

Upgrading Tasmota from 8.X to 11.X

This document is a simple guide for those interested in upgrading to a newer version of Tasmota. Although this document references specific versions the general principles could be applied more broadly.

The first thing to understand is that many Tasmota devices only have 1 Mb (1,024 Kb) of memory. A typical Tasmota image requires about 550 – 590 Kb of space (or approximately 55% – 60% of total). Therefore, it is not possible to have two full images installed at the same time. To get around this limitation Tasmota has smaller “minimal” images which are used as steppingstones to a full upgrade. These are small enough to fit into the remaining space. Doing it this way ensures that you always have a bootable device. Without this approach a firmware upgrade that went wrong would render a device inoperable.

You can find the official Tasmota upgrade documentation [here](#).

The [official method](#) to upgrade from Tasmota 8.X to Tasmota 11.1.0 looks like this.

Upgrade Flow

v1.0.11  **v3.9.22**  **v4.2.0**  **v5.14.0**  **v6.7.1**  **v7.2.0**  **v8.5.1**  **v9.1**  **Current release**

If you are using local files you would do it like this.

Upgrade Tasmota 8.X to Tasmota 8.5.1 minimal
Upgrade Tasmota 8.5.1 minimal to Tasmota 8.5.1 full
Upgrade Tasmota 8.5.1 full to Tasmota 9.1 minimal
Upgrade Tasmota 9.1 minimal to Tasmota 9.1 full
Upgrade Tasmota 9.1 full to Tasmota 11.1 minimal
Upgrade Tasmota 11.1 minimal to Tasmota 11.1 full.

But there is a better way. If we use the OTA server it will take care of doing the minimal\full upgrade so it looks more like this. Much better!

Upgrade Tasmota 8.X to Tasmota 8.5.1
Upgrade Tasmota 8.5.1 to Tasmota 9.1
Upgrade Tasmota 9.1 to Tasmota 11.1

Upgrade to Tasmota 8.5.1

In this case I am upgrading a bulb from the Tasmota 8.1.0 custom compilation for Hubitat. Your screens may look a little different depending on the device but the process is the same. Your timings may also be different. From the main screen click on **"Firmware Upgrade"**. The first step is to upgrade to Tasmota version 8.5.1.



The OTA URL for Tasmota 8.5.1 is: <http://ota.tasmota.com/tasmota/release-8.5.1/tasmota.bin> As you may notice that is not the minimal distribution, that is O.K. Now follow the pictures.

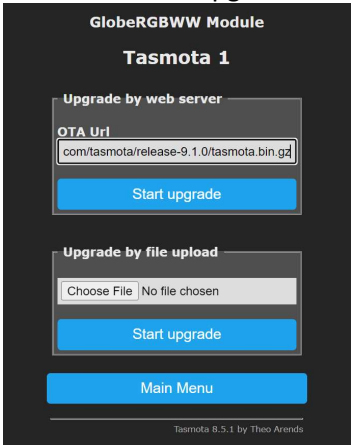
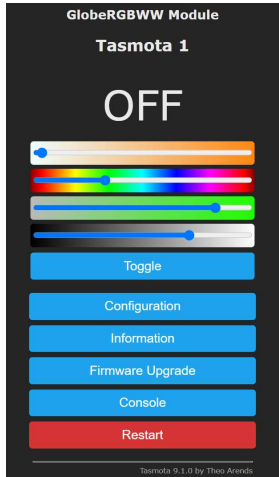
<p>Change the OTA URL as shown below and start upgrade.</p> A screenshot of the Tasmota 1 main menu. The title is "GlobeRGBWW Module" and "Tasmota 1". Below the title are two sections: "Upgrade by web server" and "Upgrade by file upload". In the "Upgrade by web server" section, the "OTA Url" field is filled with "ota.com/tasmota/release-8.5.1/tasmota.bin". Below it is a "Start upgrade" button. In the "Upgrade by file upload" section, there is a "Choose File" button and a "Start upgrade" button. At the bottom is a "Main Menu" button. At the bottom, it says "Tasmota 8.1.0 by Theo Arends & for Hubitat by markus II".	<p>This screen will appear in about 30 seconds. Just wait. Full install will start automatically.</p> A screenshot of the Tasmota 1 main menu. The title is "GlobeRGBWW Module" and "Tasmota 1". Below the title is a red text message: "MINIMAL firmware please upgrade". Below this are three buttons: "Firmware Upgrade", "Console", and "Restart". At the bottom, it says "Tasmota 8.5.1 by Theo Arends".	<p>In another minute or two the screen will change to look like this.</p> A screenshot of the Tasmota 1 main menu. The title is "GlobeRGBWW Module" and "Tasmota 1". Below the title are five buttons: "Configuration", "Information", "Firmware Upgrade", "Console", and "Restart". The "Restart" button is highlighted in red. At the bottom, it says "Tasmota 8.5.1 by Theo Arends".
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You are now at version 8.5.1.

Upgrade to Tasmota version 9.1.0

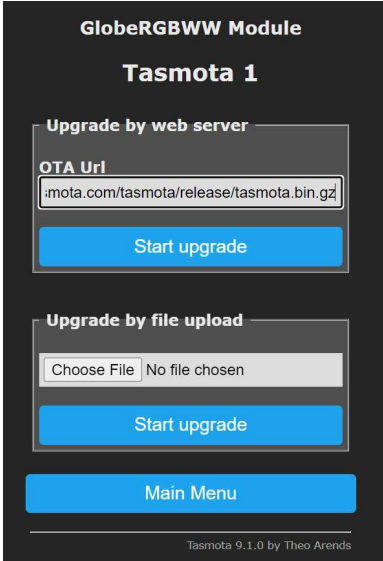
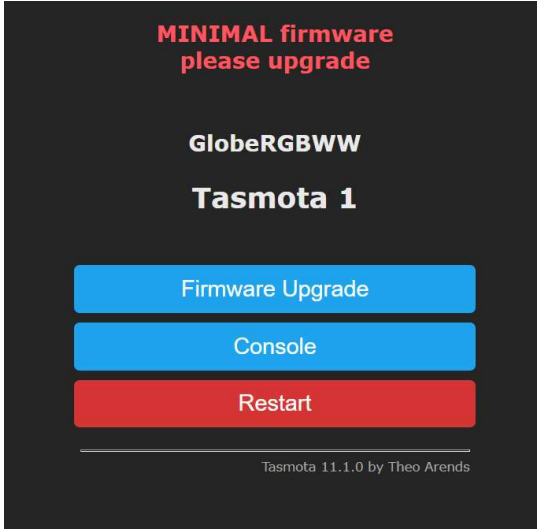
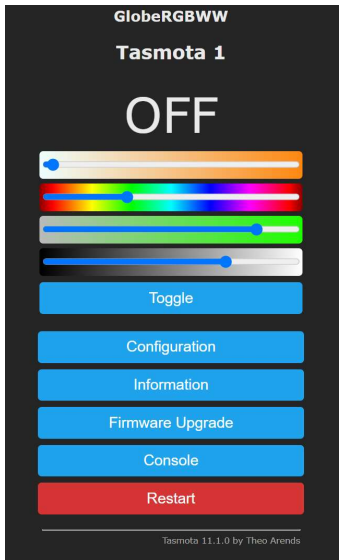
The OTA URL for Tasmota 9.1.0 is: <http://ota.tasmota.com/tasmota/release-9.1.0/tasmota.bin.gz>

Note that this URL uses a .gz extension. This is a compressed file format supported in 8.5.1 and later.

<p>Change the OTA URL as shown below and start upgrade.</p> 	<p>In about 30 seconds the device was running Tasmota 9.1 minimal.</p> <p>NO SCREENSHOT</p> <p>Don't do anything. Just wait.</p>	<p>Another 90 seconds and the screen looked like this.</p> 
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Upgrade to Tasmota Current Version (V11.1 at time of writing)

The OTA URL for Tasmota 11.1 is: <http://ota.tasmota.com/tasmota/release/tasmota.bin.gz>

<p>Change the OTA URL as shown below and start upgrade.</p> 	<p>In about 30 seconds the device was running Tasmota 11.1.0 minimal.</p> 	<p>I waited another 2 minutes and nothing appeared to happen. So I did a browser refresh.</p> 
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You are now at Tasmota 11.1.0. Not so bad.

Troubleshooting

If the upgrade does not seem to be running as expected and you have waited an appropriate amount of time then click on Console. Any error or status messages regarding the upgrade will show here. I have about 25 Tasmota devices and in all of my upgrades and changes over the last two years I have not yet rendered a single one of those devices inoperable. It really is a robust upgrade process.

After upgrading all of my devices I had two identical devices that just did not tolerate Tasmota 11.1.0 very well. They were plugs attached to lights and the lights would flick off and on occasionally. Looking at the console the cause was a hardware restart because of the device watchdog. I believe this means that some aspect of the device was unresponsive and was restarted. I downgraded these devices to 8.5.1 and use Tasmota Sync polling mode to occasionally check the device state.

Good luck.

Gary Milne - 5/16/22