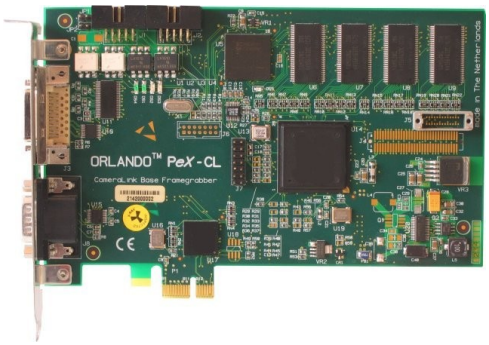
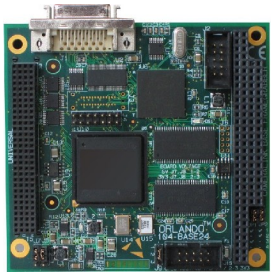
Datasheet orlando™ CL models





Key features

- Camera Link™ frame grabber
  - image resolution: 64k x 64k
  - clock: up to 85MHz
  - area and line scan supported
- available in two form factors:
  - PCI Express® x1
  - PC/104-*plus*
- supports area and line scan cameras
- Camera Link™ camera detection
- 128 MByte on board memory
- two timers
- on board UART
- RS-232 port
- 2 General Purpose inputs
- 2 General Purpose outputs
- supports Windows, Linux and QNX6

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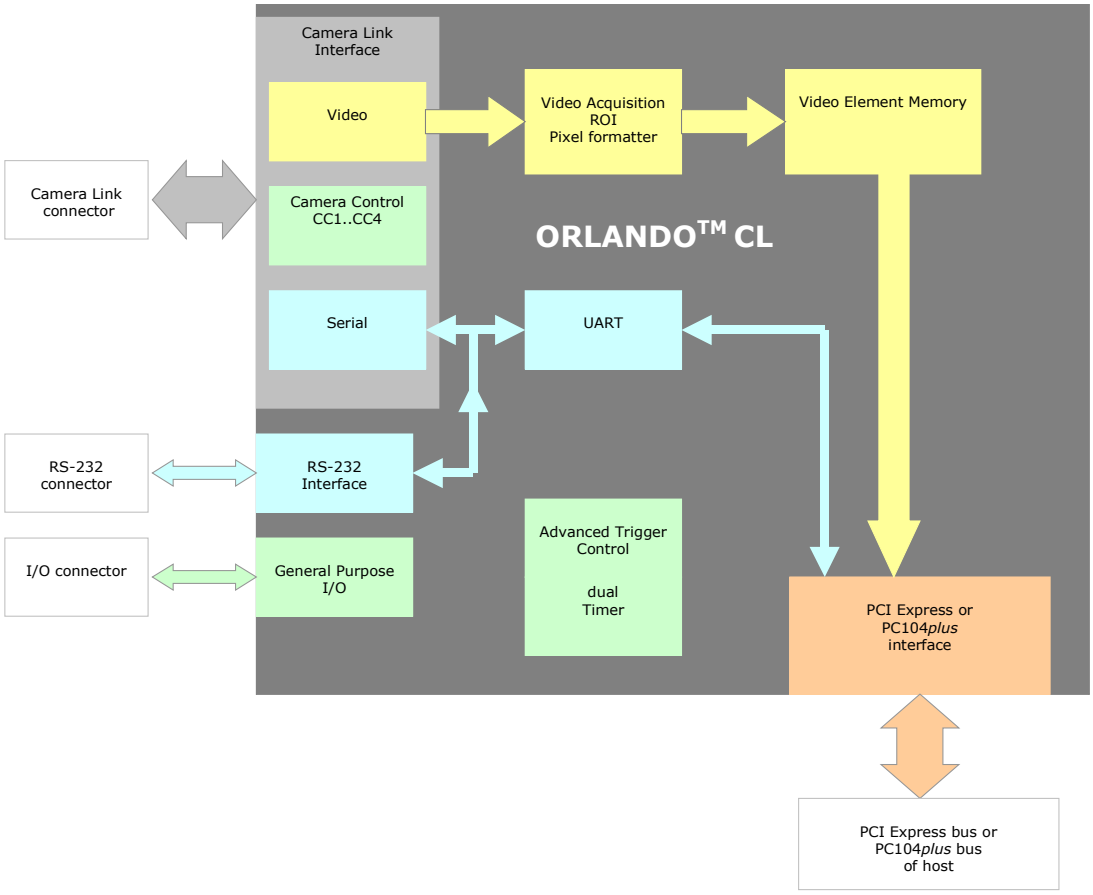
General

The orlando™ CL frame grabber is the solution for Camera Link™ video acquisition. The Camera Link™ interface acquires the incoming video frames. These frames will be stored in the on board memory before transferring to host. The on board timers can be used to trigger the camera by a signal on one of the Camera Link™ Control signals. The General Purpose inputs can be used to start video acquisition, start a timer, trigger the camera etc.
The on board UART or the RS232 connector can be used to get serial communication with the camera.
The orlando™ CL product line comes in PCI Express® and PC/104-*plus* form factor.

Architecture



Detailed Information

Video Input

The orlando™ CL-models accept video sources compliant with Camera Link™ video standard. The orlando™ accepts video data of area scan and line scan cameras in a resolution of up to 64k pixels x 64k lines.
The orlando™ accepts next Camera Link™ data formats:

- 8 bit x 1..3 taps
- 10 bit x 1 or 2 taps
- 12 bit x 1 or 2 taps
- 14 bit x 1 tap
- 16 bit x 1 tap
- 24 bit RGB

The Camera Link™ timing signals PSTRB, FVAL, LVAL and DVAL are used to acquire correct video data. The FVAL and/or DVAL signals can be ignored by the orlando™ if not needed.

Advanced Trigger Control

The Advanced Trigger Control (ATC) is the heart of various I/O signals of the orlando™ CL. The ATC can be used for e.g.:

- trigger the camera (exposure control) by a signal transition on the General Purpose input
- generate a periodical signal which can be used as line trigger for line scan cameras
- set a video timing signal to a General Purpose output
- start video acquisition after a specified edge of a General Purpose input
- trigger stroboscope

Serial communication

Serial communication with the camera is supported by the orlando™ CL. This serial channel can be accessed by software functions or by the RS232 connector.

Technical Specifications

orlando™ CL models		
	PCI Express x1	PC/104-*plus*
PCI Bus	PCI Express 1.0 up to 150 MByte/s	PC/104-p*lus* 2.0 3.3V or 5V (universal) up to 130 MBytes/s (theoretical)
Video input	Camera Link Base 8 bit x 1 tap, 8 bit x 2 taps, 8 bit x 3 taps 10 bit x 1 tap, 10 bit x 2 taps 12 bit x 1 tap, 12 bit x 2 taps 14 bit x 1 tap, 16 bit x 1 tap, 24 bit RGB	
image resolution H x V	64k x 64k	
Strobe clock	up to 85 MHz	
Camera Link timing	FVAL, LVAL, DVAL (DVAL can be disabled)	
Camera Link output Control signals	CC1, CC2, CC3, CC4	
Camara Link serial communication	SerTC and SerTFG	
on board timers	2	
timer resolution low and high period	15 ns..65s, 15ns resolution	
Digital I/O	2 digital inputs 2 digital outputs TTL compatible optical isolated 5V, 100mA, 10kHz	5V, 10mA, 10kHz
Camera Link Connector	MDR 26-pin female	
RS-232 connectors	10-pins header on PCB	
Digital I/O connector	SUB-D9 on bracket	10-pins header on PCB
Dimensions (mm)	106 x 168	90 x 96
Power consumption	3.2W pical	2.5W typical
Operating temperature	0^0 C to 70^0 C	0^0 C to 70^0 C -40^0 C to 85^0C 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

Cable sets

Camera Link cable, 1 meter
Camera Link cable, 2 meter

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)