

UG11: HOME ASSISTANT

This document describes how to use Elelabs Zigbee USB Adapter (<u>https://elelabs.com/products/elelabs_usb_adapter.html</u>) with existing Home Automation platform called Home Assistant (Hass.io) (<u>https://www.home-assistant.io/</u>).

Elelabs Zigbee USB adapter firmware version, referenced in this guide: 6.30

Home Assistant (Hass.io) software version, referenced in this guide: 0.102.3

This guide focuses on:

- Connect Elelabs USB adapter to the target
- 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>.

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Introduction

Elelabs Zigbee USB adapter can be used in 2 options with Home Assistant:

With a generic Linux machine, with Home Assistant installed



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



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's 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>).



Once Home Assistant is ready, please SSH into the machine using any tool available to you.



Then insert the Elelabs Zigbee USB adapter into your Host machine and confirm that it's visible to Home Assistant by running the following command:

hassio hw info

This should give the following output:

Core-ssn:~# nassio nw into
- cnan_1a: 0
chan_type: digital audio playback
- chan_1d: "1"
chan_type: digital audio playback
name: bcm2835_alsa - bcm2835 ALSA
type: ALSA
disk:
- /dev/mmcblk0p3
- /dev/mmcblk0p8
- /dev/mmcblk0p5
- /dev/mmcblk0p4
- /dev/mmcblk0p6
- /dev/mmcblk0p1
- /dev/mmcblk0p7
- /dev/mmcblk0
- /dev/mmcblk0p2
dbio:
- gpiochip0
- gpiochip128
input: []
serial:
 /dev/serial/by-id/usb-Silicon_Labs_CP2102N_USB_to_UART_Bridge_Controller_64c20ccc36f4e711a5436b160c17285f-if00-port0
- /dev/ttyAMA0
- /dev/ttvUS80

Here you can see 2 serial ports:

- /dev/ttyAMA0 (which is the UART port of the Raspberry Pi)
- /dev/ttyUSB0 (which is the Elelabs Zigbee USB Adapter)

If any of these steps failed, please check out the Troubleshooting section of this document.

Zigbee HA Component configuration

To work with Elelabs Zigbee USB Adapter 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.

Setup Logging (optional)

To spot any potential issues it's 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
```

```
Configurator
Home Assistant
                                                                                                  <
                                                                                                                                     Overview
 Map
                                                                                                                                    Trigger platforms
                                                                                                                                                                                                                                                                                                                  /config/configuration.yaml
                                                                                                                                   Select trigger platform
!≡
                           Logbook
                                                                                                                                                                                                                                                                                                                  36 + updater:-
37 --#-Optional, allows Home Assistant developers to focus on
38 --#-include_used_components: true-
                                                                                                                                   Events
 ıl.
                           History
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                                                                                                                                    *
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discovery:-
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                           Configurator
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                           Hass.io
                                                                                                                                   Sun (sun.sun)
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logbook:-
  ¢
                           Configuration
                                                                                                                                   Select condition
                                                                                                                                                                                                                                                                                                                               # Enables a map showing the location of tracked devices
 €
                           Log out
                                                                                                                                                                                                                                                                                                                  55
56
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                                                                                                                                   Services
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Developer tools
                                                                                                                                    automation reload
                                                                                                                                                                                                                                                                                                                  58 #-Weather-prediction-
59 * sensor:--
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63 * tts:-
64 ·····platform:.google
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automation::!include-automations.yaml-
script:-!include-scripts.yaml-
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url: http://192.168.0.103:3218-
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/o compared to the second sec
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bellows.uart: debug
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zigpy.application: debug
                                                                                                                                                                                                                                                                                                                 86
```

UG11: Home Assistant with Elelabs USB adapter

Then you can enter the following command in the SSH console to see the log output (do not forget to reload Hass.io after each modification of configuration file).

hassio homeassistant logs

Configure Zha component

To setup Zigbee Home Automation component to work properly with Elelabs Zigbee USB Adapter we need to add the following lines in the Configurator Interface to **/config/configuration.yaml**:

zha:

usb_path: /dev/ttyUSB0 database_path: zigbee.db baudrate: 115200

← Configurator	
Trigger platforms	/config/configuration.yaml
Select trigger platform	_ 1 -
Events	<pre>2 #-Configure.a.default.setup.of.Home.Assistant.(frontend,.api,.etc)- 3 default_config:-</pre>
*	<pre>4 ~ 5 * #-Uncomment-this if you are using SSL/TLS, running in Docker container, etc.~ 6 #-http:~ 7 #base_url: example.duckdns.org:8123~</pre>
Search entity	8 - 9 #-Text-to-speech-
sensor.example	10 v Tts:- 11platform:-google_translate- 12
Entities	<pre>13 group:-!include-groups.yaml- 14 automation:.!include-automations.yaml- 15 script:-!include scripts.yaml- 16 scene: !include-scenes.yaml-</pre>
admin (person.admin)	▼ 17
Conditions	19 ····default: warn- 20 ····logs:- 21 ·····homeassistant.components.zha:-debug-
Select condition	22
Services	25 ·····zigpy.application:/debug- 26 - 27 z zhate
automation.reload	28 ····usb_path://dev/ttyUS80 29 ····database_path: zigbee.db
	30baudrate: 115200

Here */dev/ttyUSBO* is from the output of *"hassio hw info"* command issued in the previous chapter. It might be different for your setup.

After the modification reload the Hass.io and the component would be added.

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

Open Configuration and go to ZHA

ant Configuration		
	Devices Manage connected devices	>
	Automations	>
	Create and edit automations	
	Scripts Create and edit scripts	>
	Scenes Create and edit scenes	
	a second	
	Change your general Home Assistant configuration	>
	Server Controls Restart and stop the Home Assistant server	;
	Entities Overview of all known entities.	;
	Areas Overview of all areas in your home.	>
	Persons	
	Manage the persons that Home Assistant tracks.	>
	Users Manage users	;
	ZHA Zidbee Home Automation network management	
-	ages for standard for an individual and	

Start "Add Devices"

Network Management		?
Commands that affect the entire network	ADD DEVICES	
Device Management		?
Run ZHA commands that affect a single device. Pick a device to see a list of available commands.	Devices	<u>•</u>
Note: Sleepy (battery powered) devices need to be awake when executing commands against them. You can generally wake a sleepy device by triggering it.		
Some devices such as Xiaomi sensors have a wake up button that you can press at \sim 5 second intervals that keep devices awake while you interact with them.		

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

← Zigbee Home Automation - Add Devices
分 Searching for ZHA Zigbee devices
Discovered devices will show up here. Follow the instructions for your device(s) and place the device(s) in pairing mode.
[0x0000:zdo] ZD0 request 0x0036: [60, <bool.false: 0="">]</bool.false:>

During this period, you need to follow Device manual to put it in Association 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)

LUMI lumi.ct	rl_In1.aq1			
lumi.ctrLJn1.aq1 by LUMI IEEE: Nwk: LQI: RSSI: Last Seen: Power Source:	00:15:8d:00:01:f2:b1:3a 0x1adb 200 -50 2019-12-12T02:43:35 Mains			
Switch		_		
Area No Area		<u> </u>		
[0x1adb:5:0x0012] ZC command_id=Comma [0x1adb:3:0x000c]: in [0x1adb:3:0x000c]: cf [0x1adb:5:0x0012]: in [0x1adb:5:0x0012]: cf [0x1adb](lumi.ctrl_ln1 [0x1adb](lumi.ctrl_ln1	L deserialize: <zcl f<br="" header="">and.Read_Attributes_rsp> itializing channel: from_cach iannel: 'async_initialize' stag itializing channel: from_cach aannel: 'async_initialize' stag .aq1): power source: Mains .aq1): completed initializatio</zcl>	rame_control=< ne: False e succeeded ne: False e succeeded on	<framecontrol< td=""><td>frame_type=GLO</td></framecontrol<>	frame_type=GLO

Remove your device from Home Assistant

Open Configuration and go to ZHA

Ξ<	Home Assistant	Assistant	e Assistant	stant Configuration		
	Overview	i i	w		Devices Manage connected devices	>
₽	Мар				Automations	,
≣	Logbook		k		Create and edit automations	
1.	History				Scripts Create and edit scripts	>
					Scenes Create and edit scenes	>
					General	
					Change your general Home Assistant configuration	<i>,</i>
					Server Controls Restart and stop the Home Assistant server	>
					Entities Overview of all known entities.	>
					Areas Overview of all areas in your home.	>
>	Developer Tools	er Tools	per Tools		Persons	
⇮	Hass.io				Manage the persons that Home Assistant tracks.	ŕ
۰	Configuration	ation	Iration	← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ←	Users Manage users	>
	Notifications	ions	ations		ZHA Zidbee Home Automation network management	>
а	admin					

Select the device, which you would like to remove

Device Management	0
Run ZHA commands that affect a single device. Pick a device to see a list of available commands.	Devices Switch
Note: Sleepy (battery powered) devices need to be awake when executing commands against them. You can generally wake a sleepy device by triggering it. Some devices such as Xiaomi sensors have a wake up button that you can press at ~5 second intervals that keep devices awake while you interact with them.	IEEE: 00:15:8d:00:01:f2:b1:3a Nwk: 0x1adb LQI: 220 RSSI: -45 Last Seen: 2019-12-12T02:45:29 Power Source: Mains
	 LUMI lumi.ctrl_In1.aq1 3ab1f201 analog_input sensor.lumi_lumi_ctrl_In1_aq1_3ab1f201_analog_input LUMI lumi.ctrl_In1.aq1 3ab1f201 analog_input sensor.lumi_lumi_ctrl_In1_aq1_3ab1f201_analog_input_2 LUMI lumi.ctrl_In1.aq1 3ab1f201 multistate_input sensor.lumi_lumi_ctrl_In1_aq1_3ab1f201_multistate_input LUMI lumi.ctrl_In1.aq1 3ab1f201 on_off switch.lumi_lumi_ctrl_In1_aq1_3ab1f201_on_off Switch
	Area No Area RECONFIGURE DEVICE REMOVE DEVICE ADD DEVICES
	Clusters

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

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 permit service in the Developer Tools
- Power ON the Lightbulb
- Confirm it's added to the Home Assistant

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

Hom	e Assistant <	Home	
	Overview		$\bigcirc \bigcirc \bigcirc \bigcirc$
₽	Мар		Sun yr Symbol LUMI Iumisen
≔	Logbook	Welcome H	łome!
	History	Here are some reso	purces to get started:
٩	Configurator	× Philips LWB01	4 🌣
â	Hass.io	Philips LWB014	
\$	Configuration	 12 seconds ago Off 	bur config in duction component.
Э	Log out	4A 00:8	M 8:00 PM
Develo	per tools	Brightness	
î		\$ ———	-
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Example: Xiaomi Smoke Sensor

This example is done with Xiaomi Mijia Honeywell Fire Alarm Detector but is applicable to other Xiaomi Zigbee products.



To use it in Home Assistant:

- Call permit service in the Developer Tools
- Press the button on the sensor promptly within 1second
- Confirm it's added to the Home Assistant

Once included, do the test Alarm. To do it – hold the button on the sensor until it starts alarming and then release it.

The sensor icon should appear in Home Assistant:

Hom	ne Assistant <	
	Overview	
₿	Мар	Sun yr Symbol LUMI kunisen.
E	Logbook	Welcome Home!
1.	History	Here are some resources to get started:
4	Configurator	× LUMI lumi.sensor_smoke 🌣
ŵ	Hass.io	LUMI lumi.sensor_smoke Clear
\$	Configuration	32 minutes ago pur config in duction component.
€	Log out	8:00 AM 8:00 PM
Devel	oper tools	Light
(100	•>	Philips LWB014

Troubleshooting

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

Elelabs Zigbee USB Adapter is not recognised

If there is no proper output of *hassio hw info* command and you can't spot the device, please try it first on your PC/laptop. If it is not recognised as well – the device is faulty and must be replaced.

Home Assistant Zha component couldn't be set up

If you have modified the *configuration.yaml* file and found issues after you have restarted the Hass.io, like:

Hom	e Assistant	<	Home
=	Overview		
₽	Мар		Sun yr Symbol
≣	Logbook		Invalid Config
11.	History		The following components and platforms could not be set up:
٩	Configurator		zha Please check your config.
1	Hass.io		DISMISS
\$	Configuration		
∋	Log out		Welcome Home!
Develo	nertools		Here are some resources to get started: • Configuring Home Assistant
	<> @	(i)	Available components Troubleshooting your configuration Cetting help
		0	To not see this card popup in the future, edit your config in
			configuration.yaml and disable the introduction component.
			UISMISS

This probably means you have set up the *usb_path* part of the configuration wrong. Check it once again.

Home Assistant does not boot at all

If you have modified the *configuration.yaml* file and the Home Assistant does not boot at all after the restart, first DON'T PANIC.

Revert using Configurator Addon

Just open the Configurator Addon Web UI and comment the **zha** component configuration like this:

Trigger platforms Select trigger platform	/config/configuration.yaml
Events	<pre>1 ~ 2 # Configure a default setup of Home Assistant (frontend, api, etc) 3 default_config:~ 4 ~ 5 * # Uncomment this if you are using SSL/TLS, running in Docker container, etc.~ 6 # http:~ 7 *</pre>
Search entity sensor.example	<pre>9 #.Text.to.speech 10 * tts:- 11platform:.google_translate- 12</pre>
Entities admin (person.admin)	13 group::linclude:groups.yaml- 14 automation::linclude-automations.yaml- 15 script:.linclude-scripts.yaml- 16 scene::linclude-scenes.yaml- 17 - 18 × logger:- 10
Conditions Select condition	20 v logs:- 21bomeassistant.components.zha:-debug- 22bellows.ezsp: debug- 23bellows.uart: debug- 24igpy.zdo: debug- 24igpy.zdo: debug-
Services automation.reload	<pre>25</pre>

Then restart Hass.io and it will work as before.

Zha component is loaded correctly but no zha.permit service

In this case, most probably the Zigbee component is simply not loaded. Try to look into the logs for the issue or contact us.

There are no packets from the device at all

This most probably means that your device is already part of the different network and just can't join your new network. Try to reset it, using the manufacturer specific reset procedure.