

mvTITAN-xCx

Discontinued



- CVBS/YC/RGB color grabber
- Suggested use: surveillance systems
- 16 video inputs
- Fast input switching without image loss
- Compression: JPEG
- Local video sensing possible
- 8 relay outputs, 16 alarm inputs
- TV output with its own image memory/overlay (on request)

The mvTITAN-xCx is a CVBS/YC/RGB color grabber with up to 16 inputs for PCI. The integrated image processor allows real-time color space conversion of Bayer mosaic color data to RGB without host CPU load.

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- Summary
- Hardware

- Software
- Comparison mvTITAN / mvGAMMA
- Application areas
- Downloads

Product	mvTITAN-C8	mvTITAN-C16	mvTITAN-2C16
PCI	PCI 32 bit / 33 MHz rev. 2.1	PCI 32 bit / 33 MHz rev. 2.1	PCI 32 bit / 33 MHz rev. 2.1
Image processor	PNX1300	PNX1300	2x PNX1311
GOPS	3.9	4.5	2x 4.5
Speicher	16 MB	16 MB	2x 8 MB
Transfer rate	572 MB/s	572 MB/s	2x 533 MB/s
Fields/s i switching mode	30 .. 50	30 .. 50	60 .. 100
Video inputs	8	16	16
Simultaneous real-time compression (channels)	1	1	2
Permissible ambient temperature	0 .. 45 °C	0 .. 45 °C	0 .. 50 °C
Permissible storage temperature	-20 .. 70 °C	-20 .. 70 °C	-20 .. 70 °C

- Adapted for M-JPEG applications due to JPEG compression
- Local pixel depth max. 9 bit
- Direct image transfer with color space conversion to display and overlay buffer
- Simultaneous display and capturing in independent pixel formats

- E2PROM usable for user data
- Image memory for code, programm and image data
- Real-time color space conversion of Bayer mosaic color data to RGB without host CPU load
- Drivers for Windows® and Linux®
- Free [mvIMPACT Base](#) image processing library

Signal input

Family	mvTITA						mvGAM		
	N						MA		
Product	C16/C8	2C16	G1	RGB/G3RGB/G4DIG			CL	G	CL
Inputs	CVBS	16 / 8	16	-	-	8	-	-	-
	YC	8 / 4	8	-	-	4	-	-	-
	Gray/VB16 / 8	16	4	2x3	2x4	-	-	4	-
	S								
	RGB	4 / 2	4	-	2	2	-	-	-
	Digital	-	-	-	-	-	1	2	1

Parallel acquisition inputs	Number 1	2	1	3	4	1	1	1	1	
	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, 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 geometry	Area	yes	yes	yes	yes	yes	yes	yes	yes	
	Line	-	-	yes	yes	yes	yes	yes	yes	
Resolution	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	AC / DC	AC / DC	AC / DC	Digital differential	Digital differential	AC	Digital differential

LVDS

Offset	-	-	+/- 1 V	+/- 1 V	+/- 1 V	-	-	+/- 0.3 V	-
Analog Gain	Manual /-3dB ..	-3dB ..	-6dB ..	-6dB ..	-6dB ..	-	-	-2.5dB ..	-
	AGC	+6dB / ja	+6dB / yes	+8dB / no	+8dB / no	+8dB / no	-	+12dB / no	-
Plug connector	2x D-Sub 26	2x D-Sub 26	1x D-Sub 26	2x D-Sub 26	2x D-Sub 26	1x MD68 (AIA) / SCSI II	2x MDR26 (2x BASE or MED.) Binder	1x D-Sub 26 a. 1x Hirose (EIAJ)	2x MDR26 (1x BASE) Binder 8p

Pixel clock

Family		mvTITAN					mvGAMMA			
Product		C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Frequen- cy	Internal	13.5 MHz	13.5 MHz	0.01 .. 40 MHz	0.01 .. 40 MHz	0.01 .. 40 MHz	-	-	0.01 .. 28 MHz	-
	External	-	-	0.01 .. 40 MHz	0.01 .. 40 MHz	0.01 .. 40 MHz	max. 80 MHz	max. 66 MHz	10 .. 28 MHz	max. 66 MHz
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	mvTITAN							mvGAMMA		
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL	
Inputs	Ext.	-	-	1	2	2	1	2	1	1
	pixel clock									
	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 outputs	-	-	3	6	6	3	2x4	3	4
	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	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	3.9	2x 4.5	3.9	3.9	3.9	3.9	4.5	4.5	3.9

(max.)

MIPS	715	2x 830	715	715	715	715	830	830	715
MFLOP	458	2x 531	458	458	458	458	531	531	458

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Local Memory

Family	mvTITA						mvGAM		
	N						MA		
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						mvGAM		
	N						MA		
Product System	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
	PCI 32	PCI 32	PCI 32	PCI 32	PCI 32	PCI 32	PCI 32	PCI 32	PCI 32
	bit / 33	bit / 33	bit / 33	bit / 33	bit / 33	bit / 33	bit / 33	bit / 33	bit / 33
	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz
	rev. 2.1	rev. 2.1	rev. 2.1	rev. 2.1	rev. 2.1	rev. 2.1	rev. 2.1	rev. 2.1	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	DMA, 0-wait bursts, 132 MB/s	DMA, 0-wait bursts, 132 MB/s	DMA, 0-wait bursts, 132 MB/s	DMA, 0-wait bursts, 132 MB/s	DMA, 0-wait bursts, 132 MB/s	DMA, 0-wait bursts, 132 MB/s	DMA, 0-wait bursts, 132 MB/s	DMA, 0-wait bursts, 132 MB/s

CPCI version	on request	on request	on request	on request	on request	on request	on request	on request	on request	max. on request
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Input processing

Family	mvTITAN						mvGAMMA		
Product	C16/C8	2C16	G1	RGB/G3RGB/G4DIG		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/G3RGB/G4DIG		CL	G	CL	
Scaling	separate HW unit, no load on VLIW / CPU	yes	yes	yes	yes	yes	yes	yes	
Filtering	separate HW unit, no load on VLIW / CPU	yes	yes	yes	yes	yes	yes	yes	

Interpolation	separate HW unit, no load on VLIW / CPU	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
Display	separate HW unit, no load on VLIW / CPU	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

Video output

Family	mvTITA					mvGAM				
Product	C16/C8	2C16	G1	RGB/G3		RGB/G4	DIG	CL	MA	CL
Signal	RGB	-	-	yes	-	-	-	-	-	-
	VBS	yes	-	yes	-	-	-	-	-	-
	CVBS,	yes	-	-	-	-	-	-	-	-

Clock	13.5 MHz	-	max. 40 MHz	-	-	max. 40 MHz	-	-
Synchro nization	Internal	yes	yes	-	-	-	-	-
	Genlock on video input	-	-	-	-	-	-	-
Plug connector	D-Sub 26 / int.	-	D-Sub 15 VGA	-	-	-	-	-

Sync output

Family	mvTITA					mvGAM			
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					mvGAM			
Product	C16/C8	2C16	G1	RGB/G3	RGB/G4	DIG	CL	G	CL
Via PCI 12V	max.	max.	max.	max.	max.	-	max.	max.	max.

									0.75A, on Binder 8p Bu.
Via addi 12V tional 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							mvGAM		
	N							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	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 humidity	10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, 10-90%, non-condensing								

Software

Family	mvTITA						mvGAM		
	N						MA		
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)
	Linux®	yes	yes	yes	yes	yes	yes	yes	yes
	Twain	yes	yes	yes	yes	yes	yes	yes	yes
Development	Compilers	yes	yes	yes	ja	yes	yes	yes	yes

	(Visual Studio®, C++ Builder®, Delphi™, Visual Basic®)								
	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 arithmetic)	yes	yes	yes	yes	yes	yes	yes	yes
	Image operations (scaling, rotating, mirroring, histogram)	yes	yes	yes	yes	yes	yes	yes	yes
Development tools for IP	Compilers	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

Librariesyes yes yes yes yes yes yes yes yes
 (compon
 ents,
 base fun
 ctions)

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

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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 [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)

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 03/2007