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# **AdafruitTCA9548A Library Documentation**

***Release 1.0***

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**Oct 21, 2019**



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## Contents

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<b>1</b>	<b>Dependencies</b>	<b>3</b>
<b>2</b>	<b>Usage Example</b>	<b>5</b>
<b>3</b>	<b>Contributing</b>	<b>7</b>
<b>4</b>	<b>Building locally</b>	<b>9</b>
4.1	Zip release files . . . . .	9
4.2	Sphinx documentation . . . . .	9
<b>5</b>	<b>Table of Contents</b>	<b>11</b>
5.1	Simple test . . . . .	11
5.2	Adafruit_TCA9548A . . . . .	12
5.2.1	Implementation Notes . . . . .	12
<b>6</b>	<b>Indices and tables</b>	<b>13</b>
	<b>Python Module Index</b>	<b>15</b>
	<b>Index</b>	<b>17</b>



CircuitPython driver for the TCA9548A I2C Multiplexer.



# CHAPTER 1

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## Dependencies

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This driver depends on:

- [Adafruit CircuitPython](#)
- [Bus Device](#)

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the [Adafruit library and driver bundle](#).





## CHAPTER 2

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### Usage Example

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```
# This example shows using two TSL2491 light sensors attached to TCA9548A channels 0_  
↪and 1.  
# Use with other I2C sensors would be similar.  
import time  
import board  
import busio  
import adafruit_tsl2591  
import adafruit_tca9548a  
  
# Create I2C bus as normal  
i2c = busio.I2C(board.SCL, board.SDA)  
  
# Create the TCA9548A object and give it the I2C bus  
tca = adafruit_tca9548a.TCA9548A(i2c)  
  
# For each sensor, create it using the TCA9548A channel instead of the I2C object  
tsl1 = adafruit_tsl2591.TSL2591(tca[0])  
tsl2 = adafruit_tsl2591.TSL2591(tca[1])  
  
# Loop and profit!  
while True:  
    print(tsl1.lux, tsl2.lux)  
    time.sleep(0.1)
```



## CHAPTER 3

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### Contributing

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Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.



### 4.1 Zip release files

To build this library locally you'll need to install the `circuitpython-build-tools` package.

```
python3 -m venv .env
source .env/bin/activate
pip install circuitpython-build-tools
```

Once installed, make sure you are in the virtual environment:

```
source .env/bin/activate
```

Then run the build:

```
circuitpython-build-bundles --filename_prefix adafruit-circuitpython-tca9548a --
↪library_location .
```

### 4.2 Sphinx documentation

Sphinx is used to build the documentation based on rST files and comments in the code. First, install dependencies (feel free to reuse the virtual environment from above):

```
python3 -m venv .env
source .env/bin/activate
pip install Sphinx sphinx-rtd-theme
```

Now, once you have the virtual environment activated:

```
cd docs
sphinx-build -E -W -b html . _build/html
```

This will output the documentation to `docs/_build/html`. Open the `index.html` in your browser to view them. It will also (due to `-W`) error out on any warning like Travis will. This is a good way to locally verify it will pass.

## 5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/tca9548a\_simpletest.py

```
1  # This example shows using two TSL2491 light sensors attached to TCA9548A channels 0
   ↪ and 1.
2  # Use with other I2C sensors would be similar.
3  import time
4  import board
5  import busio
6  import adafruit_tsl2591
7  import adafruit_tca9548a
8
9  # Create I2C bus as normal
10 i2c = busio.I2C(board.SCL, board.SDA)
11
12 # Create the TCA9548A object and give it the I2C bus
13 tca = adafruit_tca9548a.TCA9548A(i2c)
14
15 # For each sensor, create it using the TCA9548A channel instead of the I2C object
16 tsl1 = adafruit_tsl2591.TSL2591(tca[0])
17 tsl2 = adafruit_tsl2591.TSL2591(tca[1])
18
19 # After initial setup, can just use sensors as normal.
20 while True:
21     print(tsl1.lux, tsl2.lux)
22     time.sleep(0.1)
```

## 5.2 Adafruit\_TCA9548A

CircuitPython driver for the TCA9548A I2C Multiplexer.

- Author(s): Carter Nelson

### 5.2.1 Implementation Notes

#### Hardware:

- TCA9548A I2C Multiplexer: <https://www.adafruit.com/product/2717>

#### Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: [https://github.com/adafruit/Adafruit\\_CircuitPython\\_BusDevice](https://github.com/adafruit/Adafruit_CircuitPython_BusDevice)

**class** `adafruit_tca9548a.TCA9548A` (*i2c, address=112*)

Class which provides interface to TCA9548A I2C multiplexer.

**class** `adafruit_tca9548a.TCA9548A_Channel` (*tca, channel*)

Helper class to represent an output channel on the TCA9548A and take care of the necessary I2C commands for channel switching. This class needs to behave like an I2CDevice.

**readfrom\_into** (*address, buffer, \*\*kwargs*)

Pass thru for readfrom\_into.

**try\_lock** ()

Pass thru for try\_lock.

**unlock** ()

Pass thru for unlock.

**writeto** (*address, buffer, \*\*kwargs*)

Pass thru for writeto.

**writeto\_then\_readfrom** (*address, buffer\_out, buffer\_in, \*\*kwargs*)

Pass thru for writeto\_then\_readfrom.



## CHAPTER 6

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### Indices and tables

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- `genindex`
- `modindex`
- `search`



### a

adafruit\_tca9548a, [11](#)



## A

`adafruit_tca9548a` (*module*), [11](#)

## R

`readfrom_into()` (*adafruit\_tca9548a.TCA9548A\_Channel*  
*method*), [12](#)

## T

`TCA9548A` (*class in adafruit\_tca9548a*), [12](#)

`TCA9548A_Channel` (*class in adafruit\_tca9548a*), [12](#)

`try_lock()` (*adafruit\_tca9548a.TCA9548A\_Channel*  
*method*), [12](#)

## U

`unlock()` (*adafruit\_tca9548a.TCA9548A\_Channel*  
*method*), [12](#)

## W

`writeto()` (*adafruit\_tca9548a.TCA9548A\_Channel*  
*method*), [12](#)

`writeto_then_readfrom()`  
(*adafruit\_tca9548a.TCA9548A\_Channel*  
*method*), [12](#)