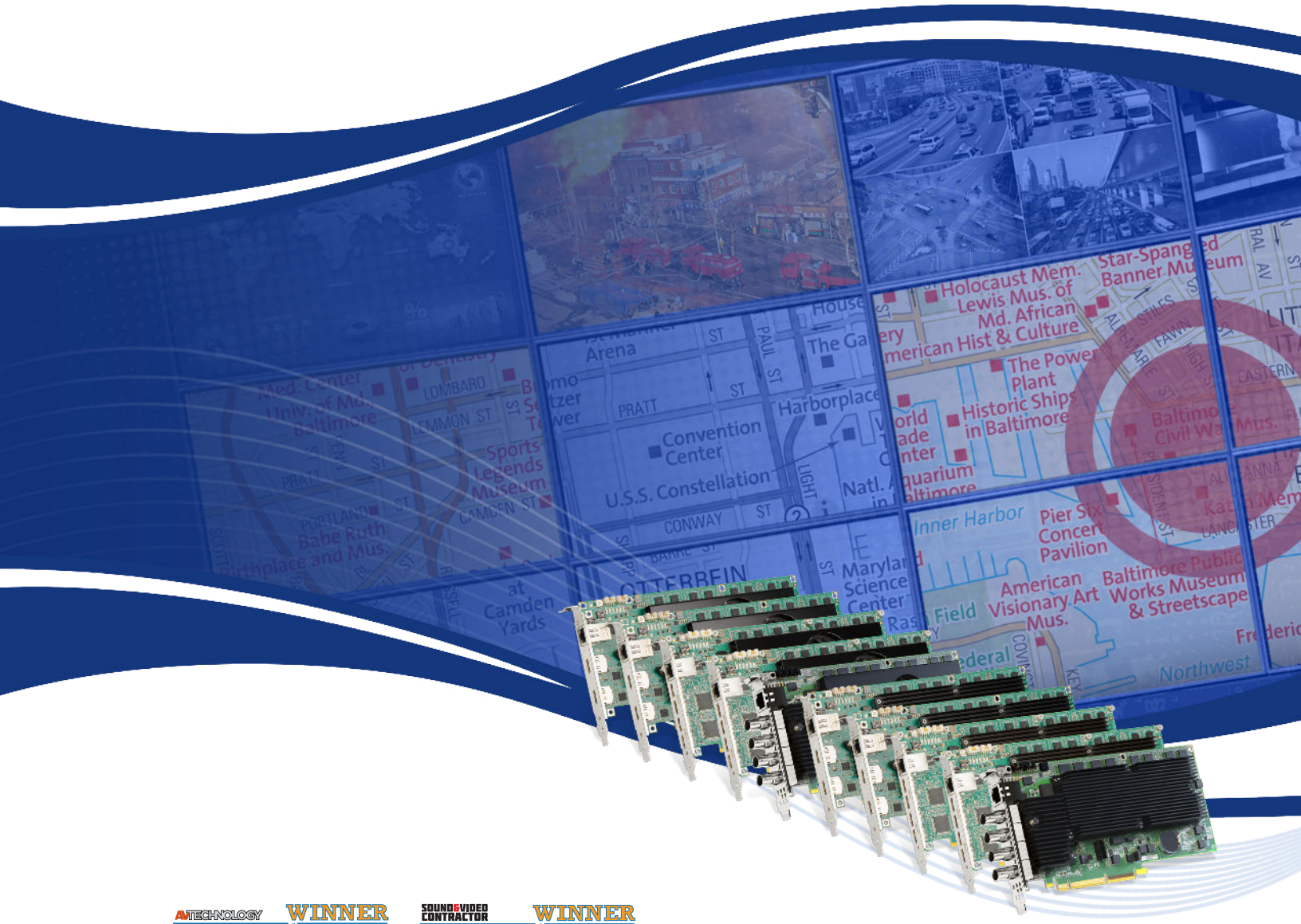
Matrox **Mura IPX™ Capture Series**



AV TECHNOLOGY WINNER BEST of SHOW InfoComm 2016

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Matrox Mura IPX 4K Capture Series Encode & Decode Cards

Any Source. Any Destination.

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Matrox Mura IPX Delivers 4K Capture and H.264 IP Encoding/Decoding Capabilities to Video Wall Controllers, Multiviewers & Personal Video Walls

Matrox Mura™ IPX 4K capture and IP encode & decode PCI Express® cards provide OEMs and system builders with best-of-breed hardware and software to enhance their video walls and operator workstations with advanced video processing and networking capabilities. Mura IPX boards are ideal for control rooms, digital signage, AV presentation and other applications requiring high-density capture, encoding, streaming, recording, decoding, displaying, and control.

Mura IPX Series Features	Benefits
Fanless design	• With the fanless board option, experience increased product longevity and minimized risk of failure in mission-critical environments.
All-in-One Card	• Benefit from HDMI, DisplayPort™ or SDI capture and IP encoding and decoding functionality packed onto a single-slot PCI Express board for simplified integration and significant cost savings
HDCP Capture*	• HDCP is supported with Mura IPX Capture Series and the Matrox D-Series video wall graphics card
H.264 Level 5.2 Encoding	• Multi-channel, hardware-accelerated H.264 encoding enables streaming and recording of high-quality, low-bitrate, up to UHD quality video over standard IP • Encode up to two 3840x2160 @60Hz, four 3840x2160 @30Hz, eight 1920x1080 @60Hz, sixteen 1920x1080 @30Hz, or numerous SD IP streams on a single board
H.264 Level 5.2 Decoding	• Multi-channel, hardware-accelerated H.264 decoding of IP sources • Decode up to two 3840x2160 @60Hz, four 3840x2160 @30Hz, eight 1920x1080 @60Hz, sixteen 1920x1080 @30Hz, or numerous SD IP streams on a single board
HDMI, DisplayPort and SDI Video Capture	• 4K video capture in true 24-bit color on up to four HDMI sources, four SDI sources or two DisplayPort sources
System Scalability	• Create high-density, low-footprint video wall controllers optimized for performance, thermals, and reliability
Color Space & Pixel Transfer Formats	• 4:4:4 chroma sampling allows for perfect replication of color • 4:2:2 and 4:2:0 chroma subsampling allows for significant bandwidth reduction while maintaining proper viewing quality
Compositing	• Create alpha blending, color key, crop, rotation, mirror, & flip effects
On-Board Network Interface Controller (NIC)	• Work off a separate, AV-dedicated network and securely add IP cameras, recordings from network-attached storage, live desktop captures, etc., on your video wall without outside intrusion or straining of the host system
Video Wall Management Software	• Manage Mura IPX-powered video walls locally or remotely using Matrox MuraControl™ for Windows® or iPad®, as well as third-party software options
API Customization	• Leverage easy-to-use APIs for tailor-made video wall management using both local and network-based custom user interfaces
Secure Cable Solutions	• Prevent loose cabling with secure Mini HDMI, SDI and DisplayPort solutions

Matrox Mura IPX Capture Series

Paired with Matrox D-Series

Advantages:

- Up to 16 synchronized 4096x2160 @ 60Hz outputs
- Available with HDMI or DisplayPort 1.4 outputs for seamless integration with multiple environments
- Over-the-top framelock cable means no additional cards are required for synchronization
- HDCP support
- Microsoft DirectX® 12, OpenGL® 4.5 and OpenCL™ 1.2 support enables latest professional applications
- Windows 10, Windows 11, and Linux[1] OS support

Paired with 3rd party Graphics[2]

Advantages:

- High-resolution monitor support, including Full HD and 4K/UHD
- Low-cost integrated or generic professional graphics options
- Multiple available models for various graphical performance requirements
- Microsoft DirectX, OpenGL and OpenCL support enables latest professional applications
- Windows 10, and Linux OS support

1 Contact Matrox for more details.
2 See release notes for details on which brands, models, and configurations are supported.
** Support available on HDMI card version*

Many Software Options to Manage Your Video Wall

Matrox MuraControl

Matrox MuraControl video wall management software provides an easy and intuitive way to manage your Matrox-based video wall, multiviewer, or personal video wall locally or remotely. Available as a feature-rich, single-license software for Windows or as a free, lighter version app for iPad with drag & drop functionality, it can be used to create and manage layouts offline or in real time.

Control of your video wall is at your fingertips.

Key Features

- Easily manage inbound and outbound AV streams
- Create, save, rename, copy, export, import, and delete layouts/presets
- Window transparency and color-keying functions
- Robust upgrade and software-support program
- Position, scale, clone, crop, frame, and label input windows
- Apply color-correction, multi-lingual text overlay, and deinterlacing

	MuraControl for Windows	MuraControl for iPad
Getting Started	• Free 21-day trial software available from Matrox website (USB software license available for purchase)	• Free app available on the Apple® App Store℠
Supported OS	• For Microsoft® Windows: MCFW on Windows 10, and Server® 2016 and 2019 • Support for Windows 11 and Server 2022 to be added with 3.07 release	• iOS 8 and up

Matrox SDKs for OEMs & Developers

Matrox offers a complete range of software, APIs, and libraries that allow OEMs and developers to deploy intuitive, ready-to-use software or build custom interfaces & applications based on project needs. Whatever the installation requirement, Matrox provides the necessary toolkit to build complete end-to-end solutions.

- **DirectShow:** Matrox support for Microsoft DirectShow to enable existing applications using DirectShow filters to capture, decode and encode/stream video.
- **Network API:** Command-level API that can be transmitted from any network computer including traditional PCs, smartphones, tablets, etc. Matrox command-level APIs can be used through Telnet, RS-232, and HTTP/HTTPS.
- **Matrox VWLib API:** A C/C++ based API to build custom capture, streaming and display video wall applications.The VWLib API makes use of DirectX under Windows and OpenGL under Linux.

	Software Development Kits		
Hardware	**DirectShow Support**	**Matrox Network API**	**Matrox VWLib API**
Matrox Mura IPX Capture Series + D-Series	Yes	Yes	Yes
Matrox Mura IPX Capture Series + 3rd Party	Yes	Yes	Yes

Matrox D-Series or 3rd party graphics paired with Matrox Mura IPX Capture Series

Matrox MuraControl for iPad and Matrox MuraControl for Windows

Matrox Mura IPX 4K Capture Series – Enhanced Capabilities for Your Video Wall

	4K Capture & IP Decode	4K Capture and IP Encode/Decode
Product		
Board Type	Four Captures and IP Decode	Four Captures and IP Encode/Decode
Connectors	4 x **Mini HDMI** (Type C), 1 x 10/100/1000 Base-T RJ45 Ethernet Port [pn: MURAIPXI-D4JF (fan sink), pn: MURAIPXI-D4JHF (fanless)] 2 x **DisplayPort 1.2**, 1 x 10/100/1000 Base-T RJ45 Ethernet Port [pn: MURAIPXI-D2MF (fan sink), pn: MURAIPXI-D2MHF (fanless)]	4 x **Mini HDMI** (Type C), 1 x 10/100/1000 Base-T RJ45 Ethernet Port [pn: MURAIPXI-E4JF (fan sink), pn: MURAIPXI-E4JHF (fanless)] 2 x **DisplayPort 1.2**, 10/100/1000 Base-T RJ45 Ethernet Port [pn: MURAIPXI-E2MF (fan sink), pn: MURAIPXI-E2MHF(fanless)] 2 x **12G SDI**, 2x **3G SDI**, 1 x 10/100/1000 Base-T RJ45 Ethernet Port [pn: MURAIPXI-E4SF (fan sink), pn: MURAIPXI-E4SHF (fanless)]
Input Resolutions[1]	HDMI/DP: 4096x2160 @60Hz*, 4096x2160 @30Hz, 3840x2160 @60Hz*, 3840x2160 @30Hz, 2560x1600 @60Hz	HDMI/DP: 4096x2160 60Hz*, 4096x2160 @30Hz, 3840x2160 @60Hz*, 3840x2160 @30Hz, 2560x1600 @60Hz SDI**: 12G-SDI on connectors 2 & 4 3G-SDI, HD-SDI, SD-SDI on all connectors
Bus Interface	PCIe x16 Gen 2 mechanical (x8 electrical)	
Memory	8 GB (34 GB/sec)	
Network Interface		
Standard	Ethernet 10/100/1000 Base-T, Auto-Detect, Half/Full-Duplex	
Connector	RJ45	
IP Version	IPv4/IPv6	
Distribution Method	Unicast, Multicast and Multiple Unicast	
IP Addressing	DHCP (Default) and Static IP	
Streaming & Control Protocols		
Streaming Protocols	SRT, RTP[3], RTSP (unicast, multicast, TCP-interleave), MPEG2-TS[3]	
Command & Control Protocols	RS232, Telnet and HTTP/HTTPS	
Color Space		
Pixel Transfer Formats	**RGB:** 8:8:8, 10:10:10 (24/32 bits per pixel), **YUV:** 4:4:4, 4:2:2, 4:2:0 (8/10 bits per component), **MONO:** (8/10 bits per pixel), Color Space Conversion Support	
Video & Audio Processing		
Video Scaling	Matrox Advanced MultiTap Video Scaling Engine for 4K to SD multi-channel downscaling and SD to 4K multi-channel upscaling	
Video Compositing	Multi-Channel Video Composite/Key/Blend/Crop/Mirror/Flip	
HDCP Compliance	Capture, display, and scale HDCP sources	
Audio Format	AAC, PCM, Stereo and Mono	
Audio Sampling Rate	Between 32 KHz and 96 KHz	
HDCP Support	HDCP is supported with Mura IPX Capture Series* and the Matrox D-Series video wall graphics card	
Video Encoding/Decoding		
Codec Engine	H.264/MPEG-4 Part 10 (AVC), Up to Level 5.2	
H.264 Profiles	Baseline profile (BP), Main Profile (MP), High Profile (HiP), High 10 Profile (Hi10P), High 4:2:2 Profile (Hi422P), High 4:4:4 Predictive Profile Separate Plane (Hi444PP)	
H.264 Encode[1, 4]	—	Two 3840x2160 @60Hz, four 3840x2160 @30Hz, eight 1920x1080 @60Hz, sixteen 1920x1080 @30Hz, or numerous SD IP channels
H.264 Decode[1, 4]	Two 3840x2160 @60Hz, four 3840x2160 @30Hz, eight 1920x1080 @60Hz, sixteen 1920x1080 @30Hz, or numerous SD IP channels	
Encoder/Decoder Bitrates	100 Kbps to 500 Mbps CABAC, 100 Kbps to 800 Mbps CAVLC	
Rate Control	Constant Bitrate (CBR), Variable Bitrate (VBR), VBR with Constraints, Configurable GOP (Group Of Pictures) Structure	
Environmental & Power Conditions		
Conditions	**Operating:** Temperature: 0 to 45 degrees Celsius, Humidity: 20% to 80% non-condensing, Altitude: from 650 hPA (3580m) to 1013 hPa (0m) **Storage:** Temperature: -40 to 70 degrees Celsius, Humidity: 10% to 90% non-condensing, Altitude: from 192 hPA (12000m) to 1020 hPa (-50m)	
Typical Power Consumption	24.6W (12V), 6.105W (3.3V) [Total: 30.705W]	
General Specifications		
Dimensions[2] **(L x H)/Weight**	9.02 x 4.38 inches/304g (fan sink), 9.02 x 4.38 inches/268g (fanless)	
OS Support	Linux®[5] and Windows 10/11/LTSC[5]	
Regulatory Certifications	**MURAIPXI-D2MF / MURAIPXI-D2MHF / MURAIPXI-E2MF / MURAIPXI-E2MHF / MURAIPXI-E4SF / MURAIPXI-E4SHF:** FCC (US) Class B, CE (European Union) Class B, RCM (Australia/New Zealand) Class B, KC (Korea) Class B, ICES-3 (Canada) Class B, UKCA (United Kingdom) Class B, VCCI (Japan) Class B. **MURAIPXI-D4JF / MURAIPXI-D4JHF / MURAIPXI-E4JF / MURAIPXI-E4JHF:** FCC (US) Class A, CE (European Union) Class A, RCM (Australia/New Zealand) Class A, KC (Korea) Class A, ICES-3 (Canada) Class A, UKCA (United Kingdom) Class A.	
Environmental Certifications	EU RoHS, China RoHS, REACH	
Warranty	2 Years (fan sink), 3 Years (fanless)	

1. Standard resolutions listed above. Support for custom resolutions available. For specific requirements, contact Matrox.
2. Including gold-fingers; not including bracket and connectors.
3. No support for these protocols for encoding purposes. Please see Release Notes for more details.
4. Listed number of streams are in YUV 4:2:0, 12 bits per pixel (8 bits per component). Support for 4:2:2 and 4:4:4 streams also available.
5. For more information, contact your Matrox Video representative.
** For the HDMI capture cards only, input resolution is in YUV 4:2:0, 12 bits per pixel (8 bits per component).*
*** 6G-SDI not supported. Not all 12G-SDI and 3G-SDI formats are supported. Please contact Matrox for more details.*

Contact Matrox Video

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