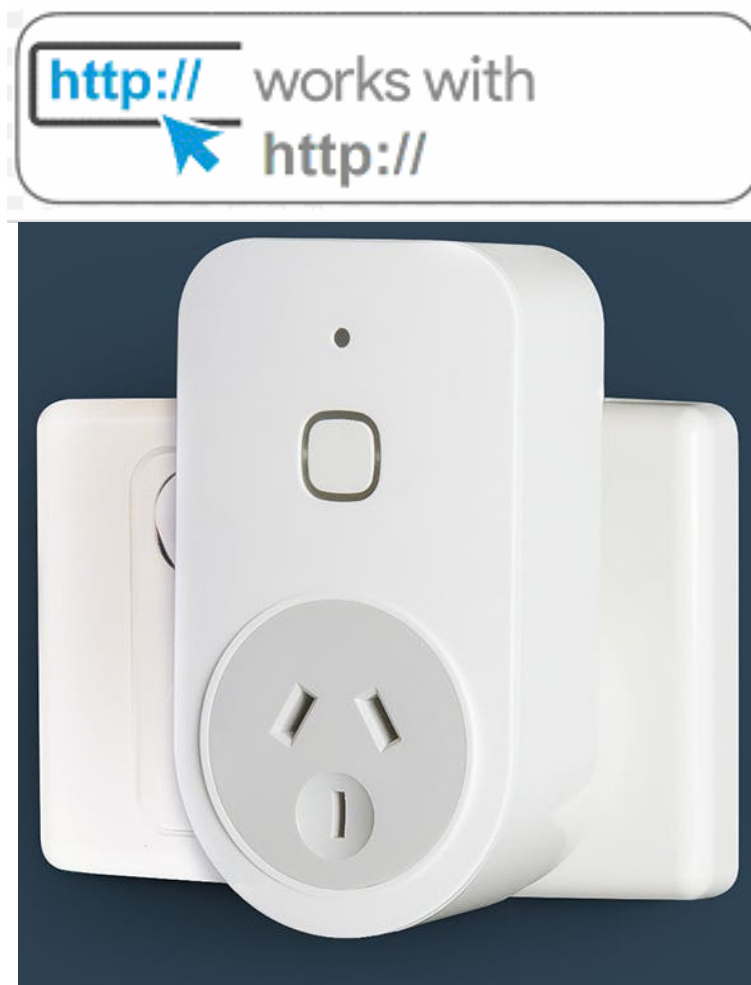


# Tasmota-Plus Smart Plug with Power Monitor



## SP-Plug-AU User Guide

Latest Version available at:

<https://ubwh.com.au/documents/UG-SP-Plug-AU.pdf>

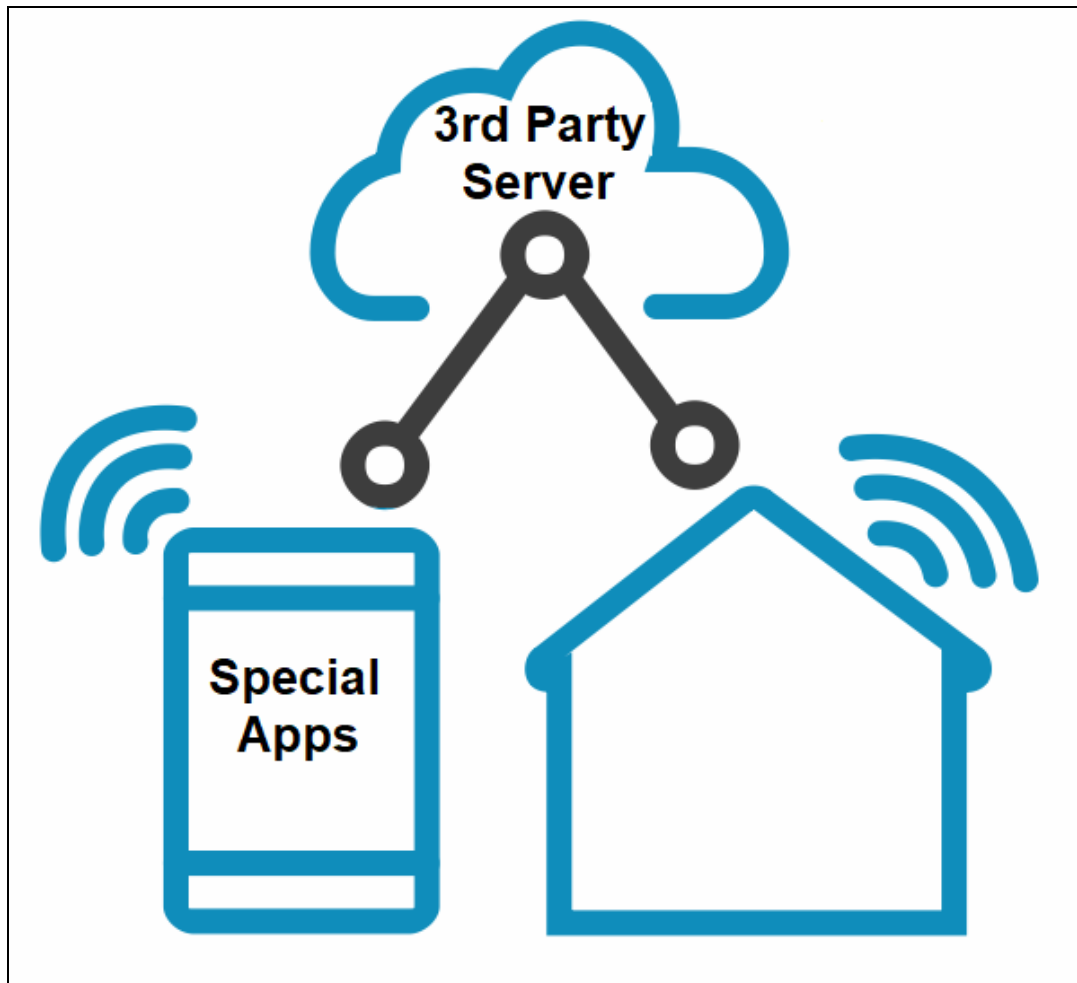
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## Introduction

The SP-Plug-AU is a WiFi connected Smart Plug, with **Tasmota-Plus**<sup>1</sup> installed.

### *Common Smart Plugs*



**Figure 1 - Common Smart Plugs require a 3rd Party server, and special apps.**

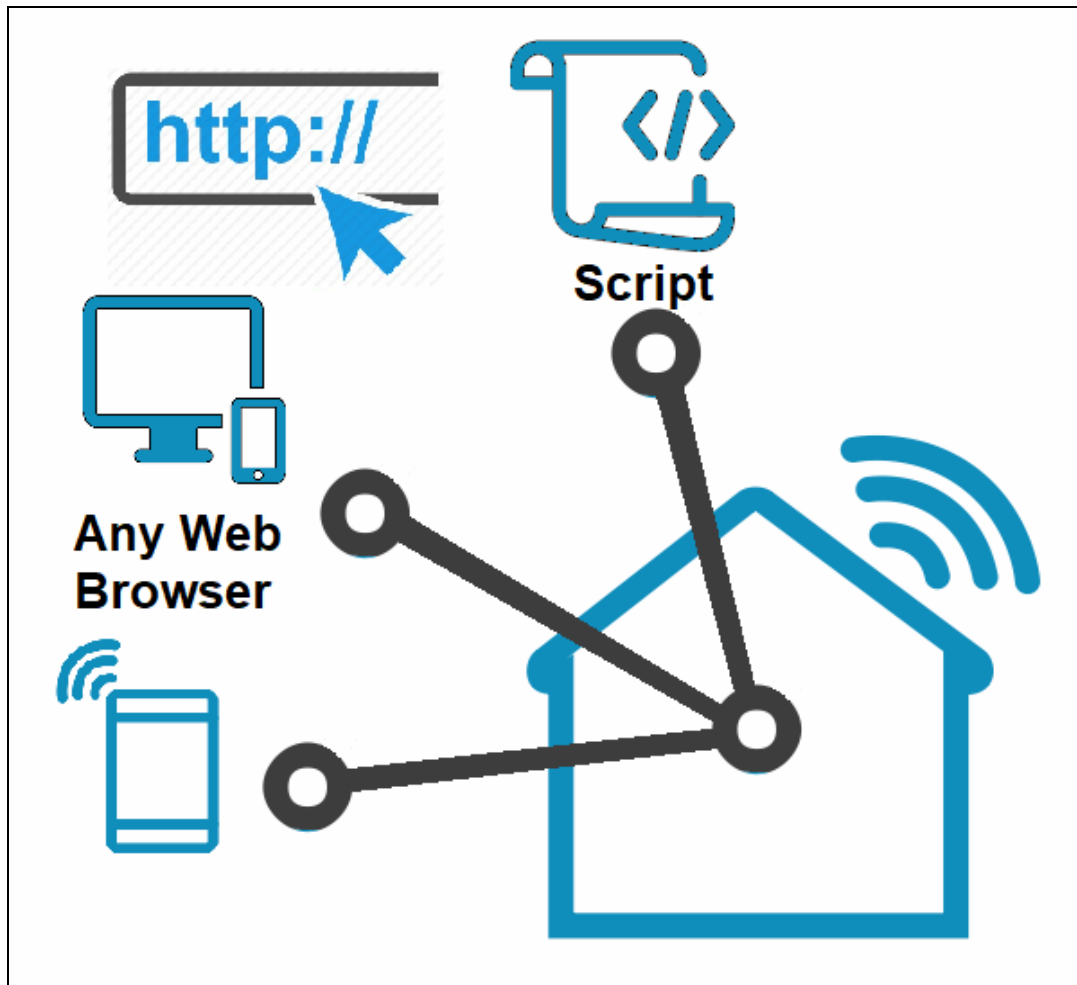
Common Smart Plugs are designed to only work via the manufacturer's server and with special apps; the user never communicates directly with the device.

While this works well for home users, power users may prefer to directly control the device using a simple `http://` (web) interface.

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<sup>1</sup> An enhanced version of Tasmota (<https://tasmota.github.io/docs/>)

## Tasmota Smart Plugs



**Figure 2 - Tasmota Smart Plugs can be directly controlled. No special app or server required.**

Tasmota gives direct access to the device via simple `http://` web access.

The value of this for power users is that the device can be controlled using:

- Web browser interface.
- `http://` Command Interface. Ideal for control by external scripts.

**More information:** <https://tasmota.github.io/docs/>

### ***Tasmota-Plus Smart Plugs***



**Figure 3 – Tasmota-Plus Smart Plugs have extra features**

Tasmota-Plus adds these features to standard Tasmota.

## Ping Watchdog



There are 4 Ping Watchdogs for use. These are configured using the **Configure Watchdog** page.

Enable this Watchdog

☒ Enable this Watchdog?

Watchdog

If 

Socket 1

 is ON

and 

3

 pings

at 

16

 second intervals

to IP V4 address 

192.168.1.1

 FAIL, then

cycle socket power for 

5

 seconds.

### Enable this Watchdog?

Only enabled Watchdogs operate.

### Socket Number

If the selected socket is not ON, then the Watchdog is disabled.

### Number of Pings at Interval (seconds)

The device will continuously send the requested number of Pings at the requested intervals. If ALL Pings fail, the Watchdog fires. If any of the Pings succeed, the Watchdog resets and starts a new cycle.

### IP V4 Address

A valid IPV4 address must be entered here.

IPV6 addresses & host names are not supported.

### Cycle Seconds

If the Watchdog fires (i.e. the Pings failed), then the specified socket will be powered down for the requested seconds, then powered up.

## WAN Security



Tasmota supports remote commands & login credentials that can query and change parameters. For example this URL will turn the power ON:

<http://<LAN.device.ip.address>/cm?user=admin&password=joker&cmnd=power1%20on>

If the device is to be managed remotely, a port forwarding firewall rule can be created. e.g. WAN Port 8080 → LAN.address.of.device:80

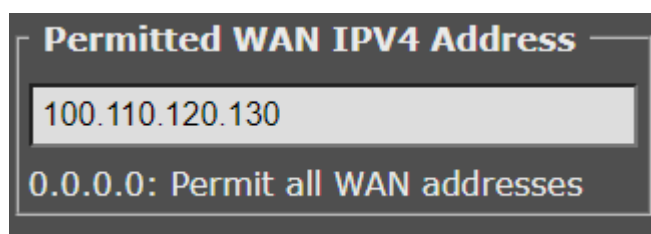
In this case the following URL will also work:

<http://<WAN.ip.address>:8080/cm?user=admin&password=joker&cmnd=power1%20>

However there is a new risk in that the credentials are sent in clear text.

**Tasmota-Plus** has a WAN Security feature where WAN requests not originating from a specified IP address can be blocked.

This is configured using the **Configure Other** page.



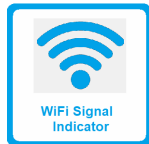
### A request looks like:

<http://<device.ip.address>/>  
<http://<device.ip.address>/cm?cmnd=xxxxx>  
etc.

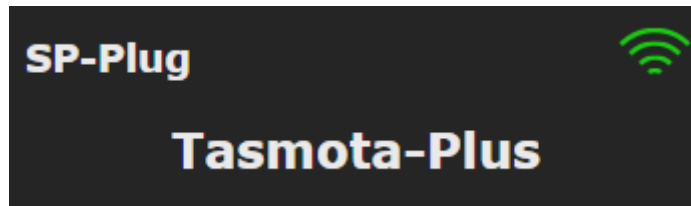
### Examples

Permitted WAN IP4 Address	Requests from ...	Result
0.0.0.0	Anywhere	Accepted
100.110.120.130	50.60.70.80	Rejected
	100.110.120.1	Rejected
	100.110.120.130	Accepted
	Local LAN	Accepted

## WiFi Signal Indicator



Much like a mobile phone, **Tasmota-Plus** shows the received WiFi signal strength in the top-right corner of the Main page.





## Clock Configuration Page



Standard Tasmota has no configuration page to set the parameters necessary to correctly calculate the local time, and local sunrise/sunset times.

**Tasmota-Plus** has a **Configure Clock** page as shown below.

**Local Date & Time (refresh page to update)**  
2020-10-09 13:59:57  
Sunrise: 06:41  
Sunset: 19:30

**Configure Clock**  
**For Sunset/Sunrise calculations**  
**Latitude (degrees, North+ / South-)**  
-37.813600  
**Longitude (degrees, East+ / West-)**  
144.963100

Use Daylight Savings? ☒

**Timezone offset from GMT**  
Standard Time  
+10:00  
Daylight Savings Time  
+11:00

**Daylight Savings**

Starts	Ends
First ▾	First ▾
Sun ▾	Sun ▾
of	of
Apr ▾	Oct ▾
at	at
2	3
o'clock	o'clock

# Requirements

The SP-Plug-AU requires:

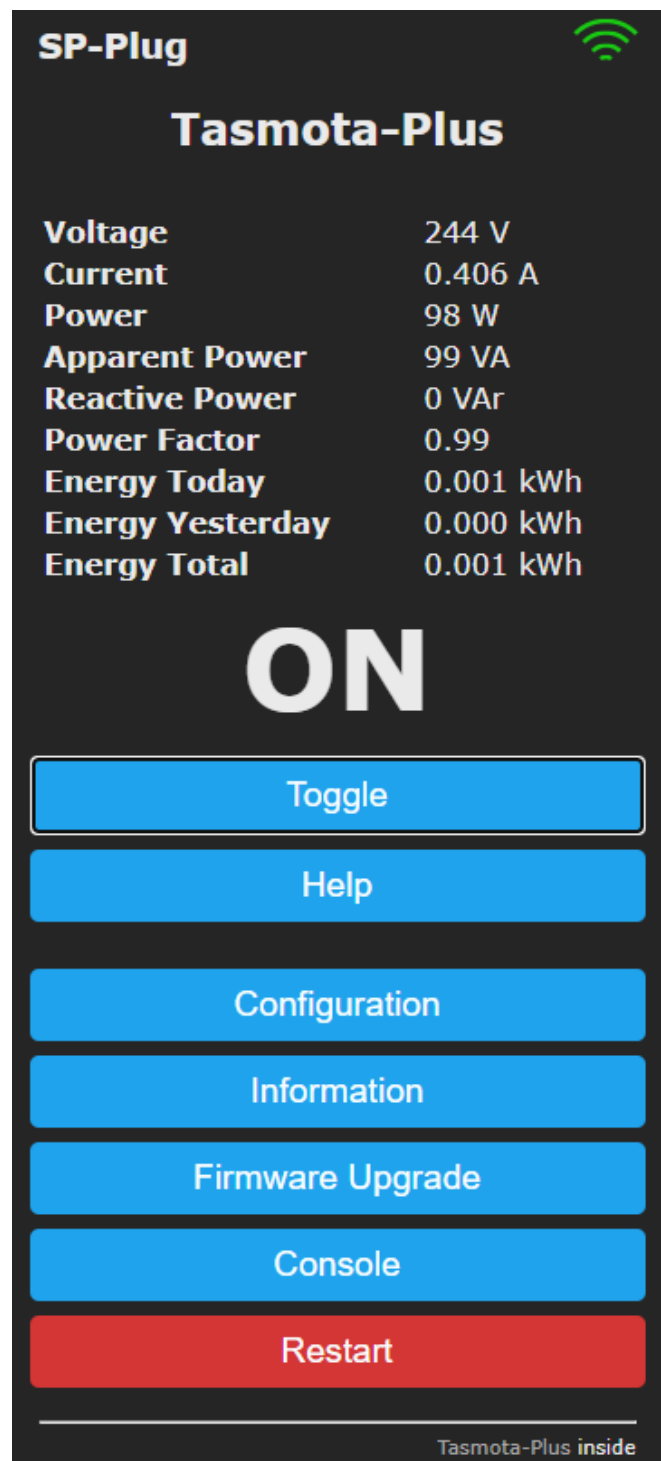
- **Initial Configuration**
  - A device with a Web Browser & WiFi interface, located within 3m of the SP-Plug-AU. A smart-phone, or tablet will usually be sufficient.
- **Operation**
  - A WiFi Access Point (AP) within 10m, connected to the local LAN<sup>2</sup>.
  - A DHCP<sup>3</sup> server on the LAN.
- **Ongoing Management**
  - Any device with a Web browser and connected to the LAN.

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<sup>2</sup> Local Area Network. See [https://en.wikipedia.org/wiki/Local\\_area\\_network](https://en.wikipedia.org/wiki/Local_area_network)

<sup>3</sup> Dynamic Host Configuration Protocol: See [https://en.wikipedia.org/wiki/Dynamic\\_Host\\_Configuration\\_Protocol](https://en.wikipedia.org/wiki/Dynamic_Host_Configuration_Protocol)

## Web Browser Interface



**Figure 4 - The Tasmota Web Interface is available from any Web browser**

Simply use any web browser to open the web page

`http://<device.ip.address>/`

See documentation here: <https://tasmota.github.io/docs/WebUI/>

## http:// Command Interface



Simple commands as below will (e.g.) turn the Smart Plug ON.

**Note:** %20 in a URL = Space character

### From Web Browser

`http://<device.ip.address>/cm?cmnd=power1%20on`

### From Windows or Linux command/terminal window

`curl http://<device.ip.address>/cm?cmnd=power1%20on`

### From a Windows Batch file (\*.bat file)

`curl http://<device.ip.address>/cm?cmnd=power1%%20on`

**Note:** need double % characters if in a batch file

### From a PHP script (\*.php file)

```
file_get_contents(  
    'http://<device.ip.address>/cm?cmnd=power1%20on');
```

You can retrieve the power monitoring status as below.

`http://<device.ip.address>/cm?cmnd=status%208`

A typical JSON response looks like:

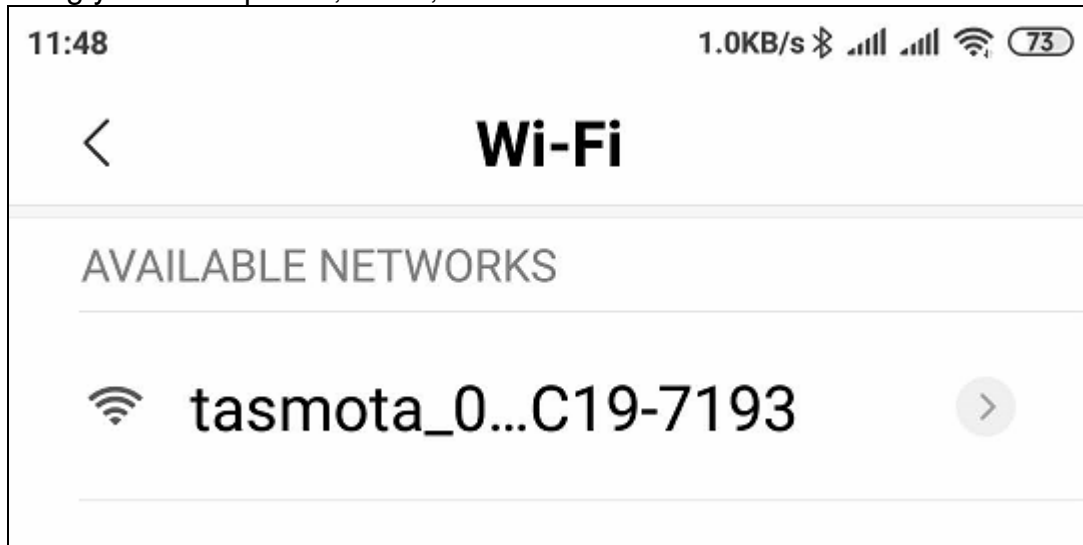
```
{ "Time": "2020-06-15T13:30:15",  
  "ENERGY": {  
    "TotalStartTime": "2020-06-15T09:41:18",  
    "Total": 0.001,  
    "Yesterday": 0.000,  
    "Today": 0.001,  
    "Power": 99,  
    "ApparentPower": 101,  
    "ReactivePower": 18,  
    "Factor": 0.98,  
    "Voltage": 239,  
    "Current": 0.421  
  }  
}
```

### More information:

<https://tasmota.github.io/docs/Commands/#power-monitoring>

## Getting Started

1. Plug the SP-Plug-AU into a 240V AC power socket and apply power.
2. Search for a WiFi network named tasmota\_xxxxxx-yyyyy using your smartphone, tablet, ...



**NOTE:** If you do not see this WiFi network: Reset the device to Factory Default. See page 19.

3. Connect to that WiFi network. On connection to the network, you may get a warning that there is no Internet connection and be prompted to connect to a different network. Do not allow the mobile device to select a different network.
4. After you have connected to the Tasmota WiFi AP, open <http://192.168.4.1> in a web browser on the smartphone (or whatever device you used). Depending on the phone, it will take you to the Tasmota configuration page automatically, or you will get a prompt to sign in to WiFi network or authorise. Tapping on the AP name should also open the configuration page (shown below).

# Tasmota-Plus

## Configure WiFi

Scan for wifi networks

**Wifi parameters**

**Network 1**

Name (SSID)

Password ☐ Show password

**Network 2 (Optional)**

Name (SSID)

Password ☐ Show password

Hostname (%s-%04d)

%s-%04d

CORS Domain

Save

On this page you can either:

- **Scan** for available WiFi networks. Select the right network from the list; or
- **Manually Enter** the **Network 1 Name (SSID)** - your WiFi network name (case sensitive)

**Network 1 Password** - password for your WiFi network (Required)  
The password has to be under 32 characters and without special characters (e.g. asterisks) or white spaces

Recommended:

**Network 2 Name (SSID)** - alternative WiFi network SSID, in case connection to Network 1 fails.

**Network 2 Password** - password for your alternative WiFi network

Click the **Show password** checkbox(s) to see the password(s) you enter to ensure that it is correct and that your mobile device has not inadvertently capitalised the first letter nor autocorrected from what you entered.

~~**Double**~~ **Triple** check the WiFi credentials.

Click



The Tasmota-Plus device will restart and connect to your WiFi network. The tasmota\_XXXXX WiFi network will no longer exist. Therefore your smartphone will automatically connect back to its normal WiFi network.

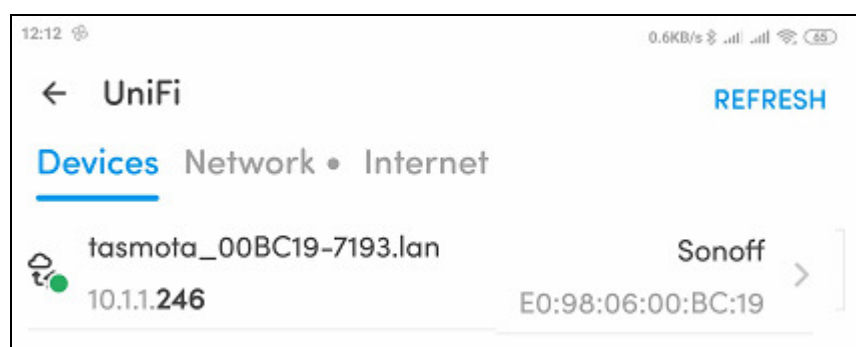
5. The next step is to learn the IP address assigned to your device by your local DHCP server. There are a number of ways to do this. You will look for a device with a name similar to this.

i.e. **tasmota-XXXXXX-YYYY**

- **Your router** – Look in DHCP leases.

- **Fing** – for Android or iOS

<https://www.fing.com/products/>



- **Angry IP Scanner** – open source for Linux, Windows and Mac.  
<https://angryip.org/>

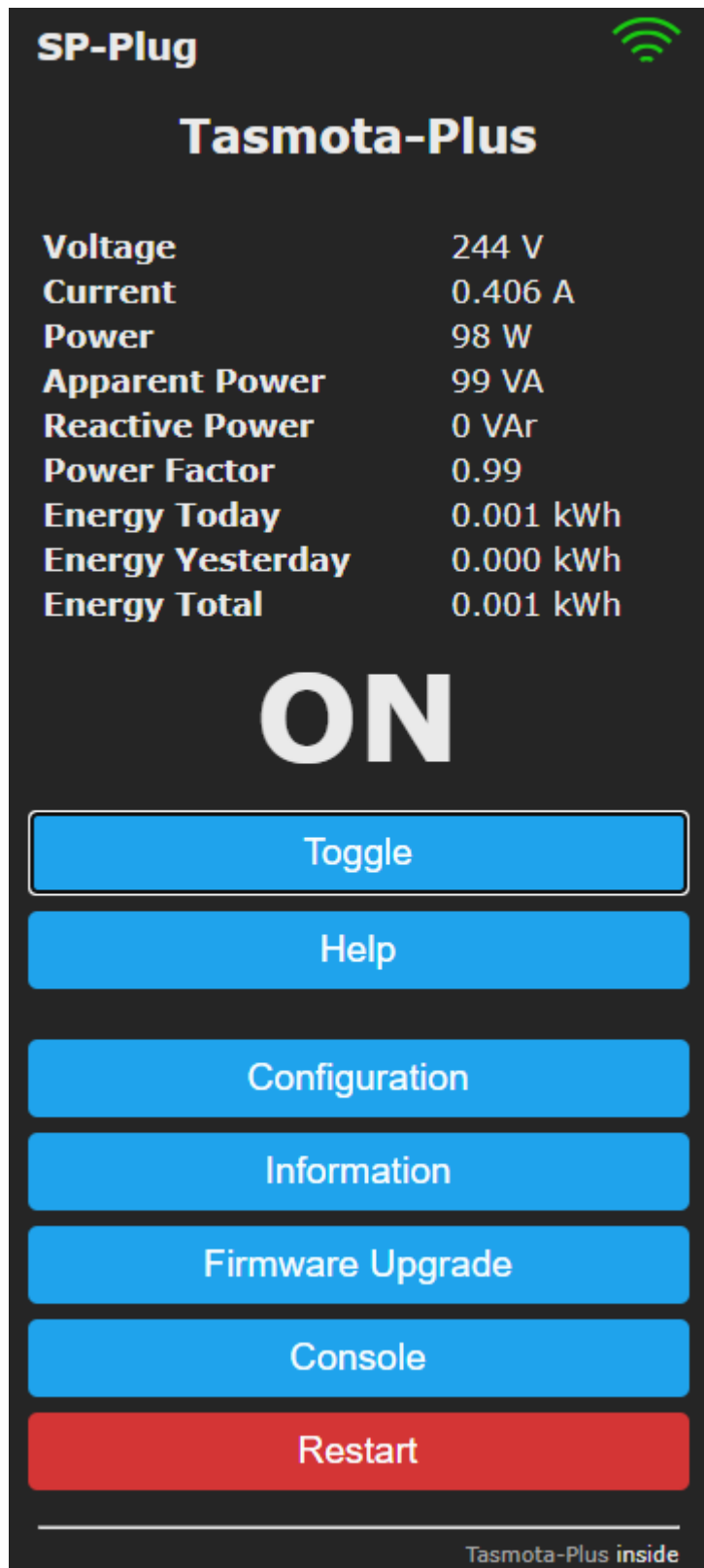
- **SuperScan** – Windows only (free)

<https://sectools.org/tool/superscan/>

6. Using your web browser, visit the device's IP address, as discovered in the step above.

**NOTE:** Do NOT visit `https://` (no 's')

`http://<device.ip.address>/`





## Using the Web Interface

### ***Standard Tasmota Web Interface***

This is documented here:

<https://tasmota.github.io/docs/WebUI/>

### ***Tasmota Plus Features***

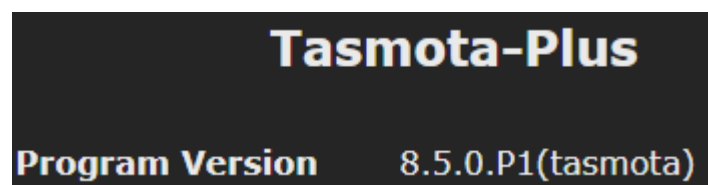
See **Tasmota-Plus Smart Plugs**; page 3 in this document.

## Firmware

From time to time, new Tasmota-Plus firmware may be released.

### *Checking the installed version*

Open the Information page and note the Program Version currently installed



### *Checking the latest released version*

Use your web browser to visit:

<http://ubwh.com.au/tasmota/Tasmota-Plus/SP-Plug-ReleaseNotes.php>

## Updating

If you choose to update the firmware to the latest version, there are two methods.

<p><b>Over The Air (OTA)</b> This is the simplest.</p> <p>Open the Firmware Upgrade page.</p> <p>Enter this OTA Url: <a href="http://ubwh.com.au/tasmota/Tasmota-Plus/tasmota-SP-Plug.bin.gz">http://ubwh.com.au/tasmota/Tasmota-Plus/tasmota-SP-Plug.bin.gz</a></p> <p>Click <b>Start upgrade</b></p>	A screenshot of the "Upgrade by web server" interface. It features a dark background with a light gray border. At the top, the text "Upgrade by web server" is displayed in a bold, white font. Below it, the text "OTA Url" is displayed in a bold, white font. Underneath, there is a text input field containing the URL "http://ubwh.com.au/tasmota/Tasmota-Plus". At the bottom, there is a large, blue button with the text "Start upgrade" in white.
<p><b>File Upload</b> With a web browser on your local PC, visit <a href="http://ubwh.com.au/tasmota/Tasmota-Plus/tasmota-SP-Plug.bin.gz">http://ubwh.com.au/tasmota/Tasmota-Plus/tasmota-SP-Plug.bin.gz</a></p> <p>Save the file on your local computer.</p> <p>Open the Firmware Upgrade page.</p> <p>Choose the file just downloaded.</p> <p>Click <b>Start upgrade</b></p>	A screenshot of the "Upgrade by file upload" interface. It features a dark background with a light gray border. At the top, the text "Upgrade by file upload" is displayed in a bold, white font. Below it, there is a text input field with the placeholder text "Choose file" and "No file chosen". At the bottom, there is a large, blue button with the text "Start upgrade" in white.

## Factory Reset Procedure

When the settings have been cleared, the device can not connect to a WiFi network, so it starts up as a WiFi Access Point (AP) in WiFi setup mode.

There are a number of ways to clear (reset) all settings.

1. Web Browser Interface → Configuration

### Reset Configuration

2. Press and hold the button on the device for 45 seconds, then release.
3. Power off the device.  
Repeat 6 times: Power on for 1 second, then power off.  
Power on.

## Power Monitoring Calibration

As delivered, and after a Factory Reset, the power monitoring values (Volts, Current, Power, ...) are not fully calibrated and may be off by a few percent.

User calibration is possible. See this page:

<https://tasmota.github.io/docs/Power-Monitoring-Calibration/>

## Specifications

<b>Working Voltage</b>	240 VAC
<b>Max. Current</b>	10 A
<b>Max. VA</b>	2400 VA
<b>Max. Power load</b>	2400 W (real)
<b>Power Monitoring Values</b>	AC Volts (V) AC Current (A) AC Power real (W) reactive (VA) total (VA) Cumulative Energy today (kWh) yesterday (kWh) total (kWh) Power Factor
<b>Power Monitoring Accuracy</b> - Factory Default - User Calibrated	+/- 2% +/- 0%
<b>WiFi Standards</b>	802.11b/g/n
<b>Manufacturer's warranty</b>	1 year
<b>Hardware manufacturer</b>	Medion
<b>Manufacturer's model</b>	S85225
<b>Firmware</b>	Tasmota-Plus (customised)
<b>Works with http://</b>	Yes
<b>Works with alexa</b>	No
<b>Works with Google Assistant</b>	No