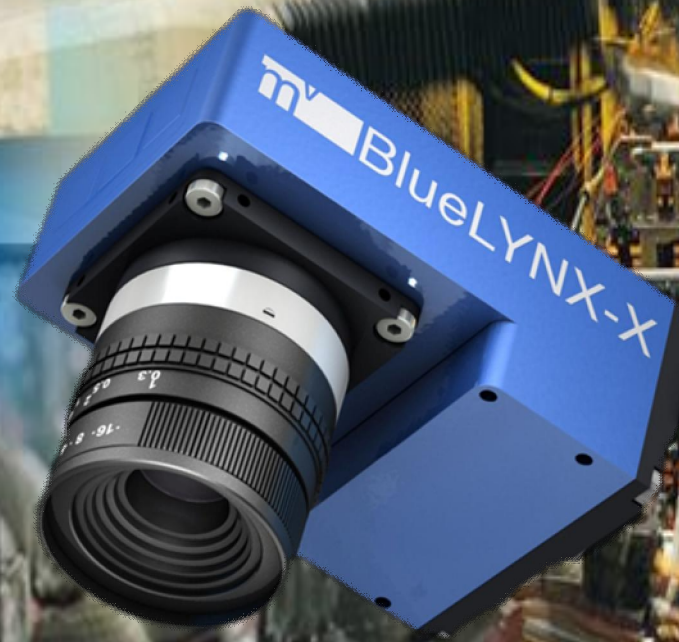


# mvBlueLYNX-X



*Smart camera series*

- ▶ NeXt generation smart camera
- ▶ Very compact check card size
- ▶ High-performance global shutter CMOS and CCD sensors
- ▶ WideVGA up to 5 megapixels gray scale and color version
- ▶ Portrait and Landscape mode as a mounting option
- ▶ OMAP based CPU family with up to 1 GHz clock
- ▶ Independent DSP with up to 800 MHz for “number crunching”
- ▶ Image processing acceleration by co-processors
- ▶ Wide range of interfaces
- ▶ .NET (Mono) interface

## ▶ CPU

- ▶ Core ARM Cortex-A8,  $\geq$  800 MHz... 1 GHz (3730)
- ▶ Caches L1: 32KB D + 32KB I, L2: 256KB
- ▶ SIMD NEON, 8 x 8 bit, VFPv3
- ▶ DSP 800 MHz (3730)

## ▶ Memory

- ▶ DDR RAM 256 MB
- ▶ FLASH 2 x microSD card interface,  
one internal, one externally accessible

## ▶ Lens interface

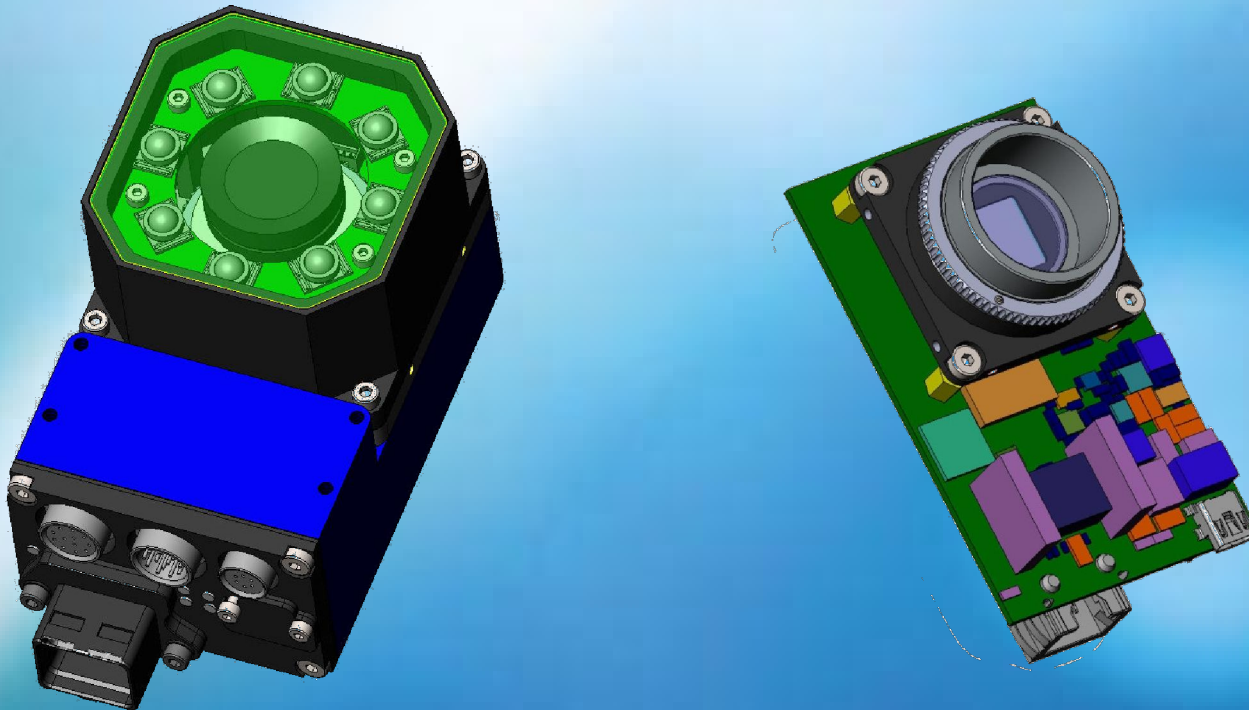
- ▶ S-Mount; optional: C(S)-Mount (mvBlueCOUGAR-X comp.),  
support for motorized (zoom) lens (opt.)

## ▶ Illumination

- ▶ Optional flashing LED ring in different colors (IR, white...)

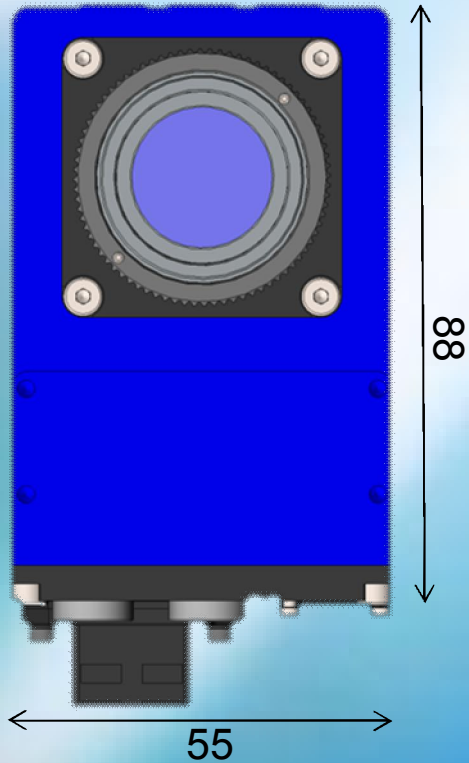
- ▶ Linux OS (Open Embedded)
- ▶ Mono for .NET applications
- ▶ SDK for own algorithms and applications on request
- ▶ TI vision library for DSP available free of charge
- ▶ Support for mvIMPACT
- ▶ Support for third-party vision libraries (e.g. Halcon)
- ▶ Applications:
  - ▶ OCR
  - ▶ Barcode
  - ▶ DataMatrix
  - ▶ Measure
  - ▶ Blob
  - ▶ Match
  - ▶ Feature, Texture
  - ▶ And many more

- ▶ Power consumption max. 5 W
- ▶ Size without lens, illumination, connectors (h x w x d):  
88 x 55 x 35 mm (~ check card dim.)

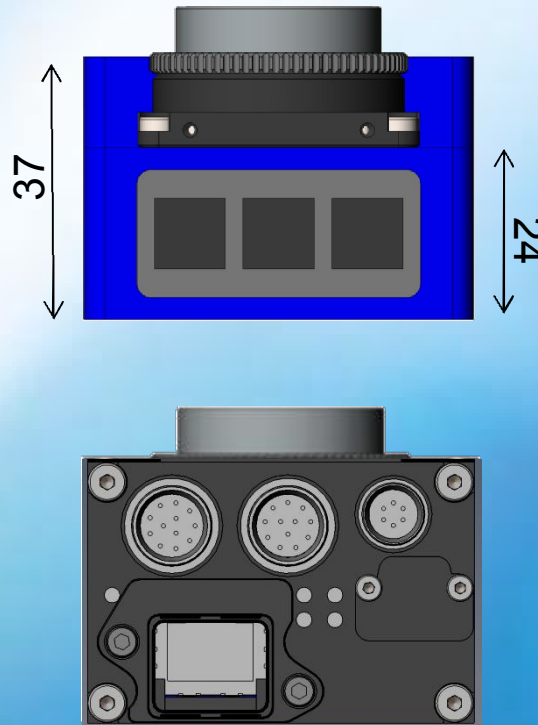


# mvBlueLYNX-X *dimen. drawing*

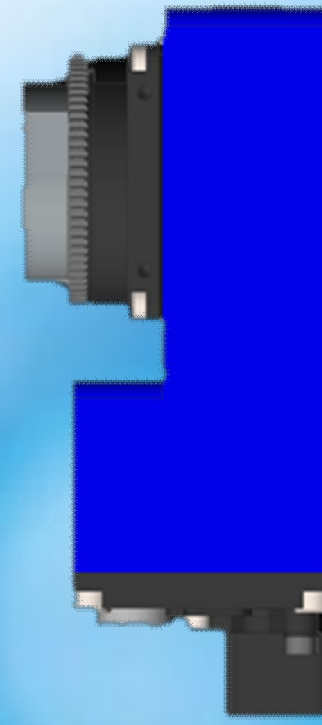
Bottom view



Back view



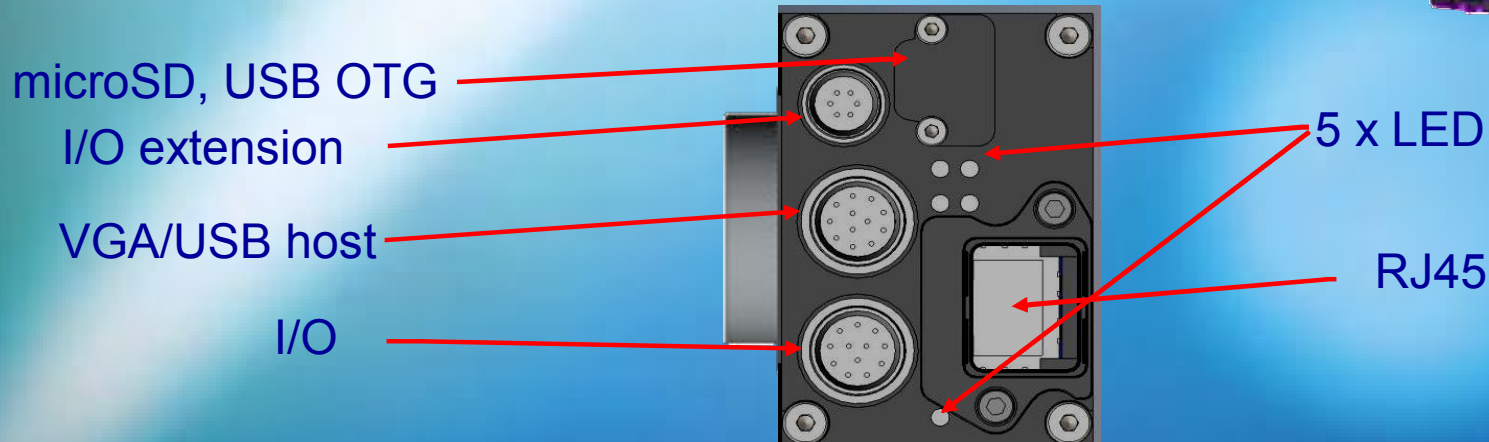
Side view



## ▶ Connectivity

- ▶ RJ45 100 Mbit Ethernet, opt. IP65 (Harting retrofit)
- ▶ VGA/USB host 12-pin Hirose, screw latch (IP65)
- ▶ I/O RS-232, dig. I/O (like BC-X), screw latch (IP65)
- ▶ I/O extension additional inputs and outputs, (on demand)  
Under cover: microSD card, USB on-the-go

## ▶ IP65 when using a Molex RJ45 cable



Model name	-100w	-102
Model variant	G, C	G, C
	G = gray, C = color	G = gray, C = color
Active sensor area	752 x 480	1280 x 960
Max. frame rate	90	45
Sensor type	CMOS	CMOS
Shutter type	Full frame	Full frame
Sensor size	1/3"	1/3"
Pixel size (w x h in [ $\mu\text{m}$ ])	6 x 6	3.75 x 3.75
Integration time	10 $\mu\text{s}$ - $\leq$ 4 s	tbd
Overlapping capabilities	yes	yes
Sensor manufacturer	Aptina	Aptina
Sensor name	MT9V034	MT9M031, not available yet



# mvBlueLYNX-X

# CCD sensors

Model name	-120b	-120a	-122	-123	-124	-125a
Model variant	G,C	G,C	G,C	G,C	G,C	G,C
	G = Gray (b/w), C = Color					
Pixel total (H x V)	640 x 480	640 x 480	1280 x 996	1360 x 1024	1600 x 1200	2448 x 2050
Max. Frame rate	104	104	31	30	28	10 fps
Sensor type	CCD	CCD	CCD	CCD	CCD	CCD
Transfer type	Full-Frame interline transfer	Full-Frame interline transfer	Full-Frame interline transfer	Full-Frame interline transfer	Full-Frame interline transfer	Full-Frame interline transfer
Sensor- size	1/2"	1/3"	1/3"	1/2"	1/1.8"	2/3"
Pixel size (w x h in [ $\mu$ m])	9.9 x 9.9	7.4 x 7.4	3.75 x 3.75	4.7 x 4.7	4.4 x 4.4	3,45 x 3,45
Read out scheme	progressive	progressive	progressive	progressive	progressive	progressive
Integration time	10 $\mu$ s- 10 s	10 $\mu$ s - 10 s	10 $\mu$ s - 10 s	10 $\mu$ s - 10 s	10 $\mu$ s - 10 s	tbd
Overlapped mode	yes	yes	yes	yes	yes	yes
Sensor manufact. & type	Sony ICX414	Sony ICX424	Sony ICX445	Sony ICX267	Sony ICX274	Sony ICX655
Sensor technology	HAD	HAD	ExViewHAD	HAD	SuperHAD	SuperHAD
Comments	Standard 1/2"	Standard 1/3"	Compl. Color with extreme sensitivity avail.	Standard	Very sensitive	Very sensitive

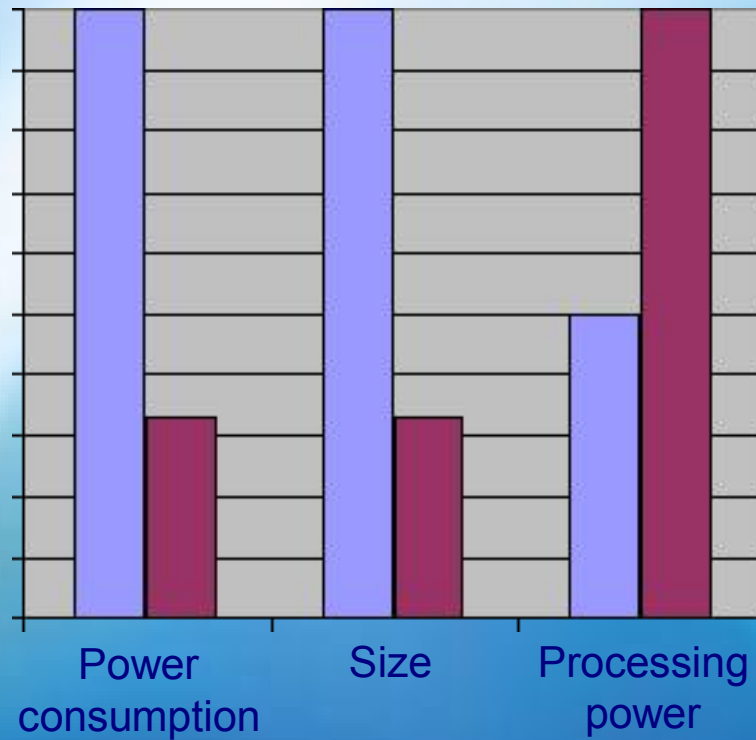
# mvBlueLYNX-X

# *comparison*

mvBlueLYNX-6xx



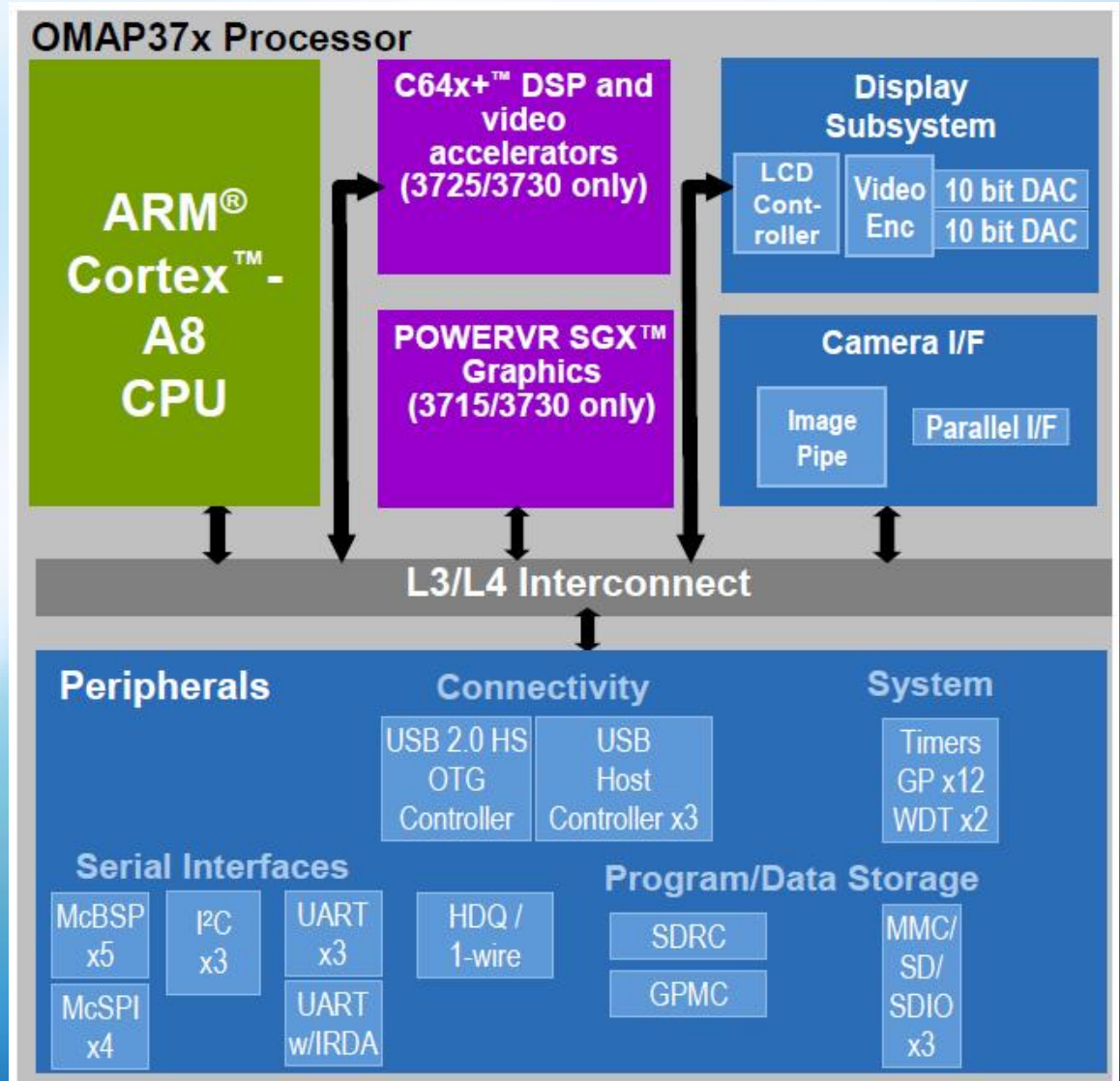
mvBlueLYNX-X

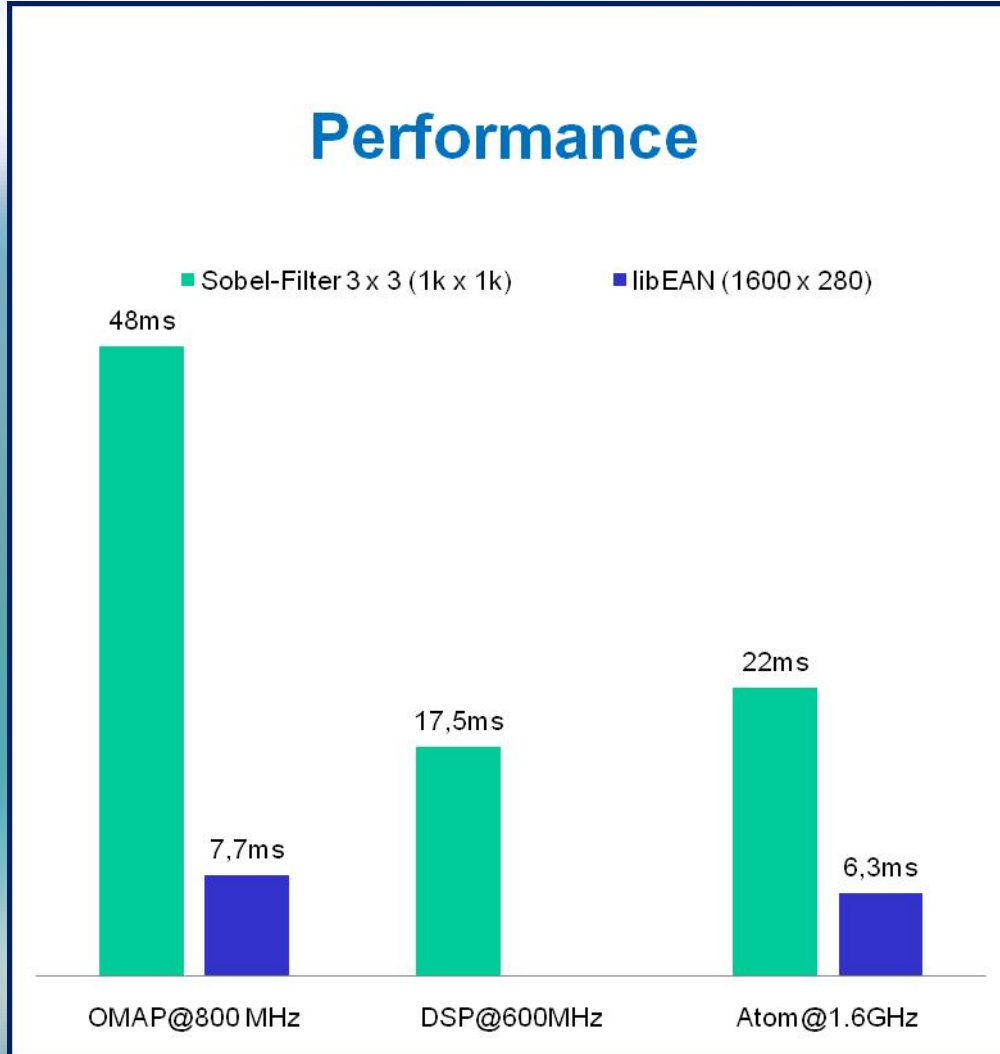


# mvBlueLYNX-X

## CPU interfaces

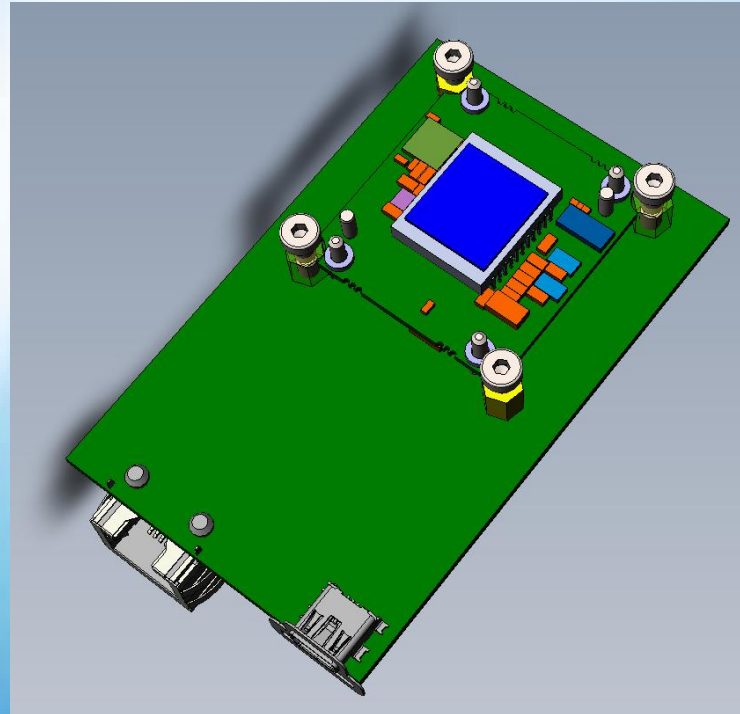
- ▶ Camera interface
- ▶ Image pipeline
- ▶ USB 2.0 HS Host+OTG
- ▶ Display subsystem
- ▶ 2 x microSD card interface
- ▶ 100 Mbit Ethernet
- ▶ Keypad
- ▶ Watchdog
- ▶ Serial interface
- ▶ ...





- ▶ Performance/MHz is similar to Atom
- ▶ Energy consumption of OMAP is ~1/3 of Atom
- ▶ (Parallel) DSP usage for algorithms or preprocessing speeds OMAP up
- ▶ OMAP architecture offers various ways to optimize code performance by
  - ▶ NEON/SIMD
  - ▶ DSP
  - ▶ Video scaling, Color preprocessing
  - ▶ Graphics

- ▶ Single board version possible for OEMs
- ▶ Size 51 x 82 mm
- ▶ Two sensor orientations
  - ▶ Landscape
  - ▶ Portrait





Do you have any questions?

# mv BlueLYNX-X

11/2010