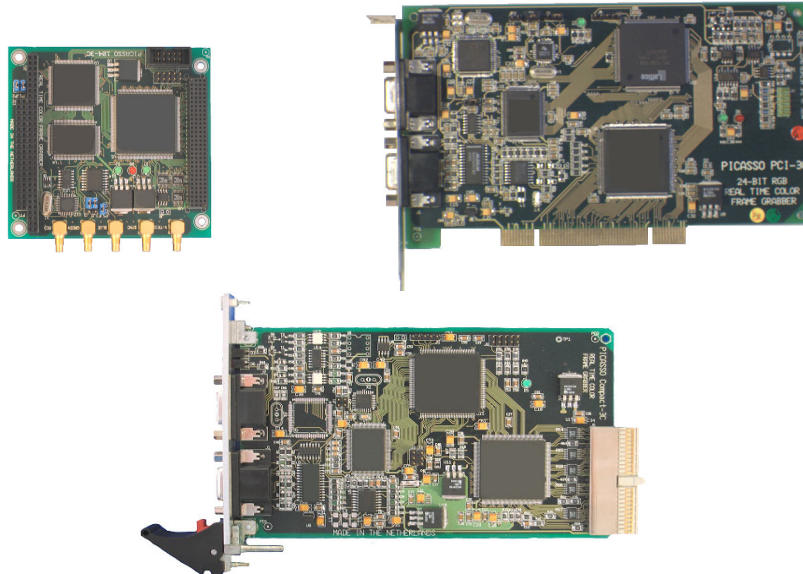


## Datasheet picasso™ 3C/3Cpro models



### Key features

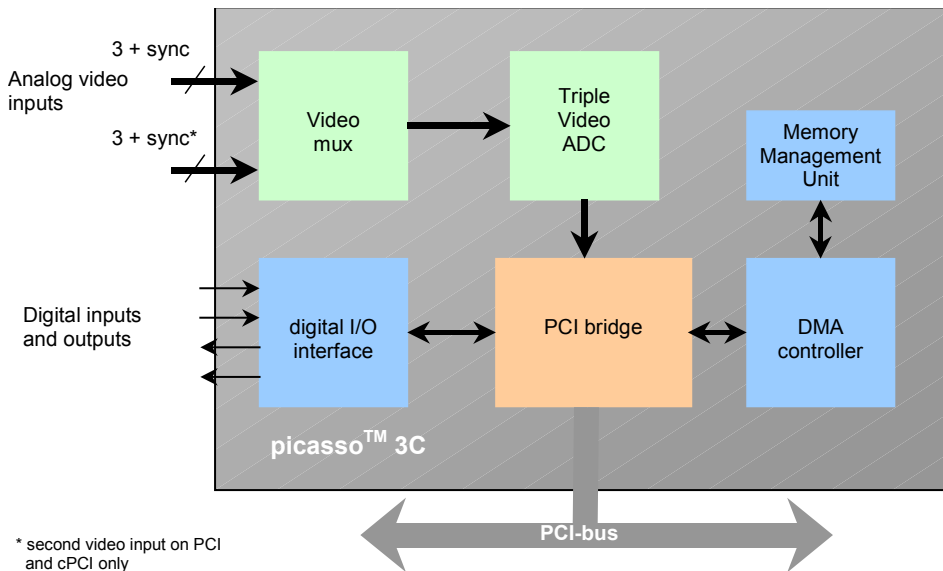
- high performance RGB framegrabber with excellent linearity and very low noise levels
- 3C models:
  - two multiplexed channels with each 3 x 8 bits RGB video inputs and one external sync input
- 3Cpro models:
  - same as 3C models, but one channel can be set as 4 multiplexed composite video inputs
- available in 3 form factors:
  - standard PCI
  - Compact PCI
  - PC/104 plus (only as 3C model)
- realtime video
- interlaced video (PAL/NTSC/SECAM)
- progressive scan video supported
- external sync or sync on a video input
- 50/60 fields/sec
- asynchrone frame reset support
- 2 digital inputs (optical isolated) for e.g.
  - start capture
  - interrupt generation
- 2 digital outputs (optical isolated) for e.g.
  - trigger stroboscoop
  - process control
- software support for several (real time) operating systems

## General

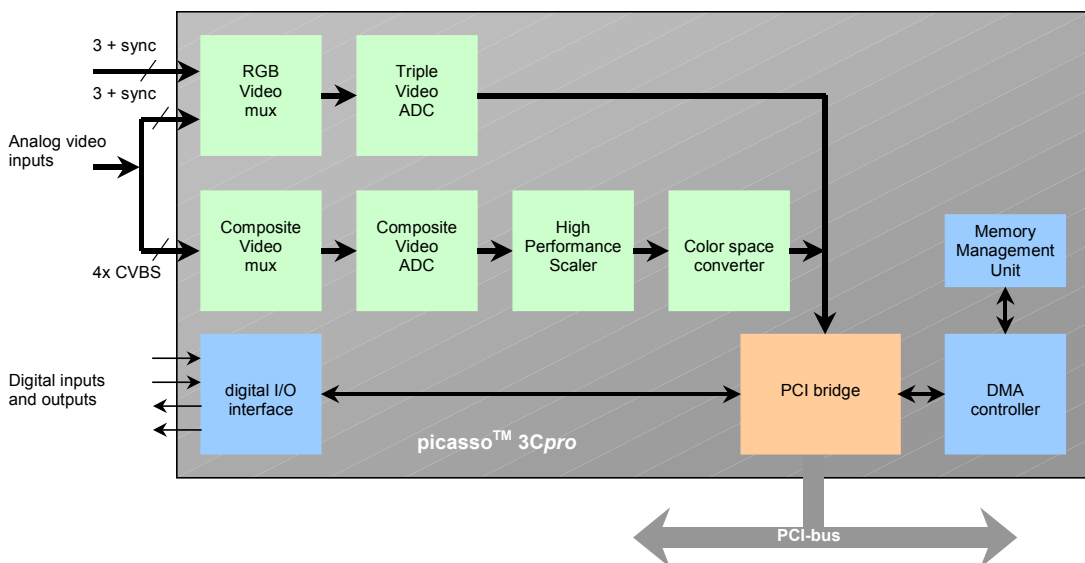
The picasso™ 3C/3Cpro is a high performance 'plug and play' PC-card for the PCI-bus. It enables each standard PCI system to capture and store single images for image processing or full frame display of real-time video in a window. A nice feature is the asynchrone frame reset option of this framegrabber. Contact ARVOO support for more information.

## Architecture

### 3C models



### 3Cpro models





## Detailed Information

### Input format

The picasso™ 3C/3Cpro models accept video sources compliant with PAL, NTSC or SECAM standards, as component RGB signal format. The synchronization is decoded from a color input or from the external synchronization input.

The video input can also be used for up to three monochrome (CCIR/RS170) cameras. If these cameras are synchronized, the picasso™ can grab three frames simultaneously.

### 3Cpro only

The picasso™ 3Cpro models accept component RGB *and* composite (CVBS) or S-Video (Y/C). The composite and S-video inputs can decode PAL(CCIR), NTSC (RS170) and SECAM video.

### Digitizer and Image Adjustments

The acquired RGB video is fed to the video digitizer. This A/D converter assures real time conversion of input analog video to digital image data at sampling rates of 14.75 MHz (PAL) or 12.27 MHz (NTSC). The resulting video data stream has a resolution of 768 x 576 (PAL) or 640 x 480 (NTSC) with a square pixel shape.

### 3Cpro only

The composite/S-Video input converts the analog video with a sample rate of 13.5 MHz to YUV 4:2:2 format. The resulting video frames have a resolution of 720 x 576 (PAL/SECAM) or 720 x 485 (NTSC).

The composite/S-video decoder offers control of brightness, contrast, saturation and hue by software.

### Overlay

Real-time video display is possible. The image will be transferred to the VGA card, without impacting the host-CPU.

### Pixel formatter

The pixel formatter of picasso™ 3C converts the raw RGB data to RGB 16-bit or 24-bit format.

### Color conversion (3Cpro only)

The acquired video data of the composite/S-Video input can be converted to several YUV-formats and RGB-formats.

### Data transfer

The digitized and conditioned data is transferred over the PCI bus with rates of up to 132 MBytes/sec (theoretical, real value depends on motherboard design and operating system performance).



## Technical specifications

<b>picasso™ 3C models</b>			
	standard PCI	Compact PCI	PC/104 plus
	PCI 2.1	Compact PCI 2.0	PC/104plus 1.0 12V/5V
PCI Bus		32-bit PCI interface PCI bus master up to 132 Mbytes/sec. Supports zero wait state burst transfers Plug and play no jumpers on PCI and Compact PCI	
Video inputs	2 channels, each 3 x 8 bit RGB separate sync or sync in component		3 x 8 bit RGB sep. sync or in comp.
Input format	PAL/NTSC /SECAM Interlaced / progressive scan		
Image resolutions	PAL/SECAM: up to 768 x 576, 50 Hz field freq NTSC: up to 640 x 480, 60 Hz field freq		
Pixel geometry	Square		
Data digitization	14.75 MHz (PAL/CCIR), 24 bit per pixel 12.27 MHz (NTSC/RS170), 24 bit per pixel		
Gain / Offset	Programmable		
Overlay	Supported. Video to VGA/AGP card without use of processor power		
MMU	Memory Management Unit; Supports Virtual Memory up to 4 Mbytes/DMA channel		
Capture formats	RGB 24 RGB 16(15)		
Digital I/O	2 digital inputs and 2 digital outputs TTL compatible inputs can be programmed as interrupt or as capture start optical isolated 5V, 100 mA, 10 kHz		5V, 10 mA
Video connector	sub D-15 female on bracket		5x SMC females: 3x video input ext. sync input async. reset output
Digital I/O connector	sub D-9 female on bracket		10-pins header on PCB
Dimensions (mm)	106 x 175	100 x 160 3U Eurocard	90 x 96
Power consumption	7.0 W typical		6.3 W typical
Operating temperature	0° C to 55° C		
Operating Systems	Windows 98/ Me/ NT/ 2000/ XP Linux Solaris 8 (x86 and SPARC)		
RT Operating Systems	RTLinux, QNX4 and QNX6		
Software	Windows: Visual C++, Borland C (ANSI C compilers) Visual Basic, Delphi Linux, Solaris and QNX6: (GNU) C compiler QNX4: Watcom C compiler		



### **3Cpro extension**

Video inputs	4 composite inputs (mux) or 2 S-video inputs (mux)
Input format	PAL CCIR /NTSC RS-170/SECAM Interlaced
Image resolutions	PAL/SECAM: 720 x 576, 50 Hz field freq NTSC: 720 x 485, 60 Hz field freq
Pixel geometry	4:3
Data digitization	13.5 MHz
Gain	Automatic
Brightness Contrast Color hue Color saturation	Programmable
Scaling	Programmable (random down scaling) realtime
Overlay	Supported. Video to VGA/AGP card without use of processor power
Capture formats	RGB 32 RGB 24 RGB 16(15) YUV4:2:2 Y8

Note: The picasso™ 3Cpro model is only available in PCI and CompactPCI form factor.



## Options

### **Software**

Windows Software Development Kit (98/Me/NT/2000/XP)

Linux Software Development Kit

Realtime Linux Software Development Kit

Solaris 8 (SPARC) Software Development Kit

Solaris 8 (i86) Software Development Kit

QNX4 Software Development Kit

QNX6 (x86) Software Development Kit

### **Cable sets**

SUB-D15 < > 5 x BNC, 1 meter, 1 RGB channel, for PCI/cPCI models

SMC < > BNC, 1 meter, video cable for PC104*plus* model

SUB-D9 < > SUB-D9, 1 meter, digital I/O cable, for PCI/cPCI models

### **Hardware modification**

PC-104 stack through connector (PC/104 *plus* model only)