

Turing L640 Pro

Uncooled Infrared Thermal Module



• Pixel Pitch 12 μm • Resolution 640 \times 512

Product Introduction

The Turing L640 Pro uncooled infrared thermal module, with 640 \times 512 resolution, measures only 17 mm \times 17.3 mm and weighs just 12 g with its lens. It features the latest image and thermographic algorithms for sharp image detail and stable, rapid temperature measurement. It meets the professional demands of fields such as emergency search and rescue, inspection, security monitoring, and industrial monitoring, while also providing an excellent compact, high-resolution solution for consumer products.

Product Highlights



High-Definition Thermal Imaging

- 640 \times 512 high-definition infrared resolution
- Paired with a new-generation image algorithm for finer imaging detail



Excellent Performance

- Latest thermographic algorithm with a startup stabilization time of just 1 min



High Integration

- Ultra-compact size of 17 mm \times 17.3 mm
 - Weighs only 12 g with lens
 - Power consumption: 0.5 W
-

Product Parameters

Specifications

Detector Type	VOx uncooled infrared focal plane detector
Spectral Range	8 μm - 14 μm
Pixel Pitch	12μm
Resolution	640×512
NETD	≤40 mK (30 mK optional)
Detector Frame Rate	50Hz (Imaging), 25Hz (Temperature measurement)

Image Adjustment

Brightness / Contrast Adjustment	Manual mode / Automatic mode / Linear mode
Polarity	Black hot/White hot
Pseudocolor	Supported
Image Processing	Non-TEC temperature control algorithm / Digital noise filtering / Digital detail enhancement / Histogram stretching
Nonuniformity Correction	Shutter correction / Shutterless algorithm correction
Image Mirroring	Left/Right / Up/Down / Diagonal
Focusing Method	Athermalized prime lens

Temperature Measurement

Temperature Measurement Range	High image quality: -20°C to +150°C, wide range: 0°C to +650°C
Temperature Measurement Accuracy (Typical value)	±3°C or ±3% of the reading (whichever is greater) @ ambient temperature -20°C to 60°C (±2°C optional)
Temperature Measurement Tools	Analysis tools: spot, line, area

Electrical Parameters

Power Supply Voltage (Typical)	3.8 V to 5.2 V DC / 1.8 V / 3.3 V
Typical Power Consumption @ 25°C	≤0.4W
Digital Video	BT.656/ LVCMOS/MIPI/USB2.0
Serial Communication Interface	UART/USB

Physical Characteristics (Excluding Lens and Flange)

Dimensions (W×L×H)	17×17.3mm
Weight	12g

Optional Lenses

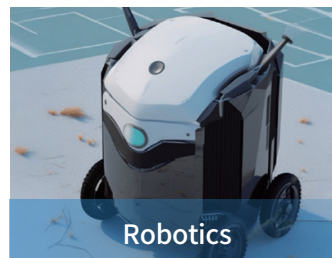
Lens (mm)	9.1
-----------	-----

Environmental Adaptability

Operating Case Temperature	-40°C to +80°C (-20°C to 60°C Temperature measurement)
Storage Case Temperature	-45°C - +85°C
Humidity	5% to 95%, non-condensing
Vibration	6.06 g, random vibration, all axes
Shock	80 g @ 4 ms, sawtooth waveform, 3 axes / 6 directions

This information is for reference only. Images and technical specifications are subject to change without notice.

Applications



Company Profile

Raytron Microelectronics Co., Ltd. is a wholly-owned subsidiary of Raytron Technology Co., Ltd., providing global customers with infrared detectors, core modules, and industry solutions.

Our products are widely used in various fields, including infrared temperature measurement, night vision observation, machine vision, intelligent driving, Commercial Drone, smart industry, security monitoring, Internet of Things, medical epidemic prevention and gas detection.

With the mission of "to create incremental value for customers with technological advancements", we are committed to leaving a name in the history of constantly expanding human perception capabilities.



Official Website



LinkedIn Official Account

Raytron Microelectronics Co., Ltd.
 Phone: 400-998-9038
 Email: marketing@raytrontek.com
 Website: www.raytron-microelectronics.com
 Version: PL202510V1