XTIUM™ 2-XGV 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
  - Action Command real-time inter-port re-distribution
  - IEEE1588 (PTP) inter-port re-distribution of PTP messages
  - Data conversion
- Quad and dual 10-GigE port models
- Supports up to 32, 1 GigE Vision cameras
- Trigger-to-Image Reliability Framework
- Host transfers up to 7 GB/sec
- Microsoft® Windows® 11 (64-bit)
- Fully supported by Teledyne DALSA's Sapera LT Software
- 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 supports the A3 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 boards feature up to four SFP+ cages, capable of sustaining aggregate input bandwidth of 5GByte/s (4x10Gbs) and 7 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 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 Z-Trak 3D profile sensors.

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. Xtium2-XGV includes a free Sapera Processing RTL (run-time license). This RTL includes area-based pattern matching, blob analysis, color, and image processing tools.

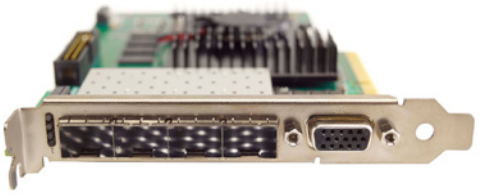
Simplify machine vision application deployment using Teledyne DALSA's Sherlock™ code-less, point-and-click programming environment. Sherlock offers image processing, analysis, graphical, and 2D/3D visualization tools. It can communicate with factory floor PLCs using Ethernet/IP, Modbus™, Profinet™, OPC,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

SPECIFICATIONS[3]

Features	Description
CARD	• **Part Number: OR-A8G0-PXF40: Xtium2-XGV Quad** • **Part Number: OR-A8G0-PXF20: Xtium2-XGV Dual** • PCIe Rev 3.0 compliant, x8
ACQUISITION	• Area scan, line scan cameras and 3D profile sensors • Acquisition rate up to 10 Gbs per input
GigE VISION	• GigE Vision ver. 1.2 and 2.0 compliant • Up to four 10, 5, 2.5 and 1-GigE cameras (direct) • Up to 32 cameras using an Ethernet switch • Support Jumbo packet (up to 9K MTU)
FEATURES	• Image Cropping • Vertical image flip • Real-time DATA conversions • IEEE-1588 (PTP) packet message reforwarding across all the GigE ports • Action Command: message reforwarding synchronously across all the GigE ports by hardware
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	• Mono and Bayer from 8 to 12-Bits • RGB24 (8-bit/color); RGB32: RGB+Y 8-bit/color/pixel • 3D: XZ (CalibratedAC), XZRW (CalibratedACRW), UniformX_Z (RectifiedC) • And more
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 for multi-camera synchronisation across all Ports • Multi frame Grabber's hardware synchronization
CONNECTORS	• Up to 4 x SFP+ cages[4] 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[5]	• FCC Class A • CE, KC, UKCA • EU & China RoHS
SOFTWARE	• Supported by Sapera LT SDK • Windows 11 64-bit
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 Contact Teledyne DALSA sales for availability
3 Specifications subject to change without notice
4 SPF+ module not included with the boards
5 Pending



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