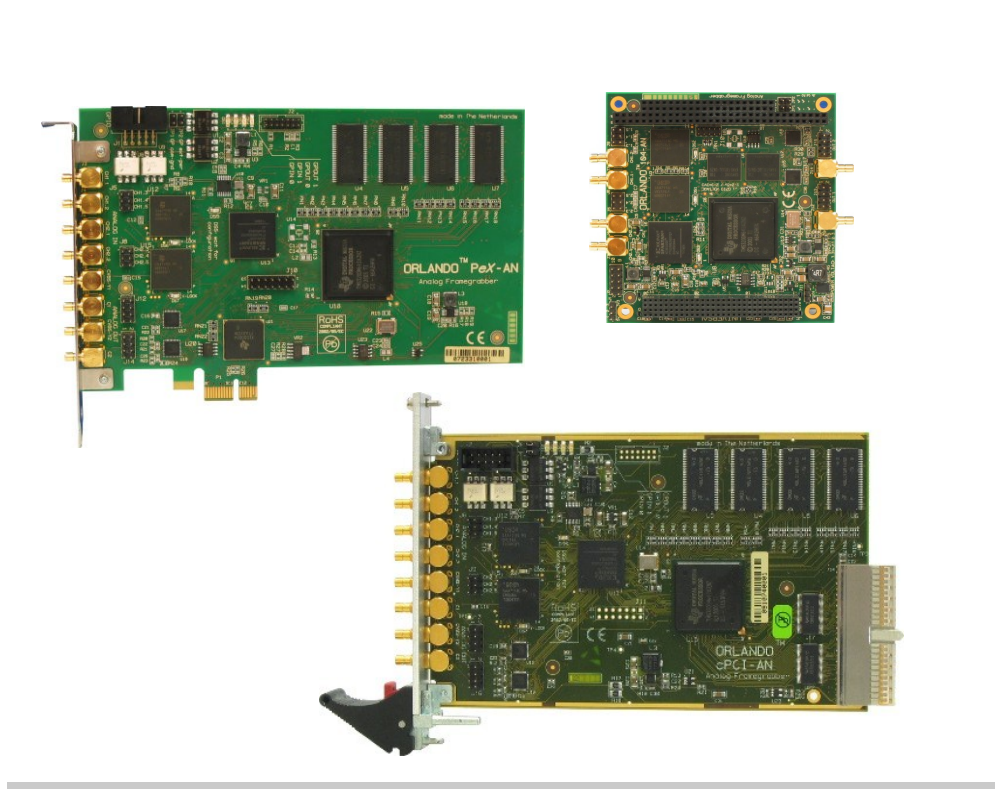**ARVOO**

Datasheet orlando™ AN models

Key features

- analog video input and video output board
  PAL/NTSC 50/60 Hz
  CVBS, Y/C or RGB
  image resolution: 720 x 576 (PAL), 720 x 484 (NTSC)
- two independent analog video inputs
- two independent analog video outputs
- high performance video scaler at the video inputs
- full frame overlay
- available in three form factors:
  PCI Express® x1
  PC/104-*plus*
  Compact PCI
- 2 General Purpose inputs
- 2 General Purpose outputs
- supports Windows, Linux and QNX6

ARVOO Imaging Products
P.O. Box 439
3440 AK Woerden
The Netherlands

email: info@arvoo.com
website: www.arvoo.com

rev. 1.6
102009

General

The orlando^{TM} AN consists of two analog video input ports and two analog video output ports. The orlando^{TM} AN can be configured in a flexible way e.g.:

- Frame grabber: to acquire video of two cameras at the same time. It's also possible to fuse both images to one capture.
- Video output board: to display images of the host.
- Video in-to-out board: to display incoming video data with e.g. video overlay generated by host (e.g a logo, annotation, date).
  Picture-in-picture with the 2nd video input is possible too.
- Combination of the above configurations

Video scaling at the incoming video signal and adding video overlay can be done on board.

Architecture
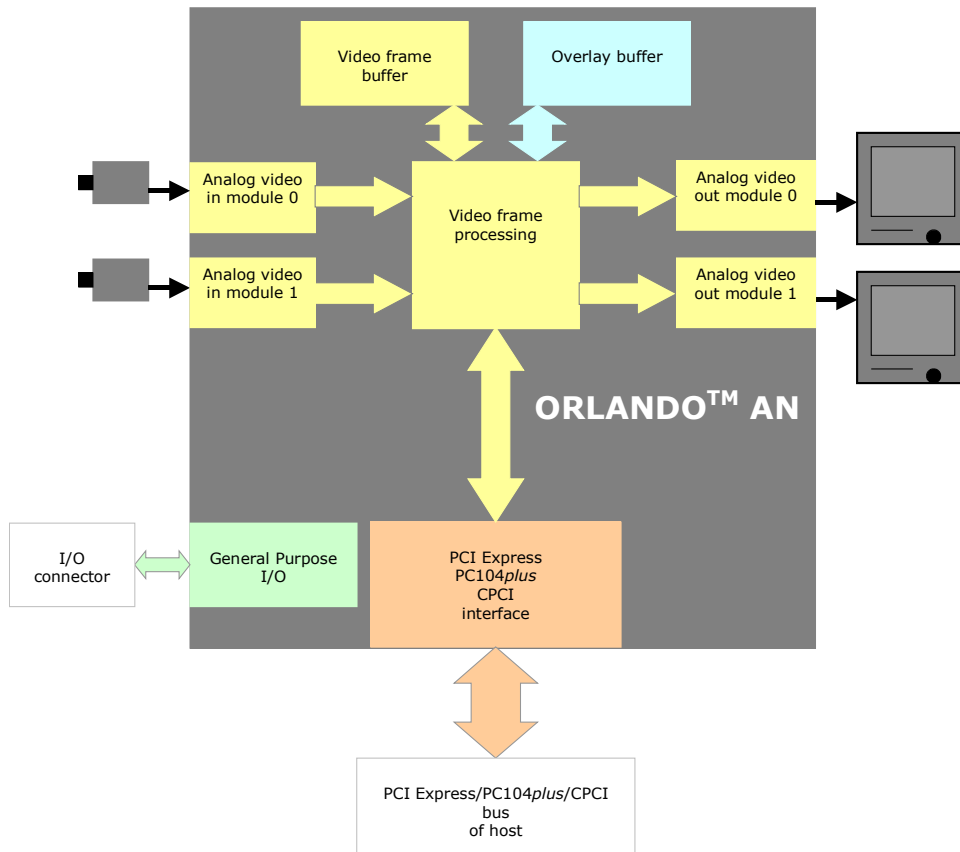
Detailed Information

Video input

The orlando™ AN models accept video sources compliant with PAL or NTSC video standards. The video inputs accept composite (CVBS), S-video (Y/C) and RGB.

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. The resulting video data stream has a resolution of 720 x 576 (PAL) or 720 x 484 (NTSC). The AN models offer control of brightness, contrast, saturation and hue by software.
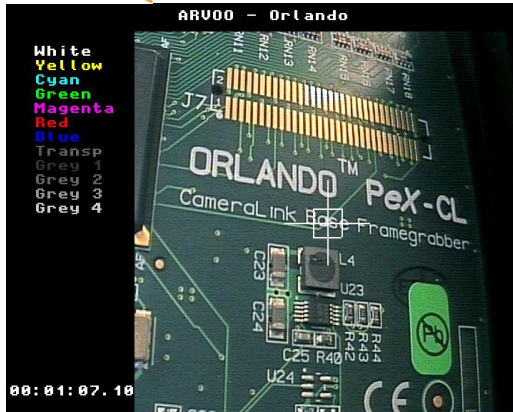
Scaling

The orlando™ offers realtime on board image scaling by the High Performance Scaler unit. The downscaling factor range is from 1 to 1/1024. Limited upscaling is possible.

Video frame processing

Overlay

The orlando™ AN offers full frame video overlay. The overlay data can be generated at host. Video with overlay mixing is done on board.

---

video with overlay

Color conversion

> The color space converter of the orlando™ AN converts the on board digital video data to RGB or YUV. Next formats are possible:
> YCbCr 4:2:2
> YCbCr 4:2:2, three planes
> Y 8 bit
> RGB 16 bit
> RGB 24 bit

Host interface

The orlando™ uses a PCI Express or PC/104*plus* or Compact PCI as host interface. The digital images are transferred from board to host or from host to board.

Video output

The video output module converts on board digital images to analog video. The generated video is complaint to PAL(50Hz) or NTSC(60 Hz). It is available as composite (CVBS), S-Video (Y/C) and RGB. The resolution is 720 x 576 (PAL) or 720 x 484 (NTSC).

ARVOO

Technical specifications

orlando™ AN models		
PCI Express	PC/104-*plus*	Compact PCI
Analog Video Input		
#video input modules	2	
Video input multiplexer	5 composite, or 2 S-video, or 1 RGB-video, per channel	
Input format	PAL and SECAM, 50Hz, interlaced NTSC, 60Hz, interlaced	
Image resolutions	PAL/SECAM: up to 720 x 576 NTSC: up to 720 x 484	
Pixel geometry	4:3	
Data digitization	13.5 MHz	
Gain	Automatic or fixed	
Brightness, Contrast, hue, saturation	Programmable	
Scaling	Programmable, realtime scaling range: 1/1024..1.17	
Video connectors per module	2 x SMB and 3 pins of at board header	
Analog Video Output		
#video output modules	2	
Video output multiplexer	2 composite, or 1-S-video, or RGB-video, per channel	
Output formats	PAL and SECAM, 50Hz, interlaced NTSC, 60Hz, interlaced	
Image resolutions	PAL: up to 720 x 576 NTSC: up to 720 x 484	
Video connectors per module	2x SMB and 3 pins at on board header	1x SMB and 3 pins at on board header	2x SMB and 3 pins at on board header
Host interface		
bus	PCI Express® x1	PC/104-*Plus* 2.0 5V/3.3V (universal)	Compact PCI
data transfer board to host	200 MByte/s	110 MByte/s	110 MByte/s
data transfer host to board	55 MByte/s	110 MByte/s	110 MByte/s
Capture formats	YCbCr 4:2:2, 3 planes RGB24 RGB16	YCbCr 4:2:2 Y8	
I/O		
Digital I/O	optical isolated 5V, 100mA, 10kHz	2 digital inputs and 2 digital outputs TTL compatible 5V, 10mA, 10kHz	optical isolated 5V, 100mA, 10kHz
Digital I/O connector	10-pins flatcable connector on PCB		
Dimensions	106 x 168 mm	90 x 96 mm	100 x160 mm (3U)
Power consumption	4.5..5.5W typical	3.8..4.8W typical	3.8..4.8W typical
Operating temperature	0^0 C to 70^0 C	0^0 C to 70^0 C -40^0 C to 85^0 C optional	0^0 C to 70^0 C -40^0 C to 85^0 C optional
Weight	130 g	95 g (PC104 stack-through connector: +20g)	170 g
Operating Systems	Windows: 2000/ XP/Vista/7 32 and 64 bit Linux kernel 2.6 and newer, x86 and x86_64 QNX6 x86, version 6.1 and newer dll/lib API: standard C and Java Native Interface (JNI)		

ARVOO

Options

Software

Windows Software Development Kit
Linux Software Development Kit
QNX6 (x86) Software Development Kit

Hardware modification

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

extended temperature range: -40^0 C to 85^{0}C
(PC/104-*plus* and Compact PCI models only)