Shenzhen Chengen Thermovision Technology Co., Ltd.

UV Series

Thermal Camera Core

User Manual V1.0

Product Model: UV Series

Product Overview

This product is a thermal imaging module based on an uncooled infrared focal plane detector, supporting USB (composite video broadcast signal) output, and can be widely used in industrial detection, security monitoring, fire search and rescue, power inspection, etc. The module captures the temperature distribution of the target object through thermal radiation and converts it into a real-time visible thermal imaging video signal, which is compatible with traditional analog display devices (such as drones, monitors, video recorders, etc.).

Technical Features

Features	Performance
Detector Type	Uncooled Focal Plane Array detector (VOx - Vanadium Oxide)
Resolution	640*512
NETD	<35mK (f/1.0 50Hz 300K)
Detector Frame Rate	60Hz
Spectral Response	8~14um
Lens Option	Support Option: 4mm/6.8mm/9mm/13.5mm/15mm/19mm/25mm/35mm
Output Signal	USB
Video Interface	USB_UVC
Secondary Development	Compatible with Windows, Linux, and Android platforms, with an SDK provided for secondary development and integration
Operating Temperature	-30°c ~ +60°c
Power Input	USB(5V)
Dimension/Weight	31*21mm/44g

Interface Definition

0.8mm-4P (1x4P Pitch: 0.8mm SMT)		Connector Definition
PIN1	VCC	
PIN2	GND	
PIN3	DP	
PIN4	DM	

Applications

- **Industrial Inspection:** Circuit board hotspot detection, equipment thermal fault warning.
- **Security Monitoring:** Nighttime no-light environment monitoring, intruder detection.
- **Firefighting and Disaster Rescue:** Fire source localization, trapped personnel rescue.
- **Power Inspection:** abnormal temperature detection of power transmission and transformation equipment.
- **Wireless Image Transmission:** Infrared gimbal applications for drones.

Communication Control

The module can be controlled through the USB serial port, supporting control functions: lid calibration, mirror flip, digital zoom, scene mode, pseudo color (white hot, black hot, red hot, iron red, and other modes), detail enhancement, brightness, contrast, etc. There is a matching upper computer output tool. For specific serial ports, see the attached "MINI2 Series Serial Port Instruction Set_V0.5_20240111".

Installation and Usage Instructions

Hardware Connection

- Installation and Usage Instructions: Connect the module power cable to a USB-5V DC power supply (ensure the power is stable).
- Use a data cable to connect the USB output port of the module to the video input port of the drone, monitor, recorder/wireless image transmission module.

Operating Procedure

- Power On and Warm-up: After powering on, wait 1–2 minutes for the module to stabilize.

- It is normal for the module shutter to actuate multiple times during startup. Once the detector reaches a stable state, the module shutter will automatically adjust the refresh rate according to temperature thresholds (this varies for models without a shutter).

Image Adjustment

- Adjust the module lens focus to clearly view the target.
- Adjust the monitor's contrast and brightness to achieve the best visual effect.
- Use host software to select pseudo-color mode or enable temperature measurement function.

Signal Check

- If the image is blurry or missing, check the power stability and video cable connections.

Maintenance and Precautions

- Do not connect the attached cables incorrectly to avoid damaging the equipment.
- When cleaning the lens, use a dust-free cloth dipped in a small amount of alcohol to gently wipe the infrared window.
- For long-term storage, keep the device in a dry environment and it is recommended to use anti-static packaging.
- Do not expose the component directly to the sun or other high-intensity radiation sources.
- The ideal operating temperature range is -30℃ to 60℃.
- Do not disassemble the device. In case of malfunction, please contact our company for professional maintenance.

Structural Dimensions