

## mvTITAN-DIG

### Abandonné



- Carte d'acquisition pour les caméras matricielles
- Capacités d'acquisition étendue : De 8 à 16 bits, à 50/25Mhz
- Conversion Bayer mosaïc temps réel embarquée sans sollicitation du CPU PC
- Depuis la révision **3.24**: Taux de transfert jusqu'à 80 MB/s (8 bit: max. 80 MHz, 10..16 bit: max. 40 MHz)

La mvTITAN-DIG est la carte spécifique de la famille mvTITAN pour les acquisitions numériques parallèles. Grâce à son connecteur standard AIA, il est possible d'utiliser des câbles SCSI-II économiques pour connecter la source image.

/\* \*/

- Matériel
- Logiciel

- Comp. de cartes d'acq. "mvTITAN"
- Dom. d'application
- Téléchargem.

- 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	mvTITAN							mvGAMMA		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL	
Inputs	CVBS	16 / 8	16	-	-	8	-	-	-	
	YC	8 / 4	8	-	-	4	-	-	-	
	Gray/VBS	16 / 8	16	4	2x3	2x4	-	-	4	
	RGB	4 / 2	4	-	2	2	-	-	-	
	Digital	-	-	-	-	-	1	2	-	
Parallel acquisition inputs	Number	1	2	1	3	4	1	1	1	
	RGB/multispectral	1	2	-	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, NTSC, SECAM	yes	yes	-	-	yes	-	-	-	-

Low pass filter (analog) switchable	1x	1x	1x	1x	1x	-	-	4x	-	
Restart / Reset	-	-	yes	yes	yes	yes	yes	yes	yes	
Sensor Area geometry	yes	yes	yes	yes	yes	yes	yes	yes	yes	
Line	-	-	yes	yes	yes	yes	yes	yes	yes	
Resolution	Pixel H x V	720 x 576	720 x 576	4K x unlimited	4K x unlimited	4K x unlimited	limited by max. memory	64K x unlimited	2K x unlimited	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 / LVDS	Digital differential / RS-644 / 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	1x D-Sub 26	2x MD68 (AIA) / SCSI II	1x D-Sub 26 a. 1x Hirose (EIAJ)	2x MDR26 (1x BASE)	
									1x Binder 8p	

Pixel clock

Family mvTITA

mvGAM

Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Frequenc y	Internal 13.5 MHz	13.5 MHz	0.01 .. 400 MHz	0.01 .. 400 MHz	0.01 .. 400 MHz	0.01 .. 40 MHz	-	0.01 .. 28- MHz	-
	External	-	0.01 .. 400 MHz	0.01 .. 400 MHz	0.01 .. 400 MHz	0.01 .. 40 MHz	max. 80 MHz	max. 66 MHz	10 .. 28 MHz
Clock delay pro grammab le	-	-	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	mvTITAN							mvGAMMA	
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Inputs	Ext.	-	-	1	2	2	1	2	1
	pixel clock	-	-	1	2	2	1	2	1
	HD, VD	-	-	1	2	2	1	2	1
	Trigger	-	-	1	2	2	1	1	1
	Threshol d progra mmable	-	-	yes	-	yes	-	-	-
	General inputs	16 / 8	16	1	2	2	3	1	1
Outputs	General outputs	-	-	3	6	6	3	2x4	3
	Relay	8 / 4	8	-	-	-	-	-	-

Image processing processor

Family	mvTITAN							mvGAMMA	
Product Name	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
	PNX 1300	2x PNX 1311	PNX 1300	PNX 1300	PNX 1300	PNX 1300	PNX 1311	PNX 1311	PNX 1300
Clock	143 MHz	2x 166 MHz	143 MHz	143 MHz	143 MHz	143 MHz	166 MHz	166 MHz	143 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	715	830	830	715
MFLOPS	458	2x 531	458	458	458	458	531	531	458

Local Memory

Family	mvTITAN							mvGAMMA	
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
SDRAM	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 MB/s	2x 533 MB/s	572 MB/s	572 MB/s	572 MB/s	572 MB/s	533 MB/s	533 MB/s	572 MB/s

Bus

Family	mvTITA N							mvGAM MA	
Product System	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.	PCI 32 bit / 33 MHz rev.
Signal level	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Transfer	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
CPCI version	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.
	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		mvTITAN						mvGAMMA		
Product		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 (4:2:2, any other formats in SW)	yes	yes	yes	yes	yes	yes	yes	yes	yes



## Video output

Family	mvTITA							mvGAM	
	N							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	-	-	-
Synchronization	Internal	yes	-	yes	-	-	-	-	-
	Genlock on video input	-	-	-	-	-	-	-	-
Plug connector	D-Sub 26 / int.	-	D-Sub 15 VGA	-	-	-	-	-	-

## Sync output

Family	mvTITA							mvGAM	
	N							MA	
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 video	-	-	via video	-	-	-	-	-

## 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, fused	-	max. 0.75A, on Binder 8p Bu.	max. 0.75A, fused on Binder 8p Bu.	max. 0.75A, on Binder 8p Bu.
Via addit 12V ional power plug	-	-	max. 2A, fused	max. 2A, fused	max. 2A, fused	-	max. 2A, on Binder 8p Bu.	max. 2A, fused on Binder 8p Bu.	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 (without camera)	max. 0.1A	max. 0.2A	max. 0.2A	max. 0.5A	max. 0.5A	-	-	-	-
- 12V	-	-	max. 0.1A	max. 0.1A	max. 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	°C	0 .. 45	0 .. 50	0 .. 45	0 .. 40	0 .. 40	0 .. 45	0 .. 50	0 .. 50	0 .. 45
Permissible storage temperature	°C	-20 .. 70	-20 .. 70	-20 .. 70	-20 .. 70	-20 .. 70	-20 .. 70	-20 .. 70	-20 .. 70	-20 .. 70
Relative humidity		10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing	10-90%, non-condensing

Software

Family	mvTITAN							mvGAMMA	
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Drivers	Windows 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)	XP / Vista / 7 (32 bit)
	Linux®	yes	yes	yes	yes	yes	yes	yes	yes
	Twain	yes	yes	yes	yes	yes	yes	yes	yes
Development tools for host	Compilers (Visual Studio®, C++ Builder®, Delphi™, Visual Basic®)	yes	yes	yes	ja	yes	yes	yes	yes
	Libraries (MV driver, acquire, display, camera controls)	yes	yes	yes	yes	yes	yes	yes	yes
IP functions	Compression (M-JPEG, run length, others planned)	yes	yes	yes	yes	yes	yes	yes	yes
	Filters	div.	div.	div.	div.	div.	div.	div.	div.
	Pixel operations (accumulation, averaging, other arith)	yes	yes	yes	yes	yes	yes	yes	yes

hmetical)									
Image op yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
erations									
(scaling,									
rotating,									
mirroring									
, histogra									
m)									
Develop	Compiler	C, C++	C, C++	C, C++	C, C++	C, C++	C, C++	C, C++	C, C++
ment	s			C#,	C#,	C#,	C#,	C#,	C#,
tools for				VB.NET	VB.NET	VB.NET	VB.NET	VB.NET	VB.NET
IP									
Libraries yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
(compon									
ents,									
base func									
tions)									

All data refer to the current revision.

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

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

mvTITAN Application areas

Pilotes et applications pour Windows 7, 8.1 (mvIMPACT Acquire)

Depuis la version 2.10.1 de mvIMPACT Acquire, les "Merge Modules for mvIMPACT Acquire" sont disponibles en téléchargement séparé. Pour cette raison, les pilotes sont plus petits. Les "Merge Modules" ont besoin pour créer des séquences de configuration privés avec les pilotes "mvIMPACT Acquire". Plus de détails sont disponibles dans le [manuel mvIMPACT Acquire](#).

 [mvTITAN\\_mvGAMMA\\_x86\\_2.45.0.msi](#) | 80,076.0 kB

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

 [mvTITAN\\_mvGAMMA\\_x86\\_64\\_2.45.0.msi](#) | 99,724.0 kB

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

 [mvIMPACT\\_Acquire.history](#) | 924.2 kB

mvIMPACT Acquire History-Datei / mvIMPACT Acquire history file

## Versions antérieures des pilotes


Pour visualiser ou télécharger les pilotes, vous devez être [enregistré](#) ou [connecté](#).

Logiciels additionnels pour NeuroCheck, LabVIEW, DirectShow, VisionPro et 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 pour Windows (désapprouver)

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 pour Linux (désapprouver)

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 [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)

Notes d'application

 [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

Documentations

 [mvTITAN / mvGAMMA technical manual](#) | 847.6 kB

mvTITAN / mvGAMMA Technisches Handbuch / Technical Manual

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

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

mvTITAN/mvGAMMA Technisches Handbuch / Technical Manual

 [mvIMPACT Acquire API C++](#) | 10,459.3 kB

mvIMPACT Acquire API C++ Handbuch / Manual

 [mvIMPACT Acquire API C](#) | 4,076.7 kB

mvIMPACT Acquire API C Handbuch / Manual

 [mvIMPACT Acquire API .NET](#) | 7,723.0 kB

mvIMPACT Acquire API .NET Handbuch / Manual

Brochures commerciales

 [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

Modifications possibles sans préavis, date 06/2005