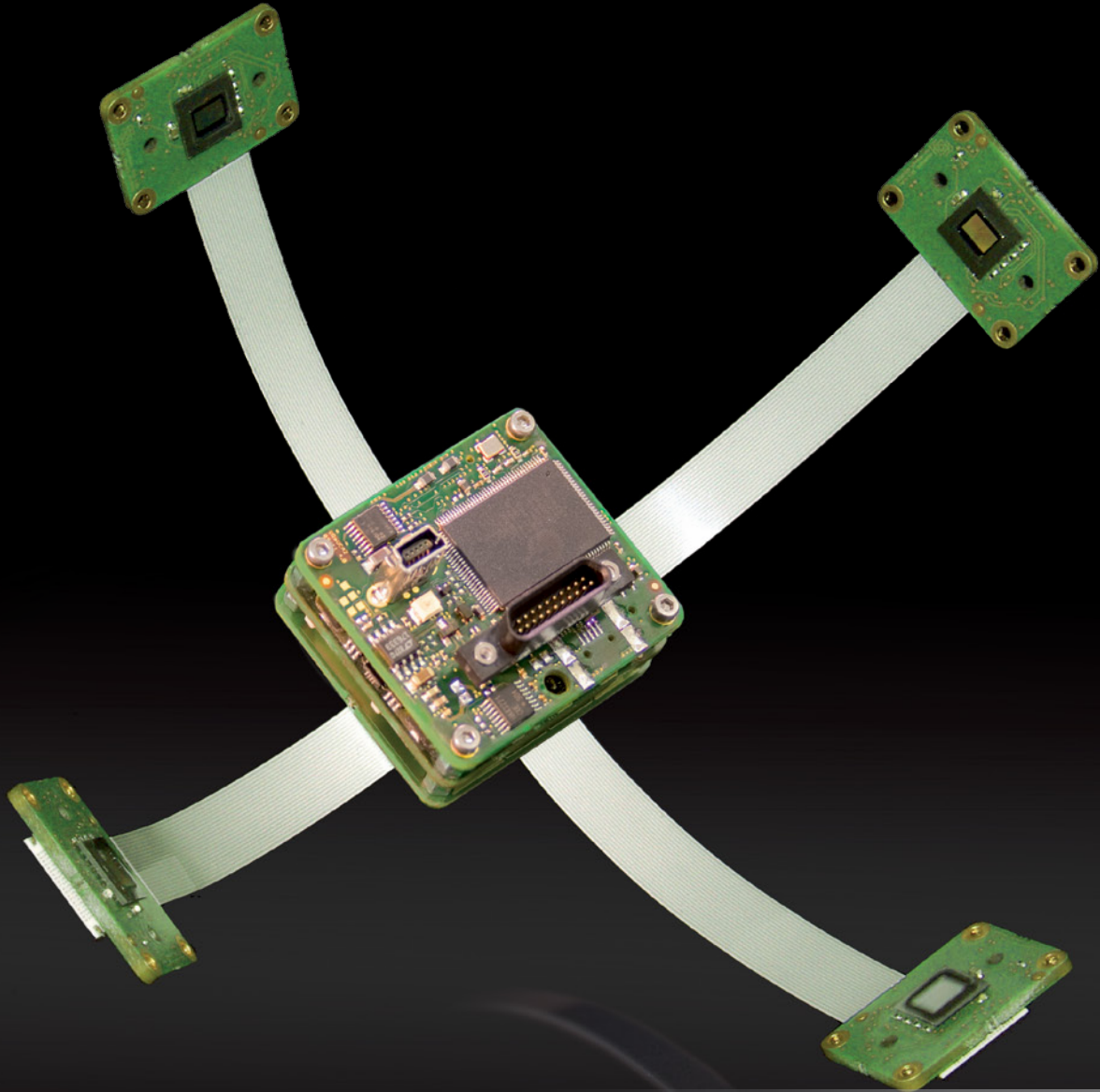


# Multi-Sensor Cameras



**Up to Four External Sensors**

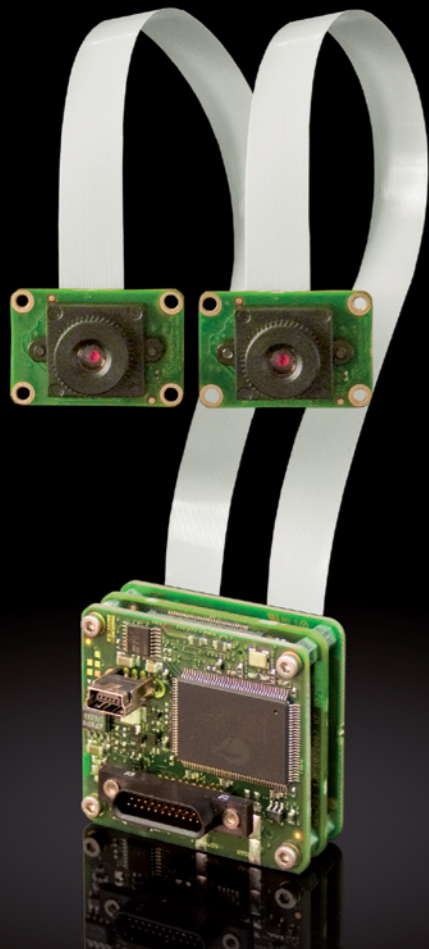
**Pixel-Synchronous**

**Freely Positionable**

**256 MB RAM**

**USB 2.0 Interface**

# Multi-Sensor Cameras



The multi-sensor cameras from VRmagic can be equipped with up to four pixel-synchronous sensors. The external sensors are connected to the camera by a flex-foil-cable with LVDS transmission and can be freely positioned. The image data is coordinated on a FPGA module with 256 MB RAM.

## Highlights

- Rolling shutter, global shutter, or interline transfer
- CMOS or CCD sensors
- Resolutions from VGA to three megapixels
- Monochrome or color with Bayer RGB matrix

## Available Designs

Board Level Cameras: Design mOEM  
 Board Level Cameras with Optics: Design mCOB

## Technical Data

	VRmMFC-8-(2/3/4)	VRmMFC-9-(2/3/4)	VRmMFC-12-(2/3/4)	VRmMFC-14-(2/3/4)
Manufacturer	Aptina	Aptina	Aptina	Sony
Type	MT9T001 ①	MT9M001 ①	MT9V024	ICX445 ①
Technology	CMOS	CMOS	CMOS	CCD
Shutter	rolling	rolling	global	interline transfer
Color	●		●	●
Monochrome		●	●	●
Sensor Size	1/2"	1/2"	1/3" wide	1/3"
Resolution	2056 x 1544	1288 x 1032	754 x 480	1296 x 966
Pixel Size [µm]	3.2 x 3.2	5.2 x 5.2	6 x 6	3.75 x 3.75
FPS	13	30	69	22 ②
Min. Exposure Time	60	38	30	to be defined
Bit Depth	8/16	8/16	8/16	8/16
Pixelclock [MHz]	to be defined	to be defined	26.6	36 ②
Main Board Size [mm]	42 x 38 x 28			
mOEM Sensor Board Size [mm]	42 x 38 x 7	42 x 38 x 7	28 x 19 x 7	42 x 38 x 9
mCOB Sensor Board Size [mm]	42 x 38 x 22	42 x 38 x 22	28 x 19 x 19	42 x 38 x 22

① available soon    ② subject to change

All dimensions W x H x D without lens and including connectors.

# 2, 3, or 4 Pixel-Synchronous Sensors!



## Camera Features

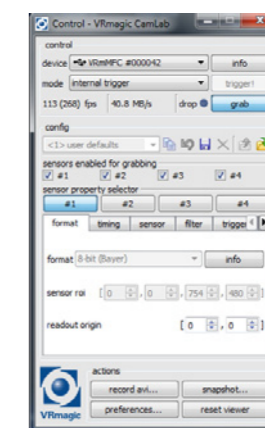
- Individual adjustment of exposure time, auto exposure, gain, auto gain, and white balance for each sensor
- Correction of gamma, luminance, and contrast via look-up tables
- Freely definable ROI (region of interest)
- Pixel formats: 8 bit, 16 bit, 8 bit RLE (lossless realtime compression)
- Unrestricted access to raw sensor data
- Trigger/strobe settings
- Soft-trigger, timestamps, framecounter

## Features of the Software Development Kit

The free software development kit contains a single API that works with all models from VRmagic. The self describing property interface allows for generic code development – an exchange of the camera model later on is thus possible without additional programming. The provided user interface allows access to all camera parameters. Further user-friendly features include the graphical configuration of regions of interest and the configuration of camera parameters without grabbing. The API allows users to access multiple frames of the host ring buffer simultaneously. Image data of the sensor can be converted into different target formats such as RGB32, RGB24, RGB565, YUV or GRAY. Demo applications and free source code for several developing platforms are included.

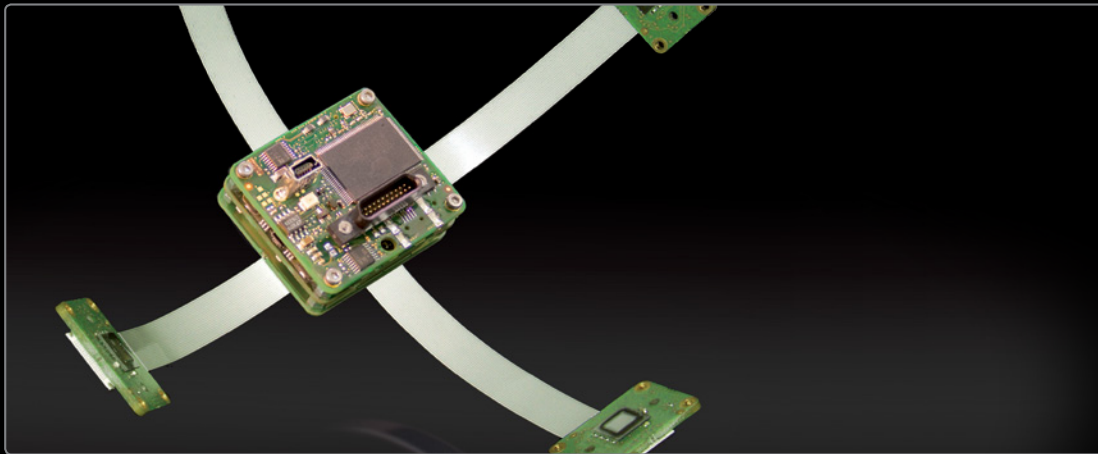
## Multi Viewer Support

The CamLab from VRmagic offers multi viewer support for the multi-sensor camera; The pixel-synchronous images of up to four connected external sensors can be displayed on the PC desktop at the same time.



◀ The CamLab of the VRmagic SDK allows users to control important sensor parameters via the graphical user interface.

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