzDev using IaC tools.

8 Provision the device with credentials

The AWS Cloud credentials are provided during flashing of the board and stored in the MCU memory. There is no need for the user to provide anything apart from the Wi-Fi credentials which are described in section 5.

9 Run the demo

The WizzDev IoT Basic board comes with pre-flashed firmware, configured for an already set-up AWS IoT Cloud environment.

When the device is powered up for the first time, connect to its access point with the SSID: "ESP32WizzDev_IoT_E8:9F:6D:B2:21:7C" and password "12345678".

The SSID contains the MAC Address of the device, which will differ for each unit. On your browser search bar enter the IP address of the device, which is: 192.168.4.1, and hit enter.

It will redirect you to "http://192.168.4.1/static/setup.html".

A page with configuration fields will appear.
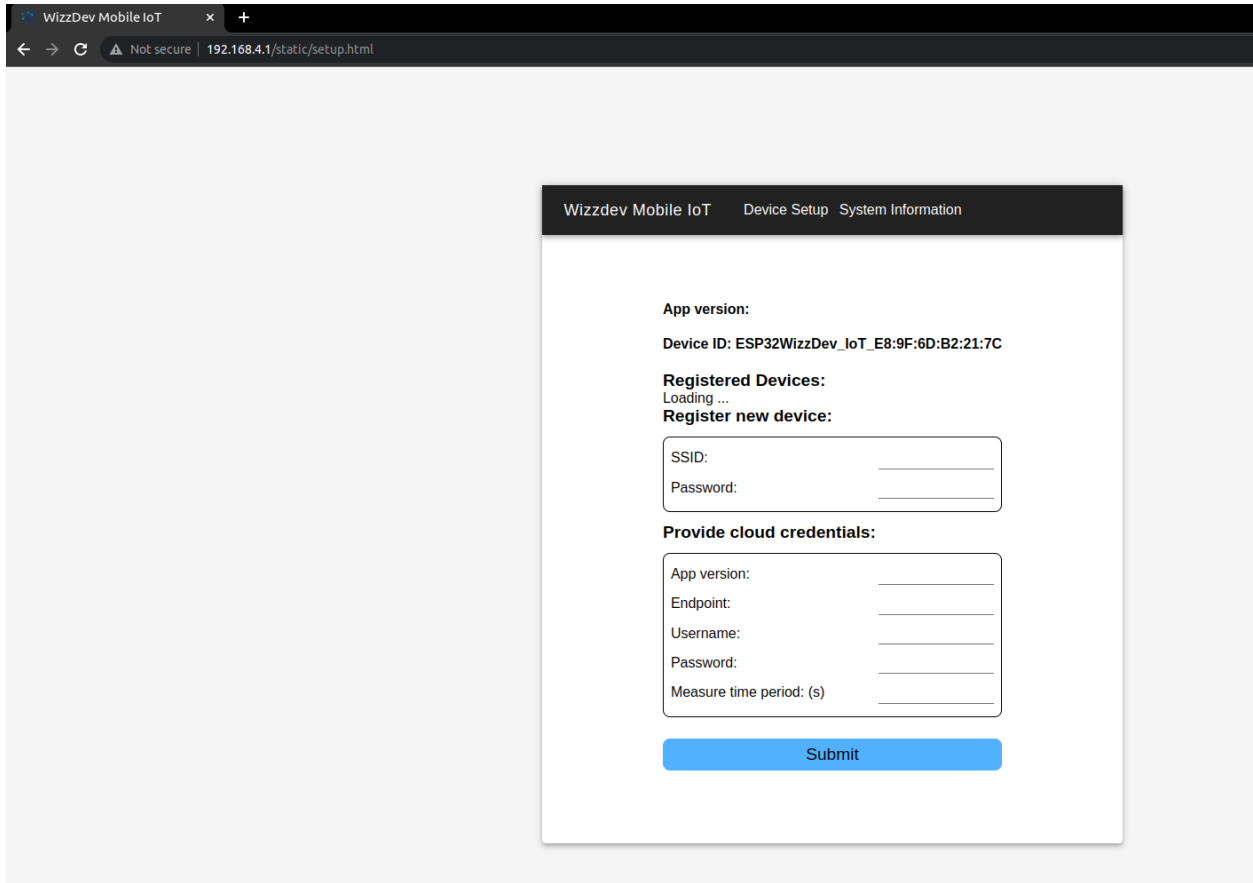
Enter the WiFi credentials of the network, which the device should connect with in the fields "SSID" and "Password". App version and cloud credentials are not required, since the device has default, preconfigured cloud settings. In the field "Measure time period" the time period between measurements can be set. If left empty, the default value is 5min. The minimal value that can be used is 30s. This setting has a big impact on the battery life of the device, the less the value, the more frequently will the device wake up and drain energy. After submitting all required values, the device will turn off the access point and begin the working cycle.

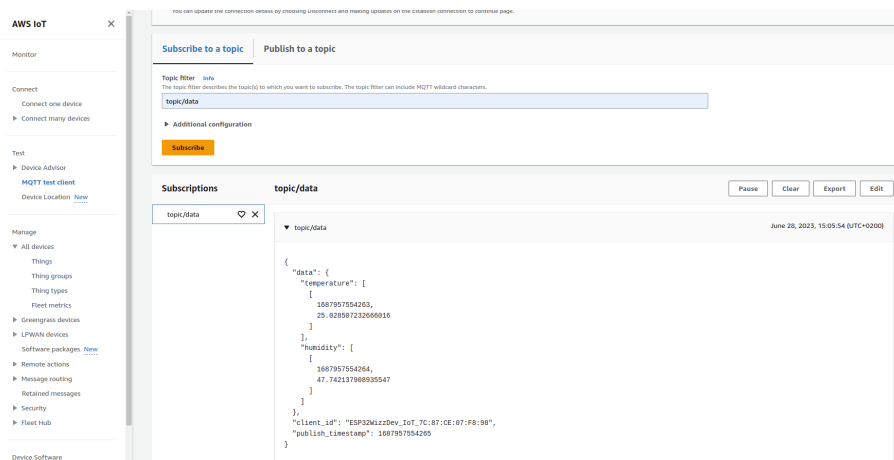The results of the measurement will appear in the provided AWS Cloud dashboard.

Here is an example:
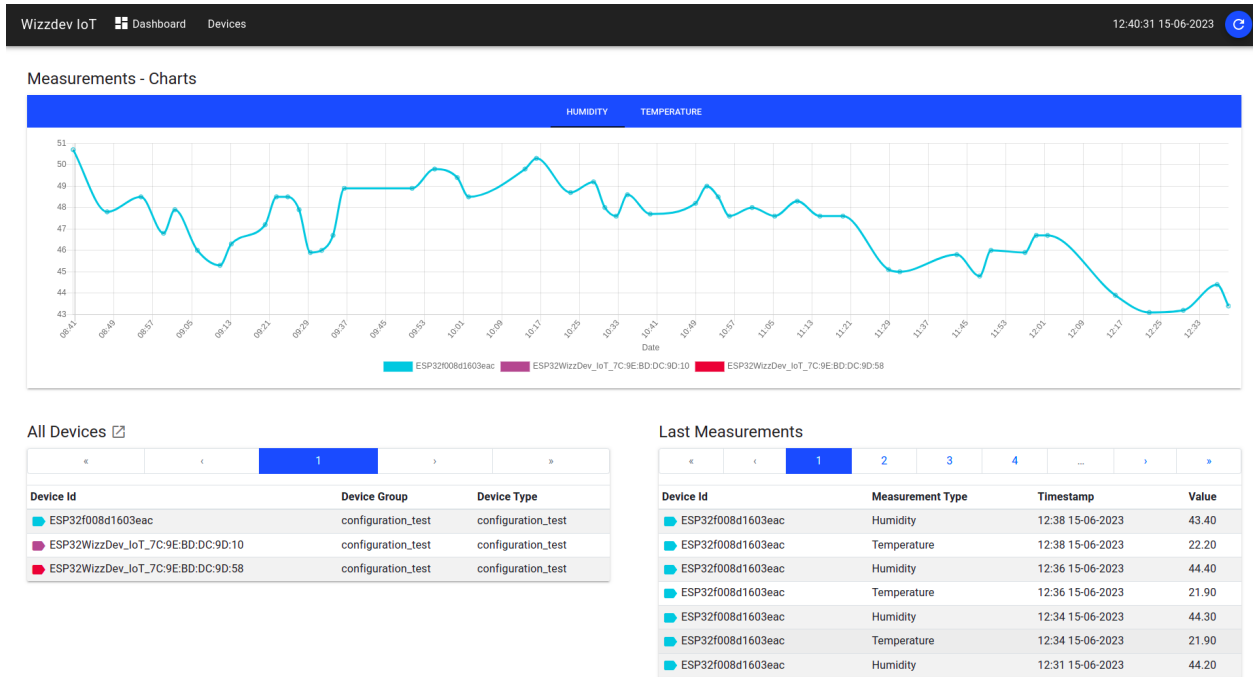
10 Verify messages in AWS IoT Core

If you have problems with using AWS IoT Core Test Client check the following guide.
All data from the IoT Basic device are published in the 'topic/data" MQTT topic and forwarded to the database:

11 Debugging

Having logs on the UART output is optional and turned off by default in order to save energy. The setting cannot be changed by the end user. To have the logs, please inform us when ordering the device.

12 Troubleshooting

If any problems occur, and the data is not displayed on the dashboard, first check if the batteries are put in the correct way and if their voltage is within specification.

If the device is not connecting to the Wi-Fi network, do a factory reset and provide the Wi-Fi credentials again. Double-check the SSID and password.

If the measurements are incorrect, check if any material is covering the sensor placed above the LEDs.

If you are still having problems, please contact WizzDev directly. You can visit our website Wizzdev.pl or contact us directly at info@wizzdev.pl