User Manual
122-ET Uncooled Infrared imaging Core Module
V1.1

Content

1.Version

Version	Date	Content
V1.0	2024-08	Initial version
V1.1	2024-10	Physical structure diagram updated

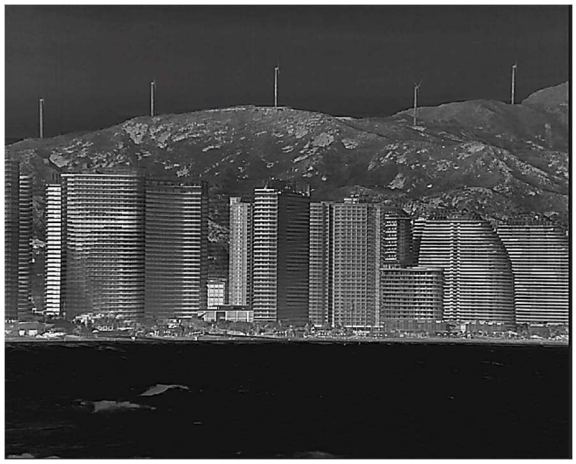
2. Cautions

To keep you and others away from harm or to keep your product away from damage, please read the following information before using your product. If the product is damaged due to improper use against these precautions, the damaged will not be covered by the warranty.

1) When in contact with products, please wear anti-static wristbands, direct contact with bare hands is prohibited;
2) To prevent the product from damp or moist, please do not touch the product or cables with wet hands;
3) The product should be stored in a cool, dry environment without strong electromagnetic fields;
4) The ideal operating temperature for the product is -20 ℃ to 50 ℃;
5) Do not touch the detector window with your hands or other objects;
6) Do not use diluents to clean the product;
7) Please do not unplug the cables without disconnecting the power;
8) Before power on, please ensure that the polarity of the power is correct;
9) When the product is in use, it has to be powered by the specified voltage to prevent damage;
10) Regardless of whether the product is turned on or off, do not aim the product directly at high-intensity radiation sources such as the sun to avoid causing malfunction or even damage;
11) Please do not disassemble the product. If there is any malfunction, please contact us for professional repair.

3. Introduction

The uncooled infrared module adopts the VOX uncooled infrared focal plane detector with ceramic encapsulated made domestically. It features small size, light weight, low power consumption, clear image, and high sensitivity. It can be widely used in optoelectronic pods, automobile applications, security monitoring, firefighting and rescue, investigation, border and coastal defense, maritime affairs, electrical engineering, electronic industry, scientific research and other fields. Development of infrared thermal imaging products using this product can be shortened with less difficulty of secondary development.

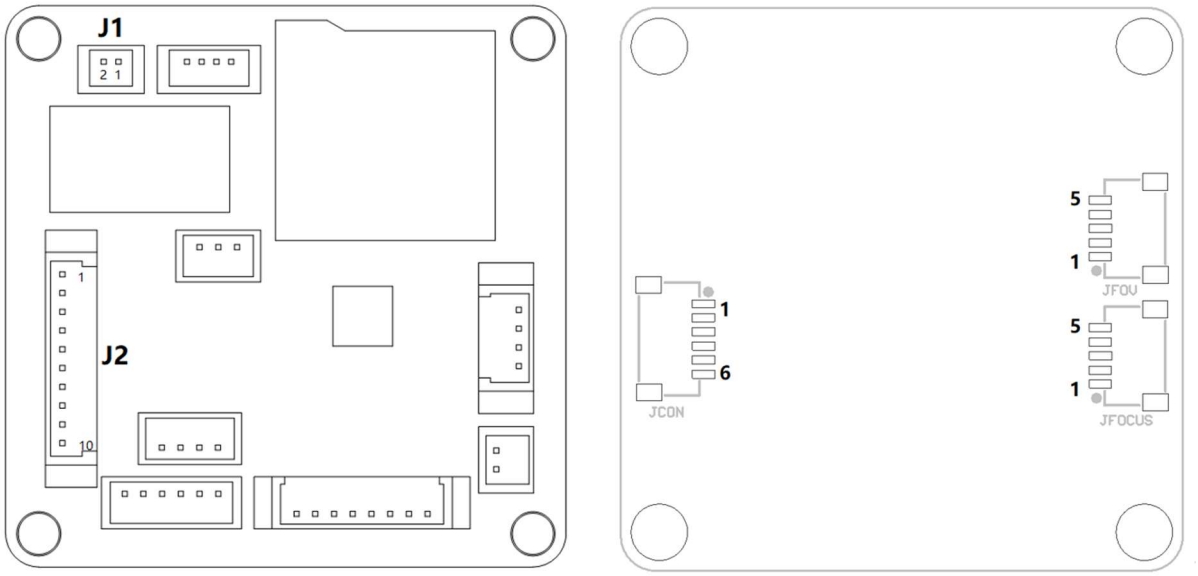



4.Specification

Model	U122-ET	
Catalog	Item	Parameter
Detector	Resolution	1280×1024
	Detector type	Uncooled VOX
	Pixel pinch	12μm
	Wavelength	8～14μm
	Frame rate	25/30Hz
	NETD	≤45mK (@f/1.0,25Hz，300K)
Network protocol	ONVIF	Supported
	RTSP	Supported
	HTTP	Supported
Image setting	Brightness	Supported
	Contrast	Supported
	Enhancement	Supported
	GAMMA setting	Supported
	Digital zoom	Supported, 2X，4X
Interface	Power interface	DC（5.5*2.1）
	Communication interface	TTL interface（RS485 reserved）
	Video streaming	Network （standard RJ45）
Power	Voltage	DC 9V~13V，Typical 12V
	Consumption	≤5W(stable)
	Start up	Start up when power on
Physical parameter	Weight	≤250g
	Size	≤43×43×55 / 57×57×55 (W×H×L)
Environmental parameter	Working temperature	-40℃～+55℃
	Working humidity	0%～90%RH
	Storage temperature	-45℃～+70℃
	Storage humidity	0%～95%RH
Packing list	Standard packing list	Uncooled U122-ET infrared imaging module
		Cable
		Warranty card
		QC certificate

5.Interface

5.1. Interface board

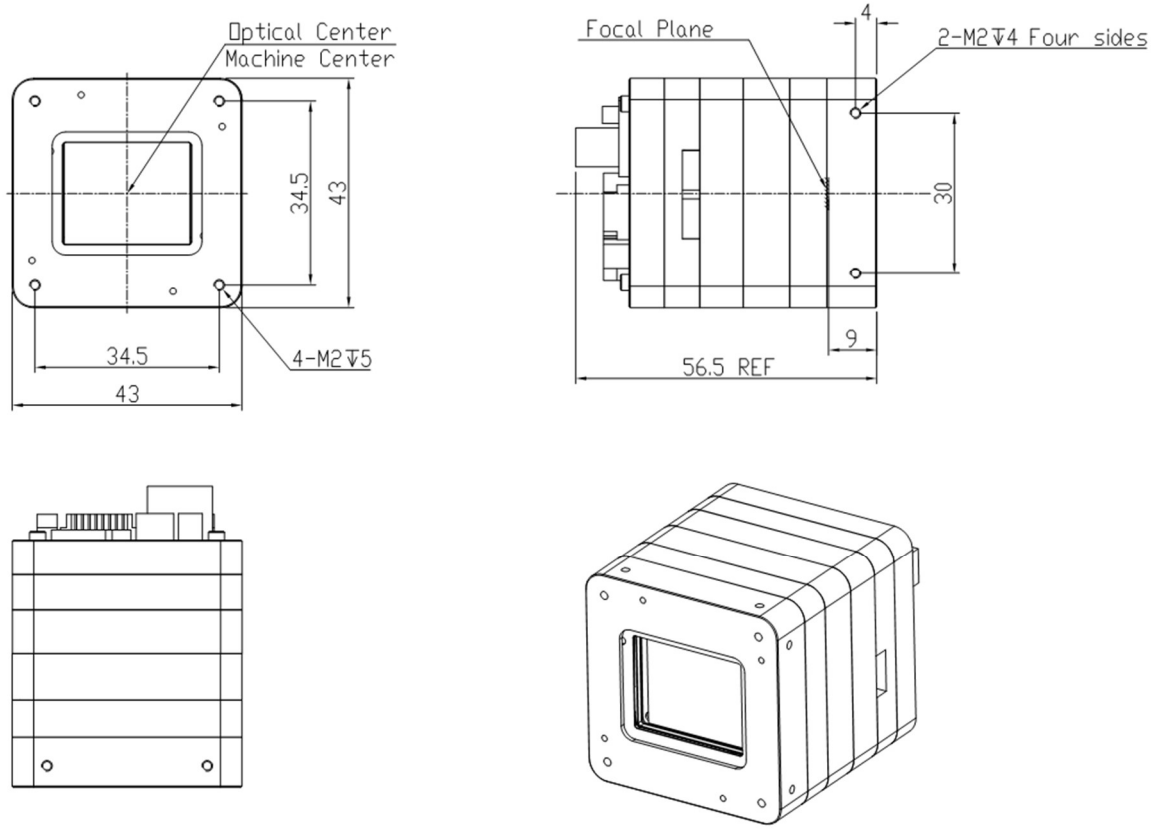


5.2. Definition

Pin	Definition	Note
J1		
1	GND	Power ground
2	POW+	Power input，DC12V
J2		
1、2	NC	/
3	RJ45_1(TX+)	Network signal TX+
4	RJ45_2(TX-)	Network signal TX-
5	RJ45_3(RX+)	Network signal RX+
6、7	NC	/
8	RJ45_3(RX+)	Network signal RX-
9、10	NC	/
JFOCUS		
1	REF	Reference voltage 1.25V
2	DIST1	Potentiometer detection
3	GND	Power ground
4	FOCUS2	focusing motor -（PWM，100%）
5	FOCUS1	focusing motor +（PWM，100%）

JFOV		
1	REF	Reference voltage 1.25V
2	DIST2	Potentiometer detection
3	GND	Power ground
4	FOV2	focusing motor -（PWM，100%）
5	FOV1	focusing motor +（PWM，100%）
JCON		
1	POW+	Power input，DC12V
2	GND	Power ground
3	TTL_RXD	System —> Thermal
4	TTL_TXD	Thermal —> System
5	GND	（TTL）serial ground/video ground
6	VIDEO	CVBS analog video out，PAL

6.Size



7. Technical Support

7.1 Customization design is available according to the different application needs of users;

7.2 Systematic training can be provided to the technical and operational personnel of users.