

Low-cost multistandard PCI and PCI Express® frame grabber - mvDELTA/mvDELTAe

Discontinued



- Low-cost multistandard frame grabber
- Video inputs: 4x CVBS/gray or (only Cinch version) 3x CVBS and 1x Y/C
- Fast channel switching
- PCI and PCI Express®

The mvDELTA frame grabber for the PCI-bus and PCI Express®-bus is the most compact and cost-effective MATRIX VISION product solution to date. Nonetheless, the quality and functionality of this board make it an ideal solution for a variety of visualization and image processing tasks. The cross-product software port facilitates quick transition to higher-performance frame grabbers from MATRIX VISION for applications that are more demanding on the board's specification.

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- Features
- Comparison mvDELTA / mvSIGMA

- Comparison PCI-E frame grabbers
- Downloads

- 4 video inputs
- Fast input switching
- Grabs color and gray scale signals
- Variable scaling with horizontal and vertical interpolation
- Even/odd frames can be handled independent
- Text and graphics overlay over live video with DirectDraw
- Input connectors: 4 x Cinch + 1 x Y/C, alternativ 4 x BNC
- Supports all important 50/60 Hz video standards
- Programmable brightness, contrast, saturation and hue
- Pixel formats: RGB 8..32 bit, Y/C, 8 bit gray scale
- PCI DMA transfer to main or VGA memory
- Permissible ambient temperature 0..50 °C

Additional mvDELTAe features

- PCI Express® x1

Signal input

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Inputs	CVBS	4	4	4	16
	YC	1 + 3x CVBS	-	4	4
	Gray/VBS	4	4	4	16
	RGB	-	-	-	-
	Digital	-	-	-	-
Parallel acquisition inputs	Number	1	1	1	4
	RGB/ Multispectral	-	-	-	-
	Synchronous / asynchronous	-/-	-/-	-/-	yes / yes
A/D converter		8 bit	8 bit	8 bit	8 bit
Standards	CCIR-601, RS-170	yes	yes	yes	yes
	Variable/ Slow Scan	-	-	-	-
	PAL, NTSC, SECAM	yes	yes	yes	yes
	Low pass filter (analog) switchable	-	-	-	-
Restart / Reset		-	-	-	-
Sensor geometry	Area	yes	yes	yes	yes
	Line	-	-	-	-
Termination	Ohm / switchable	75 / no	75 / no	75 / no	75 / no optional: yes
Coupling / Level Offset		AC	AC	AC	AC
Analog Gain	Manual / AGC	yes / yes	yes / yes	yes / yes	yes / yes
Plug connector		4 x Cinch + 1 x Mini-DIN4	4 x BNC	D-Sub 26 + 1 x Cinch + 1 x Mini-DIN4	2x D-Sub 26

Resolution

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Digitalization	Pixel H x V	768 x 576 (50 Hz)	768 x 576 (50 Hz)	768 x 576 (50 Hz)	768 x 576 (50 Hz)
		640 x 480 (60 Hz)	640 x 480 (60 Hz)	640 x 480 (60 Hz)	640 x 480 (60 Hz)
Memory	Pixel H x V	0..768 x 0..576 (50 Hz)	0..768 x 0..576 (50 Hz)	0..768 x 0..576 (50 Hz)	0..768 x 0..576 (50 Hz)
		0..640 x 0..480 (60 Hz)	0..640 x 0..480 (60 Hz)	0..640 x 0..480 (60 Hz)	0..640 x 0..480 (60 Hz)

Pixel clock

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Frequency	with 50 Hz	17.7 MHz	17.7 MHz	17.7 MHz	17.7 MHz
	with 60 Hz	14.3 MHz	14.3 MHz	14.3 MHz	14.3 MHz

Digital ports

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Inputs	Ext. pixel clock	-	-	-	-
	HD, VD	-	-	1	-
	Trigger	-	-	-	4
	Threshold	-	-	-	= 1 DigIn trigger capable ja

Outputs	General inputs	-	-	4	16
	TTL outputs	-	-	4	-
	Relay	-	-	-	-
	Highside drivers	-	-	-	8 (12 V) or ext. VDD > 12 V

Image processing processor

Family	mvDELTA		mvSIGMA	
Product	(Cinch)	BNC	SLC	SQ
Name	-	-	-	-

Bus

Family	mvDELTA		mvSIGMA	
Product	(Cinch)	BNC	SLC	SQ
System	PCI 32 bit / 33 MHz rev. 2.1	PCI 32 bit / 33 MHz rev. 2.1	PCI 32 bit / 33 MHz rev. 2.1	PCI 32 bit / 33 MHz rev. 2.1
Signal level	5V	5V	5V	3.3V or 5V
Transfer	DMA, 0-wait bursts, max. 132 MB/s	DMA, 0-wait bursts, max. 132 MB/s	DMA, 0-wait bursts, max. 132 MB/s	DMA, 0-wait bursts, max. 132 MB/s
CPCI version	-	-	-	-

Output processing

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Scaling	only down-scaling max. 1:16	yes	yes	yes	yes
Filtering	2,3,4 or 5 tap vertical filter	yes	yes	yes	yes
Pixel formats	RGB (8 / 15 / 16 / 24 / 32 bit)	yes	yes	yes	yes
	YC (16 bit planary / packed)	yes	yes	yes	yes
	GRAY (8 bit)	yes	yes	yes	yes

Video output

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Signal	RGB	-	-	-	-
	CVBS / YUV	-	-	yes (select. input - signal)	-

Sync output

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Signal		-	-	-	-

Camera power supply

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Via PCI	12V	-	-	700mA	700mA
Via additional power plug	12V	-	-	1.5A	1.5A

Power requirements

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
PCI	5V	210mA	210mA	300mA	1.5A
	12V	-	-	50mA	200mA

Dimensions

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Board	Length (mm)	123	123	125	150
	Width (mm)	95	95	76	106

Ambient conditions

Family	mvDELTA		mvSIGMA	
Product	(Cinch)	BNC	SLC	SQ
Permissible ambient temperature	0 .. 50 °C	0 .. 50 °C	0 .. 50 °C	0 .. 50 °C
Permissible storage temperature	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C
Relative humidity	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing

Software

Family		mvDELTA		mvSIGMA	
Product		(Cinch)	BNC	SLC	SQ
Drivers	Windows®	XP / Vista / 7 (32 bit / 64 bit)	XP / Vista / 7 (32 bit / 64 bit)	XP / Vista / 7 (32 bit / 64 bit)	XP / Vista / 7 (32 bit / 64 bit)
	Linux®	yes	yes	yes	yes
	Twain	yes	yes	yes	yes

All data refer to the current revision.

Signal input

Family		mvDELTAe		mvSIGMA	mvHYPERI ON		
Product		(Cinch)	BNC	SQe	CLb	CLm	CLf
Inputs	CVBS	4	4	16	-	-	-
	YC	1 + 3 x	-	4	-	-	-
		CVBS					
	Gray/VBS	4	4	16	-	-	-
	RGB	-	-	-	-	-	-
	Digital	-	-	-	1	2	2
Parallel acquisition inputs	Number	1	1	4	1	2	2
	RGB/ Multispectral	-	-	-	1	2	2
	Synchronous / asynchronous	-/-	-/-	yes/yes	-	yes/yes	-/-
A/D converter	(bit)	8	8	8	-	-	-
Standards	CCIR-601, RS-170	yes	yes	yes	-	-	-
	Variable/ Slow Scan	-	-	-	-	-	-
	PAL, NTSC, SECAM	yes	yes	yes	-	-	-
Low pass filter (analog) switchable		-	-	-	-	-	-
Restart / Reset		-	-	-	yes	yes	yes
Sensor geometry	Area	ja	yes	yes	yes	yes	yes
	Line	-	-	-	yes	yes	yes

Termination Ohm / switchable	75 / no	75 / no	75 / no	100 / no	100 / no	100 / no
Coupling / Level	AC	AC	AC	Digital differential / LVDS	Digital differential / LVDS	Digital differential / LVDS
Offset	-	-	-	-	-	-
Analog Gain Manual / AGC	yes/yes	yes/yes	yes/yes	-	-	-
Plug connector	4 x Cinch + 1 x Mini-DIN4	4 x BNC	2x D-Sub 26	1 x MiniCL (1x BASE) 1x Binder 8pin	2 x MiniCL (2x BASE or 1x MED.) 2x Binder 8pin	2 x MiniCL (1x BASE or 1x MED. or 2x Binder 8pin)

Resolution

Family		mvDELTAe	mvSIGMA	mvHYPERION			
Product		(Cinch)	BNC	SQe	CLb	CLm	CLf
Digitalization	Pixels H x V	768 x 576 (50 Hz)	768 x 576 (50 Hz)	768 x 576 (50 Hz)	-	-	-
		640 x 480 (60 Hz)	640 x 480 (60 Hz)	640 x 480 (60 Hz)			
Memory	Pixels H x V	0..768 x 0..576 (50 Hz)	0..768 x 0..576 (50 Hz)	0..768 x 0..576 (50 Hz)	64K x unlimited	64K x unlimited	64K x unlimited
		0..640 x 0..480 (60 Hz)	0..640 x 0..480 (60 Hz)	0..640 x 0..480 (60 Hz)			

Pixel clock

Family		mvDELTA		mvSIGMA	mvHYPERI ON		
Product		(Cinch)	BNC	SQe	CLb	CLm	CLf
Frequency	with 50 Hz	17.7 MHz	17.7 MHz	17.7 MHz	-	-	-
	with 60 Hz	14.3 MHz	14.3 MHz	14.3 MHz	-	-	-
	External	-	-	-	CL clock: 85 MHz	CL clock: 85 MHz	CL clock: 85 MHz

Digital ports

Family		mvDELTA		mvSIGMA	mvHYPERI ON		
Product		(Cinch)	BNC	SQe	CLb	CLm	CLf
Inputs	Ext. pixel clock	-	-	-	1	2	2
	HD, VD	-	-	-	1	2	2
	Trigger	-	-	4 = 1 DigIn trigger capable	1	2	2
	Threshold programmable	-	-	yes	no	no	no
	General inputs	-	-	16	2	4	4
Outputs	TTL outputs	-	-	-	-	-	-
	Relay	-	-	-	-	-	-
	Highside drivers	-	-	8 (12V) or ext. VDD > 12V	-	-	-
	General outputs	-	-	8	1	2	2

FPGA

Family	mvDELTA		mvSIGMA	mvHYPERI ON		
Product FPGA	(Cinch)	BNC	SQe	CLb	CLm	CLf
	-	-	-	yes	yes	yes

Bus

Family	mvDELTA		mvSIGMA	mvHYPERI ON		
Product System	(Cinch)	BNC	SQe	CLb	CLm	CLf
	PCI Express x1	PCI Express x1	PCI Express x1	PCI Express x1	PCI Express x4	PCI Express x4
Transfer	up to 200 MB/s	up to 200 MB/s	up to 200 MB/s	up to 200 MB/s	up to 620 MB/s	up to 620 MB/s

Output processing

Family	mvDELTA		mvSIGMA	mvHYPERI ON		
Product Scaling	(Cinch)	BNC	SQe	CLb	CLm	CLf
	only down- scaling max. 1:16	only down- scaling max. 1:16	only down- scaling max. 1:16	-	-	-
Filtering	2,3,4 or 5	2,3,4 or 5	2,3,4 or 5	-	-	-

Pixel formats	RGB	8 / 15/ 16 / 24 / 32 bit	8 / 15/ 16 / 24 / 32 bit	8 / 15/ 16 / 24 / 32 bit	24 / 30 / 32 bit	24 / 30 / 32 bit	24 / 30 / 32 bit
	YC	16 bit planar / packed	16 bit planar / packed	16 bit planar / packed	-	-	-
	Gray	8 bit	8 bit	8 bit	8 / 10 / 12 / 14 / 16 bit	8 / 10 / 12 / 14 / 16 bit	8 / 10 / 12 / 14 / 16 bit

Video output

Family		mvDELTA		mvSIGMA	mvHYPERION		
Product Signal		(Cinch)	BNC	SQe	CLb	CLm	CLf
	RGB	-	-	-	-	-	-
	CVBS, YC	-	-	-	-	-	-

Sync output

Family		mvDELTA		mvSIGMA	mvHYPERION		
Product Signal		(Cinch)	BNC	SQe	CLb	CLm	CLf
		-	-	-	-	-	-

Camera power supply

Family		mvDELTA		mvSIGMA	mvHYPERI		
Product		(Cinch)	BNC	SQe	CLb	CLm	CLf
Via PCI-E	12V	-	-	700mA	700mA	700mA	700mA
Via additional power plug	12V	-	-	1.5A	2A	2A	2A

Power requirements

Family		mvDELTA		mvSIGMA	mvHYPERI		
Product		(Cinch)	BNC	SQe	CLb	CLm	CLf
PCI-E	3.3V	0.15A	0.15A	0.15A	1A	1A	1A
	12V	0.2A	0.2A	0.6A	0.05A	0.05A	0.05A

Dimensions

Family		mvDELTA		mvSIGMA	mvHYPERI		
Product		(Cinch)	BNC	SQe	CLb	CLm	CLf
Board	Length (mm)	123	123	170	147	155	155
	Width (mm)	95	95	111	95	111.5	111.5

Ambient conditions

Family	mvDELTA		mvSIGMA	mvHYPERI ON		
Product	(Cinch)	BNC	SQe	CLb	CLm	CLf
Permissible ambient temperature	0 .. 50 °C	0 .. 50 °C	0 .. 50 °C	0 .. 45 °C	0 .. 45 °C	0 .. 45 °C
Permissible storage temperature	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C
Relative humidity	10-90%, non-condensing		10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing

Software

Family	mvDELTA		mvSIGMA	mvHYPERI ON		
Product Drivers	(Cinch)	BNC	SQe	CLb	CLm	CLf
Windows®	XP / Vista / 7 (32 bit / 64 bit (WOW64))	XP / Vista / 7 (32 bit / 64 bit (WOW64))	XP / Vista / 7 (32 bit / 64 bit (WOW64))	XP / Vista / 7 (32 bit / 64 bit)	XP / Vista / 7 (32 bit / 64 bit)	XP / Vista / 7 (32 bit / 64 bit)
Linux®	yes	yes	yes	yes	yes	yes
Twain	yes	yes	yes	yes	yes	yes

All data refer to the current revision.

Drivers and applications for Windows 7, 8.1 (mvIMPACT Acquire)

Since version 2.10.1 of mvIMPACT Acquire the "Merge Modules for mvIMPACT Acquire" are available as a separate download.

For this reason the installation packages are smaller now. The Merge Modules are needed for private setup routines, which shall include mvIMPACT Acquire drivers. More details are available in the [mvIMPACT Acquire manuals](#).

 [mvDELTA_mvSIGMA x86 2.43.0.msi](#) | 70,196.0 kB

mvDELTA / mvSIGMA 32 Bit Windows (7, 8.1, 10)

 [mvDELTA_mvSIGMA x86_64 2.43.0.msi](#) | 88,376.0 kB

mvDELTA / mvSIGMA 64 Bit Windows (7, 8.1, 10)

Ab Version 2.5.0 ist der Treiber nicht mehr WHQL zertifiziert / Since version 2.5.0, the driver is not WHQL certified anymore

 [mvIMPACT Acquire.history](#) | 916.2 kB

mvIMPACT Acquire History-Datei / mvIMPACT Acquire history file

Older driver versions

To be able to watch or download the drivers, you have to be [registered](#) or [logged in](#).

Drivers and applications for Linux 2.6 .. 3.x.x (mvIMPACT Acquire)

The frame grabber is supported by the Video4Linux driver. Here's a complete list:

<http://www.mjmwired.net/kernel/Documentation/video4linux/CARDLIST.bttv>

Via command line you can load the frame grabber:

```
sudo rmmod bt878 bttv  
sudo modprobe bttv card=7
```

Additional packages for LabVIEW, DirectShow, VisionPro and Halcon

Since version 1.10.69, the **DirectShow®** driver is part of the mvIMPACT Acquire installation package.


Since version 1.10.85, an interface to **VisionPro®** (Cognex) will be installed automatically when installing an MSI based mvIMPACT Acquire driver package.

mvIMPACT Acquire bindings for **HALCON** are available on MVTec's website:


<http://www.halcon.de/download/>

 [LabVIEW acquire-x86-1.6.8](#) | 9,028.0 kB

32 Bit mvIMPACT Acquire Binding für LabVIEW ab Version 6.1 / 32 Bit mvIMPACT Acquire binding for LabVIEW 6.1 or greater


 [LabVIEW acquire-x86 64-1.6.8](#) | 10,980.0 kB

64 Bit mvIMPACT Acquire Binding für LabVIEW ab Version 6.1 / 64 Bit mvIMPACT Acquire binding for LabVIEW 6.1 or greater

 [LabVIEW acquire.history](#) | 7.2 kB

32 Bit LabView Binding History-Datei / 32 Bit LabView binding history file

mvSDK for Windows (deprecated)

 [mvSL32 4.1.17.54](#) | 640.5 kB

mvDELTA / mvSIGMA 32 Bit Windows (XP, Vista, 7; mvSIGMA-SLC: > Hardware Revision 3.10)

Gerätetreiber (**nicht** mvIMPACT Acquire) / device driver (**not** mvIMPACT Acquire)

 [mvSL32 4.1.17.54.history](#) | 29.1 kB

32 Bit mvDELTA / mvSIGMA History-Datei / 32 Bit mvDELTA / mvSIGMA history file

mvSDK for Linux (deprecated)


 [README](#) | 5.3 kB

Readme-Datei mit Installationshinweisen des Gerätetreibers (nicht mvIMPACT Acquire) / Readme file with installation guide for device driver (not mvIMPACT Acquire)

 [dist_slx-4.1.17.54-1](#) | 3,392.7 kB

mvDELTA / mvSIGMA 32 Bit **Release** Linux

Gerätetreiber (**nicht** mvIMPACT Acquire) / device driver (**not** mvIMPACT Acquire)

 [dist_slx-4.1.17.54-1.history](#) | 28.7 kB

32 Bit mvDELTA / mvSIGMA History-Datei / 32 Bit mvDELTA / mvSIGMA history file

Manuals

 [mvDELTA / mvSIGMA technical manual \(chm\)](#) | 713.1 kB

mvDELTA / mvSIGMA Technisches Handbuch / Technical Manual

[Hinweis](#) / [Note](#)

 [mvDELTA / mvSIGMA technical manual \(pdf\)](#) | 687.6 kB

mvDELTA / mvSIGMA Technisches Handbuch / Technical Manual

[Hinweis](#) / [Note](#)

 [mvDELTA/mvSIGMA technical manual \(html\)](#)

mvDELTA/mvSIGMA Technisches Handbuch / Technical Manual

 [mvIMPACT Acquire API C++](#) | 10,399.0 kB

mvIMPACT Acquire API C++ Handbuch / Manual

 [mvIMPACT Acquire API C](#) | 4,040.0 kB

mvIMPACT Acquire API C Handbuch / Manual

 [mvIMPACT Acquire API .NET](#) | 7,668.7 kB

mvIMPACT Acquire API .NET Handbuch / Manual

Datasheets

 [mvDELTA e 2007-05 MR](#) | 247.6 kB

Datenblatt / Datasheet mvDELTA

 [mvSIGMA-SLC e 2006-09 MR](#) | 232.5 kB

Datenblatt / Datasheet mvSIGMA-SLC

 [mvSIGMA-SQ e 2007-05 MR](#) | 261.9 kB

Datenblatt / Datasheet mvSIGMA-SQ / mvSIGMA-SQe

Subject to change without notice, Date 11/2006

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