



Mini Series Uncooled Thermal Imaging Module

Mini adopts new self-developed $12\mu\text{m}$ VOx WLP detector and is equipped with an ASIC processing chip independently developed by InfiRay®, featuring extremely small size, lighter weight, and lower power consumption. Its 640-resolution thermal imaging module has a size of $21\text{mm}\times 21\text{mm}$, which is very suitable for applications with extremely high requirements such as various miniaturized handheld devices, wearable devices, and light UAVs.



Features

Product

Extremely small size, extremely low power consumption, and extremely light weight

Benefit from the size advantages of ASIC and WLP;

Benefit from the low power consumption of ASIC;

Mini series thermal imaging module has only one circuit board, which is extremely light.

Self-developed Core

With advanced image detection algorithm, it can realize automatic monitoring alarm, warning area customizing, and automatic target recognizing or tracking;

The interface software has complete functions and friendly interaction. It provides a variety of monitoring methods such as 360° panoramic image, radar image, and single frame image, and various parameters of the device can be set;

When the monitored target appears, it can alarm via image slice, log, sound, and other methods;

Advanced image detection algorithm

The alarm position can be accurately displayed in real time on the infrared panoramic image and 2D/3D electronic map of GIS system, and link with other external devices. For example, combined with the ARD high-accuracy remote dual-spectrum early-warning imaging tracker, it can quickly locate and recognize the target, complete the alarm situation review process, and record the linkage process information;

Advanced image stabilization algorithm

Small size, customized color, easy to install and deploy in various environments;

30V DC power supply, average power of less than 30w. The ordinary portable power source is enough for it;

A single person can complete its handling, installing, and debugging in half an hour. Main components: 1 tripod + 1 portable power supply + 1 laptop;

One 640 infrared radar can cover the shooting range of 45 units 640×512 infrared monitoring cameras, and the pitch range is adjusted from -20° to +40°, which further improves the monitoring range of the infrared radar;

Component Model	Mini384	Mini384T	Mini640	Mini640T
Detector	WLP uncooled VOx infrared focal plane detector			
Pixel Size	12 μ m			
Spectral Band	8 - 14 μ m			
Resolution	384 \times 288		640 \times 512	
Detector Frame Rate	50Hz/25Hz			
NETD	\leq 50Hz@25 $^{\circ}$ C, F#1.0 (\leq 40mK, optional)			
Image Adjustment				
Brightness Adjustment	0 - 255, optional			
Contrast Adjustment	0 - 255, optional			
Polarity	Black-hot/White-hot			
Palettes	Support			
Reticle	Display/Blank/Move			
Digital Zoom	0.25 \times - 2.0 \times continuous zoom			
Mirror Image	Horizontal/Vertical/Diagonal			
Image Processing	TEC-less algorithm			
	Non-uniformity correction			
	Digital filtering and noise reduction			
	Digital detail enhancement			
Module Power Supply				
Service Voltage	1.8V, 3.3V, 5V			
Typical Consumption @ 25 $^{\circ}$ C	$<$ 0.55W		$<$ 0.60W	
Module Interface				
Digital Video	DVP			
Communication Interface	I2C/UART			
Physical Characteristics (without lens)				
Weight	$<$ 10g			
Dimension	21mm*21mm			

Module Interface (module + expansion board)				
Service Voltage	5 - 12V			
Power Protection	Support overvoltage, undervoltage, and reverse connection protection			
Video Output Interface	Pal or NTSC, BT.656, LVCMOS			
	Support simultaneous output of all-round array image + temperature			
Communication Interface	I2C/RS232/UART			
Button	Four buttons			
Temperature Measurement				
Measurement Range	No support	High gain: -20°C - + 150°C Low gain: -20°C - + 450°C	No support	High gain: -20°C - + 150°C Low gain: -20°C - + 450°C
Measurement Accuracy	No support	High gain: ±3	No support	High gain: ±3°C
		Low gain: ±5°C or ±3% of reading (The larger one shall prevail)		Low gain: ±5°C or ±3% of reading (The larger one shall prevail)
Measurement Tool	No support	Point, line and area analysis	No support	Point, line and area analysis
Adaptive Lens				
Athermalized Fixed focus Lens	F#1.2: 9.2mm, 13mm			
	F#1.1: 9.1mm/13mm/18mm			
	F#1.1: 9.1mm/13mm/18mm			
	F#1.0: 19mm			
	F#1.0: 19mm			
Environment Adaptability				
Operating Temperature	-40°C ~ +80°C			
Storage Temperature	-45°C ~ + 85°C			
Humidity	5% - 95%, non-condensing			
Vibration	6.06g, random vibration, all axes			
Impact	80g, 4ms, final peak sawtooth wave, three axes and six directions			

Product consulting

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IMAGERS

Thermal Monocular

Phone Thermal Camera

Car Thermal Camera

Clip on Thermal Scope

Rico Thermal Scope

Tube Thermal Scope

Dual spectrum thermal imager

online monitoring thermal camera

MODULES

Micro III Thermal Imaging Module

Mini Thermal Imaging Module

LT Temperature Measurement Module

FT Alarming Thermal Imaging Module

Phoenix Cooled MWIR Imaging Module

APPLICATIONS

Infrared Thermography

Security Thermal Camera

Night Vision

UAV Thermal Module

Smart Phone

Automotive Thermal Camera

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