

Matrox **Orion HD** >>>

Graphics and video capture card with SD/HD capabilities

Overview

Versatile SD/HD acquisition

Matrox® Orion HD—a high-performance graphics adapter with video-capture capabilities—provides the ideal solution to legacy standard definition (SD) and advanced high definition (HD) video needs of many medical imaging, video surveillance, and simulation/training applications. The Matrox 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-I¹ and BNC connectivity² respectively. The Matrox Orion HD can handle different resolutions and rates, including SD (NTSC/PAL), HD (720p, 1080i, and 1080p at up to 60 Hz), PC (up to 1920x1200 @ 60 Hz), and non-standard³ rates. 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). These 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 application⁴. The video outputs support RGB, DVI-D, and SDI signal types through DVI-I¹ and BNC connectivity² respectively. Using a Matrox-designed graphics controller, the Matrox Orion HD can overlay standard Windows graphics on the video outputs.

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 selects 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.

Matrox Orion HD at a glance

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 know-how through support for standard graphics overlay

Implement video capture with ease using [Matrox Imaging Library \(MIL\) X](#) or Microsoft® DirectShow®

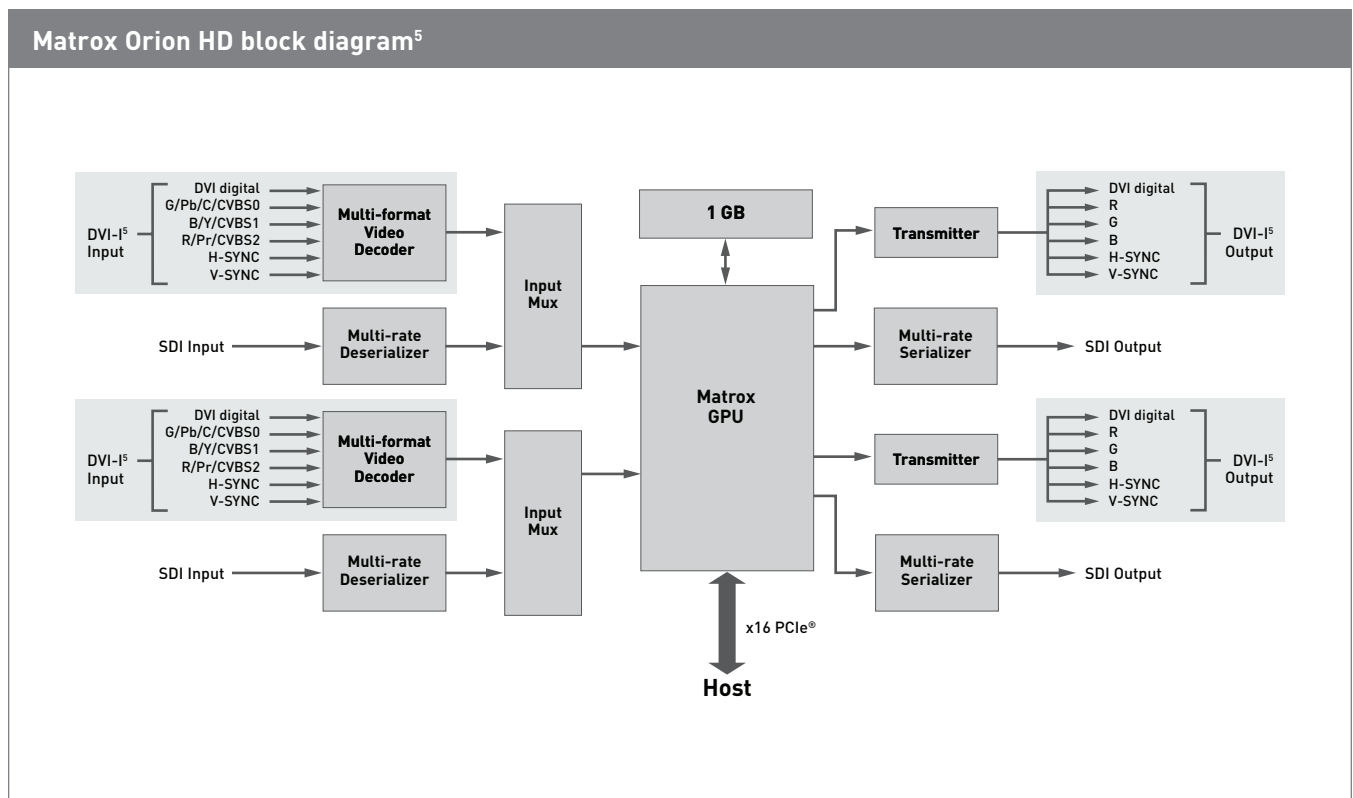
Deploy using a contemporary platform with support for 32-/64-bit Microsoft Windows® 7/10

Software Environment

Application development with MIL or DirectShow

Complementing the Matrox Orion HD is MIL X, which provides a comprehensive collection of software tools for developing industrial imaging applications. MIL X 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 solutions 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, providing platform flexibility and protecting the original development investment. Applications for the Matrox Orion HD can alternatively be developed using the DirectShow API with an available MIL X-based video capture filter.

Connectivity



Specifications

Matrox Orion HD	
Hardware	
PCIe x16 half-length board	
1 GB DDR SDRAM shared memory	
Matrox-designed Direct®X 9-compatible GPU	
Dual independent video acquisition and up to four (4) 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 @ 60 Hz)	
Connect and switch between multiple inputs	
RGB	
CVBS (3)	
YPbPr	
DVI-D	
SDI	
Connectors	
SMBs for SDI inputs and outputs ²	
KX20 for analog and digital (DVI-D) inputs and outputs ¹	
Physical	
Dimensions (L x W): 167.65 x 111.5 mm (8.38 x 4.38 in)	
Power consumption (typical)	
4.3 mA @ 3.3 V	
1.32 A @ 12 V	
15.85 W total	
Certifications	
FCC class A	
CE class A	
RoHS-compliant	
Environmental	
Operating temperature: 0°C to 55°C (32°F to 131°F)	
Relative humidity: Up to 95% (non-condensing)	
Software	
MIL X license fingerprint and storage	
Software drivers: MIL drivers for 32-/64-bit Windows 7	
Software drivers: MIL drivers for 32-/64-bit Windows 10	
Software drivers: MIL-based DirectShow video capture filter for 32-/64-bit Windows 7	
Software drivers: MIL-based DirectShow video capture filter for 32-/64-bit Windows 10	

Ordering Information

Part number	Description
Hardware	
OHD 1G 2S*	Matrox Orion HD 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 (2) SDI video outputs. Includes KX20 to four (4) DVI-I and four (4) SMB to BNC cable adaptors.

- Endnotes:
- 1. Through supplied KX20 to four DVI-I adaptor cables.
 - 2. Through supplied SMB to BNC adaptor cables.
 - 3. Horizontal resolution must be a multiple of eight.
 - 4. Matrox Orion HD must be a primary or secondary Windows display device.
 - 5. Connected via KX20 to four DVI-I cable adapters.

The Matrox Imaging advantage



Assured quality & longevity

Adhering to industry best practices in all hardware manufacturing and software development, product designs pay careful attention to component selection to secure consistent long-term availability. Matrox Imaging is able to meet Copy Exact and Revision Change Control procurement requirements in particular circumstances, backed by a dedicated team of QA specialists.



Trusted industry standards

Matrox Imaging champions industry standards in its design and production. Leveraging these standards to deliver quality compatible products, Matrox Imaging protects its customers' best interests by ensuring hardware and software components work with as many third-party products as possible.



Comprehensive customer support

Devoted front-line support and applications teams are on call to offer timely product installation, usage, and integration assistance. Matrox Professional Services delivers deep technical assistance to help customers develop their particular applications in a timely fashion. Services include personalized training and device interfacing as well as application feasibility, prototyping, troubleshooting, and debugging.



Tailored customer training

Matrox Vision Academy comprises online and on-premises training for Matrox Imaging vision software tools. On-premises intensive training courses are regularly held at Matrox headquarters, and can also be customized for onsite delivery. The Matrox Vision Academy online training platform hosts a comprehensive set of on-demand videos available when and where needed.



Long-standing global network

Matrox Imaging customers benefit from a global network of distributors who offer complementary products and support, and integrators who build customized vision systems. These relationships are built on years of mutual trust and span the globe, ensuring customer access to only the best assistance in the industry.



About Matrox Imaging

Founded in 1976, Matrox is a privately held company based in Montreal, Canada. Imaging, Graphics, and Video divisions provide leading component-level solutions, leveraging the others' expertise and industry relations to provide innovative, timely products.

Matrox Imaging is an established and trusted supplier to top OEMs and integrators involved in machine vision, image analysis, and medical imaging industries. The components consist of smart cameras, vision controllers, I/O cards, and frame grabbers, all designed to provide optimum price-performance within a common software environment.

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