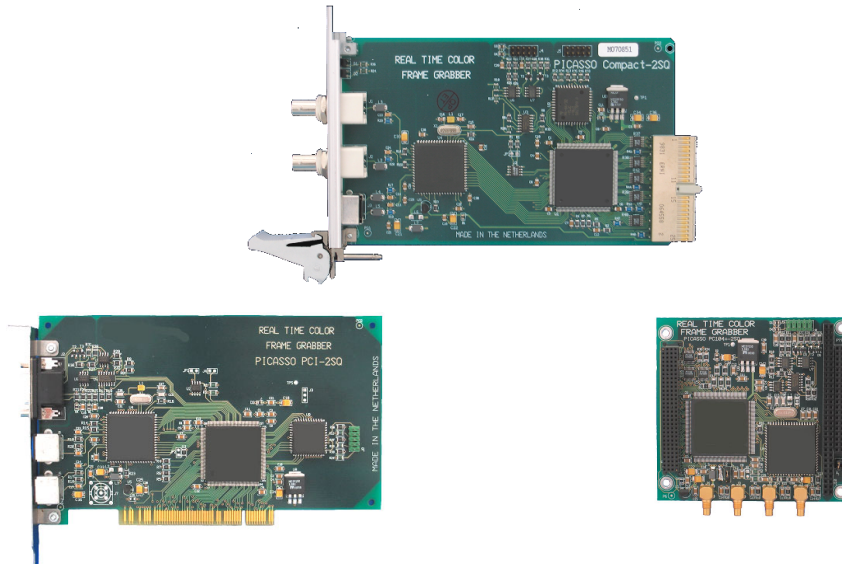**ARVOO**

Datasheet picasso™ 2SQ models
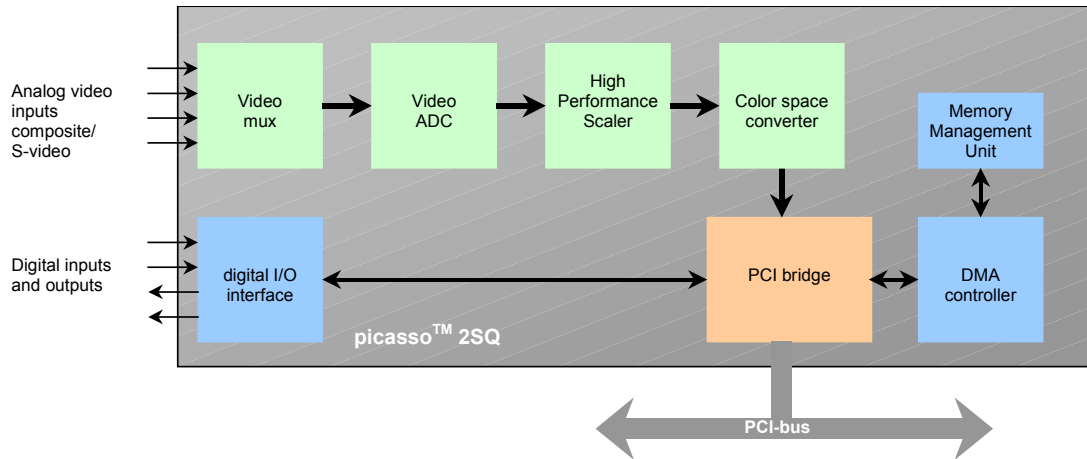

Key features

- high performance color framegrabber
- available in 3 form factors:
    - standard PCI
    - Compact PCI
    - PC/104 *plus*
- realtime video
- interlaced video (PAL/NTSC/SECAM)
- 4 multiplexed composite video inputs or
- 2 multiplexed composite video inputs and 1 S-video input or 2 S-video inputs
- 50/60 fields/sec
- realtime downscaling on board
- 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™ 2SQ 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.

ARVOO Imaging Products	email: info@arvoo.nl	rev. 2.1
P.O. Box 439	website: www.arvoo.com	092003
3440 AK Woerden		
The Netherlands		

picasso^{TM} 2SQ series

Architecture

Detailed Information

Input format

The picasso^{TM} 2SQ models accept video sources compliant with PAL/CCIR, NTSC/RS170 or SECAM standards. The video inputs accept composite (CVBS) and S-video (Y/C).

Digitizer and Image Adjustments

The acquired 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/SECAM) 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. The 2SQ models offer control of brightness, contrast, saturation and hue by software.

Downscaling

The 2SQ offers realtime on board image downscaling by the High Performance Scaler unit. The downscaling factor range is from 1 to 1/1024. Upscaling is not possible.

Overlay

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

Color conversion

The color space converter of the picasso^{TM} 2SQ converts the data to RGB or YUV with predefined color and bit depths. For example RGB24 or YUV4:2:2 output formats can be selected under software control.

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).

picasso™
2SQ series

Technical specifications

picasso™ 2SQ models		
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 4 composite or 2 composite and 1-S-video or 2 S-video		
Input format PAL/CCIR, NTSC/RS170, SECAM Interlaced		
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), 8 bit per pixel 12,27 MHz (RS170/NTSC), 8 bit per pixel		
Gain Automatic		
Brightness Contrast Color hue Color saturation Programmable		
Scaling Programmable (random down scaling) Realtime scaling		
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 RGB32 / YUV4:2:2 / RGB24 / Y8 / RGB16(15)		
Digital I/O 2 digital inputs and 2 digital outputs TTL compatible optical isolated inputs can be programmed as interrupt or as capture start 5V, 100 mA, 10kHz		
Video connectors	2 x 4-pins minidin female	2 x BNC 4-pins minidin female	4 x SMC female
Digital I/O connector	sub D-9 connector on bracket	10-pins flatcable connector on PCB	
Dimensions (mm)	106 x 175	100 x 160 3U Eurocard	90 x 96
Power consumption 4.9 W typical		
Operating temperature 0⁰ C to 55⁰ 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, QNX6: (GNU) C compiler QNX4: Watcom C compiler		

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

minidin < > 2 x BNC/Cinch, 1 meter, video cable for PCI/cPCI models
SMC < > BNC, 1 meter, video cable for PC/104 *plus* model
SUB-D9 < > SUB-D9, 1 meter, digital I/O cable for PCI model

Hardware modification

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