

PSI3542 – 2023

SISTEMAS EMBARCADOS PARA IOT

AULA 16 – ATIVIDADE 16 FIRMWARE TASMOTA

SERGIO TAKEO KOFUJI

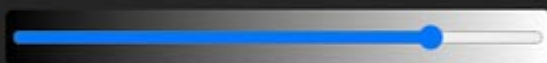
KOFUJI@USP.BR

Generic Module

Tasmota

DHT11 Temperature 21.9 °C
DHT11 Humidity 80.0 %
DHT11 Dew point 18.3 °C

ON



Toggle

Configuration

Information

Firmware Upgrade

Console

Restart



TASMOTA



ESPRESSIF

ATIVIDADES

- INSTALAR O FIRMWARE TASMOTA NO DISPOSITIVO
- CONFIGURAR A REDE WIFI DO DISPOSITIVO ATRAVÉS DO CAPTIVE PORTAL
- CONFIGURAR OS PARAMETROS DE DISPOSITIVO TASMOTA
 - MQTT
 - TIPO DE DISPOSITIVO
- VERIFICAR O FUNCIONAMENTO DO DISPOSITIVO NO HOMEASSISTANT

ATIVIDADE 16.1

INSTALAÇÃO DO FIRMWARE

INSTALAÇÃO DO FIRMWARE TASMOTA

- <https://tasmota.github.io/docs/Getting-Started/#flashing>
- FORMAS DE INSTALAÇÃO
 - WEB INSTALLER
 - TASMOTIZER
 - ESP-flasher
 - Esptool.py

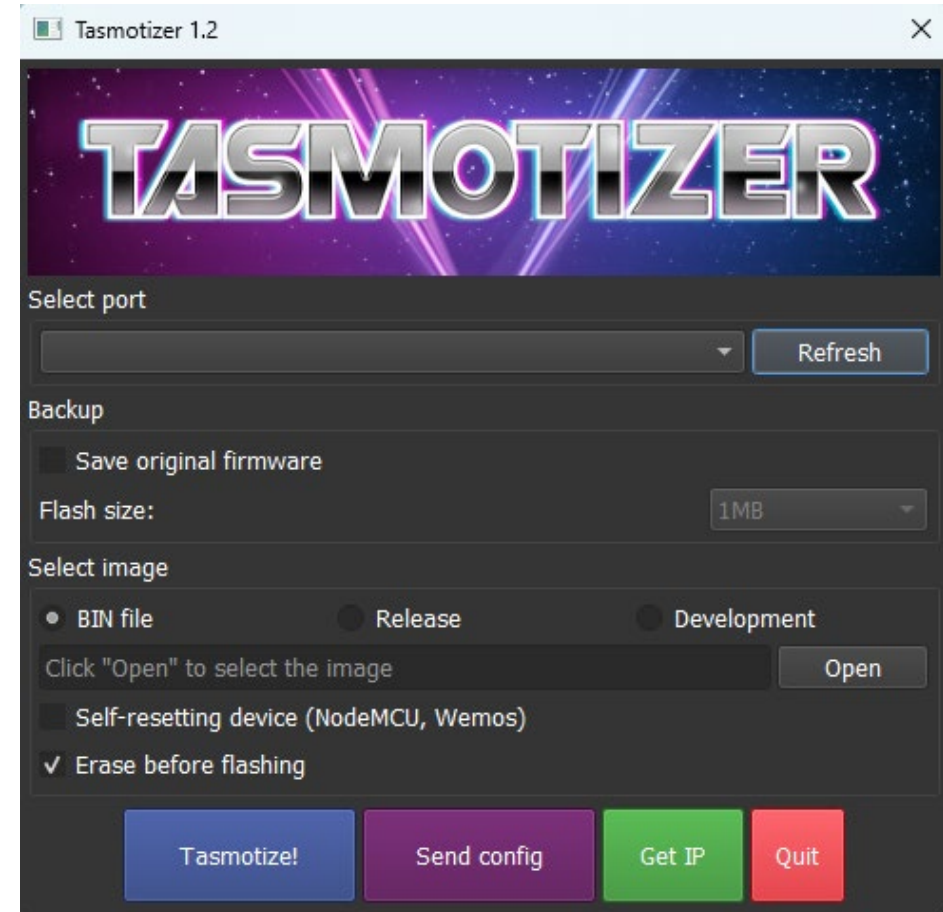
TASMOTIZER

OPÇÕES DE INSTALAÇÃO

- Ferramenta Windows
 - <https://github.com/tasmota/tasmotizer/releases>
 - **tasmotizer.exe** (64bit)
 - tasmotizer-x86.exe (32bit)
- Linha de Comandos
 - pip3 install --upgrade pip wheel
 - pip3 install tasmotizer
 - **tasmotizer.py** ou **python3 -m tasmotizer.py**

TASMOTIZER

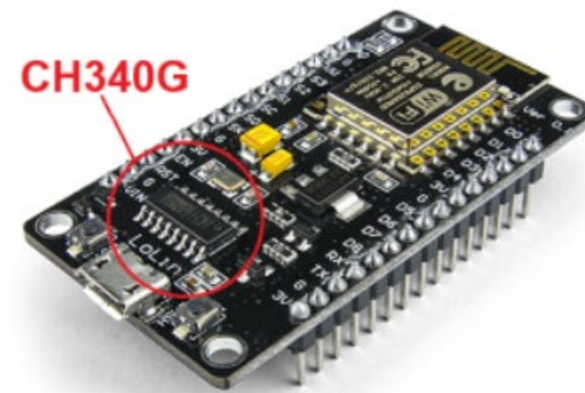
- Baixar o firmware TASMOTA (tasmota.bin)
 - <http://ota.tasmota.com/tasmota/release/>
- Conectar o ESP8266/32
- Executar TASMOTA



Chips de conversao USB-serial



NodeMCU ESP8266 V2



NodeMCU ESP8266 V3

TASMOTA WEB INSTALLER

PASSOS

- CONECTAR O DISPOSITIVO
- ACESSAR O INSTALADOR ATRAVÉS DO CROME OU EDGE
 - <https://tasmota.github.io/install/>
- SEGUIR OS PASSOS DA INSTALAÇÃO

Install Tasmota


1. Connect the ESP device to your computer using USB or serial-to-USB adapter


2. Select your device

3. Hit the button or

Tasmota

✕

 Tasmota EN 13.2.0

 ESP8266EX

[INSTALL TASMOTA \(ENGLISH\)](#)

[VISIT DEVICE](#)

[CHANGE WI-FI](#)

[LOGS & CONSOLE](#)

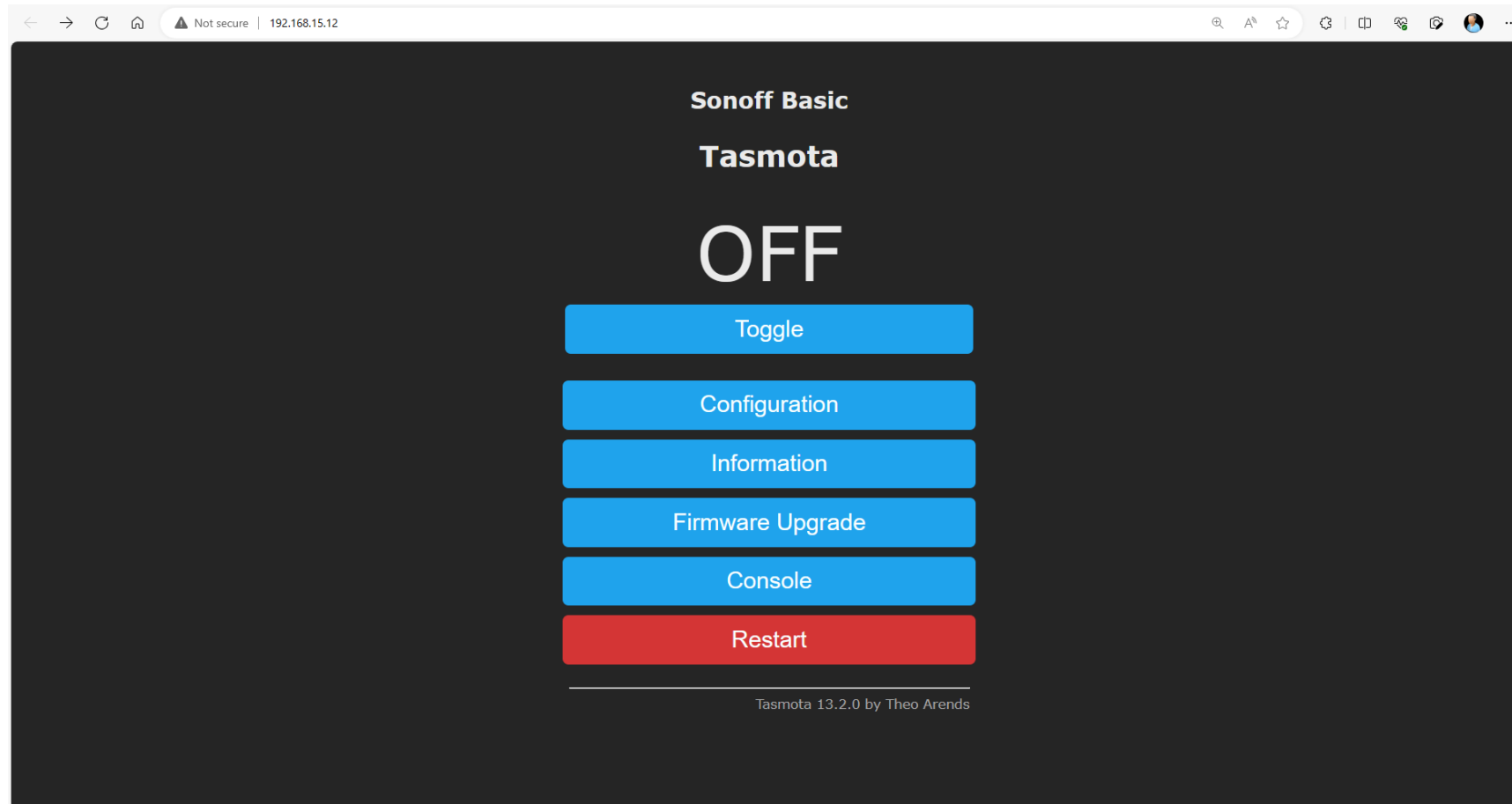
Tasmota ESP8266

ATIVIDADE 16.2

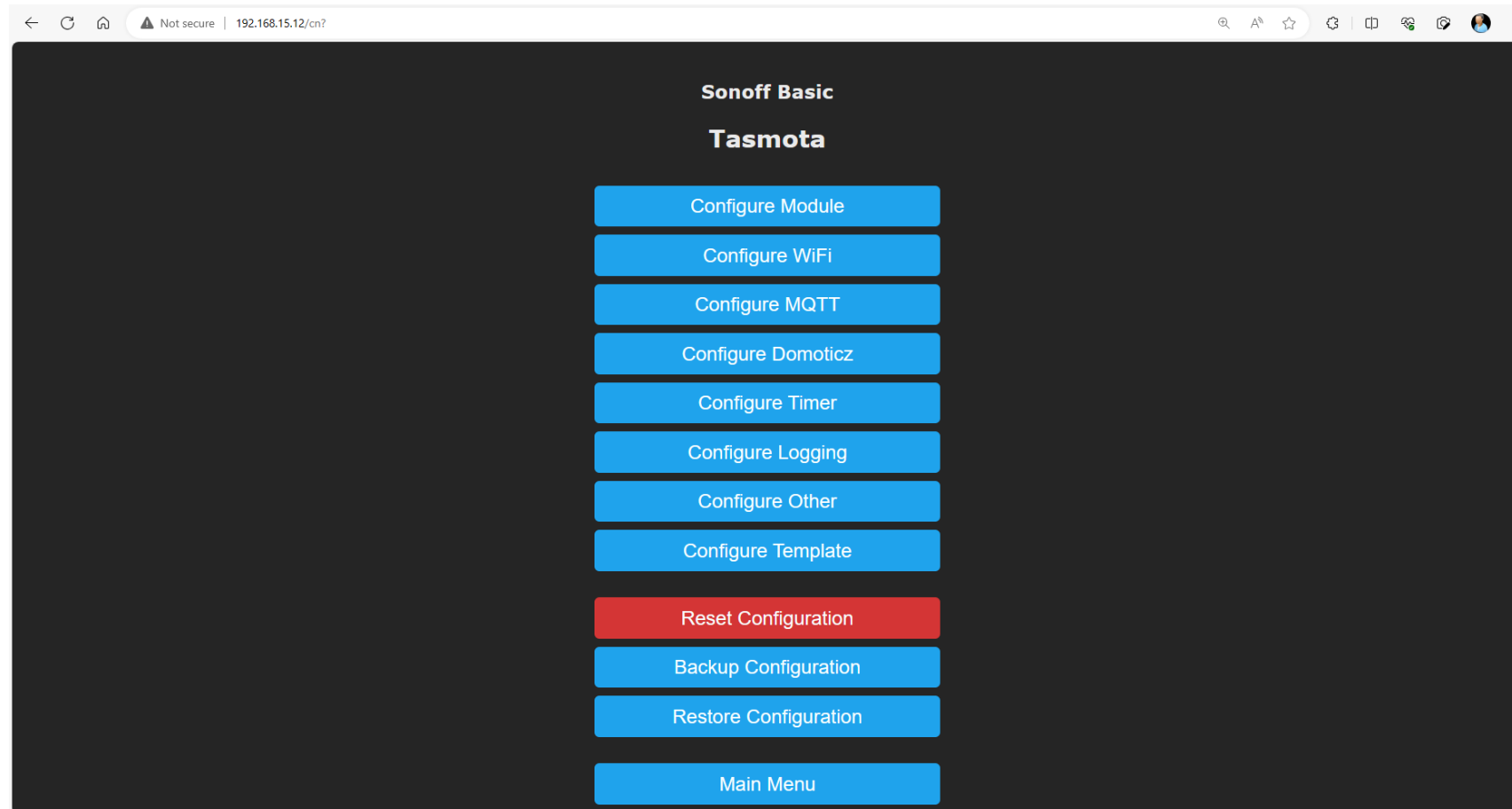
CONFIGURAR O DISPOSITIVO

TASMOTA

ACESSAR O MENU PRINCIPAL DA INTERFACE WEB DO TASMOTA



ACESSAR O MENU DE CONFIGURAÇÃO



CONFIGURAR O TIPO DE MÓDULO

The screenshot shows a web browser window with the URL `192.168.15.12/md?`. The page title is "Sonoff Basic" and "Tasmota". The main content area is titled "Module parameters" and contains the following configuration options:

- Module type (Sonoff Basic)**: A dropdown menu currently set to "Sonoff Basic (1)".
- GPIO1**: A dropdown menu set to "None".
- GPIO2**: A dropdown menu set to "Relay", with a secondary dropdown menu set to "1".
- GPIO3**: A dropdown menu set to "None".
- GPIO4**: A dropdown menu set to "None".
- GPIO14**: A dropdown menu set to "None".

Below the configuration options are two buttons: a green "Save" button and a blue "Configuration" button. At the bottom of the page, the text "Tasmota 13.2.0 by Theo Arends" is visible.

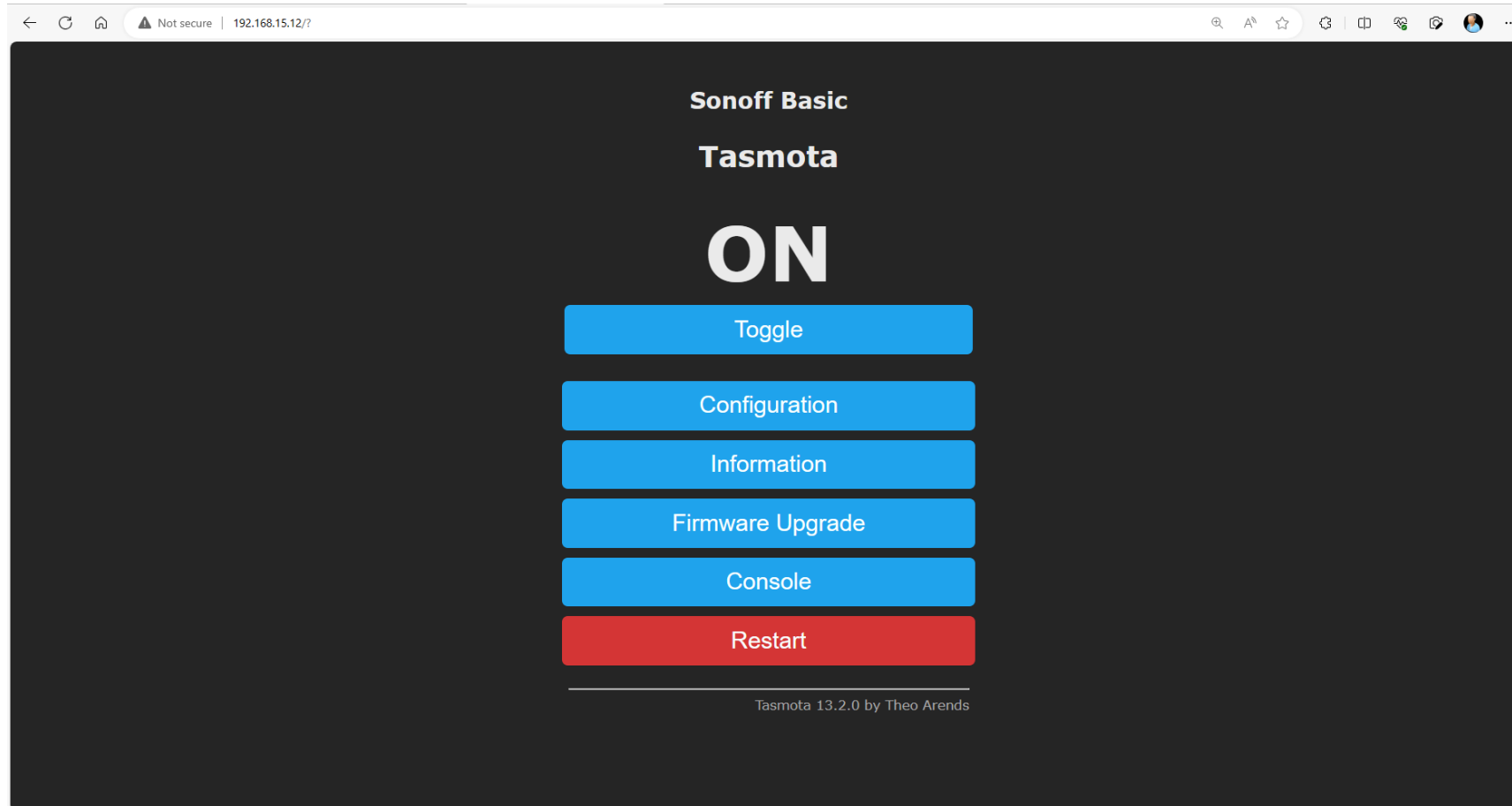
TIPOS DE MÓDULO

- <https://tasmota.github.io/docs/Modules/>
- Alguns módulos interessantes:
 - Generic (0)
 - Sonoff Basic (1)
 - Generic (18)

COMPONENTES

- <https://tasmota.github.io/docs/Components/>
- Alguns componentes:
- ATUADOR:
 - RELAY
 - LED
 - BUZZER
 - PWM
- SENSOR:
 - BUTTON
 - SWITCH
 - DHT11

VERIFICAR O FUNCIONAMENTO



ATIVIDADE 16.3 DISPOSITIVO TASMOTA SENSOR DHT11

CONFIGURAR O DISPOSITIVO

The screenshot shows a web browser window with the URL `192.168.15.12/md?`. The page title is "Sonoff Basic" and "Tasmota". The main content area is titled "Module parameters" and contains the following configuration options:

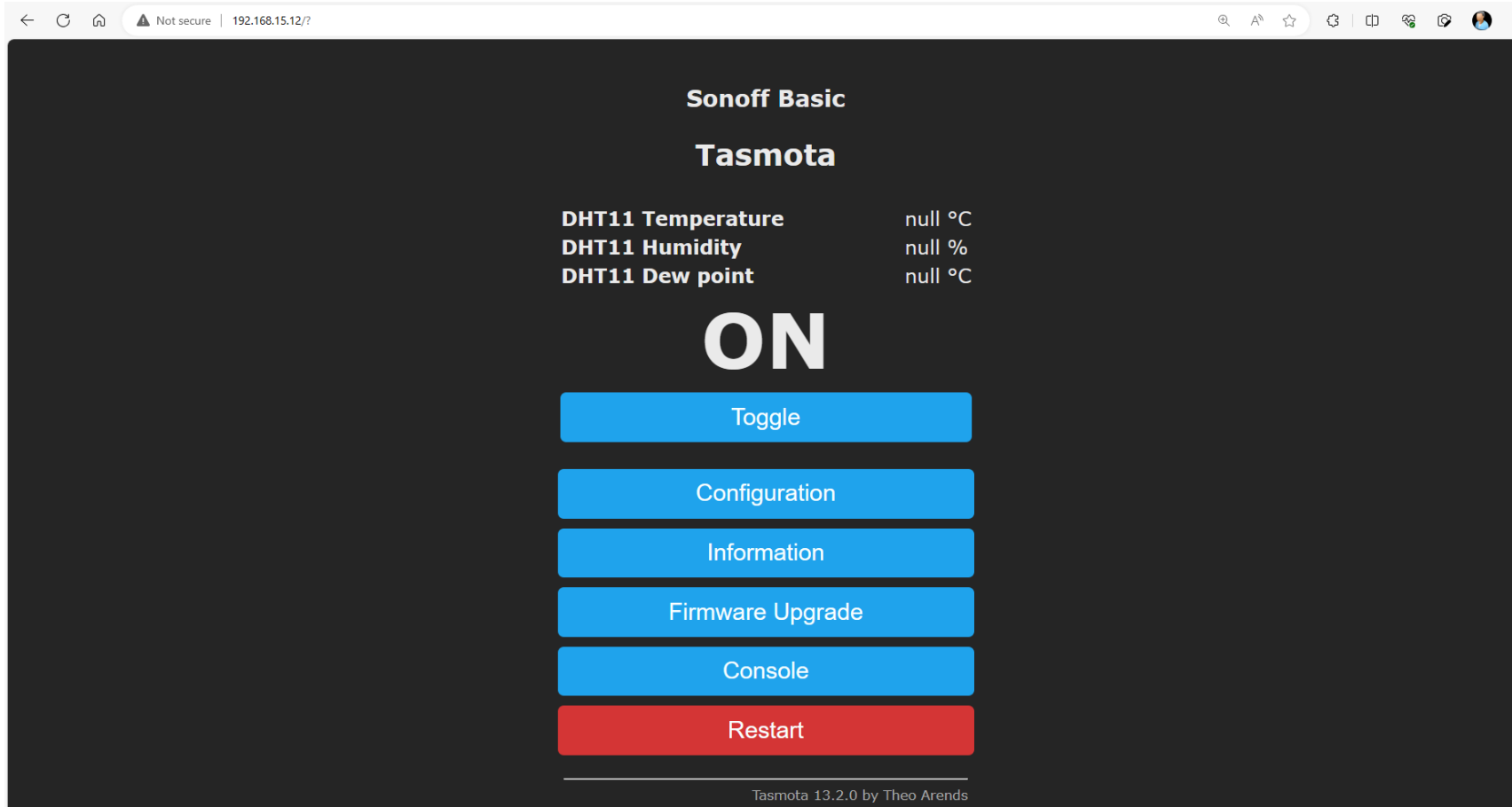
- Module type (Sonoff Basic)**: A dropdown menu showing "Sonoff Basic (1)".
- GPIO1**: A dropdown menu showing "DHT11".
- GPIO2**: A dropdown menu showing "Relay" and a numeric input field showing "1".
- GPIO3**: A dropdown menu showing "None".
- GPIO4**: A dropdown menu showing "None".
- GPIO14**: A dropdown menu showing "None".

Below the configuration options are two buttons: a green "Save" button and a blue "Configuration" button. At the bottom of the page, the text "Tasmota 13.2.0 by Theo Arends" is visible.

TESTE

- CONECTAR O DHT11
- VERIFICAR O FUNCIONAMENTO

VERIFICACAO DE FUNCIONAMENTO



The image shows a web browser window displaying the Sonoff Basic Tasmota interface. The browser's address bar shows the URL '192.168.15.12/?' and a 'Not secure' warning. The interface has a dark background with white text. At the top, it says 'Sonoff Basic' and 'Tasmota'. Below this, there are three sensor readings: 'DHT11 Temperature' (null °C), 'DHT11 Humidity' (null %), and 'DHT11 Dew point' (null °C). In the center, the word 'ON' is displayed in large, bold, white letters. Below 'ON' is a vertical stack of seven buttons: 'Toggle' (blue), 'Configuration' (blue), 'Information' (blue), 'Firmware Upgrade' (blue), 'Console' (blue), and 'Restart' (red). At the bottom of the page, there is a small footer that reads 'Tasmota 13.2.0 by Theo Arends'.

Not secure | 192.168.15.12/?

Sonoff Basic

Tasmota

DHT11 Temperature null °C
DHT11 Humidity null %
DHT11 Dew point null °C

ON

Toggle
Configuration
Information
Firmware Upgrade
Console
Restart

Tasmota 13.2.0 by Theo Arends

INTEGRACAO COM O
HOMEASSISTANT

NO HOME ASSISTANT:

- Instale o MQTT broker addon
 - <https://github.com/home-assistant/addons/blob/174f8e66d0eaa26f01f528beacbde0bd111b711c/mosquitto/Dockerfile>
 - Vá para settings->addons
 - Selecione addon store e procure MQTT
 - Instale e Inicie
- Configure o MQTT
 - <https://www.home-assistant.io/integrations/mqtt/>
 - Vá para Settings > Devices & Services.
 - Selecione Add Integration button.
 - Selecione MQTT.
 - Siga as instruções e complete a configuração.