Multi-facet video capture with UHD clarity

Matrox Clarity UHD is a comprehensive video capture card supporting the full range of video formats from standard definition (SD) to high definition (HD) all the way to ultra-high definition (UHD). Mini DisplayPort, HD-BNC, HDMI and custom analog DVI\(^1\) connectivity are provided to hook up to and switch between the different types of legacy and advanced video sources used in medical, surveillance and simulation training applications. System setup and management are further simplified with the board’s automatic video source presence and format detection. Matrox Clarity UHD can simultaneously acquire multiple streams such as eight HD (1080p60) or two 4K UHD (2160p60) video streams and reliably transfer these off board using its efficient PCIe\(^2\) 2.0 x8 host interface.

Video pre-processing and H.264 encoding

In addition to video capture, Matrox Clarity UHD can offload video pre-processing tasks such as scaling, compositing and de-interlacing from the host processor. An optional H.264 encoder supports a range of profiles, from the baseline one up to the high 4:4:4 predictive\(^4\) one, for the broadest choice in encoded video quality for recording and distribution. Video pre-processing and H.264 encoding are designed to keep up with the board’s multi-stream acquisition capability.
**Application development with MIL**

Complementing the Matrox Clarity UHD capture card is the MIL, which provides a comprehensive collection of software tools for developing 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.

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### Matrox Clarity UHD block diagram

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### The Matrox Imaging Advantage

**Assured Quality & Longevity**

We adhere 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 our dedicated team of QA specialists.

**Trusted Industry Standards**

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

**Comprehensive Customer Support**

Our devoted front-line support and applications teams are on call to offer timely product installation, usage, and integration assistance, while the exclusive Matrox Imaging Vision Squad provides hands-on support, helping assess application feasibility, recommend best methods, and even prototype solutions.

**Tailored Customer Training**

Matrox Vision Academy comprises online and on-premises training for our vision software tools. On-premises intensive training courses are regularly held at Matrox headquarters, and can also be customized for onsite delivery. 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.
### Specifications

#### Hardware

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLA 4G HDSA</td>
<td>Matrox Clarity UHD PCIe 2.0 x8 video capture card with 4 GB of memory supporting HDMI, DisplayPort, SDI and analog acquisition.</td>
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<tr>
<td>CLA 4G HDSA E</td>
<td>Matrox Clarity UHD PCIe 2.0 x8 video capture card with 4 GB of memory supporting HDMI, DisplayPort, SDI and analog acquisition, and H.264 encoding.</td>
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#### Software

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<tr>
<td>CLA-CBL-USBDVI</td>
<td>Two (2) USB Type-C to DVI analog cable adaptors for the Matrox Clarity UHD</td>
</tr>
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</table>

#### Ordering Information

- **Compatible software**: Matrox Imaging Library (MIL) 10
- **Operating system support**: Windows 7 (64-bit), Windows 10 (64-bit), Linux (64-bit)
- **Licensing provisions**: MIL license fingerprint and storage

### Specifications (cont.)

#### Hardware

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### Accessories

- **CLA-CBL-USBDVI**: Two (2) USB Type-C to DVI analog cable adaptors for the Matrox Clarity UHD

### Software

- **Refer to MIL datasheet.**

### Notes:

1. Using optional USB Type C to DVI-I adaptor cable.
2. Or a maximum combined bandwidth of 4 GB/sec.
3. From supported formats.
4. Up to 10-bit.
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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