Adafruit MLX90614 Library Documentation

Release 1.0

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Sep 24, 2021

Contents

CircuitPython module for the Melexis MLX90614 Contact-less Infrared Temperature sensor. See examples/mlx90614_simpletest.py for a demo of the usage.

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-mlx90614
```

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

```
sudo pip3 install adafruit-circuitpython-mlx90614
```

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-mlx90614
```

CHAPTER 3

Usage Example

See examples/mlx90614_simpletest.py for a demo of the usage.

CHAPTER 4

Contributing

Contributions are welcome! Please read our Code of Conduct before contributing to help this project stay welcoming.

CHAPTER 5

Documentation

For information on building library documentation, please check out this guide.

CHAPTER 6

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6.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/mlx90614_simpletest.py

```
# SPDX-FileCopyrightText: 2021 ladyada for Adafruit Industries
# SPDX-License-Identifier: MIT

#  Designed specifically to work with the MLX90614 sensors in the
#  adafruit shop
#  ----> https://www.adafruit.com/product/1747
#  ----> https://www.adafruit.com/product/1748
#
#  These sensors use I2C to communicate, 2 pins are required to
#  interface Adafruit invests time and resources providing this open
#  source code,
#  please support Adafruit and open-source hardware by purchasing
#  products from Adafruit!

import board
import adafruit_mlx90614

# The MLX90614 only works at the default I2C bus speed of 100kHz.
# A higher speed, such as 400kHz, will not work.
i2c = board.I2C()
mlx = adafruit_mlx90614.MLX90614(i2c)

# temperature results in celsius
print("Ambent Temp: ", mlx.ambient_temperature)
print("Object Temp: ", mlx.object_temperature)
```

6.2 adafruit_mlx90614

CircuitPython module for the MLX90614 IR object temperature sensor.

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6.2.1 Implementation Notes

Hardware:

- Adafruit Melexis Contact-less Infrared Sensor - MLX90614 3V (Product ID: 1747)
- Adafruit Melexis Contact-less Infrared Sensor - MLX90614 5V (Product ID: 1748)
- Sensors: https://www.adafruit.com/product/1747 https://www.adafruit.com/product/1748
- Datasheet: https://cdn-shop.adafruit.com/datasheets/MLX90614.pdf

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: https://circuitpython.org/downloads

class adafruit_mlx90614.**MLX90614**(*i2c_bus*, *address=90*)

Create an instance of the MLX90614 temperature sensor.

Parameters

- **i2c_bus** (*I2C*) – The I2C bus the MLX90614 is connected to. Do not use an I2C bus speed of 400kHz. The sensor only works at the default bus speed of 100kHz.
- **address** (*int*) – I2C device address. Defaults to 0x5A.

Quickstart: Importing and using the MLX90614

Here is an example of using the *MLX90614* class. First you will need to import the libraries to use the sensor

```
import board
import adafruit_mlx90614
```

Once this is done you can define your board.I2C object and define your sensor object

```
i2c = board.I2C()
mlx = adafruit_mlx90614.MLX90614(i2c)
```

Now you have access to the *ambient_temperature* attribute

```
temperature = mlx.ambient_temperature
```

ambient_temperature

Ambient Temperature in Celsius.

object_temperature

Object Temperature in Celsius.

CHAPTER 7

Indices and tables

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