



grass valley

A **BELDEN** BRAND

KALEIDO-X (7RU)

HIGH PICTURE COUNT MULTIVIEWER WITH ADVANCED
ALARMING

Quick Start Guide

M808-9905-112

2015-06-02

www.grassvalley.com

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Important Safeguards and Notices

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

Symbols and Their Meanings



Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



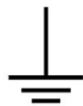
Indicates that the user, operator or service technician should refer to the product manuals for important operating, maintenance, or service instructions.



This is a prompt to note the fuse rating when replacing fuses. The fuse referenced in the text must be replaced with one having the ratings indicated.



Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.



Indicates that static sensitive components are present, which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.



Indicates that the equipment has more than one power supply cord, and that all power supply cords must be disconnected before servicing to avoid electric shock.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Canadian Standard Association (CSA) regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Intertek Testing Services regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley product means that it complies with all applicable European Union (CE) directives.



The presence of this symbol in or on Grass Valley product means that it complies with safety of laser product applicable standards.

Warnings



A warning indicates a possible hazard to personnel, which may cause injury or death. Observe the following general warnings when using or working on this equipment:

- Appropriately listed/certified mains supply power cords must be used for the connection of the equipment to the mains voltage at either 120 V AC or 240 V AC.
- This product relies on the building's installation for short-circuit (over-current) protection. Ensure that a fuse or circuit breaker for 120 V AC or 240 V AC is used on the phase conductors.
- Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only.
- Do not operate the equipment in wet or damp conditions.
- This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- High leakage current may be present. Earth connection of product is essential before connecting power.
- Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.
- To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- Use proper lift points. Do not use door latches to lift or move equipment.
- Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.
- Have qualified service personnel perform safety checks after any service.

Cautions



A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- This equipment is meant to be installed in a restricted access location.

- When installing this equipment, do not attach the power cord to building surfaces.
- Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.
- Use the correct voltage setting. If this product lacks auto-ranging power supplies, before applying power ensure that each power supply is set to match the power source.
- Provide proper ventilation. To prevent product overheating, provide equipment ventilation in accordance with the installation instructions.
- Do not operate with suspected equipment failure. If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel. Servicing should be done in a static-free environment.
- This unit may have more than one power supply cord. Disconnect all power supply cords before servicing to avoid electric shock.
- Follow static precautions at all times when handling this equipment.

Electrostatic Discharge (ESD) Protection



Electrostatic discharge occurs when electronic components are improperly handled and can result in intermittent failure or complete damage adversely affecting an electrical circuit. When you remove and replace any card from a frame always follow ESD-prevention procedures:

- Ensure that the frame is electrically connected to earth ground through the power cord or any other means if available.
- Wear an ESD wrist strap ensuring that it makes good skin contact. Connect the grounding clip to an *unpainted surface* of the chassis frame to safely ground unwanted ESD voltages. If no wrist strap is available, ground yourself by touching the *unpainted* metal part of the chassis.
- For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms.
- When temporarily storing a card make sure it is placed in an ESD bag.
- Cards in an earth grounded metal frame or casing do not require any special ESD protection.

Battery Handling



This product includes a backup battery. There is a danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Before disposing of your Grass Valley equipment, please review the "Disposal and Recycling Information" appendix, in the *Kaleido-X (7RU) Hardware Description & Installation Manual*.

Mesures de sécurité et avis importants

La présente section fournit des consignes de sécurité importantes pour les opérateurs et le personnel de service. Des avertissements ou mises en garde spécifiques figurent dans le manuel, dans les sections où ils s'appliquent. Prenez le temps de bien lire les consignes et assurez-vous de les respecter, en particulier celles qui sont destinées à prévenir les décharges électriques ou les blessures.

Signification des symboles utilisés



Signale la présence d'une tension élevée et dangereuse dans le boîtier de l'équipement ; cette tension peut être suffisante pour constituer un risque de décharge électrique.



Avertit l'utilisateur, l'opérateur ou le technicien de maintenance que des instructions importantes relatives à l'utilisation et à l'entretien se trouvent dans la documentation accompagnant l'équipement.



Invite l'utilisateur, l'opérateur ou le technicien de maintenance à prendre note du calibre du fusible lors du remplacement de ce dernier. Le fusible auquel il est fait référence dans le texte doit être remplacé par un fusible du même calibre.



Identifie une borne de mise à la terre de protection. Il faut relier cette borne à la terre avant d'effectuer toute autre connexion à l'équipement.



Identifie une borne de mise à la terre externe qui peut être connectée en tant que borne de mise à la terre supplémentaire.



Signale la présence de composants sensibles à l'électricité statique et qui sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.



Le symbole ci-contre signifie que l'appareil comporte plus d'un cordon d'alimentation et qu'il faut débrancher tous les cordons d'alimentation avant toute opération d'entretien, afin de prévenir les chocs électriques.



La marque C-CSA-US certifie que l'appareil visé a été testé par l'Association canadienne de normalisation (CSA) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.



La marque C-UL-US certifie que l'appareil visé a été testé par Underwriters Laboratory (UL) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.



La marque ETL Listed d'Intertek pour le marché Nord-Américain certifie que l'appareil visé a été testé par Intertek et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.



Le marquage CE indique que l'appareil visé est conforme aux exigences essentielles des directives applicables de l'Union européenne en matière de sécurité électrique, de compatibilité électromagnétique et de conformité environnementale.



Le symbole ci-contre sur un appareil Grass Valley ou à l'intérieur de l'appareil indique qu'il est conforme aux normes applicables en matière de sécurité laser.

Avertissements



Les avertissements signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire fatales. Veuillez vous familiariser avec les avertissements d'ordre général ci-dessous :

- Un cordon d'alimentation dûment homologué doit être utilisé pour connecter l'appareil à une tension de secteur de 120 V CA ou 240 V CA.
- La protection de ce produit contre les courts-circuits (surintensités) dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur pour 120 V CA ou 240 V CA est utilisé sur les conducteurs de phase.
- Dans le présent manuel, toutes les instructions qui nécessitent d'ouvrir le couvercle de l'équipement sont destinées exclusivement au personnel technique qualifié.
- N'utilisez pas cet appareil dans un environnement humide.
- Cet équipement est mis à la terre par le conducteur de mise à la terre des cordons d'alimentation. Pour éviter les chocs électriques, branchez les cordons d'alimentation sur une prise correctement câblée avant de brancher les entrées et sorties de l'équipement.
- Acheminez les cordons d'alimentation et autres câbles de façon à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.
- Coupez l'alimentation avant de nettoyer l'équipement. Ne pas utiliser de nettoyeurs liquides ou en aérosol. Utilisez uniquement un chiffon humide.
- Des tensions dangereuses peuvent exister en plusieurs points dans cet équipement. Pour éviter toute blessure, ne touchez pas aux connexions ou aux composants exposés lorsque l'appareil est sous tension.
- Avant de procéder à toute opération d'entretien ou de dépannage, enlevez tous vos bijoux (notamment vos bagues, votre montre et autres objets métalliques).
- Pour éviter tout risque d'incendie, utilisez uniquement les fusibles du type et du calibre indiqués sur l'équipement ou dans la documentation qui l'accompagne.
- Ne pas utiliser cet appareil dans une atmosphère explosive.
- Présence possible de courants de fuite. Un raccordement à la masse est indispensable avant la mise sous tension.

- Après tout travail d'entretien ou de réparation, faites effectuer des contrôles de sécurité par le personnel technique qualifié.

Mises en garde



Les mises en garde signalent des conditions ou des pratiques susceptibles d'endommager l'équipement. Veuillez vous familiariser avec les mises en garde ci-dessous :

- L'appareil est conçu pour être installé dans un endroit à accès restreint.
- Au moment d'installer l'équipement, ne fixez pas les cordons d'alimentation aux surfaces intérieures de l'édifice.
- Les produits qui n'ont pas d'interrupteur marche-arrêt et qui disposent d'une source d'alimentation externe doivent être installés à proximité d'une prise de courant facile d'accès.
- Si l'équipement n'est pas pourvu d'un module d'alimentation auto-adaptable, vérifiez la configuration de chacun des modules d'alimentation avant de les mettre sous tension.
- Assurez une ventilation adéquate. Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation.
- N'utilisez pas l'équipement si vous suspectez un dysfonctionnement du produit. Faites-le inspecter par un technicien qualifié.
- Pour réduire le risque de choc électrique, n'effectuez pas de réparations autres que celles qui sont décrites dans le présent manuel, sauf si vous êtes qualifié pour le faire. Confiez les réparations à un technicien qualifié. La maintenance doit se réaliser dans un milieu libre d'électricité statique.
- L'appareil peut comporter plus d'un cordon d'alimentation. Afin de prévenir les chocs électriques, débrancher tous les cordons d'alimentation avant toute opération d'entretien.
- Veillez à toujours prendre les mesures de protection antistatique appropriées quand vous manipulez l'équipement.

Protection contre les décharges électrostatiques (DES)



Une décharge électrostatique peut se produire lorsque des composants électroniques ne sont pas manipulés de manière adéquate, ce qui peut entraîner des défaillances intermittentes ou endommager irrémédiablement un circuit électrique. Au moment de remplacer une carte dans un châssis, prenez toujours les mesures de protection antistatique appropriées :

- Assurez-vous que le châssis est relié électriquement à la terre par le cordon d'alimentation ou tout autre moyen disponible.
- Portez un bracelet antistatique et assurez-vous qu'il est bien en contact avec la peau. Connectez la pince de masse à une *surface non peinte* du châssis pour détourner à la terre toute tension électrostatique indésirable. En l'absence de bracelet antistatique, déchargez l'électricité statique de votre corps en touchant une surface métallique *non peinte* du châssis.

- Pour plus de sécurité, vérifiez périodiquement la valeur de résistance du bracelet antistatique. Elle doit se situer entre 1 et 10 mégohms.
- Si vous devez mettre une carte de côté, assurez-vous de la ranger dans un sac protecteur antistatique.
- Les cartes qui sont reliées à un châssis ou boîtier métallique mis à la terre ne nécessitent pas de protection antistatique spéciale.

Remplacement et élimination des piles



L'appareil renferme une pile. Pour réduire le risque d'explosion, vérifiez la polarité et ne remplacez la pile que par une pile du même type, recommandée par le fabricant. Mettez les piles usagées au rebut conformément aux directives du fabricant. Avant de vous défaire de l'équipement, assurez-vous d'avoir lu l'appendice Disposal and Recycling Information, dans le manuel *Kaleido-X (7RU) Hardware Description & Installation Manual*.

Recycling

Visit www.grassvalley.com for recycling information.

Certification and Compliance

Safety Compliance



This equipment complies with the requirements of the following standards for safety of information technology equipment:

- CSA-C22.2 No. 60950-1-07
- UL 60950-1 (2nd Edition)
- EN 60950-1:2006
- IEC 60950-1:2005

The power cords supplied with this equipment meet the appropriate national standards for the country of destination.

Electromagnetic Compatibility



This equipment has been tested for verification of compliance with FCC Part 15, Subpart B requirements for class A digital devices.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



This equipment has been tested and found to comply with the requirements of the EMC directive 2004/108/EC:

- EN 55022 Class A Radiated and conducted emissions
- EN 61000-3-2 Limits for harmonic current emissions
- EN 61000-3-3 Limitation of voltage changes, voltage fluctuations and flicker
- EN 61000-4-2 Electrostatic discharge immunity
- EN 61000-4-3 Radiated, radio-frequency, electromagnetic field immunity
- EN 61000-4-4 Electrical fast transient/burst immunity
- EN 61000-4-5 Surge transient immunity
- EN 61000-4-6 Conducted disturbances immunity
- EN 61000-4-11 Voltage dips, short interruptions and voltage variations immunity

Environmental Compliance

部件名称 Part name	有毒有害物质或元素 (Toxic or hazardous substances and elements)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6)	多溴联苯 (PBB)	多溴二苯 (PBDE)
电缆及电缆组件 Cables and cable assemblies	X	O	O	O	O	O
电路模块 Circuit modules	X	O	O	O	O	O
组装风扇 Fan assemblies	X	O	O	O	O	O
金属零件 Metal parts	X	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 规定的限量要求以下。

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 规定的限量要求。

X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006.

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Setting Up Your Kaleido-X (7RU) Multiviewer

Welcome to the Kaleido family of multiviewers! This Quick Start Guide is designed to help you get your Kaleido-X (7RU) multiviewer up and running for the first time. The following sections will guide you through the installation of a Kaleido-X (7RU) system in its default configuration.

Summary

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Introduction

Grass Valley's Kaleido family of multiviewers ranges from quad-splits to large-scale, multi-room monitoring systems, with outstanding image quality and signal flexibility. The Kaleido multiviewers are available in different models: the Kaleido-MX, the Kaleido-MX 4K, the Kaleido-IP, the Kaleido-X (7RU), the Kaleido-X (4RU), the Kaleido-X16, and the Kaleido-XQUAD frames, as well as the Kaleido-Modular-X cards, and the Kaleido-Modular KMV-3901/3911 cards.

The **Kaleido-X (7RU)** can display 96 3Gbps, HD, SD or analog inputs any number of times, in any size, across eight displays of any resolution and orientation. With its router option, the Kaleido-X (7RU) offers switching unprocessed inputs to 48 HD/SD outputs for feeding monitors, test equipment and master control or production switchers. By using an optional mid-plane expansion module, two Kaleido-X (7RU) frames can be configured into a fully interconnected 14 RU system to display up to 192 video inputs over up to 12 displays, and capable of switching unprocessed inputs to 96 HD/SD router outputs.

At the heart of every multiviewer system is the **Kaleido-X software**, which includes the following client applications:

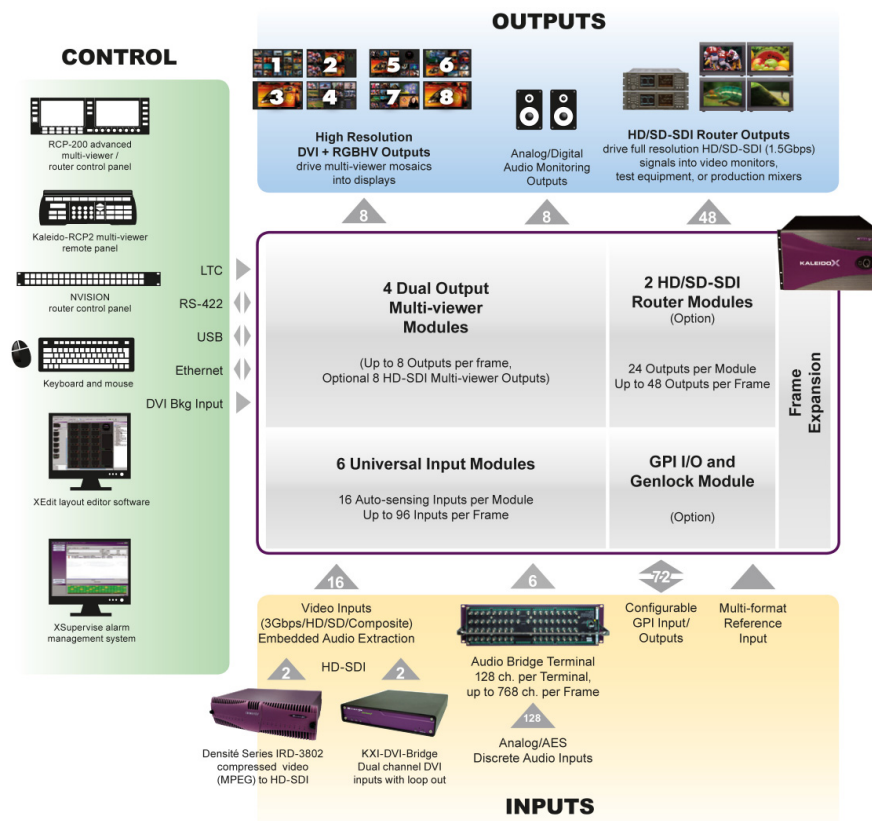
- **XAdmin** is a Web client that your system administrator will use to manage the multiviewer system.
- **XEdit** is a client application used to create layouts for the monitor wall, and to configure the multiviewer, from your PC or laptop.
- The **Router Control** Software Single Bus and Matrix View applications (also part of the iRouter Router Control Software packaged with iControl Application Servers) can be used to control your multiviewer's logical sources and monitor wall destinations, via

the *KX Router* logical router, or to control other logical routers configured within your multiviewer system.

- **Signal Path Viewer** opens as a standalone panel, updated in real time, showing assignment information between router sources and multiviewer inputs. Signal Path Viewer is available for all multiviewer models, except Kaleido-IP (for which it is not relevant).

A Kaleido-X multiviewer system in its default configuration includes a number of layout presets. Each preset shows the video signal from a specific input module (card). Each output card drives displays in either VGA or DVI-D at a default resolution of 1280 × 1024 @ 60Hz. Consult the *Kaleido-X User's Manual* (on the DVD that shipped with your multiviewer) for instructions on how to create rooms and layouts according to your specific requirements.

The Kaleido-X (7RU) is a multi-room, multi-image display processor and router in a single, expandable chassis. Its unique mix of capabilities represents the most integrated monitoring and routing solution. As a multi-image processor, it offers the highest level of signal flexibility. Each chassis can display 96 HD, SD or Analog inputs any number of times, in any size, across 8 displays of any resolution and orientation. As a router, it offers switching of 96 unprocessed inputs to 48 HD/SD outputs for feeding monitors, test equipment and master control or production switchers.



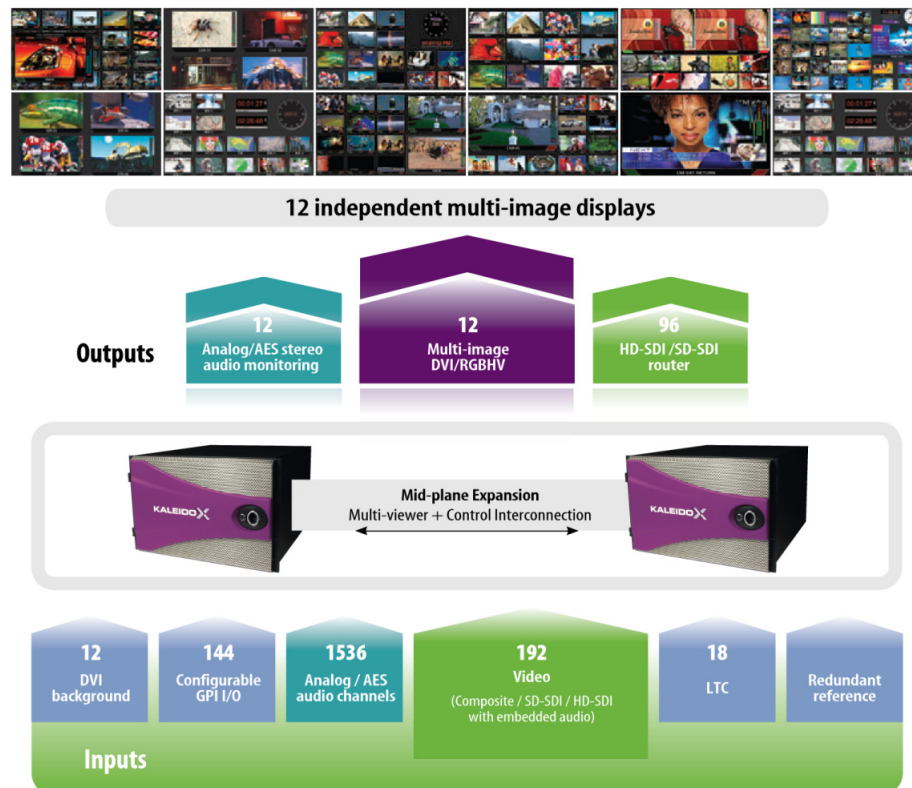
Kaleido-X (7RU) System Overview

Kaleido-X (14RU) Expansion System Overview

It is possible to expand the input connectivity of one Kaleido-X (7RU) frame to include that of a second. The two frames, each with its own expansion (KXO-EXP) card, are connected by

a high-bandwidth cable, such that all the output modules on each frame (up to 6 in total) have access to all inputs on each frame (up to 192 in total) without any blocking or bandwidth limitations.

Using Grass Valley's XEdit software, the two frames can be configured as a single system, allowing *rooms* to have a mixture of input modules from either frame. The expansion card interconnect allows seamless sharing of video, audio monitoring output, time code inputs, reference input, metadata information (CC, XDS, alarms, etc.), and audio level data. For more information, refer to the "Kaleido-X (7RU) Expansion" chapter in the *Kaleido-X (7RU) Hardware Description & Installation Manual*, available on the DVD that shipped with your system.



Kaleido-X (14RU) Expansion System Overview

For more information about the Kaleido-X (7RU), refer to the Kaleido-X (7RU) Hardware Description & Installation Manual.

Getting Organized

This section provides information about system requirements, and items shipped with your Kaleido-X (7RU).

Required Materials

Your Kaleido-X (7RU) system package includes the following:

- A Kaleido-X (7RU) frame (enclosure) containing various input, output and option modules (cards)
- One keyboard
- One mouse
- Serial port adapters (one with straight cabling and one with crossover cabling for each output module in your multiviewer):

Part number	Adapter cabling	RS-422 pinout at the DE-9P connector
1737-3000-102	Straight	Controller (SMPTE master) mode
1792-3700-100	Crossover	Tributary (SMPTE slave) mode

- Two AC power cord per power supply
- The Kaleido-X (7RU) Quick Start Guide (this document)
- DVD including the Release Notes for the current version of the Kaleido-X software, the Kaleido-X User's Manual, database samples, Quick Start guides and hardware reference manuals for all multiviewer models

Note: 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. All manuals are available on the DVD that shipped with your multiviewer. See the "Documentation" section of the Release Notes for a complete list. You can obtain the latest version of the manuals, the Release Notes, as well as software and useful data, from the Documentation Library section of Grass Valley's website.

In addition to the above, you will need the following (not supplied):

- Up to 12 displays
- A dedicated 100Base-T Ethernet switch with enough ports for the Kaleido-X, client PCs, Kaleido-RCP2, and Audio Bridge Terminals
- Client PC (see below for system requirements)

- Cables (to connect your multiviewer to video sources, to displays, and to the network):

Cable type	Purpose
CAT-5	For Ethernet connectivity
Display cables	Either extension modules—for example Grass Valley's DXF-200 (part number DXF-200-A)—or DVI cables
Video cables	Standard coaxial cables with BNC connectors

Note: On all Kaleido multiviewers, the network adapters are set to auto-negotiate. By default, the connection speed and duplex mode will be set automatically based on the corresponding port settings on the switch.

System Requirements for a Client PC

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

Step 1: Physical Setup

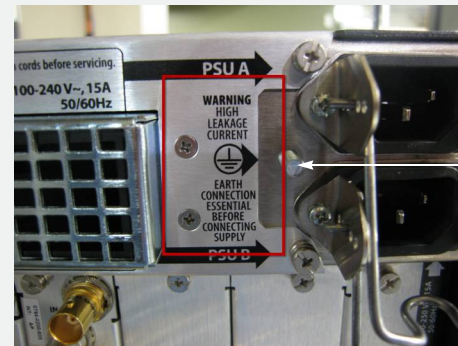
Setting up the Kaleido-X (7RU) Hardware

To set up the Kaleido-X (7RU) hardware:

- 1 With the Kaleido-X (7RU) frame (enclosure) installed in its designated rack position, and before powering up the unit, verify that each card is securely seated in its slot.

IMPORTANT

There are two different models of 7RU frames, and two models of power supplies. If you have a frame model KXA-FR7-B (with the corresponding KXA-PSU-7-B power supply), you must ensure that a ground cable (not included) is connected between the frame and the rack before powering up the unit.



Connect a ground cable between this stud and the rack

The Kaleido-X has been configured to automatically detect the resolution of any connected display. If the required information is not available, then a fall-back resolution of 1280 × 1024 @ 60 Hz is used.

- 2 Connect at least one output of the Kaleido-X to displays that support this resolution (see [Cabling Diagram](#) on page 7).
 - **Monitor wall displays:** Connect the multiviewer's DVI-D OUT outputs to the displays.
 - **Broadcast monitors:** If your installation involves broadcast monitors, connect them to the appropriate SDI outputs. It is also possible to connect SDI outputs to a router. Refer to *Configuring the HD-SDI Monitoring Output Format*, in the Kaleido-X User's Manual, for instructions on setting the scan format.
- If you wish to use a different resolution, see [Changing the Output Resolution](#) below, for detailed instructions.
- 3 Connect one or more video sources to the frame.
 - 4 Make the network and other connections as shown in the cabling diagram (see [page 7](#)). Connect a client PC, the Kaleido-RCP2, one or more Audio Bridge Terminals, and every output module to a dedicated 100Base-T Ethernet switch. You can also connect a mouse and a keyboard to your Kaleido-RCP2.

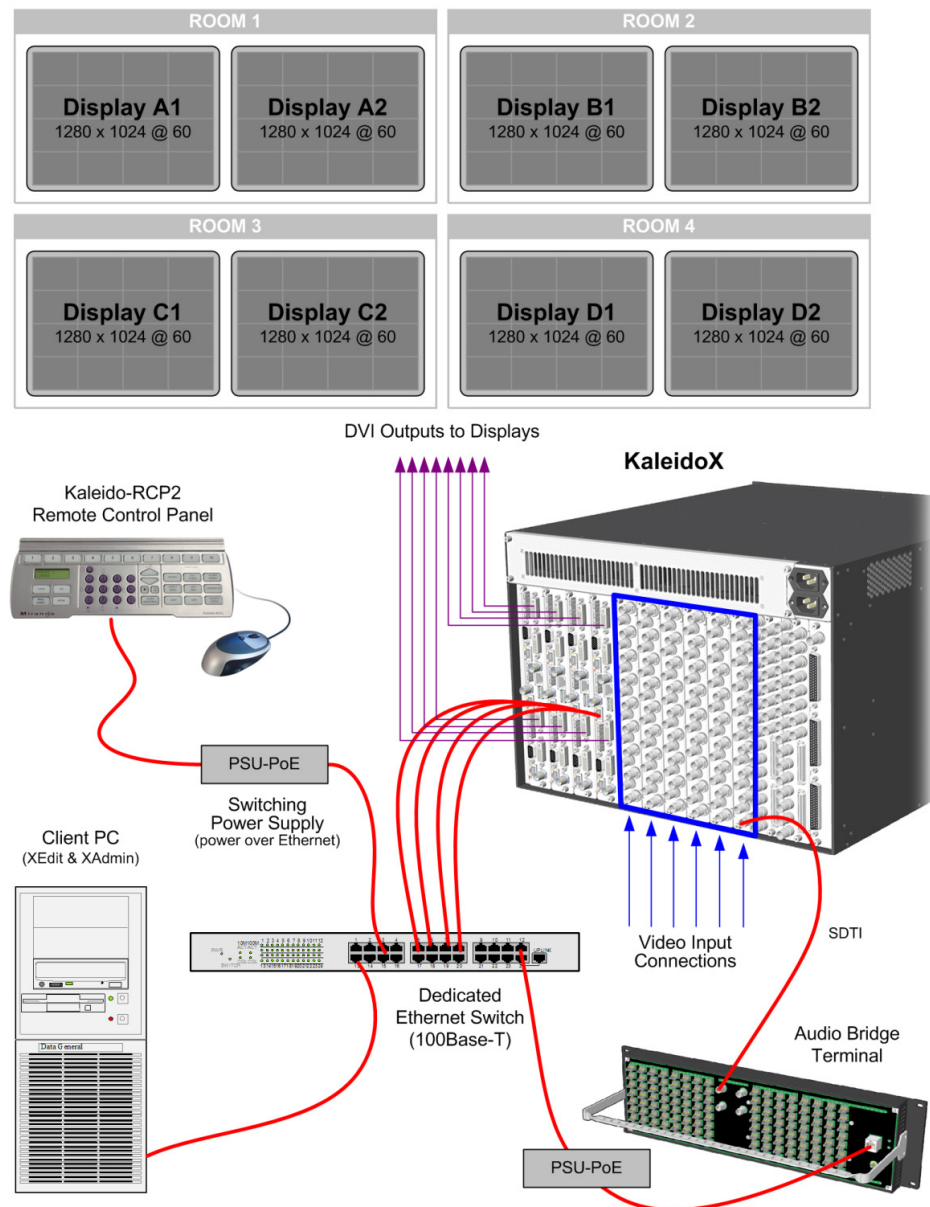
Notes

- The Kaleido-RCP2, and Audio Bridge Terminal (ABT) are optional devices, and may not have been shipped with your Kaleido-X (7RU) system. For information on these and other Kaleido-X options, please contact your Grass Valley sales representative.

Notes (continued)

- You may need to upgrade your Audio Bridge Terminal and Kaleido-RCP2 devices (if available) to the latest firmware. The update files can be found on the DVD that shipped with your multiviewer, and on Grass Valley's website. Please refer to the *Kaleido-RCP2 Guide to Installation and Operation*, and to the *Audio Bridge Terminal Guide to Installation and Operation* (available on the DVD, and from the Documentation Library section of Grass Valley's website) for instructions on how to determine the firmware level, and how to perform the upgrade for these devices.

Cabling Diagram

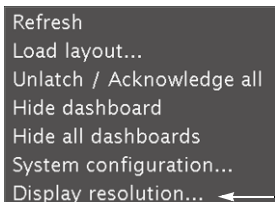


Kaleido-X (7RU) cabling diagram

Changing the Output Resolution

To set a display's output resolution from the monitor wall:

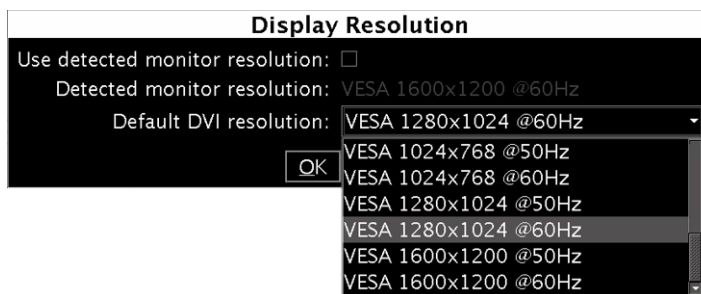
- 1 Connect a mouse to an output card's USB connector.
- 2 Right-click anywhere on the monitor wall, point to **Monitor wall** (if you clicked a monitor), and then click **Display resolution**:



The **Display Resolution** window appears:



- If you would like the system to automatically select a resolution based on information from the connected display, select **Use detected monitor resolution**.
- If you would like to manually set (and fix) the resolution, select the desired resolution from the **Default DVI resolution** list:



- 3 Click **OK**.

The output resolution is adjusted accordingly.

Powering Up the Kaleido-X (7RU)

IMPORTANT

If you have a KXA-FR7-B frame, make sure a ground cable (not included) is connected between the frame and the rack before plugging any of the power cords into a power outlet (see [page 6](#)).

To power up the Kaleido-X:

- Plug both power cords from the Kaleido-X into a grounded power outlet.

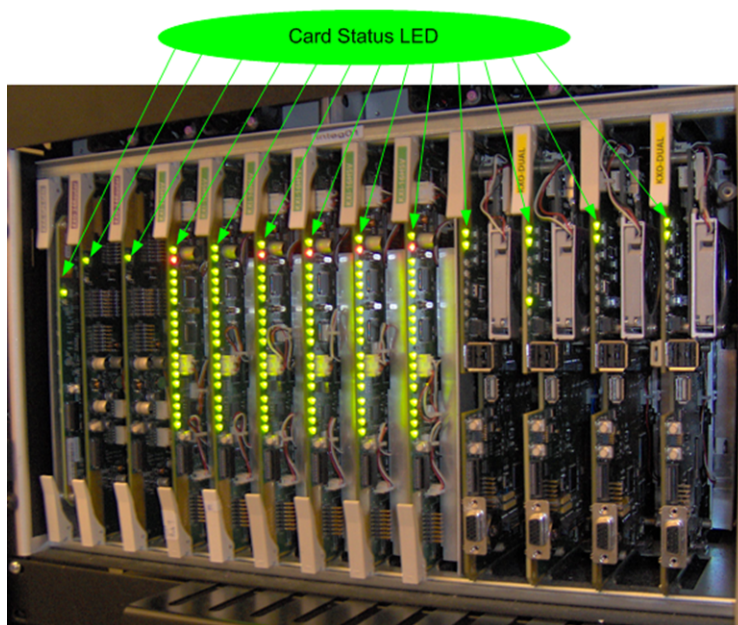
Note: The Kaleido-X (7RU) does not have power switches, and will start up as soon as it is plugged in.

The startup sequence takes approximately four minutes, during which time some video may appear on the displays. The startup is completed when the CPU LEDs of the output cards (second LED from the top) are solid green.

Verifying that the Cards are Ready

To verify that the cards (modules) are ready:

- Check the status LEDs on each card installed in the Kaleido-X frame. Make sure that none are indicating an error condition (see table below).



Photograph of a Kaleido-X (7RU) frame showing LED indicators on modules.

CPU LED Color	Card Status	Action Required
Solid green	Ready	None
Red	Fault	Verify that the card is securely seated in the proper slot in the frame. If status remains unchanged, remove the card, reseal it and then reboot.
Flashing green	Rebooting	Wait for card to reboot before starting operations.

Step 2: Networking Setup

For the Kaleido-X unit to join a TCP/IP network, it must be configured with an IP address, a network mask, a gateway, and a system name. In addition, a client PC must be configured to communicate with the Kaleido-X (see [Configuring a Client PC](#) on page 14). You must also configure the Kaleido-RCP2 unit, and any Audio Bridge Terminal unit you may have ordered.

The Kaleido-X is shipped with the following default settings:

	Kaleido-X (7 RU)	Kaleido-X (14 RU)
Frame IP address	10.0.3.70	10.0.3.70
Network mask	255.255.0.0	255.255.0.0
Gateway	10.0.0.1	10.0.0.1
Output A	10.0.3.66	10.0.3.66
Output B	10.0.3.67	10.0.3.67
Output C	10.0.3.68	10.0.3.68
Output D/EXP	10.0.3.69	—
Output A (frame B)	—	10.0.3.61
Output B (frame B)	—	10.0.3.62
Output C (frame B)	—	10.0.3.63

Note: If the IP address of the Kaleido-X has been changed (i.e. it no longer corresponds to the as-shipped configuration), it is still possible to determine the IP address. To determine the IP address of your Kaleido-X, see [Finding the System IP Address, System Name, and Application Version](#) on page 11.

Changing the IP Address of a Kaleido-X from the Monitor Wall

The IP address, system name, and other parameters can be set via a control panel on the monitor wall.

To change the IP address of the Kaleido-X from the monitor wall:

- 1 Connect a mouse to the USB connector of an output card.
- 2 Connect a USB keyboard to the USB connector of an output card.
- 3 Right-click anywhere on the monitor wall, point to **Monitor wall** (if you clicked a monitor), and then click **System configuration**.
The **System Configuration** window appears.
- 4 Click the **Ethernet** tab.
- 5 Type the required Frame IP address, network mask, and gateway address in the appropriate boxes.
- 6 Type the required addresses for all outputs.
- 7 Click **OK**.
- 8 When prompted to restart the system to apply your changes, click **Yes**.

The new configuration will become effective once the system restart has completed.

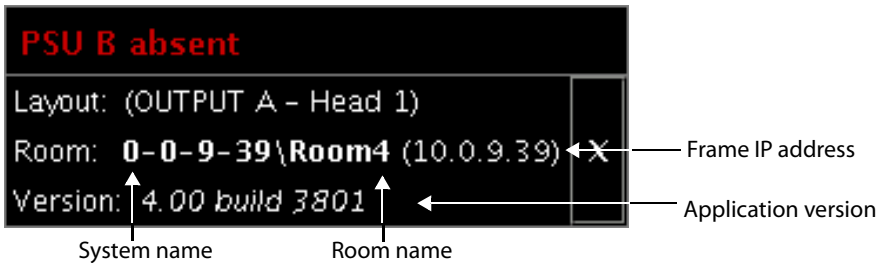
Finding the System IP Address, System Name, and Application Version

To find the system IP address, system name and application version:

- 1 Connect a mouse to the front USB connector of an output card.
- 2 Right-click anywhere on the monitor wall. On the shortcut menu, point to **Monitor wall** (if you clicked a monitor), and then click **Show dashboard** to display the dashboard associated with the current head. A small window appears, revealing the frame IP address and the system version. Take note of these values — they will be used later in the configuration process.



Display from card output (partial view) showing dashboard at the bottom right



Enlarged view of dashboard.

Using the Kaleido-RCP2 with Default Settings

To start using the Kaleido-RCP2 with its default settings:

- 1 Physically connect the Kaleido-RCP2 unit to the network using an Ethernet cable.

By default, the Kaleido-RCP2 is shipped with DHCP enabled, so it will automatically be assigned an IP address by a DHCP server. If no DHCP server can be found, the Kaleido-RCP2 will fall back to its default static IP address, subnet mask, and gateway settings:

Default IP address	10.0.3.191
Default subnet mask	255.255.0.0
Default gateway	0.0.0.0

Notes

- If you need to operate with a fixed IP address, you must use the Kaleido-RCP2's configuration menu to disable DHCP and set up the correct IP address, Network Mask, and Gateway (see the "Enabling or Disabling DHCP" and "Setting an IP Address, Subnet Mask and Gateway" sections in the "Peripheral Equipment" chapter of the Kaleido-X (7RU) Hardware Description & Installation Manual).
 - To access Kaleido-X rooms located in other subnets, the Kaleido-RCP2 must be configured with the appropriate unicast IP addresses (see the "Configuring Unicast IP Addresses" section in the "Peripheral Equipment" chapter of the Kaleido-X (7RU) Hardware Description & Installation Manual).
-

- 2 On the Kaleido-RCP2 unit, press the ENTER button and hold it until the ESC button lights up.

The following message appears on the LCD display:

Configuration
ROOM SELECTION

- 3 Press ENTER again to obtain the room list from the Kaleido-X systems that are currently available on the network.
The message **ROOM Select** followed by the name of the first room available appears on the LCD display.
- 4 Press the **2** key (to move up in the list) or the **8** key (to move down the list) until the name of the room you wish to access is displayed.

Note: By default, the two head (DVI/VGA) outputs from each of the Output A, B, C and D cards are assigned to ROOM1, ROOM2, ROOM3 and ROOM4 respectively.

- 5 When the desired room name is visible, press ENTER, and then press ESC to exit the configuration menu.
- 6 Press the LOGIN button.

The following message appears on the LCD display:

LOGIN Position
Admin

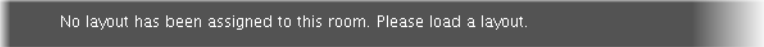
- 7 Press ENTER to log on to your system as "Admin".
A message prompting you for a password appears on the LCD display.

- 8 Press ENTER again (by default, there is no password).

The message "Access granted" will appear on the LCD display if the login is successful. If a mouse is connected to the Kaleido-RCP2, then you should be able to see and move the mouse pointer on the monitor. Press any of the LAYOUT PRESETS buttons to load a predefined layout on the monitor wall.

If your system was configured prior to shipment, then a layout will appear on all displays. Otherwise, a gray screen will appear with the following message in the middle:

"No layout has been assigned to this room. Please load a layout."



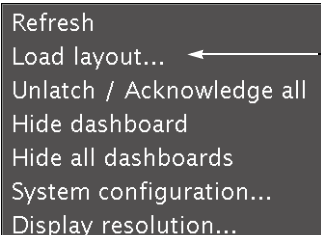
No layout has been assigned to this room. Please load a layout.

Note: To access other layouts, press the LOAD button. To assign a layout to a preset button, press and hold the button for more than six seconds while the desired layout is showing on the monitor wall.

Loading a Layout

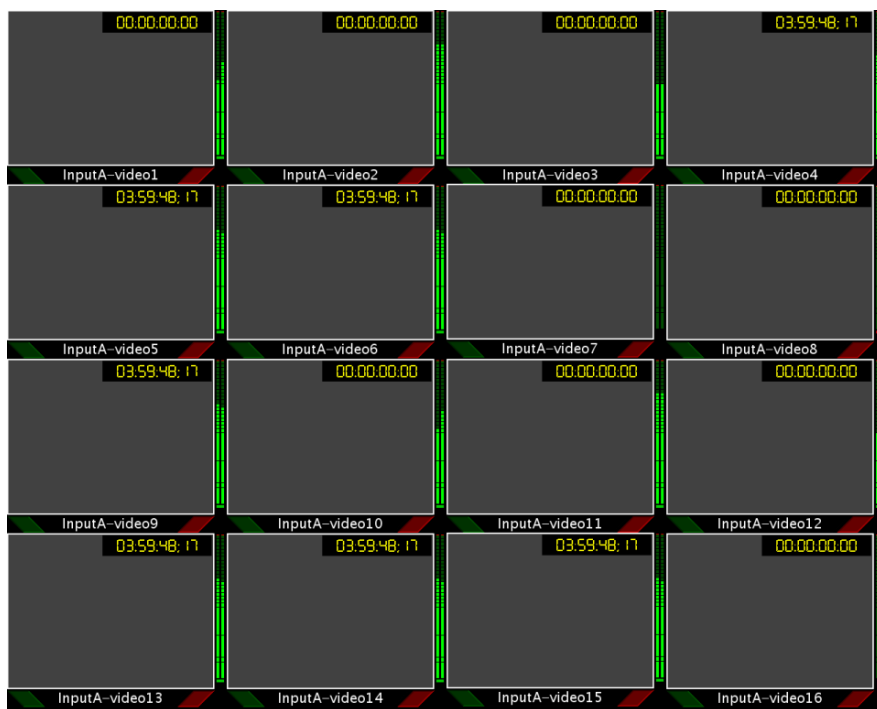
To load a layout on the monitor wall:

- 1 Connect a mouse to the Kaleido-RCP2.
- 2 If you have not already done so, log on to the Kaleido-X from the Kaleido-RCP2. See [Using the Kaleido-RCP2 with Default Settings](#) on page 11.
- 3 Right-click anywhere on the monitor wall, point to **Monitor wall** (if you clicked a monitor), and then click **Load layout** on the shortcut menu.



Monitor wall shortcut menu

A layout browser appears on the displays associated with the current room. By default, each room is associated with one output card. Each default layout is pre-configured to show 16 video streams for each input card.



Example of a default layout showing 16 video streams

- 4 Choose a layout from the layout window on the monitor wall.
The video source should appear on the room displays.

Configuring a Client PC

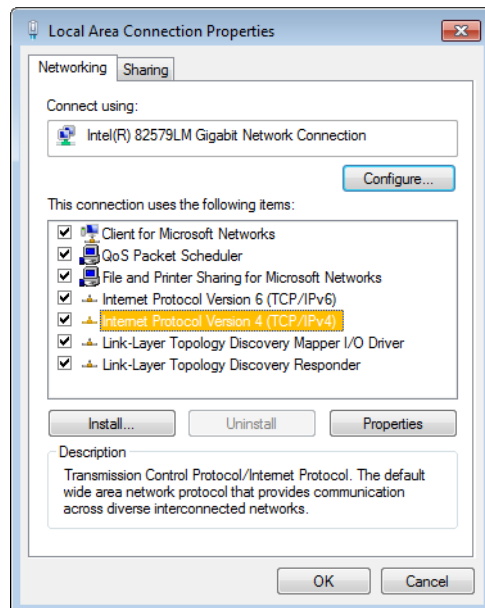
The client PC that you will use to communicate with the Kaleido-X (via XAdmin and XEdit) and the Kaleido-X itself must have IP addresses within the same subnet. The following procedure applies to a typical Windows 7 or Windows 8 system. For Windows XP, see [Changing an IP Address on Windows XP](#) on page 16.

Changing an IP Address on Windows 7 or Windows 8

To change the IP address of a client PC that has Windows 7 or Windows 8

- 1 Press the Windows key on your keyboard, type "control panel" and then press Enter.
- 2 In the search box, type "adapter", and then, under **Network and Sharing Center**, click **View network connections**.
- 3 In **Network Connections**, right-click the network adapter you wish to configure (e.g., *Local Area Connection*, or *Ethernet*), and then click **Properties**. If the system prompts you for an administrator password or confirmation, type the password or provide confirmation.

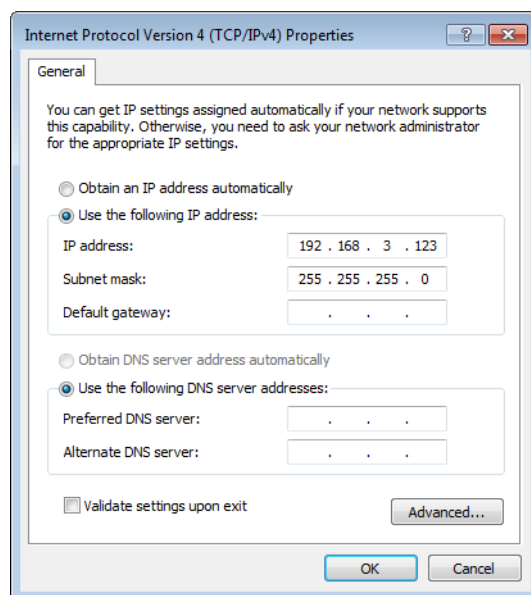
The Properties window for the selected network adapter opens.



- 4 On the **Networking** tab, under **This connection uses the following items**, click **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.

The **Internet Protocol Version 4 (TCP/IPv4) Properties** window opens.

- 5 On the **General** tab, click **Use the following IP address**.



- 6 Type an IP address in the same range as the multiviewer's current IP address.
For example, if the multiviewer's IP address is 192.168.3.31, then the IP address of your client PC could be 192.168.3.123. If you are unsure, contact your network administrator.
- 7 Type a subnet mask in the same range as that of the multiviewer.
- 8 Click **OK**.
- 9 In **Local Area Connection Properties**, click **Close**.

Changing an IP Address on Windows XP

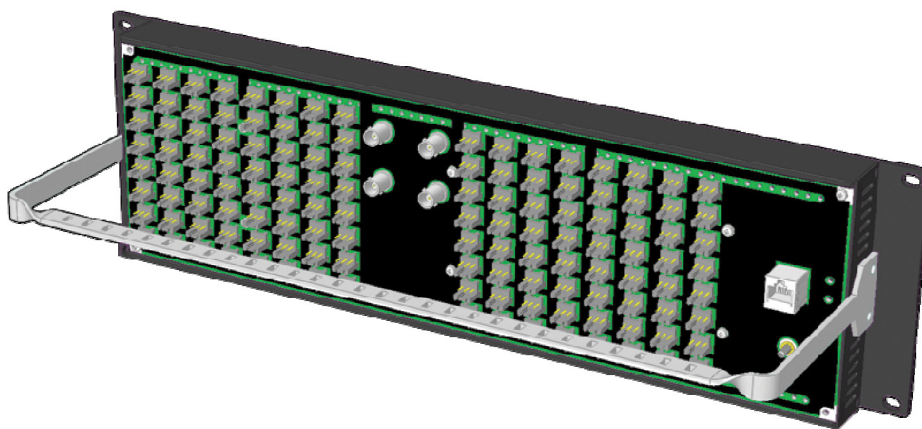
To change the IP address of a client PC that has Windows XP

- 1 On the **Start** menu, point to **Control Panel**, right-click **Network Connections**, and then click **Open** on the menu.
- 2 In **Network Connections**, right-click **Local Area Connection**, and then click **Properties** on the shortcut menu.
- 3 In **Local Area connection Properties**, select **Internet Protocol (TCP/IP)** from the list on the **General** tab, and then click **Properties**.
The **Internet Protocol (TCP/IP) Properties** window opens.
- 4 On the **General** tab, click **Use the following IP address**.
- 5 Type an IP address in the same range as the multiviewer's current IP address.
For example, if the multiviewer's IP address is 10.0.3.70, then the IP address of your client PC could be 10.0.3.123. If you are unsure, contact your network administrator.
- 6 Type a subnet mask in the same range as that of the multiviewer.
- 7 Click **OK**.
- 8 In **Local Area Connection Properties**, click **Close**.

Configuring an Audio Bridge Terminal

The optional Audio Bridge Terminal (ABT) is an external audio multiplexer/serializer for the Kaleido-X. The Kaleido-X supports audio channel inputs from the ABT-64 or ABT-128 series of Audio Bridge Terminal panels through up to two SDTI inputs. The ABT-64 supports 64 channels and the ABT-128 supports 128 channels.

There is not enough space on the Kaleido-X rear panels to also include discrete audio connectors. An ABT provides connector space for multiple audio signal inputs, and multiplexes all the audio signals into combined serial feeds on coaxial cables that connect to the KXI cards.



Note: The ABT is powered through the RJ-45 Ethernet connector. There is no power ON/OFF button, so the device is ON whenever a powered Ethernet cable (PoE) is connected.

For more information about the ABT, refer to the Audio Bridge Terminal Guide to Installation and Operation, available on the DVD that shipped with your system.

To configure the IP address and other network settings of the ABT

- 1 Connect a PC to a switch.
- 2 Referring to [Configuring a Client PC](#) on page 14, configure the PC with the following network settings:

DHCP	OFF
Static IP address	10.0.0.1
Subnet mask	255.255.0.0
Default gateway	10.0.0.1

- 3 Apply power to the Audio Bridge Terminal and make sure it is connected to the same switch as the PC.
 - If the switch is Power over Ethernet (PoE) enabled, simply connect it to the unit using an Ethernet cable.
 - If not, PoE mid-span (*inserter*) equipment must be placed between the switch and the Audio Bridge Terminal.
- 4 Press the RESET button (located on the right-hand side of the ABT rear panel beside the ETHERNET/POWER RJ-45 connector) for at least 1 second.

The Audio Bridge Terminal will reboot with the following static network configuration:

DHCP	OFF
Static IP address	10.0.3.190
Subnet mask	255.255.0.0
Default gateway	10.0.0.1

- 5 Using a Web browser on the PC, connect to the ABT using the following address: 10.0.3.190.

The home page of the ABT's built-in Web server is displayed.

- 6 Click **Network Configuration** (in the navigation pane).

The Network Configuration page is displayed.

The screenshot shows the 'Miranda - Audio Bridge Terminal' web interface. On the left is a navigation pane with links: Status, Parameters, Network Configuration (highlighted), and Information. The main content area is titled 'Network Configuration' and contains the following fields:

- MAC Address: 00:50:1E:01:FF:DD
- Label: ABT-128 (with a note: Valid characters: a-z A-Z 0-9 - _ *)
- DHCP: ☒ Disabled ☐ Enabled
- Static IP Address: 10 . 0 . 3 . 190
- Static Network Mask: 255 . 255 . 0 . 0
- Static Default Gateway: 10 . 0 . 0 . 1

At the bottom are three buttons: 'Apply & Reboot', 'Cancel Changes', and 'Factory Defaults'.

- 7 Change the ABT's network settings, as necessary, and then click **Apply & Reboot**.

Note: If you purchased more than one Audio Bridge Terminal unit, keep in mind that they all ship with the same default static IP address. Make sure to assign each of them a different static IP address before connecting them to the network, if DHCP is not used.

Step 3: XEdit Installation

XEdit is a client application used to create layouts for the monitor wall, and to configure your multiviewer system, from your PC or laptop. When the computer with XEdit is connected to the Kaleido-X through a TCP/IP network, you can use XEdit to modify layouts and settings directly on the Kaleido-X, or you can work locally on the computer and then export your changes to the Kaleido-X.

To install XEdit from your multiviewer's home page

- 1 From a workstation on the same subnet as the multiviewer, open a Web browser window and type the multiviewer's IP address in the address bar.

The multiviewer's home page appears.



- 2 Click the **XEdit** button.

The browser prompts you to save an executable file to your hard drive (Kaleido-windows32-online.exe¹). This file is an online installer, which will download XEdit and other companion elements from your multiviewer, and install them. Some browsers may allow you to run the file directly. Depending on your browser's security features, warnings may appear, which you may safely dismiss.

- 3 Unless your browser let you run the file (and you chose to do so), navigate to the location where you saved the installer file and open it.

More security warnings or prompts may appear, which you may safely dismiss or accept.

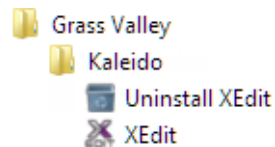
A window appears, showing the download and installation progress.

1. Installers for Linux or Mac OS X are not yet available.

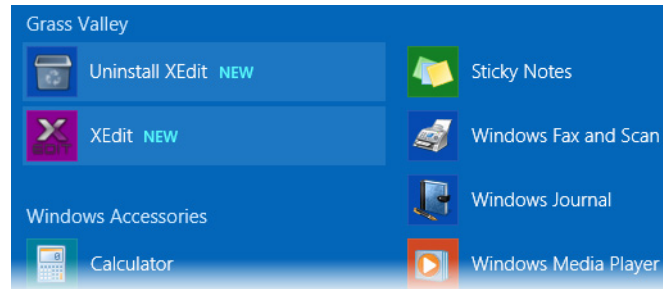


At the end of the installation process:

- If you have Windows 7, or Windows XP, shortcuts () are added to your desktop and to the Start menu (under **All Programs**).



- If you have Windows 8.1, or Windows 8, XEdit will appear on your desktop, in the Apps view with all the other applications on your PC (Windows 8.1), or in your Start screen (Windows 8).



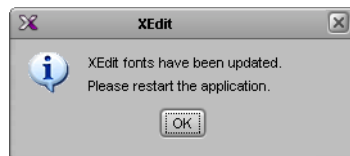
Once the installation has completed, the XEdit startup screen appears.



Depending on your Windows Firewall settings, a security alert may appear.

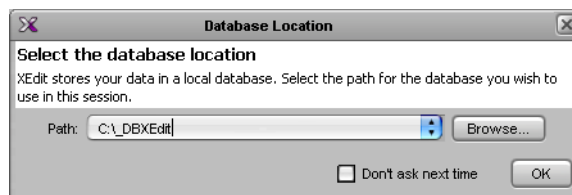
- Click **Allow access** to unblock the application.

If XEdit cannot find all of the fonts it needs already on your PC or laptop, it downloads them from the multiviewer automatically, in which case a message will appear to confirm the font update, and instruct you to restart the application.

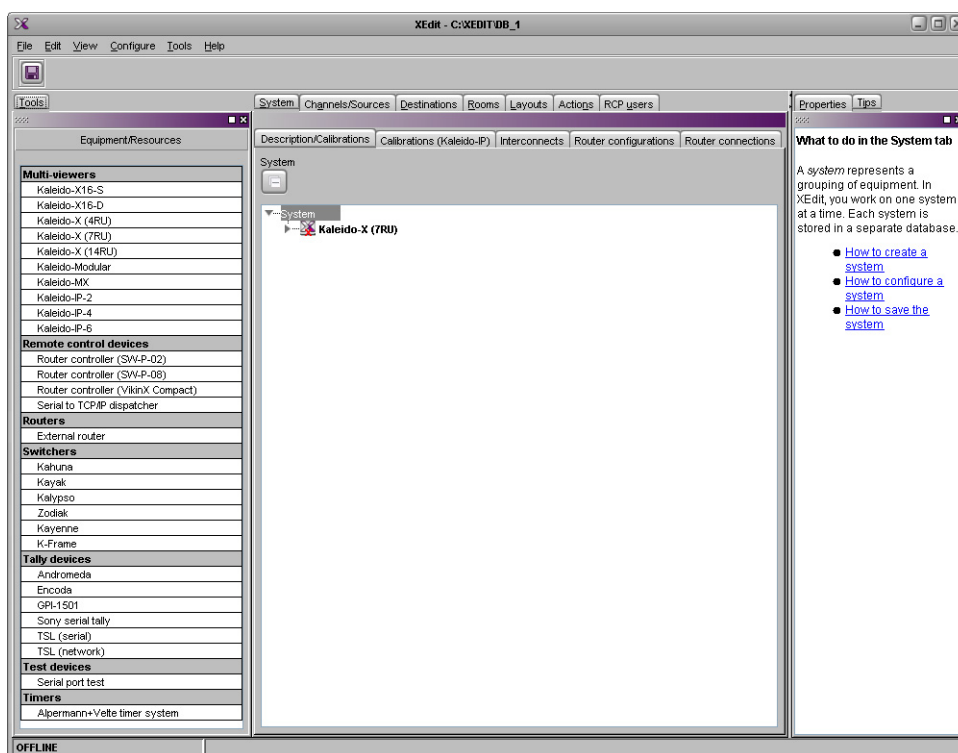


- Click **OK** to continue, and then open XEdit again, by using the shortcut on your desktop, in your Apps view (Windows 8.1) or Start screen (Windows 8), or from the Start menu (Windows 7, Windows XP).

- 4 When prompted to specify a database, choose one from the **Path** list, or click **Browse** to navigate to the database you wish to use as your local workspace, and then click **OK**.



Once the database has completed loading, XEdit's main application window appears.



Note: Once it has been installed from the multiviewer, XEdit remains on your PC or laptop, and can be launched from the  shortcut that was added to your desktop, Apps view, or Start screen (see [page 19](#)), or from the Start menu. Whenever you install a new version of the Kaleido-X software on the multiviewer, the next time you open XEdit, your installed copy of the application will be automatically updated from the multiviewer.

For more information about calibrating your system, configuring rooms, creating layouts, and operating the monitor wall, refer to the *Kaleido-X User's Manual*, available on the DVD that shipped with your system, and from the Documentation Library section of Grass Valley's website.

Step 4: System Verification

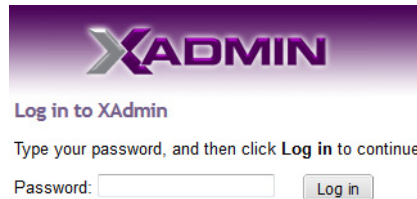
Verifying the Kaleido-X Multiviewer

To verify the status of your Kaleido-X multiviewer:

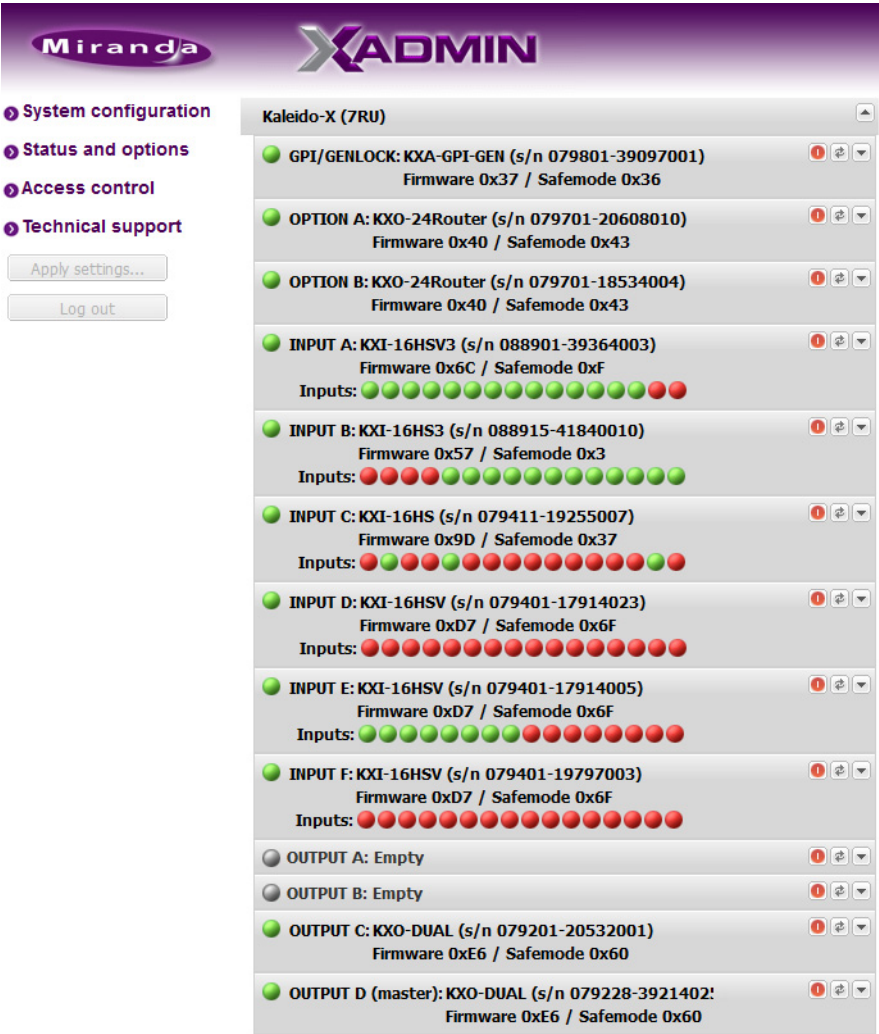
- 1 Open a Web browser window and enter the multiviewer's IP address in the address bar. The Kaleido-X home page appears.



- 2 Click the XAdmin button.
- 3 If you see a security warning, or a certificate error message, then refer to *Registering your Multiviewer's Security Credentials with your Browser*, in the Kaleido-X User's Manual.
- 4 If the "Log in to XAdmin" page appears, type the password, and then click **Log in**.

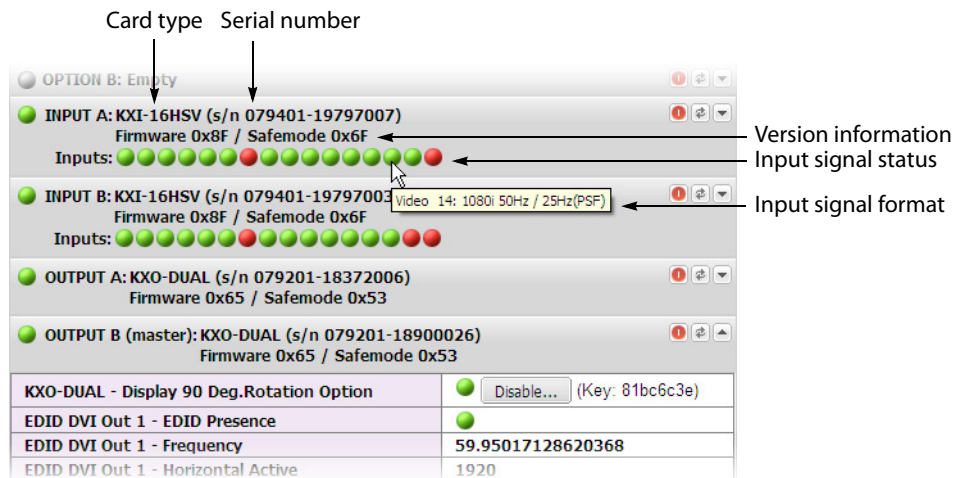


- 5 **Internet Explorer users:** If a blank page appears, then refer to *Enabling the Compatibility View in Internet Explorer*, in the Kaleido-X User's Manual.
The XAdmin Status and Options page appears, displaying a list of all cards and their statuses.

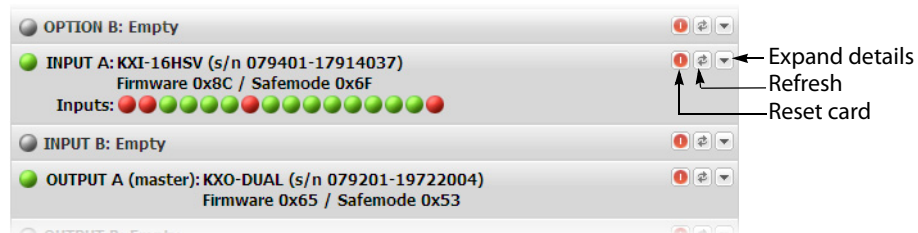


Cards are presented in the order they appear, from left to right when looking at the front of the chassis. The card heading shows the card type, serial number, firmware and safemode versions, and a summary view of the input signals for each input card.

- 6 Move the pointer to an input signal status icon to view the associated signal format.

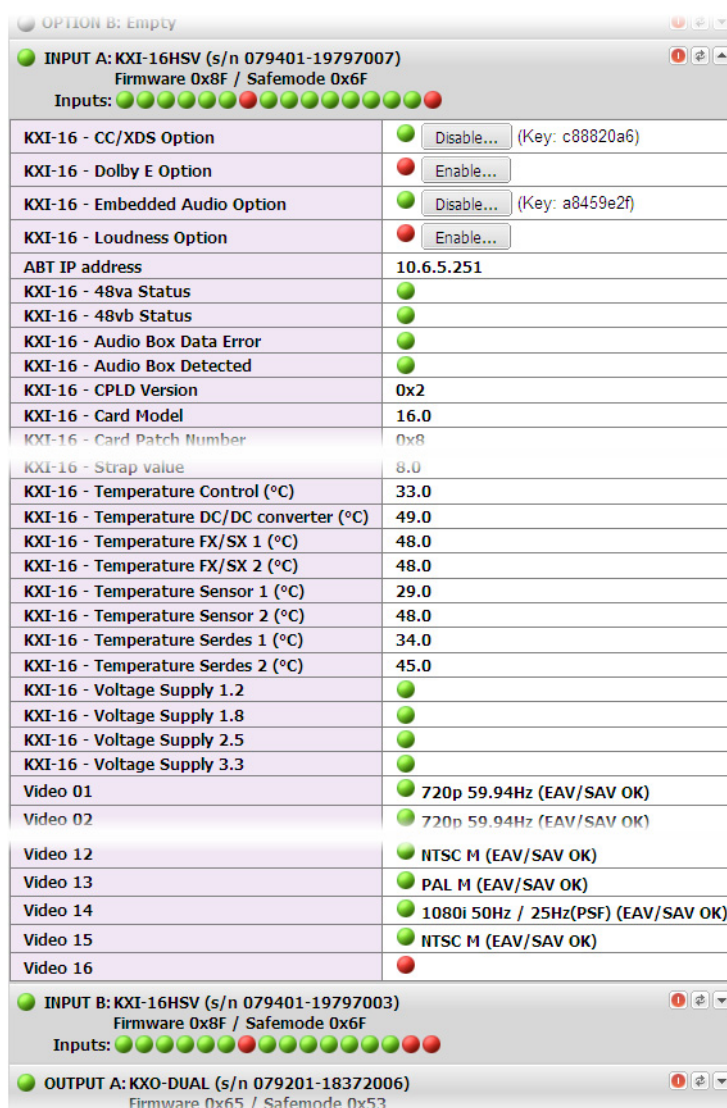


- 7 Click the arrow button (▼) at the end of each card's heading row to view detailed information for this card.



Note: At any time you can click the **Refresh** button to make sure the data displayed for the selected card is up to date. Click the **Reset card** button at the end of a card's heading row to reset the card remotely, directly from your Web browser.

- 8 Review the enabled card options, and make sure that no card status error is reported.



Note: See *Managing Hardware and Software Options*, in the Kaleido-X User's Manual, for more information on the available options.

- If your system includes a GPI/genlock card (KXA-GPI-GEN), you can check the main system statuses of the Kaleido-X frame, to make sure that there are no errors or alerts related to system temperature, fan operation, or card fault conditions.

GPI/GENLOCK: KXA-GPI-GEN (s/n 079899-17912009) Firmware 0x35 / Safemode 0x36	
KXA-GPI-GEN - 1.2V Status	
KXA-GPI-GEN - 1.8V Status	
KXA-GPI-GEN - 2.5V Status	
KXA-GPI-GEN - 3.3V Status	
KXA-GPI-GEN - 48V Power Supply A Fuse Status	
KXA-GPI-GEN - 48V Power Supply B Fuse Status	
KXA-GPI-GEN - Board High Temperature	
KXA-GPI-GEN - Board Temperature (°C)	41.0
KXA-GPI-GEN - CPLD Version	0x1
KXA-GPI-GEN - Card Model	48.0
KXA-GPI-GEN - Card Patch Number	0x0
KXA-GPI-GEN - Card Revision	0x2
KXA-GPI-GEN - Card Type	0x30
KXA-GPI-GEN - Chassis Door Open Status	
KXA-GPI-GEN - Chassis Identifier	307.0
KXA-GPI-GEN - FPGA Version	0x15
KXA-GPI-GEN - Firmware Package Number	0x35
KXA-GPI-GEN - Firmware Type	0x2
KXA-GPI-GEN - Firmware Version	0x21
KXA-GPI-GEN - Frame Rate	60Hz
KXA-GPI-GEN - Normal Mode	
KXA-GPI-GEN - Power Supply A Status	
KXA-GPI-GEN - Power Supply B Status	
KXA-GPI-GEN - Rear Fan 1 Status	
KXA-GPI-GEN - Rear Fan 2 Status	
KXA-GPI-GEN - Rear Fan 3 Status	
KXA-GPI-GEN - Rear Fan 4 Status	

The other statuses should all be normal, although if you left the door open when checking the card LEDs, you may see a warning under **Chassis Door Open Status**.

KXA-GPI-GEN - 1.2V Status
KXA-GPI-GEN - 1.8V Status
KXA-GPI-GEN - 2.5V Status
KXA-GPI-GEN - 3.3V Status
KXA-GPI-GEN - 48V Power Supply A Fuse Status
KXA-GPI-GEN - 48V Power Supply B Fuse Status
KXA-GPI-GEN - Board High Temperature
KXA-GPI-GEN - Chassis Door Open Status
KXA-GPI-GEN - Power Supply A Status
KXA-GPI-GEN - Power Supply B Status
KXA-GPI-GEN - Rear Fan 1 Status
KXA-GPI-GEN - Rear Fan 2 Status
KXA-GPI-GEN - Rear Fan 3 Status
KXA-GPI-GEN - Rear Fan 4 Status
KXA-GPI-GEN - Rear Fan 5 Status
KXA-GPI-GEN - Rear Fan 6 Status

Verifying the Kaleido-RCP2

To verify that the Kaleido-RCP2 is functioning normally:

- Log on to the Kaleido-RCP2 (see [Using the Kaleido-RCP2 with Default Settings](#) on page 11), and then test various operations using the Kaleido-RCP2 keyboard and the mouse (e.g. load a predefined layout).

Verifying the Audio Bridge Terminal

To verify that the ABT is functioning normally:

- Inspect the ACTIVITY and front panel LEDs on the unit to make sure there are no error conditions:

The ACTIVITY indicator is located on the right-hand side of the rear panel. This LED reports the status of the Ethernet connection as indicated in the table below.

Two LEDs are visible on the front panel, one for each power supply. When lit, they both indicate the same status.

When the ABT is powered up, all three LEDs will be orange until the boot sequence is terminated. This is a visual indicator that the LEDs are functioning properly.

ACTIVITY Indicator on Rear Panel		Power-Supply LEDs on Front Panel	
Color	Status	Color	Status
Off	No link detected	Green	Normal
Green	Normal (good link)	Flashing green	Normal, rebooting
Orange	Activity	Orange	Warning
Red	Hardware fault	Flashing orange	Warning, rebooting
Flashing red	Upgrading firmware	Red	Hardware fault
		Flashing red	Upgrading firmware

RS-422 Connection Diagram

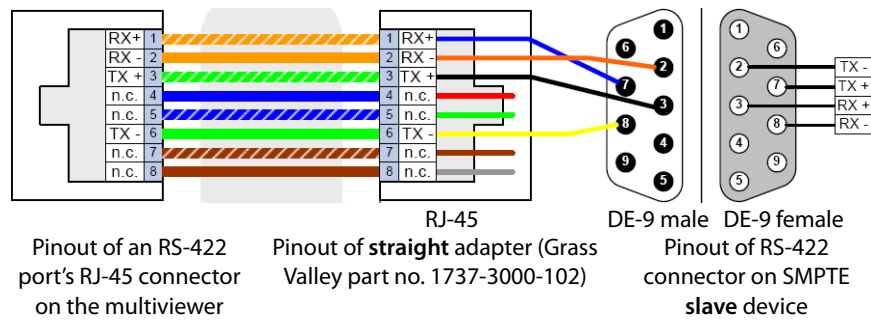
Each output card supports one RS-422 port over an RJ-45 connector. This port allows the Kaleido-X to connect to external serial devices such as a router, production switcher, or router controller.

Note: The Kaleido-X RS-422 ports each have an RJ-45 connector in order to preserve space on a busy panel. The RS-422 interface specifies a DE-9 connector, so if you are using this interface, you will require a DE-9-to-RJ-45 adapter. Grass Valley supplies two adapter models, correctly wired for this application: a straight adapter (part no. 1737-3000-102), and a crossover adapter (part no. 1792-3700-100).

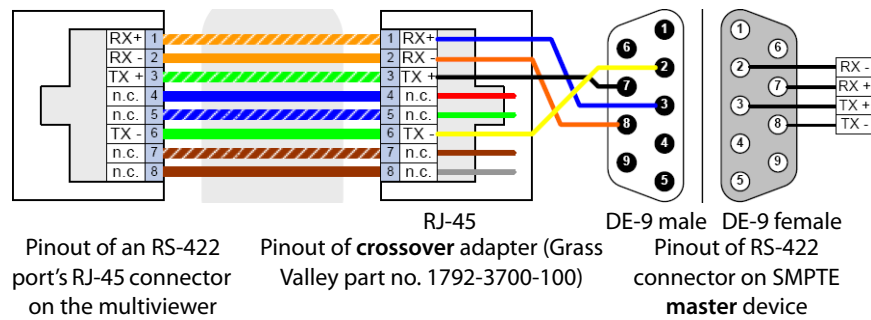
The pinout for the RS-422 signals on the Kaleido-X16's RJ-45 connectors, and the wiring diagrams for the appropriate adapters, are shown here:

Setting Up Your Kaleido-X (7RU) Multiviewer

RS-422 Connection Diagram



Standard wiring between multiviewer and devices wired to SMPTE "slave" specification (e.g. most routers, Ross Synergy switchers, Nevion ETH-CON)



Standard wiring between multiviewer and devices wired to SMPTE "master" specification (e.g. Philips Jupiter router control system, Grass Valley Presmaster PCS)

Note: The two RS-422 ports on the multiviewer side have no ground pin. Using the appropriate DE-9S-to-RJ-45 adapter, an external device should be able to communicate with a multiviewer despite the lack of a ground.

For more information about the RS-422 specifications, see the "RS-422" section in the *Specifications* chapter of the Kaleido-X (7RU) Hardware Description & Installation Manual. For more information about the RS-422 serial connections, see the "Serial Connections" section in the *Routers* chapter of the Kaleido-X User's Manual.



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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