
AdafruitTCA9548A Library Documentation

Release 1.0

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CircuitPython driver for the TCA9548A I2C Multiplexer.

CHAPTER 1

Dependencies

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

Usage Example

```
# 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

Contributing

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

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

Indices and tables

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