

Matrox DSX SDK

Release Notes (Linux)
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matrox[®]
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Your notes

About these release notes

This document lists new features, known issues, and other important information applicable to the Matrox DSX SDK version 10.2.020.25336.

IMPORTANT - Before you upgrade

This release supports the libdispatch library version 0.1.3.1. For more information on libdispatch, see the specific installation manual for your Matrox DSX product.

Remarks

- Before installing the software installation package (*DSX-TopologyUtils.run*), in addition to installing libdispatch, libaio and libGL must also be installed. For more information on installing libaio and libGL, see the installation manual for your Matrox DSX product.

Supported operating systems

This release supports the following operating systems:

- Ubuntu 18.04.1 LTS, 64-bit (full support for kernel version 4.15)
- Ubuntu 16.04 LTS, 64-bit (full support for kernel version 4.4 and 4.8)
- Ubuntu 14.04 LTS, 64-bit
- CentOS 7, 64-bit

Remarks

- For Ubuntu, use a generic kernel. Low latency kernel is not supported.
- Ubuntu 18.04.1 (kernel version 4.15) has not been validated yet for X.mio5 (12G and ST 2110) and DSX LE5 (12G and ST 2110).
- CentOS 7.6 has not been validated yet for X.mio5 (12G and ST 2110) and DSX LE5 (12G and ST 2110).
- CentOS 7.7 has not been validated.

Development platform

This release supports the following development platform:

- GCC development platform version 7 or later.

Discontinued support

As of this release, the Matrox DSX no longer supports the following hardware:

- Matrox DSX LE3.

As of this release, the Matrox DSX no longer supports the following development tools:

- GCC development platform version 4.8.
As of this release, only GCC development platform version 7 or later is supported.
- On CentOS 7, Developer Toolset prior to 7.
As of this release, Developer Toolset 7 or later is required on CentOS 7.

What's new in this release

This section lists important changes, new features, and new sample applications for this release.

IMPORTANT - Changes

The Matrox M264 hardware encoder is now thread safe, which means that the completion callback notification can no longer be unregistered from within the notify function. That is, it can no longer be unregistered in ***IMvVideoEncoderOperationCompletionCallback::Notify()***. The unregister must be done after receiving the close notification from ***IMvEncoderVideo::Close()*** and outside the notify function. To demonstrate how to do this, the sample applications *mvsVideoEncoderTester* and *mvsCompressedWriterSampleApp* have been modified. (VPG-33058)

New hardware features

This section lists the new hardware features for this release.

Matrox X.mio5 12G and DSX LE5 12G

- Up to 12 completely reconfigurable connectors with up to four 12G inputs and four 12G outputs. For more information, see “[Configuring the X.mio5 12G or DSX LE5 12G inputs and outputs](#)” on page 8.
- Up to 16 channels of embedded audio per SDI video stream for inputs and outputs.
- Matrox ancillary data format for inputs and outputs.
- Scaling, compositing, and deinterlacing (X.mio5 12G only).
- Alpha channel inputs and outputs.
- Auto-detection of input video standards.
- Auto-detection of genlock standard.
- Time base correction for synchronous or asynchronous input sources (by setting ***SMvInputStreamSettings::eInputStreamMode*** to ***keMvInputStreamModeAudioVideoTBC***).

Remarks

- The Matrox DSX supports the Matrox X.mio5 12G and the Matrox DSX LE5 12G cards as of this beta release. You should not revert to an earlier release of the Matrox DSX (this includes official, beta, development, and service pack releases) with these cards.
- For more information, see the [X.mio5 12G](#) and [DSX LE5 12G](#) data sheets.

Matrox X.mio5 (12G and ST 2110) and DSX LE5 (12G and ST 2110)

- Decimation scaler for proxy generation of any I/O buffer, which provides 1/2, 1/4, or 1/8 decimation.

Note For more information, see the [X.mio5 12G](#), [DSX LE5 12G](#), [X.mio5 ST 2110](#), and [DSX LE5 ST 2110](#) data sheets.

New software features

This section lists the new software features for this release.

AMWA NMOS support

- The Matrox DSX.sdk supports modifying and querying the parameters of the NMOS Nodes, Devices, Senders, and Receivers using the **IMvNmosController** interface. To demonstrate how to do this, the *mvsNmosConnectionApi* sample application has been modified.

Note Currently the modifications are not saved to the Matrox NMOS configuration file that is associated to your Matrox card. This means that when your system is restarted, the modifications are not applied.

- Support for AMWA NMOS BCP-003-01 Securing Communication in NMOS Systems including:
 - TLS 1.3 Cipher Suites (RFC 8446) and TLS 1.2 Cipher Suites (RFC 5246) with support for using multiple certificates.

Note Client side verification must be configured through the OS.

- Support for JT-NM TR-1001-1:2018 as per JT-NM Tested March 2020 for system environment and device behaviors for SMPTE ST 2110 media nodes including:
 - DHCP (Dynamic Host Configuration Protocol), PTP (Precision Time Protocol), LLDP (Link-Layer Discovery Protocol), DNS-SD (Domain Name Service-Service Discovery).
 - System resource as per Annex A System Resource Specification in JT-NM TR-1001-1:2018.

Matrox M264

- The Matrox M264 hardware encoder supports:
 - Dynamic GOP size changes by ending a GOP on any frame, which forces the next frame to be an IDR frame.
 - Capturing buffers in I420 (8-bit) and I422 (10-bit) formats.

Note Scaling and deinterlacing is not supported when capturing I420 or I422 buffer formats.

Improvements

This release includes the following improvements:

Matrox DSX.sdk

- The Matrox installation program can be installed in silent mode without automatically restarting your system. For more information, see “[Silent mode installation without automatic restart](#)” on page 7. (VPG-32670)

Matrox X.mio5 ST 2110 and DSX LE5 ST 2110

- Improved input stability. (VPG-32280, VPG-32147, VPG-32059, VPG-32326, and VPG-32700)
- Diagnostic information (such as SFP temperature, power, and current) is now reported for long range (LR) SFP transceivers using the ***IMvSfpIp::GetTelemetry()*** method. (VPG-33257)

Sample applications

There are no new sample applications provided with this beta release.

Note For information on changes to an existing sample application, see the README of the sample application in question in */opt/MatroxVideo/DSX.sdk/Samples*.

Resolved issues

This release includes the following resolved issues.

Matrox X.mio5 ST 2110 and DSX LE5 ST 2110

- Correct MAC (Media Access Control) address is now used on SFP B for the PTP (Precision Time Protocol) signal conforming to SMPTE ST 2059-2. (VPG-32687)
- When the packet interval is 1 ms, fixed RTP (Real-time Transport Protocol) time stamp mismatch messages (*kMvkStatusInputAndSystemRtpTimeStampMismatch*) on audio capture. (VPG-33026)
- Capture of audio streams in overnight tests no longer fail. (VPG-32578)
- Fixed an issue where PTP sync rates of 64 or higher could temporarily unlock the genlock. (VPG-31715)
- Fixed an issue which caused the card to hang when receiving certain ancillary data streams. (VPG-33016)

Matrox M264

- The H.264 levels were adjusted from 4.0 to 4.1 according to the Sony specifications when using the Matrox M264 hardware encoder to capture the following Sony XAVC Long GOP formats. (VPG-33412)

Sony XAVC format	Resolution	Frame rate (fps)
Long GOP 25 (4:2:2, 10-bit)	1080i	25 and 29.97
	1080p	23.98, 25, and 29.97
Long GOP 50 (4:2:2, 10-bit)	720p	50 and 59.94

Other resolved issues

- Shaped ARGB graphic (8-bit) to shaped YUAYVA 4:2:2:4 (8- and 10 bit) conversion pedestal is now applied correctly. (VPG-32761)

Limitations

This release has the following hardware limitations:

- When you use the same multicast address data flow for multiple inputs on the same SFP connector, you must enable the data flow for ancillary data first, then for audio, and last for video. If you need to disable the data flow, you must disable it in the reverse order. That is, you must disable the data flow for video first, then for audio, and last for ancillary data. (VPG-32343)
- When capturing on X.mio5 ST 2110 or DSX LE5 ST 2110, the card must be genlocked to an IP source conforming to SMPTE ST 2059-2 and the IP stream must conform to SMPTE ST 2059-2. (VPG-32050)
- On X.mio5 ST 2110, DSX LE5 ST 2110, X.mio3 IP, and DSX LE4 IP, the genlock source must be set before a topology is created. (VPG-29004)
- Processing between buffers created with different Flex Engines is only supported if these buffers were created with Flex Engines of I/O cards. (VPG-28317)
- On the Matrox M264 hardware decoder, when the YUV 4:2:2 10-bit format (*keMvSurfaceFormatYUYV422*) is used to decompress generic H.264 compressed data, the codec will return `MV_E_INVALID_PITCH` for certain resolutions (such as 720p, 4096x2160, or some proxy resolutions). If this occurs, the user application should use the V210 format (*keMvSurfaceFormatV210*). (VPG-20525)

Known issues

This release includes the following known issue:

- On X.mio5 12G, DSX LE5 12G, X.mio5 ST 2110, and DSX LE5 ST 2110, NTSC and PAL are currently not supported.

Downloading this release

You can download this release here:

ftp://video.matrox.com/DSX/10202025336_DSX.sdk_10.2_beta_1/Linux

There are several executables that you can install depending on which DSX product you have. Open the *README.txt* file included with the executables for more detail.

Where to find more information

For more information on how to install and use our hardware and software, refer to the documentation available on our ftp site when you download this release or the documentation included with the Matrox SDK. For additional information, such as application notes, refer to the Knowledge Base available on our website:

<http://www.matrox.com/video/en/support/developer/private/tools/>



Important The documentation installed with the Matrox SDK contains the most up-to-date information available at the time the installation program was compiled. It may not necessarily contain the latest information about our products. We recommend checking our website and forum for the latest information and any documentation updates.

Documentation updates

This section provides documentation that will be available with the Matrox SDK for the 10.2.100 official release.

Silent mode installation without automatic restart

To run the installation program in silent mode without automatically restarting your system, use the following suffix:

-- -quiet-no-reboot

For example: **sudo ./DSX-TopologyUtils.run -- -quiet-no-reboot**

All prompts and messages are bypassed. Log messages, including errors about dependencies, will appear in the execution trace. As well, your system will not automatically restart when the software installation is complete. Instead, a status file (*UpdaterStatus.txt*) will be generated when the Matrox software is installed and the Matrox firmware is updated (if required). For more information on updating the Matrox firmware, see the installation manual for your card.

Unless you changed the install path, the *UpdaterStatus.txt* file will be copied to */opt/MatroxVideo/DSX.utils* and contains one of the following three strings, which can be used by an installation script.

String	What does it mean?
Done	The Matrox software is installed and the Matrox firmware is up to date.
Reboot required	The Matrox software is installed and the Matrox firmware is updated. A restart is required.
Shutdown required	The Matrox software is installed and the Matrox firmware is updated. A full system shutdown is required before your system can be restarted.

Note Although the Matrox DSX License Agreement is only displayed during a typical installation, acceptance of the agreement is implied when using this suffix.

Configuring the X.mio5 12G or DSX LE5 12G inputs and outputs

The X.mio5 12G or DSX LE5 12G card can be reconfigured to different I/O configurations using a read-only I/O configuration file (such as, *xmio5_x2_00i12o.pin*). For example, an X.mio5 12G/X2 or a DSX LE5 12G/X2 card can be configured as 12i00o (twelve inputs and no outputs), 11i01o, 10i02o, 09i03o, 08i04o, 07i05o, 06i06o, 05i07o, 04i08o, 03i09o, 02i10o, 01i11o, or 00i12o.

Remarks

- Refer to the tables in the connector mapping reference document for your card for the relationship between the physical input and/or output connectors and their corresponding video channels.
- If you change the I/O configuration, the new configuration will be retained until the next time it is changed.
- Run the *mvConnectorConfig.exe* application with `sudo` (for example, `sudo ./mvConnectorConfig.exe load -f=Xmio5Le5ConnectorMapping\Xmio5\xmio5_x2_00i12o.pin`) or while logged in as the root user.

To configure the X.mio5 12G or DSX LE5 12G card, follow the steps below:

- 1 From the folder that contains the mvConnectorConfig.exe, open the Terminal. The default installation folder is /opt/MatroxVideo/DSX.utils/bin.

- 2 Configure the inputs and outputs as follows:

```
./mvConnectorConfig.exe load -f=Xmio5Le5ConnectorMapping/  
subfolder /Pinout_XiYo.pin -sn=XXXXXXX
```

Where:

subfolder Subfolder for X.mio5 12G (Xmio5) or DSX LE5 12G (Dsxle5).

Pinout_XiYo.pin I/O configuration file containing the I/O mapping that you would like to apply (for example, xmio5_x2_00i12o.pin).

Xi Number of inputs.

Yo Number of outputs.

XXXXXXX Serial number of the card you want to configure. If you do not specify the serial number, no cards in your system will be configured.

Note The serial number is case sensitive and can be obtained from mveXinfo (for more information on mveXinfo, see the installation manual for your card).

- 3 Press **ENTER**.

If the new I/O configuration requires an FPGA update, you will need to reboot your system.

- 4 If you need to reboot your system, follow the onscreen instructions. The new configuration will be applied to your card.

Your notes



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