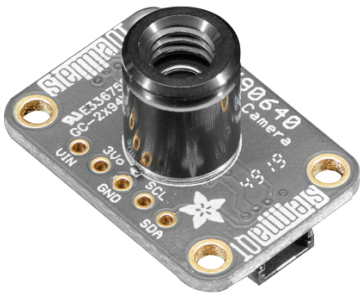
MLX90640 IR Thermal Camera Breakout Boards

Product Overview

10-27-2021

For the most up-to-date information, visit www.mouser.com or the supplier's website.

Description



Adafruit MLX90640 IR Thermal Camera Breakout Boards contain a 24x32 array of IR thermal sensors. When connected to a microcontroller (or Raspberry Pi), they will return an array of 768 individual infrared temperature readings over I²C. The board is like a thermal camera, but compact and simple enough for easy integration. The 4407 has a narrow 55°x35° Field of View (FoV) and the 4469 has a wider (110°x70°) Field of View (FoV). These boards will measure temperatures ranging from -40°C to 300°C with an accuracy of ±2°C (in the 0 to100°C range). With a maximum frame rate of 16Hz, it is perfect for creating a human detector or mini thermal camera.

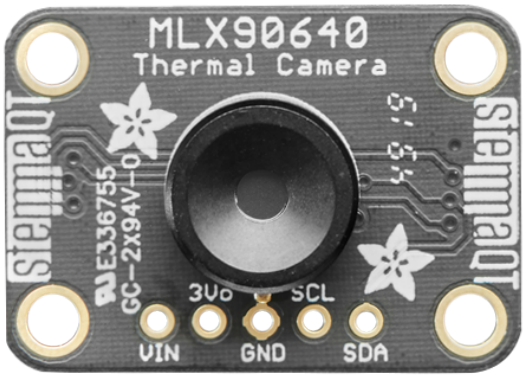
Adafruit has the code for using this sensor on an Arduino or compatible (the sensor communicates over I²C) or on a Raspberry Pi with Python. If using an Arduino-compatible device, the user will need a processor with at least 20KB RAM. The SAMD21 (M0) or SAMD51 (M4) chipset is a possible solution. On the Pi, the user can even perform interpolation processing with help from the SciPy python library and get nice results. This sensor reads the data twice per frame, in a checkerboard pattern, so it is normal to see a checkerboard dither effect when moving the sensor around. This effect is not as noticeable when things move slowly.

To make it easy to use, it is hand-soldered on a breakout board with a 3.3V regulator and level shifting. This makes it so that it can be used with any 3V or 5V microcontroller or computer. Also included are SparkFun qwiic compatible STEMMA QT connectors for the I²C bus, so the user does not need to solder. The user can just plug-n-play with any Adafruit STEMMA QT (JST SH) cables.

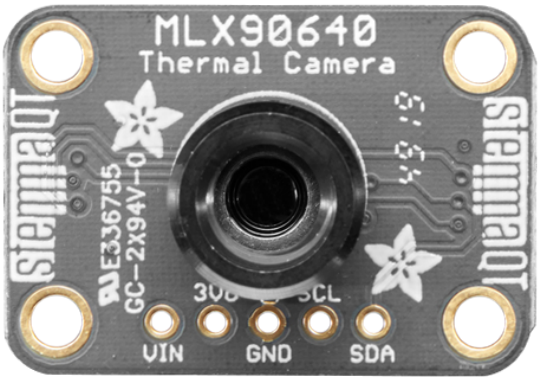
Features

- I²C compatible digital interface
- Programmable refresh rate 0.5Hz to 64Hz (0.25 ~ 32FPS)
- 3.3V to 5V supply voltage, regulated to 3.3V on breakout
- Current consumption is less than 23mA
- Field of View (FoV):
  - 4407 - 55°x35°
  - 4469 - 110°x70°
- -40°C to 85°C operating temperature range
- -40°C to 300°C target temperature range
- Product dimensions:
  - 4407 - 25.7mm x 17.7mm x 16.0mm (1.0” x 0.7” x 0.6”)
  - 4469 - 25.8mm x 17.8mm x 10.5mm (1.0” x 0.7” x 0.4”)
- Product weight:
  - 4407 - 3.5g (0.1oz)
  - 4469 - 3.0g (0.1oz)

Board Overview



24x32 IR Thermal Camera
Breakout- 110 Degree FoV



Thermal Camera
Breakout - 55 Degree FoV

Mouser Part Number(s)

View All Parts

To learn more, visit
https://www.mouser.com/new/adafruit/adafruit-mlx90640-ir-thermal-breakout-board/#top-anchor