sparkfun$_{q}wiic_{t}ca9548a$

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Contents:

Python module for the SparkFun Qwiic Mux Breakout - 8 Channel (TCA9548A).

This package should be used in conjunction with the overall SparkFun qwiic Python Package. New to qwiic? Take a look at the entire SparkFun qwiic ecosystem.

CHAPTER 1

Contents

CHAPTER 2

Supported Platforms

The qwiic TCA9548A Python package current supports the following platforms:

- Raspberry Pi <!– Platforms to be tested
- NVidia Jetson Nano
- Google Coral Development Board –>

CHAPTER 3

Dependencies

This package depends on the qwiic I2C driver: Qwiic_I2C_Py

CHAPTER 4

Documentation

The SparkFun qwiic TCA9548A module documentation is hosted at ReadTheDocs

CHAPTER 5

Installation

5.1 PyPi Installation

This repository is hosted on PyPi as the sparkfun-qwiic-tca9548a package. On systems that support PyPi installation via pip, this library is installed using the following commands

For all users (note: the user must have sudo privileges):

```
sudo pip install sparkfun-qwiic-tca9548a
```

For the current user:

```
pip install sparkfun-qwiic-tca9548a
```

5.2 Local Installation

To install, make sure the setuptools package is installed on the system.

Direct installation at the command line:

```
python setup.py install
```

To build a package for use with pip:

```
python setup.py sdist
```

A package file is built and placed in a subdirectory called dist. This package file can be installed using pip.

```
cd dist
pip install sparkfun_qwiic_tca9548a-<version>.tar.gz
```

CHAPTER 6

Example Use

See the examples directory for more detailed use examples.

```
import qwiic_tca9548a
import time
import sys

def runExample():

    print("\nSparkFun TCA9548A Example 1\n")
    test = qwiic_tca9548a.QwiicTCA9548A()

    if test.is_connected() == False:
        print("The Qwiic TCA9548A device isn't connected to the system. Please check␣
↪your connection", \
            file=sys.stderr)
        return

    try:
        test.list_channels()
        time.sleep(2)

        test.enable_channels([4,5])
        test.list_channels()
        time.sleep(2)

        test.disable_channels(5)
        test.list_channels()
        time.sleep(2)

    except Exception as e:
            print(e)
```

CHAPTER 7

Table of Contents

7.1 API Reference

7.1.1 qwiic_tca9548a

Python module for the [Qwiic Mux Breakout](https://www.sparkfun.com/products/14685) This package can be used in conjunction with the overall [SparkFun qwiic Python Package](https://github.com/sparkfun/Qwiic_Py) New to qwiic? Take a look at the entire [SparkFun qwiic ecosystem](https://www.sparkfun.com/qwiic).

class qwiic_tca9548a.**QwiicTCA9548A**(*address=None*, *debug=None*, *i2c_driver=None*)

Initialise the TCA9548A chip at `address` with `i2c_driver`. :param address: The I2C address to use for the device.

If not provided, the default address is used.

Parameters **i2c_driver** – An existing i2c driver object. If not provided a driver object is created.

Returns Constructor Initialization True- Successful False- Issue loading I2C driver

Return type Bool

connected

Determine if the device is conntected to the system. :return: True if the device is connected, otherwise False. :rtype: bool

disable_all()

This method disables the connection of all channels on the Qwiic Mux.

disable_channels(*disable*)

This method disables the connection of specific channels on the Qwiic Mux. :param enable: Channel(s) to disable on the Qwiic Mux.

Input must be either an individual integer or list. The method will automatically convert an individual integer into a list. Range- 0 to 7

enable_all()
This method enables the connection of specific channels on the Qwiic Mux.

enable_channels(*enable*)
This method enables the connection of specific channels on the Qwiic Mux. :param enable: Channel(s) to enable on the Qwiic Mux. Input

must be either an individual integer or list. The method will automatically convert an individual integer into a list. Range- 0 to 7

is_connected()
Determine if the device is conntected to the system. :return: True if the device is connected, otherwise False. :rtype: bool

list_channels()
This method lists all the available channels and their current configuration (enabled or disabled) on the Qwiic Mux.

7.2 Example 1: Enable Channels

Listing 1: examples/ex1_enable_channels.py

```
#------------------------------------------------------------------------
# Qwiic Mux - Example 1
#------------------------------------------------------------------------
#
# Written by  SparkFun Electronics, June 2019
# Author: Wes Furuya
#
# Compatibility: https://www.sparkfun.com/products/14685
#
# Do you like this library? Help support SparkFun. Buy a board!
# For more information on Qwiic Mux, check out the product page
# linked above.
#
# This program is distributed in the hope that it will be useful, but
# WITHOUT ANY WARRANTY without even the implied warranty of
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```

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#==================================================================================

"""
This example enables channels 0 and 4, pauses, and then enables channel 7.
"""

import qwiic
import time

# Initialize Constructor
test = qwiic.QwiicTCA9548A()

# Test Run
########################################
# List Channel Configuration
test.list_channels()

# Enable Channels 0 and 4
test.enable_channels([0,4])

# Pause 1 sec
time.sleep (1)

# Enable Channel 7
test.enable_channels(7)

# List Channel Configuration
test.list_channels()
```

7.3 Example 2: Disable Channels

Listing 2: examples/ex2_disable_channels.py

```
#-----------------------------------------------------------------------
# Qwiic Mux - Example 2
#-----------------------------------------------------------------------
#
# Written by  SparkFun Electronics, June 2019
# Author: Wes Furuya
#
# Compatibility: https://www.sparkfun.com/products/14685
#
# Do you like this library? Help support SparkFun. Buy a board!
# For more information on Qwiic Mux, check out the product page
# linked above.
#
```

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```
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#==================================================================================

"""
This example disables channels 0 and 4.
"""

import qwiic
import time

# Initialize Constructor
test = qwiic.QwiicTCA9548A()

# Test Run
########################################
# List Channel Configuration
test.list_channels()

# Enable Channels 0 and 4
test.disable_channels([0,4])

# List Channel Configuration
test.list_channels()
```

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