



Turing F640

Uncooled Infrared Module (Imaging)

Turing F640 uncooled infrared module has a built-in high-sensitivity VOx infrared detector, providing a consistently high-performance kernel, ultimate image algorithms, and technology of lens control, bringing a new experience for long-distance monitoring. The product can be widely used in application scenarios such as perimeter security, high-altitude observation, forest fire prevention, and water area monitoring.



Product Highlights

All-Weather, All-Scenario Ultra-Fast Focusing

- By optimizing the lens control technology and employing a series of continuous zoom lenses, this product achieves full focus in all temperature ranges.
- Automatic focusing algorithms are deeply optimized to achieve ultra-fast focusing in 1 second, improving the focusing speed in general and weak target scenarios. The image is clear throughout the process in application scenarios like target tracking and linkage magnification.



Providing Sharp Infrared Images

- The module upgrades the image algorithm to the new generation and optimizes the image for special scenarios such as forests, sea, sky, and rainy and foggy weather, providing customers with clear and sharp infrared images.



Providing Optimized Lens

- It supports athermalized prime lenses, prime electric focusing lenses, and continuous zoom lenses.
- It can realize electric focus, continuous zoom, automatic focus, and defocusing compensation functions, etc



Multiple Video Interfaces, Easy for Secondary Development

- Support interfaces such as BT.601, BT.1120, SDI, USB, Cameralink, and HDMI.
- It provides multiple SDK, which are simple and easy to use, shortening the development cycle, improving efficiency, and reducing secondary development costs.



Specifications

Model	Turing F640 Imaging	
Performance Characteristics		
Detector Type	Uncooled VOx infrared detector	
Resolution	640×512	
Pixel Pitch	12μm	
Frame Rate	50Hz	
Spectral Band	8~14μm	
NETD	≤40mK@25°C,F#1.0	
Image Adjustment		
Palette	Support (20)	
Digital Zoom	1.0~8.0× continuous zoom (step size: 0.1)	
Image Processing	Non-uniformity correction/Brightness and contrast adjustment/Temporal filtering and spatial filtering noise reduction/Digital detail enhancementStyle adjustment	
Mirror Image	Horizontal/Vertical/Diagonal	
Temperature Measurement and Alarming		
Temperature	Not support	
Measurement Range	Not support	
Measurement Accuracy	Not support	
Fire Alarm	Support	
Network Function		
Network Protocol	TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, RTP, RTSP, RTCP, IGMP, SMTP, NTP, QoS, and other network protocols	
Platform Access	Support Modbus TCP, MQTT protocols, ONVIF, GB28181, and SDK	
Simultaneous Previewed Videos	Up to 8 channels	
User Management	Up to 20 users, 3 levels: administrator, operator and user	
Browser	Google, Firefox, Edge, etc	
Intelligent Function		
Fire Warning	Support fire point detection	
Intelligent Video Taking	Support	
Intelligent Alarm	Support abnormality detection and linkage alarm for network cable disconnection, IP address conflict, memory error, and illegal access	
Intelligent Detection	Support intelligent analysis of events such as regional intrusion, tripwire intrusions, and passenger and vehicle recognition	
Alarm Linkage	Video taking/Image capture (thermal image capture supported)/Email/Linked PTZ/Alarm output	
Lens Control		
Lens Type	Athermalized/Prime electric focus	
Focus Mode	Manual/Automatic	
Electric Focus	Support	
Electric Zoom	Support	
Digital		
Power Supply Range	5-24V DC (12V DC recommended)	
Power Consumption	<1.5w (Typical, @25°C)	
Analog Video	1-channel PAL system	
Digital Video	LVCMOS/BT.601/BT.1120	
Communication Interface	RS-232/UART	
Online		
Power Supply Range	12V DC ±10%	
Power Consumption	<2.0w (Typical, @25°C)	
Communication Interface	One RJ45 10M/100M adaptive Ethernet port, one RS-485, one UART	
Alarm Interface	1-channel alarm input, 1-channel alarm output	
Audio Interface	1-channel audio input, 1-channel audio output	
Environment Adaptability		
Operating Temperature	-40°C~-70°C	
Storage Temperature	-45°C~-85°C	
Humidity	5-95%, non-condensing	
Product Certification	RoHS2.0	

Applications



Perimeter Surveillance



Forest Fire Prevention



Security Monitoring



Urban High-Altitude Observation

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The information is for illustrative purposes only. The pictures and technical specifications are subject to change without notice. Sample No.: O2025-Turing F640 Imaging-2P001