

IR-SF641

Infrared Cameras



640 × 512 thermal imaging in a module for drones and embedded systems

IR-SF641

Mini infrared module for OEM integration

amperis

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A thermal core ready to integrate into inspection, surveillance and airborne systems.

Product overview



Compact module with interchangeable athermalised lens

A complete thermal core

The IR-SF641 packs an uncooled VOx detector of 640×512 with a $12 \mu\text{m}$ pixel pitch and a thermal sensitivity $\leq 30 \text{ mK}$ at 50 Hz, over the 8-14 μm band: the imaging heart of an inspection or surveillance system, ready to integrate.

Optics for every distance

Six athermalised fixed lenses (from 9 to 75 mm; 9-25 mm on the IR-SF641R variant) hold focus regardless of the ambient temperature, and DDE detail enhancement, polarity inversion and 1-8 $\times$ digital zoom condition the image before output.

Main features

- Analogue PAL or NTSC video output on one channel.
- UART control (TTL 3.3 V) with reserved user I/O.
- Automatic calibration at power-on, plus manual calibration.
- Automatic or manual brightness and gain.
- Single 5 V DC supply, suited to low-power platforms.



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Applications and variants



Night scene illumination from a drone: aerial observation

Applications

- Drones and airborne platforms.
- Industrial temperature measurement systems.
- Security control and outdoor sighting.
- Applications with strict volume and power requirements.

Two variants

The IR-SF641 offers the full lens set from 9 to 75 mm, while the IR-SF641R keeps the compact set of 9, 13 and 25 mm; both share detector, processing and interfaces.

Made for the integrator

The electrical interface concentrates power, analogue video and user I/O on a 16-bit connector, so the module joins the design without auxiliary electronics.



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IR-SF641 – MEASUREMENT DATA

Detector	Uncooled VOx, 640 × 512; 12 µm pixel pitch
Thermal sensitivity (NETD)	≤ 30 mK
Frame rate	50 Hz
Spectral range	8-14 µm
Image processing	DDE digital detail enhancement; polarity inversion; noise reduction
Digital zoom	1.0-8.0×
Calibration	Manual, plus automatic calibration at power-on
Brightness and gain	Manual, auto brightness/manual gain or fully automatic

Imaging core specifications common to the IR-SF641 and IR-SF641R.
The manufacturer reserves the right to change the specifications without prior notice.

IR-SF641 – TECHNICAL SPECIFICATIONS

Model	IR-SF641	IR-SF641R
Detector	Uncooled VOx, 640 × 512; 12 µm	Uncooled VOx, 640 × 512; 12 µm
Sensitivity (NETD)	≤ 30 mK	≤ 30 mK
Frame rate and band	50 Hz; 8-14 µm	50 Hz; 8-14 µm
Athermalised fixed lenses	9, 13, 25, 35, 50 or 75 mm	9, 13 or 25 mm
Video output	1 channel PAL or NTSC (analogue)	1 channel PAL or NTSC (analogue)
Control	UART (TTL 3.3 V); reserved user I/O	UART (TTL 3.3 V); reserved user I/O
Electrical interface	16-bit connector: power, video and I/O	16-bit connector: power, video and I/O
Supply	5 V DC	5 V DC

Both variants share detector, processing and interfaces; they differ in the available lens set.



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