

mvBlueLYNX-M7 - single board image processing system

The new mvBlueLYNX-M7 is a practical and complete single-board image processing system with numerous innovations in comparison with the previous model. Based on a complete new hardware design, now the mvBlueLYNX-M7 is a stereo system, which means that two sensors can be used for e.g. three-dimensional acquisition. Additionally, with the PowerPC processor the system is suitable for all image processing applications even those with high performance demands.

Features

CPU	Type	MPC8343		
	Clock	MHz	400	
Operating system			Linux Kernel v2.6.19+	
Memory	DDR2-RAM	MB	256	
	FLASH NOR	MB	8	
	FLASH NAND	MB	32	
RTC			yes	
	Battery	yes		
FPGA custom usage			optional	
Temperature sensor			yes	
Status LEDs			Power / LAN / FPGA	
	RS232 (HW-Handshake)	2		
Interfaces	LAN 10/100/1000	ports	2	
	Dig I/O 5V CMOS	8 / 8		
	Dig I/O connector	Header		
	USB (USB-A alt. Header)	2.0 OTG		
	miniPCI Type-III	slots	1	
	SD-Card Standard size	slots	1	
	I2C	2		
	Sensors	ports	2	
	Power	Supply VDC	12-48	
		Consumption	6-8 W	
Board size	mm	120 x 120		

Software

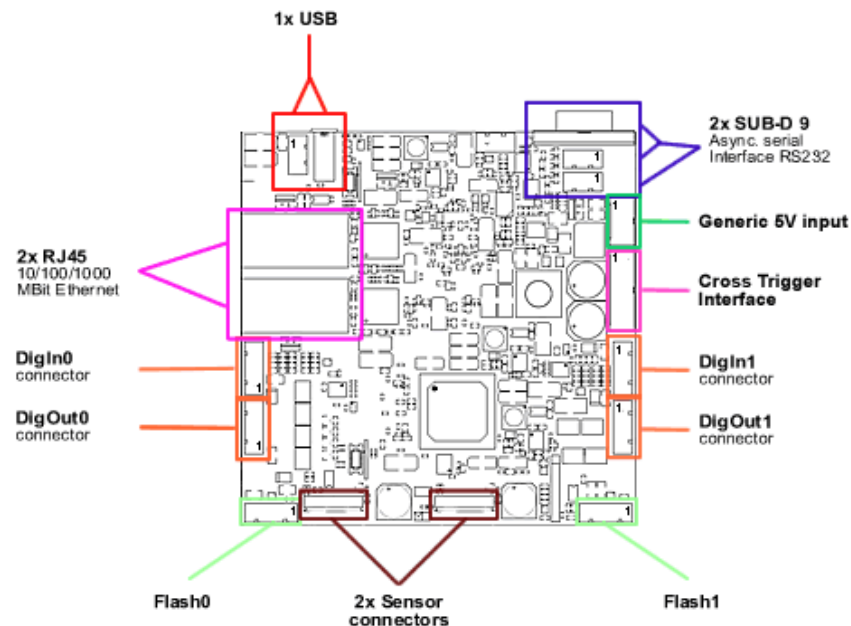
- Windows® and Linux® drivers (mvIMPACT Acquire)
- GigE Vision
- comes with free mvIMPACT Base library

Area scan sensors

mvBlueLYNX					
Model name	-M720a	-M721	-M724	-M702a	-M702b
Model variant	G – gray / C – color	G – gray / C – color	G – gray / C – color	G – gray	G – gray / C – color / I – near infrared
Sensor supplier	Sony	Sony	Sony	Micron	Cypress
Sensor name	ICX424AL/AQ	ICX204AL/AQ	ICX274AL/AQ	MT9M001	IBIS5-B-1300
Sensor type	CCD	CCD	CCD	CMOS	CMOS
Indication of lens category to be used	1/3"	1/3"	1/1.8"	1/2"	2/3"
Resolution of sensor's active area (width x height in [pixels])	640 x 480	1024 x 768	1600 x 1200	1280 x 1024	1280 x 1024
Pixel size (width x height in [µm])	7.4 x 7.4	4.65 x 4.65	4.4 x 4.4	5.2 x 5.2	6.7 x 6.7
Readout type (CCD only)	progressive	progressive	progressive	-	-
Transfer type (CCD only)	full frame	full frame	full frame	-	-
Shutter type (CMOS only)	-	-	-	rolling	rolling / global
Overlap capabilities	yes	yes	yes	yes	yes
Maximum frame rate [Hz]	100	39	16	30	27
Integration time	1 µs – 128 s	1 µs – 128 s	2 µs – 128 s	31 µs - 0.5 s	1 µs – 128 s

Connectors

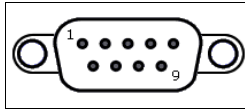
mvBlueLYNX-M7



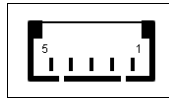
MATRIX VISION

Figure 1: Connectors mvBlueLYNX-M7 (top view)

SUB-D 9 asynchronous serial interface (RS232)



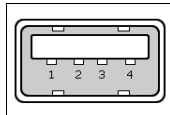
Pin	Signal	I/O	Comment
1	---		
2	Rx	in	RS232 - Receiver
3	Tx	out	RS232 - Transmitter
4	---		
5	GND		Ground
6	GND		Ground
7	RTS	out	Ready-To-Send
8	CTS	in	Clear-To-Send
9	---		



Pin	Signal	I/O	Comment
1	Rx	in	RS232 - Receiver
2	RTS	out	Ready-To-Send
3	Tx	out	RS232 - Transmitter
4	CTS	in	Clear-To-Send
5	GND		Ground

This connector is available as SUB-D 9 male connector and pin header. The second RS232 is only available as pin header. The pin 1 of both headers is marked in Figure 1.

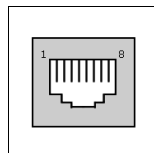
USB (USB-A / pin header)



Pin	Signal
1	Power (+ 5 V)
2	D-
3	D+
4	GND
5 (header)	OTG ID-Line
Shell	shield

This connector is also available as pin header. Pin 1 is marked in Figure 1.

RJ45 10/100/1000 MBit Ethernet



Pin	Signal	I/O	Comment
1	TX1+	out	primary Tx pair
2	TX1-	out	
3	RX1+	in	secondary Tx+
4	TX2+	out	secondary Tx pair
5	TX2-	out	
6	RX1-	in	secondary Tx-
7	RX2+	in	secondary Rx pair
8	RX2-	in	

2x Digital Inputs



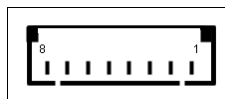
Pin	Signal
1	Main Power (12-48VDC)
2	Main Power (12-48VDC)
3	GND
4	GND
5	In0
6	In1
7	In2
8	In3

2x Digital Outputs



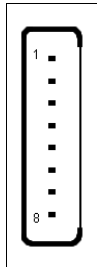
Pin	Signal
1	Main Power (12-48VDC)
2	Main Power (12-48VDC)
3	GND
4	GND
5	Out0
6	Out1
7	Out2
8	Out3

2x Flash Interface



Pin	Signal
1	Flash Trigger (5V CMOS)
2	3.3V/5V I2C Clock
3	33V/5V I2C Data
4	Generic Out (5V CMOS)
5	Generic In (5V CMOS)
6	VCC 5V
7	Main Power (12-48VDC)
8	GND

Cross Trigger Interface (mvBlueLYNX-M7 daisy chaining)



Pin	Signal
1	Main Power (12-48VDC)
2	Main Power (12-48VDC)
3	Main Power Return
4	Main Power Return
5	Rx-
6	Rx+
7	Tx+
8	Tx-

Generic 5V Inputs with pull-ups (Quadrature Encoder Input)



Pin	Signal
1	VCC 5V
2	GND
3	AB0
4	AB1
5	GND