XTIUM™ 2-XGV PX8 SERIES

A High-Performance 10 GigE Frame Grabber for Machine Vision Applications

KEY FEATURES

- PCI Express Gen 3.0 x8 board
- GigE Vision® V1.2 and 2.0 compliant
- Real-time, hardware based:
  - Depacketization
  - Packet-resend to improve reliability
  - Action Command for rapid application response
- Quad and dual 10-GigE port models
- Supports up to 32, 1 GigE Vision cameras
- Host transfers up to 6.8 GB/sec
- Microsoft® Windows® 10/11 64-bit and WOW64
- Fully supported by Teledyne DALSA's Sapera Vision Software and Teledyne FLIR IIS's Spinnaker SDK packages
- FCC, CE, KC, UKCA and ROHS compliant (Pending)

Multi-port 10 GigE Image Acquisition Board

Building on the field proven capabilities of Teledyne DALSA's Xtium2 family of frame grabbers, the Xtium2-XGV PX8 supports the AIA GigE Vision standard and supports area scan and line scan cameras (color and monochrome) and 3D sensors that output data using 10, 5, 2.5, or 1-GigE Ethernet links.

This half-length PCI Express™ Gen 3.0 x8 board supports up to 32 cameras in any configuration. The Xtium2-XGV PX8 boards feature up to four SFP+ cages, capable of sustaining aggregate input bandwidth of 4GByte/s (4x10 Gbs) and 6.8 GBytes/sec to the host memory.

The Xtium2-XGV features a real-time depacketizing capability that converts GigE Vision packets into ready-to-use images and then transfers the images to the host memory without using the CPU. Combined with the Data Transfer Engine, Xtium2-XGV can also perform on-board Bayer to RGB conversion.

For a more reliable GigE Vision system, the Xtium2-XGV supports hardware assisted packet resend and Action Command for external event synchronization. In addition, the Xtium2-XGV is capable of transmitting/re-transmitting IEEE-1588 messages without requiring an external network switch.

ACQUISITION AND CONTROL SOFTWARE

The Xtium2-XGV supports Sapera™ LT and Teledyne FLIR® IIS Spinnaker SDKs.

Sapera LT SDK offers image acquisition and control of all Teledyne DALSA frame grabbers and 1D, 2D, and 3D cameras. It includes CamExpert™—a graphical tool for frame grabber and camera setup and Z-Expert—a graphical tool to configure and setup Teledyne DALSA's 3D profile sensors.

The Spinnaker SDK is Teledyne FLIR IIS's next generation GenICam3 API library built for machine vision developers. The Spinnaker SDK supports FLIR IIS and DALSA USB3 and GigE area scan cameras.

IMAGE PROCESSING, ANALYSIS AND AI

The Sapera processing library offers over 400 image processing and analysis functions. In addition, it offers a variety of high-level imaging tools for machine vision applications such as barcode (1D and 2D), OCR, pattern matching, and color.

Simplify machine vision application deployment using Teledyne DALSA's Sherlock™ code-less, point-and-click programming environment. Sherlock offers image processing, analysis, graphical, and 2D/3D visualization tools. It can communicate with factory floor PLCs using Ethernet/IP, Modbus™, Profinet™, OPC, MQTT (the standard for IoT messaging).

Teledyne DALSA's Astrocyte™ is a graphical environment for creating deep learning models. These AI models allow Sapera Processing and Sherlock8 to recognize, categorize, and divide objects and anomalies.

PRELIMINARY PRODUCT INFORMATION

SPECIFICATIONS[2]

PRELIMINARY PRODUCT INFORMATION

Features	Description
CARD	• **Part Number: OR-A8G0-PXF40: Xtium2-XGV PX8 Quad** • **Part Number: OR-A8G0-PXF20: Xtium2-XGV PX8 Dual** • PCIe Rev 3.0 compliant, x8 board
ACQUISITION	• Area scan, line scan cameras and 3D profile sensors • Acquisition rate up to 10 Gbs • Action Command
GigE VISION	• GigE Vision ver. 1.2 and 2.0 compliant • Up to four 10, 5, 2.5 and 1-GigE cameras (direct) • Packet Resend • IEEE-1588 (PTP) • Up to 32 cameras using an external switch • Jumbo packet up to 9K
FEATURES	• Image Cropping • Vertical image flip • Multiple board synch
ON-BOARD MEMORY BUFFER	• 4 GB (Quad), 2 GB (Dual) image buffer
RESOLUTION	• Horizontal size: 8 Bytes to 128K Bytes • Vertical size: 1 line to 64K lines
INPUT PIXEL FORMATS	• Mono8, Mono10, Mono12, Mono14 and Mono16 • RGB24 (8-bit/color); RGB32: RGB+Y 8-bit/color/pixel • 3D: XZ (CalibratedAC), XZRW (CalibratedACRW, UniformX_Z (RectifiedC)
I/O AND CONTROLS	• Inputs: 4 opto-coupled general inputs with trigger level RS-422, 5V, 12V or 24V • Outputs: 4 LVTTL general outputs • Comprehensive event notification • H/W based action command through GenCP/SFNC
CONNECTORS	• 4 x SFP+ cages[3] with latch • 15-pin D-Sub High-density (VGA type) connector – General purpose I/Os (main bracket) • 16-pin connector on the board for Board Sync and/or other usage
LED	• 4 LEDs link status indicators
CERTIFICATION[4]	• FCC Class A • CE, KC, UKCA • EU & China RoHS
SOFTWARE	• Supported by Sapera LT, CamExpert (1D/2D), and Z-Expert (3D) • Spinnaker SDK (2D) • Windows 10/11 64-bit and WOW64
OPERATING TEMPERATURE[1]	• 10°C (50°F) to 50°C (122°F)
STORAGE TEMPERATURE[1]	• Relative Humidity–up to 90% (non-condensing)
DIMENSIONS[1]	• 16.5 cm (6.5") length x 10 cm (4") height

1 Based on preliminary information
2 Specifications subject to change without notice
3 SPF+ module not included with the boards
4 Pending

FOR MORE INFORMATION CONTACT:

AMERICAS Boston, USA | +1 978-670-2000 | TDI_sales.americas@teledynedalsa.com
EUROPE Krailling, Germany | +49 89-89-54-57-3-80 | TDI_sales.europe@teledynedalsa.com
ASIA PACIFIC Tokyo, Japan | +81 3-5960-6353 | TDI_sales.asia@teledynedalsa.com
Shanghai, China | +86 21-3368-0027 | TDI_sales.asia@teledynedalsa.com

This document does not contain information whose export/transfer/disclosure is restricted by the Canadian Export Control regulation. Teledyne DALSA has its corporate offices in Waterloo, Canada. Teledyne DALSA reserves the right to make changes at any time without notice. © Teledyne DALSA.

Revision Number:
Revision Date: 2023 12 06