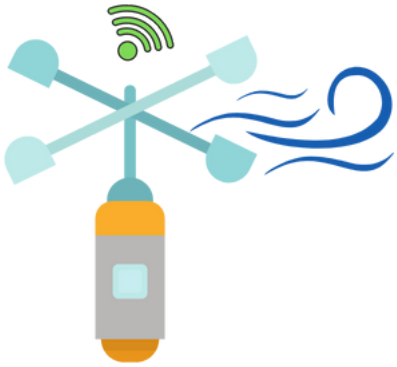

Smart Wind Speed Monitor

status active

Smart Wind Speed Monitor

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About

This repo contains

- Backend
- Firmware
- Detailed instructions

for Smart Wind Speed Monitor.

Getting Started

These instructions will get you a copy of the project up and running on your system.

Prerequisites

Things you need to install the FW.

```
- Raspberry Pi Zero W
- PiSugar
```

```
- SIM7600-X
```

Installing

A step by step series that tell you how to get the Firmware and Backend running

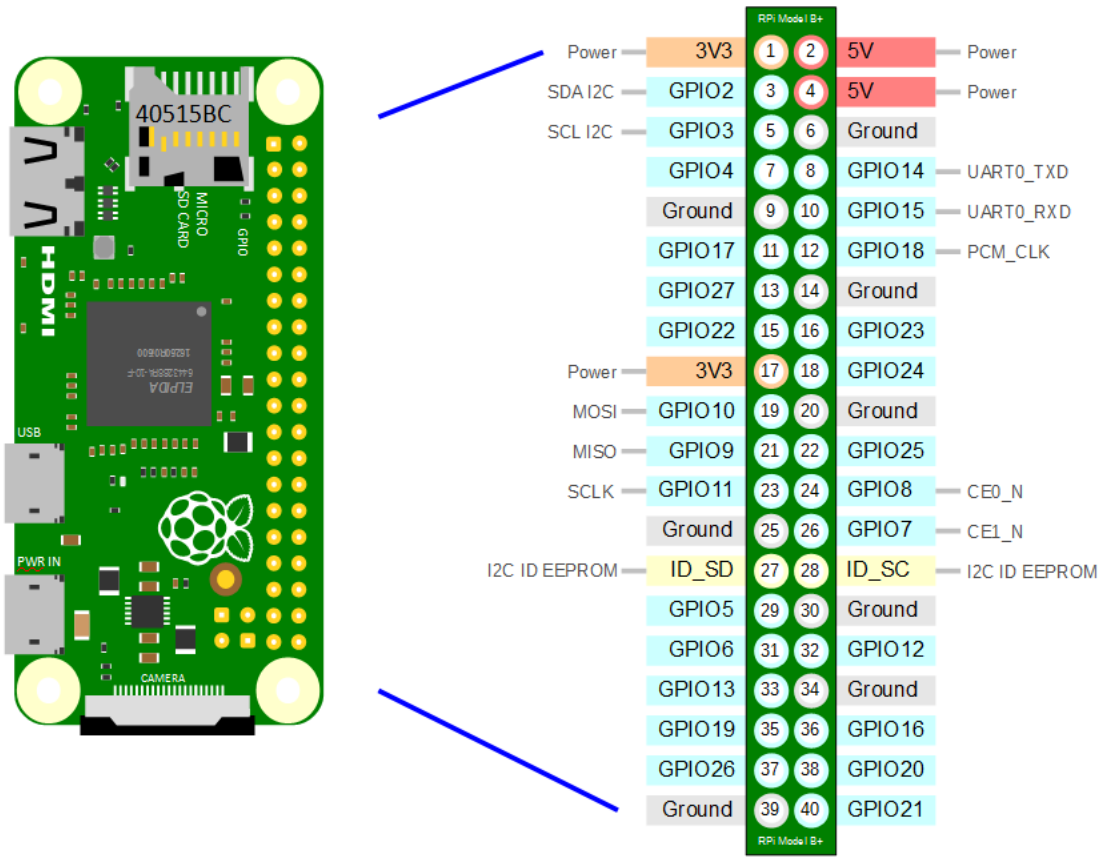
Raspberry Pi Configuration

((TO BE UPDATED IN THE UPCOMMING MILESTONES))

Circuit

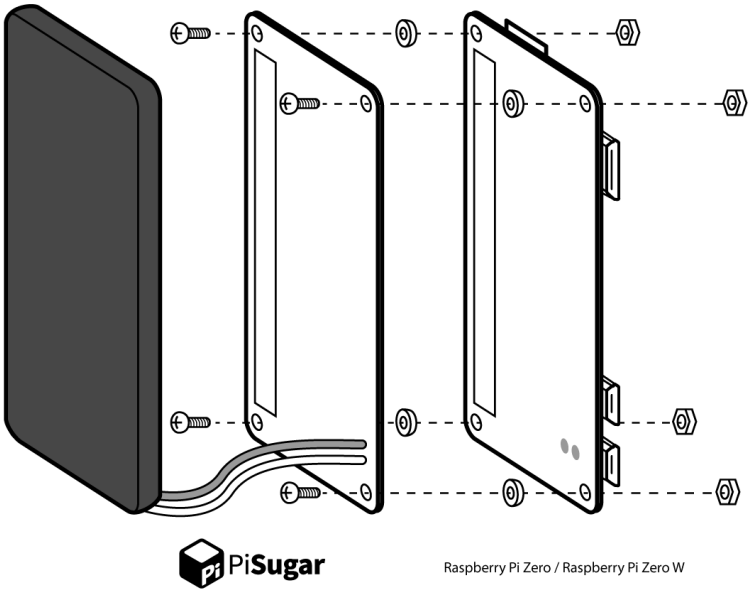
Raspberry Pi Zero W Pinout

Follow the pinout diagram given below to connect different components to your Raspberry Pi Zero W.



Pi Sugar Connection with Raspberry Pi Zero W

The Pi Sugar will be placed beneath the Raspberry Pi Zero W as shown in the sketch below.

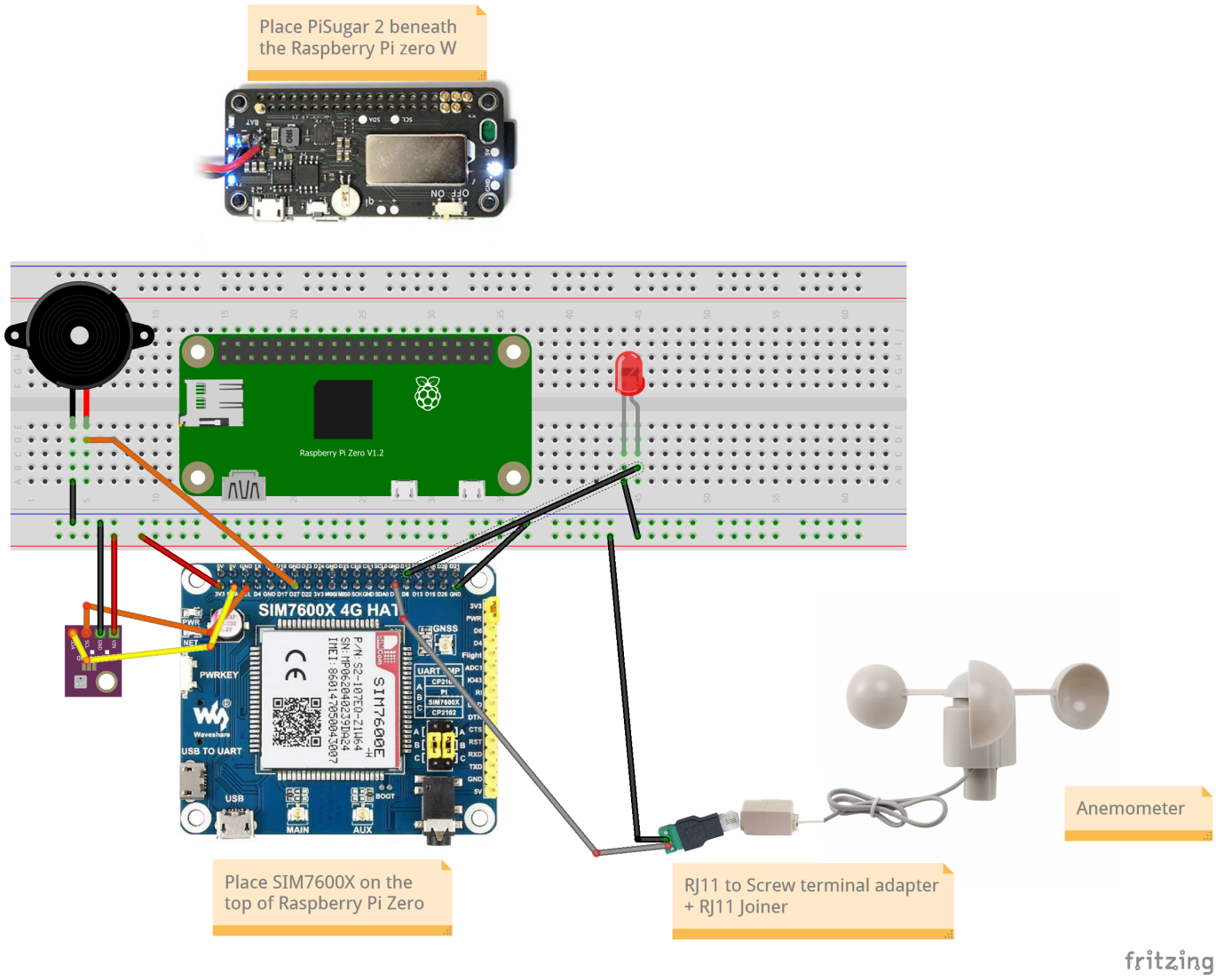


Sim7600E Connection with Raspberry Pi Zero W

The Pi Sugar will be placed above the Raspberry Pi Zero W as shown in the pciture below. Moreover, the antennas for GPS and GPRS can be easily connected.

Complete Circuit Diagram

Here's the complete circuit diagram of the system.



Components Pin Connection Details

```
Components pin connection details
```

LED Light

LED Light Connected with Rapberry Pi Zero W

LED Pins	Raspberry Pi Zero W
Pin 1 (longer pin)	D12
Pin 2 (shorter pin)	GND

Buzzer

Buzzer Connected with Rapberry Pi Zero W

Buzzer Pins	Raspberry Pi Zero W
Pin 1 (red)	D27

Buzzer Pins	Raspberry Pi Zero W
Pin 2 (black)	GND

Anemometer

Anemometer Connected with Rapberry Pi Zero W

Anemometer Pins	Raspberry Pi Zero W
Pin 1	D5
Pin 2	GND

Temperature and Humidity Sensor (BME280)

BME280 Connected with Rapberry Pi Zero W

BME280 Pins	Raspberry Pi Zero W
VIN	3.3V
GND	GND
SCL	SCL
SDA	SDA

WebApp

((TO BE UPDATED IN THE UPCOMMING MILESTONES))

Usage

((TO BE UPDATED IN THE UPCOMMING MILESTONES))

List of Components

Following components are used to make this project

1. Raspberry Pi Zero W ○ https://www.amazon.co.uk/CanaKit-Raspberry-Wireless-Complete-Starter/dp/B072N3X39J/ref=sr_1_1?keywords=raspberry+pi+zero+w+w&qid=1639821510&sr=8-1
2. RPi Zero W UPS ○ https://www.amazon.co.uk/Pisugar2-Portable-Lithium-Raspberry-Accessories/dp/B08D678XPR/ref=sr_1_4?keywords=raspberry+pi+ups&qid=1639821580&sr=8-4
3. 4G GPRS and GPS SIM7600E-H ○ https://www.amazon.co.uk/IBest-GSM-GPRS-GNSS-Board/dp/B07PPSTY13/ref=sr_1_3?keywords=raspberry%2Bpi%2B4g&qid=1639821783&sr=8-3&th=1
4. BME280 Temperature, Humidity and Pressure Sensor ○ https://www.amazon.co.uk/CUQI-Barometric-Pressure-Temperature-Humidity/dp/B0991RKZSN/ref=sr_1_1?keywords=bme280&qid=1639822215&sr=8-1
5. Wind Speed Meter ○ https://www.amazon.co.uk/Nephit-Measurement-Meteorological-Instruments-Accessories/dp/B09F64GXQH/ref=sr_1_7?keywords=wind+speed+sensor&qid=1639822540&sr=8-7

6. RJ11 Screw Terminal ○ https://www.amazon.co.uk/JENOR-Terminal-Adapter-Connector-Splitter/dp/B087R3187F/ref=sr_1_2?keywords=rj11+terminal&qid=1639823304&sr=8-2
7. RJ11 Connector ○ https://www.amazon.co.uk/Rhinocables%C2%AE-Coupler-Extender-Extension-connector/dp/B00EVS92KQ/ref=sr_1_3?keywords=rj11+connector&qid=1639823380&sr=8-3
8. Alarm Buzzer ○ https://www.amazon.co.uk/sourcingmap%C2%AE-Continuons-Electronic-Buzzer-Sounder/dp/B010V4UZTK/ref=sr_1_9?keywords=alarm+buzzer&qid=1639823529&sr=8-9
9. 3v-6v LED ○ https://www.amazon.co.uk/Sourcingmap-20pcs-Wired-Light-Flashing/dp/B07DYZ1L3Y/ref=sr_1_12?keywords=led+light+5mm&qid=1639823838&sr=8-12

🔨 Built Using

- Python - Programming Language - For Raspberry Pi Zero W Firmware
- Fritzing - Circuit Designer

✍️ Authors

- @Nauman3S - Development and Deployment