

mvTITAN-DIG

Discontinued



- Flexible digital frame grabber for area cameras
- Acquisition of 8..16 bit with up to 50/25 MHz
- Real-time color space conversion of Bayer mosaic color data to RGB without host CPU load
- Since **rev. 3.24**: transfer rates up to 80 MB/s (8 bit: max. 80 MHz, 10..16 bit: max. 40 MHz)

The mvTITAN-DIG is the appropriate member of the mvTITAN family for the acquisition of parallel digital signals. Due to its AIA standard connector you can use inexpensive SCSI-II cables to connect your image source.

/* */

- Hardware
- Software
- Comparison mvTITAN / mvGAMMA
- Application area

- Downloads

- Direct image transfer with color space conversion to display and overlay buffer
- Local pixel depth max. 16 bit
- Since **rev. 3.22**: Pixel clock output
- Permissible ambient temperature 0..45 °C
- Simultaneous display and capturing in independent pixel formats
- E2PROM usable for user data
- Since **rev. 3.22**: Extended line scan camera support

Image processor

- Image processor PNX1300 with 3.9 GOPS
- Real-time color space conversion of Bayer mosaic color data to RGB without host CPU load
- Local memory 8 MB, opt. 32 MB for code, programm and image data

- Drivers for Windows® and Linux®
- Free [mvIMPACT Base](#) image processing library

Signal input

Family	mvTITA							mvGAM		
Product	C16/C8	2C16	G1	RGB/G3			DIG	CL	G	CL
Inputs	CVBS	16 / 8	16	-	-	8	-	-	-	-
	YC	8 / 4	8	-	-	4	-	-	-	-
S	Gray/VB16 / 8	16	4	2x3	2x4	-	-	4	-	
	RGB	4 / 2	4	-	2	2	-	-	-	-
	Digital	-	-	-	-	1	2	-	1	
	Parallel Number	1	2	1	3	4	1	1	1	1
acquisition inputs	RGB/ multispectral	1	2	-	1	1	-	1	-	1
	Synchronous / asynchronous	-/-	yes/yes	-/-	pixel-synch./-	pixel-synch./-	-/-	-/-	-/-	-/-
Bits depth (max.)	9 bit	9 bit	10 bit	10 bit	10 bit	16 bit	48 bit	10 bit	24 bit	
Standards	CCIR-601, RS-170	yes	yes	yes	yes	yes	-	-	yes	-
	Variable / slow scan	-	-	yes	yes	yes	yes	yes	yes	yes
	PAL,	yes	yes	-	-	yes	-	-	-	-

Low pass filter (analog) switchable	1x	1x	1x	1x	1x	-	-	4x	-	
Restart / Reset	-	-	yes	yes	yes	yes	yes	yes	yes	
Sensor geometry	yes	yes	yes	yes	yes	yes	yes	yes	yes	
Line Resolution	-	-	yes	yes	yes	yes	yes	yes	yes	
Pixel H x V	720 x 576	720 x 576	4K x limited	4K x limited	4K x limited	limited by max. memory	64K x unlimited	2K x limited	64K x unlimited	
Termination	Ohm / switchable	75 / yes	75 / yes	75 / yes	75 / yes	75 / yes	100 / yes	100 / yes	75 / yes	100 / yes
Coupling / Level	AC	AC	AC / DC switch.	AC / DC switch.	AC / DC switch.	Digital differential / RS-644	Digital differential / LVDS	AC	Digital differential / LVDS	
Offset	-	-	+/- 1 V	+/- 1 V	+/- 1 V	-	-	+/- 0.3 V	-	
Analog Gain	Manual / AGC	-3dB .. +6dB / ja	-3dB .. +6dB / yes	-6dB .. +8dB / no	-6dB .. +8dB / no	-6dB .. +8dB / no	-	-	-2.5dB .. +12dB / no	
Plug connector	2x D-Sub 26	2x D-Sub 26	1x D-Sub 26 a. 1x D-Sub 15	2x D-Sub 26	2x D-Sub 26	2x D-Sub 26	1x MD68 (AIA) / SCSI II	2x MDR26 (2x BASE or Hirose MED.) 1x Binder 8p	1x D-Sub 26 (1x BASE) (EIAJ) 1x Binder 8p	2x MDR26 (1x BASE) Binder 8p

Pixel clock

Family	mvTITA						mvGAM			
	N						MA			
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL	
Frequency	Internal	13.5	13.5	0.01 .. 40	0.01 .. 40	0.01 .. 40	-	-	0.01 .. 28	-
	External	-	-	0.01 .. 40	0.01 .. 40	0.01 .. 40	max. 80	max. 66	10 .. 28	max. 66
Clock delay programmable	-	-	yes	yes	yes	-	-	-	-	
PLL	Analog	yes	yes	12 .. 40 MHz, 1ns Jitter	12 .. 40 MHz, 1ns Jitter	12 .. 40 MHz, 1ns Jitter	-	-	-	-
		Digital	-	-	0 .. 40 MHz, < 12ns Jitter	0 .. 40 MHz, < 12ns Jitter	0 .. 40 MHz, < 12ns Jitter	-	-	0 .. 28 MHz, < 12ns Jitter

Digital ports

Family	mvTITA						mvGAM			
	N						MA			
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL	
Inputs	Ext.	-	-	1	2	2	1	2	1	1
	pixel clock	-	-	1	2	2	1	2	1	1
	HD, VD	-	-	1	2	2	1	2	1	1
	Trigger	-	-	1	2	2	1	1	1	1
	Threshold programmable	-	-	yes	-	yes	-	-	-	-
	General inputs	16 / 8	16	1	2	2	3	1	1	1

Outputs General	-	-	3	6	6	3	2x4	3	4
outputs Relay	8 / 4	8	-	-	-	-	-	-	-

Image processing processor

Family	mvTITA N						mvGAM MA		
Product Name	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
	PNX	2x PNX	PNX	PNX	PNX	PNX	PNX	PNX	PNX
	1300	1311	1300	1300	1300	1300	1311	1311	1300
Clock	143	2x 166	143	143	143	143	166	166	143
	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz
Type	-	-	-	-	-	-	-	-	-
Performance (max.)	3.9	2x 4.5	3.9	3.9	3.9	3.9	4.5	4.5	3.9
	MIPS	715	2x 830	715	715	715	830	830	715
	MFLOPS	458	2x 531	458	458	458	531	531	458

Local Memory

Family	mvTITA N						mvGAM MA		
Product SDRAM	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
	16 MB	2x 8 MB	8 / 32 MB	16 MB	16 / 32 MB	8 / 32 MB	8 / 32 MB	8 MB	8 MB
Transfer rate	572	2x 533	572	572	572	572	533	533	572
	MB/s	MB/s	MB/s	MB/s	MB/s	MB/s	MB/s	MB/s	MB/s

Bus

Family	mvTITA N						mvGAM MA		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
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	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	PCI 32 bit / 33 MHz rev. 2.1
Signal level	3.3V or 5V	3.3V or 5V	3.3V or 5V	3.3V or 5V	3.3V or 5V	3.3V or 5V	3.3V or 5V	3.3V or 5V	3.3V or 5V
Transfer	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.	DMA, 0-wait bursts, 132 MB/s max.
CPCI version	on request	on request	on request	on request	on request	on request	on request	on request	on request

Input processing

Family	mvTITA N						mvGAM MA		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Input LUT	Hardware (bit)	-	-	10 → 8	10 → 8	-	10 → 8	10 → 8	10 → 8
	Software (bit)	-	10 → 8 / - 10 → 16	-	16 → 8 / - 16 → 16	-	10 → 16	-	-

Output processing

Family	mvTITA							mvGAM		
Product	N	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Scaling	separate HW unit, no load on VLIW / CPU	yes	yes	yes	yes	yes	yes	yes	yes	yes
Filtering	separate HW unit, no load on VLIW / CPU	yes	yes	yes	yes	yes	yes	yes	yes	yes
Interpolation	separate HW unit, no load on VLIW / CPU	yes	yes	yes	yes	yes	yes	yes	yes	yes
Color space conversion	separate HW unit, no load on VLIW / CPU	yes	yes	yes	yes	yes	yes	yes	yes	yes
Display	separate HW unit, no load on VLIW / CPU	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pixel formats	RGB (8 / 15 / 16 / 24 / 32 bit) YC	yes	yes	yes	yes	yes	yes	yes	yes	yes

Video output

Family	mvTITA N						mvGAM MA		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Signal	RGB	-	-	yes	-	-	-	-	-
	VBS	yes	-	yes	-	-	-	-	-
	CVBS, YC; PAL, NTSC	yes	-	-	-	-	-	-	-
Clock	13.5 MHz	-	max. 40 MHz	-	-	max. 40 MHz	-	-	-
Synchro nization	Internal	yes	-	yes	-	-	-	-	-
	Genlock on video input	-	-	-	-	-	-	-	-
Plug con nector	D-Sub 26 / int.	-	D-Sub 15 VGA	-	-	-	-	-	-

Sync output

Family	mvTITA N	mvGAM MA
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Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Signal HS, VS as TTL signal	-	-	yes	yes	yes	yes	-	yes	-
CSYNC, via VBS video output	-	-	via video output	-	-	-	-	-	-

Camera power supply

Family	mvTITA N						mvGAM MA		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Via PCI 12V	max. 0.75A, fused	max. 0.75A, fused	max. 0.75A, fused	max. 0.75A, fused	max. 0.75A, fused	-	max. 0.75A, on Binder 8p Bu.	max. 0.75A, fused	max. 0.75A, on Binder 8p Bu.
Via additional power plug	-	-	max. 2A, fused	max. 2A, fused	max. 2A, fused	-	max. 2A, on Binder 8p Bu.	max. 2A, fused	max. 2A, on Binder 8p Bu.

Power requirements

Family	mvTITA N						mvGAM MA		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
PCI 5V	max. 2.2A	max. 3A	max. 1.5A	max. 1.5A	max. 1.5A	max. 1.5A	max. 1.5A	max. 1.5A	max. 1.5A
+ 12V	max.	max.	max.	max.	max.	-	-	-	-

- 12V - - max. max. max. - - - -
 0.1A 0.1A 0.1A

Dimensions

Family		mvTITA						mvGAM		
		N						MA		
Product		C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Board	Length (mm)	128	186	171	171	171	128	147	123	147
	Height (mm)	106	106	106	106	106	106	95	75	95

Ambient conditions

Family		mvTITA						mvGAM		
		N						MA		
Product		C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Permissible ambient temperature		0 .. 45 °C	0 .. 50 °C	0 .. 45 °C	0 .. 40 °C	0 .. 40 °C	0 .. 45 °C	0 .. 50 °C	0 .. 50 °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	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C
Relative		10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%								

Software

Family	mvTITA						mvGAM		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Drivers	Window s®	XP / Vista / 7 (32 bit)	XP / Vista / 7 (32 bit)	XP / Vista / 7 (32 bit)	XP / Vista / 7 (32 bit)	XP / Vista / 7 (32 bit)	XP / Vista / 7 (32 bit)	XP / Vista / 7 (32 bit)	XP / Vista / 7 (32 bit)
	Linux®	yes	yes	yes	yes	yes	yes	yes	yes
	Twain	yes	yes	yes	yes	yes	yes	yes	yes
Develop ment tools for host	Compile rs (Visual Studio® , C++ B uilder®, Delphi ™, Visual Basic®) Libraries (MV driver, acquire, display, camera controls)	yes	yes	yes	ja	yes	yes	yes	yes
IP functi ons	Compresy sion (M- JPEG, run length, others planned)	yes	yes	yes	yes	yes	yes	yes	yes

Filters	div.	div.	div.	div.	div.	div.	div.	div.	div.
Pixel operations (accumulation, averaging, other arithmetic)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Image operations (scaling, rotating, mirroring, histogram)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Development tools for IP	Compile C, C++	C, C++	C, C++, C#, VB.NET	C, C++, C#, VB.NET	C, C++, C#, VB.NET	C, C++, C#, VB.NET	C, C++, C#, VB.NET	C, C++, C#, VB.NET	C, C++, C#, VB.NET
Libraries (components, base functions)	yes	yes	yes	yes	yes	yes	yes	yes	yes

All data refer to the current revision.

Area/Application	C16/2C16	G1	RGB/G3	DIG	CL
RGB/G4					
Industrial Image Processing					
▶ 2D/3D measurement	■□□	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
▶ OCR, Pattern recognition	■□□	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
▶ Control, Robotics	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
▶ Visualisation	■ ■ ■	■ □ □	■ □ □	■ □ □	■ □ □
▶ Line camera applications	□ □ □	■ □ □	■ □ □	■ ■ ■	■ ■ ■
Security					
▶ Object surveillance	■ ■ ■	■ □ □	■ □ □	■ □ □	■ □ □
▶ Traffic surveillance	■ ■ ■	■ □ □	■ □ □	■ □ □	■ □ □
▶ Compressed recording	■ ■ ■	■ □ □	■ □ □	■ □ □	■ □ □
▶ Video sensoric	■ ■ ■	■ □ □	■ □ □	■ □ □	■ □ □
Microscopy/Diagnostic					
▶ Light microscopy	■ □ □	■ ■ ■	■ ■ ■	■ ■ □	■ ■ □
▶ Laser scan systems	□ □ □	■ ■ ■	■ ■ ■	■ ■ □	■ ■ □
▶ Electron microscopy	□ □ □	■ ■ ■	■ ■ ■	■ ■ □	■ ■ □
Medicine					
▶ Visual dignostic	■ ■ ■	■ ■ □	■ ■ ■	■ ■ □	■ ■ □
▶ Laboratory systems	■ ■ □	■ ■ ■	■ ■ ■	■ ■ □	■ ■ □
Image Capture/Archiving					
▶ Document line scanner	□ □ □	■ □ □	■ □ □	■ ■ ■	■ ■ ■
▶ High res area cameras	□ □ □	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■

■ ■ ■ optimum usage due to special features
■ ■ ■ very suitable
■ ■ ■ suitable

mvTITAN Application areas


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](#).

 [mvTITAN_mvGAMMA_x86_2.36.0.msi](#) | 47,012.0 kB

mvTITAN / mvGAMMA 32 Bit Windows (7, 8.1, 10)

 [mvTITAN_mvGAMMA_x86_64_2.36.0.msi](#) | 74,976.0 kB

mvTITAN / mvGAMMA 64 Bit Windows (7, 8.1, 10)

 [mvIMPACT_Acquire.history](#) | 882.5 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](#).

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)

Release versions are extensively tested on several platforms, components and operating systems. You should prefer to use the Release versions. MATRIX VISION transfers Beta versions to Release


versions regularly.

Beta driver versions are functionally complete and tested on selected platforms. We publish them in order to allow expert users the use of the newest products with the latest features. Due to the multitude of possible combinations of components and operating systems, the user acts at his or her own risk.

 [beta mvTITAN 1.5.32.9](#) | 3,141.2 kB

mvTITAN / mvGAMMA 32 Bit **Beta** Windows (XP, Vista, 7)

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

 [mvTITAN 1.5.27.98](#) | 3,135.0 kB

mvTITAN / mvGAMMA 32 Bit **Release** Windows (XP, Vista, 7)

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

mvSDK for Linux (deprecated)


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multitude of possible combinations of components and operating systems, the user acts at his or her own risk.

 [README](#) | 5.3 kB

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

 [beta dist_titan-1.5.32.9-4](#) | 4,377.5 kB

mvTITAN / mvGAMMA 32 Bit **Beta** Linux

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

 [dist_titan-1.5.27.78-2](#) | 4,264.0 kB

mvTITAN / mvGAMMA 32 Bit **Release** Linux

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

Application Notes

 [ATMEL AVIIVA M2LV + mvTITAN-DIG](#) | 391.4 kB

ATMEL AVIIVA M2LV mit/with mvTITAN-DIG

 [MegaPlus 1.6 + mvTITAN-DIG](#) | 89.2 kB

MegaPlus 1.6 mit/with mvTITAN-DIG

 [VDS CCD1300 + mvTITAN-DIG](#) | 82.5 kB

VDS CCD1300 mit/with mvTITAN-DIG

 [VDS CCD4000 C + mvTITAN-DIG](#) | 110.8 kB

VDS CCD4000 C mit/with mvTITAN-DIG

Manuals

 [mvTITAN / mvGAMMA technical manual](#) | 2,274.0 kB

mvTITAN / mvGAMMA Technisches Handbuch / Technical Manual


[Hinweis / Note](#)

 [mvTITAN/mvGAMMA technical manual \(html\)](#)

mvTITAN/mvGAMMA Technisches Handbuch / Technical Manual

 [mvIMPACT Acquire API C++](#) | 9,883.7 kB

mvIMPACT Acquire API C++ Handbuch / Manual

 [mvIMPACT Acquire API C](#) | 3,729.8 kB

mvIMPACT Acquire API C Handbuch / Manual

 [mvIMPACT Acquire API.NET](#) | 6,875.1 kB

mvIMPACT Acquire API .NET Handbuch / Manual

Datasheets

 [mvGAMMA-CL e 2007-05](#) | 245.1 kB

Datenblatt / Datasheet mvGAMMA-CL

 [mvGAMMA-G e 2006-09](#) | 247.1 kB

Datenblatt / Datasheet mvGAMMA-G

 [mvTITAN-CL e 2006-09 MR](#) | 219.8 kB

Datenblatt / Datasheet mvTITAN-CL

 [mvTITAN-Series e 2007-05 MR](#) | 227.9 kB

Datenblatt / Datasheet mvTITAN-Series

Subject to change without notice, Date 06/2005