



TPLink RTI Driver



Revision: 20180629
Date: 2018/06/29
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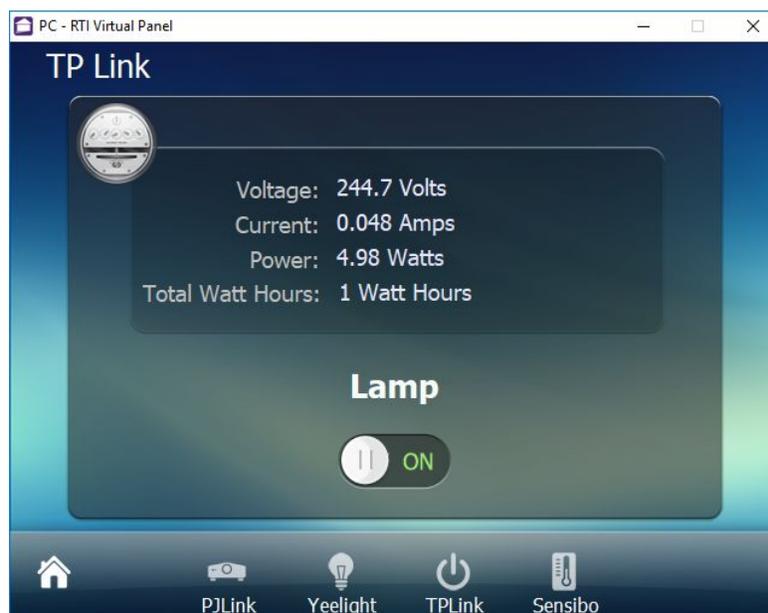
Overview

The TPLink RTI driver allows for control over the TPLink range of WiFi outlets. The TPLink outlets are inexpensive and widely available, simple to install and, with this driver, fully controllable by RTI.

The TPLink driver supports the HS-1xx range of outlets, offering basic on / off control as well as full energy monitoring on the supported models.



The driver also supports a custom power usage for on and off events. Using this you can tune the power levels that indicate a device being powered on or powered off to suit.



Installation

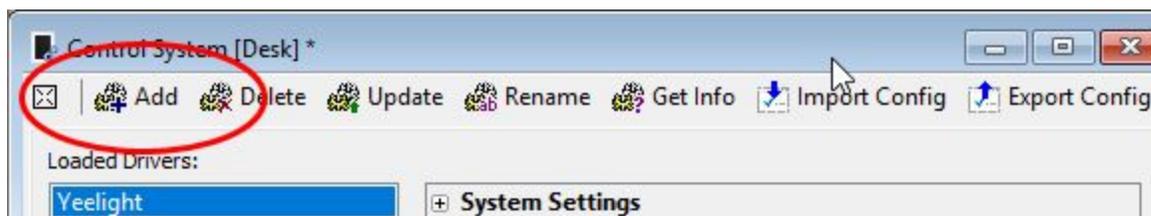
The zip file that included this documentation has the rtidriver file you will need to add. The first step is to download and extract the driver from the zip file. It doesn't matter where you store the file but we advise keeping them together.

The default location is Documents\Integration Designer\Control Drivers

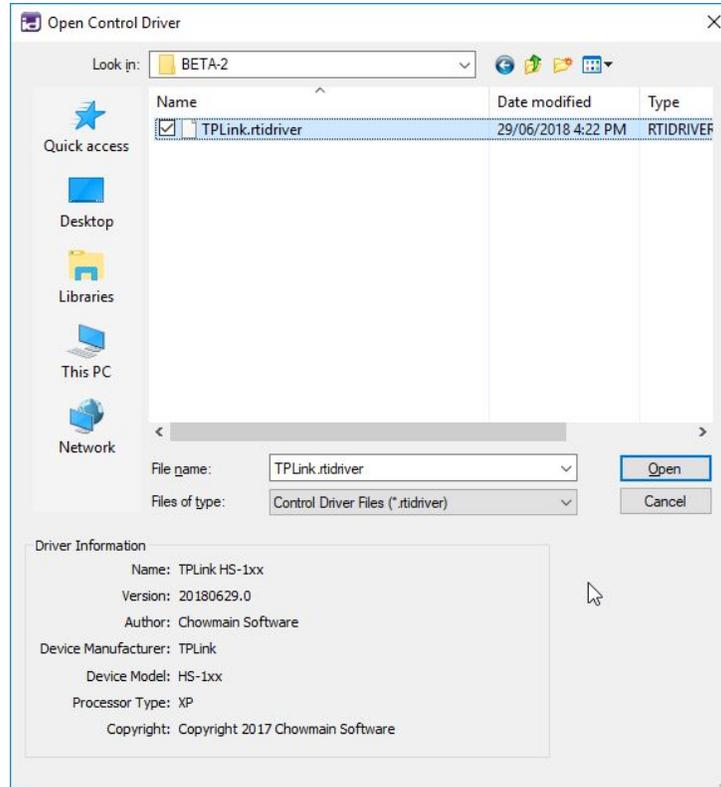
Select your processor from the System Workplace sidebar and select the Drivers tab at the bottom of the window (If you are using a KX3 in control mode then you might need to select 'Switch UI / Control Processor Mode' from the Device menu).

Add the driver

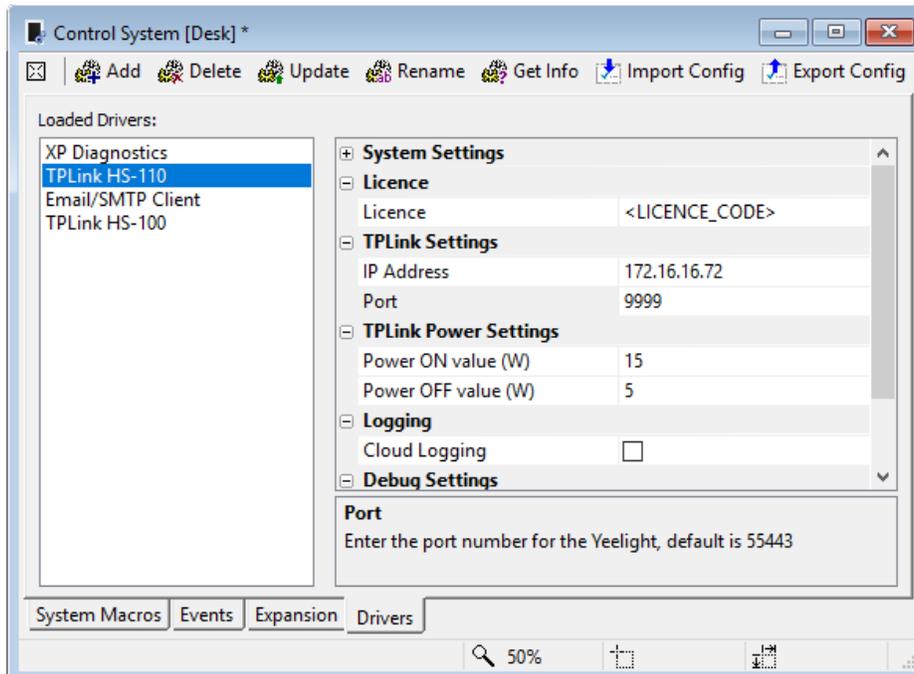
Click the Add button at the top of the driver window. The driver is now ready to configure or use.



Find the rtidriver file that you extracted from the zip file above. Click on Open when you have found the correct file.



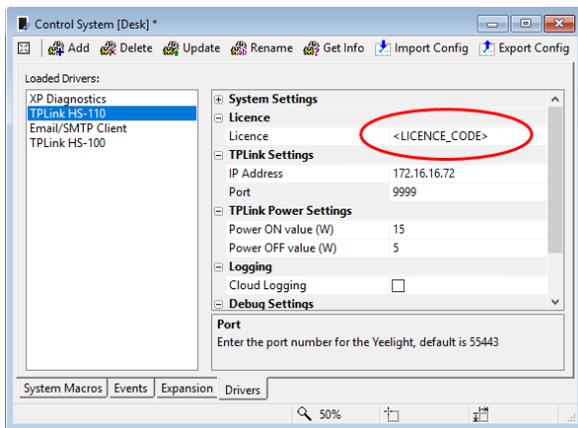
The driver is now ready to use.



Driver Configuration

Add licence to driver

The driver will work without a licence for 7 days, automatically entering the trial phase if you don't enter a licence key. To keep using the driver after the trial has expired you will need to purchase a licence key.



Once you have your key it should be entered in to the Licence field of the config settings for the driver.

Enter the licence into the field shown to the left.

Device Configuration

The TPLink driver requires only two configuration settings, the ip address and the port of the outlet you wish to control. The port defaults to 9999 and should be fine to leave as the default.

If you have an outlet that supports energy monitoring you will also want to configure the Power ON value and Power OFF value. These values are used to specify when the Power ON and Power OFF events will trigger. See the events section of this document for more details.

Driver Variables

State

Power [boolean]

This variable indicates the current power state of the outlet.

On Time (s) [number]

The On Time (s) variable contains the time since the outlet was last switched on. The time is in seconds.

Energy Use

The following variables will only contain values if the outlet supports energy monitoring. There are also different values depending on your geographical region. In some regions the values are in millivolts, milliamps and milliwatts and in others its in volts, amps and watts. You will need to configure your variables appropriately.

Voltage [number]

The Voltage variable contains the mains voltage level. The voltage reported varies depending on the region your in. It will either be in millivolts or volts.

Current [number]

The Current variable contains the current being consumed by the device. The current reported varies depending on the region your in. It will either be in milliamps or amps.

Power [number]

The Power variable contains the power being consumed by the device. The power reported varies depending on the region your in. It will either be in milliwatts or watts.

Total Watt Hours[number]

The Total Watt Hours variable contains the power that has been consumed over the time since the outlet was swithced on. Regardless of region it is reported in Watt Hours.

System

Version [string]

This variable contains the current firmware version.

Model [string]

This variable contains the model number of the outlet.

Name [string]

This variable contains the name that you have assigned the outlet in the Kasa app.

Driver Commands

The state of the outlet is maintained automatically (the unit is periodically polled for its current state). For the power toggle command the current state will be checked and it will change the outlet to the opposite state (if its on it will turn it off and vice versa). If the unit turned on or off from the Kasa app and then immediately used through the driver the state may not have updated yet. If you are in a situation where you need the app and the driver to be used very close together the get system and get energy commands can be used to make certain that the driver has an accurate representation of the current state. The commands are queued so if you request the current state and then send a toggle it will correctly change the outlet regardless of when it last polled the device. The Get Energy command is only required for the outlets that support energy monitoring.

Driver Commands

Power On

This command will turn the outlet on.

Power Off

This command will turn the outlet off.

Power Toggle

This command will toggle the outlet. It tracks the current state and will change appropriately.

Get Energy

This command will fetch the current energy usage for the outlet. This command only applies to the outlet that support energy monitoring. On these devices the Power ON and Power OFF events may be affected by the config settings for the on and off levels (see below)

Get System

This command will update the system details. This includes the name and the current power state. This can be used to ensure the toggle always works if you are using the app and the driver very close together.

EVENTS

TPLink Power Settings

In the system config it is possible to set a Power ON value and a Power OFF value. These values are used to determine when the outlet power events trigger. This only applies to the outlets that support energy monitoring.

The concept is that you can leave a device connected and the outlet powered on, but have the event trigger when the connected device itself turns on.

An example would be connecting a playstation to the outlet. When the playstation is placed into sleep mode it uses much less power. Once you work out the level to which it drops to you can use this value to signal to the driver that it should consider the device off. Similarly the device will jump to a higher power usage when turned on. This value can be used to set when the Power ON event fires.

By configuring the device to use the Power ON and Power OFF values you can trigger macros when the device powers on independently of RTI. Using this method, simply turning on the Playstation with the controller could be used to turn on your entire system, select the correct input on your AVR and power on the TV and switch it to the correct input all without needing to use the RTI remote.

Power ON

The Power ON event will trigger when the outlet is turned on via the driver or via the app. The unit is polled so the event will not trigger immediately if the unit is turned on via the app.

If the outlet supports energy monitoring then the power on state will trigger when the connected device draws more power than the value you have specified in the Power ON value of the driver configuration.

NOTE: The Power ON event will trigger whenever the Power On driver command is used regardless of how much power is being drawn.

Power OFF

The Power OFF event will trigger when the outlet is turned off via the driver or via the app. The unit is polled so the event will not trigger immediately if the unit is turned off via the app.

If the outlet supports energy monitoring then the power off state will trigger when the connected device draws less power than the value you have specified in the Power OFF value of the driver configuration.

NOTE: The Power OFF event will trigger whenever the Power Off driver command is used regardless of how much power is being drawn.