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TELEDYNE DALSA
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Xtium-CL MX4

Next Generation Camera Link® Frame Grabber on PCIe Gen2 platform

Building on the field proven capability of Teledyne DALSA's Xcelera frame grabber series, the Xtium™-CL MX4 is based on industry standard PCI Express™ Gen 2.0 expansion bus to deliver high speed access to host memory. The new Xtium series offers higher bandwidth to sustain Camera Link® 80-Bit modes over longer cable distances and supports a wide variety of area and line scan color/monochrome cameras, all in a compact, half-length, single slot solution.

The Xtium-CL MX4 takes full advantage of PCIe Gen 2.0 x4 platform to deliver a bandwidth in excess of 1.7GB/s, while at the same time supporting PCIe Gen 1.0 slot to deliver 850MB/s. The newly engineered, on-board, Data Transfer Engine (DTE) produces maximum bandwidth without the need for specialized motherboards or chipsets. By enabling maximum sustained throughput and ready-to-use image data, the Xtium-CL MX4 minimizes CPU usage and improves processing times for the host applications. In addition, the Xtium series has been engineered with enhanced memory architecture allowing it to handle different sensor tap topologies while sustaining color decoding at the maximum frame/line rate.

The Xtium-CL MX4 offers built-in, robust electrical signals for external event synchronization, and status notification LEDs. One or more boards can be synchronized to acquire images from multiple area or line scan cameras simultaneously. The Xtium-CL MX4 supports Base, Medium, Full or 80-Bit mode Camera Link area and line scan, color and monochrome cameras with PoCL capabilities.

The Xtium series is engineered to meet the ever-increasing image resolution and faster frame rates of today's camera technology. In addition to PCIe Gen 2.0 x4 and Camera Link, upcoming models will support Camera Link HS as well as other popular interface standards on a PCIe Gen 2.0 x8 platform.

Fully Supported By Sapera™ Vision SDK

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 includes access to image processing functions, area based (normalized correlation based) template matching tool, blob analysis and lens correction tool.

Features

- Half-length PCI Express Gen 2.0 x4 Board
- Camera Link Rev 2.0 compliant
- Acquires images from two Base cameras or one Medium, Full or 80-bit camera
- Supports Camera Link operations up to 85MHz
- Extended cable distance at max data rate
- Enhanced feature set supports advanced Camera Link pixel/tap configurations
- Windows® 7/8/10 (32/64-bit), Linux Kernel Ver. up to 4.15 compatible
- Fully supported by Free Sapera LT SDK and the T2IR framework
- FCC, CE, ROHS, China RoHS and KC compliant
- PoCL support for all Camera Link configurations

Xtium-CL MX4

Function	Description
Board	• Part Number: **OR-Y4C0-XMX00** • Camera Link® Specifications Rev 2.0 compatible • Half-length PCI Express x4 Rev 2.0 compliant
Connectors	• Camera- 2xSDR (mini CameraLink) • GPI/O – DH60-27pin on main bracket • GPIO – 16-pin Shrouded header
Acquisition	• Supports: two CameraLink Base or one Medium, Full or 80-bit CameraLink cameras • Acquisition pixel clock rates from 20MHz to 85MHz •
Resolution	• Horizontal Size (min/max):8 byte/64K 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 • 512MB onboard frame buffer memory
Pixel Format and Tap	• Integrated advanced tap management engine allows independent tap formatting • Supports Camera Link tap configurations for 8, 10, 12, 14 and 16-bit mono or 8, 10 or 12-bit RGB

Configuration	• For Base cameras in any of the following combinations:
	  • 3x8-bit/tap, 2x10-bits/tap, 2x12-bit/tap,
	  • 1x14-bit/tap, 1x16-bits/tap, & 1x24-bit/RGB
	  • For Medium camera - 4x8-bit/tap, 4x10-bits/tap, 4x12-bit/tap, 1x30-bit/RGB, & 1x36-bits/tap
	  • For Full—8x 8-bit/tap Camera Link
	  • 10-tap/8-bit and 8-tap/10-bit configurations, 9.1 RGB Deca-mode

Function	Description

Controls	• Comprehensive event notification includes:
	  • start/end of frame/transfer
	  • Camera control signals for external event synchronization
	  • 4-optically isolated inputs can be configurable as Trigger or general purpose inputs; tolerate 5, 12 and 24VDC signals
	  • 4 reconfigurable TTL outputs

Communication	• PC independent serial communications ports provide support for 9600 to 921K baud • Appears as system serial ports enabling seamless interface to host applications
Encoder Inputs	• RS422 quadrature (AB) shaft-encoder inputs for external web synchronization • Up to 20MHz frequency, with built in bi-directional jitter tolerance
Power Output	• Power-on-reset fused • +12V output @ 500mA • PoCL Base: 4W • PoCL Medium/Full: 8W • Requires PCI Express 6-pin power connector
Software	• Device driver supports: • Microsoft® Windows® 7, Windows 8 and Windows 10 (32/64-bit) compatible • **Supports Linux kernel versions up to 4.15 (including 3.x and 2.6.32)** • Fully supported Teledyne DALSA's Sapera • Vision Software packages • Application development using C++ and Microsoft • .Net languages(C++, C# or Visual Basic)
System Requirements	• PCI Express Rev 1.1a or higher (Rev 2.0 recommended) with one x4 slot system with 1024MB or higher system memory
Dimensions	• 4.00" (10.1cm) Length X 4.20" (10.7 cm) Height
Temperature	• 10°C (50° F) to 50° C (122° F) • Relative Humidity: up to 90% (non-condensing)
Markings	• FCC Class A • CE • ROHS, China RoHS, South Korea KC