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KALEIDO-X

VERSION 8.30

Release Notes

M770-2103-166

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Title	Kaleido-X Version 8.30 Release Notes
Part Number	M770-2103-166
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1 Release Notes

The Release Notes include a list of new features and improvements, as well as known issues and limitations associated with the latest version of the Kaleido-X software.

Overview

Kaleido-X version 8.30 is a major release containing new features, enhancements (see page 3), and bug fixes (see page 5). It also expands support for the KMX-4911 multiviewer, up to a 36×4 configuration.

IMPORTANT

Kaleido-X may require new CompactFlash storage cards
As of version 8 of the Kaleido-X software, every KXO-Dual3 output card in a Kaleido-X multiviewer must have a 4 GB CompactFlash storage card on board. Output cards with a 2 GB CF card cannot be upgraded to version 8 (or later). Contact Grass Valley to order the 4 GB CF cards you need (see Contact Us, on page 89).

Kaleido-IP X100, Kaleido-IP X300 may require a RAM upgrade
To be able to use Kaleido-X version 8, and later releases, a Kaleido-IP must have at least 12 GB of RAM. If a Kaleido-IP X300 system must handle more than 1500 sources, the multiviewer's RAM should be upgraded to 24 GB. See Kaleido-IP X300, and Kaleido-IP X100 Memory Modules on page 86.

Kaleido-IP X310, Kaleido-IP X110, and SNMP: As of version 7.90 of the Kaleido-X software, **Kaleido-IP X310** and **Kaleido-IP X110** multiviewers relay health-related status information via a new MIB module. The new module, `basebrd7_v5.mib`, replaces both of the earlier `basebrd5_v1.mib` and `basebrd5_v2.mib` MIBs. See Upgrading Your Kaleido-IP Multiviewer on page 65.

Kaleido-MX and Kaleido-Modular-X may require new assignments
As of version 7.51 of the Kaleido-X software, URS time code information appears under the SYSTEM module, in a Kaleido-MX or Kaleido-Modular-X system. You may need to reassign text, alarm, and time code levels, in the sources table, after you upgraded from version 7.50 or earlier (see page 70).

IMPORTANT *(continued)*

You may need to upgrade the Kaleido-X software, on a Kaleido-MX or Kaleido-Modular-X multiviewer, BEFORE upgrading the Densité controller's CPU-ETH2 firmware to version 2.2.0 (or later)

Kaleido-MX and Kaleido-Modular-X multiviewers, with a version of the Kaleido-X software *earlier than 7.20* are not compatible with CPU-ETH2 version 2.2.0 (and later). Using these multiviewers with a Densité controller that has *version 2.2.0 or later* of the CPU-ETH2 firmware may result in an inoperative multiviewer system, in which case you might need assistance from Grass Valley Technical Support.

Kaleido-MX and Kaleido-Modular-X may require a controller upgrade

To fully benefit from the auto recovery features introduced in Kaleido-X version 7.20, Kaleido-MX and Kaleido-Modular-X multiviewers require a controller with at least version 2.2.0 of the CPU-ETH2 firmware, and a 4 GB CompactFlash storage card. (With version 2.1.2 of the CPU-ETH2 firmware, or with less than 4 GB CompactFlash storage capacity, only IP address information, and frame configuration are recovered from the Densité CPU-ETH2 controller non-volatile memory.)

KMV-3901/3911, Kaleido-MX, and Kaleido-Modular-X require new restore points saved AFTER controller upgrade

After you have upgraded the CPU-ETH2 firmware *from version 2.1.2 (or earlier)* to version 2.2.0 (or later), you must save restore points to the CPU-ETH2 controller's non-volatile memory, for all your multiviewer cards (see Saving Restore Points to the CPU-ETH2 for All Card, on page 81). Refer to the Densité CPU-ETH2 Release Notes for more information.

Alarm debouncing may need to be recalibrated

Before upgrading from version 6.50 (or earlier) to version 6.60 (or later) of the Kaleido-X software, make sure to review your system's alarm debouncing calibrations, some of which you may have to modify if you wish to maintain the same behavior. Refer to page 70 for details.

Kaleido-X16 and KXO-Dual3 compatibility

As of version 5.22 of the Kaleido-X software, all new Kaleido-X16 multiviewers and KXO-Dual3 output cards have new hardware components not compatible with earlier versions of the software.

- Kaleido-X or Kaleido-X16 multiviewers shipped with version 5.22 (or later) of the Kaleido-X software cannot be downgraded to a version earlier than 5.22.
- This also applies to new KXO-Dual3 output cards shipped with version 5.22 (or later), and might, in some cases, apply to older output cards and Kaleido-X16 multiviewers, should they be refurbished or repaired.

Kaleido-X systems may require a RAM upgrade

As of version 5.00, the Kaleido-X software can be installed on all Kaleido-X multiviewers that have recent KXO-Dual3 output cards. To ensure optimal performance of the software, it is required to have all KXO-Dual output cards configured with a 2-GB RAM module. See Kaleido-X Output Cards Memory Module on page 82.

IMPORTANT *(continued)*

The "Internal router" logical router is not supported anymore
As of version 5.20 of the Kaleido-X software, configurations that involve controlling a multiviewer's router outputs via the *Internal router* logical router are not supported anymore. See Ref. #KX-4751 on page 32 for more information.

Notes

- In line with our commitment to environmental preservation, only the Quick Start Guide for your multiviewer model, and some ancillary documents (e.g., welcome letters, warranty cards) are distributed in printed form. You can obtain the latest version of the Kaleido-X User's Manual, database samples, Quick Start guides and hardware reference manuals for all multiviewer models, as well as the Release Notes, from the *Documentation Library* section of Grass Valley's website. (See Documentation, on page 40 for details.) Software, drivers, and useful data are also available from the *Downloads* section of the website.
- To install and use XEdit, you must be connected to the multiviewer over an Ethernet network, or have access to the Grass Valley website. Refer to *Installing XEdit* in the Quick Start Guide that shipped with your multiviewer, for more information.

New Features and Enhancements

The following is a complete list of features and enhancements introduced over the course of the latest three major versions of the Kaleido-X software.

New Features in Kaleido-X Version 8.30

★ [Ref. #KX-10774] **Kaleido-IP:** Support for RTMP H.264/AAC streams.

★ [Ref. #KX-10860] **XEdit exporting/importing layouts:** XEdit now supports exporting, and importing room layouts. An exported layout is saved to your file system as a *Kaleido Room Layout* (KRL) file. You can use this file as a backup, or reuse it by importing it to another room or to another system.

★ [Ref. #KX-10438] **Daktronics pitch timer:** Support for Daktronics Pitch Timer TV Feed Specification DD3030549, Rev 1. (Requires All Sport 5000, with All Sport CG version 2.6 or later).

★ [Ref. #KX-10674] **Upstream router control:** A new **Assign Router Input** category/index panel replaces the former **Assign** [router] **input** menu, which the KMV-3901/3911 and Kaleido-XQUAD did not support.

Note: The **Assign Router Input** category/index panel does not support duplicate names for the router sources (see Ref. #KX-11130 on page 32).

★ [Ref. #KX-11069] **Audio monitoring:** Support for removing an audio monitoring output assignment by using a gateway command (`SetKAudioOut`), or a *Monitor audio* action, to set the audio source to *None*.

★ [Ref. #PMV-267] **KMX-4911 alarm probing, and metadata extraction:**

- Detection of video freeze, black, luma too high conditions
- Detection or extraction of closed captions, teletext or subtitles
- Extraction of XDS metadata

Enhancements in Kaleido-X Version 8.30

★ [Ref. #PMV-1774] **KMX-4911 and spanned monitors:** Support for seamless spanning of monitors across two room displays or more.

Notes

- For a *seamless* output, the room displays must be positioned as a tight 2 × 2 grid, in XEdit, and assigned as follows (same configuration as a 4K UHD room).
  - Top left: CARD A, Head 1
  - Bottom left: CARD A, Head 2
  - Top right: CARD B, Head 1
  - Bottom right: CARD B, Head 2
- In a spanned video monitor, if the video window is larger than 1920 × 1080 pixels (the maximum video window size currently supported for this multiviewer model), the source image will be windowboxed (i.e., centered, and surrounded with blank borders).

★ [Ref. #KX-11279] **Kaleido-X, Kaleido-X16 audio monitoring:** The Kaleido-RCP2's *Mute* button, its equivalent on the RCP-200, and the corresponding Gateway command are no longer limited to analog audio monitoring outputs. It is now possible to use them to mute digital audio, at the AES, HDMI, and SDI monitoring outputs, of Kaleido-X, and Kaleido-X16 multiviewers.

★ [Ref. #KX-2762] **XEdit opening/deleting layouts:** XEdit now supports opening and deleting multiple layouts in a single operation. In addition, deleting a **room** no longer requires having first deleted all associated layouts — these are now automatically deleted at the same time.

★ [Ref. #KX-10583] **XEdit layout editing:** Enhanced usability of monitor libraries (formerly known as "widget libraries"). The custom monitor libraries now have their own tab in the **Tools** pane, separate from the default monitor libraries, and XEdit automatically opens any custom libraries that were open when you last closed the application.

★ [Ref. #KX-10586] **Text levels and layout editing:** XEdit now prevents you from editing UMD text in a layout, for UMDs configured to show dynamic text.

★ [Ref. #KX-10893] **XEdit logical source count:** The **Configure** menu now includes an option to prevent XEdit from prompting you to disable global alarm contribution for all alarm levels when the number of logical sources in your system exceeds 1500.

★ [Ref. #KX-10185] **XEdit connection history:** XEdit now remembers recent connection history (up to 10 multiviewers).

New Features in Kaleido-X Version 8.20

- [Ref. #PMV-2092] **KMX-4911:** Support for external router control (routers or control systems).

Enhancements in Kaleido-X Version 8.20

- [Ref. #KX-10892] **Kaleido-Modular-X 4K UHD prescaler:** Support for 2160p29.97, and 2160p25 quad link, square division sources.

New Features in Kaleido-X Version 8.10

- [Ref. #KX-10015] **Kaleido-Modular-X:** Support for the KMX-3901-IN-IP input/output module.
- [Ref. #KX-10777] **KMV-3901/3911:** Support for the Densité 3+ CPU-ETH3 frame controller.

Enhancements in Kaleido-X Version 8.10

- [Ref. #KX-10758] **Kaleido-IP:**
  - Support for elementary streams over RTP.
  - Decoding of MPEG-4 video, and MPEG-4 AVC (H.264) video elementary streams.

Bug Fixes

Bugs Fixed in Kaleido-X Version 8.30

★ [Ref. #KX-11277] **Kaleido-IP detection of scrambled packets:** Packets with no payload but marked as scrambled may prevent decoding of otherwise non-scrambled video and audio elementary streams.

★ [Ref. #KX-11344] **Kaleido-IP encrypted signal detection:** With *version 8.20* of the Kaleido-X software, when a monitored source is encrypted, the Kaleido-IP raises the *Video loss* alarm, instead of the *Video scrambled* alarm.

★ [Ref. #KX-9709] **Kaleido-RCP2:** A Kaleido-RCP2 configured with the appropriate unicast IP address for a multiviewer in a different subnet may still be unable to log on to rooms associated with this remote multiviewer.

Notes

- Version 165 of the Kaleido-RCP2 firmware solves this issue. Refer to *Updating the Kaleido-RCP2 Firmware,* in the Kaleido-RCP2 Guide to Installation and Operation, for detailed instructions.
- Previous versions of the Kaleido-RCP2 firmware would attempt to ARP an IP address even if it was not in the same subnet as the Kaleido-RCP2. With version 165, the Kaleido-RCP2 will not attempt to ARP an IP address outside of its own subnet. Instead, it will send the original IP datagram to the gateway, which will forward it as appropriate. If the Kaleido-RCP2 does not have an ARP entry to resolve the IP address of the default gateway, then it will ARP the gateway before sending the original IP datagram.

Bugs Fixed in Kaleido-X Version 8.20

- [Ref. #KX-10930] **Router control:** A multiviewer connected to an Encore controller using the *Grass Valley 7000 Native Protocol* may stop receiving status labels from the controller.
- [Ref. #KX-6102] **Overwriting existing layout via Save as:** In XEdit, it is not possible to use **Save as**, to overwrite an existing layout.
- [Ref. #KX-6104] **Overwriting current layout via Copy layout to:** In XEdit, it is not possible to use **Copy layout to**, within the current layout (e.g., to swap heads).
- [Ref. #KX-10861] **Saving cluster layouts:** Cluster layouts resulting from a **Save as** operation in XEdit may lose composite monitors, should the corresponding composite monitors be deleted from the originating layout, or if the originating layout itself is deleted.

Bugs Fixed in Kaleido-X Version 8.10

- [Ref. #KX-10809] **Kaleido-IP:** Client information leak, and buffer overflow vulnerabilities CVE-2016-0777, and CVE-2016-0778.
- [Ref. #KX-10659] **GPI-1501:** Communication between a multiviewer, and a GPI-1501 General Purpose Interface I/O Module hosted in a Densité 3+ FR4 or GV Node frame is not supported.
- [Ref. #KX-10862] **Kaleido-IP, Kaleido-X, Kaleido-X16:** Local privilege escalation vulnerability CVE-2016-0728.
- [Ref. #KX-4366] **Kaleido-X, Kaleido-X16 potential display issue:** Occasionally, during a cold start of the multiviewer, there could be a display corruption issue in the form of a narrow strip of repeated content on the monitor wall.
- [Ref. #KX-10808] **Kaleido-X, Kaleido-X16 layout background:** Layout background images in a PNG format that includes embedded metadata may fail to appear on the monitor wall.
- [Ref. #KX-10830] **Router control:** Multiviewers controlled using the SAM (Snell/Pro-Bel) SW-P-08 protocol respond to unsupported request messages with NAK, instead of ACK, and they do not respond — instead of replying with NAK — to messages whose packaging is incorrect (e.g., incorrect format, incorrect byte count, incorrect checksum), which eventually results in a loss of communication between the controller and the multiviewer (some controllers deliberately send messages that have an invalid checksum, as a keep-alive mechanism).
- [Ref. #KX-10839] **Missing info from tally device at startup:** Tally information from network devices connected to a multiviewer may fail to appear on the monitor wall at startup.

Known Issues and Limitations

Note: The star (★) symbol indicates a new known issue or limitation found in Kaleido-X version 8.30.

Installation, Upgrade, Downgrade, Live Update

All Multiviewer Models

- [Ref. #KX-4520] **Cluster and cascade systems:** All members of a cascade or cluster must have the same version of the Kaleido-X software.

  > Note: Although some Kaleido-X version combinations may prove to be compatible in the context of a cluster or cascade system, this is not supported. If you upgrade any cluster or cascade member from Kaleido-X version 6.30 or earlier *to version 6.40 or later* make sure you upgrade all members to the same version. Failure to do so may result in erratic mouse pointer behavior on the monitor wall.

- [Ref. #KX-3607] If you try upgrading a KMV-3901/3911 multiviewer by using an operating system (`.os`) file meant for a Kaleido-X multiviewer model (or vice versa), then nothing happens, and no message appears at the bottom left corner of the monitor wall in the area where upgrade progress would normally be displayed. Likewise, attempting to upgrade a Kaleido-IP multiviewer by using files meant for the other multiviewer models (or vice versa) will result in the same behavior.
  Workaround: Verify that you loaded your USB key with the correct operating system file (of the form "`kxos-8.30-build_xxxx.os`" for a Kaleido-X multiviewer, "`kmvos-8.30-build_xxxx.os`" for a KMV-3901/3911, or a `.run` file for a Kaleido-IP), and then insert the USB key again.
- [Ref. #KX-1528] When performing a system upgrade from a USB key, there is a 30-second countdown period during which you may expect that removing the USB key will cancel the upgrade. However, if you do so, the system will still report that it is updating the software, but the upgrade will fail after a minute or so.
  Workaround: Insert the USB key again to properly update your system.
- [Ref. #KX-2850] **Changing monitors during upgrade causes dashboard display issues:** Changing a monitor type during an update causes the upgrade dashboard to freeze, and to be hidden or displaced. If a KMV-3901/3911, a Kaleido-X16 or either head on a KXO card is set to **Use detected monitor resolution**, and, if you change the monitor connected to it while an upgrade is in progress, the dashboard may freeze, and have its position altered. If the new resolution is higher, the dashboard is repositioned on top of other monitor wall elements. If the new resolution is lower, the dashboard is hidden off-screen. Note that the upgrade process continues normally.
  Workaround: Restart the multiviewer or reset the KXO card after the upgrade is complete.

Kaleido-IP

- [Ref. #KX-8394] **Display rotation:** After upgrading a Kaleido-IP from Kaleido-X version 7.21 or earlier, to version 7.30 or later, any rotated displays you might have configured will revert to an unrotated behavior. Contact Technical Support for the latest configuration instructions (see Contact Us, on page 89).

- [Ref. #KX-7805] **Kaleido-IP X310, Kaleido-IP X110:** Should you downgrade a Kaleido-IP X310, or Kaleido-IP X110 multiviewer, to a version of the Kaleido-X software earlier than 7.30, this will result in a non-functional system, with the monitor wall not starting.
Workaround: To recover from an unwanted downgrade, use XAdmin's Upgrade page to upgrade your multiviewer back to Kaleido-X version 7.30 or later.
- [Ref. #KX-5579] **Upgrade button missing after uploading RUN file to a Kaleido-IP with a pre-6.20 version of the Kaleido-X software:** In the case of Kaleido-IP systems with a Kaleido-X version earlier than 6.20, on rare occasions, after uploading the RUN package you wish to install, the **Upgrade** button may be missing on the XAdmin's Upgrade page.
Workaround: Clear your browser's cache and cookies before uploading the RUN package again. If this still does not resolve the issue, then using a different browser may help. See also: Ref. #KX-5433 on page 34.
- [Ref. #KX-5871] **Upgrade apparently incomplete:** When upgrading your Kaleido-IP system to Kaleido-X version 6.20 or later, *from a version earlier than 6.20,* the **Reboot** button may fail to appear on the XAdmin's Upgrade page, at the end of the upgrade.
Workaround: Restart the multiviewer by clicking the Reset button in the Status and Options page, and then refresh the Upgrade page.

Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X

- [Ref. #KX-6676] **Video freeze during update:** When updating the Kaleido-X software on a Kaleido-MX, Kaleido-MX 4K or Kaleido-Modular-X multiviewer, probing may momentarily stop, video may appear frozen on the monitor wall, while the dashboard reports that Head 1, and Head 2 are disconnected.
- [Ref. #KX-8449] **Input card live update:** In a Kaleido-MX, or Kaleido-Modular-X system that has a version of the Kaleido-X software earlier than 7.40, if you replace an input card with a card that has *version 7.40,* the system will not automatically downgrade the new card.
Workaround: Prepare a USB key with the Kaleido-X software version you wish to keep using, and reapply the upgrade. Refer to the upgrade instructions in the Release Notes that were published with this earlier version of the software.
- [Ref. #KX-8389] **Output card live update:** In a Kaleido-MX, or Kaleido-Modular-X system that has a version of the Kaleido-X software earlier than 7.40, if you replace an output card with a card that shipped with version 7.40 (or later), initially or after repairs, the system may not automatically downgrade the new card.
Workaround: Upgrade the system to version 7.40 or later.

> Note: KMX-3901-OUT cards with the latest hardware are not compatible with versions of the Kaleido-X software earlier than 7.40.

- [Ref. #KX-7281] **Input card live update:** In a Kaleido-MX or Kaleido-Modular-X system, replacing an input card that has the Kaleido-X software version 7.01 (or earlier) with a card that has version 7.10 or later results in the system failing to automatically downgrade the new card.
Workaround: Upgrade the system to version 7.10 or later, and then downgrade to the desired Kaleido-X software version.

KMV-3901/3911

- [Ref. #KX-4384/KX-4509] **Altered video on monitor wall after upgrade:** After upgrading a KMV-3901/3911 multiviewer, video windows on the monitor wall may appear to be corrupted or lacking luminance.
  Workaround: Restart the multiviewer *once more.*
- [Ref. #KX-3490] **Monitor resolution unknown after upgrade:** After upgrading a KMV-3901/3911 multiviewer, with the **Use detected monitor resolution** option selected, it may happen that the monitor resolution is nevertheless not detected.
  Workaround: Reseat the KMV-3901/3911 card. Alternatively, if a DXF-200 is connected to the monitor, you can reset this device instead of reseating the multiviewer card.

Kaleido-X16

- [Ref. #X16-41] On rare occasions, after updating the Kaleido-X software on a Kaleido-X16, the USB and serial ports may become inoperative.
  Workaround: Restart the Kaleido-X16 using its power switch.
- [Version 4.10] USB update takes up to 30 minutes on a Kaleido-X16.

Kaleido-X (4RU, 7RU, 14RU)

- [Ref. #KX-4227] Video activity on the monitor wall while a multiviewer equipped with KXO-HDM modules is being upgraded to version 5.30 (or later), *from a version of the Kaleido-X software earlier than 5.30,* may cause a permanent loss of functionality to some of the HD-SDI outputs. Precautions must be taken before upgrading such a system. See page 71 for details.
- [Ref. #KX-2732] A firmware update performed on an input card that has HD video signals on all its input ports may fail, resulting in the input card entering safe mode.
  Workaround: To recover from the update failure, power cycle the multiviewer. After the reboot, the system will start with the updated Kaleido-X software version, and the auto-update process will then proceed with applying the latest firmware to any input card whose update had initially failed.
- [Ref. #KX-1739] USB Live Update takes about 20 minutes.
- [Ref. #KX-1439] If a firmware update begins upon insertion of an input card, inserting a second input card, or making a change to another card via XEdit, will cause the update to fail. The input card on which the update failed will enter safe mode.
- [Ref. #KX-953] After a Live Update using a USB key, displays associated with the output card where the USB key is inserted may turn black.
  Workaround: After the Live Update is complete, remove the USB key before the output card reboots.
- [Ref. #KX-2216] **Expansion systems:** If you downgrade a Kaleido-X (14RU) expansion system from version 3.00 (or later) to version 2.20 without first splitting the frames as described in the documentation, neither frame will reboot properly or be accessible via XAdmin. For more information, please refer to *Splitting an Expansion Frame*, and *Recovering from a failed downgrade,* in the Kaleido-X (7RU) Hardware Description & Installation Manual.
- [Ref. #K3-195] **Version-2.00 upgrades:** When upgrading from version 2.00 to version 2.10 or later, the GPI/Genlock or KXO-24Router firmware upgrade may fail. When the

multiviewer restarts, the Live Update process will automatically try to update the failed cards.

System

Kaleido-IP

- [Ref. #KX-5938] **Support for dynamic H.264 video format changes:** With the current version of the Kaleido-X software, it may take up to 1.5 s for the video decoding to resync during which time the video appears frozen on the monitor wall.
- [Ref. #KX-6066] **EdgeVision compatibility:** If you set the *high resolution* stream's encoder level to **Medium** in EdgeVision Configurator, the output stream resulting from a a 720p input signal to the EdgeVision is currently not compatible with the Kaleido-IP, and may result in noise (e.g., vertical lines, or stray dots) on the monitor wall.
Workaround: In Edgevision Configurator, select a different encoder level for the high resolution stream.
- [Ref. #EV-855] **EdgeVision compatibility:** In the case of a Kaleido-IP multiviewer system with sources from an EdgeVision device, the Kaleido-IP must have version 6.40 (or later) of the Kaleido-X software, and the EdgeVision must have version 1.05 (or later) of the EdgeVision software.
- [Ref. #KX-10338] **Renaming transport streams:** Renaming a transport stream may result in blank text labels or disabled/non-existent alarm statuses on the monitor wall.
Workaround: Restart the Kaleido-IP unit after changing a transport stream's name.
- [Ref. #KX-5357] **Kaleido-IP support for join and leave:** Before creating or modifying a layout, for a Kaleido-IP system, review the guidelines listed under Ethernet Connection, on page 60.

Kaleido-IP Limitations

Kaleido-IP systems do not yet support the following:

- decoding of SMPTE ST 302 PCM audio
- audio sampling rate change without a PSI change (see Ref. #KX-5808 on page 28)
- decoding of a signal's aspect ratio from WSS metadata
- changing the multiviewer's network settings from the monitor wall (see Ref. #KX-5507 on page 22)
- automatic output resolution detection (see Ref. #KX-5748 on page 22)
- [Ref. #KX-5412] associating unicast transport streams to consecutive port numbers
- cropping, and zooming (underscan/overscan)
- spanned monitors

KMX-4911

★ [Ref. #PMV-2455] **KMX-4911 factory reset:** With the current version of the KMX-4911 service panel available for iControl and iControl Solo, it is not possible to reset card settings to their factory-default values, for *card C,* or *card D* of a KMX-4911 system that has three or four cards.

★ [Ref. #PMV-2417] **KMX-4911 alarm contributions:** With the current version of the Kaleido-X software, it is not possible to configure alarm contributions for the status LED on *card C,* or *card D* of a KMX-4911 system that has three or four cards. Any changes to the default card LED alarm contribution configuration for these cards are ignored.

- [Ref. #PMV-2061] **KMX-4911-18X4-4DRP rev. 100:** With *revision 100* of the KMX-4911 18×4 dual rear panel, the mapping between the multiviewer's logical sources and the GV Node fabric module's outputs is discontinuous. For example, with a 18×4 rev. 100 rear covering a GV Node frame's slots 9 and 10, card A is in slot 10 (associated with the fabric module's outputs 82–90), and card B is in slot 9 (associated with the fabric module's outputs 73–81).

  Note: With revision 200 (and later) of the 18×4 rear panel, the card in the leftmost slot (the slot with the lowest number) is considered *card A,* while the next card on the right is *card B,* which results in the more natural mapping sequence.

- [Ref. #PMV-1511] **Clusters:** With the current version of the Kaleido-X software, if multiple KMX-4911 multiviewer modules are to be part of a cluster, they must be physically located in the same GV Node frame.

KMX-4911 Limitations

The KMX-4911 multiviewer supports a subset of the features offered by other Kaleido-X series models. The KMX-4911 currently does not support the following Kaleido-X features:

- Extraction of Dolby E metadata
- Loudness measurement
- Discrete audio sources
- Sending alarms via SNMP
- Layout, and video display:
  - Duplicated/repeated video
  - Overlapping video monitors
  - Cropping, and zooming (underscan/overscan)
  - Automatic aspect ratio adjustment based on decoded AFD/WSS information
  - Video monitors larger than 1920×1080 pixels
  - Display rotation
  - Custom display resolutions

Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X

- [Ref. #IC-17634/KX-7836] **Densité CPU-ETH2 service panel in iControl version 5.00:** The service panel available with iControl version 5.00 for the Densité CPU-ETH2 controller card may fail to report network configuration information. This problem applies to controller cards in Kaleido-MX (1RU) multiviewer systems, and in Densité 3+ FR1 housing frames. Contact Grass Valley Technical Support for more information (see Contact Us, on page 89).
  Workaround: Use the controller card's local control panel, or the Densité CPU-ETH2 Web client.

- [Ref. #KX-7949] **KMX-3901-OUT control panel in iControl version 6.00:** The control panel available with *iControl version 6.00* for the Kaleido-MX and Kaleido-Modular-X output cards may prevent you from changing the card's or the system's network settings.
  Workaround: Use the local control panel in the Densité housing frame, or XAdmin's System Configuration page.
- [Ref. #KX-7405] **KMX-3901-IN control panel in iControl:** The services currently available with iControl do not yet recognize the 4K UHD prescaler mode. When the input card control panel reports a KMX-3901-IN-16-Q card type, there are no indications as to whether the prescaler mode is enabled or not.
  Workaround: Verify the SDI LEDs status, on the card itself. On a card configured as a prescaler, SDI LEDs 3, 4, 7, 8, 11, 12, 15, and 16 are always off.
- [Ref. #KX-6814] **Probing:** In the case of a Kaleido-MX or Kaleido-Modular-X system with *two output cards,* when you remove or restart one of the cards, the other stops probing for one second.
- **Phase locking:** The Kaleido-MX and Kaleido-Modular-X multiviewers' SDI outputs are not aligned with the reference.

Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X Limitations

The Kaleido-MX, Kaleido-MX 4K, and Kaleido-Modular-X do not support the following Kaleido-X features:

- [Ref. #KX-7937] Removing more than one input card at a time from a system in operation.
- [Ref. #KX-6692] Loudness measurement
- Layout, and video display:
  - Overlapping video windows
  - Brightness/contrast/color saturation calibrations
- Other input/output signals:
  - DVI background inputs
  - Composite inputs
  - [Ref. #KX-6722] Stereoscopic 3D input formats
  - AES audio monitoring output (the WECO connector on the KMX-3901-OUT rear panel only supports analog audio)
  - The *Kaleido-MX (1RU) 16 x 4,* and the *Kaleido-MX 4K (1RU) 16 × 1* do not have analog audio outputs (they offer audio monitoring through their SDI, and HDMI outputs only)
  - Router outputs

KMV-3901/3911

- [Ref. #KX-6475] **KMV-3901/3911 timers:** In the case of a KMV-3901/3911 multiviewer, using an LTC count down time code as the reference for a count up timer is not yet supported.
- [Ref. #KX-4314] **KMV-3911 HD-SDI output activation:** In the case of a KMV-3911 multiviewer, after enabling the *SDI monitoring output* option in XAdmin, you may need to power cycle the multiviewer for the change to be effective.

- [Ref. #KX-3520] **KMV-3901/3911 networking setup:** If the Densité CPU-ETH2 controller associated with a KMV-3901/3911 multiviewer is configured to apply settings stored in its non-volatile memory whenever a Densité card is inserted or restarted, then it may not be possible to change the multiviewer's IP address and other networking parameters.
  Workaround: Before changing the multiviewer's networking parameters, make sure the Densité controller's *default action* is set to *keep card settings*. See Disabling the CPU-ETH2 Automatic Restore Feature on page 80.
- [Ref. #KX-3678] **KMV-3901/3911 auto-recovery not fully supported:** If you replace a KMV-3901 or KMV-3911 card with a new one (in the same Densité frame slot), the new card receives appropriate network settings from the Densité controller, but the multiviewer's database is not automatically restored.
  Workaround: Manually restore the database, either
  - by using XEdit to export a local copy of the database from your PC or laptop to the new card, or
  - by physically transferring the SD memory card from the old multiviewer card to the replacement card.

  Note: The Densité controller cards do not yet have enough non-volatile memory to support full database backups from multiviewer cards.

KMV-3901/3911 Limitations

Designed to address production-type applications, the KMV-3901/3911 multiviewer models support a subset of the features offered by the other Kaleido-X series models, and thus may be lacking some of the advanced monitoring capabilities typical of master control, and playout environments. The following Kaleido-X features are *not supported* in the KMV-3901/3911:

- Alarm probing, and metadata extraction:
  - Detection of video freeze, black, luma too high conditions
  - Detection or extraction of closed captions, teletext or subtitles
  - Extraction of Dolby E metadata
  - Loudness measurement
  - Extraction of XDS metadata
- Layout, and video display:
  - More than eight video windows over two displays; duplicating video more than eight times
  - Overlapping video windows
  - Video signal repeated in more than 2 windows
  - Display rotation
  - HD-SDI monitoring output
  - Brightness/contrast/color saturation calibrations
  - Detail enhancer calibration
- Other input/output signals:
  - Discrete audio inputs (only embedded audio inputs are supported)

    - Router outputs
    - DVI background inputs
    - Composite inputs
- Graphical display elements:
    - Analog clocks (only digital clocks are supported)

Kaleido-X16

- [Ref. #KX-4459] **EdgeVision compatibility:** A Kaleido-X16 multiviewer configured to feed its HDMI output to an EdgeVision device must have version 5.30 (or later) of the Kaleido-X software.
- [Ref. #KX-3861] **Kaleido-X16 with two serial devices:** If there are two serial devices connected to a Kaleido-X16 multiviewer, and configured in XEdit, then swapping their port assignments may result in a nonfunctional system.
  Workaround: If you need to reconfigure the serial port assignments for two devices in XEdit, first disconnect both devices from the multiviewer as follows:
    1. In the **Interconnects** tab, click the link between the device and the multiviewer, and then, in the **Properties** pane, set the **RS-422 communication port** attribute to "Disconnected".
    2. Save the system.

       If you are using XEdit in offline mode, then export the database to the multiviewer.
    3. Set the new port assignment for each device, and then save the system again.

       If you are using XEdit in offline mode, then export the database to the multiviewer once more.

Kaleido-X (4RU, 7RU, 14RU)

- [Ref. #KX-2597] **Kaleido-X (14RU):** After changing the frame rate for an expansion system, it may happen that the GPI/Genlock card status information displayed in XAdmin does not reflect the new frame rate.
  Workaround: Reset the GPI/Genlock card (either by pressing the Reset button on the front of the card, or by clicking the **Reset** button at the end of the card heading row in XAdmin's Status and Options page). If there is no valid reference signal connected to the GPI/Genlock card input, then you may need to physically reseat the card.
- [Ref. #K3-234] **Kaleido-X (14RU):** If an expansion card is removed from, and then reinserted into Frame A, video output from a KXO card on Frame A may become corrupted if that KXO card is being fed by inputs from Frame B.
  Workaround: Press the reset button on the Frame A expansion card.
- [Ref. #KX-2127] **Kaleido-X (14RU):** On rare occasions, after an expansion card is inserted into a Kaleido-X frame, Dolby E audio embedded in a video signal is lost when routed to a monitoring output.
  Workaround: If the audio monitoring out for Dolby E stops working after inserting an expansion card, reseat both the associated input, and output cards. The audio should be restored.

- [Ref. #KX-2242] **Kaleido-X (14RU):** If the expansion card in Frame A is removed, an upgrade message appears in the dashboard: "Firmware upgrade cannot proceed until legacy KXO (<3.00) are removed from frame B".
  Workaround: Before removing an expansion card, power down the frame. Note that removing an expansion card will affect the behavior of the expansion system. Refer to the *Kaleido-X (7RU) Expansion* chapter in the Kaleido-X (7RU) Hardware Description & Installation Manual, for more information.

Multiple Multiviewer Models

- [Ref. #KX-3492] **Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X, Kaleido-XQUAD, KMV-3901/3911 time reference:** The *URS time code loss* alarm (called *URS TC loss* in XEdit, and *URS TC - Time code loss* in XAdmin) reports an error condition only when the URS signal is absent. If the REF-1801 card is otherwise properly configured, then the absence of a time code source is not reported as an error.
- [Ref. #KX-6403] **Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X, Kaleido-XQUAD, KMV-3901/3911 and Densité CPU-ETH2 date/time configuration:** A Densité CPU-ETH2 controller with an incorrect date may prevent multiviewer cards located in the same housing frame as the controller card from rotating their log files, which could result in the multiviewer systems becoming unstable, and eventually locking up.
  Workaround: Make sure the controller's internal clock is correctly set. Refer to the Densité CPU-ETH2 Enhanced Ethernet Controller Card Guide to Installation and Operation for details.

  > Note: Should you need to change the time on a Densité CPU-ETH2 controller, then make sure to restart all multiviewers located in the same housing frame as the controller card.

- [Ref. #KX-4275] **Kaleido-X, Kaleido-X16:** If your multiviewer is configured for half-duplex communication, and you wish to set it back to auto-negotiation mode, you may need to power cycle the multiviewer, for the change to be effective.
- [Ref. #KX-4927] **NV9000 aliases:** The Kaleido-X software does not officially support aliases. If you wish to include aliases from an NV9000 router configuration within your multiviewer configuration, please contact Technical Support (see Contact Us, on page 89).
- [Ref. #KX-3900] **Swapping port assignments:** Swapping the port assignments between two tally devices connected to a multiviewer over a TCP/IP or UDP/IP network, and configured in XEdit, may result in a nonfunctional system.
  Workaround: If you need to interchange the network port assignments between two devices in XEdit, first disconnect both devices from the multiviewer as follows:
  1. In the **Interconnects** tab, click the link between the device and the multiviewer, and then, in the **Properties** pane, set the **Transport type** attribute to "Disconnected".
  2. Save the system.
     If you are using XEdit in offline mode, then export the database to the multiviewer.
  3. Set the new port assignment for each device.
  4. Set the **Transport type** attribute back to the appropriate value.
  5. Save the system again.

If you are using XEdit in offline mode, then export the database to the multiviewer once more.

- [Ref. #X16-43] **EDID auto detection**: With EDID auto detection enabled, if a glitch occurs in the connection between a multiviewer and one of its monitor-wall displays, the display timings may be reset to incorrect values. The display image is compromised (e.g., green dots, misaligned graphics and/or video, or loss of display). This might happen, for example, after a power-up or a system reboot, during which an anomaly in the EDID detection would change the head resolution. It could also be triggered by the swap of a DXF-100 storing the wrong EDID information.
  Workaround: Reset the head resolution or reboot the system to have the proper resolution applied.
- [Ref. #KX-3109] **Clusters:** All members of a cluster must have the same Kaleido-X software version.
- [Ref. #KX-2564] **Clusters:** After a multiviewer is removed from a cluster system, and reverted to a standalone system by reloading its individual database, errors or warnings may be recorded in `vroom.log`.
  Workaround: Make sure to restart any separated multiviewer once you have loaded it with the appropriate standalone database.
- [Ref. #KX-2213/T80883] Changing an input format may momentarily affect the entire screen.
- [Ref. #KX-2916] **HD-SDI monitoring output resolutions:** The current version of the Kaleido-X software supports the following DVI/RGBHV resolutions only: 1920 × 1080 (for an HD-SDI output in the 1080i or 1080p format, configurable in XEdit), and 1280 × 720 (for an HD-SDI output in the 720p format). Any other DVI/RGBHV resolution will result in the HD-SDI output being disabled (you may see a color bar in some circumstances).

> Note: Make sure that the **Use detected monitor resolution** option is disabled. Refer to *Enabling EDID Auto-Detection from the Monitor Wall,* or *Enabling EDID Auto-Detection in XEdit,* in the Kaleido-X User's Manual, for details.

Cascade Limitations

In the current version of the Kaleido-X software, cascade systems are subject to the following limitations.

- [Ref. #KX-9366] **KMV-3911 cascade:** Kaleido-Modular KMV-3911 cascade systems do not support audio monitoring at the SDI monitoring output.
  Workaround: Convert the cascade system's HDMI output to SDI, by using an ADVC G1 converter. This will make the audio from the HDMI output available for monitoring.
- **RCP operation:** In the case of a cascade system, monitor wall functions performed via the associated buttons on a Kaleido-RCP2 or RCP-200 (ASPECT RATIO, UNDERSCAN, FULL SCREEN, etc.) only work in parts of the layout associated with the multiviewer that is directly connected to the displays.
  Workaround: Use the monitor wall menu.
- **Kaleido-X16 cascade, Kaleido-IP hybrid cascade:** In the case of a Kaleido-X16 cascade, Kaleido-IP/Kaleido-X16 cascade or Kaleido-IP/Kaleido-X cascade, the following limitations apply:

  - Audio monitoring is not supported.
  - Router outputs are not cascaded.
- In the case of a **KMV-3901/3911** cascade, XAdmin may fail to report the system's genlock source, reference format, and related statuses for the second- and third-layer cards (i.e., the ones that are not directly connected to a monitor wall display). iControl alarm browsers, and filtered system lists that display alarms in XEdit may also incorrectly report a reference input loss for these cards.
- **KMV-3901/3911 cascade:** Restarting one of the cards may result in a blank monitor wall display.
  Workaround: If you restart the card associated with the third layer of a cascade, then restart the card associated with the second layer. Once the card associated with the second layer has restarted, then restart the card associated with the first layer as well.
- In the case of a **KMV-3901/3911** cascade, an output resolution of 1600 × 1200 is not supported.
- Full screen layouts are not supported.
- Changing a display resolution from the monitor wall menu is not supported. See Ref. #KX-3956 on page 23 for more information.
- Changing the system name or IP address of a **KMV-3901/3911** multiviewer associated with a cascade, by using the card's control panel on the Densité housing frame, or by using the KMV-3901/3911 control panel in iControl, is not supported. To maintain the integrity of the underlying cluster configuration, you must use XAdmin, or the monitor wall menu, to make any such changes. In the advent that such a change was made by mistake, or that is had to be forced for some reason, you will have to repair the broken cascade (see *Repairing a Cascade Configuration,* in the KMV-3901/3911 Cascade Step-by-Step Configuration guide).
- **Some changes are not automatically propagated to all members of a cascade.** If you wish to have the same configuration for every multiviewer in a cascade, then the following elements must be manually replicated:
  - system calibrations
  - sources/channels, and router configuration
  - pointer size configuration (after changing the pointer size for a room, on all multiviewers in a cascade, you must restart every multiviewer, for the change to become effective across the cascade system)
  - audio monitoring output assignment (the audio monitoring output assignment configured for each RCP user must be replicated manually to every member of the cascade system)
- If two multiviewers in a cascade are connected to the same router, then the router name should be the same in both configurations. Conversely, two different routers in the same cascade must not have the same name.
- Serial ports are not shared between cascade members. A serial device connected to one multiviewer in a cascade is not known to the other cascade members.
- Working against the same cascade system in concurrent XEdit sessions is not supported.
- EDID auto-detection is not supported. When configuring a cascade room, make sure the **Use detected monitor resolution** check box is not selected for any of its displays.

Refer to *Enabling EDID Auto-Detection from the Monitor Wall,* or *Enabling EDID Auto-Detection in XEdit,* in the Kaleido-X User's Manual, for details.

- In the case of a **KMV-3901/3911** cascade room with two heads, spanning monitors across the two displays is not supported.
- Although nothing prevents you from configuring a **Kaleido-X** cascade system in XEdit, such a configuration is not supported.

Hardware

- [Ref. #KX-3829] **Input cards:** It is possible to use legacy KXI-16HSV, KXI-16HS or KXI-16SV input cards with the latest KXI-16H3-R rear panels. However, in such a case, the return loss specification for the SDTI input is: > 15 dB up to 200 MHz, and > 12.5 dB up to 270 MHz.
- **KMV-3901/3911 does not support USB hubs:** Only one USB device (USB key or mouse) can be connected at a time. If an externally powered USB hub is connected to the KMV-3901/3911, then a mouse connected to the hub will not work.
- [Ref. #KX-2463] **Kaleido-RCP2 does not support USB hubs:** If an externally powered USB hub is connected to the Kaleido-RCP2, then a mouse connected to the hub will not work. Similarly, multi-function keyboards or numeric keypads that have a built-in USB hub also do not work when connected to the Kaleido-RCP2.
  Workaround: Use a standard keyboard or keypad, and connect it to the Kaleido-RCP2 directly.
- [Ref. #MEDIT-990] **Kaleido-X (4RU) / Kaleido-X (7RU):** Interconnect configurations are lost when you change frame type.

  Note: Support for the Kaleido-X (4RU) was introduced with Kaleido-X version 2.10. Only cards of this version or later should be used in a 4 RU frame.

- [Ref. #KXOD-119] **Ethernet Switch:** When a KXO-Dual card is connected to an HP ProCurve 408 Ethernet switch, the switch may not recognize the output card.
  Workaround: Forcing the output card's link mode to 100 Mbps full duplex may help.
- [Ref. #KX-2367] **Redundancy:** The KXO and KXI cards in a Kaleido-X multiviewer have built-in redundancy that works like a RAID 3 or 5 disk array—when a faulty card is removed, the other cards automatically rebuild the software on its replacement. In order for this to work properly, however, a faulty card must be replaced, and the system must be allowed time to rebuild. Swapping cards around indiscriminately, without any consideration for keeping a master card in the system, or not waiting long enough for cards to have booted completely before swapping them, can lead to serious problems.
  Workaround: (1) Remove all KXO and KXI cards. (2) Insert a card that has the most recent software version. (3) Insert the remaining KXO cards one by one, allowing time for the software rebuild and a complete reboot. (4) Insert the KXI cards one by one, allowing time for the software rebuild and a complete reboot. See System Requirements & Installation on page 57, for more information.

- [Ref. #KX-2561] Restarting an expansion system with an expansion card missing or a disconnected expansion cable is not supported. If you reseat missing expansion cards or reconnect expansion cables, an IP address conflict will be reported.
  Workaround: Restart the expansion system after reseating any missing expansion card and making sure both expansion cables are connected.

  > Note: If you wished to convert your expansion system to two separate Kaleido-X (7RU) systems, please refer to *Splitting an Expansion Frame* in the Kaleido-X (7RU) Hardware Description & Installation Manual.

- [Ref. #KX-1981/KXOD-142] **Audio monitoring:** Audio playback is ~37 ms ahead of video, due to an inherent processing limitation.
  Workaround: It is possible to compensate for this delay using the audio monitoring delay calibration introduced in version 3.00.
- [Ref. #KX-2894] **Non-functional connection on Audio I/O TBA for the Kaleido-X16:** The PC In analog audio ports on the Kaleido-X16's Audio I/O terminal block adapter (TBA) are not functional in the current release of the Kaleido-X software.
- **Non-functional connections on Kaleido-X16:** OPTION, PC In 1 Left, PC In 1 Right, PC In 2 Left, PC In 2 Right.
- **Non-functional connections on KXO-Dual/KXO-Dual3:** OPTION 1, OPTION 2.
- **Non-functional buttons on Kaleido-RCP2:** ALARM INHIBIT, SAVE.
- **Non-functional connections on KXI-DVI-Bridge:** ETH 10/100.

Monitor Wall

- [Ref. #KX-10808] **KMV-3901/3911 layout background:** Layout background images in a PNG format that includes embedded metadata may fail to appear on the monitor wall.
  Workaround: Remove the metadata from the PNG image file, recreate the image without metadata, or convert the PNG file to another format such as JPEG.
- [Ref. #KX-10528] **Kaleido-IP:** Changing the display resolution for *Head 2* of a Kaleido-IP multiviewer may result in frozen video (and audio) on the monitor wall.
  Workaround: Restart the multiviewer.
- [Ref. #KX-5811] **Kaleido-IP:** If you replace a monitor wall display with a different model while the multiviewer is running, you may notice unexpected behavior at the audio monitoring output.
  Workaround: Restart the multiviewer to obtain the audio support information from the new display.
- [Ref. #KX-7912] **Kaleido-IP:** If your Kaleido-IP multiviewer is connected to a single monitor wall display configured with a 50 Hz refresh rate, you may notice video tearing on the display.
  Workaround: Configure a separate room with the second, unused head, and select a default resolution that has a 50 Hz refresh rate.
- [Ref. #KX-8308] **KMV-3901/3911:** When monitoring a 1080p source in a video window larger than 960×540 (i.e., larger than ¼ of the signal resolution), you may notice that the bottom part of the image is shifted horizontally by a few pixels.
- [Ref. #KX-7397] **Virtual alarms:** A virtual alarm created by using XEdit *version 7.21 or earlier* with a name containing characters such as the ampersand (&), slash (/), dollar sign ($),

question mark (?), pound sign (#), at sign (@), etc. may appear disabled when used to form a higher-level virtual alarm.
Workaround: Use XEdit version 7.30 (or later) to edit alarms whose name includes characters outside of [a-z], [A-Z], [0-9], period (.), asterisk (*), hyphen (-), underscore (_), percent sign (%), and space. Avoid renaming these alarms (see Ref. #KX-6159, on page 30). Alternatively, recreate these alarms.

- [Ref. #KX-7537] **Audio monitors:** In the case of a source with embedded Dolby E audio in either of the two AES pairs that are selected for Dolby E metadata decoding, while the Dolby E option is not enabled for this source, VU and peak meters may appear *empty* (indicating silence) instead of *full* (0 dBFS), which indicate by convention that the option is not enabled. In addition, if an audio monitor explicitly configured to show PCM levels is assigned a source with embedded Dolby E audio, the monitor's VU and peak meters will appear *empty* (indicating silence) regardless of the actual PCM levels or Dolby E option status.
Workaround: Setting the monitor's **Audio format** attribute to *Auto,* instead of PCM, may help with the second issue.
- [Ref. #KX-7278] **KMV-3901/3911 cascade:** On rare occasions, after a KMV-3901/3911 cascade system started, some video monitors in the current layout may remain blank.
Workaround: Refresh the layout.
- [Ref. #KX-6793] **Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X:** When loading a layout, or changing a video monitor's source assignment, on the monitor wall or by using a Gateway command, or when an input signal changes format, the corresponding display may exhibit a brief glitch.
- [Ref. #KX-6744] **Display resolutions:** Although it is still possible to select and configure output resolutions as low as 800×600 in XEdit (and on the monitor wall, for some multiviewer models), this resolution is not supported. The lowest display resolution supported is 1024×768.
- [Ref. #KX-6974] **Kaleido-X with KXI-16HSV, KXI-16HS, or KXI-16SV (rev. 599 and earlier) input cards:** If a source becomes unavailable (or you switched to a source that does not include audio) while you were monitoring the associated audio, noise may persist at the audio monitoring outputs.
Workaround: Momentarily enable audio monitoring for a different source.
- [Ref. #KX-6287] **Audio monitors:** Although valid calibration values for out of phase sensitivity are between -1 and 1, XEdit lets you set the threshold for an audio monitor's phase meter to a value that is outside of the valid range, after which audio monitors may turn gray or unresponsive on the monitor wall.
Workaround: To recover from such a situation, set the phase meter threshold back to a valid value (between -1 and 1), and then restart your multiviewer.
- [Ref. #KX-4934/KX-6337] **NV9000 source labels:** In the case of a multiviewer with sources from an upstream NV9000 router configuration, on rare occasions, after restarting the multiviewer, UMDs may fail to show the expected source labels on the monitor wall.
Workaround: Refresh the layout on the monitor wall. If router source labels are still missing after refreshing the layout, then restart the multiviewer.
- [Ref. #KX-4907] **Polish teletext:** Kaleido-X multiviewers with first-generation input cards (KXI-16HSV, KXI-16HS, or KXI-16SV rev. 599 and earlier) may incorrectly display accented characters in Polish WST teletext, on the monitor wall.

- [Ref. #KX-5861] **Multi-program transport streams and Kaleido-IP:** Kaleido-IP that shipped with a version of the Kaleido-X software *earlier than 6.30* may incorrectly process multi-program transport stream (MPTS) sources where programs are added or removed dynamically (e.g., when re-grooming or channel-lineup changes take place). In such cases, it may happen that video and audio programs are shifted in the Kaleido-IP sources table, resulting in incorrect video and audio on the monitor wall. If you experience this problem after upgrading your system to version 6.30 or later, please contact Technical Support for a solution (see Contact Us, on page 89).
- [Ref. #KX-1054] **Closed captions:** Closed captions may be fail to appear or they may be only partially visible, when a monitor — be it configured with transparency — overlaps the area where the captions are expected to be displayed.
- [Ref. #KX-4736] **Router crosspoint actions:** A monitor wall action configured to switch router crosspoints upon loading a specific layout may fail to produce the expected crosspoint changes when that layout happens to be loaded during the multiviewer startup process.
  Workaround: Refresh the layout.
- [Ref. #KX-4722] **Distorted monitors:** A system configuration that has displays in different rooms sharing conflicting head assignments may result in distorted layout elements on the monitor wall. This may happen, for example, if the same output head is assigned to two displays with different resolutions.
  Workaround: Review your room configurations in XEdit, look for red *Head* elements in the filtered System list that appears at the bottom of the **Tools** pane, and then remove the conflicting display or delete the conflicting room altogether (refer to *Managing Rooms* in the Kaleido-X User's Manual).
- [Ref. #KX-6008] **Kaleido-IP:** In the case of a Kaleido-IP system that has sources from an EdgeVision device, changing a stream's resolution at the EdgeVision output may result in UMDs failing to display text information decoded from the stream (e.g., the video format), on the monitor wall.
  Workaround: Restart the Kaleido-IP multiviewer.
- [Ref. #KX-6066] **EdgeVision compatibility:** If you set the *high resolution* stream's encoder level to **Medium** in EdgeVision Configurator, the output stream resulting from a a 720p input signal to the EdgeVision is currently not compatible with the Kaleido-IP, and may result in noise (e.g., vertical lines, or stray dots) on the monitor wall.
  Workaround: In EdgeVision Configurator, select a different encoder level for the high resolution stream.
- [Ref. #KX-6068] **Kaleido-IP:** When the Kaleido-IP is decoding streams that are subject to sustained corruption, it may happen that the decoding engine restarts causing all video windows on the monitor wall to momentarily freeze or black.
- [Ref. #KX-4192] **Expansion systems:** After inserting or removing an input card, you may notice video jitter on every monitor wall display that is connected to an output card's Head 2.
  Workaround: Refresh the layout on the monitor wall.
- [Ref. #KX-5744] **Incorrect assignments:** Due to a limitation in XEdit's support for drag-and-drop operations (see Ref. #KX-5744 on page 36), when you first load a new layout

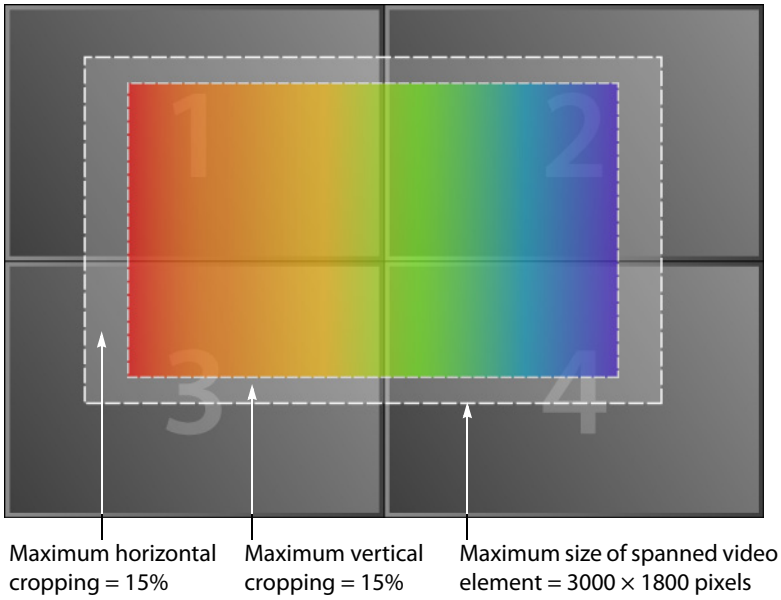
on the monitor wall, you may notice that a monitor's source or destination assignment is incorrect.
Workaround: Open the layout in XEdit, click the corresponding monitor, verify the **Source** and **Monitor wall destination** attributes indicated in the **Properties** pane, and correct them as needed.

- [Ref. #KX-2493] **Glitch after changing assignment:** If two monitors of approximately the same size are displaying the same source on the same head, changing one monitor's assignment may cause glitches in the other.
- [Ref. #KX-5748] **Kaleido-IP output resolution:** In the case of a Kaleido-IP multiviewer, the value indicated for **Detected monitor resolution** in the **Display Resolution** window is always "unknown" since the Kaleido-IP does not yet support automatic resolution detection.
- [Ref. #KX-5865] **Kaleido-IP:** If your Kaleido-IP multiviewer is connected to displays that are configured with different resolutions and refresh rates (e.g., 1280 × 720 @ 50 Hz for Head 1 vs. 1920 × 1080 @ 60 Hz for Head 2), you may notice video tearing on one of the displays.
- [Ref. #KX-5507] **Kaleido-IP networking configuration:** In the current version of the Kaleido-X software, if you change the *management* IP address for a Kaleido-IP multiviewer from the monitor wall, this changes the *data* IP address as well.
Workaround: Restore the appropriate IP settings for network adapter connected to the data network from XAdmin's System Configuration page.
- [Ref. #KX-5103] **Kaleido-IP:** After losing communication with the data network, it may take up to one minute for all video signals to reappear on the monitor wall, once communication is reestablished.
- [Ref. #KX-5405] **Kaleido-IP and DXF-200:** In the case of a Kaleido-IP, stringing DisplayPort-to-DVI and DVI-to-HDMI adapters together between the multiviewer and a DXF-200 device is not a supported configuration, and could result in an output head becoming momentarily disabled.
Workaround: Use a proper DisplayPort-to-HDMI cable between the Kaleido-IP and the DXF-200-TX module.
- [Ref. #KX-5234] **Kaleido-IP:** The Kaleido-IP does not yet support spanned monitors.
- [Ref. #KX-5232/KX-10905] **Kaleido-IP:** The Kaleido-IP does not yet support cropping and zooming (underscan/overscan) modes.
- [Ref. #KX-5110] **Kaleido-IP:** When monitoring a program that belongs to an encrypted stream, the corresponding video window displays a black signal on the monitor wall.
- [Ref. #KX-5188] **Kaleido-IP:** In the case of a Kaleido-IP, the physical input information (**Phy**) on the monitor wall's **Info** menu is not relevant.
- [Ref. #KX-4075] **Kaleido-X, Kaleido-X16 and 3D stereoscopic display option:** The current version of the Kaleido-X software does not support detail enhancement for a 3D source. Calibrating detail enhancement for a multiviewer input may result in overly bright 3D signals on the monitor wall.
Workaround: When you need to monitor 3D signals, make sure the corresponding multiviewer inputs are calibrated with the **Detail Enhancer** parameter set to 0. (This is the default value.)
- [Ref. #KX-4343] **KMV-3901/3911:** When restarting a standalone KMV-3901 or KMV-3911 multiviewer that was set to lock on a URS signal, you may notice a transient glitch on the monitor wall before the graphical elements appear.

- [Ref. #KX-3312] **KMV-3901/3911:** In cases where the two heads from the same KMV-3901/3911 multiviewer are associated with displays in separate rooms, loading a layout in one room may result in the other room's layout being unresponsive for a few seconds.
- [Ref. #KX-3956] **Cascade:** In the case of a cascade system, changing a display resolution from the monitor wall menu is not supported. To maintain the integrity of the underlying cluster configuration, you must use XEdit to configure the display resolution (see *Changing Room Display Resolutions* in the Kaleido-X User's Manual). *Workaround:* In the advent that such a change was made by mistake, you will have to repair the broken cascade, by using XEdit as follows:
  1 Connect to the multiviewer associated with the display whose resolution was changed by mistake, and open the corresponding room.
    - If you wish to *restore the previous resolution*, then set this display to its previous resolution.
    - If you wish to *apply the new resolution*, then change something in the room to enable the **Save** button (e.g., move a display, and then bring it back to its initial position).
  2 On the **File** menu, click **Save**.
- [Ref. #KX-4063] **KMV-3901/3911 cascade:** Upon startup of a KMV-3901/3911 cascade system, video from upstream multiviewers may appear later than video from the card that is connected directly to the monitor wall displays.
- [Ref. #KX-3884] **Kaleido-X multiviewer cards:** After replacing a card in a Kaleido-X multiviewer, with another card that has yet to be updated to version 5.20 of the Kaleido-X software, momentary jitter may be observed in some video windows on the monitor wall while the Live Update is in progress. This will only happen when a card is updated from a version earlier than 5.20 to version 5.20 or later.
- [Ref. #KX-1592] **Sony production switchers:** The Kaleido-X software's current implementation of the Sony Serial Tally protocol does not provide the name of the selected source for the Program and Preview outputs, on Sony production switchers. This prevents UMD labels associated with these switcher outputs from being dynamically updated on the monitor wall.
- [Ref. #KX-3944] **Full screen layouts:** If you attempt to load a full screen layout while pointing a tally element from a composite monitor on the monitor wall, then the full screen layout may load without the expected logical source assignments. *Workaround:* When pointing a composite monitor on the monitor wall, make sure the pointer is positioned over the video window area within the composite before loading the full screen layout.
- [Ref. #DVR-60] **KXI-DVI-Bridge**: On some units an unconnected DVI input may be detected as active, in which case the unit would report an unstable DVI input. *Workaround:* Always connect valid signals to both DVI inputs. If only one signal is available, then connect it to DVI-D IN A, and loop DVI-D OUT A back to DVI-D IN B.
- [Ref. #DVR-49] **KXI-DVI-Bridge**: When both DVI inputs are in use, connecting or disconnecting one of the inputs may cause momentary glitches on the other signal path. For example, disconnecting DVI input B would cause glitches on all outputs A (HD-SDI OUT A 1, HD-SDI OUT A 2, and DVI-D OUT A).

- [Ref. #KX-3574] **Monitor wall irresponsive after date/time change:** After changing the date or time on a KMV-3901/3911 multiviewer by using the Densité controller's time management features, the monitor wall may freeze.
  Workaround: Restart the multiviewer.
- [Ref. #KX-3573] **Display resolution and analog clocks:** It is sometimes not possible to change a display's resolution from the monitor wall. This may occur if the current layout includes an analog clock.
  Workaround: If the issue does not resolve itself after a few attempts, then load a layout that does not include analog clocks, before changing the resolution.
- [Ref. #KX-1138] **Send to [router] output menu available while no router outputs are enabled:** In the case of a multiviewer model for which there is no *SDI Router Output* option, or a multiviewer where this option is not enabled, the **Send to [router] output** menu may still be available on the monitor wall. This typically results from having configured an internal router in XEdit.
- [Ref. #KX-3066] **Input method selector not available with KMV-3901/3911:** In the case of a KMV-3901/3911 multiviewer, the current version of the Kaleido-X software does not support input methods on the monitor wall. Pressing Alt+Shift+1 on a keyboard connected to the Kaleido-RCP2 does not bring up the input method selector.
  Workaround: In XEdit, open the layout that contains the text you wish to modify (e.g., static UMD text), and use the appropriate input method from your client PC or laptop.
- [Ref. #KX-3265] **Blank screen after KMV-3901/3911 restart:** After restarting a KMV-3901/3911 multiviewer, it may happen that a Dell monitor connected to Head 1 remains blank.
  Workaround: Restart the multiviewer again.
- [Ref. #KX-3709] **Blank screen after KMV-3901/3911 restart:** When a KMV-3901/3911 multiviewer is powered down shortly after a layout change on the monitor wall, it may happen that the multiviewer cannot load the layout upon restart. This results in at least one monitor-wall display remaining blank.
  Workaround: If the layout does not appear after three minutes, restart the multiviewer again.
- [Ref. #KX-1100/KX-3175] **Video visible through UI elements:** On rare occasions, video may appear through user interface elements in some windows or on the menu, in which case the window or menu does not have the expected look and feel.
  Workaround: Restart the multiviewer (in the case of a Kaleido-X16 or KMV-3901/3911), or reseat the output card associated with the affected display.
- [Ref. #KX-3530] **Timers:** Once you have stopped a timer that was configured in Overrun mode, you cannot start it again.
  Workaround: Reset the timer, and then start it again.
- [Ref. #KX-1770/KX-3561] **Timers:** If you modify a timer in XEdit while a timer monitor associated with this timer is shown on the monitor wall, your changes are not automatically reflected on the monitor wall. This may lead to unpredictable behavior (e.g., timer not starting, or starting at an unexpected time).
  Workaround: Refresh the layout on the monitor wall.
- [Ref. #KX-2053] **Timers:** On the monitor wall, if you change the logical source (channel) associated with a timer monitor, the timer monitor will appear to have stopped (even though the system has actually implemented the timer change).
  Workaround: Refresh the layout on the monitor wall to observe the change.

- [Ref. #KXI16HSV-171] **Kaleido-X, Kaleido-X16:** When a layout with a lot a overlap among the video monitors is loaded on the monitor wall, the video may appear corrupted in the video windows.
  Workaround: Reduce the amount of overlap in the layout.
- [Ref. #KX-2270] **Kaleido-X, Kaleido-X16:** Excessive scaling of video elements results in a loss of video image on a monitor wall. This can be caused by loading a complex layout with a video monitor or full screen zone spanning two or more displays. The problem can be made worse by overlapping elements.
  Workaround: Keep full screen zones within a single display. Do not span a monitor beyond a maximum of 3000 × 1800 pixels. When spanning or scaling video monitors in a layout, avoid heavy cropping settings (generally avoid exceeding 15% in any direction). If the problem persists in full screen layouts, try reducing the scaling settings further.



Note: Even if a spanned video monitor does not exceed the recommended maximum size, the problem could occur if it is set to follow AFD/WSS with a custom cropping of (15, 15, 15, 15).

- [Ref. #K3-252] **Teletext:** When WST teletext information from a SECAM video input is displayed on the monitor wall, spaces may appear in place of certain characters.
- [Ref. #KX-3180/T99474] **Teletext/subtitling:** The current version of the Kaleido-X software supports foreground colors for teletext (WST, RDD 8/OP-47) only. Other text formatting attributes (e.g., background color, italic and bold type, font case) specified in the OP-42 (WST) and RDD 8/OP-47 (HD teletext) standards are not supported. On the monitor wall, closed captions (CC, DTVCC) appear in white against a black background.
- [Ref. #KX-1160] **Embedded audio and time code alarms** are sometimes not reported correctly on the monitor wall. When the active layout does not include any audio monitor assigned to a specific audio signal, then tallies or alarm monitors assigned to audio alarms for this signal may report an incorrect state.
  Workaround: Refresh the layout on the monitor wall.

- [Ref. #KX-2712] **Keying Mode and UMDs:** A UMD with the same background color as the layout background may not be displayed properly when the DVI Input Keying Mode on the video output is set to **Background**.
  Workaround: In XEdit, set the UMD transparency to a value between 75% and 80% (in the **Properties** tab, under **Appearance**, click the **UMD transparency** box, and then enter the value).
- [Ref. #KX-634/KX-641] The system performance is affected by a database import/export or system snapshot.
- [Ref. #KX-2422] **Kaleido-X (4RU):** After the Output B card is inserted in a Kaleido-X (4RU) frame, the dashboard associated with Output A will briefly report PSU-related alarms, while output B is rebooting.
- [Ref. #K3-147] **Kaleido-X multiviewers:** Inserting a KXA-GPI-GEN card may generate a momentary flash on the monitor wall.
- **Kaleido-X, Kaleido-X16, KMV-3901/3911 startup:**
  - It takes approximately 15 seconds to display the videos of the last configuration after a power-on reboot.
  - It can take up to three minutes to load the graphical monitors (i.e., clocks, UMDs, tallies, audio monitors, timers, etc.) after a power-on reboot. This depends on the system configuration, and the number of monitors to be displayed. It may take a little longer for time codes, closed captions, and audio monitors to become fluid in a heavy layout.

Mouse and RCP Operation

- [Ref. #KX-2891] **Audio monitoring:** The Kaleido-RCP2's volume control, and -20dB buttons, their equivalent on the RCP-200, and the corresponding Gateway commands apply to *analog* audio monitoring outputs only. They do not affect the audio signal at digital (i.e., AES, HDMI, or SDI) monitoring outputs. The Kaleido-RCP2's Mute button (and its equivalents), is also limited to analog audio outputs, with the exception of Kaleido-X and Kaleido-X16 where it applies to digital audio outputs as well.

  Note: Kaleido-MX 16 × 4, Kaleido-MX 4K 16 × 1, Kaleido-IP, and KMV-3901/3911 do not have *analog* audio monitoring outputs.

- [Ref. #KX-4750] **Cascade:** In the case of a cascade system, monitor wall functions performed via the associated buttons on a Kaleido-RCP2 or RCP-200 (ASPECT RATIO, UNDERSCAN, FULL SCREEN, etc.) only work in parts of the layout associated with the multiviewer that is directly connected to the displays.
  Workaround: Use the monitor wall menu.
- [Ref. #KX-4710] **Spanned monitors:** Mouse and Kaleido-RCP2 operations are not fully supported on monitors spanning two or more displays.
  Workaround: In XEdit, configure the spanned monitor you wish to control, as a monitor wall destination. You will then be able to use a mouse connected to the Kaleido-RCP2 to interact with the spanned monitor. Configuring your multiviewer as a router also allows you to interact with spanned monitors by using the RCP-200, or other router control devices or software (e.g. the Router Control Matrix and Single Bus applications available from the Kaleido-X Web page).

- [Ref. #KX-3843] **Keyboard configuration:** If you change the external keyboard configuration for a currently active RCP user, the user must log on to the room again for the change to be effective.
- [Ref. #KX-2542] **Kaleido-RCP2:** It may happen that the list of rooms discovered on the network by the Kaleido-RCP2 is incomplete.
  Workaround: Try to obtain the room list again. On the Kaleido-RCP2, press the ESC button to return to the Configuration menu, and then press ENTER to select ROOM SELECTION, and obtain the room list from all multiviewer systems that are currently available on the network.
- [Ref. #KX-3594] **Blinking pointer:** In cases where the two heads from the same dual-head output are associated with displays in separate rooms, the RCP user in each room may notice that the mouse pointer is blinking.
- [Ref. #KX-3543/KX-3544] **Large mouse pointer option:** When using XEdit in online mode, after you select or clear the **Use large mouse pointer** option and save your change, the pointer size may not be immediately adjusted on the monitor wall.
  Workaround: In the case of a Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X, Kaleido-XQUAD or KMV-3901/3911, restart the multiviewer; for other multiviewer models, refresh the current layout or load a different layout.
- If you connect a mouse directly to your multiviewer (as opposed to connecting the mouse to a Kaleido-RCP2, for instance), the pointer can travel between two displays with the following limitations:

Multiviewer model	Behavior
Kaleido-X, Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X	The pointer travels **horizontally**, between the right side of the display connected to Head 1, and the left side of the display connected to Head 2, of the output card to which you connected the mouse.
Kaleido-X16	The pointer travels **horizontally**, between the right side of the display connected to MV OUT 1, and the left side of the display connected to MV OUT 2.
KMV-3901/3911, Kaleido-XQUAD	The pointer travels **vertically**, between the bottom side of the display connected to MV OUT 1, and the top side of the display connected to MV OUT 2.
Kaleido-IP	The pointer travels **horizontally**, between the right side of the first display (Head 1), and the left side of the second display (Head 2).

- [Ref. #KX-3299] **KMV-3901/3911:** When connecting a mouse to the USB port directly on the KMV-3901/3911 card, it may happen that the multiviewer does not detect the mouse.
  Workaround: Disconnect the mouse, and then connect it again.
- [Ref. #KX-740] It is not possible to enter a value of "10" from the Kaleido-RCP2 keyboard when using an input method. As soon as you type "1", the selection is made.
  Workaround: To enter "10", type "0".
- [Ref. #KX-1324] Two RCP users in the same room cannot use the monitor wall menu at the same time.

- [Version 2.00] If two RCP users use the same head, the mouse pointer is shared. However, because the pointer position of each user is preserved, the pointer behavior looks natural.
- [Version 2.00] Connecting the keyboard affects the mouse pointer fluidity.
- [Version 2.00] Mouse pointer movements are not as fluid as on a standard PC.

Signal Formats

- [Ref. #KX-6750] **Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X and KXI-DVI-Bridge:** In the case of a Kaleido-MX, Kaleido-MX 4K, or Kaleido-Modular-X multiviewer, support for graphics converted to HD-SDI from KXI-DVI-Bridge is currently limited to 1080p60.
- [Ref. #KX-6975] **Kaleido-X with KXI-16HSV, KXI-16HS, or KXI-16SV (rev. 599 and earlier) input cards:** When monitoring AC-3 audio channels 15 or 16, on a source's embedded audio stream number 8, the detected audio format may be reported as OTHER instead of AC-3.
- [Ref. #KX-4843] **Kaleido-X vs. embedded audio:** In the case of a KXI-16HSV, KXI-16HS, or KXI-16SV (rev. 599 and earlier) input card, if Dolby E is available in an input signal's embedded audio streams number 1, 2, 3 or 4, then audio monitors associated with streams number 5, 6, 7 or 8 may fail to reflect some of the channels' actual level.
- [Ref. #KX-6357] **Kaleido-X, Kaleido-X16 closed captions:** In the case of SDI-625 signals, a monitor configured with its CC/subtitling text mode set to **Auto sense** may fail to show CEA-608 closed captions on the monitor wall.
  Workaround: Set the monitor's text mode to **CC (608)**.
- [Ref. #KX-6356] **Kaleido-X, Kaleido-X16 closed captions:** With the current version of the Kaleido-X software, when monitoring PAL or SDI-625 video signals with CEA-608 closed captioning on line 18, related CC presence alarms are reported as *Line 21 loss* and *CC1 loss*.
- [Ref. #KX-7480/KX-7481] **Kaleido-IP encrypted signal detection:** With the current version of the Kaleido-X software, when a monitored source becomes encrypted, the last non-encrypted video image may remain visible on the monitor wall, and related status texts may keep the last decoded values. In the case of a scrambled audio signal, when the *Audio scrambled* alarm is raised, other audio alarms may keep the last status they had before the audio signal became encrypted, instead of being disabled.
- [Ref. #KX-5900/F33873] **Kaleido-IP:** The current version of the Kaleido-X software for the Kaleido-IP does not support decoding of ST 302 PCM audio.
- [Ref. #KX-5808] **Kaleido-IP:** Audio sampling rate changes without a PSI change are not supported. Should this occur, the audio will not be decoded, and the audio loss alarm will be raised.
- [Ref. #KX-4019] **Kaleido-MX, Kaleido-Modular-X, KMV-3901/3911, Kaleido-XQUAD, and Kaleido-X16 support for audio monitoring over HDMI:** If AC-3 audio from an SDI

source is routed for monitoring, to a monitor wall display that does not support this format, the display's loudspeakers may emit a constant frying noise or become silent.
Workaround: To troubleshoot or confirm the situation, you may want to configure UMDs in your layout to display the audio format associated with the current source, for each video window on the monitor wall.

> Note: Grass Valley's current implementation of the HDMI standard does not include detection of the audio formats supported by a specific display. Most display models support compressed audio.

- [Ref. #KXO24R-33] **KXO-24Router cards do not support 3Gbps signals:** In the case of a Kaleido-X (7RU) with the 3G input option enabled, if you try routing a 3 Gbps source to a KXO-24Router destination, the internal router will not let the video signal through, resulting in a black output.
- [Ref. #KX-2895] **SD video in SDTI input:** If you were to feed a multiviewer's SDTI input port with SD video signals (instead of audio signals from an Audio Bridge Terminal), then no status or alarm indicator in XAdmin will report any problem with the signal format. In addition, the IP address of the last ABT that was connected to this port will be shown.
Workaround: Do not feed the SDTI input port with a video signal.
- **KXI-DVI-Bridge:** The KXI-DVI-Bridge does not support dual-link DVI.
- **KXI-DVI-Bridge:** A KXI-DVI-Bridge used *without dongle* skips every second input frame when converting a DVI signal (60 fps) to HD-SDI (30 fps).
- [Ref. #KX-1627] **NTSC-J:** Video alarm levels set in IRE do not work with NTSC-J, because the calibrations are based on a 7.5 IRE setup. This results in alarms being incorrectly reported for *Luma too high,* and *Black*.
Workaround: Use the mV scale instead.

Alarm Management and Actions

- ★ [Ref. #PMV-2417] **KMX-4911 alarm contributions:** With the current version of the Kaleido-X software, it is not possible to configure alarm contributions for the status LED on *card C*, or *card D* of a KMX-4911 system that has three or four cards. Any changes to the default card LED alarm contribution configuration for these cards are ignored.
- [Ref. #KX-9384] **Virtual alarms:** If you include the text *GlobalAlarm* in the name of a virtual alarm, the virtual alarm may eventually disappear from your system configuration.
Workaround: Create the virtual alarm again, making sure not to include the reserved text *GlobalAlarm* in its name.
- Ref. #KX-6568] **Folder status in iControl's GSM alarm browser:** When navigating a multiviewer's GSM, by using the alarm browser in iControl, some alarm folders may be

black, until you expand them to reveal the alarms they contain, at which point the folder color will be updated to reflect the status of the alarms.
Workaround: Create a virtual alarm, based on the alarms whose status you want to be able to monitor in real time.

> Note: An alarm status is only visible in iControl's GSM alarm browser when at least one of the following conditions apply.
> - The alarm is already monitored on the monitor wall.
> - Someone navigated to this alarm by expanding the System list in iControl or XEdit.
> - The alarm is associated with a background action.
> - The alarm contributes to a virtual alarm.

- [[Ref. #KX-6159] **Virtual alarms:** Changing a virtual alarm's name in XEdit may result in its status becoming unavailable on the monitor wall.
Workaround: Refresh the layout on the monitor wall.
- [Ref. #KX-6248] **Global alarm metadata:** Editing of global alarm metadata from a multiviewer's GSM, in iControl, is not yet supported.
- [Ref. #KX-4948] **Inverted alarms:** In the case of a Kaleido-X (4RU, 7RU, or 14RU) multiviewer with more than one output card, some monitor wall displays may fail to report the expected status for *manually* inverted alarms.

> Note: Manual alarm inversions are performed in iControl. Refer to the iControl User Guide for more information.

- [Ref. #KX-4655] **Alarm scheduling:** If non-recurring schedules were in progress before a multiviewer restarted, the associated actions (alarm inversion or suppression) may fail to be applied once the system has restarted.
Workaround: For every schedule you need to resume, open the **Schedule Entry Details** window, and then click **OK**: (1) On the **Tools** menu, click **Edit schedules**. (2) In **Edit Schedule**, select a schedule you wish to resume (to locate them, notice that they have nothing indicated under **Recurrence**, and are reported as *In progress* under **Status)**, click **Edit** to open **Schedule Entry Details,** and then click **OK** to close the window.
- [Ref. #KX-4725] **Background actions:** A background action triggered by an alarm is executed, regardless of the alarm's operational mode.
- [Ref. #KX-6067] **Kaleido-IP alarms:** In the case of the Kaleido-IP, video alarms are only supported for signals whose video resolution's horizontal dimension is a multiple of 16.
- [Ref. #KX-2695/KX-4394] **Background actions:** Background actions created from the main System list in the **Description/Calibrations** tab, or from the filtered System list associated with the current level in the sources table, cannot be saved from these tabs.
Workaround: To save background actions created from the **Description/Calibrations** tab, or from the **Channels/Sources** tab, switch to the **Actions** tab, and then click **Save** on the toolbar.
- [Ref. #KX-5752] **Virtual alarms:** When building a virtual alarm based on the current multiviewer, clicking **Use selected folder as path** in the **Build Virtual Alarm** window may have no effect.
Workaround: Manually enter the desired path in the **Path** box.

- [Ref. #KX-3632] **Virtual alarms:** When a virtual alarm associated with a router source becomes pending (for example after the router source was disconnected), then background action items based on this alarm's status may not be executed.
- [Ref. #KX-3032] **GSM alarm browser:** Kaleido-X systems that have legacy KXO-Dual cards with only 1 GB RAM are subject to the following limitation. An alarm that is not published (i.e., most alarms) is only visible in iControl's GSM alarm browser if the alarm is already monitored on the monitor wall, or by a background action, or otherwise (e.g., in iControl or XEdit).
Workaround: To force an alarm to appear in the GSM alarm browser, connect to the Kaleido-X multiviewer by using XEdit, and then navigate to the desired alarm in the System hierarchical list.

> IMPORTANT
> To fully benefit from all new features introduced in Kaleido-X version 5.00, every legacy KXO-Dual card that does not have a 2-GB memory module must be upgraded to 2 GB (see Kaleido-X Output Cards Memory Module, on page 82).

- [Ref. #KX-3172] **Background actions based on router sources:** With the current version of the Kaleido-X software, a background action based on a router source can only be triggered when the same router source is used on the monitor wall.
Workaround: Add a hidden component (e.g., a UMD) to your layouts, and assign the required router source to this component.
- [Ref. #KX-3567] **Dialnorm alarms:** After a multiviewer input has switched from a signal with dialnorm information to a signal format that does not include this information, the *Dialnorm - Expected* and *Dialnorm - Loudness* alarm indicators may report irrelevant status information, whereas they should be disabled.

SNMP

- [Ref. #KX-4998/KX-6071] **Kaleido-IP and SNMP managers:** In the case of a Kaleido-IP, publishing signal/service probing alarms to SNMP managers is not fully supported. This partial support for `KALEIDO-KX-MIB` allows the Kaleido-IP to report service/signal status to an SNMP manager via the MIB file's `kxVirtualAlarmTable`. This table includes entries for all virtual alarms and logical sources created in XEdit for your multiviewer. For each logical source, the global alarm and associated text information is available. Refer to the MIB-embedded descriptions for exceptions.
Workaround: If an iControl Application Server is available to your system, configure it to relay your Kaleido-IP alarm status information to the target devices. Refer to *General Status Manager (GSM)* in the Kaleido-X User's Manual, and to *iControl and SNMP* in the iControl User Guide, for more information.
- [Ref. #KX-2477] **SNMP managers:** Some text status data (e.g., AFD/WSS format, Dolby E or Dolby VANC encoded dialnorm or program config, etc.) only become available to SNMP managers once they have been displayed on the monitor wall.
Workaround: (1) In XEdit, add the text status element from the appropriate source signal to a logical source (channel). (2) Assign the logical source to a UMD. (3) Load the layout that includes this monitor on the monitor wall. The text status will then be available to SNMP managers.

- [Ref. #KX-1431] **Kaleido-X:** The performance of a Kaleido-X system can be degraded by enabling a large number of SNMP traps. By default, traps are automatically configured for a logical source's global alarm, and for health-related statuses. Each trap contains a cause, and the name of the logical source. Traps for individual physical inputs are disabled by default. These traps only provide physical input information, with no correlation to a logical source.
  Workaround: Avoid setting alarm thresholds to short durations—for example, 1 second for a freeze detection is too low; 10 seconds is adequate.
- [Ref. #KX-1521] The Kaleido-X software does not support the SNMP v2 `GetBulk` command. Performing a `GetBulk` on `kxVideoTable` returns "There is no such instance in this MIB" instead of the data for the table.

Router Control

★ [Ref. #KX-11130] **Upstream router control:** The **Assign Router Input** category/index panel does not support duplicate names for the router sources. When using the panel to assign a router source to a monitor, if multiple router sources have the same name, only the source with the highest index number is available.
Workaround: Update the configuration of your router, or router control system, so that every router source has a unique name. Alternatively, override the source labels for the appropriate physical router level in XEdit's **Router Configurations** tab.

- [Ref. #KX-4751] **Internal router control:** In the case of a Kaleido-X or Kaleido-X16 system whose internal router is controlled from an external router control device or application, and was configured *before* version 5.20 of the Kaleido-X software, after upgrading your system to version 5.20 or later, you may need to:
  - add the internal router's physical levels to the first level (i.e. [0] Video) of the KX Router logical router, if you were previously using the now deprecated *Internal router* logical router, and,
  - if your external router control device or application uses the SAM (Snell/Pro-Bel) SW-P-08 protocol, then adjust its configuration so that it refers to KX Router's logical router matrix ID.

  Refer to *Configuring a Multiviewer's Internal Router,* in the Kaleido-X User's Manual, for more information.
- [Ref. #KX-3536/KX-3964] **KMV-3901/3911 vs. VikinX Compact panels:** The Kaleido-X software does not support using the *Network Compact* protocol for controlling logical routers within a KMV-3901/3911 multiviewer configuration. For example, a VikinX Compact panel connected to the KMV-3901/3911 multiviewer's serial port is not a supported configuration.
- [Ref. #KX-3886/KX-3895] **Ineffective Lock/Unlock features in Matrix and Single Bus:** With the current version of the Kaleido-X software, all Lock and Unlock features available from the Matrix and Single Bus user interface are ineffective.
- [Ref. #KX-3946] **KX Router source mapping:** Although the multiviewer's physical inputs appear in the list of sources that can be selected when configuring source mapping for the *KX Router* logical router, they should *not* be used. Only logical sources (channels) should be used in this context.

- [Ref. #KX-2482] **"Monitor wall" physical level:** Although it appears in the list of physical levels that can be added to any logical router configuration, the "Monitor wall" physical level should only be used when configuring the *KX Router* logical router.
- [Ref. #IC-13430] **Matrix and Single Bus support up to 8 levels:** The Matrix and Single Bus client applications can display and control up to 8 levels in a logical router. When the *All follow* mode is enabled, it applies to the levels that are visible in the application window only.
  Workaround: To control a logical router with more than 8 levels, use a router-control device or application that supports the required number of levels.
- [Ref. #IC-13335] **Level offset required for commands to Network Modular devices from third-party router controllers:** If a third-party router controller sends a command (using the Network Modular protocol) to Level 1 of a router connected to a Kaleido-X system, the command is sent to Level 0 instead. This is due to the particular way in which the Network Modular protocol is handled by the NDC component of the Kaleido-X software.
  Workaround: On the third-party router controller, increment the target Level (or Frame ID) by one. For example, to change a crosspoint on Level 1, send the instruction to Level 2.
- [Ref. #IC-13242] When an NV9000 system controller is controlling a multiviewer's *KX Router* logical router, and the multiviewer is controlling the NV9000, the NV9000 may indicate that the multiviewer is offline.
  Workaround: Change the timeout period on the NV9000 system controller. The recommended timeout value is 2000 milliseconds.
- [Ref. #KX-2614] Configuring two multiviewers so that they control each other's internal router is not supported in Kaleido-X version 4.00 and later. Do not upgrade existing systems that were previously configured in this way. If you already upgraded your system, please contact Grass Valley Technical Support before downgrading to an earlier version, to verify whether a new release addressing this issue has been made available.
- [Ref. #KX-2513] After launching the Single Bus or Matrix View Router Control applications from the Kaleido-X home page, it is possible to create salvos, change settings, etc. However, when the Kaleido-X system is restarted, such changes will be lost.
  Workaround: Use a standalone version of the iControl Router Control software, or the one that is part of the iControl suite, to configure your Kaleido-X routers. Your salvos and other settings will then be visible, when you next open the Single Bus and Matrix applications from the Kaleido-X home page.
- [Ref. #IC-13346] **Backward compatibility:** As of Kaleido-X version 4.00, router configuration changes made in Router Manager Configurator are not compatible with earlier versions of the software. Downgrading is supported but any change to the router configuration made in Kaleido-X version 4.00 or later will be lost during the downgrade. After downgrading, any router configuration will have reverted to what it was before the last upgrade.
- [Ref. #KX-2043] **Version 2.20 compatibility:** If you delete one or more routers from an XEdit version 2.20 database, and then create new router entries using the same KXI inputs but connected to a new router, the new entries are not saved. This has the result that the 2.20 database, if imported on a Kaleido-X version 3.00 (or later) system, will appear to have lost settings.
- [Ref. #KX-1697] **Background actions:** If a background action is configured to change an external router crosspoint, then, when the action is triggered, the Kaleido-X Gateway

will return `<ack/>` even if the crosspoint change could not be made. Note that in such a case, the crosspoint failure will cause the action to stop, and the event will be properly recorded in `vroom.log`.

Kaleido Remote Control Protocol (Gateway)

- [Ref. #KX-7639] **Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X audio monitoring:** Sending a `<setKAudioOut>` command with the `Type="AUDIOCARD"` option to a Kaleido-MX, Kaleido-MX 4K or Kaleido-Modular-X system may fail to set the specified ABT source for audio monitoring.
- [Ref. #KX-2913] If the name of a Kaleido-X system contains a space or a special character, opening a remote control Gateway session with user context may not be possible.
  Workaround: Remove any space or special character from the system name. Alternatively, if editing the Gateway command is an option, you may try percent-encoding the unsafe characters in the system name.
- [Ref. #KX-2167] If a single `<setKTimer2>` command is used to change both `PresetTime` and either `TimerMode` or `EndMode` for a timer monitor, the `PresetTime` change is ignored.
  Workaround: Send separate `<setKTimer2>` Gateway commands for each parameter that is to be changed.

XAdmin

- [Ref. #KX-6555] **XAdmin compatibility with Internet Explorer 10:** If you use Internet Explorer 10 to access the multiviewer's home page, a blank page may appear instead of the expected application after you clicked the XAdmin button.
  Workaround: Click the Compatibility View button at the end of your browser's address bar. Alternatively, use a different browser.
- [Ref. #KX-5433] **Kaleido-IP:** When reinstalling, upgrading, or downgrading the Kaleido-X software on a Kaleido-IP multiviewer that has version 6.02 or earlier, once you have uploaded the RUN package to the unit, clicking the **Upgrade** button more than once may cause the installation to be repeated, which could result in a defective installation.

  Note: Once you have upgraded to version 6.20 or later, you will benefit from a more robust interface.

- [Ref. #KX-4276] **100 Mbps half-duplex data interface configuration:** Kaleido-X (7RU, 4RU, and 14RU) multiviewers with output cards that shipped with version 5.22 (or later), initially or after repairs, and Kaleido-X16 multiviewers that shipped with version 5.22 (or later), initially or after repairs, do not support 100 Mbps half-duplex communications.
- [Ref. #KX-3569] **KMV-3901/3911 3Gbps signal decoding option:** If you enable the 3Gbps signal decoding option for a KMV-3901/3911 multiviewer in XAdmin, while a 3Gbps source is already connected to your multiviewer, the option will not be immediately effective.
  Workaround: Disconnect the 3Gbps source, and then connect it to your multiviewer again.

- [Ref. #KX-2393] **Kaleido-X input options:** In the case of a Kaleido-X (4RU, 7RU, or 14RU) multiviewer, if you try enabling or disabling more than one option on the same input card, once the card has restarted only the first change will persist.
  Workaround: Enable or disable input options one at a time, making sure to reset the card after each change.
- [Ref. #KX-3638] **XAdmin momentarily unavailable:** When configuring IP addresses for the output cards in a Kaleido-X (4RU, 7RU, or 14RU) multiviewer, if a slave output card is assigned an invalid IP address, XAdmin may remain unavailable for several minutes after the multiviewer has restarted.
- [Ref. #KX-3478] **Kaleido-X16 status and options:** In the case of a Kaleido-X16 multiviewer, you may notice strange values (e.g., serial numbers, voltage or current values reported as zeroes; aberrant *Mezz, PP,* and *PS* temperatures) on the Status and Options page.
- [Ref. #KX-2244/KX-2173] If one or more cards in a Kaleido-X frame is being upgraded (i.e., if a Live Update is in progress), then it is not possible to apply any changes made in XAdmin. If you click the **Apply settings** link in the XAdmin sidebar, an error message will appear. This restriction also occurs during the first 10 to 20 seconds after a card is inserted into or removed from the frame.
  Workaround: Wait until the upgrade has finished, then click **Apply settings** again.
- [Ref. #KX-6529] **Kaleido-X expansion systems:** XAdmin always reports a normal status for "KXO-EXP - Link: Cable crossed", in the Status and Options page, regardless of whether the expansion cables are physically crossed or not.

XEdit

- [Ref. #KX-7463] **Saving layouts:** When you first save a new layout (or rename an existing layout by using **Save as**), XEdit may fail to prevent you from including invalid characters (e.g., `* \ / < > | ? " & :`) in the layout name. However, any further attempts at saving such a layout result in a error message preventing you from saving your changes.
  Workaround: Use **Save as**, to save the layout under a new name that does not include offending characters, and then delete the version of the layout with the invalid name.
- [Ref. #KX-4901] **Saving layout changes:** Saving a layout may fail, when the zoom factor XEdit uses to display it is higher than 50%.
  Workaround: Zoom out (e.g. all the way down to 2%) before saving your changes.
- [Ref. #KX-7447] **Peripheral device alarms:** In XEdit, when you disconnect a device (e.g., a router, or a tally interface device) in the **Interconnections** tab, and then switch to the **Channels/Sources** tab, you may notice that alarm status indicators, in the filtered System list associated with the sources table, do not immediately reflect the connection loss.
  Workaround: Expand or collapse a node in the System list, or move the scroll bar (if present), to update the alarm status indicators.
- [Ref. #KX-6261] **Global alarms:** In the sources table, the ability to include or exclude a level's contribution to the global alarms is only relevant for alarm levels although the properties are also available for other levels such as text and time code.
- [Ref. #KX-3646] **Incorrect multiviewer model:** On rare occasions, if you use XEdit with different models of multiviewer, you may notice that the model indicated in a system

configuration does not match the actual multiviewer anymore, and that the system's logical sources have assignments marked in red.
Workaround: If you have a recent backup of your system configuration, restore this backup to your local workspace, and then export it to the multiviewer. Alternatively, right-click the multiviewer in the System list, click the "replace with..." option that matches your actual multiviewer model, and then make sure to reply **No** when XEdit prompts you to confirm whether you want to restore the database factory defaults.

- [Ref. #KX-4696] **Import NVISION config:** On rare occasions, when configuring physical routers in XEdit's **Router configurations** tab, the **Import NVISION config** button is not available.
  Workaround: Disconnect XEdit from the multiviewer, and then connect again.
- [Ref. #KX-6308] **Kaleido-IP:** In the case of a Kaleido-IP system configuration with a very large number of transport streams, connecting to the multiviewer or accessing a local copy of its database with the current version of XEdit may take more than one minute.
- [Ref. #KX-5883] **Kaleido-IP:** After changing the name of a transport stream, related alarm indicators in the System list may turn white (meaning that their status is pending or unknown).
  Workaround: Restore the transport stream's original name.
- [Ref. #KX-5936] **Kaleido-IP:** After adding a transport stream to your Kaleido-IP system configuration, it may happen that the transport stream that appears at the bottom of the filtered System list associated with the sources table cannot be expanded.
  Workaround: Click a different cell in the sources table, or collapse the filtered System list, and then expand it again.
- [Ref. #KX-5774] **Kaleido-IP source names:** If your sources table includes dynamic assignments from Kaleido-IP transport streams in the **Name** level under **Source info**, using the incremental copy tool to quickly populate the source name column for a range of logical sources results in clearing assignments in this column instead.
- [Ref. #KX-5483] **Kaleido-IP:** In the case of transport streams for which **Activate automatic sources creation** was selected, new logical sources created automatically for these streams may not follow the current template.
- [Ref. #KX-5210] **Kaleido-IP:** In the logical sources table, if you manually remove sources associated with a transport stream for which **Activate automatic sources creation** was selected, these sources are not automatically created again.
  Workaround: Right-click the appropriate transport stream element in the filtered System list associated with the sources table, and then click **Create logical sources**.
- [Ref. #KX-5379] **Kaleido-IP:** On rare occasions, when navigating the System list in XEdit, the first time you expand an elementary stream, an audio or video presence alarm may briefly indicate a signal loss before turning green.
- [Ref. #KX-5744] **Source assignments:** When assigning logical sources or monitor wall destinations to monitors in a layout, it may happen that the selection migrates to an adjacent element from the **Channels**/**Sources** or **Monitor wall destinations** list during the drag-and-drop operation.
  Workaround: Once you selected a logical source or monitor wall destination from the corresponding list, dragging the selected element horizontally until the pointer exits the **Tools** pane, or performing a slower drag-and-drop may help.
- [Ref. #KX-4708] **Logical source names:** If your configuration includes logical sources with names based on router source labels that are set locally in XEdit (i.e. in the

Source/Destination mapping configuration for the corresponding router, you cleared the option **Get labels from physical level**, and either typed the labels manually or imported them from a CSV file), then further changes to these router source labels in the router configuration are not reflected in the sources table (under **Source info**).
Workaround: In the sources table, right-click the name you wish to refresh, click **Copy assignment** on the menu, right-click again, and then click **Paste assignment**.

- [Ref. #KX-4505] **Monitor wall destinations:** After switching to the **Layouts** tab in XEdit, the set of destinations listed in the **Monitor wall destinations** pane may momentarily not belong to the current system's KX Router, or fail to reflect the latest changes to this logical router's destinations. This is more noticeable if you work with different systems during the same XEdit session, if you modify your KX Router configuration while managing a specific layout's assignments, or if you wish to assign monitor wall destinations to monitors in a *full screen* layout when a room layout has yet to be opened.
  Workaround: Open a *room* layout to update the set of destinations listed in the **Monitor wall destinations** pane.
- [Ref. #KX-3797] **TSL (network) devices port number:** XEdit does not prevent adding multiple TSL (network) devices configured to the same Kaleido-X port number (8901 by default). If you must configure more than one TSL (network) device make sure to specify different port numbers (in the 1023–65,535 range) to avoid conflicts.
- [Ref. #KX-3903] On rare occasions, switching from online to offline mode, or vice versa, while the **System** tab is active may result in most of the panels in XEdit displaying a *"Loading..."* message indefinitely.
  Workaround: Click a tab other than **System**, in the main tab bar (e.g., **Rooms**, **Layouts**, etc.), and then:
  - If you just switched to **offline** mode, connect to the multiviewer, and then switch back to offline mode.
  - If you just switched to **online** mode, close the connection to the multiviewer, and then switch back to online mode.

  Alternatively, close XEdit, and then open it again.
- [Ref. #KX-3616/KX-3850] **Cannot retrieve backup:** XEdit cannot retrieve a database backup created in XEdit version 5.00 (or earlier), if the original system from which this backup was made included elements (e.g., actions, virtual alarms, logical sources, levels) with an ampersand ("&") in their name. When you attempt to retrieve such a backup, XEdit becomes unresponsive, and you must use Windows Task Manager to close it. An "Uncaught exception" will appear in `xedit.log`.

  > Note: Database backups created in XEdit version 5.10 and later can be retrieved without problem. Make sure to create a fresh backup once you have updated a Kaleido-X system from version 5.00 (or earlier) to version 5.10 or later.

- [Ref. #KX-3560] **Cannot add input cards:** When configuring a Kaleido-X (7RU) or Kaleido-X (14RU) system, if all input slots are empty while one or more router cards are present in the System hierarchical list, then it may not be possible to add input cards (or more router cards) to the system.
  Workaround: Close XEdit, and open it again.

- [Ref. #KX-3336] **Logical Sources:** If you do not click **Save** after deleting a level from the sources table, then adding a new level may cause unwanted data from the deleted level to reappear in the table.
  Workaround: After deleting a level from the sources table, click **Save**.
- [Ref. #KX-3340/KX-3780] **Internal router port aliases not available to logical sources:** Aliases defined for the physical sources or destinations of a Kaleido-X (7RU) or Kaleido-X16 multiviewer's internal router may not be available in the filtered System list associated with the sources table. Specifically, in the case of the *KX Router* logical router, neither source nor destination aliases from the physical internal router are available. Source and destination aliases defined for an external router are always available (regardless of the logical router).
- [Ref. #KX-3313] **Online mode:** When connected to a KMV-3901/3911 multiviewer from XEdit (in online mode), if you modify the layout that is currently shown on the monitor wall, and then save it, the graphical elements on the monitor wall may freeze for several seconds until the layout is fully loaded again.
- [Ref. #KX-3124] **Resetting calibrations to factory defaults:** With the current version of the Kaleido-X software, the calibration reset feature (see *Restoring Factory Defaults,* in the Kaleido-X User's Manual) is not immediately effective on the multiviewer.
  Workaround: Restart the multiviewer, close XEdit, and then open it again, for the calibrations to be applied.
- [Ref. #KX-3000] **Alarm status not updated:** When using XEdit in online mode, having a firewall enabled on your client PC or laptop may prevent alarm status indicators from being dynamically updated in XEdit.
  Workaround: Disable the firewall.
- [Ref. #KX-1965] **Concurrent sessions:** If two or more XEdit sessions are open, and connected to the same multiviewer in online mode, changes made under the **System** tab and applied from one XEdit session are not reflected in the others.
- [Ref. #KX-2506] **Cluster composition not automatically updated across concurrent XEdit sessions:** if user A adds a multiviewer to a cluster while user B is connected to a different member of the same cluster, then the addition is not automatically reflected in XEdit for user B.
  Workaround: Other concurrent users must close XEdit, and open it again to view the updated cluster composition.
- [Ref. #KX-2903] **Database location:** If the XEdit database is located in a directory whose name contains an IP address, then attempting to export the database will cause a system error, and XEdit will close.
  Workaround: Rename the directory without using an IP address.
- [Ref. #KX-2860/T94343] **Offline changes to logical sources (channels) are not reflected on the monitor wall after a database export:** If changes are made (in XEdit) to a logical source currently in use, and if the modified database is then exported to the multiviewer, the changes will not appear on the monitor wall, even if the layout is refreshed.
  Workaround: After the database export is completed, create an empty layout (i.e., a layout that does not contain any monitors), and load it on the monitor wall. This will cause the logical source cache to be emptied. You can then load the layout with recent logical source changes.

- [Ref. #KX-1348] **Custom resolutions:** Custom resolutions created in XEdit must have the same active width and active height as one of the default resolutions, otherwise the new resolution will not be applied. When creating a new resolution, it is recommended to start from an existing resolution (i.e., one whose active height and width parameters match your display), and update the timing parameters as needed. You may have to reboot twice after adding an unknown resolution (i.e., a resolution whose geometry [width × height] is not already known by the multiviewer).
- [Ref. #KX-2761] **Layout preview missing:** In XEdit version 4.00 and later, if you click **Open layout** on the **File** menu, you will not see preview images for layouts created prior to version 4.00. In addition, if you replace the multiviewer in the System hierarchical list, then any existing layout previews may become unavailable.
  Workaround: To generate a preview for a layout, open the layout in XEdit, and then save it.
- [Ref. #KX-1666] In the **Actions** tab, the **Undo** and **Redo** commands are not available.
- [Ref. #KX-1702] The **Set action** menu is not available when you right-click a GPI line element in the System hierarchical list in the **System** tab.
  Workaround: (1) Click the **Actions** tab, and expand the GPI/GENLOCK card in the filtered System list that appears in the **Tools** pane. (2) Right-click the GPI In or GPI Out element under the GPI line for which you wish to define a background action, point to **Set action**, and then click the appropriate action type on the menu.
  Alternatively, click the **Channels/Sources** tab, and then click anywhere under an alarm heading. You can then expand the GPI/GENLOCK card in the filtered System list, and proceed as described above.
- [Ref. #KX-2131] **Expansion systems and router configuration:** When two standalone Kaleido-X (7RU) frames are joined in an expansion system, third-party device configurations are not preserved. After such a conversion, however, external router icons and settings may still appear in XEdit under the **Interconnects** tab.
  Workaround: Delete the external routers from the System list, restart XEdit, and then recreate all external router configurations.
- [Ref. #KX-1641] **Router configuration:** The process of configuring external routers has significantly changed between Kaleido-X versions 2.20 and 3.00 (see the Kaleido-X User's Manual for details). This has had an impact on the backward compatibility of XEdit databases. A router configuration opened in XEdit 3.00 or later should not be exported to a pre-3.00 system.

  If a frame has been upgraded to 3.00 or later, you can only downgrade it to 2.20 if the database was **not** opened in XEdit 3.00 (or later). If the database is opened in XEdit 3.00 (or later) and then exported to a pre-3.00 system, the router configuration will have to be redone.

  > Note: An older database is converted as soon as it is loaded in XEdit 3.00 (or later), and becomes incompatible with pre-3.00 systems, even if you don't modify the database or save it.

- [Ref. #KX-1376] **Toolbar:** When the XEdit window is resized, the monitor toolbar may disappear.
  Workaround: Resize the window again until the toolbar reappears ().

- [Ref. #KX-1192] In the **Rooms** tab, the **Maximize horizontally** and **Maximize vertically** toolbar buttons are not relevant, and have the unwanted effect of resizing the selected heads.
  Workaround: Do not use these buttons when configuring rooms: they are only relevant in the **Layouts** tab.
- [Ref. #KX-1037] **Pointer properties:** Online changes made to mouse pointer properties require a refresh of the layout so they can take effect.
- [Ref. #KX-330] **Widget libraries:** Monitors from widget libraries may change in appearance (compared to the original) when used in a layout.
- [Ref. #KX-634] **Database export:** Exporting a database from XEdit may take up to a minute, during which time there is no user feedback. System Performance may also be slightly degraded.
  Workaround: Delete any unused layouts or logical sources prior to exporting a database.

Documentation

The table below details the documentation available for Kaleido multiviewers, as of Kaleido-X version 8.30. A star (★) symbol indicates manuals that were updated since the previous release of the Kaleido-X software. In line with our commitment to environmental preservation, only the Quick Start Guide for your multiviewer model, and some ancillary documents (e.g., welcome letters, warranty cards) are distributed in printed form. You can obtain the latest version of the manuals and the Release Notes, from the Documentation Library section of Grass Valley's website.

	Part Number	Title
★	M770-2103-166	Kaleido-X Version 8.30 Release Notes (this document)
★	M770-2800-136	Kaleido-X User's Manual
★	M3033-9905-103	KMX-4911 Quick Start Guide
	M933-9905-109	Kaleido-MX (1RU) Quick Start Guide
	M933-9902-111	Kaleido-MX (1RU) Hardware Description & Installation Manual
	M933-7105-105	Kaleido-MX (3RU) Quick Start Guide
	M933-7102-108	Kaleido-MX (3RU) Hardware Description & Installation Manual
	M933-9605-101	Kaleido-MX 4K (1RU) Quick Start Guide
	M933-9602-101	Kaleido-MX 4K (1RU) Hardware Description & Installation Manual
	M933-7505-101	Kaleido-MX 4K (3RU) Quick Start Guide
	M933-7502-101	Kaleido-MX 4K (3RU) Hardware Description & Installation Manual
	M933-9805-112	Kaleido-Modular-X Quick Start Guide
	M933-9802-110	Kaleido-Modular-X Hardware Description & Installation Manual
★	M926-9405-110	Kaleido-IP X310/X110 Quick Start Guide
★	M926-9905-121	Kaleido-IP X300/X100 Quick Start Guide
	M926-3904-101	Kaleido-IP/Kaleido-X16 Cascade Step-by-Step Configuration
	M926-3804-101	Kaleido-IP/Kaleido-X Cascade Step-by-Step Configuration

	Part Number	Title
	M866-9905-111	KMV-3901/3911 Quick Start Guide
	M866-9900-116	KMV-3901/3911 Guide to Installation and Operation
	M866-9904-106	KMV-3901/3911 Cascade Step-by-Step Configuration
	M869-9905-113	Kaleido-X16 Quick Start Guide
	M869-9902-115	Kaleido-X16 Hardware Description & Installation Manual
	M869-9904-102	Kaleido-X16 Cascade Step-by-Step Configuration
★	M809-9905-113	Kaleido-X (4RU) Quick Start Guide
	M809-9900-122	Kaleido-X (4RU) Hardware Description & Installation Manual
★	M808-9905-113	Kaleido-X (7RU) Quick Start Guide
	M808-9902-115	Kaleido-X (7RU) Hardware Description & Installation Manual
	M860-9900-105	KXO-HDM Dual Channel HD-SDI Monitoring Output Mezzanine Installation Instructions
★	M735-9902-105	Kaleido-RCP2 Guide to Installation and Operation
	M876-9900-109	RCP-200 Guide to Installation and Operation
★	M770-0900-119	Kaleido Remote Control Protocol (Gateway) User's Guide
	M796-9902-103	Audio Bridge Terminal Guide to Installation and Operation
	M807-9700-102	KXI-DVI-Bridge User's Manual
	M819-0300-104	Serial to TCP/IP Dispatcher Protocol Version 1.04
	M407-9900-228	iControl Router User Guide
	M6103-9805-100	GV Node Quick Start Guide
	M844-9900-103	Densité 3 Housing Frame Guide to Installation and Operation
	M659-9900-101	CPU-ETH2 Guide to Installation and Operation
	M906-9900-101	GPI-1501 Guide to Installation and Operation
	M845-9900-101	REF-1801 Guide to Installation and Operation
	M452-9500-102	VDA-1002 Operation and installation manual
★	M3036-9900-120	IPG-3901 Guide to Installation and Operation

Supported Input/Output Formats

Kaleido-IP

Video Inputs

The Kaleido-IP multiviewer supports concurrent decoding of video programs from multi-program and single-program MPEG transport streams, over UDP or RTP Multicast/Unicast.

The following table shows the number of HD or SD programs that can be decoded concurrently, depending on the transport stream type and Kaleido-IP model.

	Kaleido-IP X310		Kaleido-IP X110		Kaleido-IP X300		Kaleido-IP X100	
	HD	SD	HD	SD	HD	SD	HD	SD
MPEG-2, DCII[a]	64	128	16	48	24	64	8	24
H.264	32	64	12	24	16	32	6	12

a. Only *unencrypted* Digicipher 2 (DCII) transport streams are supported.

Notes

- The Kaleido-IP supports concurrent decoding of up to 512 elementary streams within a program.
- The Kaleido-IP supports layouts using up to 600 Mbps of streaming bandwidth. However, when using a *layout touring* application, the total bandwidth usage per layout should be limited to 400 Mbps across all network interfaces, and the touring period should be at least 30 seconds. In the case of the Kaleido-IP-6, layout touring should be avoided (a *source cycling* application should be preferred when required). Implementing a source cycling or layout touring configuration requires iControl.
- The Kaleido-IP supports streaming over wide area networks (WAN), which are subject to packet delay variation (jitter), latency, packet reordering, and packet loss. It also supports encoders that transmit in bursts or with long delays between packets. The Kaleido-IP can handle transmission delays matching the encoder's video buffer delay, and, in the case of RTP streams, up to ±120 ms of packet delay variation.
- The Kaleido-IP functions as a fully compliant MPEG-2 decoder as per ISO/IEC 13181-2. It is capable of detecting impairments caused by non-compliant encoding, or corruption resulting from transmission failures, and recovers from such situations.

Audio Inputs

The Kaleido-IP supports decoding of elementary streams in the AC-3, DD+, MPEG-1, MPEG-2, and MPEG-4 AAC compressed audio formats. In the case of AAC audio, the following encoding, and encapsulation formats are supported:

- Encoding: AAC Main, AAC LC, AAC SSR, AAC LTP (MPEG-4 only), HE-AAC, HE-AAC v2, and AAC BSAC (MPEG-4 only);
- Encapsulation: MPEG-2 ADTS, and MPEG-4 LATM/LOAS.

Video Outputs

The Kaleido-IP multiviewer supports two progressive scan HDMI outputs. The following table lists some (but not all) output formats supported at the DisplayPort connections.

Kaleido-IP HDMI output formats

Resolution	Format name	Refresh rates (Hz)
1280 × 1024	SXGA	50, 59.94
1280 × 1024	BARCO	59.94
1360 × 768	NEC	50, 59.94
1480 × 1200	Christie	50, 59.94
1600 × 1200	UXGA	50, 59.94
1920 × 1080	Baycat	50, 59.94
1920 × 1200	WUXGA	50, 59.94

You can customize your own timing rates for resolutions ranging from 1280 × 1024 pixels up to 1920 × 1200 pixels (all progressive scan), by using XEdit.

Note: After configuring custom resolutions in XEdit, you must restart the Kaleido-IP for the new resolutions to become effective.

KMX-4911

Video Inputs

The KMX-4911 multiviewer supports 9 signal inputs. The supported input types include SD-SDI, HD-SDI, and 3G-SDI (auto-detected).

Video Outputs

The KMX-4911 multiviewer supports two HD-SDI/SD-SDI fiber outputs, or one HDMI 1.4 output, depending on the selected SFP output module. The total processing delay for the video path is one field (interlaced signals) or one frame (progressive signals), when sources are synchronous. The following table lists the supported output formats.

KMX-4911 output formats

Resolution	Refresh rates (Hz)
1080i	50, 59.94
1080p (level A)	50, 59.94

KMV-3901/3911

Video Inputs

The KMV-3901/3911 multiviewer supports 8 signal inputs. The supported input types include SD-SDI, HD-SDI, and 3G-SDI (auto-detected).

Note: The Kaleido-X software does not distinguish between 1080PsF25 and 1080i50, and neither between 1080PsF29.97 and 1080i59.94. Both 1080PsF25 and 1080i50 are reported as 1080i50, and both 1080PsF29.97 and 1080i59.94 are reported as 1080i59.94, on the monitor wall and in XAdmin's Status and Options page.

KMV-3901/3911 input formats

3G-SDI inputs	1080p50 (level A only)	1080p59.94 (level A only)	
HD-SDI inputs	720p24	720p25	720p29.97
	720p50	720p59.94	1080i50
	1080i59.94	1080PsF23.98	1080PsF24
	1080PsF25	1080PsF29.97	1080p23.98
	1080p24	1080p25	1080p29.97
SD-SDI inputs	525	625	
Graphics converted to HD-SDI from KXI-DVI-Bridge[a]	1024 × 768 @ 60 (XGA)	1280 × 1024 @ 60 (SXGA)	1366 × 768 or 1368 × 768 @ 60 (WXGA)
	1680 × 1050 @ 60 (WSXGA+)	1600 × 1200 @ 60 (UXGA)	

a. A *Dual Channel DVI to HD Bridge* must be connected between the multiviewer and the PC or laptop that provides the graphics to the multiviewer. The highest supported resolution is 1600 × 1200 in 4:3, and 1680 × 1050 in 16:9. To order this optional device (Part No. KXI-DVI-BRIDGE), contact your Grass Valley sales representative.

Video Outputs

The KMV-3901/3911 multiviewer supports two progressive scan HDMI outputs. The processing delay is close to one field if the video inputs are genlocked, or between one and two fields in non-genlock mode. The following table lists some (but not all) output formats supported on the MV OUT connections. You can customize your own timing rates for resolutions ranging from 1280 × 1024 pixels up to 1920 × 1200 pixels (all progressive scan), by using XEdit.

KMV-3901/3911 HDMI output formats

Resolution	Format name	Refresh rates (Hz)
1280 × 1024	SXGA	50, 59.94
1280 × 1024	BARCO	59.94
1360 × 768	NEC	50, 59.94
1480 × 1200	Christie	50, 59.94
1600 × 1200[a]	UXGA	50, 59.94
1920 × 1080	Baycat	50, 59.94
1920 × 1200	WUXGA	50, 59.94

a. In the case of a KMV-3901/3911 cascaded system, an output resolution of 1600 × 1200 is not supported.

In addition to the HDMI outputs, the KMV-3911 supports two HD-SDI monitoring outputs (with embedded audio).

KMV-3911 HD-SDI output formats

Resolution	Refresh rates (Hz)
720p	50, 59.94
1080i	50, 59.94
1080p (level A)	50, 59.94

Kaleido-MX, Kaleido-Modular-X

Kaleido-MX frames support 8, 16, 24, 48, or 64 signal inputs. Kaleido-Modular-X systems support up to 64 signal inputs. The supported input types include SD-SDI, HD-SDI, 3G-SDI, and 4K UHD (auto-detected). Signal inputs require DIN 1.0/2.3 connectors.

Note: The Kaleido-X software does not distinguish between 1080PsF25 and 1080i50, between 1080PsF29.97 and 1080i59.94, between 720p29.97 and 720p30, between 2160p30 and 2160p29.97, and between 1080p29.97 and 1080p30. On the monitor wall and in XAdmin's Status and Options page, 1080PsF25 is reported as 1080i50, 1080PsF29.97 is reported as 1080i59.94, 720p30 as 720p29.97, 2160p30 as 2160p29.97, and 1080p30 as 1080p29.97.

Kaleido-MX, Kaleido-Modular-X signal input formats

4K UHD inputs[a]	2160p59.94	2160p50	2160p30
	2160p29.97	2160p25	
3G-SDI inputs	1080p59.94	1080p50	
HD-SDI inputs	720p29.97	720p30	720p50
	720p59.94	1080i50	1080i59.94
	1080PsF23.98	1080PsF24	1080PsF25
	1080PsF29.97	1080p23.98	1080p24
	1080p25	1080p29.97	1080p30
SD-SDI inputs	525	625	
Graphics converted to HD-SDI from KXI-DVI-Bridge[b]			1080p60

a. Kaleido-Modular-X with *4K UHD prescaler,* only. Refer to the Kaleido-Modular-X Hardware Description & Installation Manual.

b. A *Dual Channel DVI to HD Bridge* must be connected between the multiviewer and the PC or laptop that provides the graphics to the multiviewer. To order this optional device (Part No. KXI-DVI-BRIDGE), contact your Grass Valley sales representative.

The Kaleido-MX frames support two or four progressive scan HDMI outputs. Kaleido-Modular-X systems support up to four HDMI outputs. The processing delay is two

fields if the video inputs are genlocked, and two or three fields if the video inputs are not genlocked. In rotation mode the processing delay may increase by one field. The following table lists some (but not all) output formats supported on the MV OUT connections. You can customize your own timing rates for resolutions ranging from 1024 × 768 pixels up to 1920 × 1080 pixels (all progressive scan), by using XEdit.

Kaleido-MX, Kaleido-Modular-X default HDMI output resolutions

Resolution	Format name	Refresh rates (Hz)
1024 × 768	XGA	50, 59.94
1280 × 720	Margay	50, 59.94
1280 × 768	WXGA	50, 59.94
1280 × 1024	SXGA	50, 59.94
1280 × 1024	BARCO	59.94
1360 × 768	NEC	50, 59.94
1480 × 1200	Christie	50, 59.94
1600 × 1200	UXGA	50, 59.94
1920 × 1080	Baycat	50, 59.94
1920 × 1200	WUXGA	50, 59.94

The Kaleido-MX frames support two or four HD-SDI monitoring outputs (with embedded audio). Kaleido-Modular-X systems support up to four HD-SDI monitoring outputs (with embedded audio).

Kaleido-MX, Kaleido-Modular-X HD-SDI output formats

Resolution	Refresh rates (Hz)
720p	50, 59.94
1080i	50, 59.94
1080p (level A)	50, 59.94

Kaleido-MX 4K

Kaleido-MX 4K multiviewers support 16, 32, 48, or 64 signal inputs. The supported input types include SD-SDI, HD-SDI, and 3G-SDI. Signal inputs require DIN 1.0/2.3 connectors.

Note: The Kaleido-X software does not distinguish between 1080PsF25 and 1080i50, between 1080PsF29.97 and 1080i59.94, between 720p29.97 and 720p30, and between 1080p29.97 and 1080p30. On the monitor wall and in XAdmin's Status and Options page, 1080PsF25 is reported as 1080i50, 1080PsF29.97 is reported as 1080i59.94, 720p30 as 720p29.97, and 1080p30 as 1080p29.97

Kaleido-MX 4K signal input formats

3G-SDI inputs	1080p59.94	1080p50	
HD-SDI inputs	720p29.97	720p30	720p50
	720p59.94	1080i50	1080i59.94
	1080PsF23.98	1080PsF24	1080PsF25
	1080PsF29.97	1080p23.98	1080p24
	1080p25	1080p29.97	1080p30
SD-SDI inputs	525	625	
Graphics converted to HD-SDI from KXI-DVI-Bridge[a]			1080p60

a. A *Dual Channel DVI to HD Bridge* must be connected between the multiviewer and the PC or laptop that provides the graphics to the multiviewer. To order this optional device (Part No. KXI-DVI-BRIDGE), contact your Grass Valley sales representative.

All Kaleido-MX 4K multiviewer models support one seamless quad link (square division) 4K UHD output (with embedded audio), using the four HD-SDI monitoring outputs.

Kaleido-MX 4K HD-SDI output formats

Resolution	Refresh rates (Hz)
1080p (level A)	50, 59.94

The Kaleido-MX 4K multiviewer models support one progressive scan HDMI 2.0 output, via the quad link SDI to HDMI converter that ships with each multiviewer.

Kaleido-MX 4K default HDMI output resolutions

Resolution	Format name	Refresh rates (Hz)
3840 × 2160	4K UHDTV	50, 59.94

The processing delay is two fields at the SDI outputs, if the video inputs are genlocked (two or three fields if the video inputs are not genlocked), or four fields at the SDI to HDMI converter's HDMI output. (One converter ships with every multiviewer.)

Kaleido-X16

The Kaleido-X16 frame supports 16 signal inputs. The supported input types include Composite, SD-SDI, HD-SDI, and 3G-SDI (auto-detected). Signal inputs require BNC connectors.

Note: The Kaleido-X software does not distinguish between 1080PsF25 and 1080i50, and neither between 1080PsF29.97 and 1080i59.94. Both 1080PsF25 and 1080i50 are reported as 1080i50, and both 1080PsF29.97 and 1080i59.94 are reported as 1080i59.94, on the monitor wall, and in XAdmin's Status and Options page.

Kaleido-X16 signal input formats

3G-SDI inputs	1080p59.94	1080p50	
HD-SDI inputs	720p24	720p25	720p29.97
	720p50	720p59.94	1080i50
	1080i59.94	1080PsF23.98	1080PsF24
	1080PsF25	1080PsF29.97	1080p23.98
	1080p24	1080p25	1080p29.97
SD-SDI inputs	525	625	
Composite inputs	NTSC-M	NTSC-J	PAL-BGDHI
	PAL-N	PAL-M	SECAM
Graphics converted to HD-SDI from KXI-DVI-Bridge[a]	1024 × 768 @ 60 (XGA)	1280 × 1024 @ 60 (SXGA)	1366 × 768 or 1368 × 768 @ 60 (WXGA)
	1680 × 1050 @ 60 (WSXGA+)	1600 × 1200 @ 60 (UXGA)	

a. A *Dual Channel DVI to HD Bridge* must be connected between the multiviewer and the PC or laptop that provides the graphics to the multiviewer. The highest supported resolution is 1600 × 1200 in 4:3, and 1680 × 1050 in 16:9. To order this optional device (Part No. KXI-DVI-BRIDGE), contact your Grass Valley sales representative.

The Kaleido-X16 supports two DVI inputs, one for each output head. Since the DVI input cannot be resized, the resolution on the PC that feeds this input is best set to match the selected display's (head) resolution. The DVI background is always positioned from the top-left corner of the display, and is drawn pixel for pixel. If the resolutions do not match, some part of the DVI input might be missing or noise might be displayed.

Kaleido-X16 DVI input formats

Resolutions	Refresh rates (Hz)
From 1024 × 768 to 1920 × 1200 NI	50, 59.94

The Kaleido-X16 frame supports two progressive scan HDMI outputs. The processing delay is two fields if the video inputs are genlocked. The following table lists some (but not all) output formats supported on the MV OUT connections. You can customize your own

timing rates for resolutions ranging from 1024 × 768 pixels up to 1920 × 1200 pixels (all progressive scan), by using XEdit.

Kaleido-X16 default HDMI output resolutions

Resolution	Format name	Refresh rates (Hz)
1024 × 768	XGA	50, 59.94
1280 × 720	Margay	50, 59.94
1280 × 768	WXGA	50, 59.94
1280 × 1024	SXGA	50, 59.94
1280 × 1024	BARCO	59.94
1360 × 768	NEC	50, 59.94
1480 × 1200	Christie	50, 59.94
1600 × 1200	UXGA	50, 59.94
1920 × 1080	Baycat	50, 59.94
1920 × 1200	WUXGA	50, 59.94

The Kaleido-X16 supports two HD-SDI monitoring outputs (with embedded audio).

Kaleido-X16 HD-SDI output formats

Resolution	Refresh rates (Hz)
720p	50, 59.94
1080i	50, 59.94
1080p (level A)	50, 59.94

Kaleido-X (4RU), Kaleido-X (7RU) and Expansion Systems

Note: The Kaleido-X software does not distinguish between 1080PsF25 and 1080i50, and neither between 1080PsF29.97 and 1080i59.94. Both 1080PsF25 and 1080i50 are reported as 1080i50, and both 1080PsF29.97 and 1080i59.94 are reported as 1080i59.94, on the monitor wall and in XAdmin's Status and Options page.

KXI-16HSV3 input formats

1080p59.94	1080p50	720p24	720p25	720p29.97
720p50	720p59.94	1080i50	1080i59.94	1080PsF23.98
1080PsF24	1080PsF25	1080PsF29.97	1080p23.98	1080p24
1080p25	1080p29.97	SDI-525	SDI-625	SECAM
PAL-M	PAL-N	PAL-BGDHI	NTSC-M	NTSC-J

KXI-16HSV input formats

720p24	720p25	720p29.97	720p50	720p59.94
1080i50	1080i59.94	1080PsF23.98	1080PsF24	1080PsF25
1080PsF29.97	1080p23.98	1080p24	1080p25	1080p29.97
SDI-525	SDI-625	SECAM	PAL-M	PAL-N
PAL-BGDHI	NTSC-M	NTSC-J		

KXI-16HS3 input formats

1080p59.94	1080p50	720p24	720p25	720p29.97
720p50	720p59.94	1080i50	1080i59.94	1080PsF23.98
1080PsF24	1080PsF25	1080PsF29.97	1080p23.98	1080p24
1080p25	1080p29.97	SDI-525	SDI-625	

KXI-16HS input formats

720p24	720p25	720p29.97	720p50	720p59.94
1080i50	1080i59.94	1080PsF23.98	1080PsF24	1080PsF25
1080PsF29.97	1080p23.98	1080p24	1080p25	1080p29.97
SDI-525	SDI-625			

KXI-16SV input formats

SDI-525	SDI-625	SECAM	PAL-M	PAL-N
PAL-BGDHI	NTSC-M	NTSC-J		

Graphics converted to HD-SDI from KXI-DVI-Bridge[a]

1024 × 768 @ 60 (XGA)	1280 × 1024 @ 60 (SXGA)	1600 × 1200 @ 60 (UXGA)
1366 × 768 or 1368 × 768 @ 60 (WXGA)	1680 × 1050 @ 60 (WSXGA+)	

a. A *Dual Channel DVI to HD Bridge* must be connected between the multiviewer and the PC or laptop that provides the graphics to the multiviewer. The highest supported resolution is 1600 × 1200 in 4:3, and 1680 × 1050 in 16:9. To order this optional device (Part No. KXI-DVI-BRIDGE), contact your Grass Valley sales representative.

The KXO-Dual/KXO-Dual3 output cards support two DVI inputs, one for each output head. Since the DVI input cannot be resized, the resolution on the PC that feeds this input is best set to match the selected display's (head) resolution. The DVI background is always positioned from the top-left corner of the display, and is drawn pixel for pixel. If the

resolutions do not match, some part of the DVI input might be missing or noise might be displayed.

KXO-Dual/KXO-Dual3 DVI input formats

Resolutions	Refresh rates (Hz)
From 1024 × 768 to 1920 × 1200 NI	50, 59.94

KXO-24Router input formats

720p24	720p25	720p29.97
720p59.94	720p50	1080i59.94
1080PsF29.97	1080i50	1080PsF25
1080p29.97	1080p25	1080p24
1080p23.98	1080PsF23.98	1080PsF24
SDI-525	SDI-625	

KXA-GPI-GEN reference input formats

NTSC	PAL	720p59.94
720p50	1080p59.94	1080p50
1080i59.94	1080i50	

KXO-Dual/KXO-Dual3 default output resolutions

1280 × 768 @ 50 Hz	1280 × 768 @ 60 Hz	1360 × 768 @ 50 Hz
1360 × 768 @ 60 Hz	1366 × 768 @ 50 Hz	1366 × 768 @ 60 Hz
1680 × 1050 @ 50 Hz	1680 × 1050 @ 60 Hz	1920 × 1080 @ 50 Hz Baycat4
1920 × 1080 @ 50 Hz Negative	1920 × 1200 @ 50 Hz	1920 × 1200 @ 60 Hz
VESA 1024 × 768 @ 50 Hz	VESA 1024 × 768 @ 60 Hz	VESA 1280 × 1024 @ 50 Hz
VESA 1280 × 1024 @ 60 Hz	VESA 1600 × 1200 @ 50 Hz	VESA 1600 × 1200 @ 60 Hz
BARCO 1400 × 1050 @ 50 Hz	BARCO 1400 × 1050 @ 60 Hz	CLARITY 1920 × 1080 @ 50 Hz
CLARITY 1920 × 1080 @ 60 Hz	1920 × 1080 @ 50 Hz (HDTV)	1920 × 1080 @ 60 Hz (HDTV)
1280 × 720 @ 50 Hz (HDTV)	1280 × 720 @ 60 Hz (HDTV)	

Note: Reading of the actual output timing from the display is supported. Custom resolutions can be created in XEdit to drive a display in its native resolution. Supported resolutions: 1024 × 768 to 1920 × 1200 (all progressive scan).

KXO-Dual/KXO-Dual3 cards equipped with the optional KXO-HDM module support two HD-SDI monitoring outputs (with embedded audio).

KXO-HDM HD-SDI output formats

Resolution	Refresh rates (Hz)
720p	50, 59.94
1080i	50, 59.94
1080p (level A)	50, 59.94

Peripheral Device/System Support

A number of configurable services are available to establish communications between the multiviewer and a wide variety of devices.

Optional Drivers for Controlling Routing Devices from the Multiviewer

Optional drivers are available to extend your Kaleido-X system with the ability to control routing devices that comply with the protocols listed in the following table. Contact your sales representative for details.

Company	Protocol	Text database download	Routers/Controllers
Datatek	D-2815 Control Module Protocol	No	
ETL	ETL Matrix	Yes	ETL Matrix
Evertz	Quartz Type 1	Yes	EQX
Grass Valley (Miranda)	Densité	Yes	HRS-1801
		No	HCO-1821, HCO-1822
Grass Valley (Miranda/NVISION)	NVISION Ethernet protocol - Enterprise router (Logical)[a]	Yes	NV9000 system controllers
	NVISION Ethernet protocol - Enterprise router (Physical)[b]	Yes	
	NVISION Ethernet protocol - Enterprise router (Device ID based)[c]	Yes	
	NVISION Ethernet protocol - Compact router	No	Compact router series

Company	Protocol	Text database download	Routers/Controllers
Grass Valley (Thomson/Philips)[d]	GVG 7000 Native Protocol[e]	Yes	Concerto-series routers, Encore-series control panels
	Jupiter ASCII communications protocol	No	Jupiter VM-3000 system controller, Venus-series and Trinix-series routers
	ES-Switch protocol (serial)[f]	Yes	Jupiter VM-3000 system controller
Imagine Communications (Harris/Leitch)	Harris XY Passthrough Protocol	No	Platinum, Xplus, Integrator, Via-32, Panacea, Xpress
Lantronix	(Lightwave) Matrix-Hub Protocol	No	Matrix-Hub 1000
Nevion (Network Electronics)	Network Compact (serial)	No	VikinX Compact
	Network Modular (Ethernet)	No	VikinX Modular
PESA	USP (Unsolicited Status Protocol)	No	Cheetah, Tiger, Jaguar, Cougar, Ocelot, Bobcat, TDM3000, PERC2000 system controller
	CPU Link Protocol No.1 (serial)	No	
Quintech	XRM/SRM/MRF/MRM Series Protocol (serial)	No	SRM 2150 Matrix Switching Systems
SAM (Snell/Pro-Bel)	General Switcher Protocol (SW-P-02)	No	
	General Remote Protocol (SW-P-08)	Yes	Halo, Aurora and Sirius Controller (serial control)
Sony	Sony HKSPC (GVGNP Emulator)	No	Sony routers (requires HKSPC card); GVG routers (Ethernet)
Utah Scientific	PL-160/PL-320	No	AVS-1B
	RCP-1	No	SC-1, SC-2, SC-3 series
	RCP-3	Yes	SC-4 series (Ethernet only)

a. Deprecated. To be used with legacy configurations only.
b. To be used in most cases. Supports native locks, and aliases from router (provided system controller has NV9000 router control system version 6.0.6 or later)
c. To be used in very specific scenarios involving physical router interconnects with tie lines, or with hybrid router configurations. Contact Technical Support for more information (see Contact Us, on page 89).
d. Our current implementations of the protocols listed above for Grass Valley (Thomson/Philips) routers and controllers support neither the CM-4400 nor the CM-4000 system controllers.
e. For Thomson / Grass Valley Series 7000 devices, our current implementation of the Series 7000 Native Protocol supports serial devices, in addition to some Encore system controller models, which are also supported over Ethernet. For other Series 7000 devices you wish to control via Ethernet, use Sony HKSPC (GVGNP Emulator).
f. In the case of the Kaleido-X, and Kaleido-X16 multiviewers, the ES-Switch protocol is only supported with a baud rate of 19200.

Optional Drivers for Controlling Tally Interface Devices from the Multiviewer

Optional drivers are available to extend your Kaleido-X system with the ability to control tally interface devices such as the ones listed in the tables below. Contact your sales representative for more information.

Production Switchers

Company	Device/System
Grass Valley (Thomson)	Kayenne K-Frame, Karrera K-Frame, Kayenne, Kalypso, Zodiak, KayakDD, Kayak SD/HD, DD35, XtenDD HD/SD series
Ross	Acuity, Synergy, and Vision Tritium series (via the Kalypso Serial Tally Protocol)
SAM (Snell & Wilcox)	Kahuna
Sony	DVS-9000, MVS-8000, MFS-2000

UMD controllers

Company	Device/System
Grass Valley (Thomson)	Andromeda UMD Controller
Image Video	TSI-1000 Tally System Interface (requires option from Image Video)
TSL	UMD Controller (serial, TCP/IP or UDP/IP)

Scoreboards

Company	Device/System	Sport	Protocol version
Daktronics	All Sport scoreboard controllers	Basketball	ED-16593, Rev 0–1
		Football	ED-16098, Rev 0–1
		Baseball	DD1492305, Rev 0
		Soccer	ED-16804, Rev 0–1
		Volleyball	ED-19266, Rev 0
		Hockey	ED-16092, Rev 0
	Pitch timer (requires All Sport 5000, with All Sport CG version 2.6 or later)	Baseball	DD3030549, Rev 1

Timer systems

Company	Device/System
Plura (Alpermann+Velte)	Studio Production Timer (SPT)

Automation systems

Company	Device/System
Imagine Communications (Harris/Encoda)	D-Series Playout Automation, A7500 Dual Master Automation
Sundance Digital	Fastbreak NXT Automation (requires option from Sundance Digital)

Built-in Communications Protocols

The multiviewer itself can be controlled by external devices (e.g. Kaleido-RCP2, router control panels) or applications (e.g. router control software application, Remote Control Gateway) via built-in communications protocols. Such devices or applications can be used to command monitor wall operations (e.g. source assignment) or routing operations.

A router control device or application can control a Kaleido-X (7RU) or Kaleido-X16 multiviewer's internal router module, or any multiviewer's logical sources and monitor wall destinations, via the *KX Router* logical router. It can also control other logical routers configured within your multiviewer system. In the case of the *KX Router* logical router, the device or application must support the *NVISION Ethernet protocol - Compact router* protocol.

The supported communications protocols are listed in the following table, with an indication of the supported connection types (TCP/IP or serial), and the dedicated port number on the multiviewer, in the case of a TCP/IP protocol.

Company	Protocol	TCP/IP (port)	Serial
Grass Valley (Miranda)	Kaleido Remote Control Protocol	Yes (13000)	Yes
Grass Valley (Miranda/NVISION)	NVISION Ethernet protocol - Compact router	Yes (5194)	No
Nevion (Network Electronics)	Network Compact	N/A	Yes
	Network Modular	Yes (4381)	No
SAM (Snell/Pro-Bel)	SW-P-08	Yes (14000)	Yes
	SW-P-02	Yes (2000)	Yes

2 System Requirements & Installation

This section details the requirements that must be met prior to installing or upgrading the Kaleido-X software, and describes how to upgrade (or downgrade) a multiviewer system.

Software and Firmware Versions

Kaleido-X version 8.30 includes the following:

Software/Firmware Component	Version
Kaleido-X software	8.30
XEdit application	8.30
XUpdate (Kaleido-X Upgrade Manager application)	8.00
Kaleido-RCP2	165
ABT Audio Bridge Terminal (CPU firmware version)	1.0.9
ABT Audio Bridge Terminal (FPGA firmware version)	1.0.3
KXI-DVI-Bridge firmware	8.3.1

For the **Kaleido-X16**, this release contains the following, in addition to the above:

Software/Firmware Component	Version
System (firmware)	0xC6
Safe mode	0x2

For the **Kaleido-X (4RU)** and **Kaleido-X (7RU)**, this release contains the following, in addition to the above:

Firmware Package	Version
KXO-Dual output module firmware	0xF4
KXI-16HS3 input module firmware	0xD3
KXI-16HS input module firmware	0xAE
KXI-16HSV3 input module firmware	0xD0
KXI-16HSV input module firmware	0xE5
KXI-16SV (rev. 600 and later) input module firmware	0xB7
KXI-16SV (rev. 599 and earlier) input module firmware	0xAF
KXO-24ROUTER router output module firmware	0x50

Firmware Package *(continued)*	Version
KXA-GPI-GEN firmware	0x45
KXO-EXP firmware	0x3A

Safe Mode Package	Version
KXO-Dual output module safe mode	0x60
KXI-16HS3 input module safe mode	0x03
KXI-16HS input module safe mode	0x37
KXI-16HSV3 input module safe mode	0x0F
KXI-16HSV input module safe mode	0x6F
KXI-16SV (rev. 600 and later) input module safe mode	0x03
KXI-16SV (rev. 599 and earlier) input module safe mode	0x38
KXO-24ROUTER router output module safe mode	0x43
KXA-GPI-GEN safe mode	0x36
KXO-EXP safe mode	0xC

System Requirements

Client Platform

A client PC or laptop meeting the following requirements is required to access the XAdmin Web client, and the other Kaleido-X client applications.

Operating system	Windows 10, Windows 8.1, Windows 8, or Windows 7
Processor	Core 2 Duo at 2 GHz, or better
Memory	At least 2 GB of RAM
Disk space	At least 2 GB free

Component Compatibility

Kaleido-X version 8.30 is compatible with the products listed below. For some products, a minimum version and a recommended version may be indicated. For a specific multiviewer model, the minimum version indicated for a product is typically what was the latest version of the product at the time this multiviewer model was introduced. This version of the product was tested and found to be compatible with the first version of the Kaleido-X software that supported the multiviewer model. It may not have been tested against every subsequent release of the Kaleido-X software or other products. The recommended version of a product has been tested and found to comply with the current version of the Kaleido-X software.

Grass Valley system component compatibility

Product	Kaleido-IP	Kaleido-X, Kaleido-X16	KMV-3911[a]	KMX-3901[b]	KMX-4911
RCP-200 remote control panel	Rec: 1.80 or later. Min: 1.40 if the RCP-200 is configured within an iControl system; 1.70 if the RCP-200 is used to control the multiviewer directly.				
Kaleido-RCP2 control panel	Rec: 165 or later Min: 160				
NV9000 router control system	Rec: 6.4.0 or later Min: 6.0.0				
EdgeVision	Rec: 1.30 or later Min: 1.05				
CPU-ETH2	N/A		Rec: 2.2.2 or later Min: 2.0.4	Rec: 2.2.2 or later[c] Min: 2.1.2	*Not supported*
CPU-ETH3	N/A		Rec: 1.0.3 or later Min: 1.0.3		
CPU-ETH3-REF[d]	N/A		Rec. firmware: 1.1.0 (upgrade package 1.1.2-RC-1) or later		
Densité REF-1801	N/A		Rec. firmware: 1.1.0 (upgrade package 1.1.0-RC-6) or later		N/A
Densité GPI-1501	Rec. firmware: 1.0.0 (upgrade package 1.0.0-RC-1) or later				
Densité VDA-1002	N/A		Rec. firmware: 1.1.1 or later		
IPG-3901[e]	N/A			Rec.: firmware 1.1.0, and upgrade package 1.1.0 RC-4	N/A
iControl	Rec: 6.00 or later Min: 4.14	Rec: 6.00 or later Min: 3.60	Rec: 6.00 or later Min: 3.60	Rec: 7.10 or later[f] Min: 4.43	Rec: 7.20 or later Min: 7.20
Multiviewer service panel (iControl 5 and later)	N/A		Rec. upgrade package: 1.0.1-RC-1 or later	Rec. KMX-3901-IN upgrade package: 1.0.1-RC-1 or later Rec. KMX-3901-OUT upgrade package: 1.0.1-RC-1 or later	*Use the KMX-4911 upgrade package that contains the current version of the Kaleido-X software (i.e., 8.3.0)*

a. Applies to KMV-3901/3911, Kaleido-XQUAD.

b. Applies to Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X.

c. Versions 2.2.0 and later of the CPU-ETH2 firmware are not compatible with Kaleido-MX and Kaleido-Modular-X systems that have a version the Kaleido-X software *earlier than 7.20*. Using a Kaleido-MX or Kaleido-Modular-X multiviewer that has a version of the Kaleido-X software earlier than 7.20, with a Densité controller that has version 2.2.0 or later of the CPU-ETH2 firmware, may result in an inoperative multiviewer system, in which case you might need assistance from Grass Valley Technical Support.

d. Frame reference module included with CPU-ETH3.

e. SDI/IP gateway module of the KMX-3901-IN-IP input/output card. The current IPG-3901 upgrade packages update the service panel only. Firmware is upgraded separately, directly on the module's CF card.

f. The KMX-3901-IN-IP input/output modules are compatible with iControl version 7.10 and later.

IMPORTANT
Keeping your Grass Valley software products up to date ensures optimal interoperability between all system components.

Configuration Guidelines

Ethernet Connection

- All output (KXO-Dual, KXO-Dual3) cards in a Kaleido-X multiviewer must be connected to an Ethernet switch prior to powering up the multiviewer.
- Any multiviewer you wish to configure or access by using XEdit or XAdmin must be connected to an Ethernet switch.
- A client workstation must be connected to the LAN or Ethernet switch to access the multiviewer by using XAdmin or XEdit.
- The Ethernet switch must support 100 Mbps full-duplex connections. In the case of a Kaleido-IP multiviewer, the Ethernet switch associated with the *data* network should support 1000 Mbps full-duplex.
- The port on the Ethernet switch to which the multiviewer is connected should be configured to auto-negotiate. By default, multiviewers have their Ethernet ports set to auto-negotiate. If a switch does not support auto-negotiation, the recommended settings are 1000 Mbps, full-duplex—for a switch associated with a Kaleido-IP *data* network—, and 100 Mbps, full-duplex, for all other cases. As required by the IEEE-802.3 standard, section 28D.5, 1000 Mbps full-duplex communication is only supported via auto-negotiation.
- Kaleido-IP support for multicast join and leave: It is possible to add and configure up to 6000 logical sources in a Kaleido-IP system without exceeding the network's bandwidth or the unit's decoding resources.[1] Refer to the Kaleido-IP video inputs section (under Supported Input/Output Formats) on page 41 for details on the number of programs and total streaming bandwidth supported.

  The Kaleido-IP multiviewer joins a multicast group only when decoding is required, that is when a source is being monitored on the wall. In addition, streams that are not decoded are joined momentarily in a polling manner—one stream at a time—to update the PMT and PAT information. The Kaleido-IP leaves the multicast group as soon as a change of layout implies that a different set of streams must be decoded.

  However, if your situation involves frequent changes of layout (e.g., loading a new layout to the monitor wall every minute) then, when you are creating or editing a layout, make sure to terminate XEdit's connection to the Kaleido-IP once configuration tasks are completed.

1. In the case of a Kaleido-IP X300 model, to support more than 1500 sources, the multiviewer's RAM must be upgraded to 24 GB (see Kaleido-IP X300, and Kaleido-IP X100 Memory Modules, on page 86). The Kaleido-IP X100 is limited to 1500 sources.

Clusters

IMPORTANT
Before changing the system name or IP address of a multiviewer associated with a cluster, review the following.

- If you change the system name or IP address of a cluster member while another cluster member is offline or otherwise unavailable, the cluster's integrity will be broken. If you attempt to make such a change, XEdit will alert you of the situation, prompting you to cancel the operation and try again later, when all cluster members are available. However, in the advent that such a change was made by mistake, or that is had to be forced for some reason, you will have to repair the broken cluster (see "Repairing a Cluster System" in the Kaleido-X User's Manual).
- Changing the system name or IP address of a KMV-3901/3911 multiviewer associated with a cluster, by using the card's control panel on the Densité housing frame, or by using the KMV-3901/3911 control panel in iControl, is not supported.
- To maintain the integrity of a cluster configuration, such changes must be made by using the system configuration features available in XAdmin.

Kaleido-X Output/Expansion Cards

- **Kaleido-X (7RU) and Kaleido-X (14RU):** One card must always be present in either OUTPUT slot C (KXO-Dual or KXO-Dual3) or OUTPUT slot D (KXO-Dual, KXO-Dual3 or KXO-EXP) to ensure proper operation of the multiviewer system.
- **Kaleido-X (4RU):** One KXO-Dual or KXO-Dual3 card must always be present in either OUTPUT slot A or OUTPUT slot B to ensure proper operation of the multiviewer system.

Kaleido-X, Kaleido-X16 Audio Monitoring

- All equipment in the audio path (e.g., ABT, multiviewer, audio source) must use the same reference source.

KMV-3901/3911, Kaleido-XQUAD, Kaleido-MX, Kaleido-MX 4K Time Reference

- **Densité CPU-ETH2 Enhanced Ethernet Controller Card:** The Densité frame housing a KMV-3901 or KMV-3911 multiviewer card must have a controller card with firmware version 2.0.4 or later. A controller with an earlier version of the firmware cannot provide a time reference to the multiviewer card.
- **Date/time configuration:** The KMV-3901/3911, Kaleido-XQUAD, Kaleido-MX, and Kaleido-MX 4K multiviewers receive date and time information from the Densité CPU-ETH2 controller upon startup. Unlike other multiviewer models, date/time or NTP settings for these multiviewers cannot be configured in XAdmin. Make sure the controller's internal clock is correctly set. The clock settings will persist for 10 days after a power loss. Should you need to change the time on a Densité CPU-ETH2 controller, then make sure to restart all multiviewers located in the same housing frame as the controller card. Refer to the Densité CPU-ETH2 Enhanced Ethernet Controller Card Guide to Installation and Operation, for instructions on setting the date and time

manually, or configuring the controller to provide date and time information from an NTP server.

- **Time Code Reference from REF-1801:** If the time reference signal is provided by a Densité REF-1801 HD/SD Frame Reference Module, this module must be configured as follows:
  - An input reference signal must be connected to the BNC marked REF on the REF-1801's rear panel.
  - The LTC source must be locked to the same reference signal.
  - The *reference source* must be set to **External** (either from the card's REFERENCE menu or, in iControl, from the **Input** tab on the control panel for this card).
  - In the case of a non-standard time code (e.g. a count down time code, or a time code that includes user bits with date information), the *time code processing* mode must be set to **Pass through** (either from the card's REFERENCE menu or, in iControl, from the **Input** tab on the control panel for this card). The pass through mode is available as of version 1.10 of the REF-1801 firmware.
  - The *URS generation mode* must be set to **Normal** (either from the card's REFERENCE menu or, in iControl, from the **Mode** tab on the control panel for this card).

  Notes
  - If the REF-1801 is configured properly, the Status LED on the front of the card will be green. Improper configuration would result in periodical time code glitches. Refer to the REF-1801 HD/SD Frame Reference Module Guide to Installation and Operation (available from the Documentation Library section of Grass Valley's website) for more information.
  - Using an LTC count down time code as the reference for a count up timer is not yet supported.

iControl

- **Alarm latching:** As of version 6.60 of the Kaleido-X software, multiviewer GSMs have their *acknowledgement snooze duration* set to 0 ms, by default. If you have set a non-default value for the acknowledgement snooze duration in the past, you may want to verify whether it is appropriate for your current purposes:
  1. In the GSM alarm browser, click the **Admin** tab, and then click **Configuration** on the second-level tab bar.
  2. Review the value indicated for **Acknowledgement snooze duration**.
  3. Set it to 0 ms if needed, and then click **Save**.

Upgrading

IMPORTANT

Back up your system database
Before upgrading your multiviewer system, make sure you have a backup of the current system database. Refer to *Creating a Backup* in the Kaleido-X User's Manual, for details.

IMPORTANT *(continued)*

Cluster and cascade systems
All multiviewers that are part of a cluster or cascade system must have the same Kaleido-X software version.
Cluster backups you create with version 6.50 (or later), cannot be restored by using an earlier version of XEdit. Grass Valley recommends you make a backup of the individual databases for every cluster member, *before upgrading* from a pre-6.50 version, to version 6.50 or later.

Virtual alarms used in iControl Web pages
The internal representation of virtual alarms has changed as of version 6.30 of the Kaleido-X software. If you are upgrading your multiviewer from a version prior to 6.30, then, once the upgrade is completed, it will be necessary to reassign any virtual alarms that were created on the multiviewer before the change, and used in iControl Web pages. Virtual alarms created in iControl are not affected.

Upgrade packages are made available either on a DVD or via download from a Grass Valley FTP server. The upgrade package contains:

- the Kaleido-X Upgrade Manager application required to upgrade the Kaleido-X, Kaleido-X16, Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X, KMV-3901/3911, and Kaleido-XQUAD multiviewers
- one or more Kaleido-X operating system (`.os`, `.zip`, or `.run`) files
- documentation, including the Release Notes

If you do not have the upgrade package, please contact Grass Valley Technical Support (see Contact Us, on page 89).

If you have a **cascade system,** refer to the *Cascade Upgrade* section, in the Cascade Step-by-Step Configuration guide for your system (see Documentation, on page 40).

In the case of a **Kaleido-IP** multiviewer, the upgrade is performed from your PC or laptop, by using XAdmin. See Upgrading Your Kaleido-IP Multiviewer on page 65.

In the case of a **KMX-4911** multiviewer, the upgrade is performed from your PC or laptop, by using the Densité Upgrade Manager application, which is part of iControl, and iControl Solo. Refer to the iControl Solo User Guide, or to the iControl User Guide, for more information. iControl Solo is available from the Downloads section of Grass Valley's website, and both manuals are available from the Documentation Library section of the website. See Upgrading Your KMX-4911 Multiviewer on page 64.

For **all other multiviewer models** (Kaleido-X, Kaleido-X16, Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X, KMV-3901/3911, Kaleido-XQUAD) you will need a USB key (not supplied) and a mouse to perform an upgrade of the Kaleido-X system. The USB key should be USB 2.0 compliant, have a capacity of at least 1 GB, and must be formatted using the FAT32 file system. See Upgrading Your Multiviewer by Using a USB Key on page 69.

Upgrading Your KMX-4911 Multiviewer

IMPORTANT

- If you wish to add a KMX-4911 card that currently has *version 8.20 (or earlier)* of the Kaleido-X software, to a KMX-4911 27×4, or 36×4 configuration, *this card must first be upgraded separately, to version 8.30 or later.* Before starting the upgrade, power down any other cards sharing the same rear module, by tilting their swivel handle, to lever the connectors apart, and then using their handle to pull the cards part way out of their slot.
- If you wish to add a KMX-4911 card that currently has *version 8.10* of the Kaleido-X software, to a KMX-4911 18×4 configuration, *this card must first be upgraded separately, to version 8.20 or later.* Before starting the upgrade, power down the other card sharing the same rear module, by tilting its swivel handle, to lever the connectors apart, and then using the handle to pull the card part way out of its slot.
- To upgrade a multi-card KMX-4911 multiviewer system (i.e., a system with more than one KMX-4911 card), you must select *all* the cards in Densité Upgrade Manager, so that they be upgraded simultaneously.

To upgrade your KMX-4911 multiviewer

1. From iControl Navigator, or iControl Solo, open Densité Upgrade Manager.
2. In **Densité Upgrade Manager**, click **Upload files**.

   A file browser window opens.
3. Navigate to the upgrade package (e.g., `KMX4911-service-8.3.0-RC-1-upgrade-package.zip`), select it, and then click **Open**.

   A progress indicator window appears.
4. Click **Upload**, to transfer the upgrade package to the Densité manager.
5. Once the operation has completed, click **Close**.
6. In the **Available package** column of **Densité Upgrade Manager**, expand the appropriate list to verify that the new upgrade package is present.
7. Locate the KMX-4911 cards that belong to the multiviewer system you wish to upgrade.

   TIP

   If you have more than one KMX-4911 system in your GV Node frame, click the **Physical view** tab, where you can locate your cards by their slot number.
8. For each of these cards, select the upgrade package you wish to install, from the corresponding list, under **Available package**.
9. Make sure the check boxes under **Select/Bypass** remain selected, for all the cards that belong to the KMX-4911 system you are upgrading.
10. Click **Upgrade**.
11. When prompted to confirm, click **Yes**.

    During the upgrade, a progress bar appears in the **Install progress** column. Once the upgrade operation has completed, a message appears in the Install progress column.

Upgrading Your Kaleido-IP Multiviewer

Notes

- **Kaleido-IP X100, Kaleido-IP X300 may require a RAM upgrade:** To be able to use Kaleido-X version 8 and later releases, a Kaleido-IP must have at least 12 GB of RAM. If a Kaleido-IP X300 system must handle more than 1500 sources, the multiviewer's RAM should be upgraded to 24 GB. See Kaleido-IP X300, and Kaleido-IP X100 Memory Modules on page 86.
- **SNMP:** As of version 7.90 of the Kaleido-X software, **Kaleido-IP X310** and **Kaleido-IP X110** multiviewers relay health-related status information via a new MIB module. The new module, `basebrd7_v5.mib`, replaces both of the earlier `basebrd5_v1.mib` and `basebrd5_v2.mib` MIBs. *After* you have upgraded your multiviewer, update your NMS with the appropriate MIBs, available from `http://`<your multiviewer's IP address>`/pub/`, if needed.
- **HTTP Live Streaming (HLS):** If your Kaleido-IP system includes HLS playlists that were added *before version 7.80* of the Kaleido-X software, you will need to remove these playlists, and then add them again, *after the upgrade*. Once you have added the playlists back to your system representation in XEdit, switch to the **Channels/Sources** tab, and repair the associated logical sources (whose video assignments appear in red): (1) make their video assignments again, (2) verify that the logical source that was designated as the *template* has the desired assignments, and then (3) apply the template (to all or to selected sources).
- **Display rotation:** If you are upgrading a Kaleido-IP that currently has a Kaleido-X version *earlier than 7.30,* and you have a room with rotated displays, see Ref. #KX-8394 on page 7.
- If your Kaleido-IP multiviewer shipped with a version of the Kaleido-X software *earlier than 6.30,* see Ref. #KX-5861 on page 21.
- If you are upgrading a Kaleido-IP that currently has a Kaleido-X version *earlier than 6.20,* the workflow is slightly different than what is described below. You may want to refer to the upgrade instructions in the Release Notes for Kaleido-X version 6.20. Make sure to review the related known issues: Ref. #KX-5433 on page 34, Ref. #KX-5579 on page 8, and Ref. #KX-5871 on page 8.

To upgrade your Kaleido-IP multiviewer

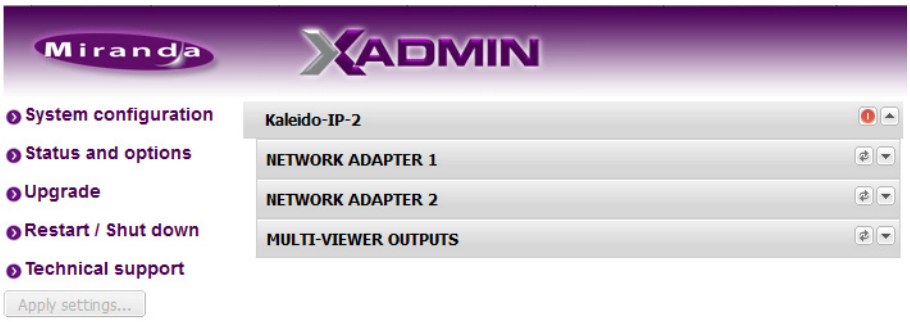
1 From a workstation on the same subnet, open a Web browser window, and type the *management* IP address of the multiviewer, in the address bar.

The Kaleido-IP home page appears.

Firefox users:
If you see a security warning instead of the home page, then refer to *Registering your Multiviewer's Security Credentials with your Browser,* in the Kaleido-X User's Manual.

2 Click the **XAdmin** button.

The XAdmin Status and Options page appears.



Internet Explorer users:
- If the page remains blank, then refer to *Enabling the Compatibility View in Internet Explorer 10,* in the Kaleido-X User's Manual.
- If you see a certificate error message instead of the Status and Options page, then refer to *Registering your Multiviewer's Security Credentials with your Browser,* in the Kaleido-X User's Manual.

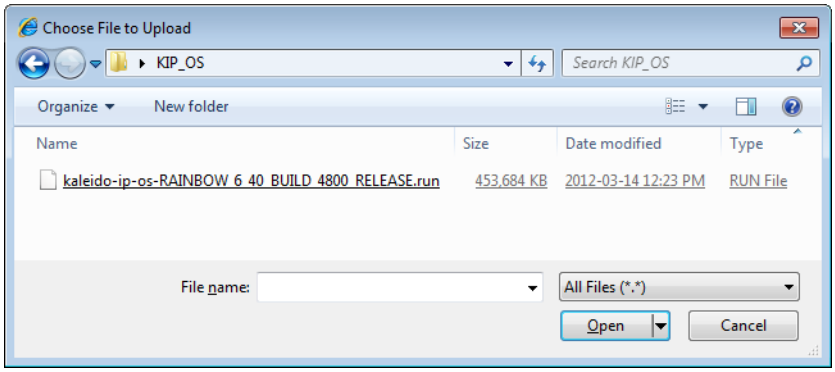
3 Click **Upgrade**, in the navigation area on the left of the page.

The Upgrade page appears.

4 Click **Choose a package to upload**.

A file chooser window appears.

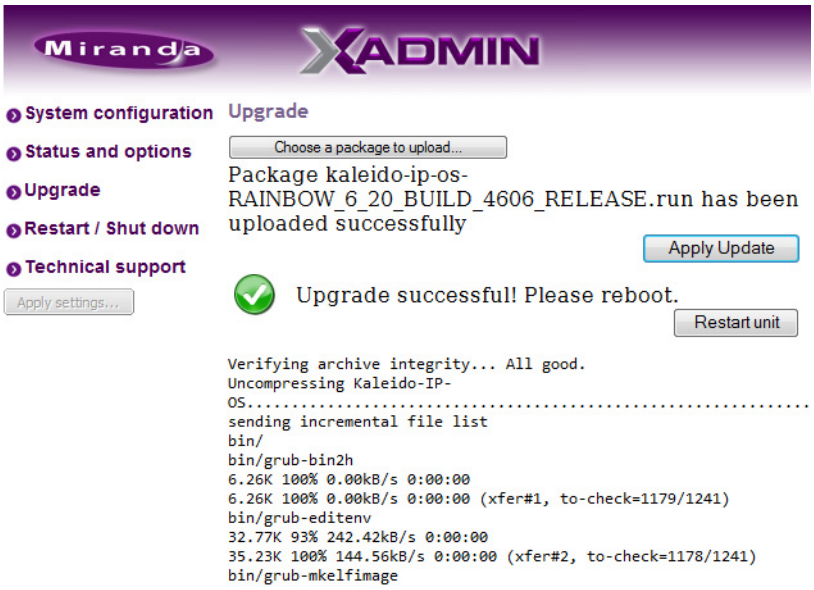
5 Navigate to the RUN package you wish to install, select it, and then click **Open**.



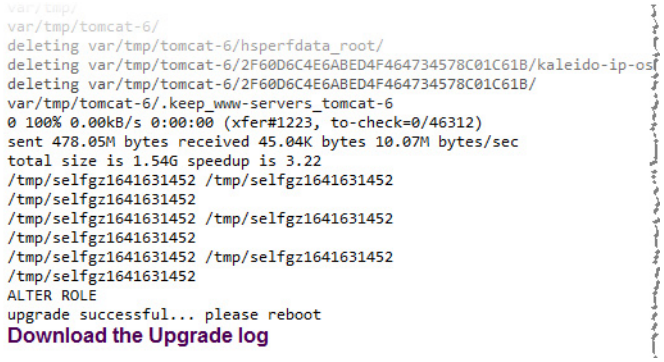
The selected file is uploaded to the Kaleido-IP. This may take a few seconds.

6 Once the upload has completed, click **Apply update**.

While the upgrade is taking place you can monitor its progress if you wish, or wait until the system prompts you to restart the Kaleido-IP unit.

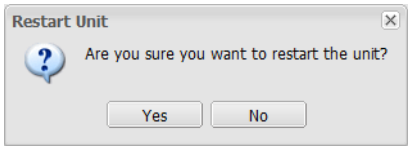


7 Once the upgrade has completed, if you wish to keep a copy of the log messages, scroll down to the bottom of the page, right-click **Download the Upgrade log**, and save the log to your hard drive as a text file.



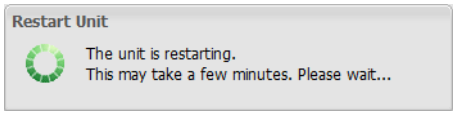
8 Click **Restart unit**.

The system prompts you to confirm.

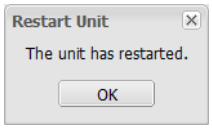


9 Click **Yes** to proceed.

Your multiviewer will shut down, and then start again, during which time you can observe messages associated with the operating system shutdown and boot sequences on the monitor wall display connected to Head 2. This may take a while.



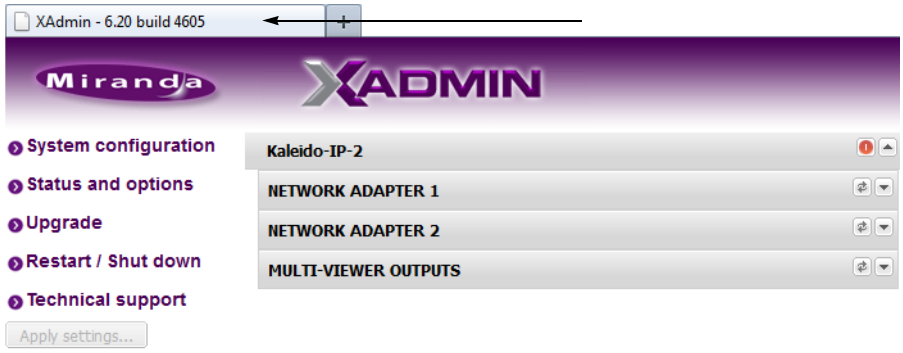
Once the multiviewer has restarted, the system notifies you.



10 Click **OK**.

The XAdmin Status and Options page appears.

11 Verify that the expected version number appears in the page title (check the tab label, or the browser's title bar).



At this point, the upgrade is complete.

Upgrading Your Multiviewer by Using a USB Key

This section applies to the Kaleido-X, Kaleido-X16, KMV-3901/3911, Kaleido-XQUAD, Kaleido-MX, Kaleido-MX 4K, and Kaleido-Modular-X. To upgrade a Kaleido-IP, see Upgrading Your Kaleido-IP Multiviewer, on page 65.

IMPORTANT

Before upgrading your multiviewer system, review the following.

Kaleido-X may require new CompactFlash storage cards

As of version 8 of the Kaleido-X software, every KXO-Dual3 output card in a Kaleido-X multiviewer must have a 4 GB CompactFlash storage card on board. Output cards with a 2 GB CF card cannot be upgraded to version 8 (or later). Contact Grass Valley to order the 4 GB CF cards you need (see Contact Us, on page 89).

Kaleido-MX, Kaleido-MX 4K, or Kaleido-Modular-X

The *first time* you upgrade a Kaleido-MX, Kaleido-MX 4K, or Kaleido-Modular-X, *from version 7.80 R5 (or earlier) to version 7.82 (or later),* expect an additional delay, after the multiviewer has restarted at the end of the installation process. See Kaleido-MX, Kaleido-MX 4K, and Kaleido-Modular-X input cards on page 76.

IMPORTANT *(continued)*

Upgrading a Kaleido-MX, or Kaleido-Modular-X from version 7.50 or earlier

Version 7.51 of the Kaleido-X software introduced a change in the location of URS time code information in the system representation. *After the upgrade,* connect XEdit to your multiviewer, and review the sources table, to locate text, alarm, or time code levels with assignments marked in red.

If you found assignments marked in red

1 Click an affected level, and then expand the SYSTEM module in the filtered System list.
2 Locate the appropriate element, and then drag it onto the affected level.
3 Repeat until all assignments related with URS time code have been restored. Use the incremental copy tool, or the logical source template, as needed.

Kaleido-MX and Kaleido-Modular-X may require a controller upgrade

To fully benefit from the auto recovery features introduced in Kaleido-X version 7.20, Kaleido-MX and Kaleido-Modular-X multiviewers require a controller with at least version 2.2.0 of the CPU-ETH2 firmware, and a 4 GB CompactFlash storage card.

Upgrading from a version prior to 6.60

Version 6.60 of the Kaleido-X software introduced a change in the **alarm debouncing calibrations,** which could result in alarms being raised earlier and more frequently, after upgrading. The following properties have been removed from the list of configurable parameters: **Occurrences** and **Detection window**. After the upgrade, the system behavior will be based on *1* occurrence of an alarm event. A detection window is no longer used.

If, prior to the upgrade, the **Occurrences** parameter was set to a value other than *1*, then you will need to revise the **Set duration** value after the upgrade to take this change into account. For example:

- **Before the upgrade —** If you had the following settings: Occurrences = 3, Duration = 5 seconds, before the upgrade, then an alarm would be raised after 15 seconds.
- **After the upgrade —** The former settings will be replaced with the following: Set duration = 5 seconds, and the alarm will be raised after 5 seconds.

In this example, after the upgrade, you should set the **Set duration** parameter to 15 seconds to maintain the same behavior.

It is recommended to review and note down the alarm debouncing calibrations prior to the update, and to re-calibrate the alarm debouncing as needed after the upgrade.

IMPORTANT *(continued)*

Upgrading a KMV-3901/3911 from 6.50 (or earlier)

In the case of a KMV-3901/3911, upgrading to version 6.60 or later, from an earlier version of the Kaleido-X software requires additional steps involving the CPU-ETH2 automatic restore feature:

1 Make sure the Densité controller's *default action* is set to *keep card settings* (see Disabling the CPU-ETH2 Automatic Restore Feature, on page 80).
2 Upgrade the multiviewer to version 6.60 (or later) as described in this section.
3 Save a *restore point* to the controller's non-volatile memory (see Saving a Restore Point to the CPU-ETH2 for a Single Card, on page 81).
4 If you wish to use the controller's automatic restore feature, then set the Densité controller's *default action* to *update card settings* (see Enabling the CPU-ETH2 Automatic Restore Feature, on page 82).

KMV-3901/3911 multiviewers may require an additional restart after a system upgrade

After upgrading a KMV-3901/3911 to the current version of the Kaleido-X software, it may be necessary to restart the multiviewer *twice,* for the monitor wall to be fully functional.

Upgrading a Kaleido-X multiviewer with KXO-HDM modules from 5.22 (or earlier)

In the case of a Kaleido-X multiviewer that contains output cards equipped with the optional KXO-HDM module, upgrading to version 5.30 or later, from an earlier version of the Kaleido-X software requires precautions. **Before upgrading,** you must stop all activity on the monitor wall, through either of the following methods:

- Remove all input cards.
- Load special layouts that do not contain any video monitor to all heads in every room associated with the multiviewer, and make sure not to make any layout change until the upgrade has completed.

Internal router control

In the case of a Kaleido-X or Kaleido-X16 system whose internal router is controlled from an external router control device or application, and was configured *before* version 5.20 of the Kaleido-X software, after upgrading your system to version 5.20 or later, you may need to:

- add the internal router's physical levels to the first level (i.e. [0] Video) of the *KX Router* logical router, if you were previously using the now deprecated *Internal router* logical router, and,
- if your external router control device or application uses the SAM (Snell/Pro-Bel) SW-P-08 protocol, then adjust its configuration so that it refers to KX Router's logical router matrix ID.

Refer to *Configuring a Multiviewer's Internal Router,* in the Kaleido-X User's Manual, for more information.

IMPORTANT *(continued)*

Kaleido-X systems may require a RAM upgrade
Kaleido-X version 5.00 and later can be installed on all Kaleido-X multiviewers that have recent KXO-Dual3 output cards. To ensure optimal performance of the software, it is required to have all KXO-Dual output cards configured with a 2-GB RAM module. See Kaleido-X Output Cards Memory Module on page 82.

Kaleido-X16 HD-SDI monitoring output option (KXS-X16-HDM-D, KXS-X16-HDM-S)
After upgrading your system from version 5.00 or earlier to version 5.10 or later, you will have to enter the activation key, in XAdmin, to enable your multiviewer's HD-SDI monitoring output feature, if applicable.

Expansion systems
Kaleido-X (7RU) multiviewers and all cards that are to become part of an expansion system (including spares) must be upgraded to version 3.00 or later, *before* performing the expansion. Once two Kaleido-X frames have been upgraded to version 3.00 or later, and joined in expansion mode, cards with older versions of the software will not work.

Brightness and contrast
After upgrading a Kaleido-X (4RU, 7RU, or 14RU) multiviewer system from a version prior to 2.00, you may have to recalibrate the brightness and contrast. Please refer to the Kaleido-X User's Manual for instructions.

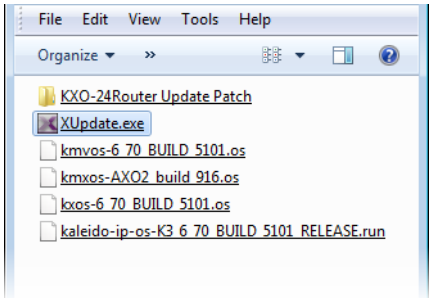
To upgrade your multiviewer

1 Copy the upgrade package files to a USB key (see Preparing a USB Key, on page 72).
2 Upgrade your multiviewer's software and firmware from the USB key (see Upgrading the Kaleido-X Software and Firmware, on page 74).
3 Verify the version number to confirm that the upgrade was successful (see Verifying the Version Number, on page 78).

Preparing a USB Key

To copy all files required for the upgrade to a USB key

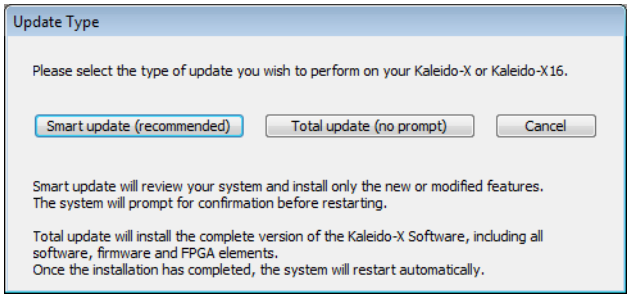
1 Insert the Kaleido-X Upgrade DVD into the DVD drive on your PC or laptop, or download the update files from Grass Valley's website onto the PC's hard drive.
2 Insert a USB key into one of the PC's USB ports.
3 Locate and open the Kaleido-X Upgrade Manager application (XUpdate).



4 On the startup screen, click the appropriate update option for your multiviewer model:

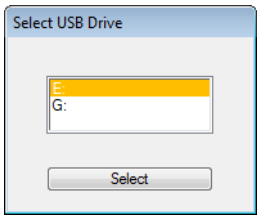
- **Kaleido-X / Kaleido-X16 update**, for a Kaleido-X or Kaleido-X16 multiviewer
- **KMV-3901/3911 update**, for a Kaleido-Modular KMV-3901 or KMV-3911 multiviewer, or for a Kaleido-XQUAD
- **KMX-3901 update**, for a Kaleido-MX, Kaleido-MX 4K, or Kaleido-Modular-X multiviewer

5 When prompted to select a type of update, click **Smart update (recommended)**.



Note: If you click **Total update (no prompt)**, then the update process, once initiated, cannot be halted. This option should only be used to recover from a failed upgrade.

6 If the **Select USB Drive** window appears, click the letter corresponding to the USB key you inserted in step 2, and then click **Select**.

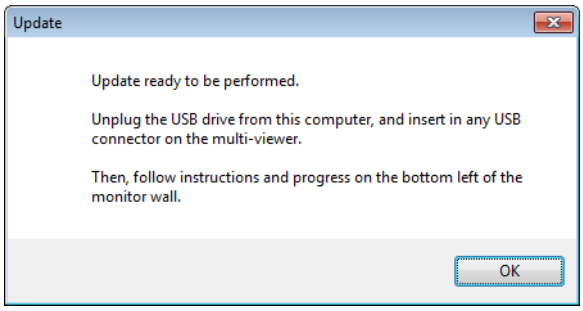


7 When prompted to select an update file, locate and open the Kaleido-X operating system file for your multiviewer model.

To upgrade this multiviewer model...	Choose the file whose name is of the form...
Kaleido-X or Kaleido-X16	`kxos-8.30_build_xxxx.os`
Kaleido-MX, Kaleido-MX 4K, or Kaleido-Modular-X	`kmxos-8.30_build_xxxx.os`
KMV-3901, KMV-3911, Kaleido-XQUAD	`kmvos-8.30_build_xxxx.os`

The `.os` file will be copied to the USB key. This may take a few minutes.

When the copying process has finished, a message appears.



8 Click **OK**.

9 Click **EXIT** on the startup screen.

10 Click the **Safely Remove Hardware** icon in your desktop's notification area, and then click the USB key on the menu. When a message informs you that it is safe to remove the key, do so.

Upgrading the Kaleido-X Software and Firmware

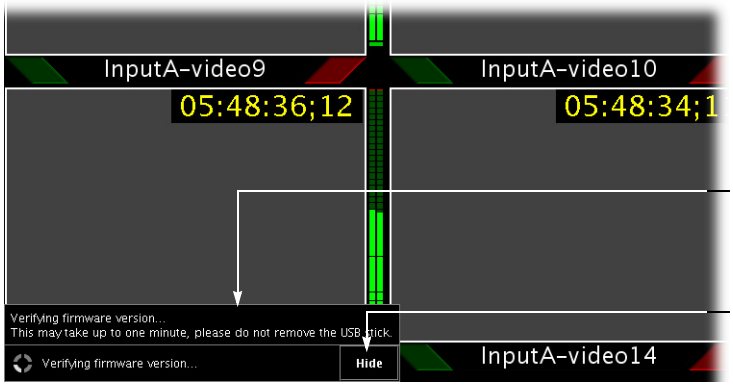
At this point, you are ready to upgrade the Kaleido-X system software and firmware. The multiviewer should be powered up, with an active monitor wall display. You will need access to the monitor wall to observe the progress of the upgrade, and you will use a mouse to trigger a system restart from the monitor wall, once the upgrade has completed:

- If you have a Kaleido-RCP2, make sure that it is connected, and that you can use the mouse to move the pointer on the monitor wall. If the mouse is unresponsive, try rebooting the Kaleido-RCP2 by pressing ENTER+ESC+DEL on the Kaleido-RCP2's keypad.
- If your system does not include a Kaleido-RCP2, connect the mouse directly to a USB port on your multiviewer, and then make sure you can move the pointer on the monitor wall.

Note: In the case of a **Kaleido-Modular KMV-3901/3911** multiviewer, when you connect a mouse directly to the card's USB port, the pointer travels vertically, between the bottom side of the display connected to MV OUT 1 and the top side of the display connected to MV OUT 2. In addition, since there is only one USB port, you must now unplug the mouse in order to connect the USB key.

To upgrade the Kaleido-X system software and firmware

1 Insert the USB key into any USB port on the multiviewer. After a while, a message appears at the bottom left corner of the monitor wall, reporting that the Upgrade Manager is verifying software, firmware, and safe mode versions.



Note: You can click the **Details** button to view more information. The button label alternates between **Details** and **Hide**.

The firmware verification process may take a minute or so.

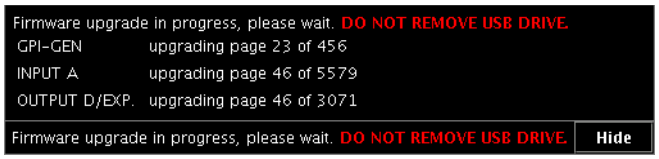
2 Once the verification process is complete, you will be advised what upgrade action, if any, needs to be performed.

IMPORTANT
To cancel the upgrade process, you must click to ABORT within 30 seconds.

3 The upgrade process begins automatically, starting with the software upgrade.

IMPORTANT
In **Kaleido-X, Kaleido-MX, Kaleido-MX 4K,** and **Kaleido-Modular-X** multiviewers, all cards are updated in parallel, during which time their status LEDs will be flashing red. Do not interrupt this process. Do not insert or remove cards while an upgrade is in progress.

4 Once the software upgrade is complete, the firmware upgrade begins.



Note: In the case of a **Kaleido-X, Kaleido-MX, Kaleido-MX 4K,** or **Kaleido-Modular-X** multiviewer, should the upgrade dashboard report that some cards' software upgrade could not be completed, then proceed with Troubleshooting an Incomplete Upgrade, on page 77.

When the entire upgrade process has successfully completed, a red button appears at the bottom of the dashboard on all displays that are connected to the system.

5 Click any of the **Upgrade complete** buttons to restart the system.

Note: When the firmware upgrade (or downgrade) process involves several cards (e.g., a fully populated expansion system), the dashboard may still be displaying firmware upgrade progress messages while the **Upgrade complete** button has already appeared. You can safely click the button to restart the system at this point.

The multiviewer now restarts.

IMPORTANT

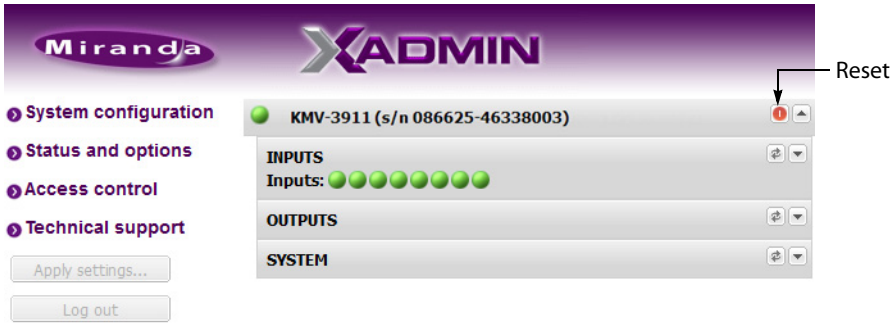
Kaleido-MX, Kaleido-MX 4K, and Kaleido-Modular-X input cards

If this is the *first time* you upgrade a Kaleido-MX, Kaleido-MX 4K, or Kaleido-Modular-X, *from version 7.80 R5 (or earlier) to version 7.82 (or later),* then an additional update process will now start on the *input* cards. This may take up to 20 minutes, after which the input cards will automatically restart. When you next upgrade your system the entire input card update will take place at the same time as the output card update, and no additional card restart will be required.

IMPORTANT *(continued)*

If you are upgrading a Kaleido-X multiviewer from version 5.00 (or earlier) to version 5.10 (or later), and your system includes output cards with KXO-HDM mezzanines, the mezzanines' firmware will now be upgraded.
Upgrading the mezzanines may take up to 20 minutes, during which time their status LED will be orange. Once a mezzanine has completed its firmware upgrade, the output card will restart again.
When you next upgrade your system the card and mezzanine upgrades will take place at the same time, and no additional card restart will be required.

6 If you are upgrading a **KMV-3901/3911** card and notice a lack of luminance or corrupted video on the monitor wall, you should now restart your system *once more,* by clicking the Reset button on XAdmin's Status and Options page.



Troubleshooting an Incomplete Upgrade

Should the upgrade dashboard report that some cards' software upgrade failed, in a **Kaleido-X, Kaleido-MX, Kaleido-MX 4K,** or **Kaleido-Modular-X** multiviewer, then follow the troubleshooting steps below to bring the update to completion.

To bring a partially failed upgrade to completion

- If your system includes *only one output card,* and it failed to be upgraded, remove the USB key, and then repeat the upgrade procedure (see Upgrading Your Multiviewer by Using a USB Key, on page 69).
- If the upgrade was successful on at least one output card, then:
  a Power down every *output* card by tilting its swivel handle, to lever the connectors apart, and then use the handle to pull the card part way out of its slot.
  b Power down the *input* cards, in the same fashion.
  c Reseat a successfully updated *output* card.
  This card becomes your system's *master* card.
  d Once the master card's startup process has completed, reseat all other cards.

  At this point, the system will recognize that the software version on some cards does not match the master card's version, and a *live update* process will start, to automatically bring all cards to the same version. At the end of the process, all updated cards will automatically restart.

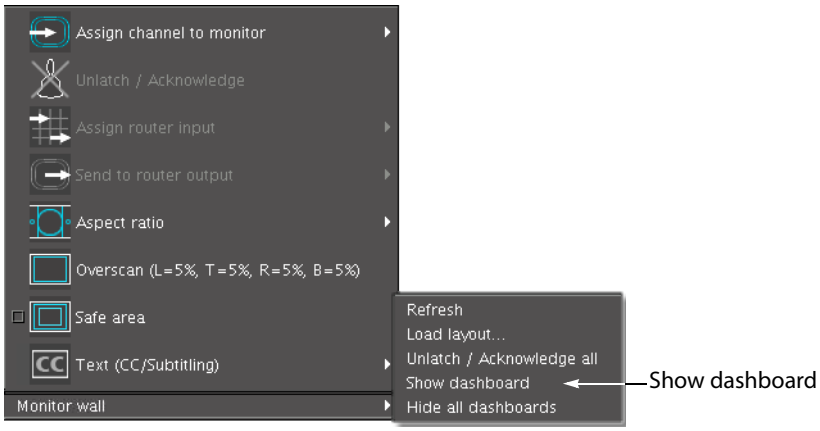
Verifying the Version Number

You can verify the new version number by displaying the dashboard on the monitor wall or, in the case of a Kaleido-Modular multiviewer, by using the control panel on the Densité housing frame (see Displaying the System's Version Number for a Kaleido-Modular Multiviewer, below).

Displaying the Dashboard

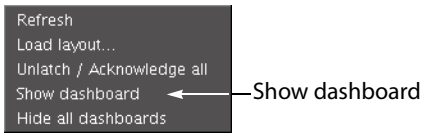
To display the dashboard

1 Right-click anywhere on the monitor wall. On the menu, point to **Monitor wall**, and then click **Show dashboard** to display the dashboard associated with the current head.

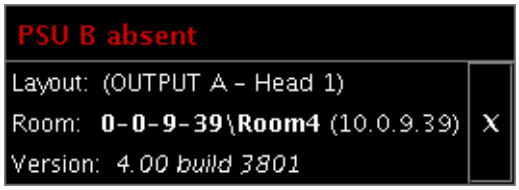


Monitor wall menu (within composite monitor menu)

Note: If you right-click the monitor wall background directly, then the monitor wall menu appears immediately. Click **Show dashboard**.



After a brief delay, the dashboard appears at the bottom-right corner of the monitor, and the command **Hide dashboard** replaces **Show dashboard** on the menu.



Dashboard on the monitor wall

Displaying the System's Version Number for a Kaleido-Modular Multiviewer

To display the system's version number on the Densité control panel

1 Press the Select button on the front edge of the Kaleido-Modular card.

The Status LED on the selected card flashes orange, and the associated control menu appears on the display of the Densité frame's local control panel.

2 On the local control panel, press the [–] button.

The version of the Kaleido-X software that is running on the card (e.g., "8.30-build.21") appears on the display.

3 Press the Select button on the front edge of the Kaleido-Modular card to exit the control menu.

Downgrading

IMPORTANT
Before downgrading your Kaleido-X system, review the following.

- **Alarm debouncing may need to be recalibrated:** Before downgrading from version 6.60 (or later) to version 6.50 (or earlier) of the Kaleido-X software, make sure to review your system's alarm debouncing calibrations, some of which you may have to modify if you wish to maintain the same behavior. Refer to page 70 for details.
- **Kaleido-MX, Kaleido-MX 4K, Kaleido-Modular-X:**
  - Kaleido-MX 4K multiviewers cannot be downgraded to a Kaleido-X version earlier than 7.70.
  - Kaleido-MX and Kaleido-Modular-X multiviewers that have two output cards, and are used to monitor URS time code information should not be downgraded to a version earlier than 7.51 (see page 70).
  - Kaleido-MX and Kaleido-Modular-X multiviewers with output cards that shipped with version 7.40 (or later), initially or after repairs, cannot be downgraded to a version earlier than 7.40.
  - **CPU-ETH2 compatibility:** Kaleido-MX and Kaleido-Modular-X multiviewers housed in a Densité frame with a controller card that has *version 2.2.0 (or later) of the CPU-ETH2 firmware* cannot be downgraded to a Kaleido-X version earlier than 7.20.
  - Kaleido-MX and Kaleido-Modular-X multiviewers can otherwise not be downgraded to a version earlier than 7.00.
- **Kaleido-X (7RU, 4RU, and 14RU):**
  - Multiviewers with output cards that shipped with version 8 (or later), initially or after repairs, cannot be downgraded to a version earlier than 8.
  - Multiviewers with output cards that shipped with version 5.22 (or later), initially or after repairs, cannot be downgraded to a version earlier than 5.22.
  - If you are downgrading a multiviewer from version 5.10 (or later) to version 5.00 (or earlier), and your system includes output cards with **KXO-HDM** mezzanines, you will need to reseat these cards, once the older version of the Kaleido-X software is installed and your multiviewer has restarted.
  - **Expansion systems:** Before downgrading a Kaleido-X (14RU) expansion system to version 2.20 of the Kaleido-X software, you must first split the system into two standalone frames. See Ref. #KX-2216 on page 9 for details.
  - Grass Valley does not recommend downgrading a Kaleido-X system to a version earlier than 2.10.

- **Kaleido-X16:**
  - Support for audio monitoring over the HD-SDI output requires version 5.30 (or later) and recent hardware: in the XAdmin Status and Options page, under SYSTEM, the value indicated for the **Card revision** attribute must be 0x4 or more.
  - Support for feeding a Kaleido-X16's HDMI output to an **EdgeVision** device requires version 5.30 (or later).
  - A Kaleido-X16 multiviewer that shipped with version 5.22 (or later), initially or after repairs, cannot be downgraded to a version earlier than 5.22.
  - No Kaleido-X16 multiviewer can be downgraded to a version earlier than 4.10.
- **Kaleido-Modular:**
  - A **KMV-3901/3911** with Kaleido-X version 6.60 or later cannot be downgraded to version 6.50 (or earlier).
  - The **KMV-3911** cannot be downgraded to a version earlier than 5.30. Downgrading to an earlier version would cause the monitor wall displays to remain blank or only show video (no graphics). In the advent that such a downgrade was attempted by mistake, reseat the card to revert the changes and restore functionality. Should this fail, please contact Technical Support (see Contact Us, on page 89).
  - The **KMV-3901** cannot be downgraded to a version earlier than 5.00.
- **Kaleido-IP:**
  - The Kaleido-IP X310 and X110 multiviewers cannot be downgraded to a version earlier than 7.30. See Ref. #KX-7805 on page 8 for instructions on how to recover from an unwanted downgrade.
  - The Kaleido-IP X300 and X100 multiviewers cannot be downgraded to a version earlier than 6.00.
  - In the case of a Kaleido-IP multiviewer system with sources from an EdgeVision device, the Kaleido-IP must have version 6.40 (or later) of the Kaleido-X software, and the EdgeVision must have version 1.05 (or later) of the EdgeVision software.
- **Router control:** As of Kaleido-X version 4.00, router configuration changes made in Router Manager Configurator are not compatible with earlier versions of the software. See Ref. #IC-13346 on page 33 for details.

To downgrade your multiviewer to an earlier version of the Kaleido-X software

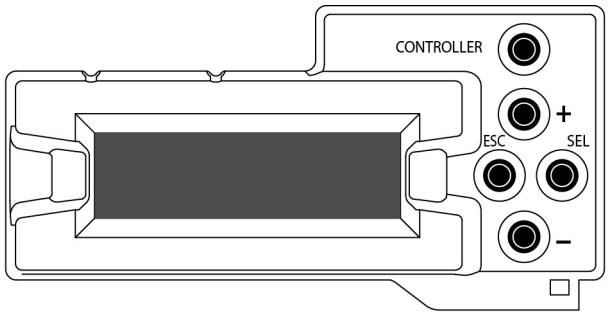
- Follow the upgrade instructions in the Release Notes that were published with the Kaleido-X software version you wish to use.

Densité CPU-ETH2 Restore Feature

Disabling the CPU-ETH2 Automatic Restore Feature

To disable the CPU-ETH2 automatic restore feature

1 On the Densité frame's local control panel, press the CONTROLLER button.



2 Press the [–] button repeatedly until RESTORE POINTS appears on the display, and then press the SEL button.
3 Press the [–] button repeatedly until DEFAULT ACTION appears on the display, and then press the SEL button.
   - If the control panel's display shows KEEP SETTINGS, then the automatic restore feature is already disabled.
   - If the control panel's display shows UPDATE SETTINGS, navigate to KEEP SETTINGS by pressing the [+] button, and then press the SEL button to apply your change.
4 Press the CONTROLLER button to exit the controller's menu.

Saving a Restore Point to the CPU-ETH2 for a Single Card

To save a restore point to the controller's non-volatile memory

1 On the Densité frame's local control panel, press the CONTROLLER button.
2 Press the [–] button repeatedly until RESTORE POINTS appears on the display, and then press the SEL button.
3 Press the [–] button repeatedly until SAVE A CARD appears on the display, and then press the SEL button.
4 Press the [–] button repeatedly until CARD # N—where N matches the slot number for the Kaleido-Modular card whose configuration you wish to save—appears on the display, and then press the SEL button.
5 Press the CONTROLLER button to exit the controller's menu.

Saving Restore Points to the CPU-ETH2 for All Card

To save restore points to the controller's non-volatile memory, for all cards

1 On the Densité frame's local control panel, press the CONTROLLER button.
2 Press the [–] button repeatedly until RESTORE POINTS appears on the display, and then press the SEL button.
3 Press the [–] button repeatedly until SAVE ALL CARDS appears on the display, and then press the SEL button.
4 Press the CONTROLLER button to exit the controller's menu.

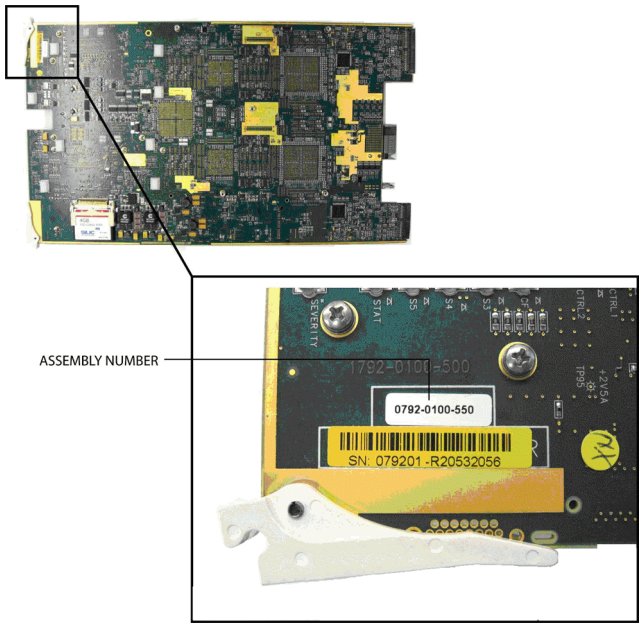
Enabling the CPU-ETH2 Automatic Restore Feature

To enable the CPU-ETH2 automatic restore feature

1. On the Densité frame's local control panel, press the CONTROLLER button.
2. Press the [–] button repeatedly until RESTORE POINTS appears on the display, and then press the SEL button.
3. Press the [–] button repeatedly until DEFAULT ACTION appears on the display, and then press the SEL button.
   - If the control panel's display shows UPDATE SETTINGS, then the automatic restore feature is already enabled.
   - If the control panel's display shows KEEP SETTINGS, navigate to UPDATE SETTINGS by pressing the [+] button, and then press the SEL button to apply your change.
4. Press the CONTROLLER button to exit the controller's menu.

Kaleido-X Output Cards Memory Module

All Kaleido-X output cards with assembly numbers 0792-2800-601 and above (KXO-Dual3), or between 0792-0100-563 and 0792-0100-571 (KXO-Dual) have a 2-GB RAM module factory-installed. To find the assembly number for an output card, look at the underside of the board near the bottom ejector. The assembly number is printed on a small white label:



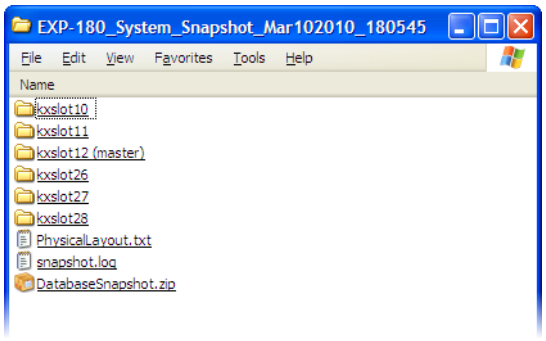
- If the card's assembly number is **0792-2800-601 or higher**, or between **0792-0100-563** and **0792-0100-571,** then no further verification is required for this card.
- If your multiviewer includes cards whose assembly number is **0792-0100-562 or lower**, you will need to verify the amount of RAM installed on each card by inspecting a snapshot of your system. See Verifying the Amount of RAM Installed on Kaleido-X Output Cards below.

Verifying the Amount of RAM Installed on Kaleido-X Output Cards

To verify whether a KXO-Dual output card has 1 GB or 2 GB of RAM

1 Open XAdmin's Technical Support page, to download a system snapshot (see "Generating a System Snapshot" in the Kaleido-X User's Manual), and then extract the content of the ZIP file to a folder on your local hard drive.

2 Open the folder where you extracted the system snapshot, and notice that it contains a number of subfolders whose name starts with "kxslot". There is one such folder for each output card. For example, the system snapshot folder for an expansion system with six output cards would look like this:



3 Referring to the tables below, identify which *kxslot* folder corresponds to the output card whose RAM capacity you wish to verify:

Kaleido-X (4RU)

Card	Folder
Output A	kxSlot13
Output B	kxSlot12

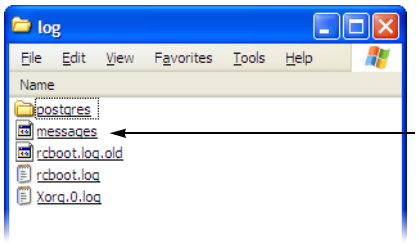
Kaleido-X (7RU)

Card	Folder
Output A	kxSlot10
Output B	kxSlot11
Output C	kxSlot12
Output D	kxSlot13

Kaleido-X (14RU)

Frame A		Frame B	
Card	Folder	Card	Folder
Output A	kxSlot10	Output A	kxSlot26
Output B	kxSlot11	Output B	kxSlot27
Output C	kxSlot12	Output C	kxSlot28

4 Open the folder you just identified, and navigate to `/var/log/messages`:



5 Open this file (`messages`) in a text editor. Alternatively you can also drag the file onto a browser window.

6 Search for a line where information similar to the following appears:

```
Mar 10 09:39:42 localhost kernel: Memory: 2044012k/2064192k available
(1354k kernel code, 19084k reserved, 468k data, 108k init, 1146688k
highmem)
```

-OR-

```
Mar  5 15:07:59 localhost kernel: Memory: 1004248k/1015616k available
(1354k kernel code, 10876k reserved, 468k data, 108k init, 98112k
highmem)
```

7 There may be more than one occurrence. Notice the date and time indicated at the beginning of the line, and keep searching until you have found the *most recent* such entry in the file.

- If you see the string `Memory: 2044012k`, in the most recent such entry, then this card already has **2 GB** of RAM, and does not need to be upgraded.
- If you see the string `Memory: 1004248k`, in the most recent such entry, then this card only has **1 GB** of RAM, and you must order a memory upgrade. Note down the card's serial number; you will need to remember which cards need the memory upgrade, when you receive the new RAM modules.

8 Repeat the procedure for every output card whose RAM capacity you need to verify.

9 Once you have identified how many (if any) of your KXO-Dual cards only have a 1-GB RAM module, please contact your Grass Valley sales representative to *order one memory upgrade option for every KXO-Dual card that must be upgraded.*

10 When you receive the new RAM modules, install them on the cards you identified (see Replacing the Memory Module on KXO-Dual Output Cards, below).

Replacing the Memory Module on KXO-Dual Output Cards

The memory upgrade kit includes a 2-GB memory module and a self-adhesive wire clamp (part no. 2400-0040-0).

To replace the memory modules on output cards within your Kaleido-X system, you must proceed according to a specific sequence:

- **In the case of a standalone Kaleido-X frame,** start with the KXO-Dual card in slot D, and then continue with the cards in slots C, B, and A (in this order).

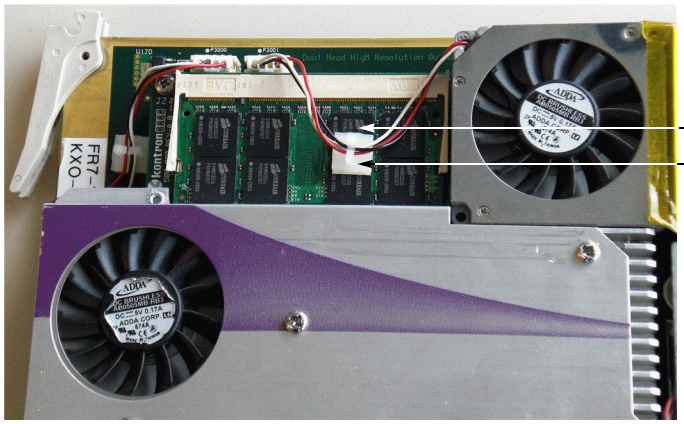
- **In the case of a Kaleido-X Expansion system,** start with the KXO-Dual card in Frame A slot C, then continue with the cards in slots B, and A. Next move on to Frame B slot C, and continue with the cards in slots B, and A (in this order).

> **WARNING**
> Before starting, make sure you are properly grounded, and all static electricity build-up has dissipated.

To remove the memory module on a KXO-Dual card

1 Remove the KXO-Dual card from the Kaleido-X system.

2 Locate the memory module near the front edge of the card in the corner that is enclosed by two fans:



3 If there is a plastic clamp holding fan wires glued on top of the memory module, carefully release the wires from the clamp.

4 Release the two retaining clips holding the memory module in place.

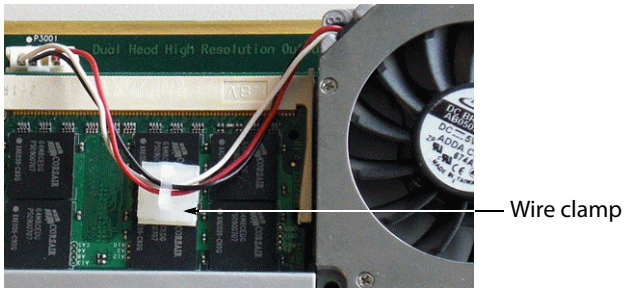
5 Pull the memory module away from the card at a 45 degree angle.

To install the replacement memory module on the KXO-Dual card

1 Insert the replacement memory module at a 45 degree angle.

2 Carefully press the memory module down so that the retaining clips lock into place.

3 Attach the self-adhesive wire clamp (part no. 2400-0040-0) to the top of the memory module, and carefully secure the fan wires as shown below:



4 Reseat the KXO-Dual card into the frame. The card will now restart.

5 Once the card restart has completed, repeat the above procedures (remove module, install replacement, attach clamp, and secure fan wires) with the next card, until you have replaced the memory module on all KXO-Dual output cards in your system.

Kaleido-IP X300, and Kaleido-IP X100 Memory Modules

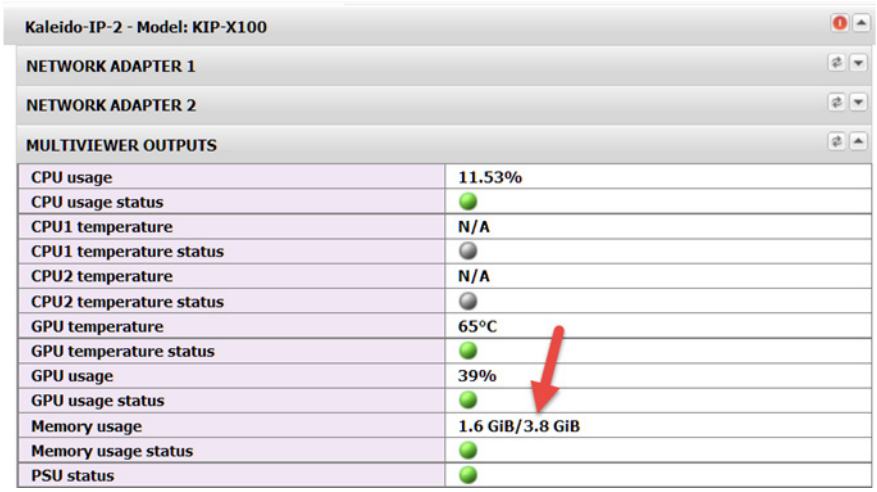
Version 8 of the Kaleido-X software introduced new features that increased the minimum hardware requirements for the Kaleido-IP. To be able to use Kaleido-X version 8 and later releases, a Kaleido-IP must have at least 12 GB of RAM. In the case of a Kaleido-IP X300 model, to support more than 1500 sources, the multiviewer's RAM should be upgraded to 24 GB.

Verifying Your Multiviewer's RAM Capacity

To verify whether your Kaleido-IP X100, or Kaleido-IP X300 requires a RAM upgrade

1 Open XAdmin's Status and Options page.

2 Expand the MULTIVIEWER OUTPUTS section.



3 The value indicated next to **Memory usage** has the following format: `<currently used memory>/<total available memory>`.

4 If the total available memory indicated is less than the minimum requirements for your Kaleido-IP model and monitoring purposes, then your need to order the appropriate memory upgrade option.

Kaleido-IP model	Memory required	Memory upgrade option
Kaleido-IP X100	At least 12 GB	KIP-X100-MEMORY-UPGRADE
Kaleido-IP X300	At least 12 GB, or 24 GB to support more than 1500 sources	KIP-X300-MEMORY-UPGRADE

Replacing the Memory Modules in a Kaleido-IP X300

Grass Valley's 24-GB memory upgrade kit for the Kaleido-IP X300 (order code KIP-X300-MEMORY-UPGRADE) includes 6 4-GB memory modules. Depending on when you purchased it, your Kaleido-IP X300 was originally equipped with either 6 1-GB modules, or 6 2-GB modules, which you must now all replace with the new 4-GB modules. The Kaleido-IP X300 memory modules must be installed in the *blue* DIMM sockets.

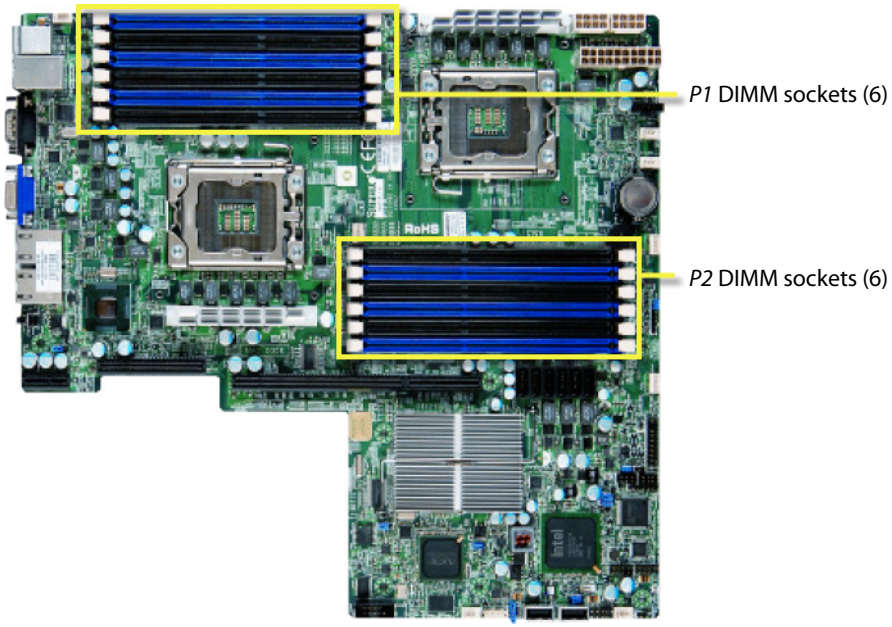
To replace the memory modules in a Kaleido-IP X300

1 Use the **Shut down** button on XAdmin's Restart / Shut Down page, to shut down the Kaleido-IP frame.[2]

2 Disconnect the power cords.

> **WARNING**
> Before proceeding, make sure you are properly grounded, and all static electricity build-up has dissipated.

3 Open the frame, and locate the 12 DIMM sockets on the motherboard.



Picture of the X300 motherboard, from X8DTU/X8DTU-F User's Manual, Revision 1.20

4 For each memory module currently on the board:

   a Use your thumbs to push the release tabs near both ends of the module. This should release the module from the slot.

   b Pull the module away from the board, vertically.

5 In each of the 6 *blue* DIMM socket on the board:

   a Insert a 4-GB memory module vertically, making sure to align the notch at the bottom of the module with the socket's corresponding point.

   b Carefully press the memory module down so that the retaining tabs lock into place.

6 Connect the power cords, and then turn the power on.

   The power switch is located on the front panel.

2. The Kaleido-X software does not support activating a soft shutdown from the Kaleido-IP frame's power button.

Replacing the Memory Modules in a Kaleido-IP X100

Grass Valley's 16-GB memory upgrade kit for the Kaleido-IP X100 (order code KIP-X100-MEMORY-UPGRADE) includes two 8-GB memory modules. Your Kaleido-IP X100 was originally equipped with two 2-GB modules, to which you will now add the two 8-GB modules from the upgrade kit.

To replace the memory modules in a Kaleido-IP X100

1. Use the **Shut down** button on XAdmin's Restart / Shut Down page, to shut down the Kaleido-IP frame.[3]
2. Disconnect the power cords.

   WARNING
   Before proceeding, make sure you are properly grounded and all static electricity build-up has dissipated.

3. Open the frame, and locate the four DIMM sockets, on the motherboard.

   Notice that two of the four sockets are empty.
4. In each of the two empty socket on the board:
   a. Insert a 8-GB memory module vertically, making sure to align the notch at the bottom of the module with the socket's corresponding point.
   b. Carefully press the memory module down so that the retaining tabs lock into place.
5. Connect the power cords, and then turn the power on.

   The power switch is located on the front panel.

3. The Kaleido-X software does not support activating a soft shutdown from the Kaleido-IP frame's power button.

Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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