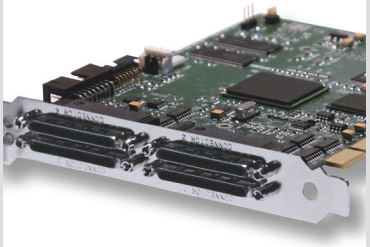
X64™ Xcelera-LVDS PX4



Key Features

- Half-length PCI Express x4 Board
- Acquires images from conventional LVDS camera
- Rapid image acquisition rates up to 1GB/s and high-speed image transfer to host memory at 1GB/s
- Supports pixel clock up to 80MHz
- Windows Vista, XP Professional (32/64-bit) compatible
- ROHS compliant
- Teledyne DALSA Platform Development Advantage – Free Run-time Licensing[1]

TRIGGER-TO-IMAGE RELIABILITY

Fast, flexible, highly reliable image acquisition

The X64 Xcelera-LVDS PX4 is a PCIe x4 frame grabber for conventional parallel digital output cameras. As part of Teledyne DALSA's flagship Xcelera Series of high-performance frame grabbers, the Xcelera-LVDS leverages the PCI Express (PCIe) platform to bring traditional image acquisition and processing technology to new levels of performance and flexibility. The PCIe host interface is a point-to-point interface that facilitates simultaneous image acquisition and transfer without loading the system bus or requiring significant intervention from the host CPU. Designed with the requirements of machine vision OEMs in mind, the Xcelera Series of products range from entry level frame grabbers to high-performance image acquisition and processing boards.

The X64 Xcelera-LVDS PX4 has been built within Teledyne DALSA's Trigger-to-Image Reliability (T2IR) technology framework. The T2IR technology leverages Teledyne DALSA's hardware and software innovations to control, monitor and correct the image acquisition process from the time that an external trigger event occurs to the moment the data is sent to the host, providing traceability when errors do occur and permitting recovery from those errors. The X64 Xcelera-LVDS PX4 supports a wide variety of multi-tap area and line scan color and monochrome cameras.

Software Support

The Xcelera series is fully supported by Teledyne DALSA's Sapera Essential machine vision software package. Sapera Essential is a cost-effective software development toolkit that bundles board level image acquisition and control software libraries with highly advanced image processing capability including geometric search, OCR, 1D/D2 barcode symbology, calibration and blob analysis tool along with over 350 highly optimized image processing functions.

Sapera Essential is designed to deliver the critical functionality required by machine vision OEMs: develop, deploy, redistribute and maintain high-performance imaging applications while at the same time significantly lower the total cost of ownership.

Teledyne DALSA Platform Development Advantage - Free Run-Time Licensing

The Sapera Essential standard processing tool run-time license is offered at no additional charge when combined with the Teledyne DALSA frame grabbers. This software run-time license[1] includes access to over 400 image processing functions, area-based (normalized correlation based) template matching tool, blob analysis and lens correction tool.

[1] Some conditions and limitations apply, contact Teledyne DALSA sales for details.

TELEDYNE DALSA
A Teledyne Technologies Company

X64™ Xcelera-LVDS PX4

Specifications*

Function	Description
Board	Half length PCI Express Rev. 1.10, x4 compliant ROHS Compliant
Acquisition	Supports one conventional LVDS, parallel digital area and line scan camera Acquisition pixel clock rates from 1MHz to 80MHz
Resolution	Horizontal Size (min/max): 8 byte/256K bytes Vertical Size (min/max): 1 line/infinite lines for line-scan cameras 1 line/16million lines/frame for area-scan cameras Variable length frame size from 1 to 16 million lines for area-scan cameras 128MB onboard frame buffer memory Integrated advanced tap reversal engine allows independent tap formatting
Pixel Format and Tap configurations	Supports 8, 10, 12, 14, 16-bit/pixel monochrome or 24, 30, 36, 48-bit RGB Selectable tap geometry; Support multi-tap configuration for monochrome cameras
Transfers	Real-time transfers to system memory Intelligent Data-Transfer-Engine automatically loads scatter-gather and tap description tables from the host memory without CPU intervention
On-board Processing	
Shading Correction	On the fly Flat-line and Flat-field correction with dead-pixel replacement User programmable calibration gain/offset maps
Output Lookup Tables	
Monochrome	Supports one 8-bit in/out, 10-bit in 8/10-bit out or 12-bit in 8/12-bit out lookup table
Colour	Supports one 8-bit in/out, 10-bit in 8 or 10-bit out or 12-bit in 12 or 8-bit/out lookup table

Function	Description
Controls	Comprehensive event notification includes end/start-of-field/frame/transfer Camera control signals for external event synchronization Optically isolated TTL/LVDS trigger input programmable as active high or low (edge or level trigger) TTL Strobes output PC independent serial communications ports provide support 9600 to 11500K baud Appear as system serial ports enabling seamless interface to host applications
Shaft-Encoder Input	Optically isolated quadrature (AB) shaft-encoder inputs for external web synchronization Supports up/down scaling
On-board I/Os[2]	4-optically general purpose inputs tolerate 5V and 24V DC signals 4 general purpose outputs
Power Output	Power-on-reset fused +12V output @ 1.5A +5V DC output at 1.5A
Software	Device driver supports : Microsoft Windows XP Professional and Vista compliant Supports Microsoft Windows XP Professional 64-bit Full support of Teledyne DALSA's Sapera Essential software libraries Application development using C++ DLLs and ActiveX controls with Microsoft Visual Studio
System Requirements	PCI Express 1.10 compliant with one x4 slot system with 64MB or higher system memory
Dimensions	6.375" (16.1cm) Length X 4.20" (10.7 cm) Height)
Temperature	0°C (32° F) to 55° C (131° F) Relative Humidity: up to 95% (non-condensing)
Markings	FCC Class B – Approved CE – Approved

* Specifications last updated 10/08

[2] Requires a separate slot for the bracket assembly

www.teledynedalsa.com

Americas
Boston, USA
Tel: +1 978-670-2000
sales.americas@teledynedalsa.com

Europe
Munich, Germany
Tel: +49 8142-46770
sales.europe@teledynedalsa.com

Asia Pacific
Tokyo, Japan
+81 3-5960-6353
sales.asia@teledynedalsa.com

Teledyne DALSA is an international leader in digital imaging and semiconductors and has its corporate offices in Waterloo, Ontario, Canada.

TELEDYNE DALSA
A Teledyne Technologies Company