d-diot wiki

The main goal of this wiki is to collect and share all the knowledge gained from different people in building a DIY and open source based domotic system, which is what the d-diot project is.

What is d-diot

As stated in the d-diot website:

d-diot is an open project for hobbyist, makers, and everyone interested on home automation. The aim of d-diot is to create an easy, accessible and "privacy friendly" domotics platform for your home.

The main parts of this DIY home automation platform are:

- The d-diot hub

- The network of your sensors and actuators

- The sharing of knowledge

The hub

The hub is the central place that collects and process all the data of your sensors and actuators and offers a nice and user friendly web interface to manage them.

Basically it is a Raspberry Pi 3 Model B connected to the d-diot board that provides the following functionalities:

- IR Gateway (blaster and receiver) to control every device that has a dummy infrared remote.

- 433 Mhz Gateway with the RFLink firmware running on the on-board ATMega2560 microcontroller

- Dual MySensors Gateway: NRF24 (2.4 Ghz) and RFM69 (868 Mhz).

- Latch circuit to power-on and safely power-off your Pi with a simple button press.

- SSD1306 I2C Oled display

- Radio activity LEDs for IR and Mysensors gateways

The Raspberry Pi has a built in Wifi and Bluetooth module that adds other connectivity options to your hub.

Home Assistant, with more than 1000 devices and components supported and an incredible list of features, is the open source software that turns the Raspberry Pi into this universal and powerful home automation hub.

A 3d printable case for the Raspberry Pi 3 and the d-diot board v.2.0 is available. See the getting started section to learn how to build your own hub.

The sensors and actuators network

The DIY part of the project is not limited to the hub, but it extends also to the sensors and actuators network.

In fact, thanks to the MySensors library, you can build your own wireless sensors and actuators starting from an arduino and a radio module.

With the Wifi module of the Raspberry Pi and the ESPHome software pre-installed in the d-diot image you can also easily build and manage a network of ESP8266 or ESP32 based sensors.

This two networks and the possibility to print your own cases with a cheap 3D-printer are powerful tools for the creation of your custom home automation network, but if you prefer to use pre-built hardware available on the market, the RFLink firmware and the over 1300 devices supported by Home Assistant, offers you also this possibility.

Z-Wave and ZigBee connectivity can be easily added to the hub simply plugging an USB stick in one of the four Raspberry Pi USB ports.

The sharing of knowledge

The entire d-diot project exists thanks to the knowledge freely available on the internet and this is why the sharing of knowledge is here, among the others fundamental parts of the d-diot platform.

> **Forum**
>
> The d-diot forum is here for that purpose!

Below a short and not exhaustive list of useful forums and websites that are a good source of knowledge:

- Home Assistant website, documentation and forum

- MySensors website and forum

- Raspberry Pi forum

- Arduino https://forum.arduino.cc/forum

- Youtube tutorials and video guides

Sections of the wiki

The wiki has the following main sections:

- Getting started: here you can find the guides to build your own hub.

- Sensors & Actuators: share your experience with a particular product in the market or show your own MySensors build.

- HOW TOs: here you can find different guides to achieve a particular goal.

- Hardware: information on radio modules, electronic components, integrated circuit, etc… And where to buy them!

- Circuit design: design your sensors and actuators. Tools and tips.

- 3D Printing: collection of enclosures design for sensors and actuators and tips to get the best results from this technology.

- System administration: collection of guides to manage the OS with. In the manual installation subsection are reported all the steps to build a d-diot image from scratch

Contribute

Do you wont to share an how to or do you wont to fix a mistake in an other page? Please contact me for an username and password!

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