

# Sonoff iFan2

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## Flashing

Connect RX -> TX | 3.3 -> 3.3 | TX -> RX | GND -> GND and connect TP16 to GND.

Press and hold the button while connecting to power.



This is an ESP 8285 in the iFan2.

Download and compile the Tasmota firmware:

```
git clone https://github.com/arendst/Tasmota.git  
cd ./Tasmota/lib/  
vi deployLibs.sh
```

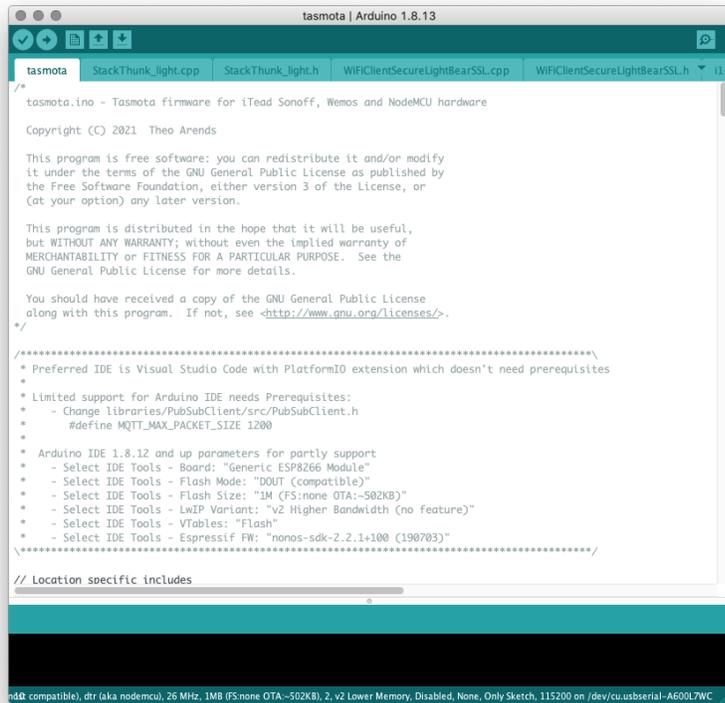
```
#!/bin/sh
rm -rf ~/Documents/Arduino/libraries/*

cp -R ./default/* ~/Documents/Arduino/libraries/.
cp -R ./lib_audio/* ~/Documents/Arduino/libraries/.
cp -R ./lib_basic/* ~/Documents/Arduino/libraries/.
cp -R ./lib_display/* ~/Documents/Arduino/libraries/.
cp -R ./lib_div/* ~/Documents/Arduino/libraries/.
cp -R ./lib_i2c/* ~/Documents/Arduino/libraries/.
cp -R ./lib_rf/* ~/Documents/Arduino/libraries/.
cp -R ./lib_ssl/* ~/Documents/Arduino/libraries/.
cp -R ./lib_ssl/* ~/Documents/Arduino/libraries/.
```

```
chmod +x deployLibs.sh
```

```
./deployLibs.sh
```

## Open Arduino IDE



The screenshot shows the Arduino IDE interface with the 'tasmota.ino' file open. The code content is as follows:

```
tasmota.ino - Tasmota firmware for iTeed Sonoff, Wemos and NodeMCU hardware

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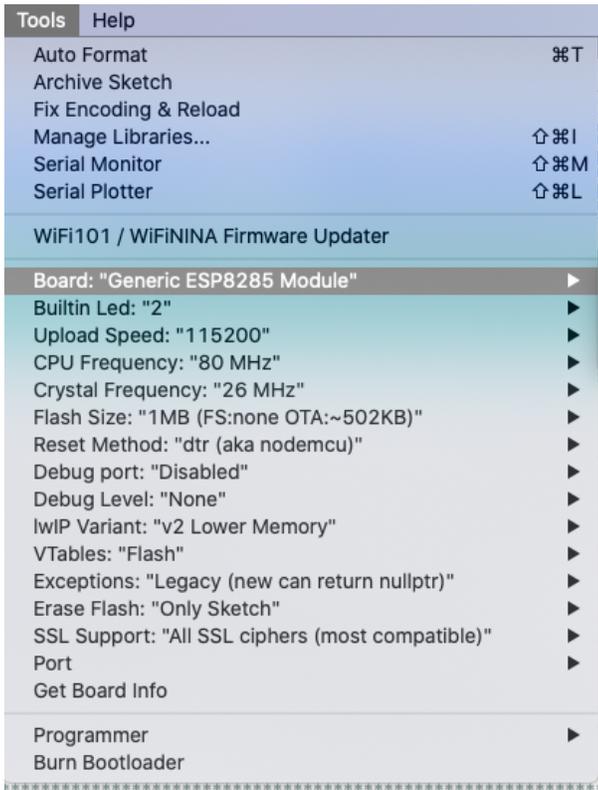
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
*/

/*
*****
* Preferred IDE is Visual Studio Code with PlatformIO extension which doesn't need prerequisites
*
* Limited support for Arduino IDE needs Prerequisites:
* - Change libraries/PubSubClient/src/PubSubClient.h
*   #define MQTT_MAX_PACKET_SIZE 1200
*
* Arduino IDE 1.8.12 and up parameters for partly support
* - Select IDE Tools - Board: "Generic ESP8266 Module"
* - Select IDE Tools - Flash Mode: "DOUT (compatible)"
* - Select IDE Tools - Flash Size: "1M (FS:none OTA:~502KB)"
* - Select IDE Tools - LwIP Variant: "v2 Higher Bandwidth (no feature)"
* - Select IDE Tools - VTables: "Flash"
* - Select IDE Tools - Espressif FW: "nonos-sdk-2.2.1+100 (190703)"
*****
*/

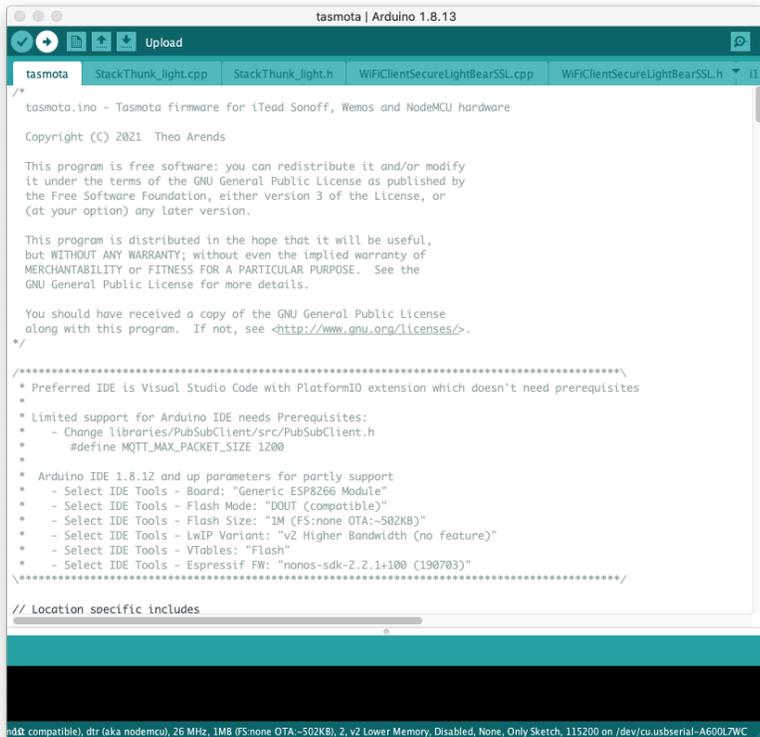
// Location specific includes
```

## Open tasmota project

Set board to ESP8285 and other settings, see below:



With the iFan in flash mode, click Upload.



# Tasmota Commands

| Cmd        | Cmnd     | Value | URL                           |
|------------|----------|-------|-------------------------------|
| Light Off  | Power    | 0     | http://xxx/cm?cmnd=Power 0    |
| Light On   | Power    | 1     | http://xxx/cm?cmnd=Power 1    |
| Fan Off    | FanSpeed | 0     | http://xxx/cm?cmnd=FanSpeed 0 |
| Low Speed  | FanSpeed | 1     | http://xxx/cm?cmnd=FanSpeed 1 |
| Med Speed  | FanSpeed | 2     | http://xxx/cm?cmnd=FanSpeed 2 |
| High Speed | FanSpeed | 3     | http://xxx/cm?cmnd=FanSpeed 3 |

## Integration with Homebridge

Configure MQTT

The screenshot shows the configuration interface for a Sonoff iFan02 Module. The title is "Sonoff iFan02 Module" and the device name is "ifan". Under the "MQTT parameters" section, the following fields are visible:

- Host ( ): 192.168.1.50
- Port (1883): 1883
- Client (DVES\_42CE62): fireplace-fan
- User (DVES\_USER): fireplace-fan
- Password: [masked]
- Topic = %topic% (tasmota\_42CE62): fireplace-fan
- Full Topic (%prefix%/topic%): %prefix%/topic%

At the bottom of the configuration area is a green "Save" button. Below the configuration area is a blue "Configuration" button. At the very bottom, the text "Tasmota 9.2.0.4 by Theo Arends" is displayed.

Using the mqttthing homebridge plugin, we configure our fan using the following:

```

{
  "accessory": "mqttthing",
  "type": "fan",
  "name": "fireplace-fan",
  "url": "http://192.168.1.50:1883",
  "username": "homebridge",
  "password": "pass",
  "topics": {
    "getOn": {
      "topic": "stat/fireplace-fan/RESULT",
      "apply": "return JSON.parse(message).FanSpeed > 0 ? true : false;"
    },
    "setOn": {
      "topic": "cmd/fireplace-fan/FanSpeed",
      "apply": "return message ? '' : '0';"
    },
    "getRotationSpeed": {
      "topic": "stat/fireplace-fan/RESULT",
      "apply": "return Math.round(JSON.parse(message).FanSpeed * 33.3);"
    },
    "setRotationSpeed": {
      "topic": "cmd/fireplace-fan/FanSpeed",
      "apply": "return Math.round(message / 33.3);"
    }
  },
  "confirmationPeriodms": 1000
},

```

### Order of Operations when Setting Rotation Speed

If we add some console.log statements in our apply function, we see that setting the rotation speed makes 2 calls. The first to setRotationSpeed and then to setOn.

```

setRotationSpeed - mesage=73
setOn - mesage=true

```

After installing the iFan for use with my fireplace, I concluded that the fan level 1 was too low and decided to bypass it. This new configuration changes the fan such that it operates at 0% (off), 50%(fan level2) and 100%(fan level 3).

```

{
  "accessory": "mqttthing",
  "type": "fan",
  "name": "fireplace-fan",
  "url": "http://192.168.1.50:1883",
  "username": "homebridge",
  "password": "pass",
  "topics": {
    "getOn": {
      "topic": "stat/fireplace-fan/RESULT",
      "apply": "return JSON.parse(message).FanSpeed > 0 ? true : false;"
    },
    "setOn": {
      "topic": "cmdn/fireplace-fan/FanSpeed",
      "apply": "return message ? '1' : '0';"
    },
    "getRotationSpeed": {
      "topic": "stat/fireplace-fan/RESULT",
      "apply": "val=JSON.parse(message).FanSpeed; if(val==0)return '0'; if(val=='2') return '50'; if
(val==3) return '100';"
    },
    "setRotationSpeed": {
      "topic": "cmdn/fireplace-fan/FanSpeed",
      "apply": "if(message >50) return 3; if(message=0) return 0; return 2;"
    }
  },
  "confirmationPeriodms": 1000
},

```

## References

| Reference        | URL                                                                                                                                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Flashing Tasmota | <a href="https://tasmota.github.io/docs/devices/Sonoff-iFan02/">https://tasmota.github.io/docs/devices/Sonoff-iFan02/</a>                 |
| Tasmota Commands | <a href="https://tasmota.github.io/docs/Commands/">https://tasmota.github.io/docs/Commands/</a>                                           |
| Issue            | <a href="https://github.com/arachnetech/homebridge-mqttthing/issues/78">https://github.com/arachnetech/homebridge-mqttthing/issues/78</a> |