AdafruitTCA9548A Library Documentation

Release 1.0

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Contents

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.

CHAPTER 4

Building locally

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.

CHAPTER 5

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5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/tca9548a_simpletest.py

```
# 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])

# After initial setup, can just use sensors as normal.
while True:
    print(tsl1.lux, tsl2.lux)
    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.

CHAPTER 6

Indices and tables

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- modindex
- search

Python Module Index

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