

INDUSTRIAL PRODUCT DATASHEET

# Smart Citizen Kit 2.3 - Open Source Environmental Monitoring Kit

The Smart Citizen Kit 2.3 is an open-source environmental monitoring kit with multi-sensor capabilities, customization, and easy data sharing via the Smart Citizen Platform.

SKU

114993536

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PRICE

\$149.00(Excl. VAT)



# Overview



The Smart Citizen Kit 2.3 is an open-source environmental monitoring kit designed by Fab Lab Barcelona, featuring multi-sensor capabilities for UV, PM, temperature, humidity, noise, and light, along with a user-friendly interface and open-source hardware customization options. It supports data sharing and visualization via the Smart Citizen Platform, multiple data-logging options including Wi-Fi, MicroSD, and internal memory, and flexible power options such as micro USB, a 2000mAh LiPo battery, and solar panels.

# Key Features

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- **Multi-Sensor Capabilities:** The new SCK2.3 is compatible with the previous SCK2.1. It brings new sensors, more customization, and exciting features that allow anyone to accurately measure and collect better quality data, including UV readings, an improved PM sensor to better measure air quality, along with the classic sensors from the previous SCK2.1: temperature, humidity, noise and light pollution.
- **User-Friendly Interface:** The SCK2.3 is designed to allow anyone to start measuring in no time, making it accessible for beginners, educators, and researchers alike. Its straightforward setup process and intuitive interface allow users to easily start collecting data without needing advanced technical skills.
- **Open Source Hardware with Customization Options:** As with previous versions, the SCK2.3 is fully open source, allowing users to modify and customize its hardware and firmware, tailoring the SCK to meet their specific needs. For example, users can add a diverse selection of new sensors to measure additional metrics for indoor and outdoor air quality, and water and soil measurements. In addition, Fab Lab Barcelona has a wide range of open-source designs that allow users to 3D print and build their enclosures, recycling them when they are done, and saving some industrial plastic manufacturing in the process.
- **Data Sharing and Visualization:** Collected data can be uploaded to the [Smart Citizen Platform](#), where users can visualize their findings through easy-to-read graphs. The Smart Citizen Platform is completely open for people to access, making it easy for anyone to play, experiment, and work with environmental data!
- **Various data-logging options:** The SCK2.3 is designed to publish data using your home or office Wi-Fi and can store data in CSV format on a MicroSD. It also includes an internal memory to store more than a month's worth of data in case the device loses its Wi-Fi connection. Data is published automatically when the connection is recovered.
- **Flexible Power Options:** Similar to previous versions, the SCK2.3 can be powered via micro USB, and it also comes with a 2000mAh LiPo battery. The battery is meant to be a complete power option for short-term measurements (from days to a week) and a backup solution when the SCK is used for longer periods. It is also compatible with various other charging options, including battery packs, or solar panels for off-the-grid deployments.

## A Community Design Scaled up by Fusion Co-Create

This incredible creation is designed by Fab Lab Barcelona. We're excited to work with the team to bring this impactful design to the market via our [Fusion Co-Create](#). It's a program where we applied the Fusion Produce and Promote services to scale up cool community projects, while the designers get commission for each single piece sold.

## Why Smart Citizen?

Since 2012, we have worked to empower communities to better understand their environment by developing open tools for environmental monitoring. Starting with the Smart Citizen Kit, we've evolved to offer a wide range of tools that support a worldwide community in collecting good quality data, openly sharing it, and taking local action.

From Barcelona to the world, we've created a unique ecosystem of sensor kits, software platforms, and tools that enable communities to make sense of their environment.

## Introducing the SCK2.3

**Fab Lab Barcelona** at **IAAC - Institute for Advanced Architecture of Catalonia** proudly introduces a new version of the Smart Citizen Kit: the SCK2.3. The new kit collects environmental data more accurately and it's easier to use. Likewise, it introduces new sensors and a more robust firmware loaded with features, while maintaining everything that made the previous versions great!

## What's new on the SCK2.3?

The new SCK2.3 is compatible with the previous SCK2.1. It brings new sensors, more customization, and exciting features that allow anyone to easily measure and collect better quality data. The new firmware supports more sensors, it's more robust, and it keeps backward compatibility while still being completely open source!

- PM sensor with finer measuring capabilities
- UV Sensor for complete light measurements
- Our most robust firmware ever
- Expanded compatibility with a wide range of sensors

## What does it measure?

\*The SCK2.3 is also compatible with other versions in the Sensirion SEN5X series, such as the SEN54 and the SEN55.

In addition, you can add plenty of new sensors to measure indoor, outdoor air quality, water and soil measurements. Check the documentation links below for more information.

## Can I get an enclosure?

The Smart Citizen Kit doesn't come with an enclosure, but there are plenty of freely available designs on our [smartcitizen-enclosures | Enclosures for Smart Citizen!](#) We have a wide range of open source designs that you can 3D print and build yourself, saving some industrial plastic manufacturing in the process. If you don't have a 3D printer, you can always [find a Fab Lab](#) near you and once the enclosure's life is done, you can repurpose it to make more 3D printing filament!

## Customized Sensor Solutions for Professionals

At Fab Lab Barcelona, we understand that every project is unique. That's why we offer companies and institutions the opportunity to customize our standard Smart Citizen sensors to meet their specific needs.

Whether you are involved in an innovative research project, an educational initiative, or developing a specialized monitoring system, our team has over a decade of experience creating open environmental monitoring solutions. We can tailor our tools to align precisely with your objectives, ensuring that you receive solutions specifically designed for you.

We will assess the best configuration to meet your professional goals.

Are you interested in exploring customized sensor solutions?

Contact us at [info@smartcitizen.me](mailto:info@smartcitizen.me) with details about your desired configuration, and let's collaborate to bring your project to life.

# Product Gallery



## Specification

| Parameter        | Description                                                                                                                                                                                        |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Power      | Powered via USB or 2000mAh LiPo battery, with a micro USB charging port                                                                                                                            |
| Output Data      | Provides real-time environmental data on air quality, noise, temperature, humidity, ambient light readings, UV index, and particulate matter. Additional Seeed Grove sensors are compatible.       |
| Connectivity     | Wi-Fi enabled for data publishing and monitoring. It also includes an internal memory to store more than a month's worth of data in case the device loses its Wi-Fi connection.                    |
| Data Storage     | Store data in CSV format on an SD/SDHC MicroSD card with a standard FAT file system.                                                                                                               |
| Sensors          | Includes Sensirion SHT31 (temperature & humidity), TDK ICS43432 (noise), Rohm BH1721FVC (Ambient Light), NXP MPL3115A2S (Barometric Pressure), AMS AS7331 (UV index), Sensirion SEN50 (PM sensors) |
| Dimensions       | 60 x 60 x 20 mm (board only), 120 x 120 x 55 mm (with enclosure)                                                                                                                                   |
| Weight           | 65g (board only), 300g (with enclosure)                                                                                                                                                            |
| Battery Life     | 2-3 days with all sensors active, 7 days with data stored on SD card (approximately)                                                                                                               |
| Power Management | Includes a 2000mAh LiPo battery and USB charging, optional solar panel support for off-grid deployment                                                                                             |
| Firmware         | Robust and open-source, with support for multiple sensors and community contributions                                                                                                              |
| Compatibility    | Compatible with previous SCK2.1 and additional Sensirion SEN5X sensors like SEN54 and SEN55                                                                                                        |

## Part List

|                                      |    |
|--------------------------------------|----|
| Smart Citizen Data Board 2.3         | x1 |
| Smart Citizen Urban Sensor Board 2.3 | x1 |
| PM Sensor (Sensirion SEN50)          | x1 |
| USB Adapter                          | x1 |
| Micro USB Cable (1m)                 | x1 |
| Smart Citizen Cloth Bag              | x1 |
| 16Gb MicroSD Card with SD Adapter    | x1 |
| 2000mAh Lithium Polymer Battery      | x1 |

## Compliance & Logistics

|          |            |
|----------|------------|
| HSCODE   | 9027900000 |
| USHSCODE | 9027908800 |
| UPC      |            |
| EUHSCODE | 9027109000 |
| COO      | CHINA      |

## Resource Links

- <https://www.seeedstudio.com/Smart-Citizen2-3-p-6327.html>
- [PCN-114993536- Smart Citizen Kit 2.3](#)
- <https://enclosures.smartcitizen.me/>
- [Smart Citizen Onboarding](#)
- [Resource](#)

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