

Soracom IoT Starter Kit

(powered by: Raspberry Pi Zero)



IoT Connectivity and Platform Services

Soracom provides IoT connectivity and platform services to over 20,000 businesses and over 5M connections, with solutions for every challenge in IoT. We're focused on making it easy to connect M2M devices at scale, with a powerful IoT SIM that provides connectivity in 160 countries. Soracom provides direct integrations with the world's leading cloud platforms, making it easy to transmit data from your device to AWS, Google Cloud Platform, or Microsoft Azure.

Our team of IoT experts is on hand to learn more about your challenges, and to discuss how Soracom can help at every stage of your product development lifecycle.



The **Soracom IoT Starter Kit (powered by Raspberry Pi Zero WH)** is built for IoT innovators, hobbyists, makers, developers, engineers, or anyone who wants to jumpstart their IoT project with secure cellular connectivity.

It contains everything you need to quickly connect devices using cellular connectivity while also getting to learn more about Soracom's User Console to monitor and manage your devices.

Why should you get it?

- Open up a world of possibilities for IoT development with Soracom cellular IoT
- Build devices that connect to the cloud
- Build a simple application that records data from an ultrasonic sensor
- Send sensor data to the cloud for real-time visualization

You create. We connect.

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Included in the Kit



| Accessory | Part Number | Description |
|--|-------------|---|
| Ultrasonic range finder | HC-SR04 | This simple yet reliable sensor measures distance using ultrasonic vibrations, and is accurate up to 10 feet. The sensor can quickly capture data for easy visualization just by waving our hand in front of it |
| 16GB Class 10 SD Card and Micro-SD Card Reader | | The SD card is Storage for your Raspberry Pi, plus a card reader so you can edit the contents on your computer. |
| Perma-Proto Breadboard and Color-coded Wires | | To connect the Ultrasonic Range Finder to your Raspberry Pi, without soldering anything. |
| LED and 15 Ohm Resistor | | Basic hardware for testing signal output |
| 1 ft USB-A to Micro-USB Cable | | To power your Raspberry Pi from your computer or other USB power source. |
| Soracom Air IoT SIM Card including \$10 Starter Kit Coupon | | The Soracom IoT SIM provides cellular data connectivity and SMS functionality on 2G, 3G, and 4G/LTE networks in over 140 countries around the world, fully managed right from your browser on the Soracom User Console.Coupon to cover Soracom service fees (such as data usage) as you build your project. |

Note: Products with electrical plugs are designed for use in the US. Outlets and voltage differ internationally and this product may require an adapter or converter for use in your destination. Please check compatibility before purchasing.



Features and Specs:

The Raspberry Pi Zero WH offers all the benefits of the Pi Zero W, but with one big difference – a pre-soldered 40pin GPIO header.

It is the smallest member of the Raspberry Pi family but still packs a LOT of features including WiFi, Bluetooth, mini-HDMI, a micro-USB port and camera connector.

The familiar 40-pin GPIO header from the larger Raspberry Pis is included (soldered in place for you), great for adding HATs and pHATs or simply connecting your project components with jumper wires.

In terms of computing power the Zero WH features a 1GHz processor (BCM2835) and 512MB RAM - not as powerful as the mighty Raspberry Pi 4 of course, but still plenty of grunt for a huge range of fun projects. There's also Bluetooth Low Energy (BLE) on board making the Pi an excellent IoT solution.

We also include a great case for the Raspberry Pi Zero to keep your new favorite board safe.

- Processor: BCM 2835 SOC
- Clock speed: 1GHz
- RAM: 512MB
- Built-in Wireless: BCM43143, WiFi + Bluetooth 4.1 +
 BLE (Bluetooth Low Energy), same as Raspberry Pi 3.
- Memory: micro-SD
- Display and Audio: mini-HDMI
- USB Port: 1 x Micro-B USB for data (with power too)
- Power input: 1 x Micro-B USB for power (no data)
- Camera interface: CSI camera connector (needs adaptor cable, 0.5mm pitch to pitch CSI)
- GPIO: Pre-soldered 40-pin GPIO connector, compatible with Raspberry Pi Zero v1.3 and Raspberry Pi 3.
- Compatibility of GPIO: Compatible with existing
 HAT addons
- Dimensions: 65mm x 30mm x 5mm



CORNER RADIUS 3mm, all holes M2.5

Link to the RPi Zero 2 W Datasheet including Safety Instructions.

Note: The RPi Zero 2 W is the latest generation of the Raspberry Pi Zero family series, which features a different type of processor, CPU and Bluetooth 4.2.



Questions? Visit soracaom.io for more information.

Onyx LTE USB Dongle

Features

- · Global 4G/LTE, 3G, and 2G network compatibility
- Compact, rugged design
- Easy installation
- Integrated antennas
- Built-in application protocols

Onyx LTE USB Dongle Technical Specifications

| Modem | EG25-G | | |
|-------------------|--|--|--|
| Region | Global | | |
| Performance | LTE Cat. 4 (3GPP Release 11) | | |
| Network Bands | LTE-FDD B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 | | |
| | LTE-TDD B38/B39/B40/B41 | | |
| | 3G UMTS B1/B2/B4/B5/B6/B8/B19 | | |
| | 2G GSM 850/900/1800/1900 | | |
| Packet Data | Max. 150Mbps downlink / Max. 50Mbps uplink | | |
| Compatibility | 3GPP TS 27.007, TS 27.005, Enhanced AT Commands | | |
| Protocols | TCP, UDP, PPP, FTP, HTTP, MQTT, NTP, NITZ, PING, QMI | | |
| Messaging | SMS, USSD | | |
| Operating Systems | Windows 7/8/8.1/10, Linux 2.6 ~ 5.4, Android 4.x/5.x/6.x/7.x/9.x | | |
| USB | USB 2.0 Type A | | |
| SIM | Nano SIM (4FF) | | |
| Antenna | Built-in, 2 × CRC9 | | |
| Operating Voltage | USB powered, 4.2V ~ 6.0V | | |
| Power Consumption | 35mA (idle, typical), 600mA (during communication, typical) | | |
| Dimensions | 95mm × 36mm × 13mm | | |
| Weight | 36g | | |
| Casing | PC-ABS | | |
| Temperature Range | -20°C ~ 60°C (operation), -35°C ~ 85°C (storage) | | |
| Humidity | 5% ~ 75% (operation, non-condensing), Max. 80% (storage, non-condensing) | | |
| Regulatory | FCC, PTCRB, JATE, TELEC, CE* | | |
| Safety | RoHS | | |
| | | | |



* Certification in progress

How to Get Started

- Set up a Raspberry Pi microcomputer
- Connect the Soracom Onyx LTE modem & activate SIM card
- Set up an ultrasonic sensor & send data to the cloud
- Manage your SIM through the SORACOM User Console
- Visualize and analyze sensor data with Soracom

Getting started tutorial for the Soracom IoT Starter Kit (powered by Raspberry Pi Zero) here.







4G/3G/2G

((_))

Global network compatibility

Nano SIM

> SMS & USSD

Status LED

AT commands

Mouser Electronics

Authorized Distributor

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