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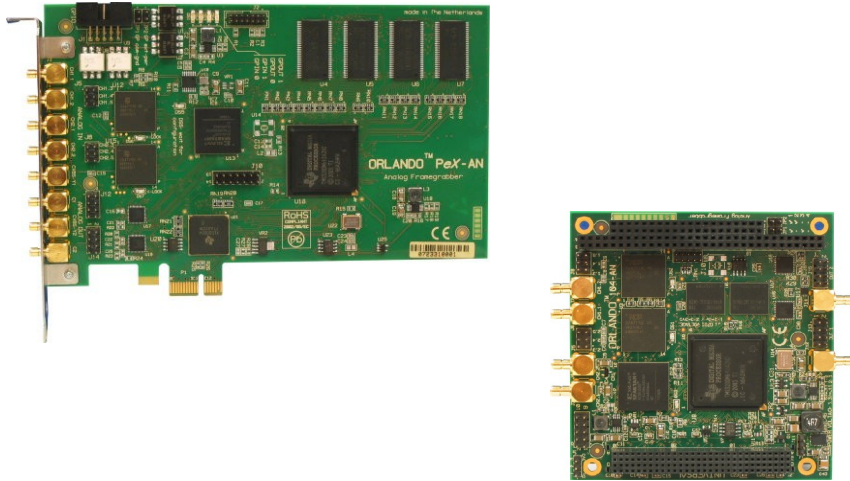
Datasheet orlando™ AN models

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 two form factors:
  PCI Express® x1
  PC/104-*plus*
- 2 General Purpose inputs
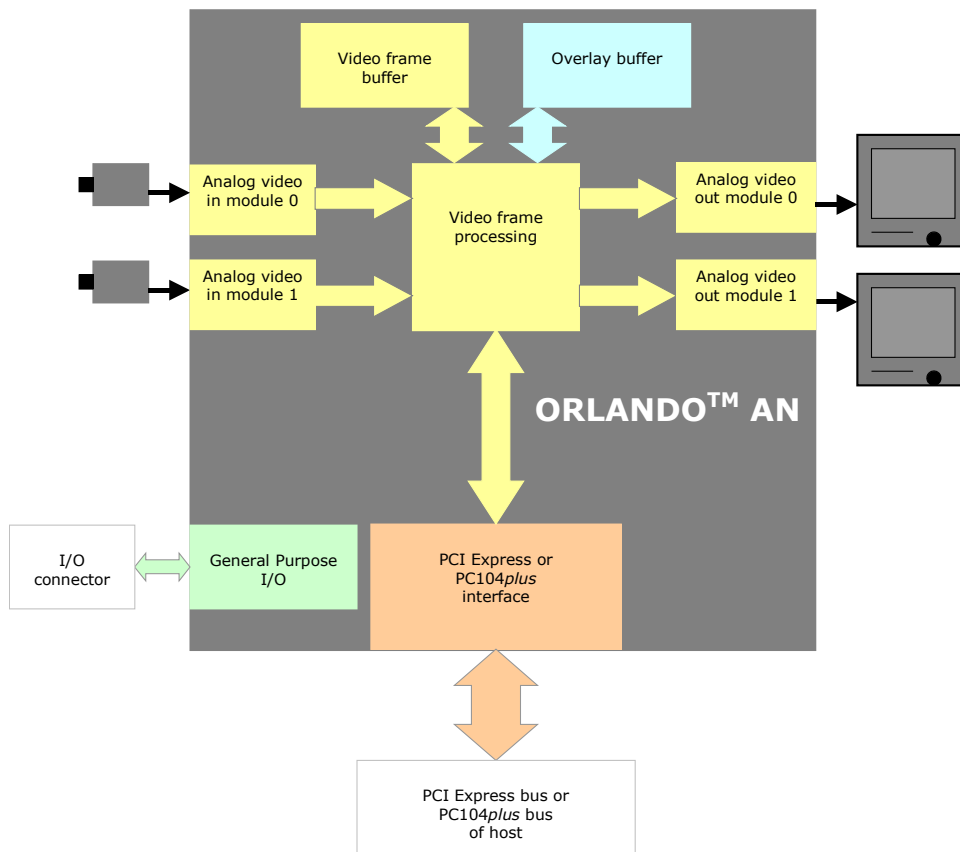- 2 General Purpose outputs
- supports Windows, Linux and QNX6

General

The orlando™ AN consists of two analog video input ports and two analog video output ports. The orlando™ AN can be configured as:

- frame grabber: to acquire video of two cameras at the same time
- video output board: to display images of the host
- video in-to-out board: to display incoming video data with e.g. video overlay.

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

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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.
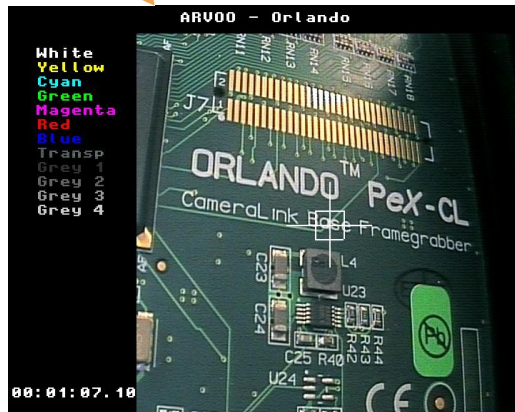
Scaling

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.

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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* 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).

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Technical specifications

orlando™ AN models		
	PCI Express	PC/104-*plus*
Analog Video Input		
#video input modules	2	
Video input mulitplexer	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 connector	2 x SMB and 3 pins of at board header, per channel	
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 connector	2x SMB and 3 pins at on board header, per channel	1x SMB and 3 pins at on board header, per channel
Host interface		
bus	PCI Express® x1	PC/104-*Plus* 2.0 5V/3.3V (universal)
data transfer board to host	200 MByte/s	110 MByte/s
data transfer host to board	55 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	2 digital inputs and 2 digital outputs TTL compatible optical isolated 5V, 100mA, 10kHz	5V, 10mA, 10kHz
Digital I/O connector	10-pins flatcable connector on PCB	
Dimensions (mm)	106 x 168	90 x 96
Power consumption	4.5..5.5W 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
Operating Systems	Windows: 2000/ XP/Vista/XP-x64/Vista-x64 Linux kernel 2.4 and newer QNX6 x86, version 6.1 and newer	

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* model only)