



Turing L640

Uncooled Infrared Module

Turing L640 uncooled infrared module is specifically designed for applications where dimensions and power consumption are critical concerns. Featuring extreme compactness, lighter weight and lower power consumption, it supports multiple parallel communication and video output interfaces, and provides various lightweight infrared lenses. This series of imaging-type products can provide comprehensive infrared imaging solutions for a variety of photoelectric products including small handheld telescopes, helmet night vision devices, light-type unmanned aircraft systems, and driving assistance devices. Products for temperature measurement can be applied in many fields like industrial and electrical temperature measurement, security measurement, and machine vision.



Product Highlights

SWaP³ Design

- Its resolution is 640×512, dimension is 21×21mm, and weight is 8g. It meets the application requirements of infrared lightweight.



Excellent Performance

- It adopts high-quality image algorithms, providing multiple details regardless of smoke and darkness.
- With a measurement range spanning from -20°C to 650°C, this device offers a precise and rapid temperature assessment algorithm, providing accurate readings immediately upon powering on.



Multiple Selections

- FOV covers 10-130°.
- It supports multiple interfaces, such as MIPI, USB, BT.656, and analog video.
- Equipped with leading programmable modules, it features flexible architecture, multiple functions, and high customizability.



Specifications

Model	Turing L640 Imaging		Turing L640 Temperature Measurement
Performance Characteristics			
Detector Type	Uncooled VOx infrared detector		
Resolution	640×512		
Pixel Pitch	12μm		
Frame Rate	50Hz	25Hz	
Spectral Band	8~14μm		
NETD	≤50mK@25°C (≤40mK, optional)		
Image Adjustment			
Brightness/Contrast Adjustment	Manual/Automatic/Linear		
Polarity	Black-hot/White-hot		
Palette	Support		
Reticle	Display/Blank/Move		
Image Processing	Support Shutterless	TEC-less temperature control algorithm	
Mirror Image	Digital filtering noise reduction / digital detail enhancement / histogram stretching		
	Horizontal/Vertical/Diagonal		
Power Supply			
Power Supply Range ⁽¹⁾	3.8~5.2VDC / 1.8V / 3.3V		
Power Consumption	0.4W (Typical, @25°C, Without Extension)	0.35W (Typical, @25°C, Without Extension)	
Interface			
Digital Video	BT.656/BT.1120/LVCMOS/MIPI	CDS2/CDS3/LVCMOS/MIPI	
Serial Communication Interface	UART/I2C (optional)		
Extension Components	USB2.0/Analog video		
Temperature Measurement Characteristics			
Temperature Measurement Range	/	For temperature measurement series, -20°C~+150°C, 0°C~+650°C	
Measurement Accuracy	/	For temperature measurement series, ±3°C or ±3% at ambient temperature of -20°C~+60°C (±2°C optional)	
Measurement Tool	/	Secondary analysis of points, lines, and areas	
Physical Characteristics			
Dimensions (Without Lens and Extension Components)	21×21mm		
Weight (Without Lens and Extension Components)	8g		
Lens	4.1mm、6.9mm、9.1mm、13mm、25mm、45mm		
Environment Adaptability			
Operating Temperature	40°C~+80°C (-20°C~60°C measurement)		
Storage Temperature	-45°C~+85°C		
Humidity	5~95%, non-condensing		
Product Certification	RoHS2.0		

(1)Please refer to the product manual for power supply requirements

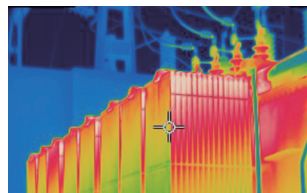
Applications



UAV



Security Monitoring



Industrial Temperature Measurement



Machine Vision

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The information is for illustrative purposes only. The pictures and technical specifications are subject to change without notice. Sample No.: O2024-Turing L640-2P001