Smart Health Monitor

Smart Health Monitor

📝 Table of Contents

🧐 About

This repo contains

- Firmware
- Circuit Diagram
- PCB Files
- Detailed instructions

for Smart Health Monitor project.

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.

```
- Arduino IDE
```

Installing

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

ESP32 Configuration

You should have Arduino IDE Installed

1. Add ESP8266 Board to your Arduino IDE 1. In your Arduino IDE, go to File> Preferences Installing ESP8266 Add-on in Arduino IDE Windows, Mac OS X, Linux open preferences 2. Enter `http://arduino.esp8266.com/stable/package_esp8266com_index.json` into the "Additional Board Manager URLs" field then, click the "OK" button: Note: if you already have the ESP8266 boards URL, you can separate the URLs with a comma(each board will go to neaw line) as follows: `https://dl.espressif.com/dl/package_esp32_index.json,\n http://arduino.esp8266.com/stable/package_esp8266com_index.json`
2. Open the Boards Manager. Go to Tools > Board > Boards Manager...
3. Search for ESP8266 and press install button for the ESP8266 by Espressif Systems":
4. That's it. It should be installed after a few seconds.
5. Close and re-open the Arduino IDE.
6. Now copy the contents of the libs folder to the libraries directory of your Arduino
    1. If you are using windows, the libraries directory will be Documents/Arduino/libraries

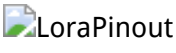
ESP8266 Node FW Uploading

1. Select ESP32 Dev Module from Tools->Board->ESP8266
2. Select the correct port from Tools->Port
3. Then open Firmware.ino file,
4. Now Upload the Code to your NodeMCU 1.0(ESP-12E Module).
5. Your ESP8266 is now ready to be used.

Circuit

ESP8266 Dev Module Pinout

Follow the pinout diagram given below to connect different components to your ESP8266 Module.



Other Components

```
Other components pin connection details
```

Temperature Sensor LM35

LM35 Connections

LM35 Pins	ESP8266 Module Pins
OUT	IO4
VCC	3.3V
GND	GND

Pulse Sensor

Pulse Sensor Connections

Pulse Sensor Pins	ESP8266 Module Pins
3.3V	3.3V
GND	GND
DATA	A0

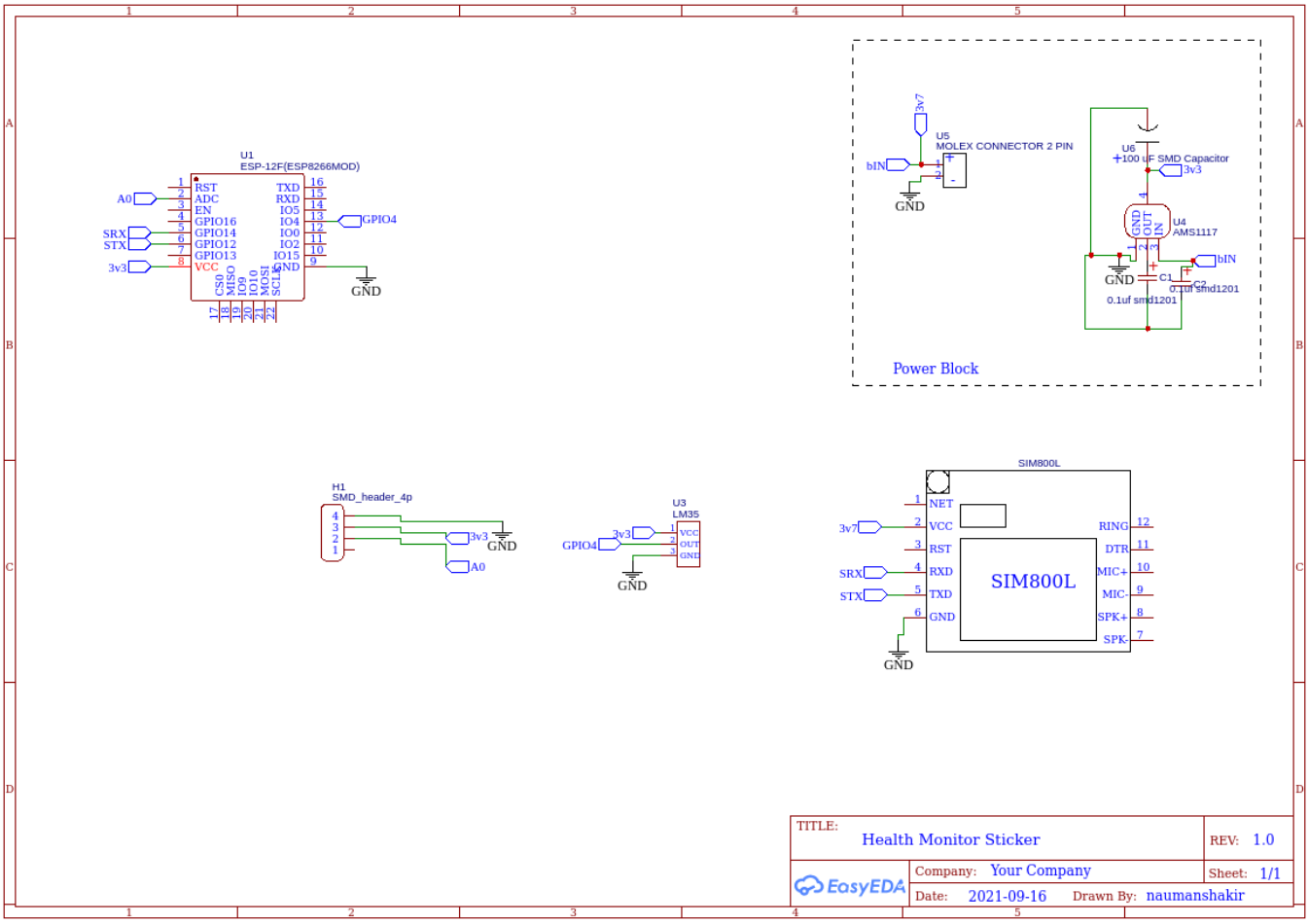
GPRS Module

SIM800L Connections

SIM800L Pins	ESP8266 Module Pins
VCC	3.7V
GND	GND
RXD	GPIO14
TXD	GPIO12

Complete Schematics

Here's the complete circuit diagram of the system.



Usage

List of Components

- BOM is available in Circuit/PCB/BOM_SmartHealthMonitor_2021-09-16.csv of this repository

⛏ Built Using

- Python - For Cloud Gateway Pogramming
- Arduino - Embedded Framework and IDE - For Sensor Node Design

✍ Authors

- @Nauman3S - Development and Deployment