



## 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	12μm			
Spectral Band	8 - 14μm			
Resolution	384×288		640×512	
Detector Frame Rate	50Hz/25Hz			
NETD	≤50Hz@25°C, F#1.0 (≤40mK, optional)			
<b>Image Adjustment</b>				
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× - 2.0× 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°C	<0.55W		<0.60W	
<b>Module Interface</b>				
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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