Home automation is "The Internet of Things". The way that all of our devices and appliances will be connected in the network and also provide us with a seamless control over all aspects of our home appliances and more. In this, we are using ESP8266 to send data to cloud platform through the Wi-Fi Router, which enables you to remotely control all appliances with the App HomeGenie on your smart phone or tab or computer. Wi-Fi switch makes all your home appliances smart, as long as your phone is connected to the network, you can remotely turn on or turn off your appliances anywhere at any time.

HomeGenie meant to be a friendly and fully customizable automation system, easy to use for everyone, but still powerful and fully featured. HomeGenie is your “The Internet of Things”.

Features

- Supports Wi-Fi network.
- Can connect any 230V or 24V or 12V end points or devices.
- Support status tracking, home appliances status timely feedback to your App.
- Support remotely turns on or off added devices.
- Can remotely access and control the appliances from anywhere at any time.
- Support numerous Wi-Fi smart switches one smart phone.
- Easy installation, easy handling and can be activated immediately and stable.

Specifications

- Input Voltage range: 90-250v AC.
- Output Voltage range: 90-250V AC or 24V DC or 12V DC.
- Max current: 5A
- Max Wattage: 1250 watts
- Dimensions: 11.5 x 4.5 x 2.7 cm
- Colour: White

Hardware

- Raspberry Pi
- SD Card installed with Raspbian or Debian Image.
- Power Adapter 5V 2A for Raspberry Pi.
- Wi-Fi Dongle if necessary.
- CrazySwitch
Downloads

You can download the Image for Raspberry Pi from below link in which made as access point for this project.

http://remotecomputing.in/techsupport/Crazy_Switch/Crazy_Switch.zip

CrazySwitch is End point which you can connect to any 230V device i.e Bulb, Fan, Tube-Light etc. In this project Raspberry Pi works as hotspot which will talk to internet using MQTT server.

MQTT (formerly MQ Telemetry Transport) is an ISO standard (ISO/IEC PRF 20922) publish-subscribe-based "lightweight" messaging protocol for use on top of the TCP/IP protocol. It is designed for connections with remote locations where a "small code footprint" is required or the network bandwidth is limited. The publish-subscribe messaging pattern requires a message broker. The broker is responsible for distributing messages to interested clients based on the topic of a message. Topic will be differing for every Crazy switch.

- Download the image for Raspberry Pi from link given above.
  http://remotecomputing.in/techsupport/Crazy_Switch/Crazy_Switch.zip

- Burn the Image into SD card using Win32DiskImager. For more details regarding How to burn the Image in the SD card, follow the below link.
  http://blog.crazypi.com/setting-sd-card/

- Connect SD card in the Raspberry pi SD card slot, Connect the power supply and boot the Raspberry Pi.
- Also connect Ethernet cable.
- Boot the Raspberry Pi.

**Connection Guide Lines**

**For 230V AC output:**

![Diagram of AC input and output with labels L+, NC, L-]

- L+ = Line
- L- = Line
- NC = No Connection

**Configuring HomeGenie using Browser**

1. To access the HomeGenie Page, Open the Browser on your Laptop or Computer, enter **192.168.202.1** or `< RPi Ethernet IP Address >`.

   To get the Raspberry Pi Ethernet IP addresses just open the Terminal on Raspberry Pi and type `ifconfig eth0`. Here **192.168.202.1** is the HomeGenie Hotspot IP address. If you have monitor to check Raspberry Pi Ethernet IP address you can use that address or you can directly type **192.168.202.1** and proceed further.
Here you can control CrazySwitch in two ways:

i. **Using Raspberry Pi IP Address:** As mentioned above, to get Raspberry Pi IP Address type `ifconfig eth0` in the Terminal of Raspberry Pi and you will find your Raspberry Pi IP Address. This is based on Ethernet connection. In our case we got 192.168.1.229, this is different in your case. When you use this IP Address on your cell phone to configure HomeGenie, you can access your data internet on mobile phone and also no need to connect Crazy_Switch Hotspot in WiFi settings.

ii. **Using Raspberry Pi Hotspot Address:** This address is same for all starters. That is **192.168.202.1**. If you use this hotspot address then go to WiFi settings connect to Crazy_Switch(this is described in next step). And use **192.168.202.1** to configure HomeGenie App also. Kindly note that, when you connect to this Hotspot address either in your laptop or mobile, you cannot access the data or WiFi or data internet on your cellphone.

![Identifying IP Addresses](image)

In this picture,

- 192.168.202.1 ------ Hotspot IP Address (This is same for all starters).
- 192.168.1.229 ------ RPi Ethernet IP Address (This varies from user to user based on wired network configuration at their location).

2. Another way of accessing is by connecting to the Raspberry Pi Wi-Fi Hotspot. On your PC go to **Wi-Fi settings >> Scan >> Crazy_Switch (in our case) >> Enter Wi-Fi password >> Connect.**

Wi-Fi Hotspot name ----- Crazy_Switch
Wi-Fi password ----------- Crazy_Switch*
3. Open the browser and enter the **Wi-Fi Hotspot** static IP address. In our case it is **192.168.202.1**

Note: Advantage of using Ethernet IP address is that you need not connect to the **Wi-Fi Hotspot**.

4. Now you need to restart the MQTT server. Here Raspberry Pi acts as server for this Home automation.

5. Follow the snapshots for your reference.
6. Now go to Configure >> Program >> Devices and Things >> test mqtt
Double click on that.

7. Then click **restart** button.

You can see MQTT Connected at the right corner.

8. Now go to Dashboard then press **MQTT:1 Switch** event. Well!!! You can see your **Crazy-Switch** working.
9. If you slide the switch, you can see ON or OFF the Light or end point which you connected to Crazy-switch.
10. To know more about MQTT, just find some links at the end of this file.

**Configuring HomeGenie Mobile App**

You can also access **HomeGenie** on your smart phone. Download the **App HomeGenie** from android play store for your smart phone. Go to Wi-Fi connection settings and connect to **Crazy_Switch** (Pass word : Crazy_Switch*) and open HomeGenie App
- Follow the snapshots for your reference.
- Double click on **HomeGenie App**.
- Change the HomeGenie Server address to your MQTT Server address. i.e 192.168.202.1 in our case.

- Then following Dashboard will appear on the screen.
Scroll down in the Dashboard. You can find **MQTT: 1 Switch**.

If you slide the switch you can see ON or OFF the Light or end point which you connected to **Crazy-switch**.

**Useful links**
- [http://www.remotecomputing.in/techsupport/Crazy_Switch/Crazy_Switch_for_starters.pdf](http://www.remotecomputing.in/techsupport/Crazy_Switch/Crazy_Switch_for_starters.pdf)
- [https://www.crazypi.com/](https://www.crazypi.com/)