Ultrix

Perfect Wave.

What happens when you combine a passion for technology, decades of domain knowledge, and a focus on creating a high quality solution that solves your problems? In a word, you get Ultrix.
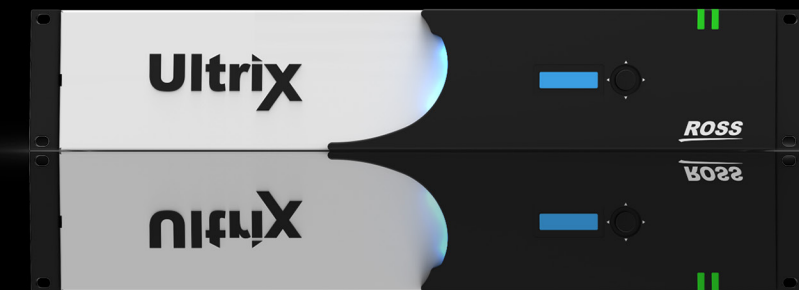
Ross Video, the company that has brought countless cutting edge innovations to production switcher solutions, is proud to present a similar kind of generational leap to the development of a video routing switcher platform.

Ultrix is a powerful, state of the art routing switcher platform that incorporates the latest technological advances and integrated functionality to provide you with a flexible, fast, and intuitive routing solution that optimizes your facility infrastructure, saves you money, and provides you the peace of mind that comes with an extremely reliable system designed for future requirements.
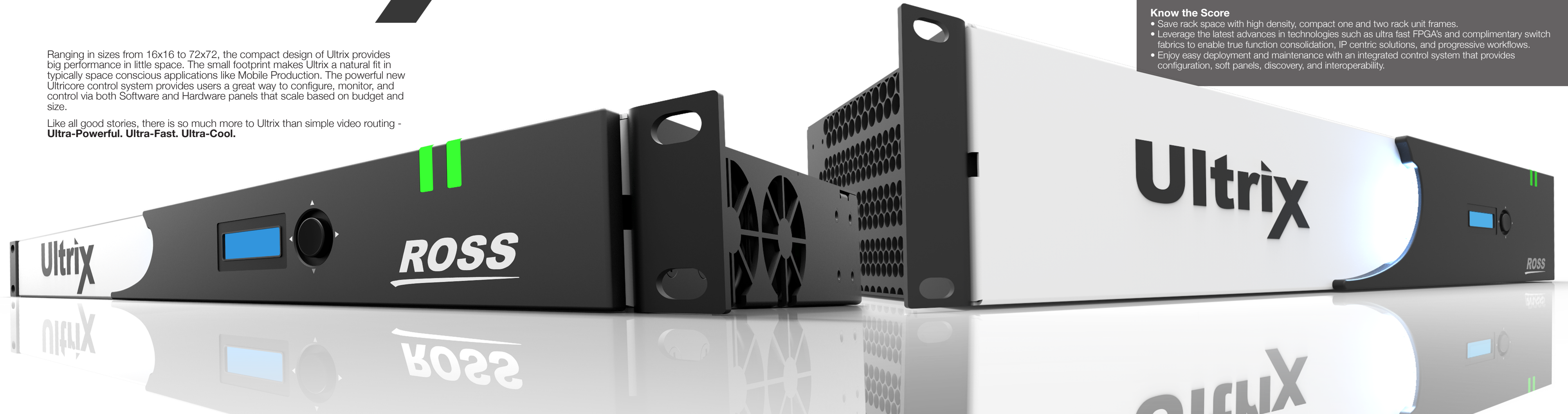
ROSS

1RU

2RU

Ultrix

ROSS

Ultrix

ROSS

UltriX

Ranging in sizes from 16x16 to 72x72, the compact design of Ultrix provides big performance in little space. The small footprint makes Ultrix a natural fit in typically space conscious applications like Mobile Production. The powerful new Ultricore control system provides users a great way to configure, monitor, and control via both Software and Hardware panels that scale based on budget and size.

Like all good stories, there is so much more to Ultrix than simple video routing - **Ultra-Powerful. Ultra-Fast. Ultra-Cool.**

Plan Ahead
• Incrementally add UHD signals as requirements arise with software licensing.
• Integrate or add MultiViewer capability in the same platform with software licensing and no additional hardware.
• Perform complex audio processing in the same platform with software licensing and no additional hardware.
• The modular architecture of the frame provides easy expansion of base I/O as required.

Mix it Up
• Route 270 Mb/s, 1.5 Gb/s, 3 Gb/s, and 12 Gb/s video signals in the same system
• Use a combination of single link and multi-link interfaces for UHD, and route between them seamlessly with the integrated gearbox capability.
• Choose from embedded or discrete audio (Analog, AES, or MADI) to fit a range of requirements.
• Connect with various video interfaces such as HDMI, SDI, Analog, IP, and Fiber to maximize flexibility.

Know the Score
• Save rack space with high density, compact one and two rack unit frames.
• Leverage the latest advances in technologies such as ultra fast FPGA's and complimentary switch fabrics to enable true function consolidation, IP centric solutions, and progressive workflows.
• Enjoy easy deployment and maintenance with an integrated control system that provides configuration, soft panels, discovery, and interoperability.
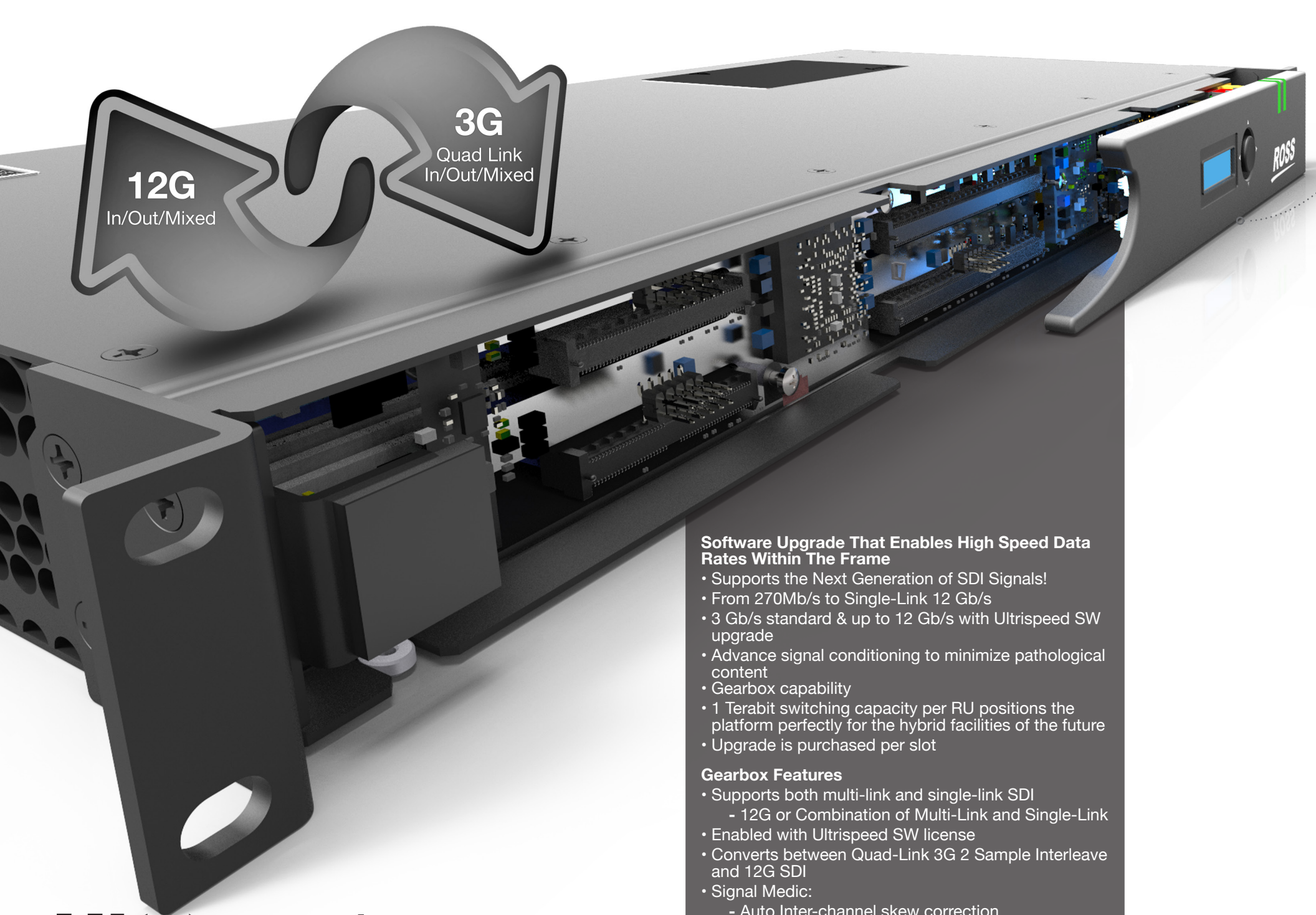
All in.

Ultra Powerful
Ultrix is a compact but incredibly powerful routing switcher platform capable of switching video signals from 270 Mb/s to 12 Gb/s. The unique design permits users to software license additional capabilities such as advanced audio processing, integrated MultiViewers, and 12 Gb/s I/O with Gearbox interface conversion. No special hardware is required for any of these features, which can be included at the time of purchase or added at a later date. While these feature sets are typically associated with large and costly systems which cause users to make critical design choices upfront, Ultrix brings such high-end features to all sizes of systems and provides easy migration as requirements change.

Ultrix

ROSS

12G
In/Out/Mixed

3G
Quad Link
In/Out/Mixed

ROSS

Ultrispeed - 12 Gb/s Performance Available Through Every Signal Path.
Ultrix provides maximum performance and quality with standard configurations supporting data rates up to 3 Gb/s. Users can purchase Ultrispeed software licenses that enable 12 Gb/s performance throughout every signal path within the router. 12Gb/s is the standard for single link UHD (4K) SDI routing. The Ultrispeed license enables Gearbox which converts to/from quad link 3G 2 Sample Interleave UHD (4K) signals for integration with some types of non-12G 4K equipment.

Software Upgrade That Enables High Speed Data Rates Within The Frame
• Supports the Next Generation of SDI Signals!
• From 270Mb/s to Single-Link 12 Gb/s
• 3 Gb/s standard & up to 12 Gb/s with Ultrispeed SW upgrade
• Advance signal conditioning to minimize pathological content
• Gearbox capability
• 1 Terabit switching capacity per RU positions the platform perfectly for the hybrid facilities of the future
• Upgrade is purchased per slot

Gearbox Features
• Supports both multi-link and single-link SDI
    - 12G or Combination of Multi-Link and Single-Link
• Enabled with Ultrispeed SW license
• Converts between Quad-Link 3G 2 Sample Interleave and 12G SDI
• Signal Medic:
    - Auto Inter-channel skew correction
    - Self-healing channel replacement

Ultrispeed

Key Features
• Up to 6 MultiViewer heads in 1RU or 12 MultiViewer heads in 2RU
• Can use standard HD-BNC I/O or AUX ports
• SFP output design permits users to choose output format
    - (HDMI, SDI, FIBER…)
• Each Ultriscape license enables 1 MultiViewer head
• Fast (<1 frame latency)
• Flexible
• Wide range of output format choices
• Feature rich
    - Integrated audio metering
    - Border/Tally
    - UMD
• Wide selection of fixed layouts supported
• Simple control and configuration
• Configure/update a single or multiple MultiViewers across many frames quickly using DashBoard
• Tight integration with Router Database
• Access to all router inputs AND outputs

Ultriscape - Software Enabled MultiViewer Integration
Ultriscape is one of the many industry firsts with Ultrix. Ultriscape is the first software enabled MultiViewer. No special output boards, crosspoints, or multichannel connection cables are needed. Simply enable the desired number of outputs to drive the monitors required, and route any input to whatever MultiViewer head is chosen. Up to 6 MultiViewer heads can be enabled in 1RU, up to 12 MultiViewer heads in a 2RU chassis. This makes Ultriscape the most compact solution currently available. Because MultiViewer outputs can be assigned to both standard HD BNC or SFP outputs, users have the flexibility to choose the output type they need for each monitor, thus eliminating the hassle of matching traditional MultiViewer outputs to the monitors being driven. Low latency, metering, tally, and UMD support via standard protocols make for easy integration into existing facilities.

Ultriscape

Ultrimix - Software Enabled Audio Integration And Processing

In another industry first, Ultrimix provides advanced audio integration and processing, including the ability to embed and de-embed audio on all of the inputs and outputs of the router. No special hardware, crosspoints, or I/O boards are required, as unlike other systems the Ultrix platform enables all this functionality with just a software license. Users have complete flexibility to process, swap, sum, mute, or route any discrete or embedded audio input to any output. This is an enormous amount of audio. Up to 768x768 in 1RU, up to 1536 x 1536 in 2RU means enough channels for even the most demanding audio operations. Ultrimix is perfect for applications where audio is constantly changing, and it can be added as needed without throwing away any initial investment in the system.

Key Features
• Complete non blocking audio support

• Route and process both embedded and discrete audio.
  - Up to 768x768 channels in 1RU
  - Up to 1536x1536 channels in 2RU

• Full audio processing and transitions
  - Level Adjust, Swap, Mute, and Tone insertion
  - Transitions such as Cut, Fade/Cut, Cut/Fade, V-Fade, and Quiet on a per channel basis

• Ease of operation
  - Standard and custom control panels available within Dashboard
  - Control and switching via standard SW and HW router control panels

• Discrete audio via MADI I/O
  - Support for up to 64 channels per MADI stream
  - AES and Analog audio support via external breakout box

• Upgradeable. Add Ultrimix as audio requirements evolve.

Ultrìmix

Ultricore - Full Featured Control System

Great hardware is only as good as the control system running it. Ultricore is a full featured control system that significantly reduces setup time, simplifies configuration, and enhances the user experience by providing powerful, yet intuitive workflows and interfaces that make operations run smoothly.

Ultricore is standard on all Ultrix frames. Integrated control is great for small systems as it does not require the use of a central controller. For larger or more sophisticated systems, the Ultricore-CC 1RU central controller is available to provide for greater client integration as well as enhanced control and connectivity capabilities.

When interoperability is required, reliable third party integration is assured by the ability to interface with industry standard protocols (GV Native / Probel SW-P-08), and by providing redundant physical communications links over serial, Ethernet, and tbus interfaces.

Ultricore can interface with existing Ross NK series routers via tbus links to be backward compatible. Organizations currently using Ross routing systems can integrate new Ultrix frames within their facilities easily, as well as reuse current NK control panels. Because the Ultricore UI is integrated with the Ross DashBoard control software, consistency and familiarity is easily achieved for a smooth user experience.
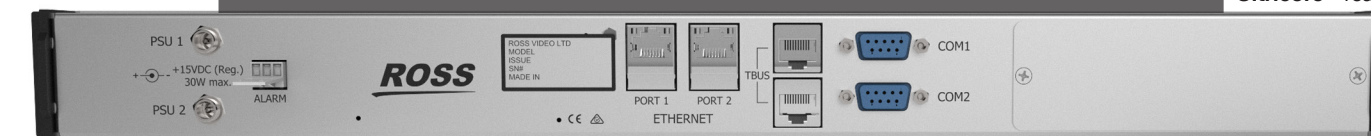
Key Features
• **System Discovery and Setup**
  - Walkabout system discovery tool
  - Configure device communication settings
  - Establish server profiles
  - Perform identifications
  - Check network performance links and status and locate devices

• **Router and MultiViewer Database and Canvas Configuration**
  - Create router and Ultriscape MultiViewer configurations with the database editing tool
  - Create, change, and update sophisticated mappings, and source/destination grouping that are available to all control clients within the system

• **Enhanced operational tools**
  - Series of standard software panels
  - Ability to create custom panels
  - Monitoring, mapping matrices, and adjusting parameter adjustments are easy with a powerful, intuitive frame view

Ultricore - rear

Hardware feature set
  - 2 Ethernet ports, 2 Serial ports, and 2 Tbus ports
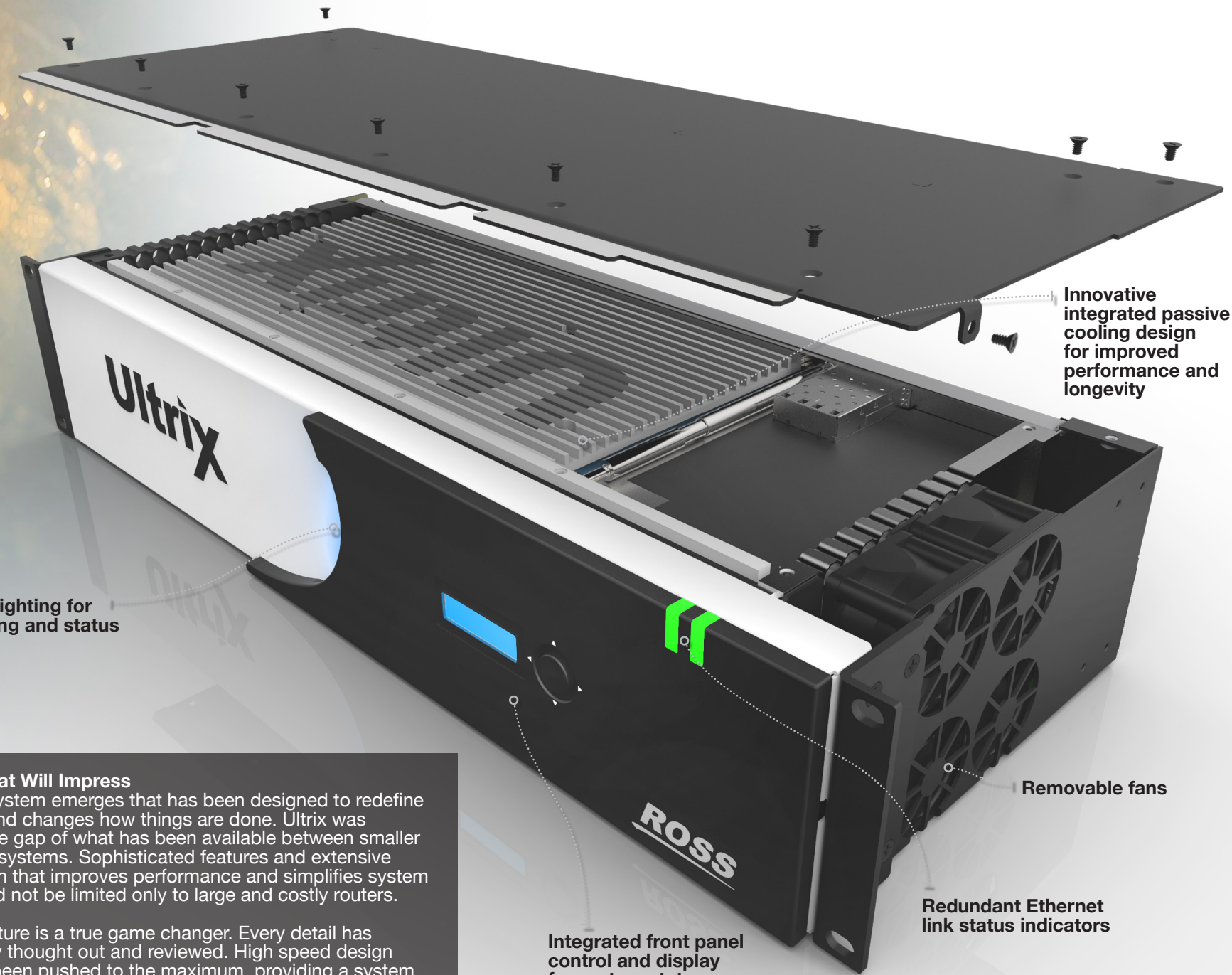 - Optional redundant power

Ultrìcore

What's inside will impress.

Innovative integrated passive cooling design for improved performance and longevity

Wave lighting for alarming and status

Removable fans

An Epic Force That Will Impress
Every so often a system emerges that has been designed to redefine what is possible and changes how things are done. Ultrix was conceived to fill the gap of what has been available between smaller and larger routing systems. Sophisticated features and extensive function integration that improves performance and simplifies system deployment should not be limited only to large and costly routers.

The Ultrix architecture is a true game changer. Every detail has been painstakingly thought out and reviewed. High speed design parameters have been pushed to the maximum, providing a system that offers a leading edge feature set at an incredible value. The Ultrix platform sets the bar on what should be expected in small to mid-size routers. Catch the new wave. Ultrix.

Integrated front panel control and display for system status, configuration, and alarm monitoring

Redundant Ethernet link status indicators

ROSS
Production Technology Experts

Multi-use USB
USB to Serial for 3rd party interface

Aux I/O
• For Video (BNC, Fiber, HDMI, IP)
  Discrete audio I/O MADI over Fiber
  or Coax

16x16 HD-BNC I/O

Ultrix-HDBNC-IO

Ultrix-HDBNC-IO

Ultrix-HDBNC-IO

Ultrix 2RU

Ultrix 1RU

Redundant Ethernet ports

Redundant external power

Dual or looping reference inputs

Backside.

Ultrix has been singularly designed to optimize signal integrity and performance to set a new standard in reliability. It is also designed to lessen the stress of choosing advanced I/O capabilities when making such a significant capital expenditure. Software licensing provides users an easy path forward to add features as they need them, without having to scrap hardware that cannot be used anymore. With Ultrix, users move to advanced workflow requirements at their own pace and growth rate.

Ultrix Hardware Specifications	1RU	2RU
PHYSICAL DIMENSIONS		
Width	17.5"	17.5"
Depth	7.9"	7.9"
Height	1.74"	3.48"
Frame Weight (approx)	4.08 kg (9 lbs)	5.44 kg (12lbs)
I/O Card Weight (approx per board)	1.36 kg (3 lbs)	1.36 kg (3 lbs)
INVENTORY		
Video Matrix Size (max)	36x36	72x72
Default I/O Slots	1 (16x16 HD BNC + 2 AUX I/O Ports)	1 (16x16 HD BNC + 2 AUX I/O Ports)
Optional I/O Slots	1 (16x16 HD BNC + 2 AUX I/O Ports)	3 (48x48 HD BNC + 6 AUX I/O Ports)
Audio Licenses (max available)	2	4
Audio I/O per license (per license) *	256x256	256x256
Audio Matrix Size (with Optional MADI SFPs)	768x768	1536x1536
MV Head Licenses per Slot	3	3
Maximum MV Heads per System	6	12
UHD Licenses per Slot**	1	1
Maximum UHD Licenses per System	2	4
UHD Gearboxes per License	3	3
Maximum UHD Gearboxes per System	6	12
OTHER		
PSU (default)	1	2
Optional Redundant PSU (additional)	1	2
Fan Module	1	1
INPUT SPECIFICATIONS		
Standard Input	HD BNC	HD BNC
Signal Type	SDI Formats 270 MB/s 1.5 GB/s 3 GB/s 6 GB/s 12 GB/s **	SDI Formats 270 MB/s 1.5 GB/s 3 GB/s 6 GB/s 12 GB/s **
Impedance	75 Ohm	75 Ohm
Max Input Level	880 mV	880 mV
Return Loss	Per SMPTE 2082-1	Per SMPTE 2082-1
Equalization	UHD: 60m HD & 3G: 200m SD: 400m	UHD: 60m HD & 3G: 200m SD: 400m
SFP Aux Connector	optional	optional
OUTPUT SPECIFICATIONS		
Standard Output	HD-BNC	HD-BNC
Signal Type	SDI Formats 270 MB/s 1.5 GB/s 3 GB/s 6 GB/s 12 GB/s **	SDI Formats 270 MB/s 1.5 GB/s 3 GB/s 6 GB/s 12 GB/s **
Impedance	75 Ohm	75 Ohm
Amplitude	800mV +/- 10%	800mV +/- 10%
Rise & Fall Time	270 MB/s: 400-800ps 1.5 & 3GB/s: < 135ps 6 & 12GB/s: <45ps	270 MB/s: 400-800ps 1.5 & 3GB/s: < 135ps 6 & 12GB/s: <45ps
DC Offset	0.0V +/- 0.5V	0.0V +/- 0.5V
Overshoot	< 10%	< 10%
Jitter	<0.2UI Alignment (up to 3G) <0.3 UI Alignment (6G & 12G) <.2UI Timing (up to 270M) <1UI Timing (1.5G) <2UI Timing (3G, 6G, & 12G)	<0.2UI Alignment (up to 3G) <0.3 UI Alignment (6G & 12G) <.2UI Timing (up to 270M) <1UI Timing (1.5G) <2UI Timing (3G, 6G, & 12G)
Return Loss	Per SMPTE 2082-1	Per SMPTE 2082-1
SFP Aux Connector	optional	optional
EMBEDDED AUDIO SPECIFICATIONS		
Audio channels per I/O	16	16

* Optional SFP MADI I/O available to support up to 384x384 per slot.
** Each license enables up to 12Gb/s support on all I/O per slot.

Ultrìx

Ross Video has a complete range of technical services available to ensure that your Ultrix installation is a success.

Operational Training can be provided at Ross Video, on-site or on the web. Experienced Ross operators will teach your staff to get the most out of your new system, and enhance your productions.

Commissioning is a service to help get your Ultrix system properly configured, connected and installed. This service is performed by factory trained Ross technical staff.

Technical Training can be provided at Ross Video, on-site or over the web. Technical training will teach your engineering staff the technical details of the system you have purchased. System configuration, interfaces, databases, and routine maintenance procedures are some of the topics covered.

Ultrix comes standard with a 1 year comprehensive warranty. **Extended Warranties** on hardware and software maintenance are available for an annual fee.

Technical advice is available on-line, by telephone, or email to Ross Video – **Free for the life of your system.**

Visit www.**rossvideo**.com for the latest information on the complete line of Ross products and services.

Acuity, Carbonite, and CrossOver
Production Switchers

XPression
Motion Graphics & Clip Servers

Acid Cameras
Furio & CamBot
Robotic Camera Systems

OverDrive & DashBoard
Control Systems

Ultrix & NK
Routing Infrastructure

openGear®
Signal Processing Infrastructure

Inception
News, Live, & Social Production Management

Streamline
Media Asset Management

Rocket Surgery
Creative Services

Ross Mobile Productions
Mobile Productions

ROSS
Production Technology Experts