
AdafruitTCA9548A Library Documentation

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Carter Nelson

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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

Installing from PyPI

On supported GNU/Linux systems like the Raspberry Pi, you can install the driver locally [from PyPI](#). To install for current user:

```
pip3 install adafruit-circuitpython-tca9548a
```

To install system-wide (this may be required in some cases):

```
sudo pip3 install adafruit-circuitpython-tca9548a
```

To install in a virtual environment in your current project:

```
mkdir project-name && cd project-name  
python3 -m venv .env  
source .env/bin/activate  
pip3 install adafruit-circuitpython-tca9548a
```


CHAPTER 3

Usage Example

```
# This example shows using TCA9548A to perform a simple scan for connected devices
import board
import adafruit_tca9548a

# Create I2C bus as normal
i2c = board.I2C() # uses board.SCL and board.SDA

# Create the TCA9548A object and give it the I2C bus
tca = adafruit_tca9548a.TCA9548A(i2c)

for channel in range(8):
    if tca[channel].try_lock():
        print("Channel {}".format(channel), end="")
        addresses = tca[channel].scan()
        print([hex(address) for address in addresses if address != 0x70])
        tca[channel].unlock()
```


CHAPTER 4

Documentation

API documentation for this library can be found on [Read the Docs](#).

CHAPTER 5

Contributing

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

CHAPTER 6

Documentation

For information on building library documentation, please check out [this guide](#).

7.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/tca9548a_simpletest.py

```
1 # SPDX-FileCopyrightText: 2021 Carter Nelson for Adafruit Industries
2 # SPDX-License-Identifier: MIT
3
4 # This example shows using TCA9548A to perform a simple scan for connected devices
5 import board
6 import adafruit_tca9548a
7
8 # Create I2C bus as normal
9 i2c = board.I2C() # uses board.SCL and board.SDA
10
11 # Create the TCA9548A object and give it the I2C bus
12 tca = adafruit_tca9548a.TCA9548A(i2c)
13
14 for channel in range(8):
15     if tca[channel].try_lock():
16         print("Channel {}:".format(channel), end="")
17         addresses = tca[channel].scan()
18         print([hex(address) for address in addresses if address != 0x70])
19         tca[channel].unlock()
```

7.2 Multisensor test

Shows how to use the I2C Multiplexer with two sensors

Listing 2: examples/tca9548a_multisensor.py

```

1  # SPDX-FileCopyrightText: 2021 ladyada for Adafruit Industries
2  # SPDX-License-Identifier: MIT
3
4  # This example shows using two TSL2491 light sensors attached to TCA9548A channels 0_
   ↪ and 1.
5  # Use with other I2C sensors would be similar.
6  import time
7  import board
8  import adafruit_tsl2591
9  import adafruit_tca9548a
10
11 # Create I2C bus as normal
12 i2c = board.I2C() # uses board.SCL and board.SDA
13
14 # Create the TCA9548A object and give it the I2C bus
15 tca = adafruit_tca9548a.TCA9548A(i2c)
16
17 # For each sensor, create it using the TCA9548A channel instead of the I2C object
18 tsl1 = adafruit_tsl2591.TSL2591(tca[0])
19 tsl2 = adafruit_tsl2591.TSL2591(tca[1])
20
21 # After initial setup, can just use sensors as normal.
22 while True:
23     print(tsl1.lux, tsl2.lux)
24     time.sleep(0.1)

```

7.3 adafruit_tca9548a

CircuitPython driver for the TCA9548A I2C Multiplexer.

- Author(s): Carter Nelson

7.3.1 Implementation Notes

Hardware:

- TCA9548A I2C Multiplexer (Product ID: 2717)

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://circuitpython.org/downloads>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

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.

try_lock ()

Pass through for try_lock.

unlock ()

Pass through for unlock.

readfrom_into (*address, buffer, **kwargs*)

Pass through for readfrom_into.

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

Pass through for writeto.

writeto_then_readfrom (*address, buffer_out, buffer_in, **kwargs*)

Pass through for writeto_then_readfrom.

scan ()

Perform an I2C Device Scan

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

Class which provides interface to TCA9548A I2C multiplexer.

CHAPTER 8

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