



Raspberry Pi Sense HAT - Make your own Astro-Pi

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Description

Make your Raspberry Pi into an Astro Pi with the Sense HAT - Pressure, humidity, temperature and orientation sensors combined with a beautiful 8x8 LED matrix!

Attach the HAT to your Pi's GPIO pins and you can use the integrated circuit based sensors for many different types of experiments, applications, and even games.

The sensors enable you to read:

- Orientation (yaw, pitch & roll) via an accelerometer, 3D gyroscope and magnetometer
- Pressure
- Humidity
- Temperature

The Sense HAT supports a whole host of projects for the Raspberry Pi, it can measure how fast is the Pi itself travelling (i.e. measure your speed), how hot is it? how humid is it? (air humidity), which direction is the Raspberry Pi facing?

The LED Matrix enables you to display the data from the various sensors, it can show you which way is geomagnetic North by programming a compass using the magnetometer, or simply be used to play games like Tetris, Pong and Snake with the joystick. The joystick can also be used to enable a human user to interact with the programs running on the Raspberry Pi Sense HAT.

Writing programs for the Sense HAT is very simple, with a Python library available to get started quickly and easily. For a truly out of world projects check out the AstroPi website <http://astro-pi.org/> (<http://astro-pi.org/>), containing a host of ideas and instructions for using the Raspberry Pi and Sense HAT on the International Space Station (ISS).

This kit comes with the Sense HAT, 4x M2.5 mounting posts and 8x M2.5 screws to securely mount your Sense HAT on your Raspberry Pi.

Getting Started:

Connect your Sense HAT to the Raspberry Pi via the 40 GPIO Pins. You will then need to install the software:

Open up a terminal and run the following command:

```
wget -O - http://www.raspberrypi.org/files/astro-pi/astro-pi-install.sh --no-check-certificate | bash
```

(This will take approximately 5 mins to run on the Raspberry Pi 2 Model B, and approximately 20 minutes on earlier models of the Raspberry Pi)

When the install has finished you will need to reboot your Raspberry Pi

Features:

- Gyroscope - angular rate sensor: +/-245/500/2000dps
- Accelerometer - Linear acceleration sensor: +/-2/4/8/16 g

- Magnetometer - Magnetic Sensor: +/- 4/8/12/16 gauss
- Barometer: 260 – 1260 hPa absolute range (accuracy depends on the temperature and pressure, +/- 0.1 hPa under normal conditions)
- Temperature sensor (Temperature accurate to +/- 2 degC in the 0-65 degC range)
- Relative Humidity sensor (accurate to +/- 4.5% in the 20-80%rH range, accurate to +/- 0.5 degC in 15-40 degC range)
- 8x8 LED matrix display
- Small 5 button joystick

Part List:

- 1 x Sense HAT

Overview

Designer: Raspberry Pi Foundation (<http://www.raspberrypi.org/>)

Other Products From This Designer (<http://www.seeedstudio.com/depot/Raspberry-Pi-Foundation-m-93.html?ref=pinfo>)

Weight: 46 g