# Matrox **Rapixo CXP** ≫

Single- to quad-input CoaXPress 2.0 frame grabbers with optional
data forwarding and FPGA-based image processing offload

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**MATROX** IMAGING

# Specifications

| Matrox Rapixo CXP | | | |
|---|---|---|---|
| **Hardware** | | | |
| Model | Matrox Rapixo CXP Single/Dual | Matrox Rapixo CXP Quad | Matrox Rapixo CXP Quad Data Forwarding |
| **Host interface** | | | |
| Interconnect | PCIe 2.1/3.1 x4 | PCIe 2.1/3.1 x8 | PCIe 3.1 x8 |
| **Camera/video interface** | | | |
| Standard | CXP version 2.0 | | |
| Configuration | One (1) or two (2) input connection(s) | Four (4) input connections | Four (4) input connections and four (4) output connections |
| Speeds | 1.25 / 2.5 / 3.125 / 5 / 6.25 / 10 / 12.5 Gbps (CXP-1, 2, 3, 5, 6, 10, and 12 respectively) | | |
| Streams | Up to eight (8) total | | |
| Connectors | High-density BNC | | |
| Power output | PoCXP | | |
| Miscellaneous | Connection-status indicator LEDs for inputs | | |
| **Memory** | | | |
| Type | DDR3 SDRAM | DDR4 SDRAM | |
| Quantity | 1 or 2 GB | 4 or 8 GB | 4 GB |
| Purpose | Image buffering and processing | | |
| **Image processing capabilities** | | | |
| Onboard look-up tables | 8-/10-/12-bit support | | |
| Onboard Bayer interpolation | GB, BG, GR, and RG pattern support | | |
| Onboard color space conversion | Input formats: 8-/16-bit mono/Bayer, 24-/48-bit packed BGR | | |
| | Output formats: 8-/16-bit mono, 24-/48-bit packed/planar BGR, 16-bit YUV, 16-bit YCbCr, 32-bit BGRa | | |
| Custom processing | N/A | Matrox Imaging- or user-developed using Xilinx Vivado® Design Suite and Matrox FDK | N/A |
| **I/Os** | | | |
| Types | Three (3) TTL I/Os per connector | | |
| | Two (2) LVDS inputs per connector | | |
| | One (1) LVDS output per connector | | |
| | Two (2) opto-isolated inputs per connector | | |
| Connectors | One (1) HD15 connector on main I/O bracket | Two (2) mDP connectors on main I/O bracket accessed through a mDP-to-HD15 adaptor | |
| | Two (2) HD15 connectors on secondary I/O bracket | | |
| **Physical** | | | |
| Form factor | Half-length, full-height, PCIe add-in card | | |
| Dimensions (L x W x H) | 16.76 x 11.12 x 1.871 cm (6.6 x 4.376 x 0.737 in) | | |
| **Environmental** | | | |
| Operating temperature | 0°C to 55°C (32°F to 131°F)[2] | | |
| Relative humidity | Up to 95% (non-condensing) | | |

# Specifications (cont.)

| Matrox Rapixo CXP | | |
|---|---|---|
| **Certifications** | | |
| Electromagnetic compatibility | FCC Class A | |
| | CE Class A (EN55032, EN55024) | |
| | ICES-003 / NMB-003 Class A | |
| | RCM Class A | |
| | KC Class A | |
| **Software** | | |
| Compatible software | MIL X | |
| | Matrox Design Assistant X | |
| | GenICam™ GenTL version 1.5 | |
| Operating system support | Windows 7 (64-bit) | |
| | Windows 10 (64-bit) | |
| | Linux (64-bit)<br>Note: MIL X only. | |
| Licensing provisions | MIL X license fingerprint and storage | |

# Ordering Information

| Part number | Description |
|---|---|
| **Hardware** | |
| RAP 1G 1C12 | Matrox Rapixo CXP Single CXP-12 PCIe 2.1 x4 frame grabber with 1 GB DDR3 SDRAM and passive heatsink.<br>Note: Cable adaptors for second and third GPIO sets sold separately. |
| RAP 2G 2C12 | Matrox Rapixo CXP Dual CXP-12 PCIe 3.1 x4 frame grabber with 2 GB DDR3 SDRAM and passive heatsink.<br>Note: Cable adaptors for second and third GPIO sets sold separately. |
| RAP 4G 4C6 | Matrox Rapixo CXP Quad CXP-6 PCIe 2.1 x8 frame grabber with 4 GB DDR4 SDRAM and passive heatsink. Includes one (1) mDP-to-HD15 GPIO cable adaptor.<br>Note: Cable adaptors for second, third, and fourth GPIO sets sold separately. |
| RAP 4G 4C12 | Matrox Rapixo CXP Quad CXP-12 PCIe 3.1 x8 frame grabber with 4 GB DDR4 SDRAM and passive heatsink. Includes one (1) mDP-to-HD15 GPIO cable adaptor.<br>Note: Cable adaptors for second, third, and fourth GPIO sets sold separately. |
| RAP 8G 4C12 P352 | Matrox Rapixo CXP Pro Quad CXP-12 PCIe 3.1 x8 frame grabber with 8 GB DDR4 SDRAM, Xilinx Kintex Ultrascale KU035 FPGA, and active heatsink (fansink). Includes one (1) mDP-to-HD15 GPIO cable adaptor.<br>Note: Cable adaptors for second, third, and fourth GPIO sets sold separately. |
| RAP 8G 4C12 P602 | Matrox Rapixo CXP Pro Quad CXP-12 PCIe 3.1 x8 frame grabber with 8 GB DDR4 SDRAM, Xilinx Kintex Ultrasacale KU060 FPGA, and active heatsink (fansink). Includes one (1) mDP-toHD15 GPIO cable adaptor.<br>Note: Cable adaptors for second, third, and fourth GPIOs sold separately. |
| RAP 4G 4C6 DF | Matrox Rapixo CXP Quad Data Forwarding CXP-6 PCIe 3.1 x8 frame grabber with 4 GB DDR4 SDRAM and passive heatsink. Includes one (1) mDP-to-HD15 GPIO cable adaptor.<br>Note: Cable adaptors for second, third, and fourth GPIO sets sold separately. |
| RAP 4G 4C12 DF[3]<br>Verify for availability | Matrox Rapixo CXP Quad Data Forwarding CXP-12 PCIe 3.1 x8 frame grabber with 4 GB DDR4 SDRAM and passive heatsink. Includes one (1) mDP-to-HD15 GPIO cable adaptor.<br>Note: Cable adaptors for second, third, and fourth GPIO sets sold separately. |
| **Software** | |
| Refer to MIL X datasheet and Matrox FDK datasheet. | |
| Refer to Matrox Design Assistant X datasheet. | |
| **Accessories** | |
| RAPACCKIT02 | Accessory kit for Matrox Rapixo CXP Single/Dual. Includes one (1) secondary dual HD15 I/O bracket with ribbon cable. |
| RAPACCKIT01 | Accessory kit for Matrox Rapixo CXP Quad. Includes one (1) additional mDP-to-HD15 GPIO cable adaptor and one (1) secondary dual HD15 I/O bracket with ribbon cable. |
| HDBNC2BNC | One (1) 12 in or 30 cm HDBNC-male-to-BNC-female adaptor cable. |

Endnotes:
1. The software may be protected by one or more patents; see www.matrox.com/patents for more information.
2. Models with passive heatsink require a minimum ventilation of 150 LFM (linear feet per minute) in a single board configuration. Contact a Matrox Imaging sales representative for ventilation requirement for multiple board configurations.
3. Certification pending.