ZB-Stick with Home Assistant

This document describes how to use POPP ZB-Stick with existing Home Automation platform called Home Assistant (Hass.io) (<u>https://www.home-assistant.io/</u>).

POPP ZB-Stick firmware version, referenced in this guide: 6.3.0

Home Assistant (Hass.io) software version, referenced in this guide: 0.112.4

This guide focuses on:

- Connect POPP ZB-Stick to the target PC or Raspberry Pi
- Setup Zigbee Home Automation component in Home Assistant
- Troubleshooting
- Zigbee devices Pairing and Removal
- Zigbee devices examples

This guide DOES NOT focus on Home Assistant (Hass.io) installation and initial configuration. Please follow the official instructions <u>https://www.home-assistant.io/hassio/installation/</u>.

Introduction

POPP ZB-Stick can be used in 2 options with Home Assistant:

- With a generic Linux machine, with Home Assistant installed



Home Assistant installed and running

- With a Raspberry Pi (any other single board computer) with Home Assistant installed



Home Assistant installed and running

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Initial setup and connection

This guide does not cover Home Assistant (Hass.io) installation. We assume, that you can access Home Assistant Web Interface using your browser.

It is highly recommended to have SSH Server and Configurator addons installed, at least during the Zigbee setup phase. To install them just follow the Hass.io installation guide (<u>https://www.home-assistant.io/hassio/installation/</u>).



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Connect POPP ZB-Stick to Raspberry Pi or PC

Once you have inserted the USB adapter, check the configuration.

- Wait for Hass.io to boot
- Connect to the web interface using your favourite browser
- Navigate to the Supervisor -> System -> Hardware menu



- Confirm the USB Adapter is detected and visible as serial ports (/dev/ttyUSB0 and in this example)

Har	aware X
	serial:
	 /dev/ttyUSB0
	 /dev/ttyAMA0
	 /dev/ttyS0
	 /dev/serial/by-ld/usb-1a86_USB2.0-Serial-if00-port0
	input:
•	disk:
	 /dev/mmcblk0p7
	 /dev/mmcblk0p1
	 /dev/mmcblk0p5
	 /dev/mmcblk0p6
	 /dev/mmcblk0p4
	 /dev/mmcblk0p8
	 /dev/mmcblk0
	 /dev/mmcblk0p2
	 /dev/mmcblk0p3
•	gpio:
	 gpiochip0
	 gpiochip504
•	audio:
	• 0:
	 name: bcm2835_alsa - bcm2835 ALSA
	 type: ALSA
	devices:
	[object Object]
	 [object object]
	 toplect object)

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Zigbee HA Component configuration

To work with POPP ZB-Stick from Home Assistant we are using Zigbee Home Automation Component (<u>https://www.home-assistant.io/components/zha/</u>). It comes preinstalled into Hass.io so we only need to configure it properly to get it working.

Configure ZHA component

To setup Zigbee Home Automation component to work properly with POPP ZB-Stick we need to:

- Navigate to the Configuration -> Integrations

Ξ¢	Home Assistant	Configure He	ome Assistant			
5 15	Overview Map	Here it is possible to Assistant. Not every yet, but we're working	configure your components and Home thing is possible to configure from the UI g on it.	e,	Home Assistant Cloud Control away from home, integrate with Alexa and Google Assistant.	>
:=	Logbook History			*	Integrations Manage and set up integrations	>
				60	Devices Manage connected devices	>
				**	Entitles Overview of all known entities.	>
				<u>1</u>	Areas Overview of all areas in your home.	>
				ф	Automations Create and edit automations	>
				۴	Scenes Create and edit scenes	>
~	Developer Tools			Ē	Scripts Create and edit scripts	>
☆	Supervisor 🕈			×	Helpers Elements that can help build automations.	>
۰.	Configuration					

- Add new Integration and search for Zigbee Home Automation



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Select Enter Manually

-



- Select EZSP radio type

	Radio Type Pick a type of your Zigbee radio	×			
EZSP = Silicon Labs EmberZ	Net protocol: Elelabs, HUSBZB-1, Telegesis	4			
TI_CC = Texas Instruments Z	-Stack ZNP protocol: CC253x, CC26x2, CC13	8x2 ⊤			
XBee = Digi XBee Zigbee radios: Digi XBee Series 2, 2C, 3					
ZIGate = ZIGate Zigbee radios: PiZIGate, ZIGate USB-TTL, ZIGate WiFi					
deCONZ = dresden elektronil	deCONZ protocol: ConBee I/II, RaspBee I/II				

- Enter /dev/ttyUSB0 as Serial Port and select Baud rate 115200

Settings	×
Enter port specific settings	
Serial device path /dev/ttyUSB0	
port speed	
115200	
	SUBMIT

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- The installation should be successful

Created configuration for /dev/serial,	/by-id/usb-1a86_USB2.0-Serial-if00-port0.
Ne found the following devices:	
Silicon Labs EZSP EZSP (Silicon Labs)	Zigbee Coordinator EZSP = Silicon Labs EmberZNet protocol: Elelabs, HUSBZB-1, Telegesis (7HA)
Area 🔻	Area -

Now the Zigbee Integration should appear:

Ξ¢	Home Assistant	\leftarrow	Integrations Devices	s Entities Areas
5	Overview	Q Search integrations	•	
ę	Мар	Matagralagiak		
≣	Logbook			💋 zigbee
11.	History	Meteorologisk institutt (Met.no)		Zigbee Home Automation
٩	File editor	Home		/dev/serial/by-id/usb-1a86_USB2.0-Serial-i100-port0 2.devices
=	Log Viewer	RENAME		
~	Developer Tools			
畲	Supervisor			
٠	Configuration	←		

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Setup Logging (optional)

To spot any potential issues it is good practice to enable logging, at least during the setup and installation period. To do it, just add the following lines to the configuration file **/config/configuration.yaml**:

logger:

default: warn logs: homeassistant.components.zha: debug bellows.ezsp: debug bellows.uart: debug zigpy.zdo: debug zigpy.application: debug

Home Assistant 🛛 <		Configurator
	Overview	
2	Мар	Trigger platforms /config/configuration.yaml
	Logbook	Select trigger platform
1	History	37 -# Optional, allows Home Assistant developers to focus o Evants 38 -# include_used_components: true - 39 -
4	Configurator	★ 40 # Discover some devices automatically- 41 discovery: - 42 - -
1	Hass.io	43 # Allows you to issue voice commands from the frontend in Entities 44 conversation: 45
		SUN (SUN.SUN) V 46 # Enables support for tracking state changes over time- 47 history: - 48 -
4	Configuration	Conditions 49 # View all events in a logbook 50 logbook 51 s
€	Log out	Select condition
		Services 55 # Track-the-sun- services 56 sun- 57 -
Develo	per tools	automation.reload 58 # Weather prediction 59 * sensor:
(<> 🔊 🔂 🚺	60 - platform: yr 61
		63 * tts:-
		64 ····platform:google· 65 ··
		66 # Cloud- 67 cloud:-
		70 automation: !include automations.yaml
		71 script: linclude scripts.yaml
		73 - panel_iframe:
		75
		76icon: -mdi:wrench- 77unl: -http://192.168.0.103.3218-
		78
		79 v logger:- 80 default: warn
		81 - logs:-
		82 ····bellows.ezsp:/debug-
		84 bellows.uart: debug
		85 ····zigpy.zdo: debug 86 ····zigov.application: debug

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Zigbee HA Component Usage

Once Zigbee Component is added and configured properly you can start to use it.

Add your devices to the Home Assistant

$\equiv <$	Home Assistant	<	Integrations Devices	Entities Areas		
55	Overview	Q Search	^			
ę	Map	↑ Device	Manufacturer	Model	Acea	Integration
I	Logbook	Zigbee Coordinator	ZHA	EZSP = Silicon Labs EmberZNet prot	No area	Zigbee Home Automation
16	History	K				
а,	File editor					
=	Log Viewer					
~	Developer Tools					
습	Supervisor					
۰.	Configuration	•				

Open Configuration and go to Devices and Zigbee Coordinator

Start "Add Devices via this device"



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When you will call it, you have 60 seconds to add the device.



During this period, you need to follow Device manual to put it in Pairing mode. Sometimes you just need to give it power.

If the device is found, you will be able to see it in the logs (example device)

	Searching for ZHA Zigbee devices	
	IKEA of Sweden TRADFRI bulb E27 CWS opal 600lm	
	TRADFRI bulb E27 CWS opal 600lm by IKEA of Sweden	
	•	
	Change device name	
	IKEA of Sweden TRADFRI bulb E27 CWS opal 600Im	
	Area 🗸	
	·	
[0x2aa1:1:0x0000]: 'acupe initialize' stage succeeded		
[0x3ce1:1:0x1000]: async_initialize stage succeeded [0x3ce1:1:0x1000]: 'async_initialize' stage succeeded		
[0x3ce1:1:0x0019]: 'async_initialize' stage succeeded [0x3ce1:1:0x0005]: 'async_initialize' stage succeeded		
[0x3ce1](TRADFRI bulb E27 CWS opal 600lm): power source: Mains [0x3ce1](TRADFRI bulb E27 CWS opal 600lm): completed initialization		
[0x3ce1:1:0x0006]: attempting to update onoff state - from cache: False		
[0x3ce1:1:0x0006] ZCL deserialize: <zclheader frame_control="<FrameCo<br">command_id=Command.Read_Attributes_rsp></zclheader>	ontrol frame_type=GLOBAL_COMMAND manufacturer_specific=False is_reply=True	e disable_default_response=True> manufacturer=None tsn=63
None: polling current state - from cache: True		

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Remove your device from Home Assistant

Open Configuration and go to Devices.

Ξ¢	Home Assistant	÷	Integrations Device	s Entities Areas			
55	Overview	Q Search	1				
¢,	Мар	↑ Device	Manufacturer	Model	Area	Integration	Batt
12	Logbook	IKEA of Sweden TRADFRI buib E27 CWS opail 600km	IKEA of Sweden	TRADFRI buib E27 CWS opail 600im	Living Room	Zigber Home Automation	
4	File editor	Zigbe# Coordinator	ZHA	EZSP + Silicon Labs EmberZNet prot.	No area	Zigbee Home Automation	
E	Log Viewer	×					
0	Supervisor						
٥	Configuration						

Select the device, which you would like to remove

	Integrations Devices	Entities	Areas	
IKEA of Sweden TRADFRI	oulb E27 CWS opal 600lr	m		🔗 zigbee
Device info TRADFRI bulb E27 CWS opal 600lm by IKEA of Sweden Zigbee Coordinator Firmware: 0x13000272	Automations	0	Scenes No scenes	G
Zigbee info IEEE: 14:b4:57:ff;fe:2d:50:f1 Nwk: 0x3ce1 Device Type: Router LQI: 255 RSSI: -31 Last Seen: 2020-07-23T13:42:26 Power Source: Mains			Scripts No scripts	•
RECONFIGURE DEVICE ADD DEVICES VIA THIS DEVICE ZIGBEE DEVICE SIGNATURE MANAGE CLUSTERS REMOVE DEVICE				
Entities				
IKEA of Sweden TRADFRI bul	•			
ADD TO LOVELACE				

Once you call this service you can verify in the logs, that the device has left the network.

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Example: Philips Hue Bulb

This example is done with Hue White Single bulb E26 but is applicable to other products as well.



To control Philips Hue Light bulb using Home Assistant, one first needs to reset it.

Once it is reset, you can follow the regular process to Add it to the Home Assistant.

- Call Add Devices service as explained in Add devices section of this guide
- Power ON the Lightbulb
- Confirm it is added to the Home Assistant

devices
× •
r.Jiže-71 maximum_incoming_transfer_Jiže-45 server_maak-0 maximum_outgoing_transfer_Jiža-45

Now you can control it directly or use in the scenarios.



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Troubleshooting

If your issue is not described here or you need help resolving it, please contact support at info@popp.eu

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