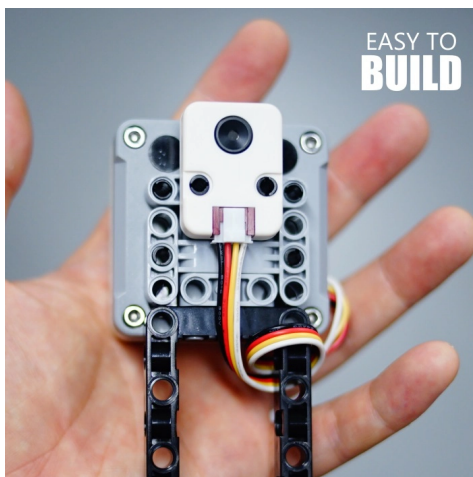
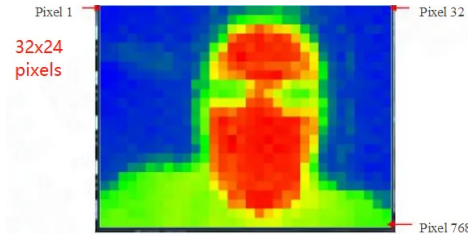


Unit Thermal

SKU:U016



Description

Unit Thermal is a high-performance infrared thermal imaging unit. It integrates the MLX90640 thermopile sensor array, which detects infrared radiation emitted from object surfaces to generate thermal images with a resolution of up to 32×24 pixels, visually presenting temperature distribution. This unit communicates via the I2C protocol (address 0x33) and features a wide field of view of $110^\circ \times 75^\circ$, a broad temperature measurement range of $-40^\circ\text{C} \sim 300^\circ\text{C}$, and a programmable refresh rate of up to 64Hz. It also adopts a LEGO-compatible hole design, allowing flexible integration with LEGO structures or screw mounting. It is suitable for various thermal vision application scenarios such as non-contact temperature measurement, security monitoring, industrial equipment diagnostics, and smart home sensing.

| Features

- Imaging Resolution: 32×24 Pixels (768 Temperature Measurement Points)
- Field of View: $110^\circ \times 75^\circ$
- Temperature Range: $-40^\circ\text{C} \sim 300^\circ\text{C}$
- Temperature Accuracy: $\pm 1.5^\circ\text{C}$
- Refresh Rate: 0.5Hz ~ 64Hz (Programmable)
- Communication Interface: I2C (0x33)
- 2 x LEGO-Compatible Holes
- Development Platform
 - UiFlow2
 - Arduino IDE

| Includes

- 1 x Unit Thermal
- 1 x HY2.0-4P Grove Cable (20cm)

| Applications

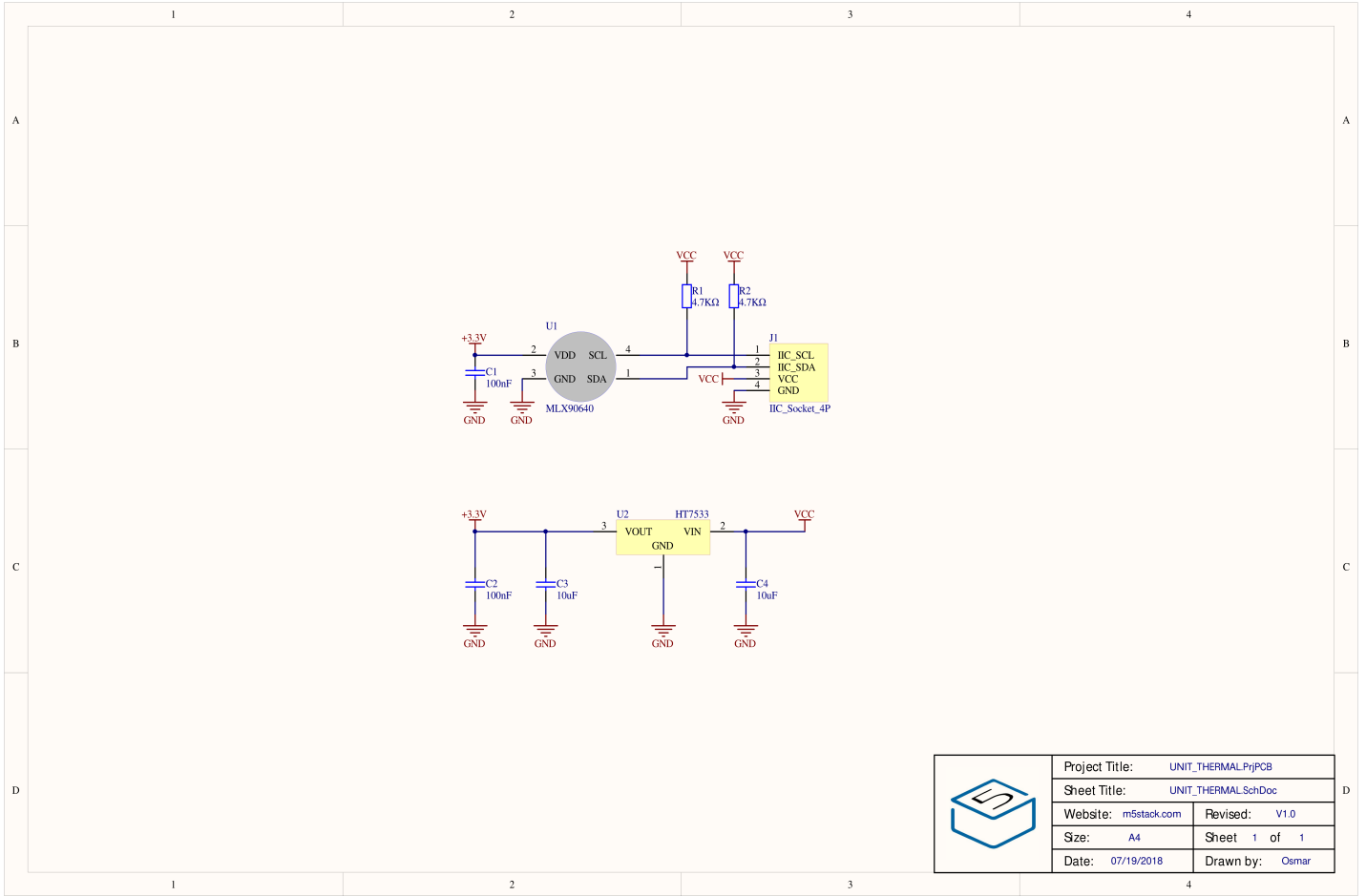
- High-precision non-contact thermometer
- Biological motion detection
- Visualized infrared imaging

| Specifications

Specification	Parameter
Communication Interface	I2C Communication @ 0x33
Operating Current	23mA
Field of View	110°×75°
Temperature Range	-40°C ~ 300°C
Accuracy	±1.5°C
Refresh Rate	0.5Hz ~ 64Hz
Operating Temperature	-40°C ~ 85°C
Product Size	32.0 x 24.0 x 8.6mm
Product Weight	5.1g
Package Size	138.0 x 93.0 x 9.6mm
Gross Weight	10.1g

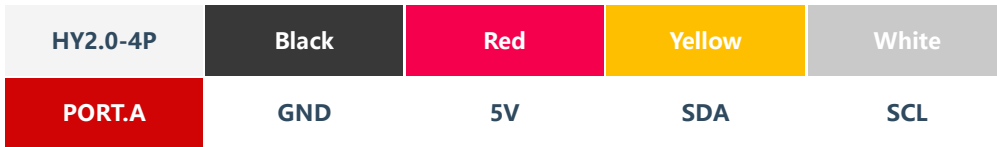
Schematics

- [Unit Thermal Schematics PDF](#)

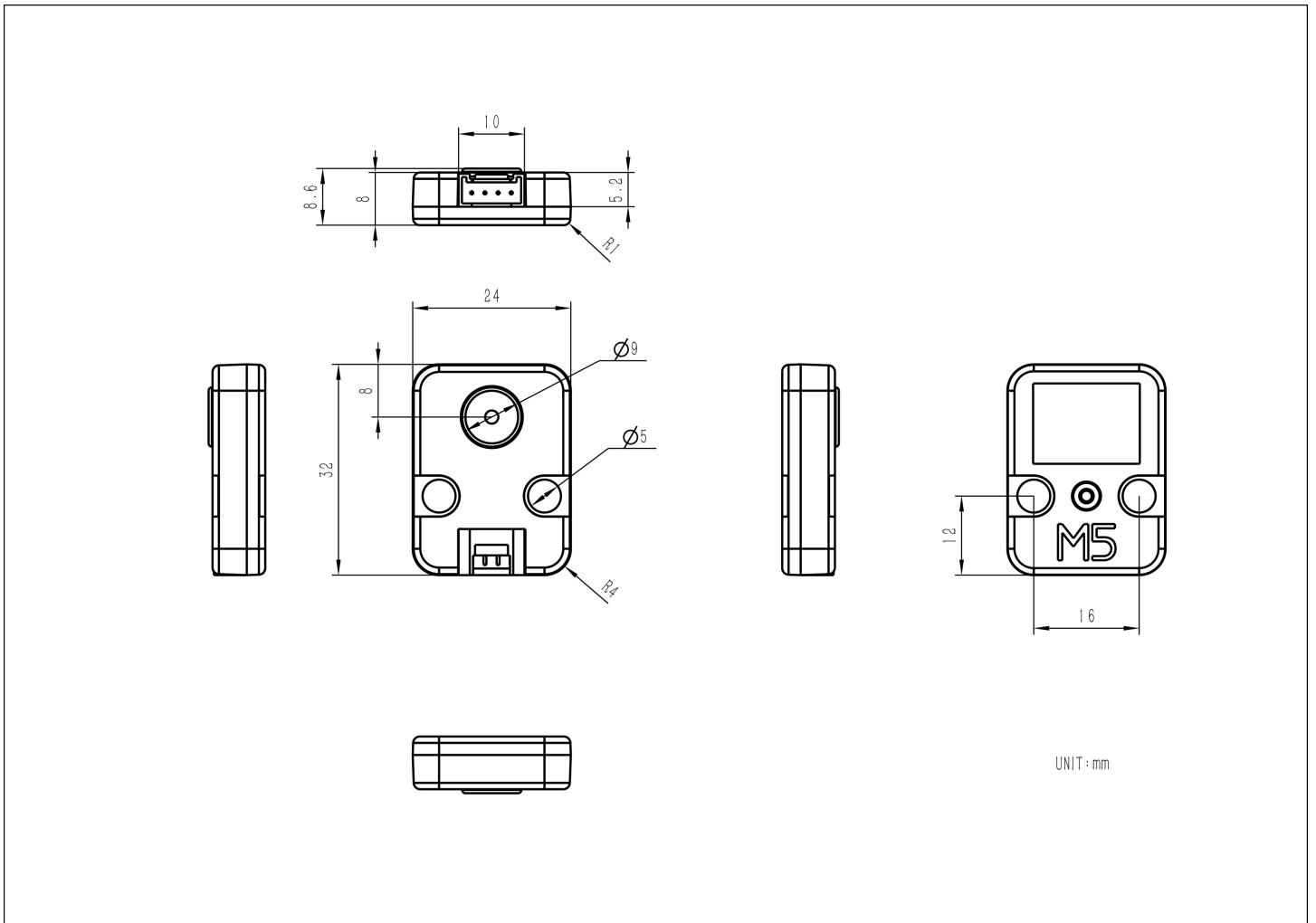


PinMap

Unit Thermal



Model Size



Datasheets

- [MLX90640 Datasheet](#)

Softwares

Arduino

- [Unit Thermal Test Example with M5Core](#)
- [Unit Thermal Test Example with M5Core2](#)

UiFlow2

- [Unit Thermal UiFlow2 Docs](#)

EasyLoader

Easyloader	Download	Note
Unit Thermal Test Easyloader	download	/

| Video

- Unit Thermal Demonstration

[Infrared Thermal Imaging.mp4](#)