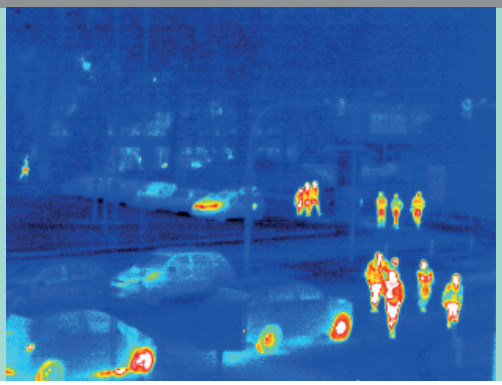
Fraunhofer
IMS

FRAUNHOFER INSTITUTE FOR MICROELECTRONIC CIRCUITS AND SYSTEMS IMS



1 *Infrared camera*
2 *Street scene recorded by the infrared camera*

EVAL – IRFPA CAMERA

EVAL – IRFPA Camera

Our new EVAL – IRFPA camera supports product managers and R&D departments in their development tasks. You get a complete IRFPA camera system, which enables you to test the functionality and performance of our digital IRFPA sensors. Thus, an adjustment to the customer's application can be planned.

The EVAL – IRFPA camera is used for uncompensated image acquisition of temperature distribution.

It is possible to display "honest images" in which pixel defects are not cleared. The manual or time-based triggering of the shutter – to equalize the temperature – is adjustable, as well as the false color representation in black and white. The image output is available in black and white or in false color. The digital range setting and the amplification of the FIR image can be varied and adjusted. This also applies to the reference voltages for image scene adaptation. On request the display software is adaptable to customer requirements.

Digital IRFPA Sensors

The Fraunhofer IMS in Duisburg develops and manufactures customized uncooled far-infrared sensors. Our digital IRFPAs (Infrared Focal Plane Arrays) are based on microbolometers with a sensor layer made of amorphous silicon working within a wavelength range of 8 to 14 µm. We integrate the CMOS readout circuit, the microbolometer with a pixel pitch of 17 µm, and the miniaturized vacuum package (chip-scale-package) to a complete imager chip. The digital conversion is performed on-chip. The readout of the microbolometers is fully digital, realized via homogenously distributed ∑Δ ADCs.

Fields of Application

- Automotive
- Thermography
- Surveillance and security
- Process control
- Smart building
- Firefighting
- Aerospace industry
- Medical applications

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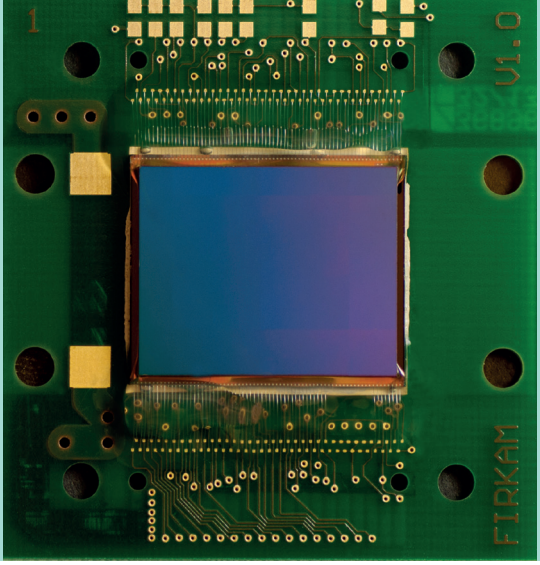

Specifications

EVAL-IRFPA Camera:

Spectral range	8 µm – 14 µm
Temperature measuring range 1	-40 °C – +100 °C
Temperature measuring range 2	-40 °C – +500 °C
Sensor	Digital IRFPA
Lens	LWIR lens, f/0.85, 30 mm, manual focusing
Frame rate	30 Hz
Package (h/w/d)	Compact aluminum package 85 x 175 x 107 (without lens)
Weight	1.350 g
Ingress protection	IP 20
Power supply voltage	12V/1A with AC adapter
Input power sensor	2.3 W
Interface	USB 2.0 (videodata + configuration)
System requirements	PC with Windows 7
Included software	USB FTDI drivers, PC software for visualization and configuration (customer-specific modifications on request)
Operating temperature	-20 °C – +70 °C
Storage conditions	-20 °C – +70 °C at a relative humidity between 20 % – 70 %

Digital IRFPA Sensor:

IRFPA detector	Uncooled microbolometer array, 17 µm pixel
Temperature measuring range 1	-40 °C – +100 °C
Temperature measuring range 2	-40 °C – +500 °C
Temperature resolution/definition (NETD)	< 80 mK (f / 1.0, 295 K)
Resolution	QVGA (320 x 240 Pixel)
Data output	Digital, 16-bit, full digital readout of the microbolometer
Max. frame rate	30 Hz
Sensor package	Miniaturized chip scale package
Operating temperature	-20 °C – +70 °C

3 *Digital IRFPA with detector board*

4 *Raw image taken with the infrared camera*