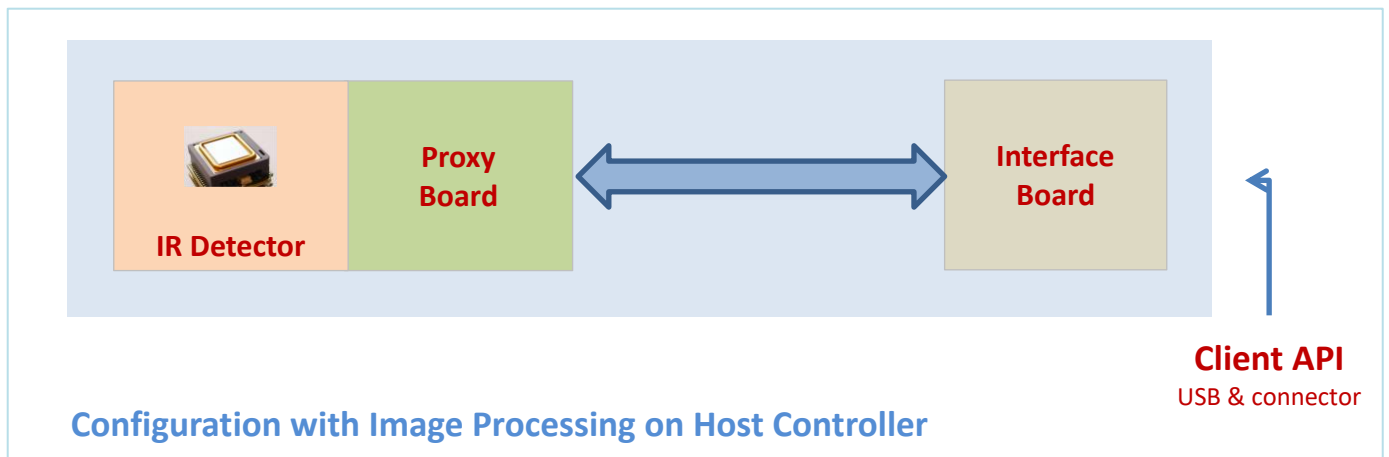


CONFIGURATION OF CAMERA MODULE

MicroCube640 is developed using a modular concept and architecture.

Thanks to its SDK, MicroCube640-USB consists in embedding the processing into the Host Controller mainly for UAVs, UGVs and Machine Vision applications.

For handheld and portable application, a Processing Board can be added to the previous stack (see figure below), allowing to embed the optimized and just needed processing to the aimed application.



PRELIMINARY SPECIFICATIONS

Plug, Sense&Play the Heat

KEY TECHNICAL SPECIFICATIONS

SYSTEM FEATURES	MicroCube640	DESCRIPTION
Camera resolution	640x480 pixels	Micro-bolometer technology with 12µm pixel pitch : camera fits to ATTO640 detector
Spectral response (LWIR)	8 – 14 µm	
NETD (f/1; 300K; 30 Hz)	< 60 mK < 50 mK < 40 mK	Can be optimized on demand only. Refer to Performance Grade section
Typical Power consumption	820mW	
Interfaces: USB 3.0 (micro USB type C female with screw lock, USB 2.0 compliance) Camera control: Connector MMCX Jack (female)	RAW 16 bits digital output Free run; External Trig Standby power mode Adjustable IR setting point (Integration time, local AGC, Gain, NUC calibration....) Input : 3V3 CMOS Slave from external shutter External sync mode input	Plug & Play to any host controller system (PC or Computer Board) Exposure mode Video disable and wakeup for fast time to image. With input protection over voltage up to 6V
Mechanical Shutter	No	
Shutterless	Optional	
User Configuration Storage	Up to 8	On module
Storage Calibration Table	Up to 8	On module
Time to image	< 3 s	Time from power on at USB power supply
Image Optimization	BPR, NUC, Image enhancement, local AGC	Configuration dependant
Full Frame Rates	60 Hz	Adjustable frame rate: from 9 to 60Hz
Standard Frame Rates	30 Hz	
Exportable Frame Rates	9 Hz	
Image Flip	Yes	On module
Qualification grade	Industrial (Standard grade) Extended or Military (MIL-STD-810E)	For Military grade only with selective sorting test concerning climatic stress screening based on MIL-HDBK-2164A
Operating temperature range	-20°C; +60°C (Standard grade) -40°C; +70°C (Extended or Military grade)	
Size: Length x Width x Height	22 x 22 x 22 mm ³	Excluding Optic & connector
Weight	22g	Excluding Optic
Demo GUI Graphical User Interface	Windows	MicroCube Viewer adjusts all image parameters in GUI. GUI compatible with Windows Only
SDK (for USB)	Windows & Linux	SDK compatible with Windows and Linux Operating System

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PERFORMANCE GRADE

MicroCube640 offers a performance grade:

FEATURES	High Grade	Ultra-High Grade
NETD	<50mK	<40mK
Operability	>99.8%	>99.8%
Bad line	0	0
Bad column	0	0

NETD with conditions: F/1 ; 300K ; 30 Hz

Operability is the number of valid pixels, including defective line or column.

These defects are corrected by the module, but can appear during operation depending on conditions.

COMPATIBILITY VERSION OF OPERATING SYSTEM

RELEASE VERSION	RELEASE DATE	NEW FEATURES
A2	May 2022	Operating Systems ⁽¹⁾ : Windows & Linux

Note:

(1) Windows (x86; x64) and Linux on Embedded Platform (ARM9, Libc 2.x with x>=13)

WHAT'S IN THE BOX

Module of Thermal Imaging Camera

MicroCube Viewer (GUI)

ICD (mechanical drawings)

SDK for developers

Documentation (user's guide)

Downloadable on Device-ALab website through customer access

General Notices:

This OEM module is intended only for product evaluation, development or incorporation into other product or sub-system. It is not a finished end-product fit for general consumer use. As such, this module is without the scope of the European Union (EU) directives concerning electromagnetic compatibility (EMC).

The products described herein are subject to French Government Export Controls except the products of lower than or equal to 9 Hz frame rates.

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