Matrox **Orion HD**

Graphics and video capture card with SD/HD capabilities.



Benefits

Maximize performance and compatibility by way of a PCIe® x16 half-length card design

Capture from a variety of legacy and state-of-the-art video sources with support for SD/HD analog/digital video formats

Optimize multi-channel applications via dual independent video inputs and outputs on a single card

Maximize existing application development knowhow through support for standard graphics overlay

Implement video capture with ease using the Matrox Imaging Library (MIL) or Microsoft® DirectShow®

Deploy using a contemporary platform with support for 32/64-bit Microsoft® Windows® 7/8.1/10

Versatile SD/HD acquisition

Matrox Orion HD, a high-performance graphics adapter with video capture capabilities, provides the ideal solution to the legacy standard definition (SD) and advanced high definition (HD) video needs found in many medical imaging, video surveillance and simulation/training applications. The Orion HD features two independent video input paths. Each video input path can connect and switch between RGB / CVBS (3) / YPrPb, DVI-D / and SDI signal types through DVI-I[1] and BNC connectivity[2] respectively. The Orion HD can handle different resolutions and rates: SD (NTSC/PAL), HD (720p, 1080i and 1080p at up to 60Hz), PC (up to 1920 x 1200 @ 60Hz) and non-standard[3]. The Matrox Orion HD includes a programmable color space converter for obtaining the most accurate color representation of the original image.

Multi-headed display

In addition to two independent video input paths, the Matrox Orion HD features four independent video outputs (two DVI-I and two SDI). The video outputs are not only independent from each other but are also independent from the video inputs for maximum configuration flexibility. The video outputs can be used for a single extended Windows® desktop or a separate Windows® desktop and exclusive display for the application[4]. The video outputs support RGB / DVI-D / and SDI signal types through DVI-I[1] and BNC connectivity[2] respectively. The Orion HD outputs can support various resolutions and rates: SD (NTSC/PAL), HD (720p, 1080i and 1080p at up to 60Hz) and PC (up to 1920 x 1200 @ 60Hz). Using a Matrox-designed graphics controller, the Orion HD can overlay standard Windows® graphics on the video outputs.

MATROX
IMAGING

Host interface to match

A PCIe® x16 host interface provides the Matrox Orion HD with the throughput necessary to handle the transfer of two HD video streams to host memory. With a peak bandwidth of up to 4 GB/s, the Matrox Orion HD's host interface prevents video data from inadvertently being discarded while the point-to-point connectivity of PCIe® stops other add-in devices from consuming valuable bandwidth between the card and the host PC.

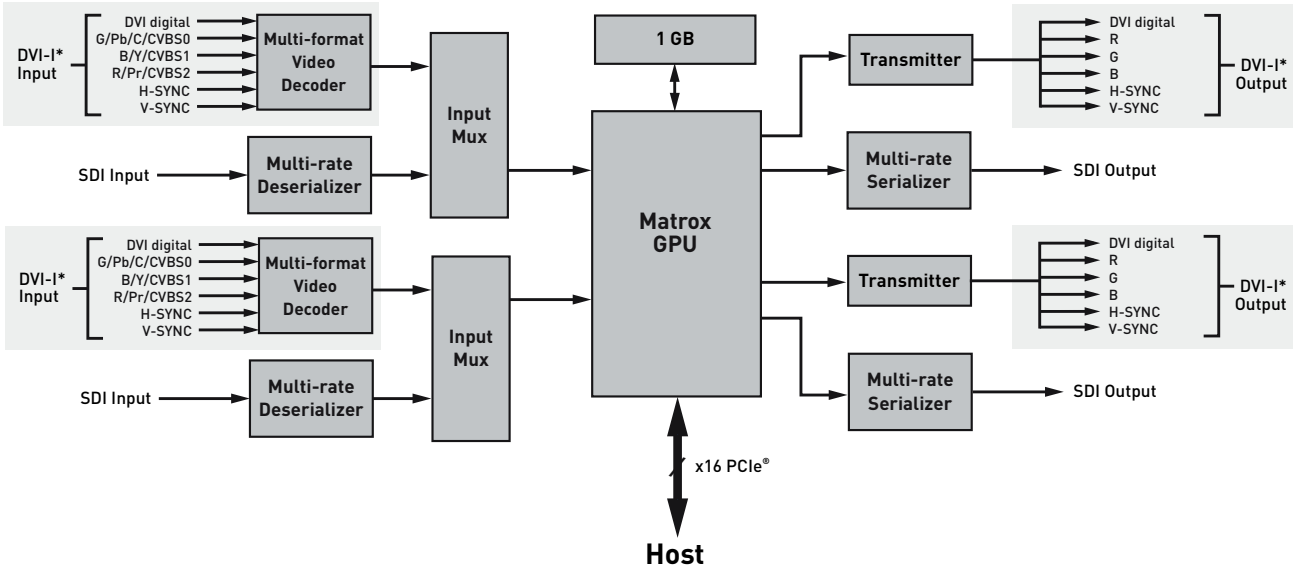
Lifecycle managed for consistent long term supply

Matrox Imaging not only carefully selected each component in the Matrox Orion HD to ensure product availability in excess of five years, but also exercises strict change control to provide consistent supply. Longevity of stable supply lets OEMs achieve maximum return on the original investment without incurring the additional costs associated with the repeated validation due to constantly-changing products.

Application development with Matrox Imaging Library (MIL) or DirectShow®

Complementing the Matrox Orion HD is the Matrox Imaging Library (MIL), which provides a comprehensive collection of software tools for developing industrial imaging applications. MIL features interactive software and programming functions for image capture, processing, analysis, annotation, display and archiving. These tools are designed to enhance productivity, thereby reducing the time and effort required to bring your solution to market. The MIL API is not only intuitive and straightforward to use but it is also portable. It allows applications to be easily moved from one supported video interface or operating system to another, which provides platform flexibility and protects the original development investment. Applications for the Matrox Orion HD can alternatively be developed using the DirectShow® API with an available MIL-based video capture filter.

Matrox Orion HD



* Connected via KX20 to four DVI-I cable adapter.

Specifications

Hardware

PCIe® x16 half-length board

1GB DDR SDRAM shared memory

Matrox-designed Direct®X 9-compatible GPU

Dual independent video acquisition and up to four display paths

Analog, DVI-D and SDI video acquisition

SD/HD DVI-I and SDI input/outputs

- 1080p at 60/59.95/50/30/29.97/25/24/23.97 frames/sec (SMPTE 274M)
- 1080i at 60/59.95/30 fields/sec (SMPTE 274M)
- 720p at 60/59.95/50/30/29.97/25/24/23.97 frames/sec (SMPTE 296M)
- NTSC/PAL
- VESA modes (up to 1920x1200 @60Hz)

Connect and switch between multiple inputs: RGB / CVBS (3) / YPbPr, DVI-D / and SDI

Connectors

- SMBs for SDI inputs and outputs[2]
- KX20 for analog and digital (DVI-D) inputs and outputs[1]

MIL license fingerprint and storage

Specifications

Dimensions and environmental information

167.65 mm x 111.15 mm

power consumption (typical):
4.3mA @ 3.3V, 1.32A @ 12V or 15.85W total

operating temperature: 0 C to 55 C (32 F to 131 F)

relative humidity: up to 95% (non-condensing)

FCC class A

CE class A

RoHS-compliant

Software Drivers

Matrox Imaging Library (MIL) drivers for 32/64-bit Windows® 7/8.1/10

MIL-based DirectShow® video capture filter for 32/64-bit Windows® 7/8.1/10

Ordering Information

Hardware

Part number	Description
OHD 1G 2S*	PCIe® x16 graphics card with two (2) DVI-I (analog & digital) video inputs, two (2) SDI video inputs, two (2) DVI-I (analog & digital) video outputs and two SDI video outputs. Includes KX20 to 4 DVI-I and four (4) SMB to BNC cable adaptors.

Endnotes:
1. Through supplied KX20 to 4 DVI-I adaptor cables.
2. Through supplied SMB to BNC adaptor cables.
3. Horizontal resolution must be a multiple of 8.
4. Matrox Orion HD must be a primary or secondary Windows® display device.

Corporate headquarters:
Matrox Electronic Systems Ltd.
1055 St. Regis Blvd.
Dorval, Quebec H9P 2T4
Canada
Tel: +1 (514) 685-2630
Fax: +1 (514) 822-6273

For more information, please call: 1-800-804-6243 (toll free in North America) or (514) 822-6020
or e-mail: imaging.info@matrox.com or http://www.matrox.com/imaging

All trademarks by their respective owners are hereby acknowledged. Matrox Electronic Systems, Ltd. reserves the right to make changes in specifications at any time and without notice. The information furnished by Matrox Electronic Systems, Ltd. is believed to be accurate and reliable. However, no responsibility license is granted under any patents or patent rights of Matrox Electronic Systems, Ltd. Windows and Microsoft are trademarks of Microsoft Corporation.
© Matrox Electronic Systems, 2010-2014. Printed in Canada, 2016-09-12. **$IE-5485-D**