



Kaleido-X16

16 inputs, 2 multi-viewer outputs

COMPACT | ULTRA QUIET | UNMATCHED QUALITY | ROUTER INTEGRATION | 3Gbps/HD/SD/ANALOG

Kaleido-X16

16 input, dual output multi-viewer

The Kaleido-X16 is a compact, ultra-quiet multi-viewer with 16 inputs and two multi-viewer outputs. It offers the highest level of image quality, and can be used with 3Gbps/HD/SD and Analog video. It's ideal for small control rooms, although it can also be paired with routers to create the very largest combined multi-viewer and routing systems.



■ Key Features and Benefits

UNMATCHED IMAGE QUALITY

- ⊕ Unmatched multi-viewer picture quality, and superior on-screen graphics, for the most critical monitoring applications
- ⊕ 2 HDMI and 2 HD/SD-SDI multi-viewer outputs
- ⊕ DXF-100 optical DVI extension module simplifies long runs to monitors from frame of up to 3300 feet (1000m)

SUPERIOR LAYOUT FLEXIBILITY

- ⊕ Any of the video inputs can be displayed, any number of times, at different resolutions and sizes up to full screen, on the multi-viewer outputs, without blocking or bandwidth limitations

MULTI-FORMAT OPERATION

- ⊕ 3Gbps / HD / SD / Analog inputs
- ⊕ 3D support with 3Gbps signals (SMPTE-425M Level A&B)
- ⊕ DVI and MPEG video accepted with optional interfaces

SCALABLE FOR THE LARGEST SYSTEMS

- ⊕ Expansion through combination with upstream router (NVISION or third party)
- ⊕ Can create the very largest combined multi-viewer/router systems with up to 1152 video inputs, 144 independent multi-viewer outputs

ADVANCED SIGNAL PROBING

- ⊕ Integral signal probing and on-screen alarms
- ⊕ Display of XDS Metadata and Closed Captioning
- ⊕ XSupervise, an optional PC-based application, delivers multi-channel, automated signal monitoring and alarm management.

BUILT-IN ROUTER

- ⊕ Two 3Gbps/HD/SD router outputs (16 x 2)
- ⊕ Internal router control by NVISION panel and NV9000 Controller

LEGENDARY EASE OF USE

- ⊕ Easy layout preparation with XEdit
- ⊕ Intuitive On-screen Mouse control
- ⊕ Choice of multi-viewer remote control panels: simple Kaleido-RCP2 and advanced RCP-200 with router control (future option)

ULTRA-QUIET, ROBUST DESIGN

- ⊕ Super silent for installation within studios and control rooms
- ⊕ Highly robust 1RU design with optional redundant power supply

INCREASING VIDEO INPUTS AND MULTI-VIEWER OUTPUTS



KALEIDO-X16 (1RU)

- ⊕ 16 video inputs
- ⊕ 2 multi-viewer outputs

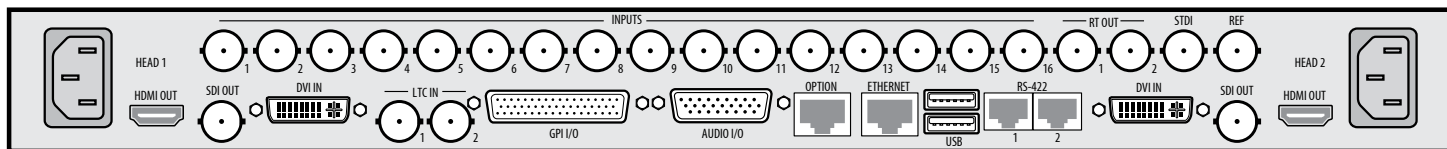


KALEIDO-X16 + NVISION router

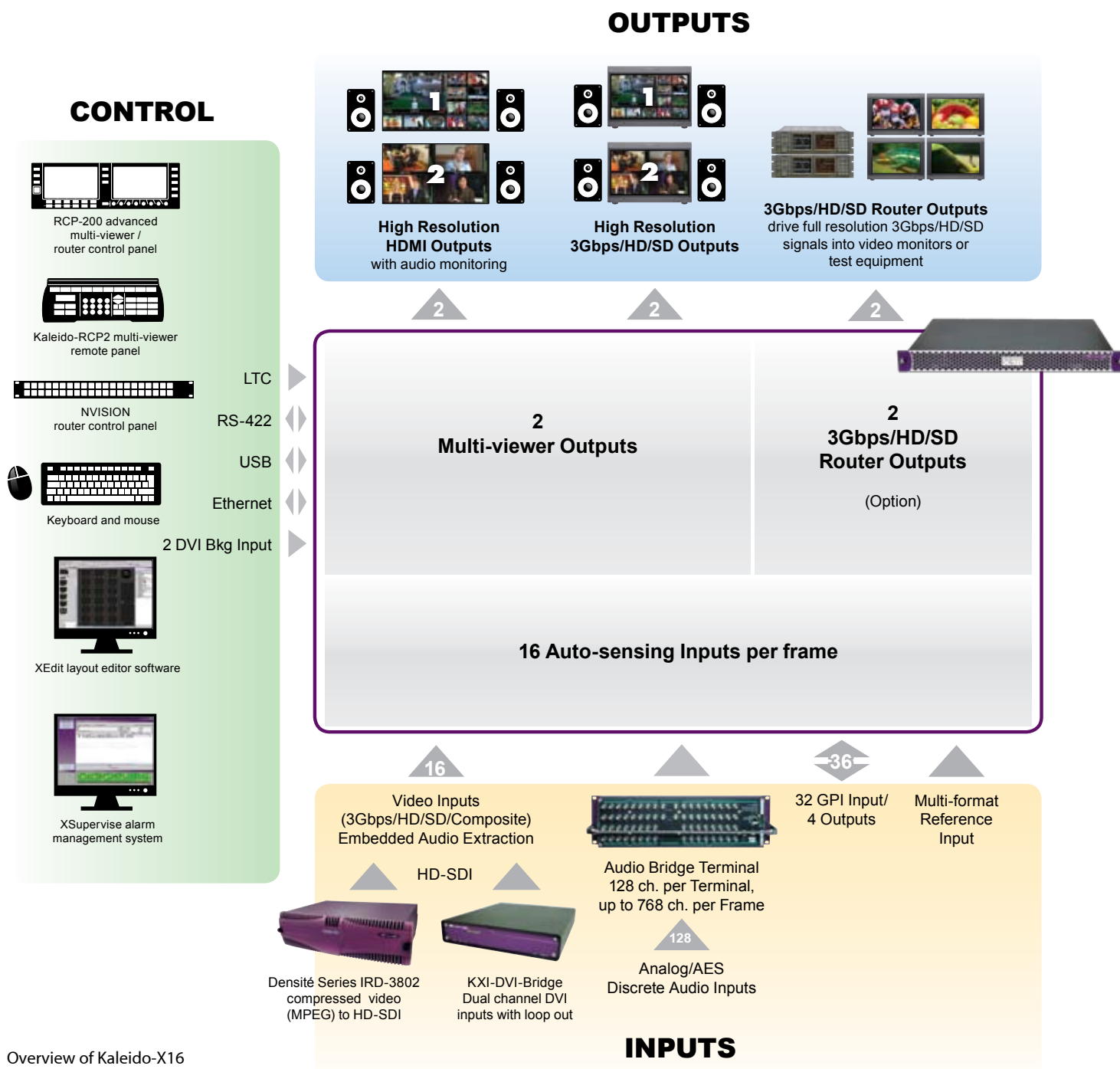
- ⊕ up to 1152 video inputs
- ⊕ up to 144 multi-viewer outputs

Kaleido-X16 is ideal for small control rooms but can be combined with routers to create the very largest combined routing and multi-viewer system with up to 1152 video inputs and 144 multi-viewer outputs (see page 10).

Overview of functionality



Kaleido-X16 rear panel



Overview of Kaleido-X16

Smaller monitoring rooms using the compact Kaleido-X16

With the introduction of the 1RU Kaleido-X16 processor, the Kaleido-X family is now ideal for smaller monitoring facilities, such as call letter television station master control rooms, mobile trucks and production fly cases, as well as community television. The Kaleido-X16's super silent design makes it ideal for installation within studios and control rooms.



Community television, small studios and trucks

With native router control and a direct tally interface with production switchers, the Kaleido-X16 is perfect for small studios and trucks. The built-in 16 x 2 router can feed quality control instruments or redundant output paths.



Small call letter TV station master control room

The Kaleido-X16 provides all the signal validation tools required, with extraction of the important metadata. The processor's two router outputs can be used to feed the master control switcher.



Production fly case

The Kaleido-X16's compact, standalone design, quiet ventilation and easy set-up makes it ideal for fly case applications.

Unmatched picture quality and display elements

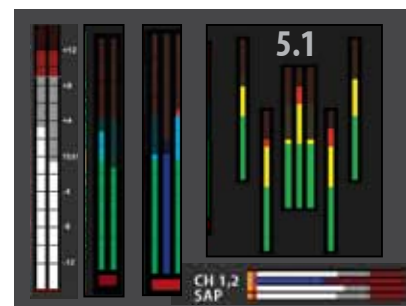
Picture quality

Kaleido-X16 offers unmatched picture quality, using Miranda's scaling technology. Windows can be resized all the way from very small windows up to full screen display, without the loss of definition that is commonly associated with multi-viewers. This high performance, combined with superior on-screen graphics, makes Kaleido-X16 ideal for the most critical monitoring applications.



Audio meters

Kaleido-X16 can display four group, multi-channel audio for multi-lingual and 5.1 applications. Audio level meters are extracted from analog, AES or embedded signals, and can be positioned inside the video window in transparency or outside. Ballistics and scales are configurable, and a phase correlation meter can be displayed with each pair. Dolby E audio can be extracted from an embedded audio signal for on-screen metering. An audio meter can readjust itself based on inserted Program Configuration metadata.



Automatic aspect ratio control and safe areas

Aspect ratio and safe area markers can be positioned over video windows to simplify multi-format monitoring. Free form safe area markers, based on a user's bitmap, can be overlaid on top of each video window. This feature is useful to protect graphical content or branding that will be applied downstream after production.

The processor can automatically change a signal's aspect ratio between 16:9 and 4:3, based on the Active Format Description (AFD), Wide Screen Signaling (WSS) or source resolution. Image formatting rules are followed during conversion, including letter/pillar boxing and resizing/cropping.



Dynamically updated UMDs

Text labels (UMDs) can be displayed inside or outside windows, and updated by a UMD controller. Dynamic text can be driven by NVISION and many third-party routers, and by some automation vendors. Kaleido-X16 also offers a serial interface for leading production switchers, which provides tally updates as well as sources and destination labels. Text fonts are flexible and support UNICODE for multi-lingual texts.



Clocks and timers

Multiple analog and digital clocks/timers (with date) can be displayed with programmable offsets and configurable colors. The clocks/timers can be driven by LTC, referenced internally, or to an NTP server. Each output module features three independent LTC inputs.



Picture-in picture and display customization

Picture-in-picture displays can be generated for easy comparisons between playout and return feed signals or for the playout server's backup confidence monitoring.

Bitmap images can be displayed to customize the display background with channel logos and other graphics.

Signal validity monitoring

The following parameters can be detected and presented on-screen, or reported to SNMP-based signal and facility monitoring systems, including Miranda's iControl Web:

VIDEO PROBING:

- ➔ video black
- ➔ video frozen
- ➔ video level too high
- ➔ loss of video
- ➔ EAV/SAV error

AUDIO PROBING:

- ➔ audio silence
- ➔ audio overload
- ➔ audio mono
- ➔ audio out of phase

METADATA MONITORING:

- ➔ XDS data including Vchip rating
- ➔ Closed Captioning and Subtitling (608, 708 and WST 42 & 47) is presented in the format seen by television viewers in their homes.

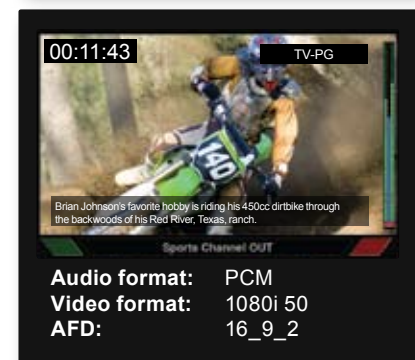
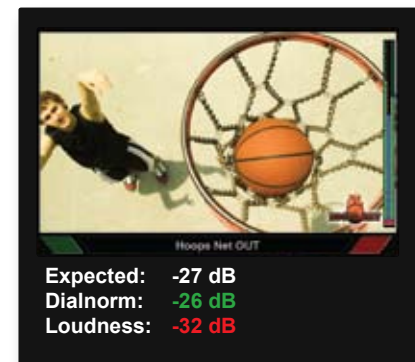
Probing points can be configured with different thresholds, and a specific probing zone within the video can be configured for the freeze and black detection.

Loudness / Dolby E monitoring

In addition to displaying the Dialnorm value encoded in the video signal, Kaleido-X16 processors can also measure the perceived Loudness of the audio signal and compare it to the encoded value. The system can alert operators when signals exceed thresholds, by comparing the Dialnorm and measured Loudness against target values. The Loudness is measured using LEQ-A or ITU-R-BS-1770.

Display of Closed Captioning, Subtitling and XDS data

Closed captioning and Subtitling (608, 708 and HD/SD WST 42 & 47) is presented in the format seen by television viewers in their homes. XDS data, including Vchip information, can also be overlaid in each video window, along with the Dolby E metadata, AFD/WSS formats, and audio/video signal format.



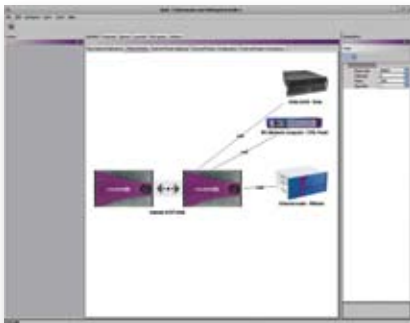
XEdit: Fast, multi-room layout editor

The Kaleido-X family's multi-room layout editor simplifies the sharing and presentation of sources across multiple areas controlled by multiple operators.

The XEdit layout editor allows non-technical operators to easily create complex multi-room layouts combining all essential display elements, including analog and digital clocks, audio level meters with various scales, and flexible UMDs and tallys.

The editor encourages rapid drag and drop layout creation, with automatic resize and alignment tools for easy optimization of the monitor wall space. The physical arrangement of multiple displays in a room is reproduced in XEdit for an absolute WYSIWYG generation of the layout.

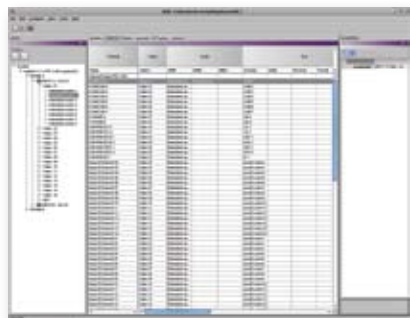
■ Using XEdit to create complex, multi-room display layouts



1

SYSTEM CONFIGURATION

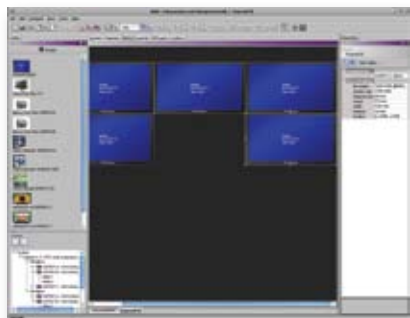
Use XEdit to create a system level view showing the number of Kaleido-X family processors and XEdit panels. The software provides comprehensive third party device integration for dynamic text labels and tallys.



2

CREATE SOURCES

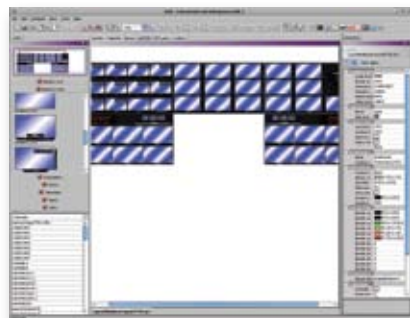
Next, sources are created using efficient logical source configuration, which offers easy re-use and quick assignment within various layouts.



3

CONFIGURE ROOMS

The rooms are then configured using a physical layout of the displays. An intelligent display library incorporates display dimensions and resolutions to simplify the configuration process.



4

CREATE LAYOUTS

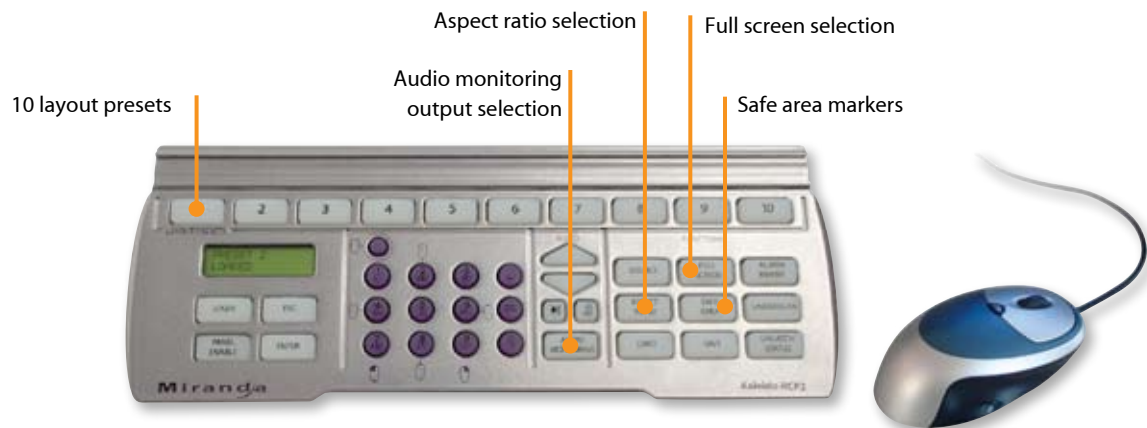
Finally, layouts are created using a simple drag-and-drop application, which features a rich library of monitors and widgets, including automatic resizing and alignment tools. XEdit allows layouts to be built simultaneously for all displays within a room, making layout creation much more efficient and intuitive.

Easy operator control

Kaleido-X16 offers the ease of use you've come to expect from the Kaleido family, using either Kaleido's On-screen Mouse or compact remote panel. Simple to use, On-screen Mouse operated drop-down menus are contextual to speed operations, and offer numerous functions, such as changing aspect ratios, checking the safe area, assigning an input, and changing text in a UMD. Users can also instantly change layout configurations, and dynamically

zoom one source larger for quality control, or audio monitoring of an on-screen source.

The Kaleido-RCP2 remote panel exemplifies this simplicity and provides easy multi-room, multi-operator control over Ethernet, with local connections for a mouse and keyboard.



The Kaleido-RCP2 remote control panel features direct key control for the most common commands



On-screen Mouse control contributes significantly to the Kaleido-X16 system's ease of use.

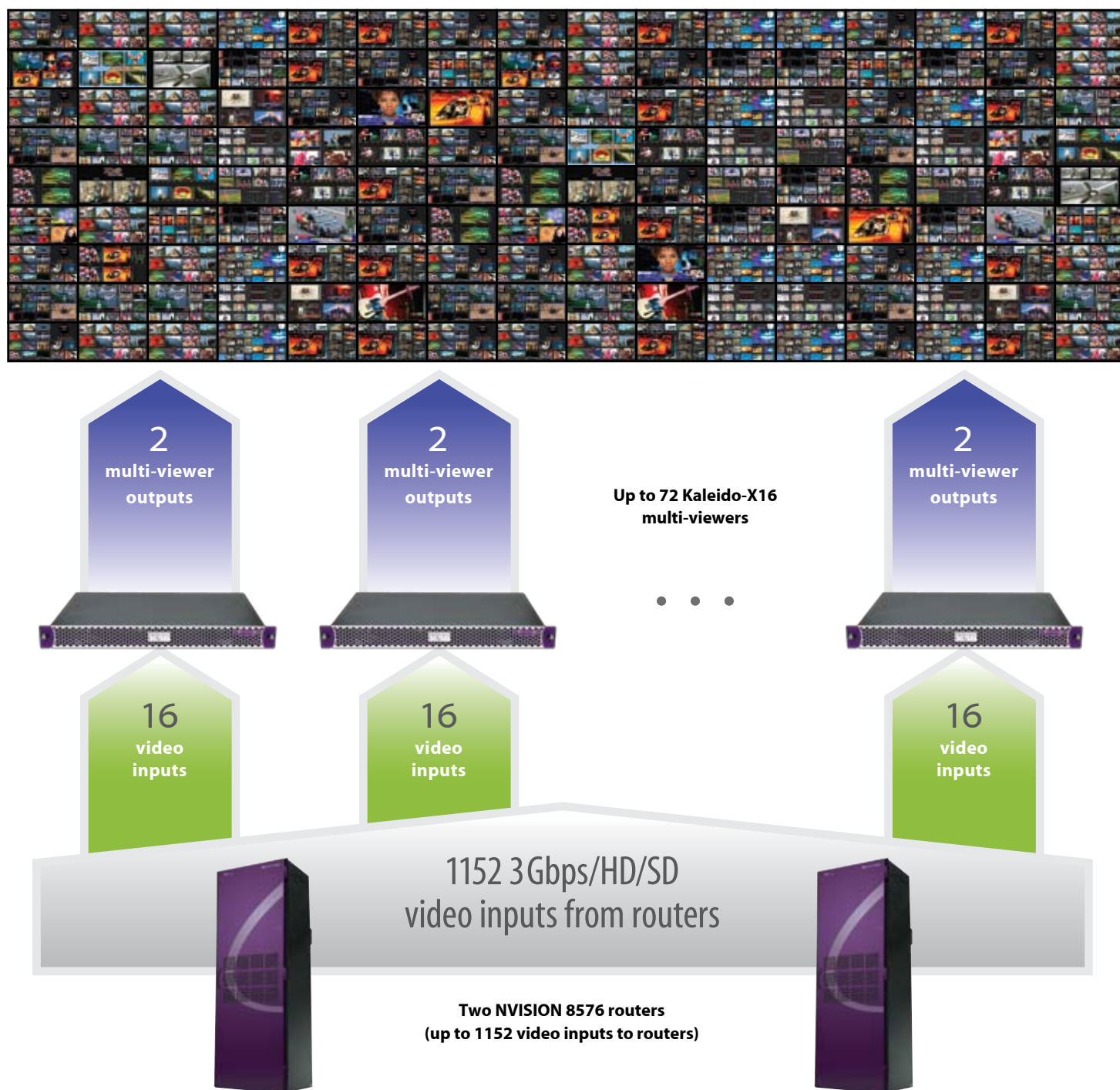
Router integration: large scale multi-viewer with small failure block

Kaleido-X16 offers seamless integration with the NVISION router family, and third party routers, to allow expansion up to 1152 video inputs and 144 multi-viewer outputs.

This 'Cluster Concept' enables multiple multi-viewers to behave like a single system from an operator's perspective, with full layout flexibility. This integration is achieved using streamlined router/multi-viewer hardware based on the MV-LiNK to simplify installation and reduce costs.

In the example below, two NVISION 8576 routers are integrated with 72 Kaleido-X16 processors. Each multi-viewer provides two multi-viewer displays, creating a total of 144 independent multi-viewer outputs, and a small multi-viewer failure block (just two displays out of 144). The entire system is fully integrated to offer seamless control of the source assignments via on-screen mouse operation or by a router control panel.

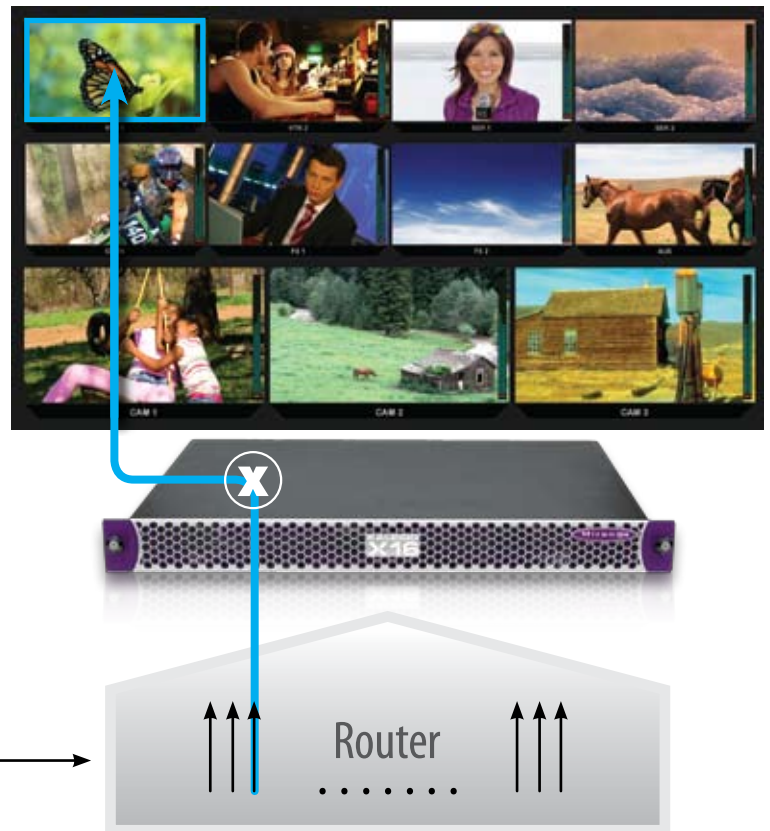
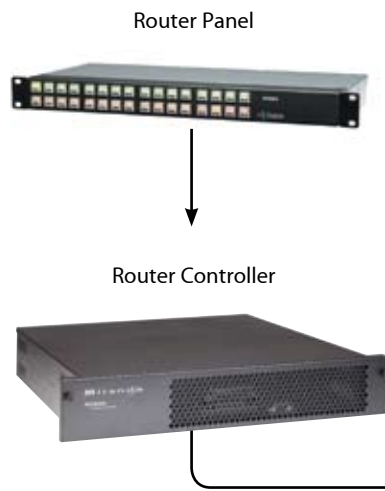
144 independent multi-viewer displays



Remote control of integrated routing and multi-viewer systems

Integrated multi-viewer and routing systems can be controlled using a choice of remote control panels. One simple option is to use a traditional router control panel to assign any source, anywhere, any number of times on the monitor wall. This mimics what the router would do to a traditional monitor wall, by allowing the user to assign any source to any destination. This type of control is available with the NVISION control panels (shown below), as well as third party router control panels from Pro-bel and Network.

Source to virtual monitor wall assignment can be made via any NVISION control panel via the NVISION 915 or 9000 controller.



The highly graphical RCP-200 remote panel offers more advanced control of combined multi-viewer and routing systems (future option). The panel provides multi-viewer layout pre-set selection, and quick router source assignment control via a category/index graphical interface. The RCP-200 is a multi-functional panel, and can also be used for control of Densité Series interfaces.



Kaleido-X16 (1RU) ordering information

Frame Selection

Kaleido-X16-D	16 input Dual Head Multi-viewer
Kaleido-X16-S	16 input Single Head Multi-viewer
Kaleido-X16-D-RT	16 input Dual Head Multi-viewer w/MV-LiNK
Kaleido-X16-S-RT	16 input Single Head Multi-viewer w/MV-LiNK

Video Input Options

KXI-DVI-BRIDGE	Dual Channel DVI to HD Bridge
KXS-X16-3Gbps	3Gbps Format License (1/frame)

Audio Input Options

KXS-X16-SD-EMB	SD-SDI Embedded Audio License (1/frame)
KXS-X16-HD-EMB	HD/SD-SDI Embedded Audio License (1/frame)
KXS-X16-Dolby	Dolby Metadata Extraction License (1/frame)
KXS-X16-Loudness	Loudness Level measurement License (1/frame)
KXA-TBA-44	Terminal Block Adaptor for HD-44 Connections (For GPI Connections)
NSH26M	Terminal Block Adaptor for HD-26 Connections (for Audio I/O Connections)
ABT-128A	128 Channel Analog Audio bridge Terminal
ABT-128D-110	128 Channel 110 ohm AES Audio Bridge Terminal
ABT-128D-75	128 Channel 75 AES Audio Bridge Terminal
ABT-64A	64 Channel Analog Audio Bridge Terminal
ABT-64D-110	64 Channel 110 ohm AES Audio Bridge Terminal
ABT-64D-75	64 Channel 75 ohm AES Audio Bridge Terminal

Alarm/metadata Options

KXA-XSupervise*	Alarm Management for Kaleido Multi-viewer
* Application Server included	
KXS-X16-CSX	CC/Subtitling and XDS data License (1/frame)

Output Options

KXS-X16-HDM-S	HD-SDI Monitoring Output for Kaleido-X16-S
KXS-X16-HDM-D	HD-SDI Monitoring Output for Kaleido-X16-D
DXF-100	Optical DVI Extension System (Multi-Mode Fiber not included)
KXS-X16-ROTATOR-S	Rotation License for Kaleido-X16-S
KXS-X16-ROTATOR-D	Rotation License for Kaleido-X16D
KXS-X16-RTR16x2	Dual Router Output Option (1/frame)

Control Panel Option

KALEIDO-RCP2	Ethernet Remote Control Panel and KM Gateway
KRCP-RK2	Kaleido-RCP2 Rack Mount Bracket
* For router control with physical control panel, make a selection within the range of Miranda/NVISION control panel series. One of the NV-9000 or NV-915 is required to interface the panel and the router.	

System Options

KXA-X16-PSU	Kaleido-X16 Redundant Power Supply Module
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Third Party Interface Options

KXS-CTRL/UMD-DATATEK	Control and UMD Support for Datatek Routers
KXS-CTRL/UMD-ENCORE	Control and UMD Support for Encore Controller
KXS-CTRL/UMD-GVG7000	Control and UMD Support for GVG7000 Routers
KXS-CTRL/UMD-JUPITER	Control and UMD Support for Jupiter Routers
KXS-CTRL/UMD-LEITCH	Control and UMD Support for Leitch Routers
KXS-CTRL/UMD-NETWORK	Control and UMD Support for Network Routers
KXS-CTRL/UMD-NVISION	Control and UMD Support for NVISION Routers
KXS-CTRL/UMD-PESA	Control and UMD Support for Pesa Routers
KXS-CTRL/UMD-PROBEL	Control and UMD Support for Probel Routers
KXS-CTRL/UMD-UTAH	Control and UMD Support for Utah Routers
KXS-TALLY-KALYPSO	Tally Interface for Thomson Kalypso Switcher
KXS-TALLY-SYNERGY	Tally Interface for Ross Synergy Switchers
KXS-TALLY-ZODIAC	Tally Interface for Thomson Zodiac Switcher
KXS-TALLY-KAHUNA	Tally Interface for Snell&Wilcox Kahuna Switcher
KXS-TALLY-SONY	Tally Interface for Sony Switchers (serial protocol)
KXS-TALLY-KAYAK	Tally interface for Thomson Kayak switcher series



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