



# ROSS<sup>®</sup>

LIVING LIVE!

Sharing a Passion for Live Production!

PRODUCTION TECHNOLOGY & SERVICES - SOLUTIONS GUIDE

[www.rossvideo.com](http://www.rossvideo.com)



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### MOTION GRAPHICS

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**XPRESSION TESSERA**  
**XPRESSION MAPS**  
**XPRESSION TELESTRATE**  
**XPRESSION TOUCH FACTORY**  
**XPRESSION BRAND IT**  
**PIERO** | Sports Analysis Graphics



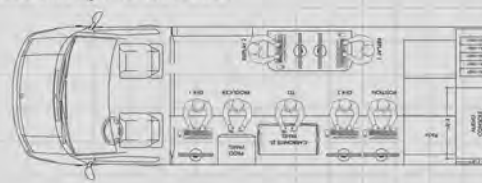
### CREATIVE SERVICES

**ROCKET SURGERY** | Graphics Creation



### OPENTRUCK

**OPENTRUCK** | Flight Case through 40-foot Truck



### ASSET MANAGEMENT & STORAGE

**STREAMLINE** | Standard, Enterprise, Graphics  
**STREAMLINE.CLOUD**  
**STREAMLINE NEWS VIDEO SUITE** | MAM, Storage & Playback for News  
**EVO** | Networked Storage



### CAMERAS

**ACID CAMERA** | H200-UCHR, Z50-UCHR  
**PIVOTCAM** | PivotCam SE



### STUDIO IN A BOX

**GRAPHITE** | All-in-One Live Production Vehicle



### PRODUCTION SERVICES

**ROSS MOBILE PRODUCTIONS**



### MULTI-SCREEN IMAGE PROCESSING

**CARBONITE MOSAIC**



### CHROMA KEYING

**ULTRACHROME HR**



\* Carbonite Black Chassis with UltraChrome HR Software

### NEWS & SOCIAL MEDIA

**INCEPTION NEWS** | Academic, Express, Standard, Enterprise  
**INCEPTION LIVE**  
**INCEPTION SOCIAL**  
**INCEPTION.CLOUD**  
**HORIZON**



### CONTROL SYSTEMS

**OVERDRIVE** | Express, Prime, Premium  
**DASHBOARD** | Facility Control  
**LIGHTNING** | Assembly Control  
**ULTRITOUCH** | Touch Screen Control  
**POWERPLAY** | Event Control System



### INFRASTRUCTURE

#### SIGNAL PROCESSING

**OPENGEAR** | Modular Signal Processing, OGX Frame  
**SOFTGEAR** | Virtualized Media Processing Platform  
**MASTER CONTROL** | MC1 openGear Card, MC1 Panel  
**NIELSEN** | Watermarks Encoder  
**GATOR** | 12G UHD Signal Processor  
**RAPTOR EDGE** | IP Gateway & Processor

**GEARLITE** | Point of Use Signal Processing  
**NEWT** | IP Point of Use Gateway

**MASTER SYNC & REFERENCE** | SRG-2200, SRG-4400, ACO-4400

**AUDIO MONITORING** | MB 651, MB-652

#### CONNECTIVITY

**ULTRIX 12G & IP ROUTER** | 16x - 144x

**NK ROUTER** | 16x4 - 144x144

**ULTRITOUCH** | Touch Screen Control

**ULTRICORE BCS** | Advanced Connectivity System Controller

**ULTRICORE IP** | IP Controller License for Ultricore BCS

**PRO-XI** | Workstation Integrator



### IP TECHNOLOGY

**OEM PRODUCTS** | Market Ready Modules & System-on-Chip  
**IGGY** | Bidirectional AES67 & ST2110 to MADI converter  
**BACH** | ST2110 AES67 Audio Networking Module



### VIDEO SERVERS, REPLAY & DELAY

**MIRA+** | Enhanced Replay System  
**MIRA EXPRESS** | Economical Replay System  
**TRIA+** | Enhanced Production Server  
**TRIA EXPRESS** | Economical Production Server  
**TRIA+ UHD** | Enhanced Production Server

**TRIA NEWS** | News Clips Playout Server  
**AIRCLEANER** | Live Event Protection Delay



### PRODUCTION SWITCHERS

**ACUITY** | Panel: A1s, A2m, A2x, A3m, A3, A4 Frame: 4RU, 8RU  
**CARBONITE BLACK** | Panel: C1, C1s, C2, C2s, C3s, C3x Frame: 2RU  
**CARBONITE BLACK PLUS**  
**CARBONITE BLACK PLUS 12G**  
**CARBONITE BLACK SOLO**  
**CARBONITE BLACK SOLO 13**  
**CARBONITE ULTRA**  
**ACUITY & CARBONITE IP SOLUTION**



### ROBOTICS

**FURIO SKYDOLLY** | Ceiling-Mounted Furio Dolly  
**FURIO LIVE** | Live Head, SE Dolly and SE Lift; PanBar and Joystick Controls  
**FURIO STUDIO** | VR100, VR600 Heads; SE & S2 Lifts; SE BlackBird  
**CAMBOT** | 520PT, 600PT, 700PT Heads; 600 BlackBird; 600XY & 700XY Free-Roaming Peds  
**VR0** | Manual Fluid Head with Tracking  
**SMARTSHELL** | Robotic Camera Control System



### VIRTUAL & AUGMENTED REALITY

**TRACKLESS VIRTUAL**  
**LUCID STUDIO 6** | Control System and Workflow  
**VOYAGER** | EPIC Unreal Engine 4  
**ARVS** | ARVS Renderer



# IP, SDI & HYBRID SYSTEMS AND SOFTWARE-DEFINED PRODUCTION

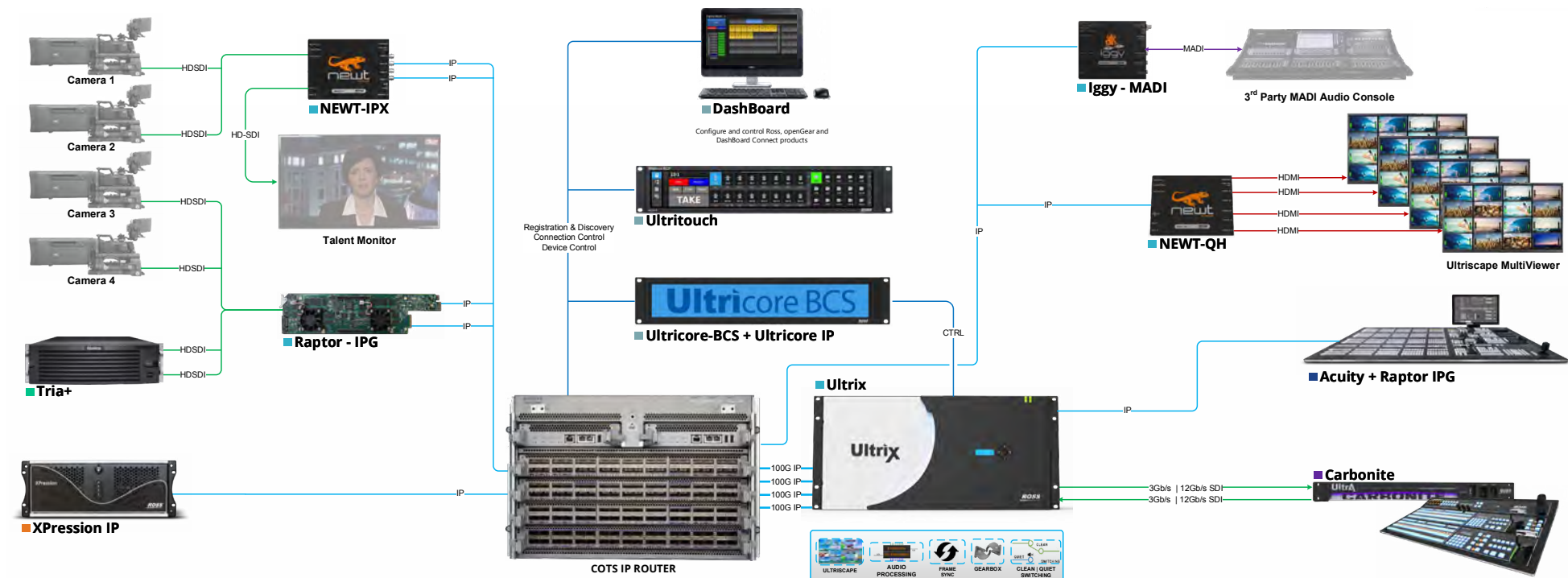
## FLEXIBILITY, AGILITY AND SCALABILITY

There is much excitement around the potential of IP connected systems to create more flexible, agile and scalable production environments.

Ross is at the forefront as a leader in IP connectivity with in-house core technology development for key popular technology standards including SMPTE ST 2110 and AES67 technology, while continuing to push forward with SDI connected environments at the same time. Hybrid IP/SDI environments will be the norm for the foreseeable future in live production as system engineers leverage the best that each technology has to offer.

Whether IP or SDI, agility comes from flexible processing engines and the notion of Software-Defined Production – Ross' term for agile, multi-function processing hardware that can add functionality through software licenses. The benefits are a flexible and scalable pool of resources that can grow as your needs change.

## ROSS IP / SDI HYBRID SOLUTION



### XPRESSION pg 60

- IP Graphics System**
- XPression graphics available with IP I/O
  - Single or dual channel versions available
  - SMPTE ST 2022-6/7 & ST 2110
  - 10Gig Interconnect
  - PTP or black burst timing

### ULTRIX pg 72

- 16x - 160x IP / SDI Routing Platform**
- IP/SDI router with integrated processing engines and clean-switching Smart Fabric
  - Up to 128x1080p IP I/O or mix of IP & SDI
  - Software-Defined Processing
  - Ultracore Control System

### ULTRICORE pg 74

- IP Control System**
- Ultracore – BCS : Large-scale control system
  - Ultracore – IP : SMPTE 2110 routing and control
  - Supports NMOS IS-04 & IS-05
  - DashBoard and Ultritouch control

### ACUITY pg 80

- IP Production Switcher**
- IP Solution Available
  - SMPTE ST 2022-6/7 & ST 2110
  - ASPEN Available (Acuity Only)
  - Software-Defined Processing

### RAPTOR pg 104

- openGear IP Gateway**
- openGear IP to SDI Gateway
  - SMPTE ST 2110 & ST 2022 7
  - Open Control, including NMOS
  - 6 x 3G-SDI in and out
  - Black burst timing output

### NEWT pg 106

- Point-of-Use IP Gateway**
- Compact IP to SDI and HDMI conversion
  - SMPTE ST 2110 & ST 2022 7
  - Open Control, including NMOS
  - 4 x 3G-SDI or HDMI
  - 1 x UHD HDMI 2.0
  - Software-Defined Processing



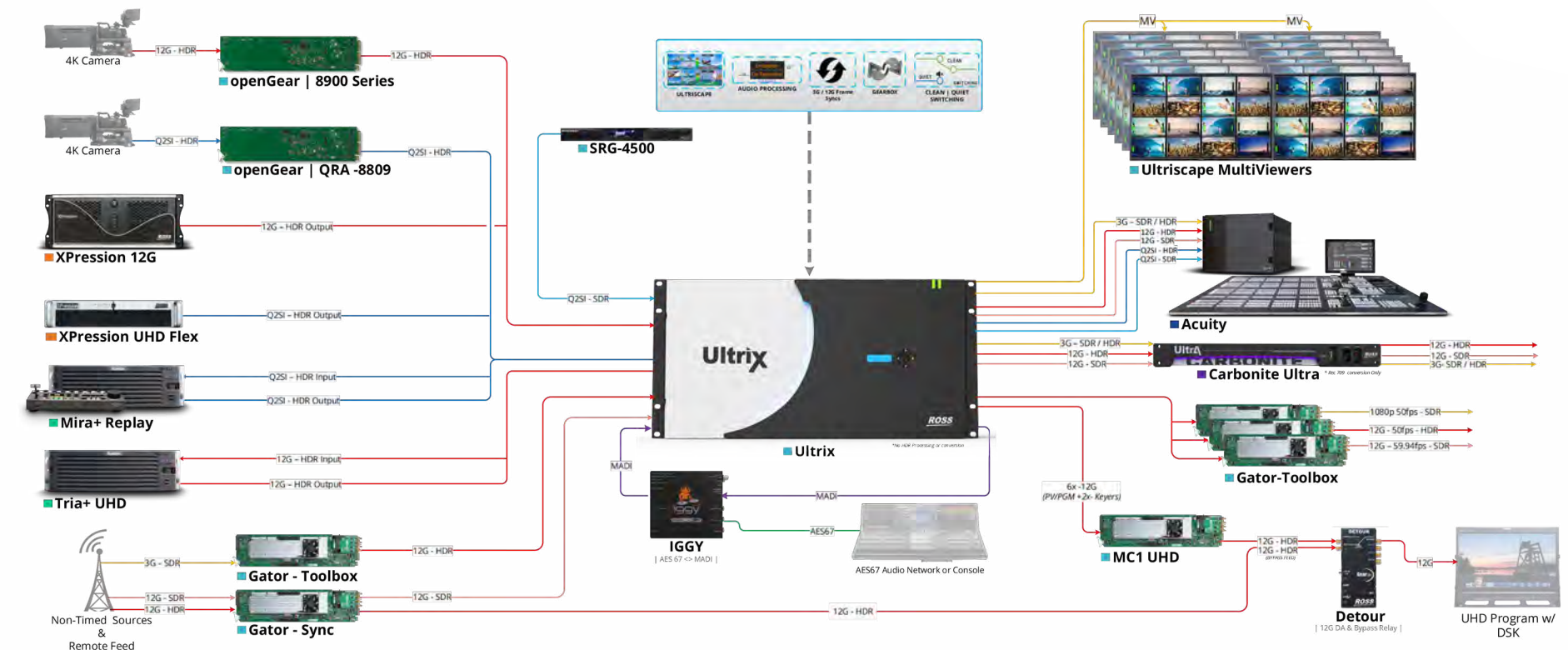
# 12G SDI, HDR, WCG AND 4K UHD

## 4K UHD PRODUCTION SOLUTIONS

4K UHD is rapidly becoming an in-demand production format as the worlds television manufacturers cease production of High Definition displays in favor of 4K UHD displays with support for High Dynamic Range (HDR) and Wide Color Gamut (WCG) and as live web streaming and broadcasting begin to transition to 4K UHD. Ross has a growing 4K UHD portfolio that will have you producing impressive results for these new large format displays.

The next generation of Serial Digital Interconnect (SDI), 12G extends SDI into 4K UHD applications with the plug & play ease-of-use and reliability that we know and love from SDI. Ross has been a pioneer in 12G SDI which has now been broadly adopted with a large ecosystem of products and vendors supporting the standard.

## ROSS 4K UHD SOLUTION



### XPRESSION pg 60

#### 4K UHD Graphics System 12G

- Single Line UHD over 12Gb/s SDI
- 12G SDI Key/Fill Output
- 12G SDI Inputs x 2 | 3G Outputs x 2

#### 4K UHD Flex

- UHD quadlink 2SI or SQD - 1 output
- 4 SDI Key/Fill pair outputs

#### HDR

- HDR & WCG support

### MIRA+ pg 64 | TRIA+ pg 66

#### Mira+ Replay Server

- 4 or 8 Channel HD Play or Record
- Up to 2 UHD Quadlink 2SI Outputs
- 10Bit Record and Playback for HDR support

#### Tria+ Production Server

- 4 or 8 Channel HD Play or Record
- Up to 2 UHD Quadlink 2SI Outputs
- 10Bit Record and Playback for HDR Support

### ULTRIX pg 72

#### 16x - 160x UHD Routing Platform

- 12Gb/s 10 Bit Video Routing
- Advanced Audio Embedding/De-embedding and Processing
- Video Clean/Quiet switching
- Up to 27x Multiviewers
- UHD Gearboxing
- 3G Frame Syncs on every input

### ACUITY pg 80

#### IP Production Switcher

- 30 12G or 2SI In, 15 12G or 2SI Out
- 4ME | 4Keyer UHD Production Switcher
- HDR & WCG I/O Conversion

### CARBONITE ULTRA pg 84

#### 4K UHD Production Switcher

- 2 ME + 2 MiniME UHD Production Switcher
- 18 In HD/12G
- 10 Out HD/12G
- HDR - Rec 709 HLG Conversion

### OPENGear pg 102

#### 8900 Series Distribution Amp

- 8900-Series 12G Distribution

#### Gator 4K UHD Signal Proc

- Gator-Toolbox Up/Down/Cross with HDR
- Gator-Sync 4 Channel UHD Frame Sync
- Gator-MC1- UHD Master Control and Branding

#### SRG-4500

- SRG-4500 Timing and UHD Test Generator

# 4K UHD



# THE POWER OF VIDEO

## CORPORATE

Modern corporations leverage video to connect with new and existing customers, employees, partners, and shareholders. Ross can help you take advantage of this opportunity with tailored solutions that fit a wide range of budgets.

### Increase community reach and engagement

Leverage live streams, real-time presentations, on-demand training, and integrated social media outreach to get your messages to stakeholders around the globe.

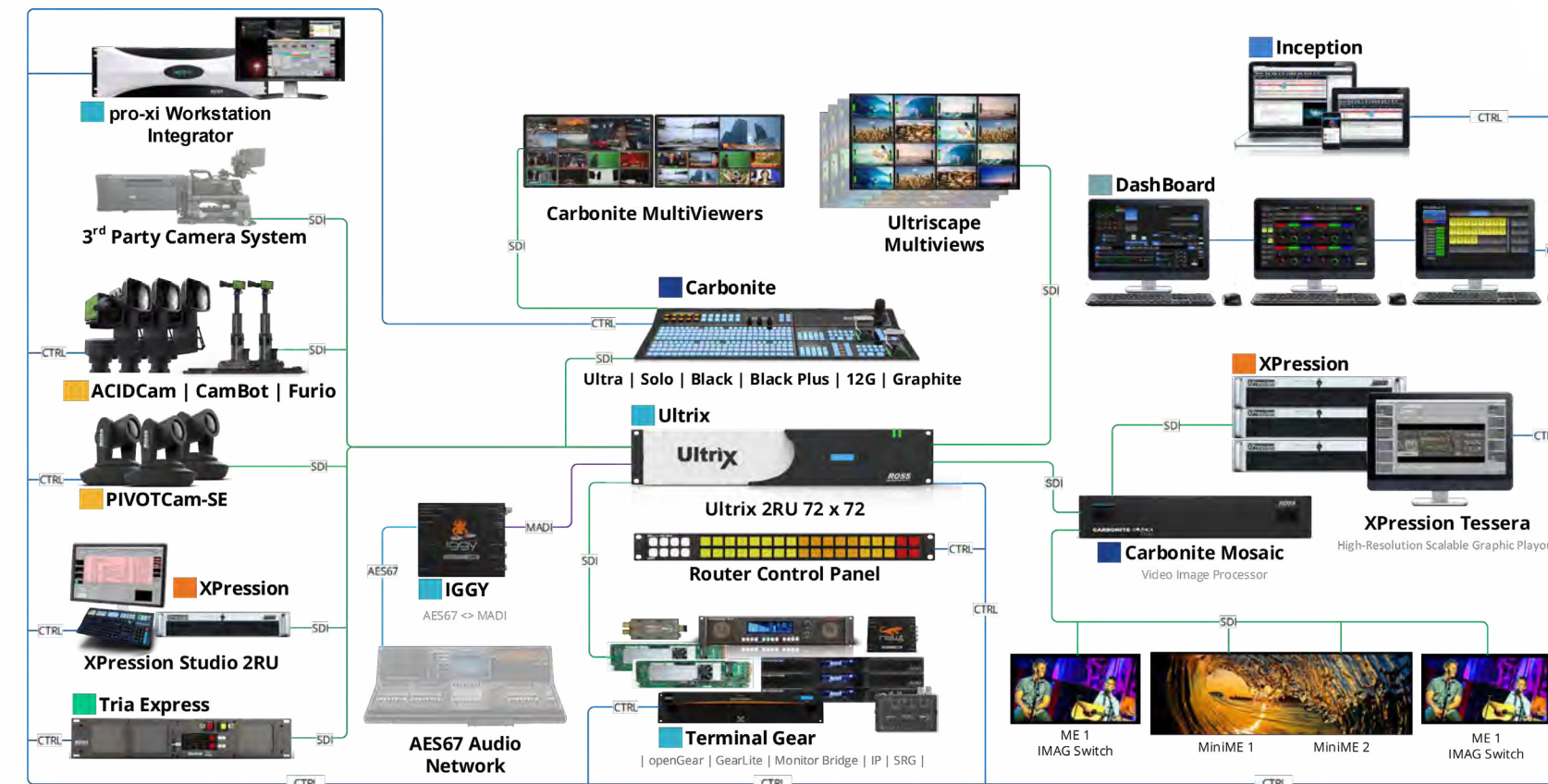
### Improve crisis communications

Be prepared to deliver time-sensitive and critical information with professional equipment quickly and easily.

### Build your brand efficiently

Tell the story of your brand with one easy to use solution that makes your staff more efficient and supports a wide variety of web and social platforms, screen sizes and more.

## ROSS CORPORATE LIVE EVENT SOLUTION



### DASHBOARD pg 28

#### Control System

- Mac, PC or Linux software included
- Control and monitor Ross products
- Add more DashBoard stations to separate out operator positions
- CustomPanels for custom operation and workflows to minimize operators
- Send RossTalk commands to DashBoard and use as a custom protocol translator

### INCEPTION LIVE pg 54

#### Live Event Management System

- Local and cloud hosted options
- Manage live event rundowns with multi-user collaboration
- Messaging and alert notifications
- Publish to web and social
- Search for user generated content on social media and push directly to onscreen graphics

### XPRESSION pg 60

#### Graphics Systems

- Robust graphic and clip playback
- Dynamic data-driven graphics including social media with Ross Inception
- Tessera licenses allow for large canvases by linking multiple XPression engines together
- Software-defined production licensing model with no hardware changes
- RossTalk and native API integration to DashBoard

### PRO-XI pg 70

#### Workstation Integrator

- Simultaneous monitoring and control of up to 8 computers on a single display
- Resize and reposition inside windows in real time
- Up to 2 simultaneous users or dual displays
- 99 custom layouts with instant recalls
- Scalable, live sub-windows

### ULTRIX pg 72

#### 16x - 160x UHD Routing Platform

- Software Defined Routing
- 1RU - 5RU: 16x16 to 144x144
- 12G / 6G / 3G / HD / SD
- Ultriscape: MultiViewers
- Ultrisync: 3G Frame Syncs
- Add Fiber | HDMI | MADI with SFP slots
- Up to 3072 x 3072 audio matrix
- DashBoard control + RossTalk

### CARBONITE pg 82 | GRAPHITE pg 88

- 13-36 inputs, 8-25 outputs
- 1ME - 3ME + 4 MiniMEs
- Mix and match panels, frames and all-in-one systems
- Multi-panel support
- Robust hardware
- Big switcher features
- DashBoard control + RossTalk



# DEVELOP FUTURE PRODUCTION ROCKSTARS

## EDUCATION

Training the next generation of video production professionals doesn't have to come with compromise. Teaching with industry-leading tools from Ross provides students with the foundation needed to become top industry operators.

### Teach production workflow

Ross solutions are great for teaching both traditional and modern workflows. Technology has enabled whole new ways of producing and delivering television and Ross can help modernize your curriculum to ground students in traditional methods while expanding their knowledge into new areas like automated production, augmented reality and social media.

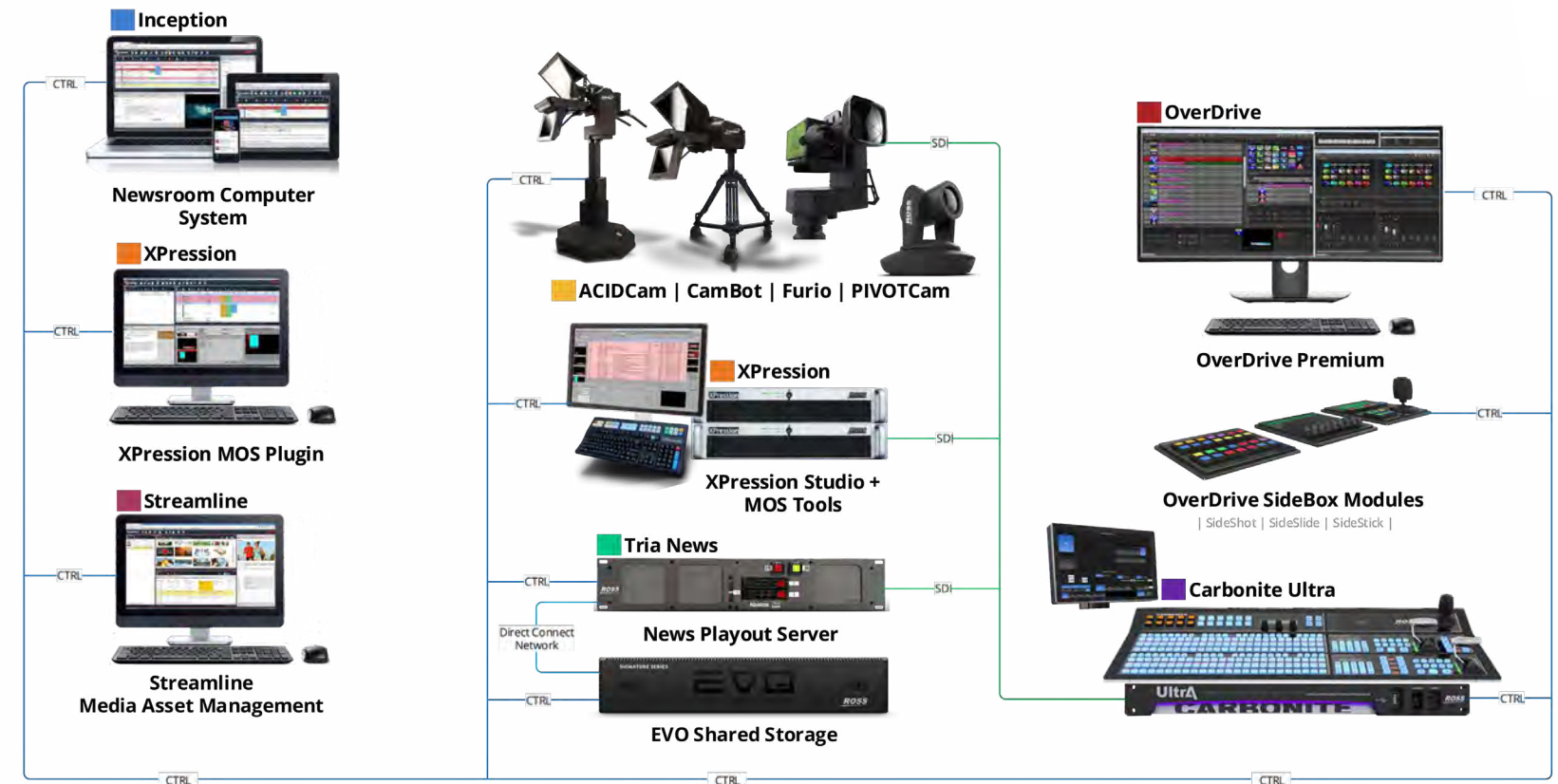
### Invest in flexibility

Easily transform a control room to suit different types of productions - from news to sports to live auditorium productions and everything in between. This gives students exposure to a broad range of production experiences and a path to potential job opportunities.

### Scale your solution

Ross has a deep portfolio of products, enabling you to start small and add equipment as the educational program grows. Easily add licenses / users, link chassis together, unlock features and swap out hardware when it's time to expand.

## ROSS EDUCATION SOLUTION



### STREAMLINE pg 36

#### Media Asset Management

- Organize assets for graphics and for video production
- Browser-based interface for easy access
- Local and cloud hosted options available
- Work order management available for graphics workflows
- Placeholders available for graphics and production workflows
- Integrates with XPression, Tria News and Inception

### INCEPTION pg 40

#### Newsroom Computer System

- Local and cloud hosted options
- Manage live event rundowns with multi-user collaboration
- Messaging and alert notifications
- Publish to web and social
- Search for user generated content on social media and push directly to onscreen graphics

### OVERDRIVE pg 46

#### Automated Production Control

- #1 automated production control system
- Control all devices for flawless production execution
- Full MOS support
- Control both Ross and 3<sup>rd</sup> party devices

### ACIDCAM | PIVOTCAM CAMBOT | FURIO pg 48-58

#### Camera Motion Systems

- Wide range of PT / PTL / XY pedestals and tracked systems
- Unified SmartShell control system
- MotionDirector live correction during recalls
- Fully integrated into OverDrive

### XPRESSION pg 60

#### Graphics Systems

- 3D real-time graphics
- Designer friendly, easy to build complex graphics
- Easy to use and operate
- Full MOS integration
- Software-defined to add channels and features as needed

### TRIA NEWS pg 66

#### News Playout Server

- Built for news production
- Multiple codec support
- MOS compliant when paired with Streamline
- 1 input and 4 outputs
- Integrates with SAN storage

### CARBONITE ULTRA pg 84

#### Production Switcher

- Highly popular mid-sized production switcher
- Easy to learn and operate
- Big switcher power at a fraction of the price
- Robust hardware with multiple panel and frame options



# PRODUCTIONS IN A LEAGUE OF THEIR OWN

## ESPORTS

The eSports world has exploded, as have the scale and demands of productions supporting this major industry. Working closely with leading eSports companies, Ross is pioneering the development of unique eSports oriented production solutions. Whether online battles, small venue, or full arenas, Ross offers eSports solutions to fit them all.

### Bring the sizzle

Deliver the excitement and experience of the game to your viewers with a world class production. Captivate fans with game characters and environments brought to life through augmented reality and virtual sets. Ross brings the best of live sports and broadcast production technology to the task of putting on an amazing eSports event.

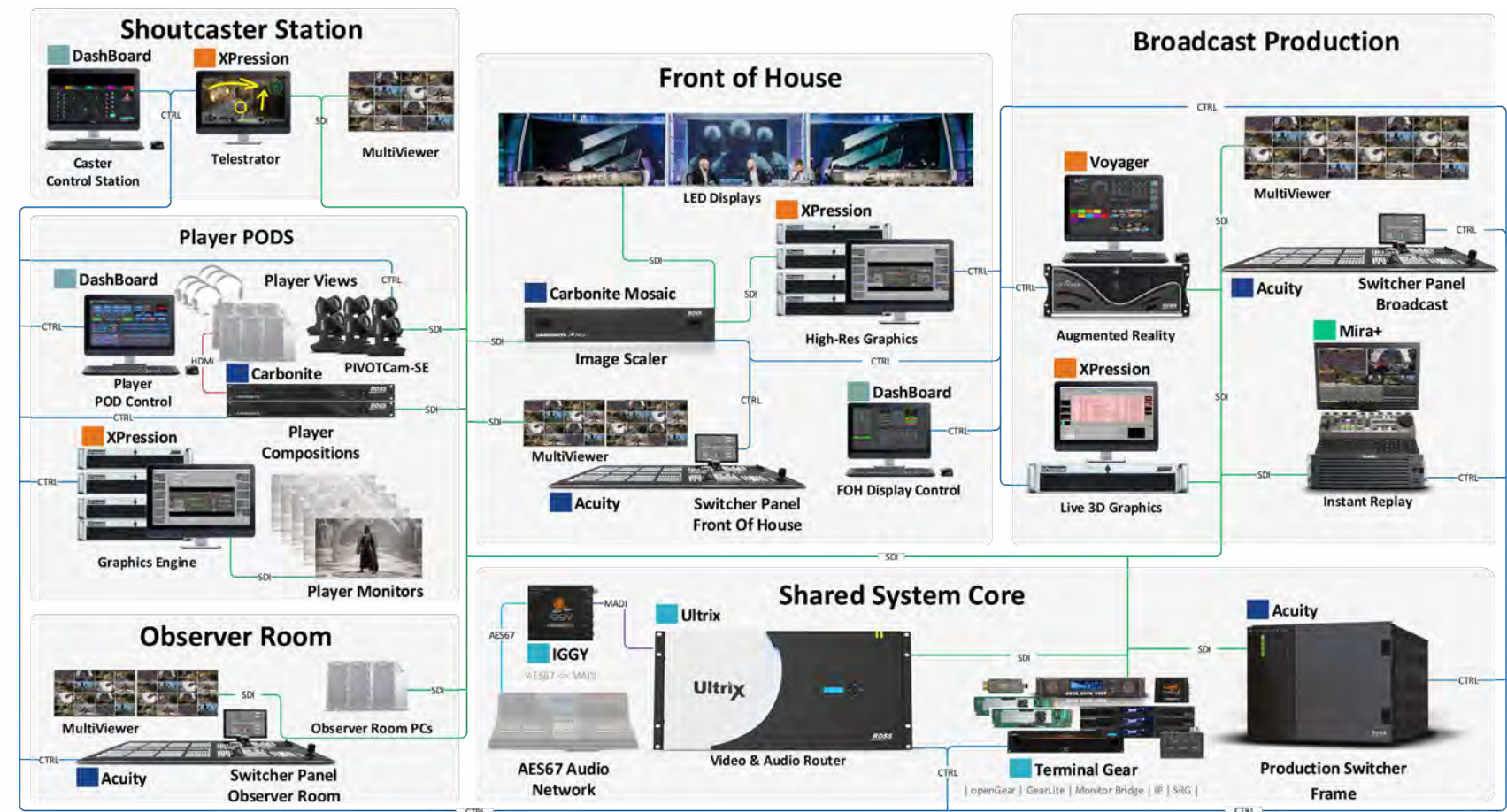
### Unify the production

Bring the operation all together with a tightly integrated workflow. Ross solutions provide more efficient use of equipment and simplified operation supporting the key elements you need including Shoutcaster, Player Pods, Observer Rooms, Player Streams, Front of House screens and Broadcast & Streaming outputs. Our eSports-optimized DashBoard control panels automate workflow, offering simplified customized operation in the exact places you need it.

### Choose a great partner

Ross technology has a proven track record of product performance in the most demanding live production applications gained from over 45 years of experience. Well known for top-notch technical support, you can count on Ross to be there when you need it most.

## ROSS ESPORTS SOLUTION



### DASHBOARD pg 28

#### Control System

- Runs on any PC on the network
- Build easy to use touchscreen based custom workflows for any operator
- Control and monitor Ross products
- Ross-purchased panels for robust turnkey applications

### MIRA+ pg 64

#### Replay Server

- Robust server architecture
- Lightning fast clip recalls
- Easy-to-use replay interface with no mouse clicks necessary
- Advanced playlist support
- Multi-user configurations
- Fully configurable bi-directional channels

### ULTRIX pg 72

#### 16x - 160x UHD Routing Platform

- Up to 160x160 Software-Defined Routing
- Full MADi audio integration
- Embed any audio to any output, useful for individual player streams
- Optional 3G frame syncs on every input
- Clean / quiet switch on every output
- Non-blocking MultiViewer with up to 100 PiPs

### XPRESSION pg 60 | VOYAGER pg 92

#### XPression Graphics Systems

- Insert: Graphics, Multi-Engine Canvas or Live Telestrator
- Quick recall of data-backed graphics

#### Voyager Unreal-Based Render Platform

- Live Unreal Engine for broadcast use
- Full augmented reality when paired with tracking data and UX virtual control system

### ACUITY pg 80 | CARBONITE pg 86

#### Acuity Production Switcher

- Large I/O and up to 8 ME's
- Superior device control and automation
- Supports up to 9 panels per frame

#### Carbonite: Mosaic

- Large screen display processor

#### Solo

- Compact, cost effective, small switcher with HDMI inputs and built in frame syncs





# REALIZE OPEN GOVERNMENT

## GOVERNMENT

Broadcast technology is increasingly being used by national agencies, state governments, and local communities to make information more accessible to constituents. City, state and national governments require different levels of scalability. Ross has a cost-effective solution for every size.

### Produce efficiently, accurately and flexibly

Make training staff and getting on air quick and easy with a seamlessly integrated solution from Ross. Control cameras, graphics, and switching all from a responsive and intuitive user interface. Keep the production flexible and engaging by quickly changing camera angles, shots, and graphical content with no added complexity.

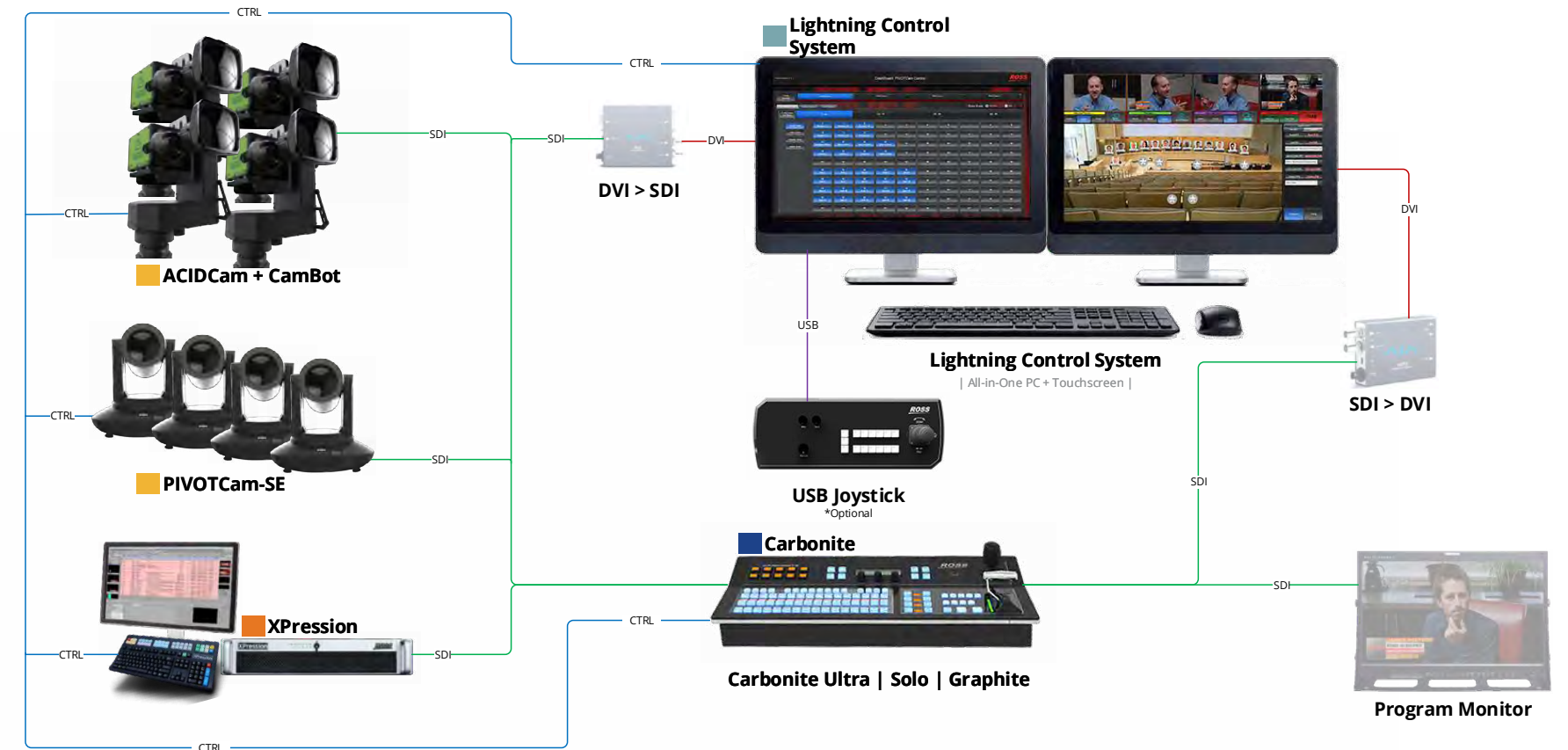
### Maximize budget

Single user workflows allow for coverage of more committee meetings and assemblies making sure nothing gets missed because of operational budgets or staffing limitations.

### Choose a proven solution

By choosing Ross you'll be in good company. Ross provides the technology that legislatures all over the world rely on.

## ROSS GOVERNMENT PRODUCTION SOLUTION



### LIGHTNING pg 32

- Control System**
- Easy-to-use DashBoard interface
  - Fast, interactive touchscreen interface with live video and only 1 frame of delay
  - Control cameras, graphics and switching from a single interface
  - Pair with a microphone system for added automation

### XPRESSION pg 60

- Real-Time 3D Motion Graphics**
- High-quality graphics
  - Unlimited layering on a single output
  - Full data integration from Lightning
  - XPression Live | Prime | Studio versions to fit any budget
  - Intuitive designing of complex graphics

### ACIDCAM | PIVOTCAM CMBOT pg 48-50,58

- ACIDCam + CamBot Robotic Camera System**
- Robust camera + robotics integration
  - High-quality images and on-air moves
  - Unlimited presets when paired with Lightning
- PIVOTCam PTZ Camera**
- Cost-effective camera with IP control and POE makes mass deployment easy
  - Great low light performance
  - Unlimited presets when paired with Lightning

### CARBONITE pg 82

- 1 - 3 ME Production Switcher**
- A range of panels and frames to fit any budget
  - Robust hardware for long lasting solutions
  - Can be ran under Lightning or operated standalone
  - Easy to learn with an intuitive design



# BUILD YOUR SPIRITUAL COMMUNITY

## HOUSE OF WORSHIP

The modern world of worship effectively leverages the use of technology for spiritual purposes. Large and small venues are incorporating IMAG, online, and multi-campus productions to reach a broader believer-base cost effectively.

### Amplify your spiritual message

Display and update pertinent speaker and sermon details including passages and hymns in real-time, or bring in remote guest speakers from across the globe. Using video production and social media tools, combined with broadcast-quality, dynamic graphics and interactive content, you will be able to create the ultimate worshiper experience.

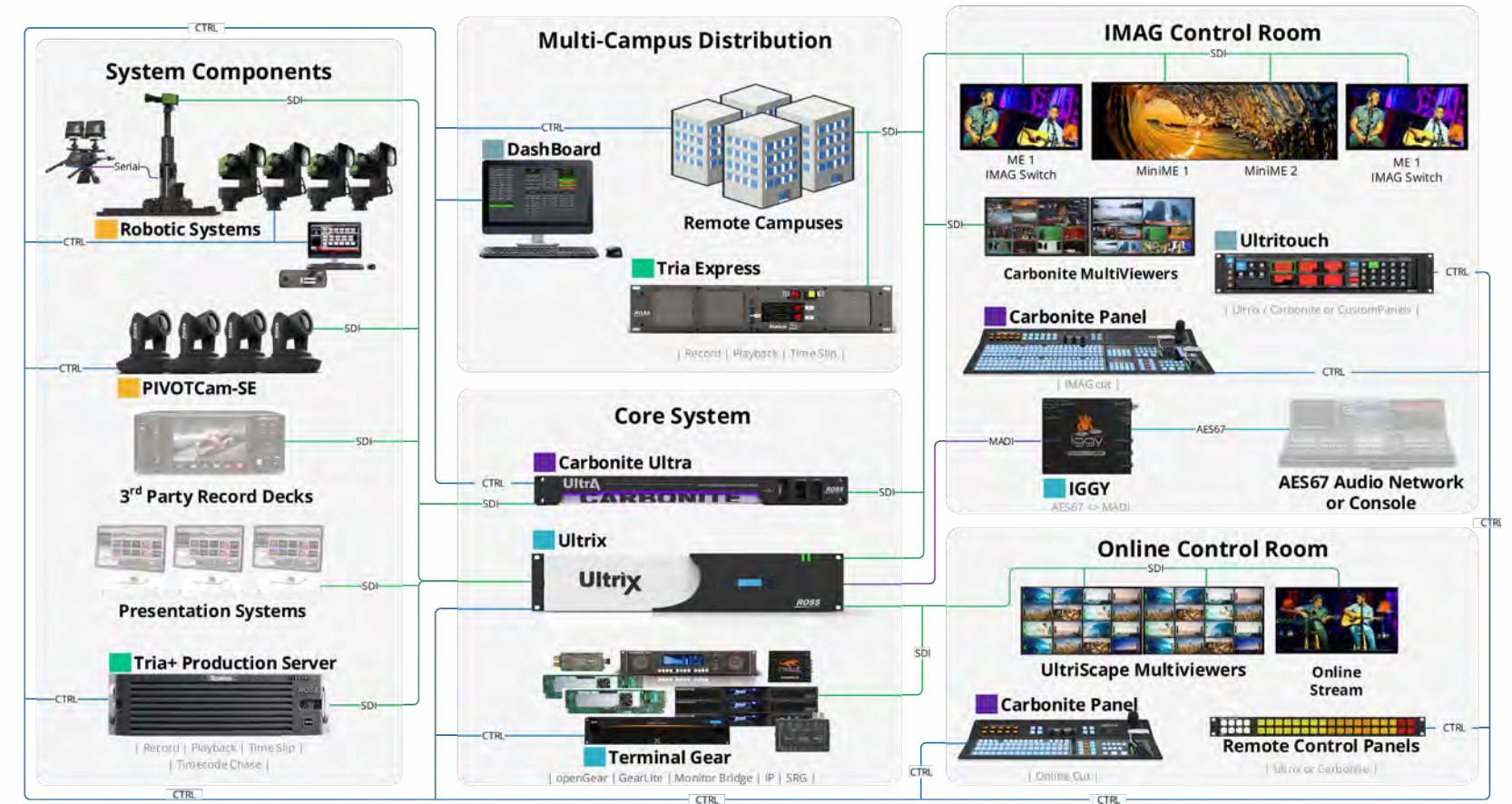
### Reach a wider congregation

Reach local and remote believers including satellite campuses easily and effectively. Reach overflow viewers in adjoining rooms with live broadcast of main sanctuary proceedings.

### Make it easy

The Ross House of Worship production solution with unified device control is easy to set up and intuitive to use. Realize expert productions from your volunteer community.

## ROSS HOUSE OF WORSHIP SOLUTION



### DASHBOARD pg 28

#### Control System

- Mac, PC or Linux software included
- Control and monitor Ross products
- Monitor devices across campus networks
- Build CustomPanels for simplified workflows controlling multiple devices including 3<sup>rd</sup> party
- Ultritouch control panel for router control or custom panel operation

### PIVOTCAM pg 50

#### Motion Camera System

- Control from DashBoard and Carbonite
- Power over ethernet
- Genlock-able

### FURIO pg 52 | CAMBOT pg 58

#### Robotic Systems

- High-speed live event camera system with Furio Live
- CamBot and Furio PT heads
- Furio studio rail and SkyDolly system

### TRIA+ | TRIA EXPRESS pg 66

#### Video Servers

- Hardware-based video server for frame accurate playback with multiple channels of audio
- Multiple frame sizes available
- Rock solid recording capabilities
- Time slip capabilities for multi-campus production
- Supports timecode chasing

### ULTRIX pg 72

#### 16x - 160x UHD Routing Platform

- Software-defined routing, MultiViewers and frame syncs
- 1RU - 5RU: 16x16 to 160x160
- Full audio matrix including audio shuffling and non-blocking MADI audio
- Clean switch on every output
- DashBoard control + RossTalk

### CARBONITE ULTRA pg 84

#### Production Switcher

- Multiple frame and panel sizes including software control with DashBoard
- Up to 3 control surfaces per frame
- Software-upgradeable ME's, frame syncs, and MultiViewers
- Powerful custom controls for executing complex production elements seamlessly
- Easy to learn and volunteer friendly



# COST EFFECTIVE PRODUCTIONS ON-THE-GO

## MOBILE

The amount of content being captured has only increased, from large national and international events to regional and local events. Ross has been on the forefront of redesigning the mobile market in a cost-efficient way that doesn't compromise quality. You can achieve that big-budget production look at a fraction of the price.

### A new standard in mobile productions

The openTruck initiative from Ross has paved the way for new ideas and workflows. Using partnerships with equipment manufacturers, system integrators, truck-builders, mobile producers, and freelance operators Ross has redefined truck production capability. This blueprint enables full-featured mobile productions with network-quality output, ensuring consistent performance and results—every time, all the time.

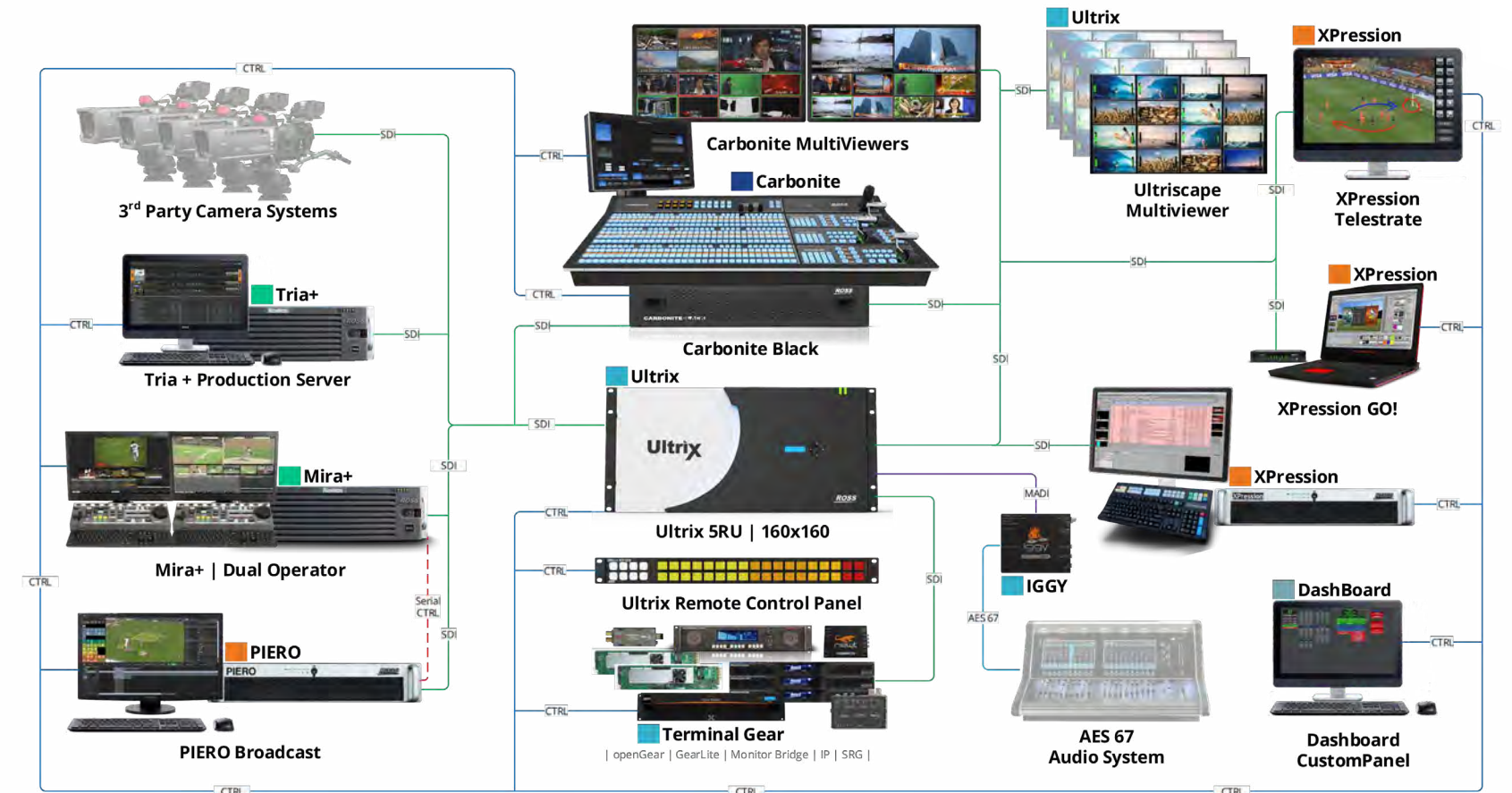
### Big productions on-the-go

A suite of best-in-class production tools from Ross include production switching, real-time motion graphics, flexible control, content management, versatile signal processing, and compact routing solutions. These solutions are well suited to the special needs of the mobile production environment, with compact sizes, low power consumption, flexibility of use, and ease of set-up and configuration.

### Built for life on the road

Planning mobile space for future expansion, extra operator stations, and rental equipment can be a compromise. When space is limited, equipment designed for high-density is important. Ross products are not only built to be compact and highly-efficient, but also robust, and up to the challenges of life on the road.

## ROSS MOBILE SOLUTION



### DASHBOARD pg 28

#### Control System

- Mac, PC or Linux software included
- Control and monitor Ross products
- Monitor devices across campus networks
- Build CustomPanels for simplified workflows controlling multiple devices including 3<sup>rd</sup> party

### XPRESSION pg 60

#### Graphics Systems

- 3D real-time graphics
- Full data integration from a wide variety of data sources
- Easy to use and operate
- Integrated video playback engine
- Great for: insert graphics, spot box, bug box, telestration and virtual production

### PIERO pg 62

#### Sports Graphic Analysis

- Broadcast | Live | Club versions
- Covers over 20 sports
- Touch and iPad integration
- Wide range of analysis effects
- Custom branding and graphics
- Augmented reality engine

### MIRA+ pg 64 | TRIA+ pg 66

#### Mira+ Replay Server

- Multiple operators on a single server
- Easily trade content between servers

#### Tria+ Production Server

- Robust video playout and Record
- Native video + key playback for spot box link functionality

### ULTRIX pg 72

#### 16x - 160x UHD Routing Platform

- Software-defined routing, MultiViewers and frame syncs
- 1RU - 5RU: 16x16 to 160x160
- Full audio Mux/Dmux on all SDI I/O with full MADI integration and channel shuffling
- Clean switch on every output
- Compact, robust design
- DashBoard control + RossTalk

### CARBONITE pg 82

#### Production Switcher

- 1ME - 3MEs + 4 MiniME
- Big switcher power in a mid sized design
- Easy to use and operate
- Extensive device control
- DashBoard menu control
- Easy to use custom controls for building and executing complex effects



STAY ON TOP OF THE  
**NEWS**

## NEWS

Ross delivers news production solutions for the 24/7 digital era. Viewers expect engaging and unique content delivered faster across a myriad of screens and channels including social media networks. Improve newscast quality and reduce your newsroom footprint with virtual sets, augmented reality (AR), automated production control (APC), streamlined content creation and distribution, 3rd party device integration and control.

### Never miss a story

Because news never stops, an efficient newsroom is vital. To reduce the time it takes to get a story on air, an integrated workflow paired with the most cutting-edge production technology will ensure your newsroom is running at top speed.

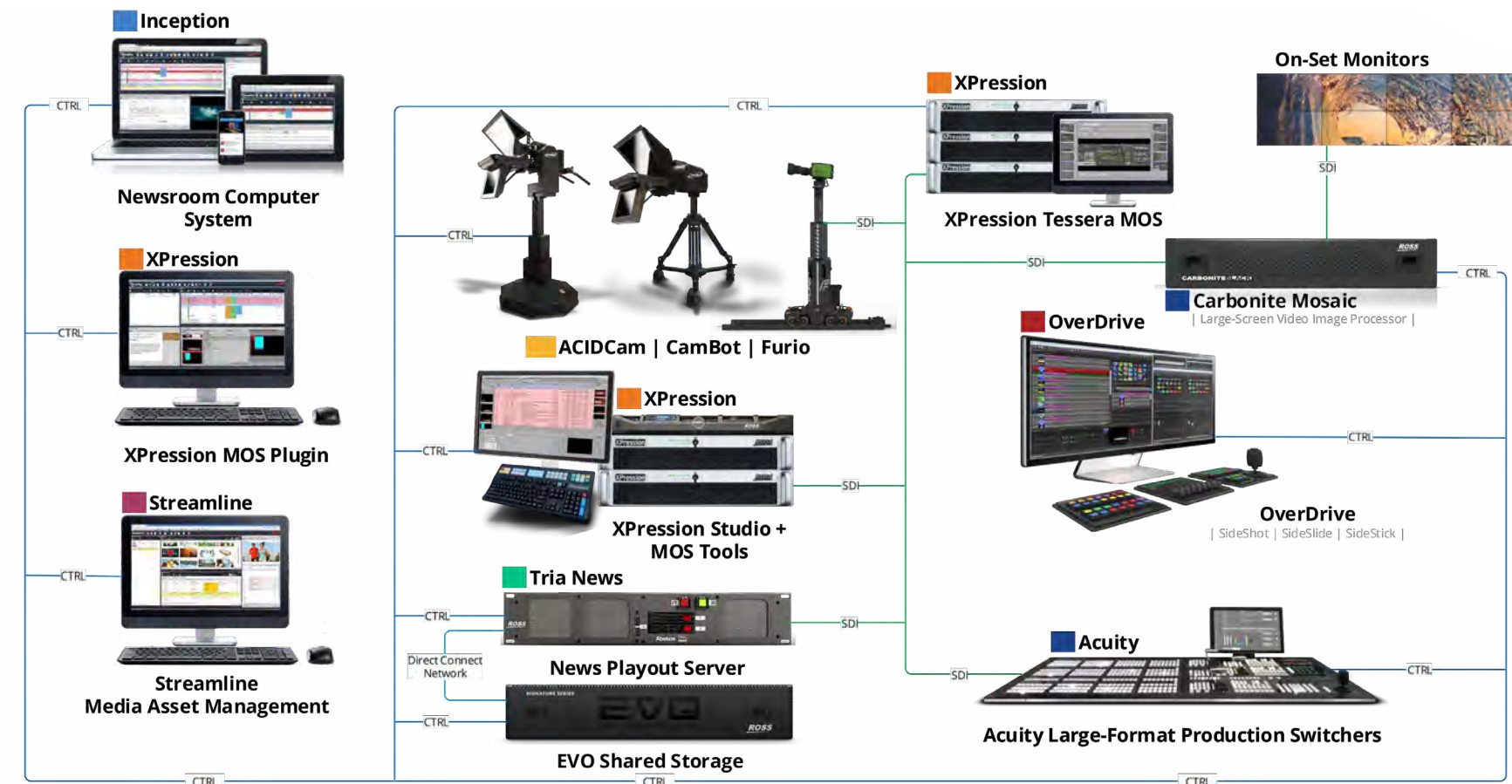
### Engage more viewers

Ross applies a unique story-based approach to easily create and package content for cross-platform distribution. Create and monetize more news content streams and produce new types of unique programming.

### Built for breaking news

Don't get scooped - Newscasts are typically scripted workflows, but, when breaking news happens it is important to have a system flexible enough to jump in and out of breaking stories. Don't sacrifice the quality of a newscast when the big stories hit.

## ROSS NEWSROOM SOLUTION



### STREAMLINE pg 36

#### Media Asset Management

- Organize assets for graphics and for video production
- Browser-based interface for easy access
- Local and cloud hosted options available
- Work order management and placeholders for asset requests
- Manage and move files between storage locations
- Integrates with XPression, Tria News and Inception

### INCEPTION pg 40

#### Newsroom Computer System

- Local and cloud hosted options
- Manage live event rundowns with multi-user collaboration
- Messaging and alert notifications
- Publish to web and social
- Search for user generated content on social media and push directly to onscreen graphics

### OVERDRIVE pg 46

#### Automated Production Control

- #1 automated production control system
- Control all devices for flawless production execution
- Full MOS support
- Control both Ross and 3rd party devices

### ACIDCAM | PIVOTCAM CAMBOT | FURIO pg 48-58

#### Camera Motion Systems

- Wide range of PT / PTL / XY pedestals and tracked systems
- Unified SmartShell control system
- MotionDirector live correction during recalls
- Fully integrated into OverDrive

### TRIA NEWS pg 66

#### News Playback Server

- Built for news production
- Multiple codec support
- MOS compliant when paired with Streamline
- 1 input and 4 outputs
- Integrates with SAN storage

### XPRESSION pg 60

#### Graphics Systems

- 3D real-time graphics
- Designer-friendly, easy to build complex graphics
- Easy to use and operate
- Full MOS integration
- Software-defined to add channels and features as needed

### ACUITY pg 80

#### Production Switcher

- Large-scale production switcher
- Long list of Ross and 3rd party device control for tight automation
- Provides the most functionality with OverDrive
- Robust hardware with multiple panel and frame options



## SPORT AND LIVE EVENTS

Today's fans and sponsors expect more. The challenge is both art and science. Ross has deep venue experience that can get you where you want to go, providing the specialized technology as well as working with you on the creative content - the solution to engaging your fans and delighting your sponsors.

### Up your creative game

Realize a grander vision, producing for your venue in new and innovative ways that are guaranteed to captivate and inform your audience. Go beyond simple graphics, animations and statistics displays, to fully 3D environments driven by real-time data and even fan-interactive games. Tie in mechanical and electrical devices like water fountains, neon signs, and stadium lightning for full venue control. Ross gives you access to experts with the know-how to make it all happen.

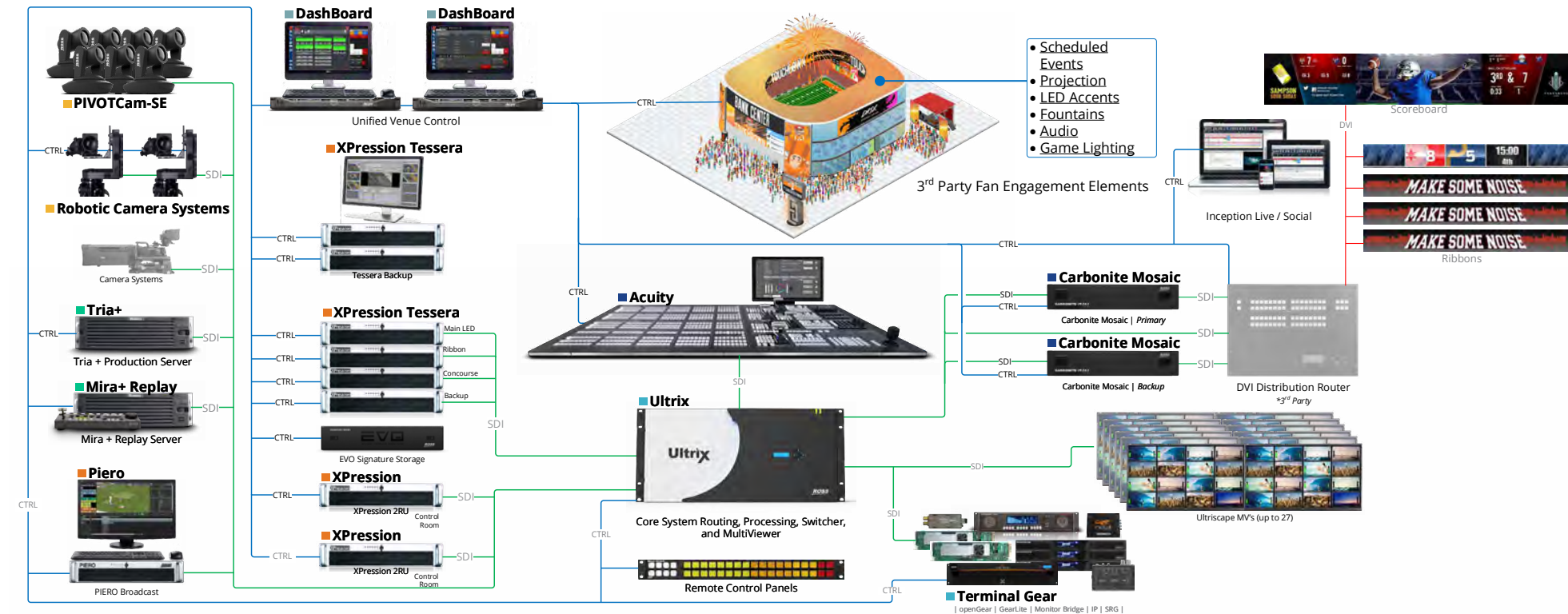
### Go big

Modern venues are incorporating massive screen sizes and higher-resolutions to integrate scoring, stats, social media, closed captioning, and more. The Ross venue solution meets this challenge with the ability to feed infinite canvas sizes across multiple screen formats of various sizes and custom shapes - all pixel perfect.

### Dazzle fans, drive revenue

Increase engagement. Increase attendance. Increase sponsorship. Keep your fans eyes on your screens and coming back for more with a top-notch game day production, made easy with a Ross solution. Deliver unrivaled impact for your sponsors with Moments of Exclusivity - branding the entire venue at the touch of a button!

## ROSS SPORTS VENUE SOLUTION



### DASHBOARD pg 28

#### Control System

- Unified venue control: Video production, LED display, and game day elements
- Mac, PC or Linux software included
- Customizable user interfaces (unique per operator position / function)
- RossTalk and native API support protocols to Ross and 3<sup>rd</sup> party

### XPRESSION pg 60

#### Graphics Systems

- Single solution: insert GFX, LED playback, clips / effects, concourse branding L-bar, telestration, augmented reality and unlimited canvas /resolution support with Tessera
- HDR capable
- Software defined production: upgrade from single to 4 channel systems with license
- RossTalk and native API integration to Dashboard

### PIERO pg 62

#### Sports Graphic Analysis

- Broadcast | Live | Club versions
- Covers over 20 sports
- Touch and iPad integration
- Wide range of analysis effects
- Custom branding and graphics
- Augmented reality engine

### MIRA+ pg 64 | TRIA+ pg 66

#### Mira+ Replay Server

- Feature rich, intuitive operation
- Dual user configurations
- Playback over network on multiple Mira's
- 1080p native | Super slow mo

#### Tria+ Production Server

- Lightning fast clip recalls
- Robust hardware
- Multiple codec support

### ACUITY pg 80

#### Production Switcher

- Unmatched devices control of Ross and 3<sup>rd</sup> parties
- Up to 8.5 MEs and 9 control panels
- Input and output HDR conversion
- Quadlink UHD and 12 gb/s SDI
- Evertz IP I/O cards or Raptor based IP gateway support

### CARBONITE MOSAIC pg 98

#### Multi-Screen Image Processor

- Large screen video image processor (20,736,000 pixels)
- Up to 10 discrete canvases
- Low latency (1 frame delay)
- 36 inputs x 22 outputs
- 5 layer per canvas
- Internal media playback
- RossTalk protocol support



# REAL WORLD VIRTUAL PRODUCTION

## VIRTUAL STUDIO

Today's technology can produce a hyper-realistic virtual environment. To obtain best results a compelling 3D design with precision camera tracking and calibration are essential. A Ross end-to-end virtual solution provides the highest level of quality with an easy-to-use workflow and consistent results.

### Tell better stories

Wow your viewers by overcoming the limitations of traditional studio environments. Get viewers to tune in longer by showing segments with captivating content like an augmented reality tornado. Create stories with multiple virtual monitors, floating augmented reality elements, and customizable virtual sets to enhance your weather, sports, news, elections, and talk / variety shows.

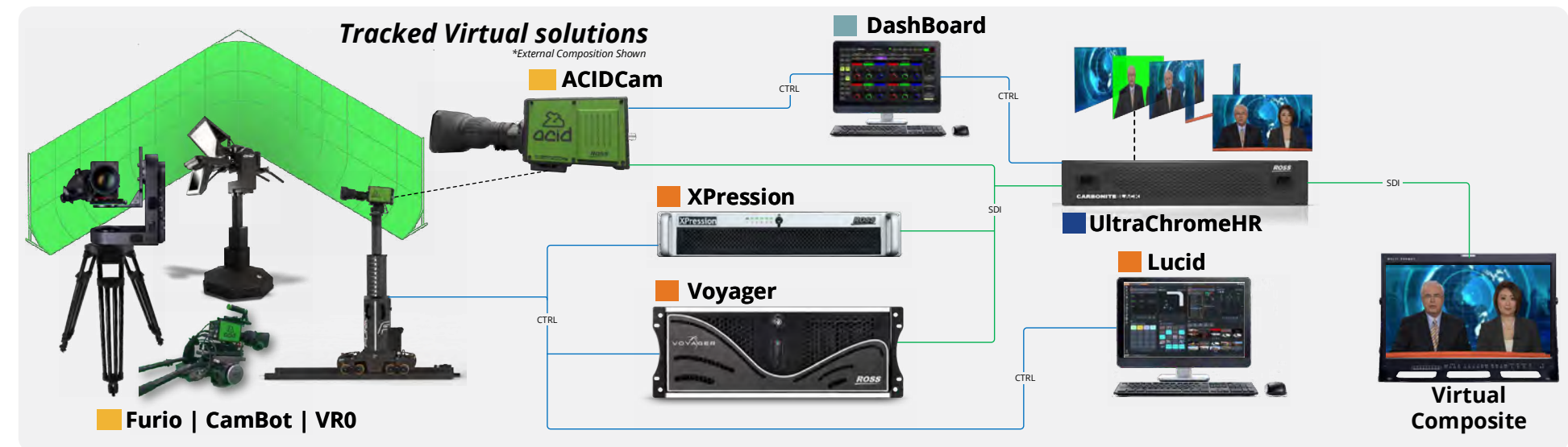
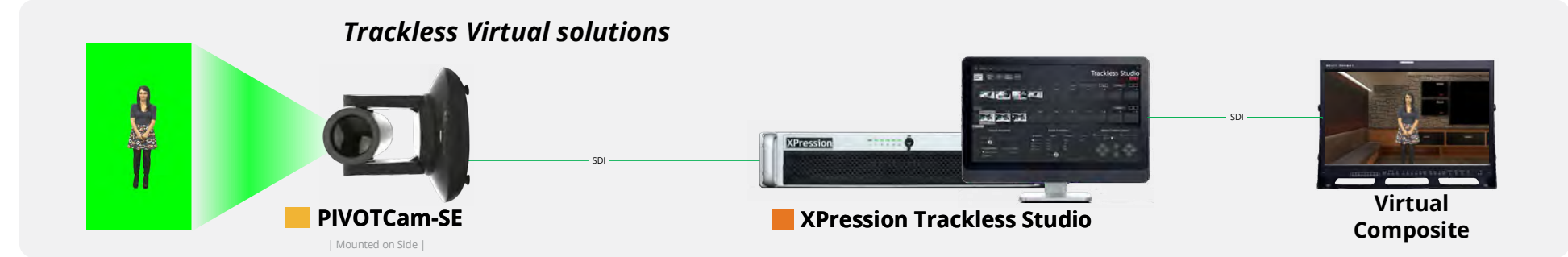
### Do more for less

Virtual production allows for a higher level of ROI. Deploy virtual solutions in small spaces which require fewer physical set pieces and less storage. Utilize "blended" environments that combine the best of traditional physical design and virtual design to eliminate the need for video walls and on-set monitors.

### Increase Flexibility

Quickly change a set, deploy a new look or share studio space with no downtime for construction, moving set pieces or competition for physical set space. Create flexible production teams that execute a variety of tasks contributing to a high-quality, lower-cost production.

## ROSS VIRTUAL SOLUTION



### ACID CAM pg 48 | PIVOTCAM pg 50

- ACID CAM**
- AC-H200 - 1080p / AC-Z50 1080i
  - UC 0:4:4 output with ultra low noise
  - Full Dashboard control
  - HDR capable (AC-H200 only)

- PIVOTCAM**
- 1080p | Genlock | POE
  - Dashboard controlled

### FURIO | CAMBOT | VRO pg 52-58

- Furio**
- Tracking PT heads, lifts, and dolly systems
- CamBot**
- Heavy duty robust XY pedestals with tracking data
- VRO**
- Tracking data module for encoded tripods and lenses

### XPRESSION pg 60 | VOYAGER pg 92

- XPression Graphics Systems**
- User friendly design and playout system
  - MOS capable virtual engine
  - Built for dynamic data driven graphics
- Voyager Unreal-Based Render Platform**
- Live Unreal Engine for broadcast use
  - Support for both external and internal compositing

### UX pg 90

- Virtual Solution Control**
- Control all camera chains from one interface
  - Quickly build and save tracking calibrations
  - Trigger assets, camera moves and more with RossTalk triggers
  - Newsroom and data integration

### ULTRACHROMEHR pg 96

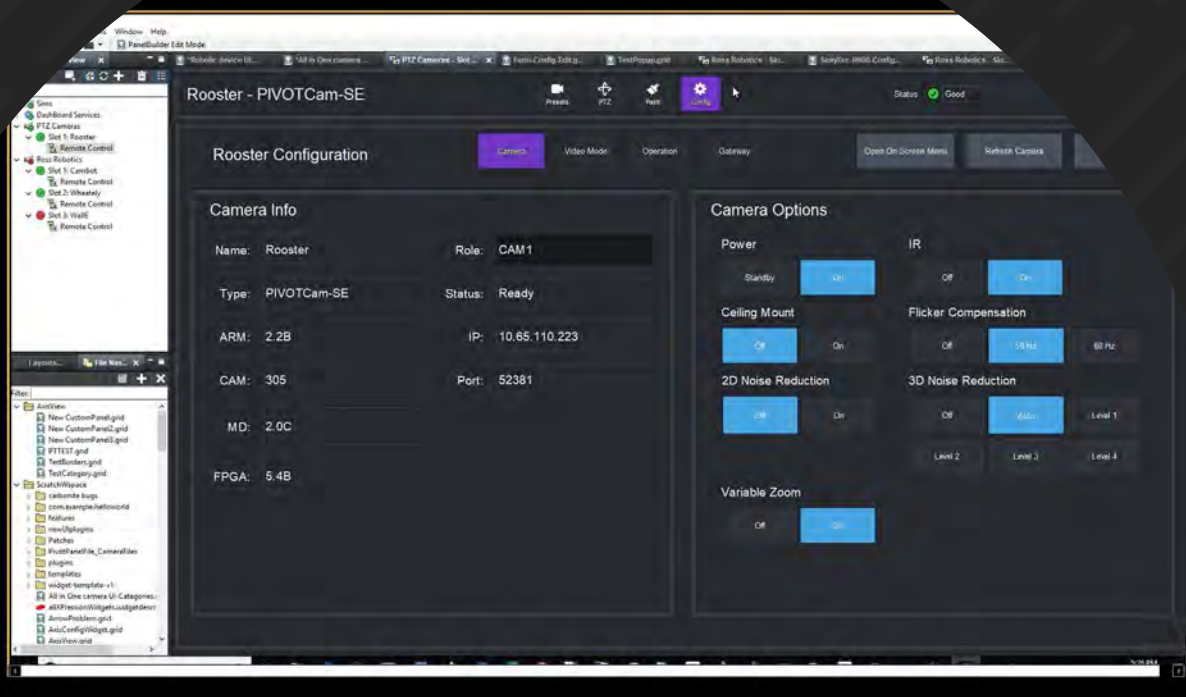
- Multi-Channel Chroma Keyer**
- Up to 4 chroma keys per system
  - Full 4:4:4 chroma keying from ACID
  - Built in input delay for up to 8 inputs
  - Full compositing of camera and renders
  - Output fill and key for internal composition
  - Dashboard control
  - Supports RossTalk





## DASHBOARD FACILITY CONTROL SYSTEM

DashBoard is an open software platform from Ross for facility control and monitoring that enables users to quickly build unique, tailored CustomPanels that make complex operations simple.



DashBoard is a software application that provides control and monitoring to hundreds of products from more than 80 partners within the openGear and DashBoard Connect ecosystem, and of course most Ross products. Its ability to craft application specific solutions across this breadth of products is what makes DashBoard so special.

### CUSTOM

DashBoard PanelBuilder is a powerful tool used for creating custom interfaces for products from Ross, and partner companies. CustomPanels built with PanelBuilder are used by major broadcasters and large sports venues around the world.

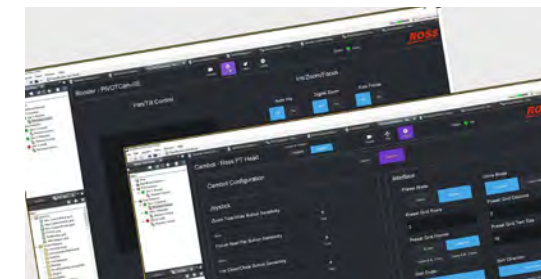
### OPEN

The Emmy®-award winning openGear platform is designed to work with DashBoard as the front end UI for the more than 80 openGear partners using OGP (openGear Protocol).

### FREE

Download DashBoard for free to start building panels and monitoring your openGear devices. Training and professional services are available to help you get the most out of DashBoard and your production equipment.

OPEN. CUSTOM. CONTROL.



### CONTROL & MONITORING

DashBoard is a primary control system from Ross. It is the only open application that allows full and complete native control running on any compatible computer system and / or Ultritouch. DashBoard panels automate workflow and offer simplified operation to any production.



### PANELBUILDER™

Integrate control of multiple devices into a single, logically laid-out control surface and allow your operators to focus on the production, not on the equipment being used.



### DASHBOARD CONNECT™

DashBoard Connect opens the DashBoard control and monitoring system beyond openGear® frame based products. DashBoard Connect is for products that benefit from integration to the DashBoard control system. With DashBoard Connect, any equipment that has an Ethernet connection can appear in DashBoard.



## ULTRITOUCH TOUCHSCREEN CONTROL SYSTEM

Ultritouch is a no-compromise, 2RU pr 4RU touchscreen-based facility control panel powered by DashBoard and guaranteed to fit your workflow.



Have you ever wished you could build a control panel to fit your workflow without compromising? So did we. That's why we created Ultritouch - allowing easy creation of custom control panels designed around your needs.

### TOUCHSCREEN OPERATION

SmartTouch™ functionality provides traditional control with modern workflows.

### SYSTEM-WIDE CONTROL

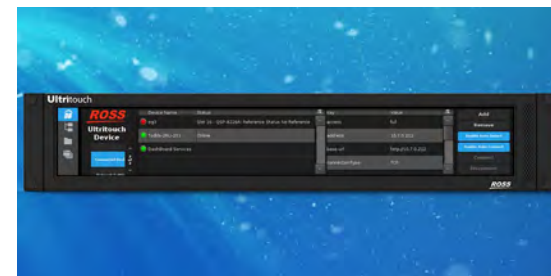
Control your Ross solutions from a single hardware based panel. Open control with DashBoard provides full customization based on user need.

### ROBUST

Redundant power, redundant control ports, HDMI output, USB 2.0 connectivity, audio speakers and a tough gorilla glass touch surface combine to provide a complete control and monitoring solution.

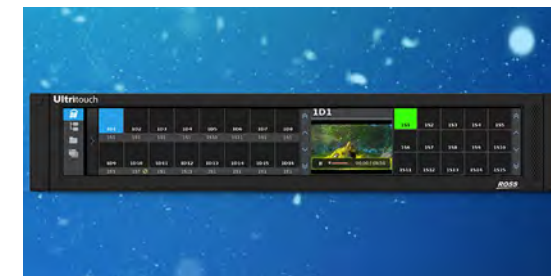
## THE NEXT WAVE IN CONTROL PANELS

# Ultritouch



### EASY SYSTEMIZATION

Basic DashBoard connectivity and custom panels brings the ability to control Ross products the way you do now. Optional software licenses allow for more advanced and targeted control of specific devices and workflows.



### ADAPTS TO YOUR WORKFLOW

Ultritouch adapts to your needs. It can be set up quickly to perform traditional applications like router, multiviewer, and signal processing control. But it's real power is the ability to do virtually anything you want, in the way you want to do it. Your panel, your workflow, own it.



### INTEGRATED DESIGN

Any device that supports OGP protocol and can be discovered in the Dashboard menu tree can be configured to be controlled with Ultritouch.



## LIGHTNING MEETING CONTROL SYSTEM

Lightning is the world's most intuitive and flexible meeting control system, perfect for legislative assembly, house of worship, education and corporate productions.



Lightning was designed to make the task of producing meeting and assembly proceedings much easier, fully controlling cameras, production switchers and graphics from a simple graphical user interface. It is ideal for single-operator use.

### ROOM FLEXIBILITY

Adjust to changes that happen quickly and easily. Lightning is able to easily accommodate changes, such as switching seating arrangements, without costly service contracts or fees.

### OPERATOR EFFICIENCY

Simplified control of broadcast equipment and automation means one operator can effectively produce an entire high-quality broadcast, without compromising unique workflow aspects of the location.

### EMPLOYEE GROWTH

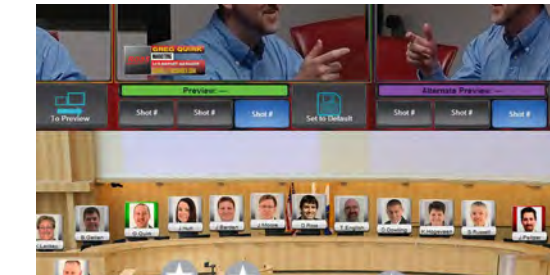
Produce more meetings with available staff enabling shorter shifts, reduced operator fatigue, and ability to accomplish other important tasks with an improved overall work/life balance.

## SIMPLIFIED MEETING BROADCASTS



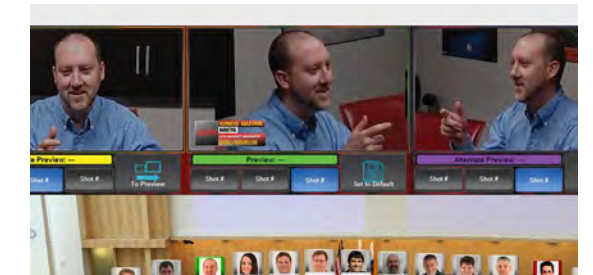
### TAILORED TO YOUR FACILITY

Load your room background and position representatives relative to where they are actually seated.



### INTUITIVE GUI

Just touch a representative and cameras move to prepare the next shot.



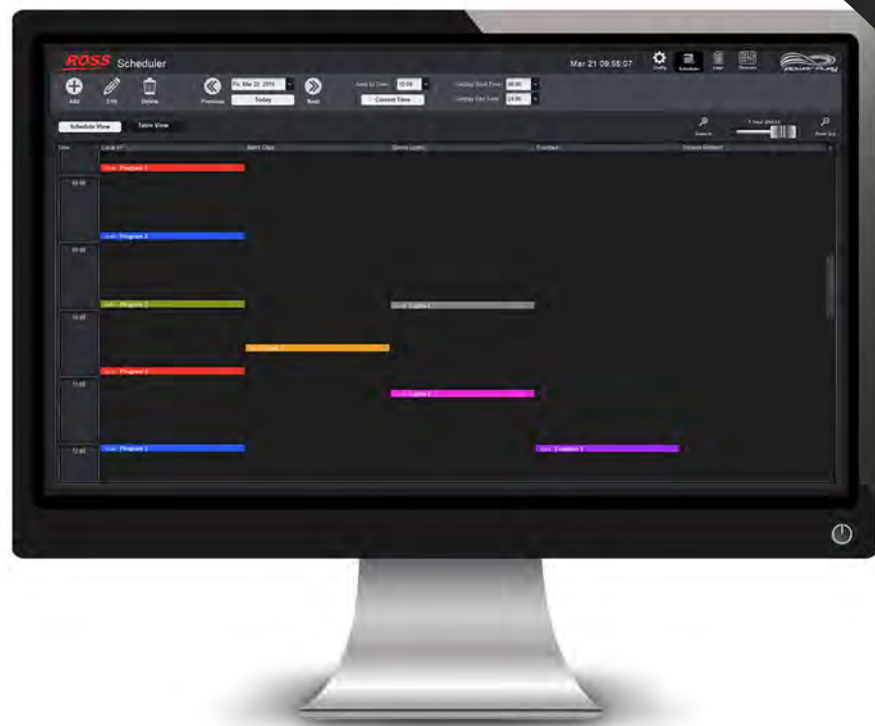
### MULTIPLE CAMERA OPTIONS

Three preview cameras, each with three quick shot recalls, are available to best capture next speaker.



## POWERPLAY EVENT CONTROL SYSTEM

PowerPlay is an Event Control System that allows users to centralize device control to a single server and simplify playout and scheduling of production and environmental devices for any live event – venue, corporate, faith-based, or broadcast.



With PowerPlay, event playback can be fully automated based on a time-of-day schedule. The system is perfect for any scenario where timed and scheduled events need to be automatically triggered before, during, or after a live event. PowerPlay is the ideal solution for pre-event and post-event content, digital signage, advertisements, and more.

### CENTRALIZED DEVICE CONTROL SOLUTION

PowerPlay is built using the DashBoard framework and offers device control that is centralized on powerful enterprise-class servers.

### RENOWNED DEVICE CONTROL LIBRARY

Out of the box, PowerPlay can integrate with XPression Graphics, XPression Clips, Abekas video servers and DashBoard custom panels. You can also add an optional CustomControl engine to access and control hundreds of 3rd party devices.

### FULLY SCHEDULED AUTOMATION

With the ability to schedule digital signage, advertisements, and time-of-day events, PowerPlay provides you with the power to monetize your production and engage audiences more efficiently.

## SIMPLIFYING LIVE EVENTS



### SCHEDULER

Using the Scheduler feature, you can trigger events at specific times and designate them as one-time or recurring events. You can also easily import and export schedules and view scheduled events in a simple 'outlook-like' format.



### DEVICE BROWSER

Each device output is browsable, searchable, and can be manually triggered in a common interface.



### DEVICE MANAGER

The Device Manager allows you to easily define, manage, and configure main and backup devices.



## STREAMLINE GRAPHICS MEDIA ASSET MANAGEMENT

Streamline Graphics combines the entire asset management process into a single platform, providing everyone from graphic artists to journalists easy access to existing assets and collaborate on new content.

Streamline Graphics is designed to pair with the XPression motion graphics workflow to make finding the right image or video faster and easier than ever. Increase graphics usage and improve accuracy using Streamline Graphics to create a searchable database of assets and (optional) approval workflows.

### IMPROVE COMMUNICATION

Utilize the built-in work order management system and user messaging capabilities to increase communication between newsroom staff and your graphics team. Users can upload requests, track progress and provide feedback without leaving the user interface.

### ACCESS AND ARCHITECTURE

Streamline Graphics requires no software installs on client machines. This increases the flexibility of devices that can be used to create content and decreases the amount of time it takes to perform upgrades. Streamline Graphics can be accessed from Mac and PC platforms on a variety of web browsers.. It is also accessible directly inside the XPression MOS plugin.

### FLEXIBILITY AND SCALE

From Streamline Graphics to Streamline Enterprise, there is a feature set and configuration model for the smallest newsrooms to the world's largest broadcasters. With a scalable feature set and both purchase and subscription models available, Streamline can empower any newsroom regardless of size.

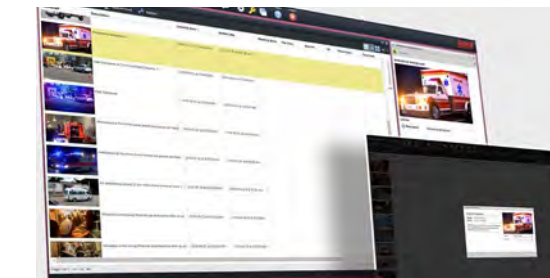
## ORGANIZING CREATIVITY & OPTIMIZING ABILITIES



Asset Thumbnail	Name	Status	Requested	Due
	Soccer Goalie...	Assigned	2014-08-26 at 4:07:23 PM (11 minutes ago)	2014-08-26 at 4:38:00 P (10 minutes)
	Aerial image of R...	Assigned	2014-08-26 at 4:05:43 PM (13 minutes ago)	2014-08-26 at 4:42:00 P (28 minutes)
	Jogging	Completed	2014-08-26 at 4:05:06 PM (10 minutes ago)	2014-08-26 at 6:31:00 P (2 hours, 11 minutes)
	test	Assigned	2014-08-24 at 1:28:34 PM (2 days, 2 hours, 59 minutes ago)	2014-08-29 at 12:00:00 (2 days, 7 hours, 40 mi)

### WORK ORDER MANAGEMENT

Streamline Graphics includes a powerful Work Order Management system that allows newsroom staff to request, track and provide feedback on required assets. Requests can include notes and supporting documents to help the graphic team understand exactly what is needed. Work orders can be assigned to a graphics artist and deadlines can be tracked with a customizable dashboard.



### INTEGRATED IMAGE LIBRARIES

Because Streamline Graphics is integrated into the XPression MOS plugin, users can browse, download and select images from third party libraries like MGN Online and AP GraphicsBank directly from the plugin.



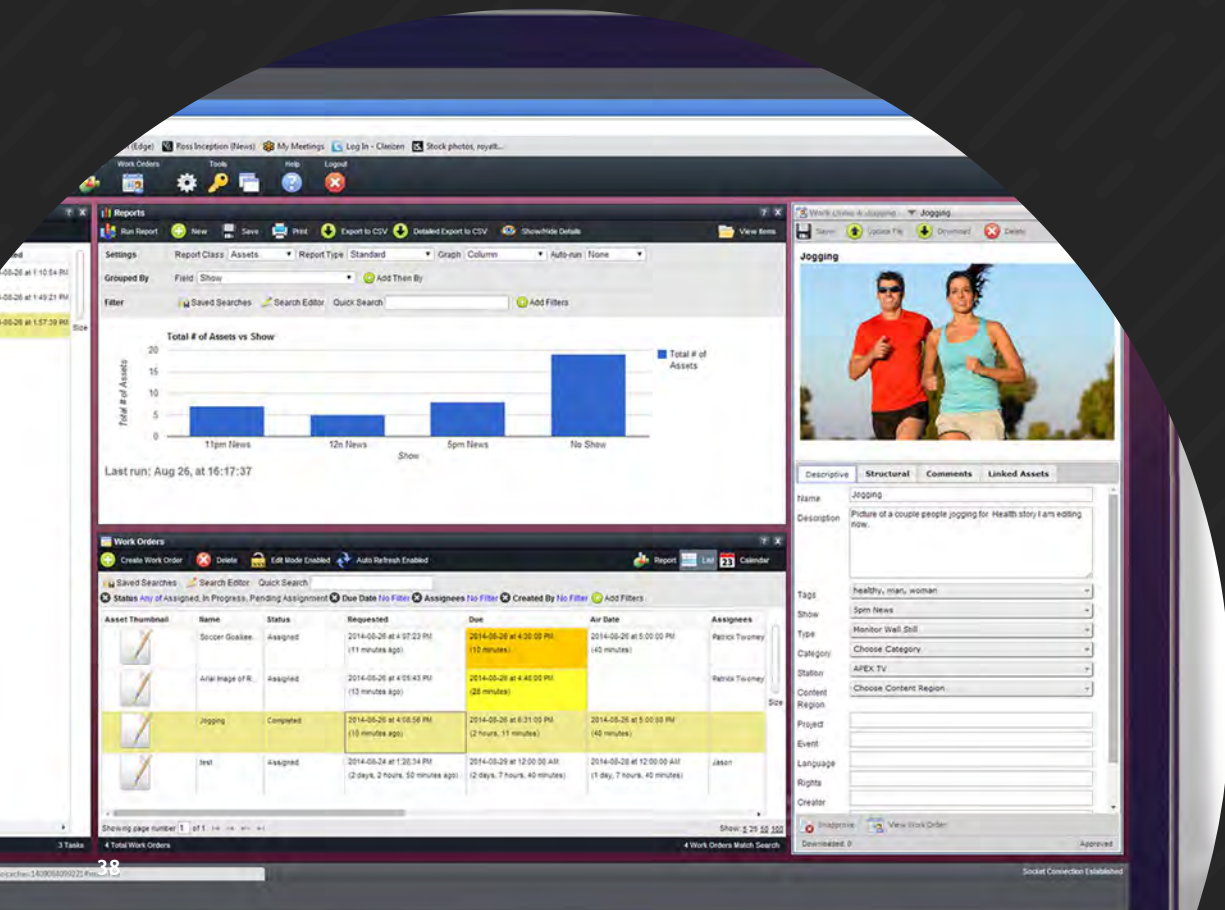
### USER DEFINED METADATA

Streamline allows each customer to define what attributes they want to assign to their asset, and embed that data into common image files' XMP metadata space. This data is accessible in XPression to manipulate the look and text in a graphic beyond the image itself.



# STREAMLINE PRODUCTION PRODUCTION ASSET MANAGEMENT

Streamline Production is designed to bridge the gap between the newsroom computer system (NRCS) and playout server. Create placeholders, search customizable metadata and select the clip needed to tell the story with a rules-based workflow designed to move content between locations and servers.



Streamline Production seamlessly ties asset creation, organization, file management and playout together in the video production workflow.

### INCREASE EFFICIENCY

Use customizable metadata fields to search for existing clips and view a proxy preview of the clip from a web browser or plugin in the NRCS. If the clip doesn't exist yet, add a placeholder to the story and receive status updates on each placeholder.

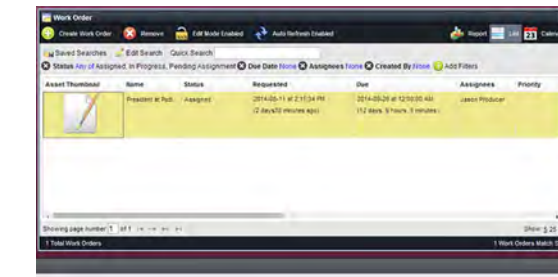
### ACCESS AND ARCHITECTURE

Streamline Production requires no software installs on client machines and is available as an HTML MOS plugin or in a web browser. This increases the flexibility of devices that can be used to create content and decreases the amount of time it takes to perform upgrades. Streamline Production can be accessed from Mac and PC platforms on a variety of web browsers.

### FLEXIBILITY AND SCALE

From Streamline Production to Streamline Enterprise, there is a feature set and configuration model to meet the needs of small newsrooms to the world's largest broadcasters. With a scalable feature set and both purchase and subscription models available, Streamline can empower any newsroom regardless of size.

## ORGANIZING CONTENT & CONNECTING WORKFLOWS



### AUTOMATED ORGANIZATION

Content can be ingested, copied or moved based on rules set up in Streamline Production. Index content from a variety of file storage systems including on premise and cloud options. Move content between servers and file storage locations with automated rules. Delete content using lifecycle rules for playout servers.

### INTEGRATED WORKFLOWS

Streamline Production pairs with Streamline Play to form an end-to-end playout workflow. Select videos or create placeholders in Streamline Production > Target a storage location or playout device such as Tria News > Streamline Play receives clip playlist from the real-time NRCS (updated in real-time as changes are made) > Streamline Play triggers clip playout.

### STREAMLINE.CLOUD

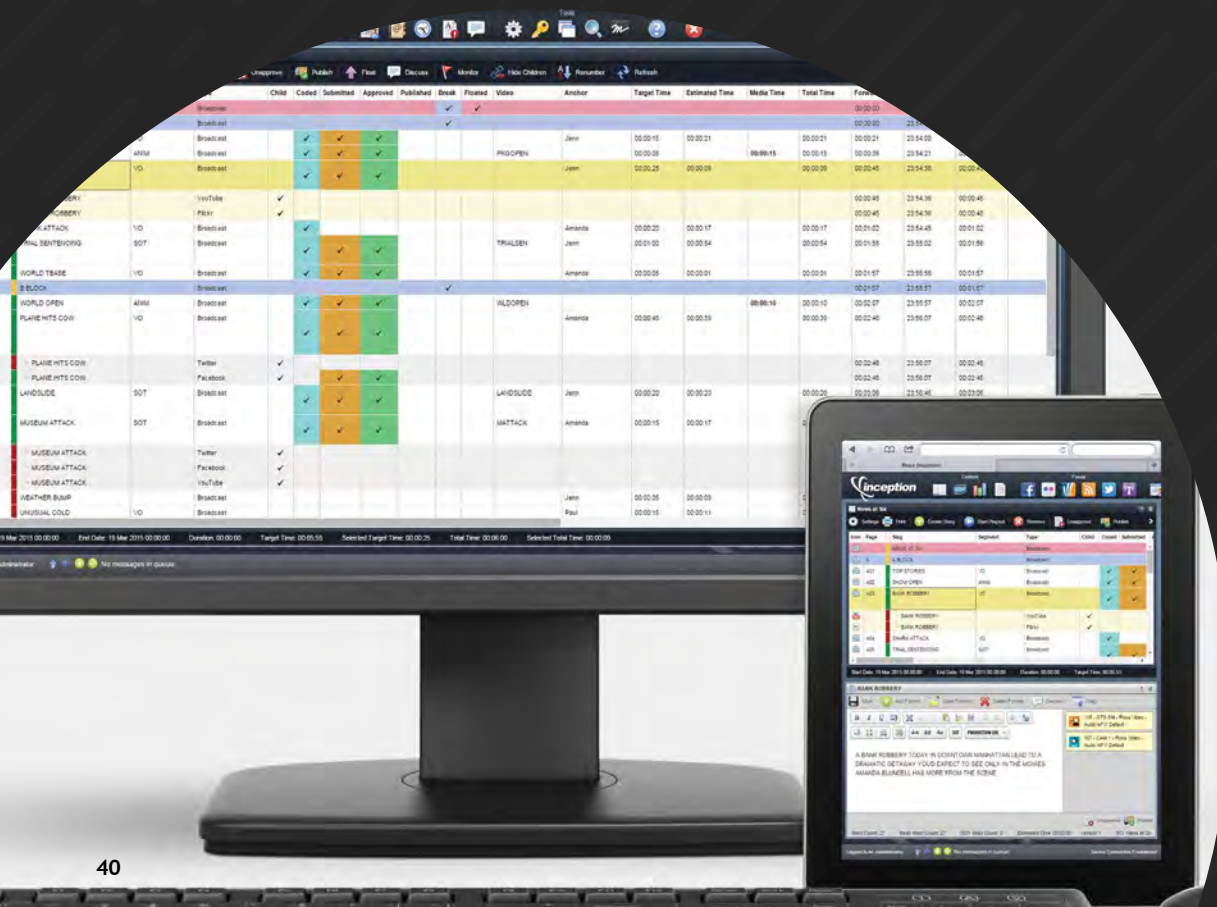
Streamline.cloud offers the ability to add Streamline functionality to your workflow without the need to maintain on premise servers and software. Streamline.cloud is hosted in the cloud and maintained by Ross. Choose from monthly and annual subscriptions.





# INCEPTION NEWS NRCS AND SOCIAL MEDIA MANAGEMENT

An innovative newsroom computer system and social media management tool all-in-one. Inception News makes it easy to discover and publish stories as they happen.



Inception News brings news, social and web content creators together, with one system designed to handle the challenges of multi-platform productions, and efficiency to your editorial team.

### INCREASE COMMUNICATION

By centralizing web, social media and broadcast workflows into a single platform, teams can easily share content and information using Inception's built-in messaging and contextual discussions.

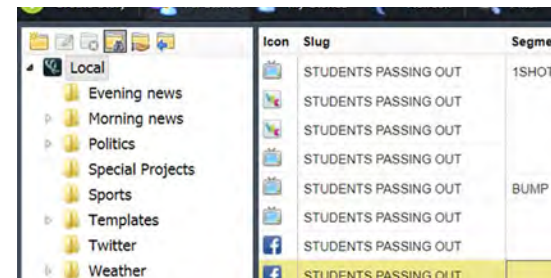
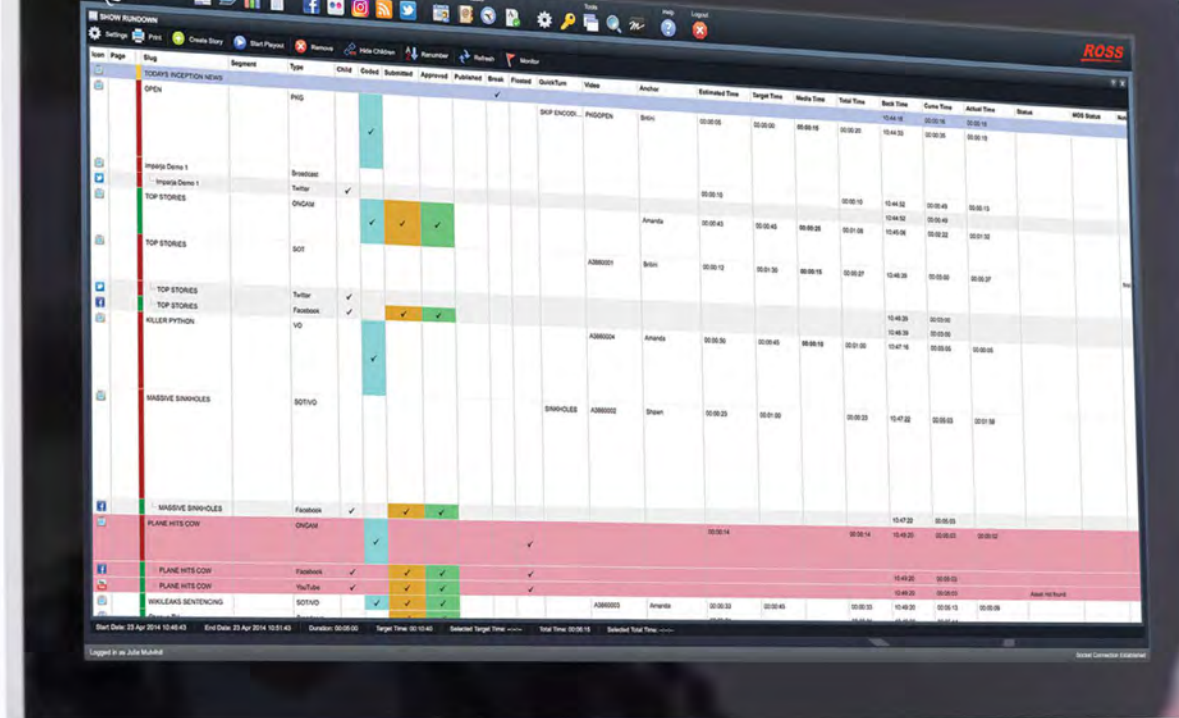
### SOCIAL & WEB ENGAGEMENT

Create interactive polls and search social media in real-time while building playlists based on comments, photos and other content which feeds directly into on-air graphics.

### FLEXIBILITY AND SCALE

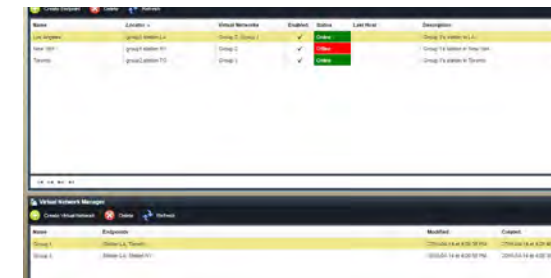
From the smallest newsrooms to the world's largest broadcasters, Inception scales to meet any size operation and workflow with both subscription and purchase models available.

## YOUR MULTI-PLATFORM NEWSROOM



### STORY-CENTRIC WORKFLOWS

Create multi-platform content based on specific user permissions, optional approval workflows, and publishing schedules. Quickly reformat a traditional broadcast story for social media or web in just a few clicks, or, break a story on the web and use that information to write your broadcast script.



### MULTIPLE SYSTEMS

Horizon manages communication and user permissions between each Inception system. Users are able to browse and share broadcast, social and web stories in addition to rundowns, assignments and contacts.



### INCEPTION.CLOUD

Inception.cloud offers the ability to add Inception News functionality to your workflow without the need to maintain on premise servers and software. Inception.cloud will be hosted in the cloud and maintained by Ross.



## INCEPTION SOCIAL SOCIAL MEDIA MANAGEMENT

A complete social media management solution for media and entertainment applications. Inception Social is your toolset to discover and curate social media content for use in productions and live events.



Inception Social allows your team to create multi-platform content based on their specific user permissions. Manage moderating and approving content from social media channels for your production payout on-the-fly.

### INCREASE AUDIENCE ENGAGEMENT

Connect with your audience through social media polling and real-time results, curating comments, photos and video posted to social media. Seamlessly feed the content to an onscreen graphic through drag-and-drop workflows with broadcast graphic solutions like XPression from Ross.

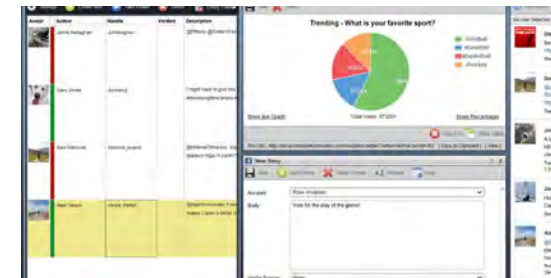
### OVERSIGHT AND ACCOUNTABILITY

Give your team the freedom to create and discover social media content while still maintaining oversight of the final product through granular user permissions and optional approval workflows.

### FLEXIBILITY AND SCALE

Inception Social is available for purchase or as a subscription service offering monthly or annual billing. The Inception platform can be hosted on a traditional on-premise server, a virtualized environment, or in the cloud.

## WHERE BROADCAST MEETS SOCIAL



### MULTI-PLATFORM PUBLISHING

A single piece of content can be published across platforms in just a few clicks. Whether it's one user or a team of content creators, this story centric workflow allows for social and web stories to easily be repurposed and tailored for each destination.



### SOCIAL CONTENT TO ON-AIR GRAPHICS

Get content from your audience onto the screen, fast. Create keyword, hashtag or geolocation searches to discover content on Twitter, Facebook and Instagram. Drag and drop comments, photos and videos directly from social media searches into a graphics playlist. Use word filters and an optional approval process to keep inappropriate content off the screen.



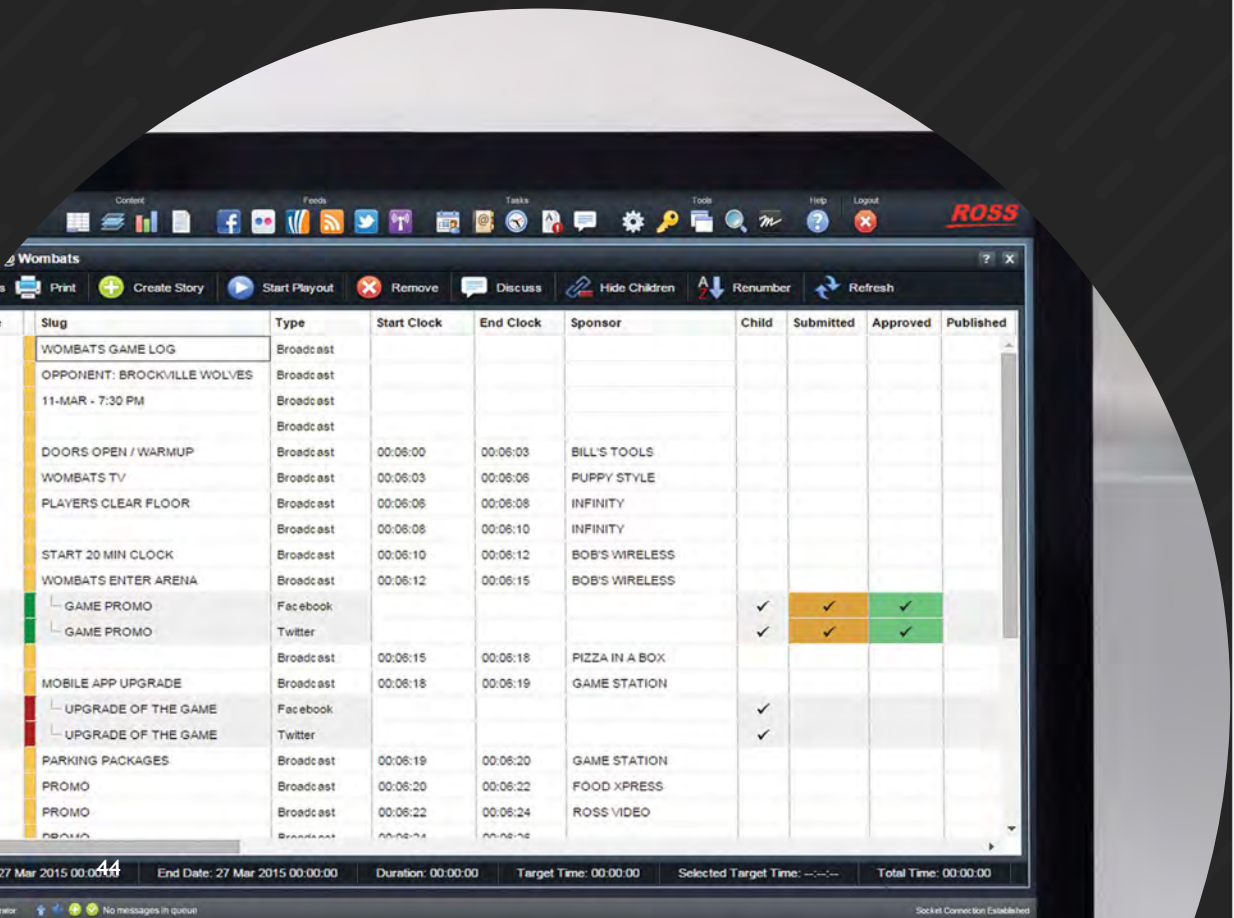
### INCEPTION.CLOUD

Inception.cloud offers the ability to add Inception Social functionality to your workflow without the need to maintain on premise servers and software. Inception.cloud will be hosted in the cloud and maintained by Ross.



# INCEPTION LIVE LIVE EVENT AND SOCIAL MEDIA MANAGER

Manage game day or live event rundowns from anywhere with a collaborative tool to plan, write and time everything from sponsor graphics to scripts for your host. Use the same tool to engage the audience with real-time social media publishing and searching.



Whether your team is in the same building or spread across the world, Inception Live presents a collaborative and tailored platform to plan, write and publish content for live event rundowns, social media and the web.

### INCREASE COMMUNICATION

By centralizing web, social media and broadcast workflows into a single platform, everyone from marketing to production teams can contribute and have visibility of the event rundown. Built-in messaging tools allow everyone to communicate easily whether working in the same building or around the world.

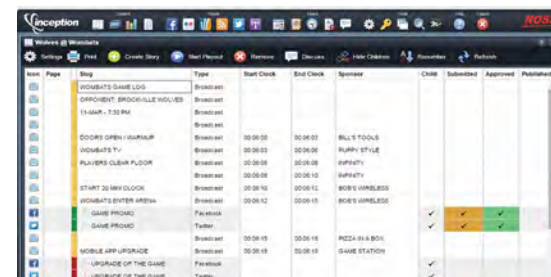
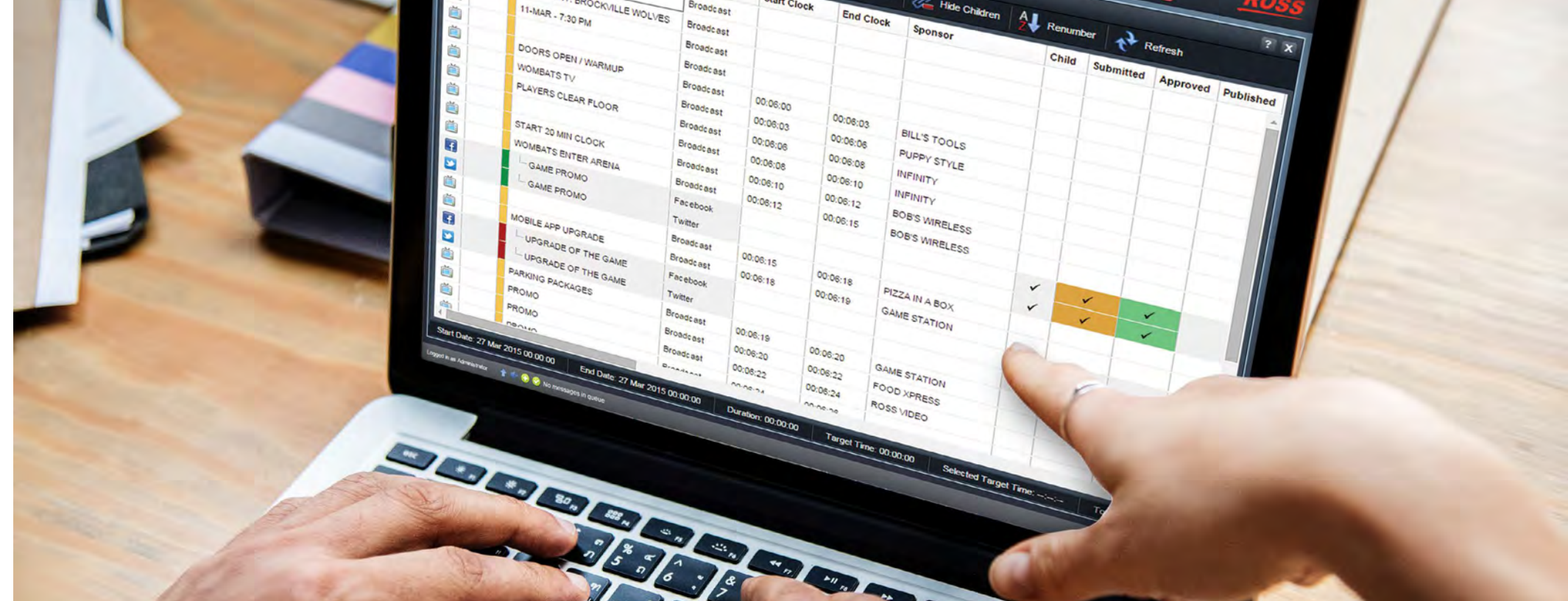
### EASY ACCESS

Eliminate printed materials by storing everything in a shared workspace. Inception Live can be accessed from both Mac and PC platforms on a variety of web browsers. Special views are offered for tablet workflows including the ability to swipe between scripts or track timing of the show. There's never any client software to download.

### INCREASE ACCURACY AND EFFICIENCY

Use templates and drag-and-drop workflows to easily reuse and share content between rundowns. With real-time updates, all users see the same information at the same time which cuts down on mistakes and redundant work. Approval workflows and content history allow you to control quality and track changes.

### OPTIMIZED FOR LIVE



### CUSTOMIZABLE INTERFACE

Tailor the user-interface to your production with user-definable columns to track everything from ribbon boards to sponsor messages. Each user can select the information they see and how they see it while still receiving updates as changes are made.

### AUDIENCE ENGAGEMENT

Get content from your audience onto the screen, fast. Create keyword, hashtag or geolocation searches to discover content on Twitter, Facebook and Instagram. Drag and drop comments, photos and videos directly from social media searches into a graphics playlist. Use word filters and an optional approval process to keep inappropriate content off the screen.

### INCEPTION.CLOUD

Inception.cloud offers the ability to add Inception functionality to your workflow without the need to maintain on premise servers and software. Inception.cloud is hosted in the cloud and maintained by Ross. Choose from monthly and annual subscriptions.



# OVERDRIVE AUTOMATED PRODUCTION CONTROL

OverDrive is the most advanced Automated Production Control System on the planet, enabling the most sophisticated productions to be executed cleanly and consistently, while delivering substantial savings in operational costs.



OverDrive was designed to meet the needs of modern production facilities, bringing benefits to both scripted and non-scripted productions. Manual and automated control is provided to both Ross and third party devices including production switchers, routing systems, video servers, audio mixers, robotic cameras, and graphics systems.

### CONTROL FLEXIBILITY

Perform manual, semi-automated or fully automated productions at any time from the same control room, using the same equipment. Manual device control is always at the operator's fingertips whether from OverDrive or a dedicated panel.

### COMPLETE BROADCAST AUTOMATION SOLUTION

In addition, there are optional interfaces to expand functionality such as router control and camera robotics control. This solution is upgradeable to other OverDrive editions and third party MOS device support is an available option.

### WISE INVESTMENT

Delivers a consistent, repeatable, error-free production across a range of operator skill sets. OverDrive enables all operators to run clean, consistent productions, every day, every time.

ROI can occur in a little as 12 months, offering a significant return for a capital expense.

FLEXIBLE. POWERFUL.  
CONTROL.



### CONFIGURABLE INTERFACE

OverDrive offers an intuitive, user-configurable interface consolidating control of many devices into one control area. Use custom icons for quick identification and preview of the rundown.



### SIDEBOX MODULES

SideBox modules are control panels for those who prefer a dedicated control surface. These work in conjunction with OverDrive's touch screen interface, keyboard and mouse allowing multiple ways for the operator to interact with the system. With the included in-desk / on-desk mounting kit, multiple combinations of SideBoxes can be ordered to fit your production needs.



### DEVICE INTEGRATION

OverDrive has the most extensive library of supported 3rd party devices and MOS tools, permitting you to choose from the best in putting your APC system together. Ross Interface Engineering and Quality Assurance Teams are continually adding new devices, along with advancing and retesting currently available interfaces.



## ACIDCAM FULL CHROMINANCE BROADCAST VIDEO CAMERAS

Studio production cameras with best-in-class resolution, sensitivity and signal to noise ratio, plus, unique, patented UltrachromeHR outputs offering full 4:4:4 data for chroma keying and live virtual applications.



ACID cameras are precise imaging systems engineered for maximum HD performance in any studio production. Using the latest camera technology, they provide superior edge-definition and natural image composition within virtual environments.

### GO VIRTUAL

ACIDCam integrates seamlessly into Ross Virtual Solutions. When combined with Ross' next-generation UltrachromeHR chroma keyer, ACIDCam delivers stunning images for live virtual broadcasts.

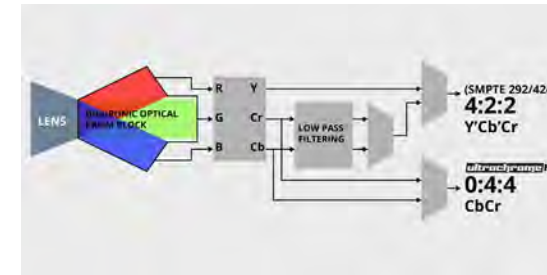
### MULTIPLE OPTIONS

Maximize your budget with two ACID camera options. The H200 is an excellent high-end performer that offers 1080p, CMOS sensors and HDR capabilities. Also available is the economical Z50 model, which offers UltraChrome with 1080i resolution and SD compatibility.

### COMPACT DESIGN

Compact and lightweight, these rugged cameras can be mounted in a variety of locations, such as on a tripod, jib, or mounted on a robot where placing an operator is not possible.

## A HEIGHTENED VISUAL EXPERIENCE



### OWN EVERY PIXEL

Create beautiful, clean, true high-resolution keys using the patented 0:4:4 UltrachromeHR output, a signal that contains full bandwidth color information for complete 4:4:4 data into the UltrachromeHR Chroma Keying System.



### BE CREATIVE

ACIDCam incorporates the latest developments in HDR technology through Hybrid Log Gamma (HLG) and Perceptual Quantization (PQ) to capture the full breadth of colors and contrast in any scene.



### CAPTURE THE DETAILS

Obtain high quality images in lower light, with Dynamic Noise Reduction from the H200-UCHR providing a signal-to-noise ratio beyond 64 dB, and the budget friendly Z50-UCHR achieving a 58 dB signal-to-noise ratio.



## PIVOTCAM FULLY INTEGRATED BROADCAST VIDEO CAMERAS

Cost-effective, broadcast-ready PTZ HD live production cameras. On its own, or as part of an array, PivotCam helps tell a story by delivering great shots to your production.



PivotCam offers high-performance image capture with quiet and accurate PTZ functionality. Ideal for assembly, auditorium, and venue productions, its full complement of broadcast-ready features also make it a great fit for small live-studio productions, POV cameras, and remote cameras in news, weather and sports broadcasts.

### VERSATILE

Pair PivotCam-SE with wall and ceiling mounts to creatively deploy dynamic camera shots.

### CARBONITE / DASHBOARD CONTROL

On-the-fly manually control or instantly recall pre-programmed moves - PivotCam can be controlled via a Carbonite production switcher joystick, or from an intuitive DashBoard panel that can be used from virtually anywhere.

### VISCA PROTOCOLS

PivotCam SE utilizes standard VISCA protocols that plug easily into existing production systems

## PAN-TILT-ZOOM ARTICULATE



### EXPAND YOUR VIEW

An affordable addition to any production, PivotCam offers producers the ability to position twice as many cameras in a production for the same cost as other PTZ camera solutions. Creative angles help to tell your story with limitless creativity.



### ON TARGET

Fast and efficient Pan / Tilt / Zoom and Focus control with preset recalls. A large rotation angle-range, and ultra-smooth PTZ mechanism, come together for fast and smooth maneuvers. PivotCam SE also features external genlock, 3G-SDI output, and IP-VISCA control, capturing high-definition moments quickly and accurately.



### DASHBOARD CONTROL

No need for additional hardware to control and save presets. Ross DashBoard offers a software approach to control and manage your PivotCam.



## FURIO STUDIO STUDIO ROBOTIC CAMERA DOLLY SYSTEM

With the ability to produce silky smooth, sweeping on-air dolly shots, which can then be precisely repeated over and over again at the push of a button, Furio allows broadcasters to create more dynamic looks – while also delivering higher quality and repeatability, and lowering operating costs.



As a modular system, Furio is available in a wide variety of configurations, with multiple platforms, lifts and heads to choose from. Select the towering height and range of the SE 3-stage lift, the more economical S2 2-stage lift, or a fixed column – or mount the head directly on the SE dolly. The system can then be paired with either a VR100 or VR600 pan and tilt head, depending on payload requirements.

### VISUAL IMPACT

Keyframed moves allow operators to create distinctive shots with more fluid and dramatic visuals that make productions come to life, capturing and holding audience attention. Furio's eye-catching aesthetics that provide a cutting-edge look to programs, not only behind the camera, but also in front of it.

### CONTROL SYSTEM

The SmartShell Control System combines a touchscreen interface with an ergonomic joystick control panel. Whether you have Furio dollies, PT heads or BlackBird pedestals, all of your Ross robotic systems can be controlled by a common control system using a centralized Ethernet-based architecture.

### GLOBAL DEPLOYMENTS & SUPPORT

With thousands of robotic systems deployed around world, few suppliers have more experience with installing, commissioning and maintaining robotic systems than Ross. As with all Ross products, you will enjoy the industry's best support, legendary for its customer-oriented approach.

THE SMART EVOLUTION  
OF CAMERA ROBOTICS

# FURIO



### TRACKED

Like all Furios, VR series PT heads provide accurate tracking data on pan, tilt, zoom and focus position, making them ideally suited for Virtual and Augmented Reality.



### DOLLY SYSTEM

All Furio Studio systems have the payload capacity to support a teleprompter, allowing them to be much more than just a specialty camera.



### BLACKBIRD

The revolutionary BlackBird base provides an ultra-stable platform for combining smooth vertical movement with pan, tilt, and zoom to create dynamic on-air moving shots in an automated environment.



## FURIO LIVE LIVE EVENT CAMERA DOLLY SYSTEM

Furio Live is the ultimate next-generation remote control camera system for live productions. Combining a high speed dolly, silky-smooth lift, and ultra-fast pan & tilt head with two intuitive and responsive control systems, Furio Live delivers a unique combination of speed, fluidity, and responsiveness in a compact and modular package – perfect for capturing all the action at live events.



Save time and money with a system designed from the ground up to be fast and easy to setup and configure. Furio Live can be located in places that were previously impossible, discretely delivering stunning visual perspectives at your command.

### GET CREATIVE

Make shots you only dreamed of previously, thanks to Furio's speed, smoothness, and range.

### SETUP QUICKLY

Specifically designed for rapid setup and tear down, with fewer cables, built-in power bar and cable management features, and integrated camera balancing plate with tool-less quick-lock adjustments.

### BUDGET FRIENDLY

Benefit from lowest total cost of ownership with the safest, most robust and reliable dolly system, coupled with the best support in the industry.

## NEXT GENERATION REMOTE CONTROL CAMERA SYSTEMS

# FURIO



### OUTPERFORM

High speed Furio SE dolly travels at speeds up to 3 m/s (straight track), with a range of nearly 100 m.

Ultra-fast pan & tilt head (up to 180 degrees/sec) covers all the action, from any angle.



### WORRY-FREE

Two lift options to choose from: The SE Lift featuring 3-stage Carbon fiber construction that delivers over 2.2 m (7' 2") of height and 85 cm (33") of extension, or the more cost-effective 2-stage S2 Lift.



### STAY IN CONTROL

Choose from two responsive and intuitive control platforms: modular joystick console, or remote pan bar.



## FURIO SKYDOLLY CEILING-MOUNTED CAMERA SYSTEM

The ceiling-mounted Furio SkyDolly camera system frees up space in the studio by replacing floor mounted pedestals, cranes, and jibs. This opens up a wide range of new creative possibilities that enhance the overall audience experience.



SkyDolly leverages Furio's industry-leading technologies to unleash the creative potential of ceiling-mounted cameras. By combining unmatched stability, speed, and accuracy, SkyDolly delivers smooth, dynamic, repeatable movements. This makes it the ideal system for live, automated, and virtual or augmented reality productions.

### PRACTICAL PERFORMANCE

SkyDolly delivers much more than just beauty shots. With the payload capacity to support a full-sized prompter, it can also serve as the primary camera in a newsroom production, providing maximum flexibility and practicality.

### ALWAYS ON TRACK

SkyDolly's absolute rail encoder technology provides reliable, accurate tracking data regardless of traction or accumulation of dust and dirt, and without the need for homing or recalibration – perfect for virtual and augmented reality.

### SAFETY FIRST

With the dolly sitting on top of the rails, a second set of safety rails above the dolly ensures that it can never fall from the sky. Additionally, tether points for the head, column, and payload, and a remote E-stop make SkyDolly the safest ceiling mounted system ever.

AMONG THE STARS.

**FURIO** *SkyDolly*



### TRIDOLLY

A longer, wider three-wheeled base (TriDolly) eliminates the possibility of instability or loss of traction resulting from an imperfectly levelled track.



### FURIO AT HEART

SkyDolly supports all the same great features as Furio SE, including stable and accurate virtual tracking data and multiple dollies with collision avoidance sharing a common, custom track.



### SWAYLESS

Furio SkyDolly sits on top of the rails, raising the center of mass as close to the rails as possible – minimizing the pendulum effect that creates unwanted swaying.



## CAMBOT FREE ROAMING PEDESTALS

With three distinct models, the mid-sized 600XY-S2 and 600XY-S3, to the extra high-payload 700XY, the CamBot series of free-roaming pedestals have been designed to suit a wide variety of studio applications and capital budgets.



CamBot's pedestal-base features the industry's best accuracy and floor repeatability, fast and easy targeting, and a straight-forward design that provides years of reliable, low-maintenance operation.

### UNBEATABLE FLEXIBILITY

CamBot XY pedestals provide the ultimate in flexibility, allowing the camera to be positioned anywhere around the studio floor, while providing remote control/programming of all camera axes, including pan, tilt, zoom, focus, elevation, and floor position.

### CONTROL SYSTEM

SmartShell Control System combines a touchscreen interface with an ergonomic joystick control panel. Whether you have free-roaming CamBot pedestals, PT heads or BlackBird pedestals, all of your Ross robotic systems can be controlled by a common control system using a centralized Ethernet-based architecture.

### PERFECT AUTOMATION PARTNER

Consistent preset recalls combined with an open API and networked control architecture make CamBot Pedestals the perfect robotic camera system for Automated Production Control solutions, including Ross OverDrive, and all major 3rd Party solutions.

## RELIABLY ACCURATE ROBOTIC PEDESTALS

# CamBot



### SMOOTH

500, 600 and 700 series heads feature special gearboxes that eliminate backlash, as well as high-resolution servos to produce smooth and highly repeatable movements.



### TRACK-STAR

All CamBot XY-pedestals offer high resolution virtual tracking data on all seven axes which, combined with their unbeatable floor accuracy, makes them ideal for augmented reality or virtual sets.



### BLACKBIRD C2

Our entry-level system is based on the 2-stage C2 lift with integrated electronics that comes from the original CamBot 600PTZ. Dubbed the C2 lift to reflect its CamBot heritage, it is paired with the 600PT to create our most cost effective robotic elevation solution.



## XPRESSION MOTION GRAPHICS SYSTEM

XPression has changed the real-time production graphics game - a 3D motion graphics system that is powerful, yet easy to use.



XPression is inspired by and continues to be developed to meet the needs of the world's top real-time motion graphics creative teams who are tasked with creating eye-catching graphics - often driven with real-time data and produced on tight timelines. XPression delivers results for the most demanding productions - from Hollywood to top network television and sports arenas all over the world while it's ease of use and affordability make it available to all.

### MAXIMIZE CREATIVE OUTPUT

XPression is a joy to create and operate graphics on employing a clean user interface, logical menus, and controls. XPression shortens your learning curve, fosters creative flow and maximizes productive output.

### OPTIMIZE WORKFLOW

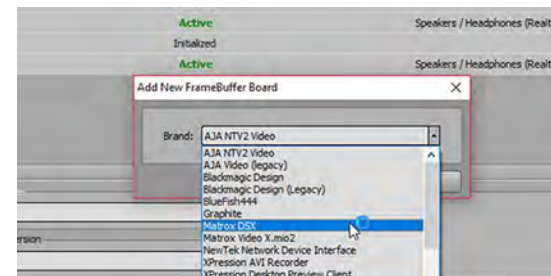
XPression offers workflow tools and integration options that generate significant efficiencies for News, Sports and Entertainment environments. Implement a journalist self-serve graphics workflow for news with a centralized art department, easily tie in Twitter, Instagram and other feeds for text, images and polls, drive and entire stadium with a single button push - solutions like these are all available with XPression.

### BUY ONCE, ENJOY FOREVER

Always enjoy state-of-the art graphics. Once you buy XPression and keep software maintenance current, you never have to buy it again. As a Windows product that runs on standard off-the-shelf computer hardware, XPression licenses can migrate from machine to machine, taking advantage of accelerated CPU and GPU performance over time.

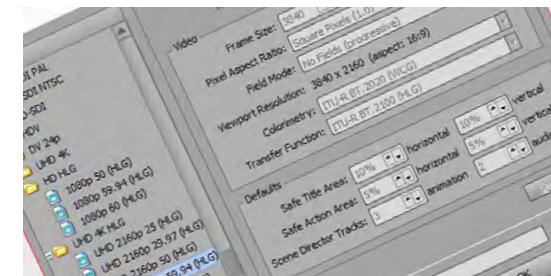
IMAGINATION REALIZED

# XPression



### OPEN HARDWARE

XPression supports multiple broadcast video I/O formats and hardware from a wide selection of I/O card vendors. Rendering is done in the GPU, which allows XPression to work with various hardware framebuffer vendor solutions, rather than just one. XPression supports I/O hardware from Matrox®, AJA®, Blackmagic Design®, and Bluefish444. NDI™ is even supported on Studio and BlueBox.



### SCALABLE

HDR and Wide Color Gamut are more important to many of our customers, than UHD, but the latest XPression Video Codec provides both. Add that to existing support for 48-bit and 64-bit image formats for stunning HDR content in HD or UHD.



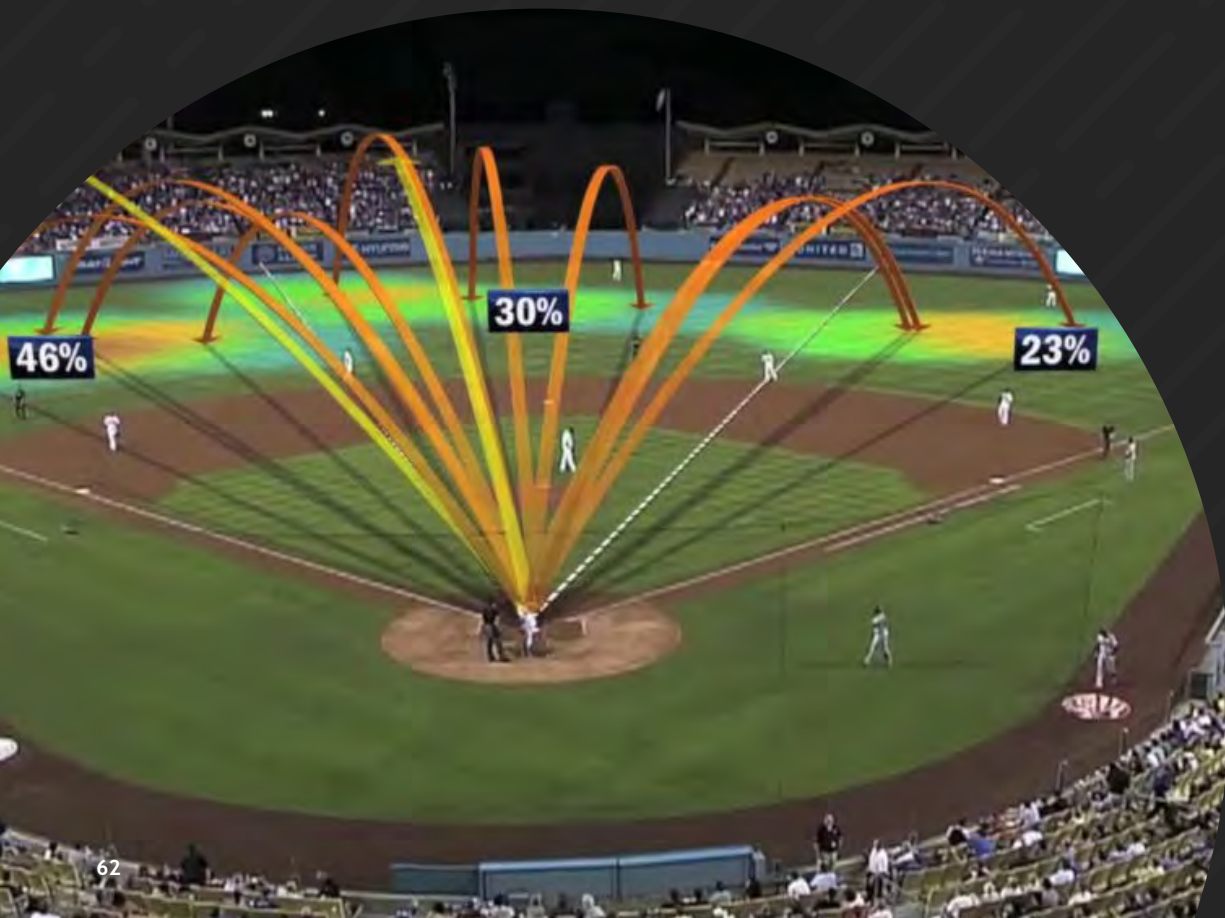
### XPRESSION TESSERA

Map animation and video across multiple XPression outputs in real time and synchronize them with each other to populate massive video walls. Available in either Single-Engine or Multi-Engine configurations, XPression Tessera allows for pixel accurately mapping XPression scenes across multiple, massive displays and ribbon boards.



## PIERO SPORTS GRAPHICS ANALYSIS

PIERO is an award-winning sports analysis tool from Ross Video. PIERO's systems use image recognition or encoded camera heads to overlay tactical graphics on sports content. PIERO brings new angles to every game, on the screen and in the studio, with visually engaging and informative effects.



Inspired by sports analysts and clubs, PIERO was developed to provide audiences, players, and coaching staff with new angles and virtual views of sports events through 3D graphics and image recognition.

### STATE-OF-THE-ART ANALYSIS

PIERO improves storytelling and maximize the communication efficiency to its targeted audience. PIERO offers a wide range of effects across its solutions, including data visualization, speed and distance, 3D replays, and many more.

### COMPREHENSIVE FEATURE SET

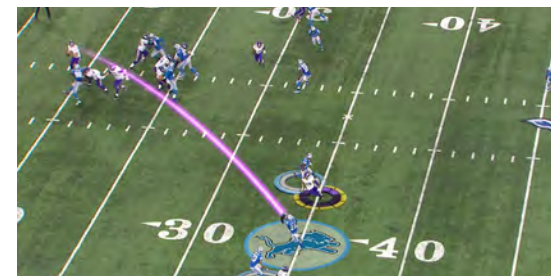
PIERO provides solutions designed for broadcasters, professional sports clubs, and studios. The comprehensive palette of effects delivers high-impact technical analysis, eye candy, and increased sponsorship opportunities. These effects are compatible with more than 20 major sports and can be customised and pre-set for both pre-recorded shows and live productions.

### COST EFFECTIVE

Simple installation and ease-of-use make PIERO cost-effective and adaptable to existing workflows. Users can apply graphical effects on highlight clips and live SDI feeds. The ethernet-based touch mode is a game changer for remote production. PIERO strives to deliver systems that provide high efficiency in all scenarios.

## STATE-OF-THE-ART SPORTS GRAPHICS AND ANALYSIS

# PIERO™



### PIERO BROADCAST

PIERO Broadcast is a real-time 3D sports graphics and analysis system created for broadcasters. The system is built upon a proprietary line and texture tracking algorithm co-developed by BBC Research. This algorithm creates a seamless blend of graphics and video which maintains proper perspective and keeps graphics tied to the pitch as the camera moves.



### PIERO LIVE

PIERO Live is a powerful real time graphic solution. Designed for live use cases, the system supports a wide array of encoded camera heads and can connect to live data feeds for NFL, Soccer, and Baseball. PIERO Live is used to create studio augmented reality and mobile truck (outside broadcast) graphics such as Badges and scores, advertisement, offside line and 1st & 10 line.



### PIERO CLUB

PIERO Club is a 3D graphics system designed for professional sports clubs. The perfect interface between coaching staff and players, it maximizes communication efficiency and engages players using pre-made clips and live presentations. It has been designed with the user in mind and helps to add visual support when reviewing and preparing games.



# KIVA LIVE PRESENTATION SERVER

Our brand-new Kiva Live Presentation Server delivers an impressive, operator-driven digital media playout solution to live sports and entertainment venues that will elevate live videoboard productions to the next level of spectator appeal.



With Kiva, all your live productions are instantly simplified. Incoming media is quickly ingested, efficiently organized, and easily presented on-demand during live sports shows, concerts, and events. The Kiva user interface features a familiar, quick, and very visual 'shot-box style' operational paradigm—so operators can confidently present a wide variety of media onto venue videoboards.

### INTUITIVE

With a simple click, the highly intuitive operator-driven Kiva user interface presents a variety of digital media assets into venue videoboards with unparalleled flexibility and ease. These media include motion video clips, 'fill+matte' stills and animations, surround-sound audio, and sponsored adverts.

### ROCK-SOLID

Kiva is built upon reliable Abekas® hardware media processing engines, ensuring your live productions will never suffer from video playout stutters, audio dropouts, user interface freezes, or unexpected hang-ups.

### SINGLE OR DUAL CHANNEL

Kiva is available in Single-Channel or Dual-Channel models, so you can choose the option that best fits your production needs and budget. The Single-Channel model features one baseband audio+video recording input, one Preview Video+Key Player output, and one Program Video+Key Player output. The Kiva Dual-Channel model simply doubles these video channel resources.

PRESENT LIVE CONTENT LIKE NEVER BEFORE



### AUDIO AGILITY

Sound is equally as important as the visuals in your live productions, and Kiva cleanly handles the complex audio needs required by live event presentations. That's why digital audio captured, stored, and presented by Kiva is handled with 48kHz, 24-bit professional quality—with an AES and embedded audio router built right into Kiva.

### CONNECTIVITY GALORE

Kiva is designed with modern 10-Gigabit USB and Ethernet connectivity to handle every possible media file ingest scenario. No matter the format, digital media files can be quickly ingested and transcoded into Kiva from a wide range of external sources—including from portable USB drives, memory sticks, and fast internet download.

### REMOTE CONTROL

Kiva features all the RS422 and Ethernet protocols required for external control from remote production switchers, third-party control panels and user-defined Ross DashBoard panels. These devices can all trigger playout operations in the PVW and PGM players across multiple Kiva servers connected on a local control network.



## MIRA REPLAY SYSTEMS

Achieve impressive instant replays for all your live events and sports broadcasts with an extremely flexible and very powerful multi-channel replay system.

Driven from a unique, ergonomically-designed control surface and purpose-built replay application, you are able to execute live instant replays with the greatest of ease, quickly clip and tag content, ingest and export media files, and create engaging game-break highlights that will captivate your audiences.

### SINGLE OR DUAL-USER WORKFLOW

Share the load with Mira+ by splitting / sharing server resources—so two operators can work independently on two replay events or work in collaboration on the same replay event.

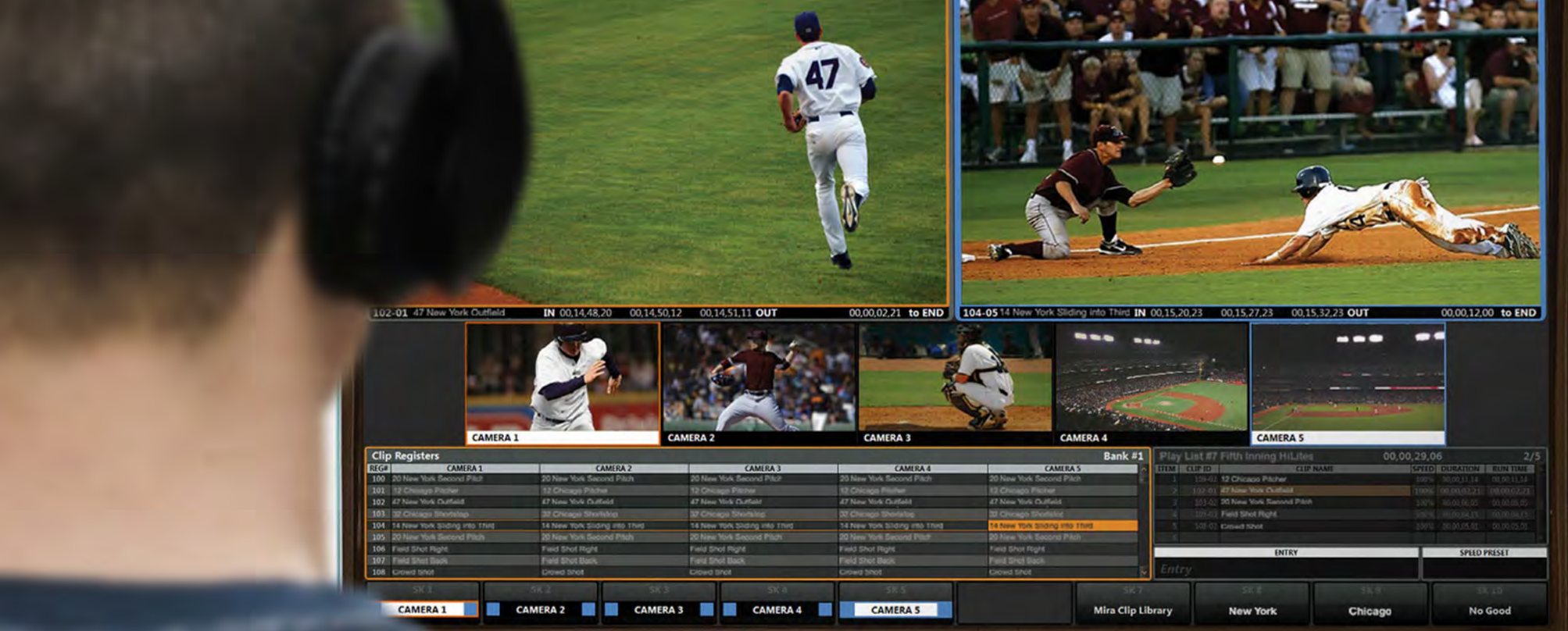
### RELIABLE PROTECTED MEDIA

Ensure maximum reliability, with standard dual-redundant, hot-swappable power supplies. For ease of maintenance, all premium Mira+ servers feature hot-swappable chassis fans and media disk drives.

### FILE-BASED OPERATIONS

Integrated media file import and export tools reduce cost and simplify workflow.

## THE ULTIMATE REPLAY SYSTEM



### CONTROL SURFACE & APPLICATION

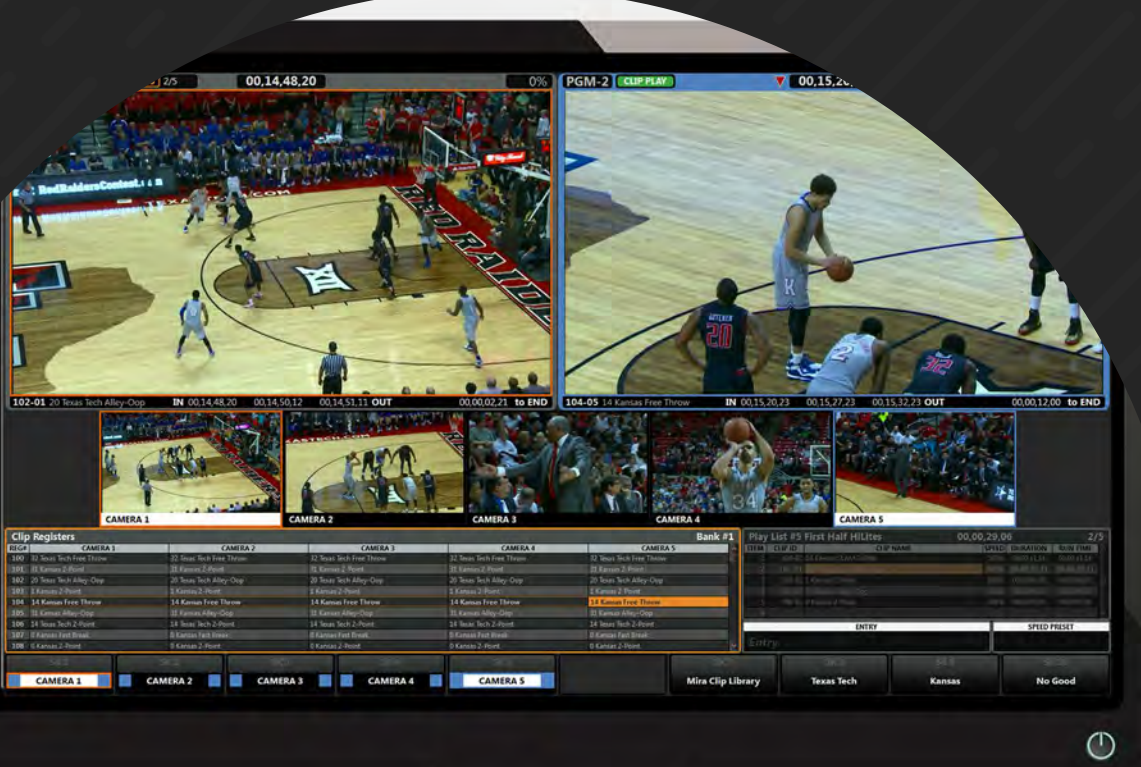
Mira Control Surface features a “wide and slim” ergonomic design, for ease of use and smooth replay operations. All buttons on the control surface are logically grouped and color-coded to function, with generous spacing around every button. The Mira Replay graphical user interface complements the Control Surface with a single “heads-up display” for monitoring, clip/playlist management, and media export.

### MIRA+

Mira+ is a premium 6-, 8- or 12-channel replay system with 280 or 580 hours of storage. The impressive Mira+ feature set provides all the resources you need to handle larger events including symmetric video channels, dual-user workflows, content sharing between multiple Mira+ servers, and background growing file export to NAS via 10G Ethernet.

### MIRA EXPRESS

Mira Express transfers the core Mira+ feature set onto an SSD hardware platform for a professional four-camera / two-playout replay system. The two SSD drives store “evergreen” clips on one for season-long content, and live four-camera recording on the other. Mira Express is available at an incredible value that makes it a great choice for mid-market sports.





## TRIA VIDEO SERVERS

Today's live production environments demand cost-effective playback of video, key and audio content. Tria is the ultimate production server that provides the flexible, feature-rich, multi-channel capability you need to deliver compelling live programming.



The incredibly flexible architecture of a Tria production server ensures seamless integration into a wide variety of live production workflows that includes animated switcher transitions, feeding on-set displays, capturing live video sources, and confidently playing out content during live shows.

### SIMPLE FILE MANAGEMENT

Integrated media file import and export dramatically simplifies file-based workflows. Files are automatically matched to production format on import and the export process features a variety of user-defined parameters.

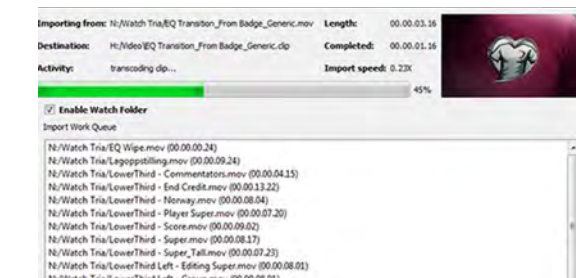
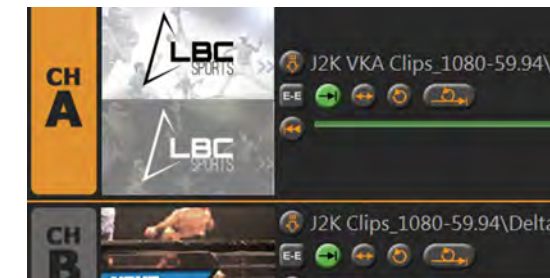
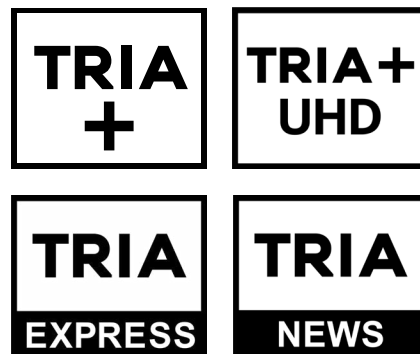
### FILE & FORMAT DIVERSITY

Compatible with the spectrum of resolutions and formats, including UHD-4K, HD and SD. A wide variety of the most popular self-contained media files can be ingested and exported with ease.

### CONTENT SHARING

Quickly and easily share media clips between any number of Tria+ production servers interconnected via Gigabit or 10-Gigabit Ethernet, depending upon Tria model. No matter where a given clip is stored—any clip can be played back in real-time.

## THE ULTIMATE PRODUCTION SERVER



### TRIA+ | TRIA+ UHD

The premium Tria+ server is configurable with four, eight, or twelve symmetric video channels—every video channel can instantly switch between record and play. The Tria+ UHD model offers 2 symmetrical UHD channels along with single-link 12G I/O connectivity.

### TRIA EXPRESS

The entry-level Tria Express server support a wide range of live production applications with 2 or 3 output channels and control integration with a wide range of live production switchers. Affordable AVC-Intra codec / 1080p format support makes Tria Express a fantastic fit for live events, web-streaming, and edit-heavy productions.

### TRIA NEWS

From four independent PGM playout channels, Tria News gets your late-breaking news stories on-air quickly and effectively. Tria News handles the news-gathering native codec media files typically found in newsrooms and is the cornerstone of an efficient MOS-enabled workflow for news media playout.



## AIRCLEANER LIVE EVENT PROTECTION DELAY

AirCleaner is your digital insurance policy against broadcasting any obscenities. This system is the leading digital video and audio delay solution for easily eliminating all unwanted content from your live broadcasts and webcasts.



The simple set up, operation, and personalization minimizes operator errors for concealing undesirable video and/or audio content.

### TWO-BUTTON CONTROL

Straight-forward to control with two large panic buttons; one for audio (red); and one for video (yellow). Simply press & hold to clean-up your broadcast.

### REACTION TIME COMPENSATION

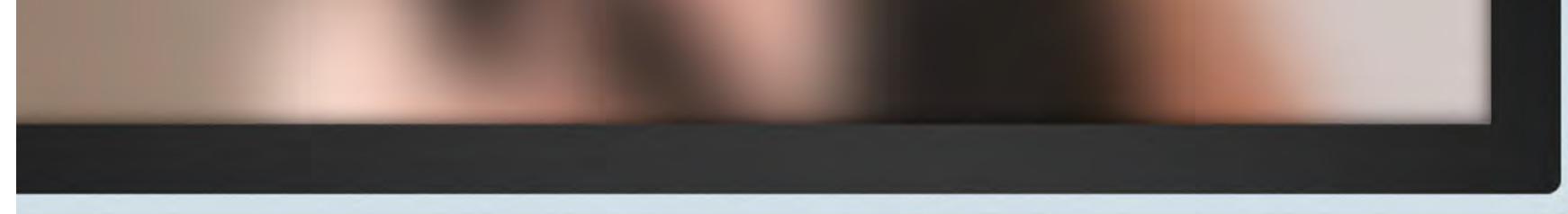
Compensates for the reaction time of human operators to an observed visual or sound event, ensuring all unwanted content is cleanly concealed in its entirety.

### HIDE CONTENT SMOOTHLY

The audience experience is minimally interrupted with subtle yet effective video and audio concealment techniques.

KEEP IT CLEAN

# AirCleaner



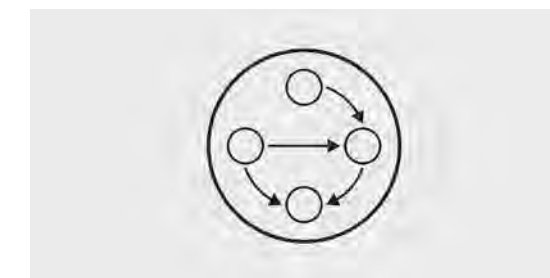
### SIMPLE SETUP

Simple configuration and programming of AirCleaner are managed via the LCD panel on the front of the chassis or from a remote custom DashBoard panel. Delay settings and other setup parameters are saved in up to three non-volatile memories.



### CONTROL PANEL

The control panel has one button for audio and one for video. After setting up your delay time and operator reaction times, make concealments by pressing & holding the button for as long as the offence takes place. AirCleaner can conceal audio and video separately or simultaneously.



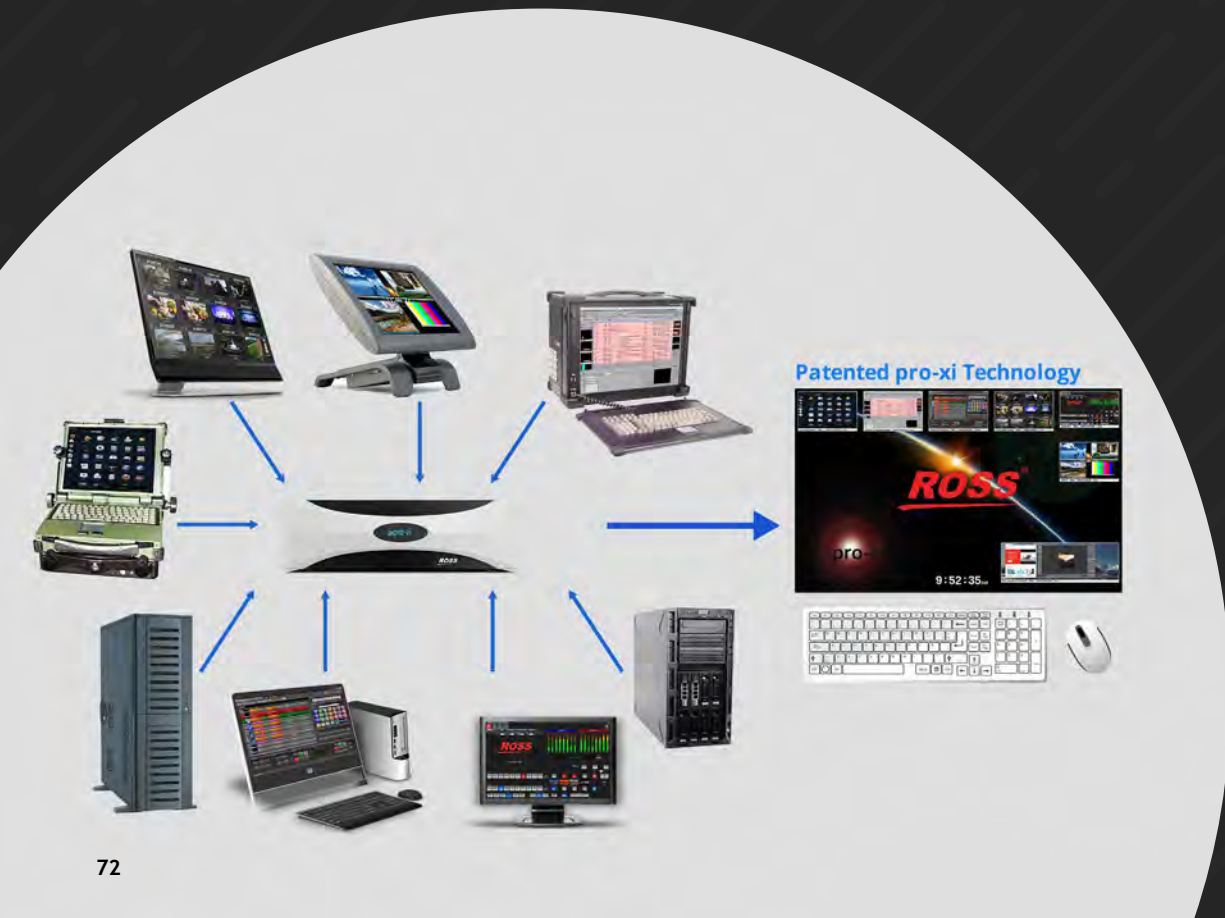
### CONCEALMENT CHOICES

AirCleaner masks offensive live content by using an integrated effects engine to blur out visual obscenities with variable defocus. The unique Jumble feature scrambles audio to make speech unintelligible—while maintaining audio levels and spoken continuity.



## pro-xi® WORKSTATION INTEGRATOR KVM SYSTEMS

Provide computer operators a better way to organize, monitor, and control critical information from multiple, disparate computer systems in a way that enhances their performance and output.



Revolutionize the way control rooms are engineered, designed, and operated. Designed to conquer control room chaos, the pro-xi Workstation Integrator is a unique, revolutionary, and disruptive technology improving workflow efficiencies and effectiveness.

### IMPROVE CONTROL

Empower control room operators to be more effective at their core responsibilities; they work faster and analyze better. They make fewer mistakes, by placing the right information, in the right place, at the right time, right in front of the operator's primary field of view.

### STREAMLINE DECISION-MAKING

Improve the critical, decision-making process in control rooms; identify and analyze important information more quickly with real-time, high-quality, scalable thumbnails and sub-windows.

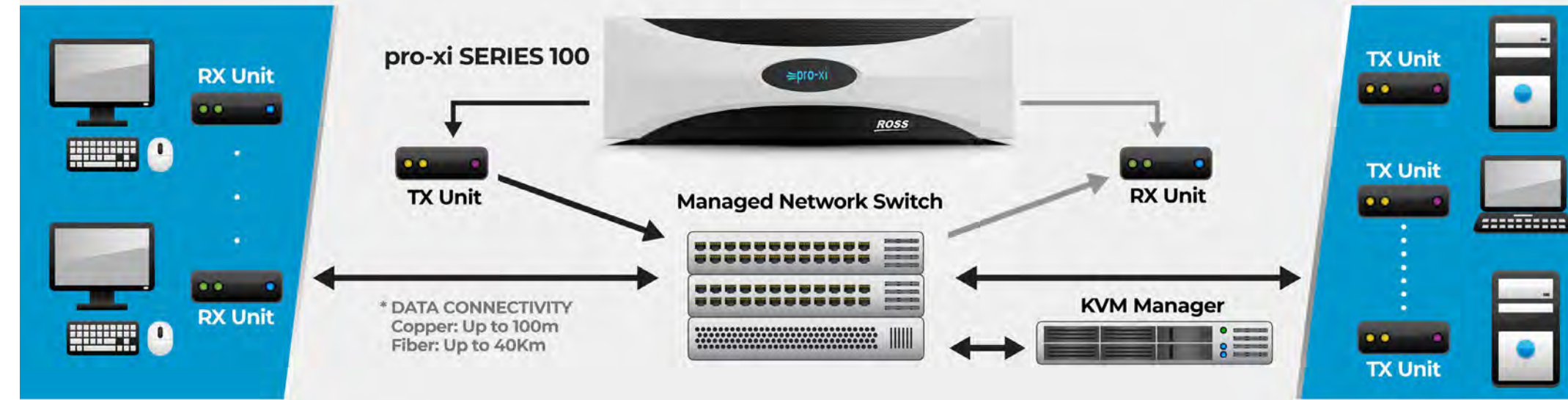
### SUPERCHARGE YOUR MATRIX

Catapult your KVM functionality into the pro-xi dimension by combining the powerful Workstation Integration technology with existing KVM matrices. Provide unique and patented workstation integration control to any workstation on the network. Solve the problems caused by the increasing proliferation of control systems and information overload in control rooms and operations centers.

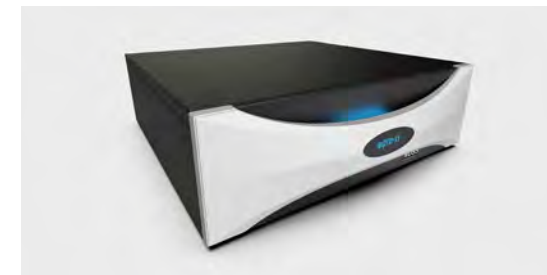
## CONQUER CHAOS™



## SUPERCHARGE YOUR MATRIX



Combine powerful Workstation Integration with existing KVM technology



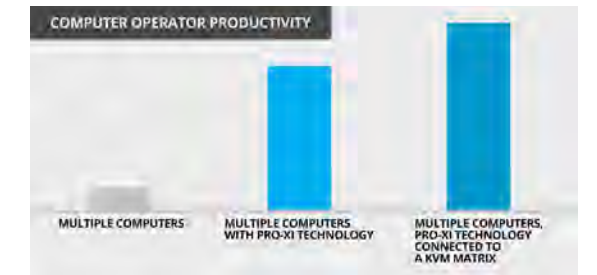
### SIMULTANEOUS MONITOR & CONTROL

Simultaneously monitor and control multiple, disparate, computer systems, in real time, on a single, display canvas — One mouse, One keyboard, One operator.



### REDUCE COST & OVERHEAD

Manage overhead more effectively by integrating multiple computer systems onto a single display — less workstations, fewer staff, better results.



### CONTROL HUNDREDS OF INPUTS

Increase operators' productivity; connect computer inputs directly to the Workstation Integrator or combine the pro-xi and KVM technologies. Control up to hundreds of inputs when connected to a matrix.



## ULTRIX SOFTWARE-DEFINED ROUTING PLATFORM

Ultrix 12G Router is the ultimate routing, multiviewer, and signal processing platform for studios, OB vans, and flypacks.



Ultrix is a powerful, state-of-the-art software-defined routing platform that lets you realize significant cost, space and power efficiently with unprecedented flexibility and agility. As well Ultrix provides you with the peace of mind that comes with an extremely reliable system designed for future requirements.

### SOFTWARE-DEFINED

Easily add new features through additional software licenses. No additional hardware required.

### INTEGRATED DESIGN

The Ultrix 12G Router is infrastructure in a box. Video/audio routing, multiviewers, audio processing, frame synchronizers, clean/quiet switching, UHD gearboxing and more all unified in one single chassis.

### SAVE MONEY

Because of its size, base feature set, and software capabilities, owners save significant money on upfront capital costs. Additionally, the advanced architecture provides significant ROI in terms of power, cooling, shipping, and space costs.

## THE NEXT WAVE IN ROUTING

# Ultrix



### RICH MULTIVIEWER CAPABILITIES

Up to 24 Independent multiviewer heads in a single 5RU chassis. Each head supports up to 100 PIPs. Completely independent and individually controllable providing superior flexibility.



### AUDIO PROCESSING & ROUTING FABRIC

Up to 3kx3k audio routing and processing fabric comes standard with Ultrix. Up to 2kx2k embedded, and 1kx1k discrete audio supported. Route, process, and configure down to a mono channel, regardless of I/O.



### TRANSPORT FLEXIBILITY

Ultrix allows for routing and processing signals through a wide variety of transport topologies. Use any combination of Coax, SFP, or IP I/O cards to deploy complete broadcast solutions for SDI, hybrid, or even pure-IP topologies.



## ULTRICORE CONNECTIVITY CONTROL SYSTEM

Ultracore is a fully featured connectivity control system that goes beyond traditional routing configuration and control. Ultracore makes it quick and easy to configure a system and gives staff an intuitive and powerful set of controls to make operations run smoothly.



Ultracore was designed to handle all the usual router requirements while also harnessing the power of Ultrix, a new breed of modern connectivity platform. Ultrix is much more than just routing - the platform includes major features like audio and video processing, multiviewing, and more.

### FEATURE RICH

System discovery, database creation, and hardware and software panel configuration are all included with Ultracore and accessible from one UI.

### EASY SYSTEMIZATION

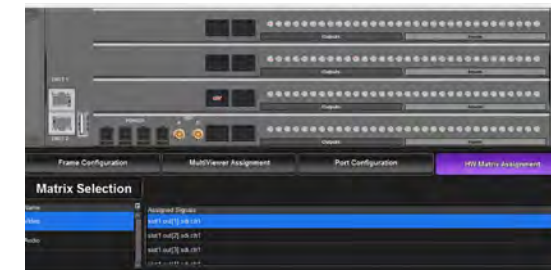
To ensure interoperability and easy interfacing to other third-party control and automation devices within your facility, Ultracore supports industry standard protocols including Probel SW-P-08, GVG Native, NV9000, and TSL 3.1, and 5.0 for multiviewer tally.

### INTEGRATED DESIGN

Ultracore's integrated control system design provides router, multiviewer, and processing configuration and control all from one system.

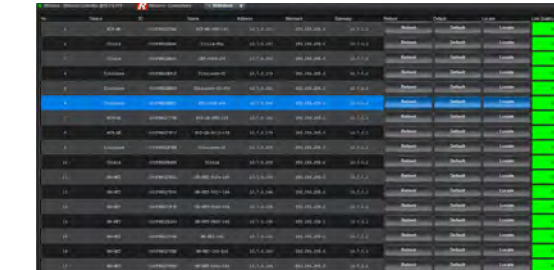
INTEGRATED,  
POWERFUL CONTROL

# Ultracore



### SIMPLE OPERATION

Use Ultracore to quickly route hundreds of video signals and thousands of audio channels anywhere by name. This creates a simple easy to use interface that allows operators to do their jobs quickly.



### QUICK SETUP

Discover and create system views quickly with the Walkabout system tool, and generate logical databases efficiently with the system fill tool. Configuration changes are pushed to system clients with no downtime.



### EXTENSIBLE CONTROL

Ultracore-BCS is a powerful external control system for both traditional and modern workflows. Software licenses can be added to provide powerful feature enhancements to enable users the same workflows in single frame, IP, or distributed topology environments



## ULTRISCAPE SOFTWARE-DEFINED MULTIVIEWER PLATFORM

Ultriscape is the ultimate multiviewer platform for Studios, OB Vans, and Flypacks. As the world's first software-defined multiviewer, customers realize significant cost, space, and power efficiencies with unparalleled flexibility and agility.



Ultriscape, is an integrated MultiViewer within the Ultrix platform. It is the worlds first software enabled MultiViewer that is housed inside a routing platform, and is also the first MultiViewer that can support single link 12Gb/s signals.

### FLEXIBLE

Each multiviewer head is completely independent, offering tremendous flexibility for layouts and control.

### INTEGRATED DESIGN

Ultriscape is an integrated multiviewer within the Ultrix platform. Therefore, it can be added to extensive routing, audio processing, and synchronization capabilities to create a completely integrated solution.

### PAY AS YOU GO

The software-defined architecture means you simply buy what you need, when you need it. No need to make critical design decisions upfront, simply add appropriate multiviewer outputs when they are required.

WORLD'S FIRST SCALABLE,  
SOFTWARE ENABLED  
MULTIVIEWER

# Ultriscape



### SOFTWARE-DEFINED

Add multiviewer heads by purchasing software licenses. Up to 6 outputs in a 1RU, 12 outputs in a 2RU, and 27 outputs in a 5RU.



### RICH MULTIVIEWER CAPABILITIES

Each multiviewer head supports up to 100 PIPs. Completely independent and individually controllable providing superior flexibility.



### INDUSTRY LEADING QUALITY

Pristine image quality, and low latency make Ultriscape ideal for the most demanding applications and venues.



## NK ROUTING PLATFORM

The NK Series routing family is a cost effective, high performance routing platform for studios, OB vans, and flypacks. NK Series is compact, robust, and simple to use.



With a variety of frame sizes and format choices NK routers excel in providing high quality routing in a cost-effective manner.

### CONTROL FRIENDLY

NK Series are based on Dashboard control and can be configured to seamlessly fit within the Ross Ecosystem, as well as be a part of an Ultrix routing system.

### MODULAR

Some NK Series frames have the ability to expand with additional I/O modules.

### BUDGET FRIENDLY

Comprehensive range of sizes and formats to meet any budget.

## COST EFFECTIVE HIGH-PERFORMANCE ROUTING PLATFORM



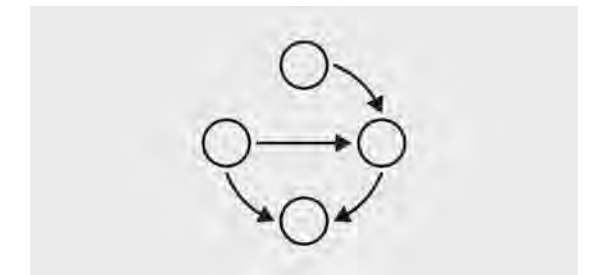
### COMPREHENSIVE FORMAT SUPPORT

From analog audio to 3G SDI, NK Series supports a wide range of signal types.



### SIZE FLEXIBILITY

With matrix sizes from 16x4 up to 72x72, NK Series can scale appropriately for the workflow that is required.



### INDUSTRY STANDARD CONTROL

Industry standard routing control means easy integration into automation systems as well as 3rd party router control systems.



## TOUCHDRIVE TOUCH-ENABLED SWITCHER PANEL SERIES

TouchDrive™ redefines the relationship between a Technical Director/ Vision Mixer and their switcher by bringing the same touch technology you know and love from your smartphone to video production switchers – even gestures. Every display on the control panel is touch-enabled. All of them. This allows features to be dropped right under the fingertips of the operator.



TouchDrive™ is another step in the success story that is Carbonite. As production requirements have grown, Carbonite has evolved to keep pace. TouchDrive™, the latest step in this evolution, is a tribute to the feedback from thousands of Technical Directors and Vision Mixers around the world.

### CONTROL WITH CONFIDENCE

High-resolution, rich color touch displays provide clear visual cues to make source and device control faster. Whether you are configuring bus maps, assigning button functions, delegating key buses or selecting your next transition type, TouchDrive™ allows you to operate with absolute confidence.

### PRODUCTION POWERHOUSE

The built-in DashBoard computer provides tight integration between TouchDrive and all of your other devices so you can control an entire production. Playout XPression graphics, trigger Tria+ clips or switch Ultrix crosspoints through this incredibly powerful surface.

### SECURE INVESTMENT

TouchDrive™ works with Carbonite Ultra, Carbonite Black and Graphite systems, making it a sound investment for today and tomorrow.

FEEL THE DIFFERENCE



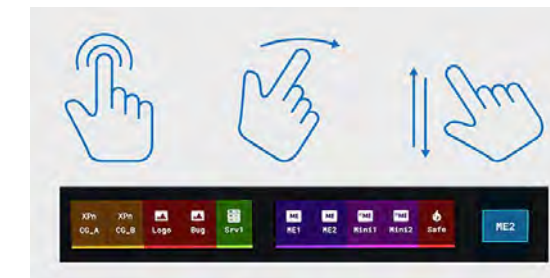
### TOUCHMAP™

Create bus maps with absolute ease. Select a crosspoint button, tap to open a Source Group, and select the source on the touch display. Done!



### BUILT-IN DASHBOARD

Imagine the power of DashBoard without the hassle of an external computer. TouchDrive is the first Carbonite control surface to incorporate a DashBoard computer right in the panel. Use our 15.6" touchscreen or a standard monitor – either way, DashBoard operations have never been easier.



### GESTURES

Selected menus are complemented with touch gestures. For example, swipe the display to view different wipe patterns, then tap the display to select the desired pattern. Gestures feel natural and intuitive.



## ACUITY LARGE PRODUCTION SWITCHER

Acuity is our top-of-the-line large production switcher - designed to handle world's most challenging live events. This switcher easily adapts to evolving technology in the video production industry and is built with the biggest creative feature set - for the biggest productions.



With Acuity, we not only provided support for new video standards, but also took everything we learned from past big switchers and made a system that was better, faster, and even more user-friendly than before.

### **FUTURE-READY WITH UHD & IP CAPABILITY**

Built with the future in mind, Acuity addresses the latest video formats and transport methods, while enabling a gradual transition from your existing equipment.

### **POWERFUL PROCESSING**

Acuity frames can be outfitted with specialized I/O cards for total input & output processing power, hybrid 3G quad & 12G single-link connectivity, or hybrid SD/IP connectivity.

### **CREATIVE TOOLS FOR CREATIVE PEOPLE**

Acuity makes it personal, allowing you to arrange things the way you want them. Independently map inputs to any button in any order on any ME. Set up individual source mnemonic names, font sizes and colors. Use the Acuity RGB buttons to design your own color scheme, background panel glow and on-air indicators to fit the way you work. Choose from a selection of system control display themes. Get Acuity in your zone and make things happen.

CREATIVITY UNLEASHED

A · C · U · I · T · Y



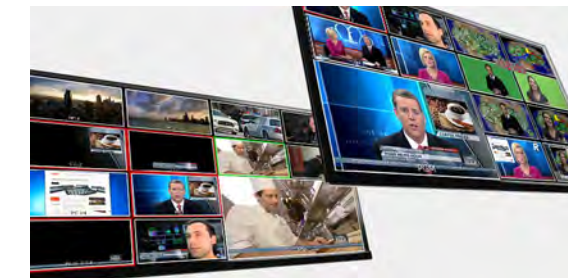
### **POWERFUL PRODUCTION ENGINES**

Two production engines implemented in 4RU (6.5 ME) and 8RU (8 ME) frames, enable Acuity to eliminate I/O limitations and add new levels of internal processing power and signal management capability. SD, HD, 3G and 4K UHD production are all easy to achieve within these two processing engines.



### **MULTIFEED CONFIGURABLE OUTPUTS**

MultiFeed equips each ME with 8 programmable outputs (6 program and 2 preview). Select any combination of keys on any of the 6 program outputs to create multiple uniquely-keyed outputs for multi-channel productions. No other switcher offers the flexibility to separately brand any ME output, and selectively preview keys and backgrounds.



### **FACILITY-GRADE MULTIVIEWERS**

With flexible ME / MultiViewer resources, and input MultiViewers on optional MultiProcessing input cards, Acuity can be the single monitoring hub for your entire facility. Benefit from huge reductions in wiring, external routing, and signal distribution systems - for a cost-effective monitoring workflow.



## CARBONITE BLACK SERIES MID-SIZED PRODUCTION SWITCHER

Powerful mid-sized production switcher with an industry-leading feature set. Carbonite Black is built on a platform that adds new features via software updates and offer exciting functionalities that go beyond just a production switcher.



The most successful production switcher ever just got better. Carbonite Black's processing engine offers an I/O count of 36 inputs and 22 outputs. The Carbonite Black Plus and Carbonite Black Plus 12G have 36 inputs and 25 outputs making Carbonite production horsepower available to larger-scale productions.

### BACKED BY THOUSANDS OF CUSTOMERS

Carbonite is the most popular mid-size switcher series in the market. This switcher is proven day-after-day in a wide variety of production environments. Enjoy a fine-tuned feature set and easy hiring & training of operations staff.

### UHD & IP CAPABILITY

Carbonite Black addresses the latest video formats and transport methods, while enabling a gradual transition from your existing equipment.

### SIMPLICITY

Ergonomic control with a dedicated button for every task you need to perform - no searching or stepping through menus.

## PRODUCTION POWERHOUSE

# CARBONITE BLACK



### POWERFUL MEs & MINIMES

Carbonite Black packs major effects and keying power in up to 3 MEs. Each ME has four powerful keyers with luma, linear, chroma and DVE key types – along with a 5th background keyer for animated MediaWipe & DVE transitions. There are 4 MiniMEs in the system that “float” and can be used anywhere in the signal path, great for assignment to multiple locations and simultaneous use.



### VIDEO PROCESSING RESOURCES

Built with internal signal processing resources to easily manage differing equipment and formats. Carbonite Black comes equipped with 6 frame syncs / format converters. Carbonite Black Plus models have frame syncs, format converters, color correctors, and proc amps on all inputs and 12 processing outputs.



### UP TO FIVE MULTIVIEWERS

Two configurable MultiViewers with up to 32 windows are included in the standard Carbonite Black engine. Five MultiViewers are included with Carbonite Black Plus and Carbonite Black Plus 12G with up to 80 windows. These clean, low latency MultiViewers have access to all internal and external sources and selectable layouts.



## CARBONITE ULTRA MID-SIZED PRODUCTION SWITCHER

Carbonite Ultra is a next-generation switcher built on a software-defined platform which offers new features via software updates and exciting functionality that goes well beyond a traditional production switcher.



Carbonite Ultra takes everything customers love about the original Carbonite switchers and makes it more powerful, more compact, and more affordable than ever.

### PROVEN PLATFORM

Carbonite Ultra is built on the solid foundation of Carbonite - the production switcher series that powers amazing productions for thousands of Ross customers worldwide. Experience the value of a software-defined switcher platform backed by a team with over 45+ years of production switcher development and one of the highest-rated customer support teams in the industry.

### REDEFINED

Compact and powerful, Carbonite Ultra is a sleek 1RU chassis with 24 inputs and 14 outputs, that improves upon the most popular Carbonite features and adds new format-independent hardware to handle multi-format productions with ease.

### VALUE

Carbonite Ultra makes it more affordable than ever to introduce big switcher features into your productions offering up to a stunning 3MEs @ 1080P 50/60 in only 1RU!

THE WORLDS MOST POPULAR  
SWITCHER - REDEFINED

**CARBONITE** Ultra



### 12G / UHD READY

Add a 12G / UHD license to Carbonite Ultra to enable support for 12G / UHD production.

With 18 inputs & 10 outputs in 12G mode, and 1 full ME & 2 MiniMEs during UHD operation - Carbonite Ultra represents unbelievable value for a 12G / UHD switcher.



### INSANE HORSEPOWER

Carbonite Ultra offers an insane list of production features: Up to 3 MEs with 5 keys each, 4 MiniMEs, 4 Key / Fill MediaStores with audio, 8 DVEs, 2 UltraChrome chroma keyers, animated media transitions, I/O signal-processing, LiveEDL, powerful macro timelines, MultiScreen mode, up to 4 MultiViewers with 64 windows and XPression LiveCG software.



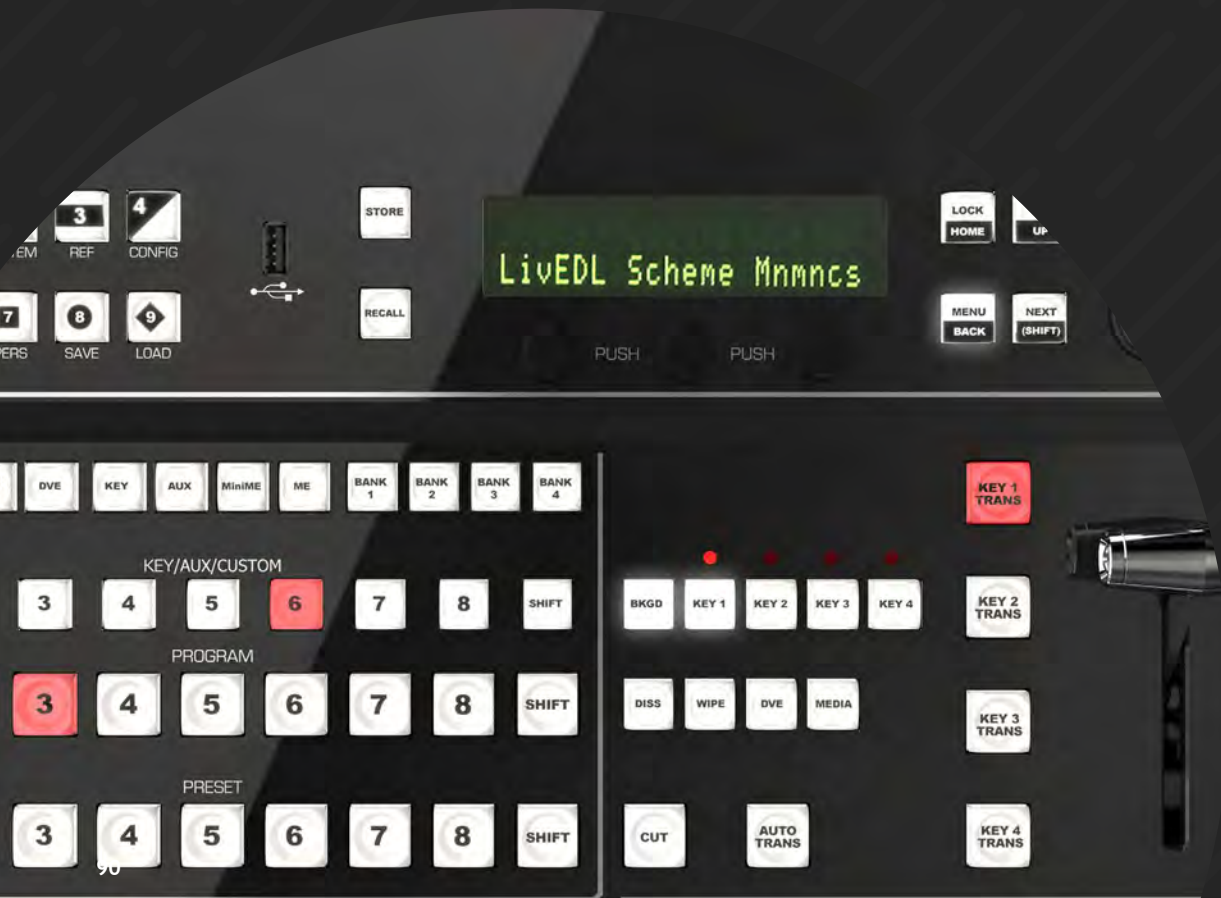
### FAMILIAR CONTROL

Offering a wide-range of control choices, any of the Carbonite Black Series control panels (including SoftPanel) can be paired with a Carbonite Ultra frame - an interface familiar to tens of thousands of users globally. RossTalk protocol support takes multi-product integration and control to the next level.



## CARBONITE BLACK SOLO COMPACT PRODUCTION SWITCHER

Carbonite Black Solo is our most compact and affordable production switcher. All-metal construction and robust, Solo is serious hardware designed for serious productions.



Carbonite Black Solo is the perfect fit for small productions and portability. Offering big switcher features of the Carbonite Black series, Solo has the tools to create a top-notch show where quality, affordability and operational performance is essential.

### ELIMINATE ADDITIONAL PURCHASES

If your productions are on the go, at different facilities and events, you want to make it easy to plug-in and get the show rolling. Carbonite Black Solo is built with internal video processing and MultiViewer resources, so no external gear is required.

### ONE-BUTTON PLAYOUT

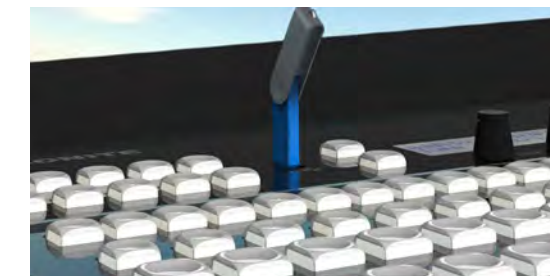
Carbonite Black Solo features fully-customizable macros and a memory system with unique smart recall and effect recall functionality unlike feature-based custom controls and memories commonly found in compact switchers.

### LIVE PRODUCTION HUB

Engage your audience with graphics, video clips, and animated media effects. Carbonite Black Solo comes equipped with everything you need for a media-rich production including four internal MediaStores, XPression LiveCG graphics software, and a USB media player, unlike anything you've ever seen in a production switcher.

## NO ORDINARY COMPACT PRODUCTION SWITCHER

# CARBONITE BLACK SOLO



### POWERFUL PRODUCTION ENGINE

Carbonite Black Solo's main ME has 4 powerful keys with luma, linear, Chroma and DVE key types - as well as an additional 5th hidden keyer for animated Media Wipe and DVE transitions. The 2 built-in MiniMEs are great for additional dissolves key layers, unique outputs, on-set monitors and multi-screen processors.

### SIMPLE CONTROL

In addition to a refined control panel, Solo is part of the Ross DashBoard Control ecosystem. This network control software allows total control of all switcher functions and makes it easy to create a purpose-built UI for your specific production environment. For truly simple shows, take advantage of the included ViewControl touch screen interface.

### REVOLUTIONARY MEDIA PLAYER

Truly unique and innovative, Carbonite Black Solo provides a dedicated single-channel clip player for playout of compressed MPEG-4 AVC media directly from a connected USB-media drive. Easily take your clips to air with a dedicated DashBoard interface, Custom Control or AMP command.



## GRAPHITE ALL-IN-ONE PRODUCTION SYSTEM

Real Switcher. Real Graphics. Real Audio. Graphite is an all-inclusive system that combines big switcher performance with 3D graphics, instant access clip servers and pristine audio clarity.



With a full suite of production tools at your finger tips, Graphite is a reliable, hardware-based alternative to software-based all-in-one production systems. Graphite is the perfect companion for generating live content for streaming, broadcasting, or feeding big screens.

### FULLY-EQUIPPED SYSTEM

The value of a single all-in-one system with no need for supplemental equipment cannot be overstated. Every aspect of the Graphite system is purpose-built with the reliability of separate hardware system components.

### FLEXIBLE WORKFLOW

Crew your show as you see fit. A single operator can run an entire show through all-encompassing control, or roles can be separated for multiple operators during high-intensity events.

### INCREMENTAL GROWTH

Switcher resources and graphics power can be upgraded via software licenses – and additional equipment is available through a single vendor for effortless integration and guaranteed support.

PURE PRODUCTION POWER

# GRAPHITE



### CARBONITE SWITCHER

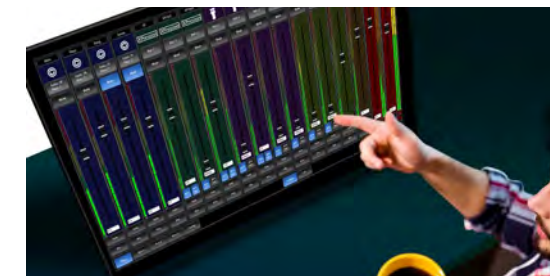
Graphite contains the full Carbonite feature set, with up to 2 powerful MEs and 4 MiniMEs.

Each ME has four powerful keys as well as an additional fifth transition key for animated Media Wipes and DVE transitions. Additionally each MiniME includes an independent mixer and 2 keys.



### XPRESSION GRAPHICS AND CLIPS

XPression Graphite is a motion graphics engine with near limitless layering on a single channel with true 3D objects and animation. In addition, Graphite includes two channels of XPression Clips to record, catalog and playback clips - with instant recall times and back-to-back clip transitions.



### RAVE AUDIO MIXER

Handle demanding live audio with RAVE, Graphite's hardware-based 46-channel digital audio mixer. RAVE provides access to audio from embedded SDI inputs and internal XPression/PC sources. Optionally, audio breakout panels add discrete analog and digital audio I/O, with microphone pre-amps and phantom power.



## GRAPHITE PORTABLE PRODUCTION CENTER (PPC)

Graphite PPC offers a complete production solution and comes neatly housed in a compact carrying case. This portable production center combines big switcher performance, stunning XPression graphics, instant-access clip servers and pristine RAVE audio with unmatched portability and ease of operation.



Graphite PPC is an all-in-one production solution that you can take anywhere. This highly portable system can be used for in-venue screens, streaming and broadcast. Best of all, PPC can be set up in minutes and requires a single operator to produce dazzling high-impact productions

### CREATE ANYWHERE

Graphite PPC packs an incredible array of creative production tools and comes in an easy to transport soft-shell carrying case, equipped with a pull-out handle and wheels.

### ULTRA-QUIET

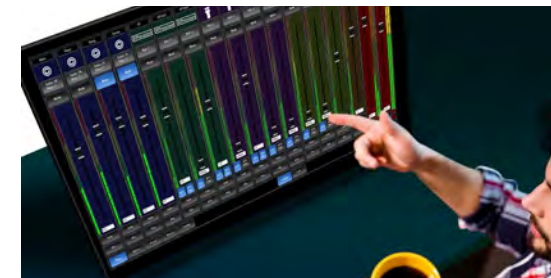
Soundless fan cooling means Graphite PPC can be deployed just about anywhere, even in studios with live microphones.

### VALUE

Graphite PPC puts high-end, true hardware-based production power within reach of just about any facility to maximize your investment.

## GRAPHITE ON-THE-GO

# GRAPHITE



### UNMATCHED AUDIO

The Ross Audio Video Engine (RAVE) is Graphite's internal, hardware-based 48-fader audio mixer with high quality 24-bit processing. RAVE can access all 16 embedded channels of each SDI input and independently assign them to available faders



### DASHBOARD CONTROL

DashBoard provides full control of Graphite's switcher and audio mixer. With DashBoard CustomPanels - you can tailor a graphical user interface to control virtually anything in your production environment.



### GRAPHITE PCIe

The Graphite PCIe efficiently distributes the system workload, eliminating the performance issues traditionally associated with all-in-one systems. The PCIe card is responsible for Graphite's internal Carbonite switcher, RAVE audio mixer, and switcher frame buffers.



## LUCID STUDIO VIRTUAL SOLUTIONS CONTROL

Lucid Studio is a highly flexible and customizable control platform with an easy-to-use intuitive graphical user interface.



Lucid provides seamless integration with tracking systems and real-time 3D rendering engines such as XPression and Voyager. It is a complete redesign of the legacy UX platform, with significant changes to the underlying code, and the graphics interface. Lucid Studio offers unparalleled customizability, flexibility and accessibility to all types of operation and operators. Lucid Studio is used for virtual set camera calibration, scene manipulation, media replacement, event triggering, MOS newsroom integration, animation control, robotic camera movement control and much more.

### CUSTOMIZABLE INTERFACE

Highly flexible and customizable UI allows the users to modify the GUI based on the production stage. Saving and recalling layouts reduces reaction time, streamlines the production, and significantly increases the speed of operation.

### PRODUCTION CONTROL

Lucid was designed to optimize live production operations and increase operator efficiency. Real-time reaction to changing production circumstances and needs was never easier or faster.

### IMPROVED WORKFLOW

Lucid offers remote control to automate production workflows for efficient operations. Combine complex virtual moves and camera moves into a single button event, and provide control over animation sequences, as well as full synchronization with material changes.

## THE CONTROL CENTER FOR VIRTUAL SOLUTIONS



### REAL TIME REACTIVENESS

Lucid Studio offers real-time control over all aspects of the production. There is no need to go off-air for simple fixes. Objects position, visibility, materials, tracking assignment, data connections, all can be control from Lucid.



### DIRECT CONTROL

Lucid Studio allows the operator direct access to objects in the scene, and the ability to move, rotate, scale, save and animate them without going into the editor on the engine. In this way, last second changes can take place easily and effortlessly.



### CONFIGURATION AND MONITORING

Lucid Studio controls the configuration of project files and network settings and provides the status of cameras, tracking streams, and network connections, in the same easy to use interface.



## VOYAGER UNREAL 4 VIRTUAL RENDER PLATFORM

Based on the UE4 gaming engine, Voyager provides photo-realistic scenery in any virtual or augmented studio environment.



Voyager enables the creation of even the most complex graphical elements quickly, easily, and accurately, producing unprecedented realism like never before.

### SUPERIOR GRAPHICS CAPABILITIES

The Unreal4 gaming engine utilizes advanced graphics features like collision, particles, dynamic texture, real-time reflections, skeleton animation, cloth animation and real-time shadows.

### FLEXIBLE WORKFLOW

With Lucid Studio and Lucid Track, any combination of tracking devices, protocols, camera mounts, and engines is achievable within the same environment.

### REAL TIME REACTIVENESS

Voyager enables real time control over scene elements, in PIE mode, without the need to package the project to go on-air.



## HYPER-REALISTIC RENDERING



### REAL-TIME DYNAMIC SHADERS

Unreal4 allows the use of shaders to create realistic looking effects. From dynamic shadows, live-lights and light blooms, to reflections and refractions. These shaders and effects are applicable both in Augmented Reality and Virtual Studio environment.



### COMPLEX ANIMATIONS

Unreal4 offers an unparalleled level of animation capabilities – IK, Skeleton, cloth, and Particles are just part of the toolset. Voyager supports the use of Unreal's sequencer to manage complex animations and trigger them effortlessly.



### WORKFLOW AND CONTROL

Through the use of Lucid Studio it is possible to control the Unreal engine, control tracking devices and lens data, make last second changes in real-time, connect to external data sources, and integrate the Unreal platform with MOS based newsroom control systems.



## TRACKLESS STUDIO VIRTUAL PRODUCTION

Trackless virtual systems are all-in-one engines that require no external action on the part of the camera in order to create movement. They use a stationary physical camera, with all the camera movement being done within the graphics engine. This eliminates the need for physical tracking equipment.



Built on the XPression Real-Time Motion Graphics System with an intuitive purpose-built interface, Ross Trackless Studio leverages years of experience with virtual sets and augmented reality to bring quality virtual sets to even the most basic productions.

### LOOKS REAL

Combining virtual camera moves and the same high-quality virtual sets as tracked implementations creates excellent productions.

### SHORTENED LEARNING CURVE

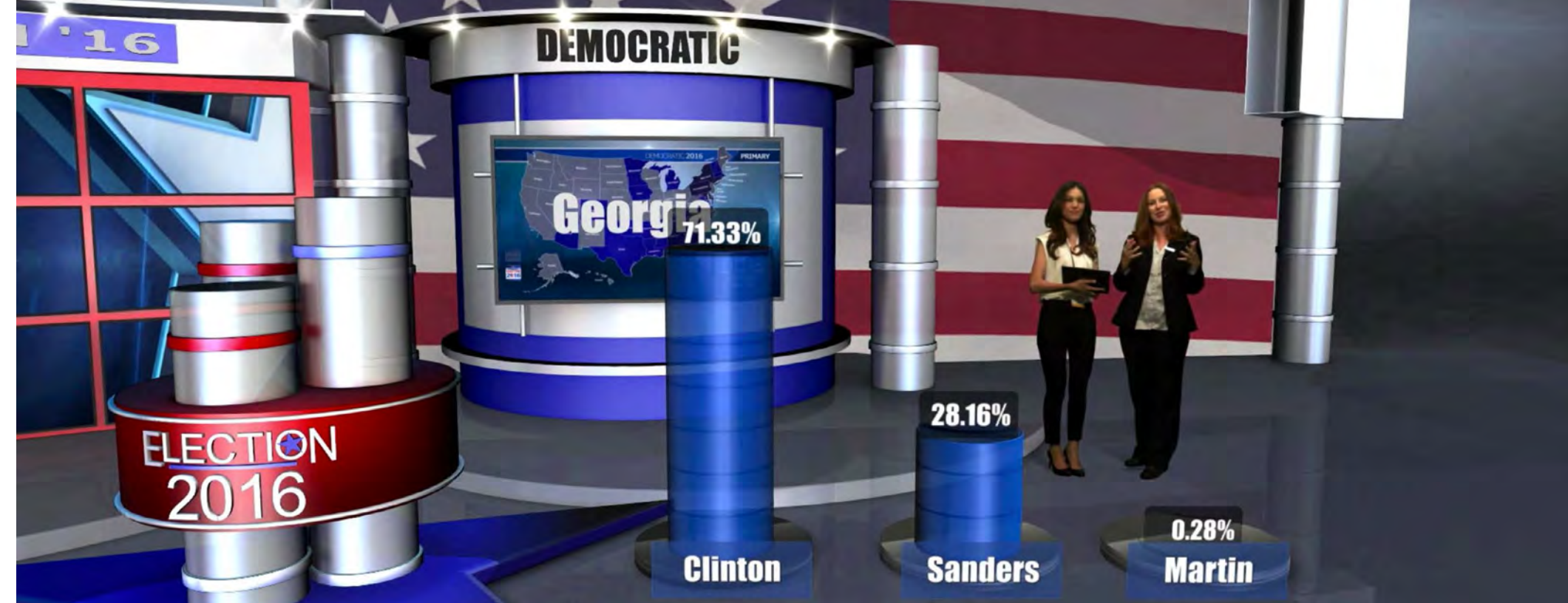
Leverages years of experience with virtual sets and augmented reality to bring quality virtual sets to even the most basic productions.

### SMALL STUDIO. BIG IMPACT.

All camera moves are done virtually inside of the XPression scene, eliminating the need for a large studio space.

## ALL-IN-ONE VIRTUAL PRODUCTION

**ROSS** trackless  
studio



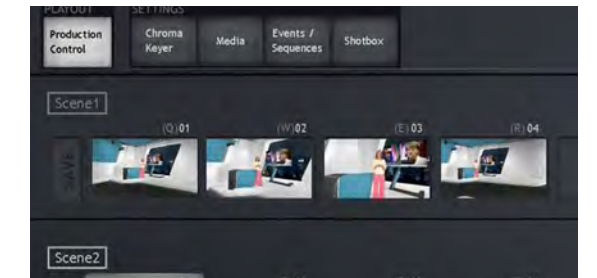
### FULL 3D

Real 3D virtual sets with full 3D motion capabilities.



### TRANSITIONS

Transitions between camera positions or between multiple cameras to show movement or changes in the production.



### USE UP TO FOUR CAMERAS

Multi-camera support (1, 2 or 4 depending on hardware configuration).



## ULTRACHROME HR MULTI-CHANNEL CHROMA KEYS

Master the black art of chroma keying with UltrachromeHR, a high performance multi-channel chroma keying system built on the rock-solid Carbonite Black foundation.



Carbonite UltrachromeHR is a powerful chroma keying system. Get great results from standard camera signals or pair with Ross ACIDCam for the highest-quality chroma key ever created.

### SIMPLE CONTROL

Part of the DashBoard ecosystem, a network-connected software platform for full control of UltrachromeHR and your entire production solution.

### VERSATILE CHROMA KEY

Choose the chroma key mode that gets the best results from your unique setup and fine-tune your key with built-in post key processing resources.

### SINGLE VENDOR VIRTUAL

Beautiful chroma keys with photo-realistic graphics and tracked + trackless virtual set technology – Ross can realize all your virtual set needs.



## HIGH PERFORMANCE CHROMA KEYING

**ultrachromeHR**



### 4:2:2 + 0:2:2 = 4:4:4

For the highest quality virtual productions, UltrachromeHR accepts an additional 0:4:4 video output from Ross ACID cameras. The standard 4:2:2 and 0:4:4 UltrachromeHR outputs are received and internally combined to create a 4:4:4 signal. This signal format is then used to develop beautiful high-resolution key edges.



### CHROMA KEYING ASSISTANCE

UltrachromeHR's quality-of-life features help you get the best key possible. Auto background analysis measures the video source to adjust the edge area and re-spill values of your chroma key. Additionally, each chroma key channel contains colour correction and colour temperature resources, to fine-tune your image.



### MINIME COMPOSITING

Each of Ultrachrome HR's 4 MiniMEs provides 3 keyers, which provide great flexibility when building your final output. You can composite your chroma key with the virtual environment, leaving two more layers that can be either between background & chroma key or in front of the subject.



## CARBONITE MOSAIC DYNAMIC VIDEO IMAGE PROCESSOR

Built on the Carbonite Black foundation, Carbonite Mosaic is a dynamic compositing tool that scales your live productions to massive displays. Take advantage of a fully-loaded video-image processing feature-set at one of the best price points in the industry.



This powerful system's single frame latency ensures your video content keeps up with the live action, for a smooth viewing experience. Prepare to stun your audience with live productions across a canvas size of over 20 million pixels.

### LEADING SOLUTION

Carbonite Mosaic and XPression Tessera team up for high-quality upscaled video and beautiful pixel-accurate graphics on your display. Live has never looked this good.

### HANDLE ANY SOURCE

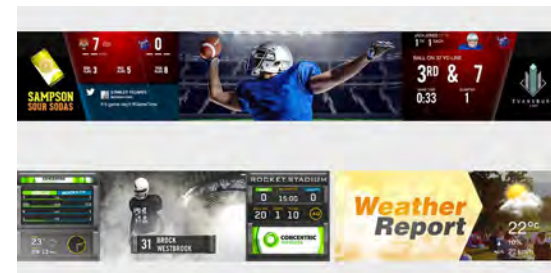
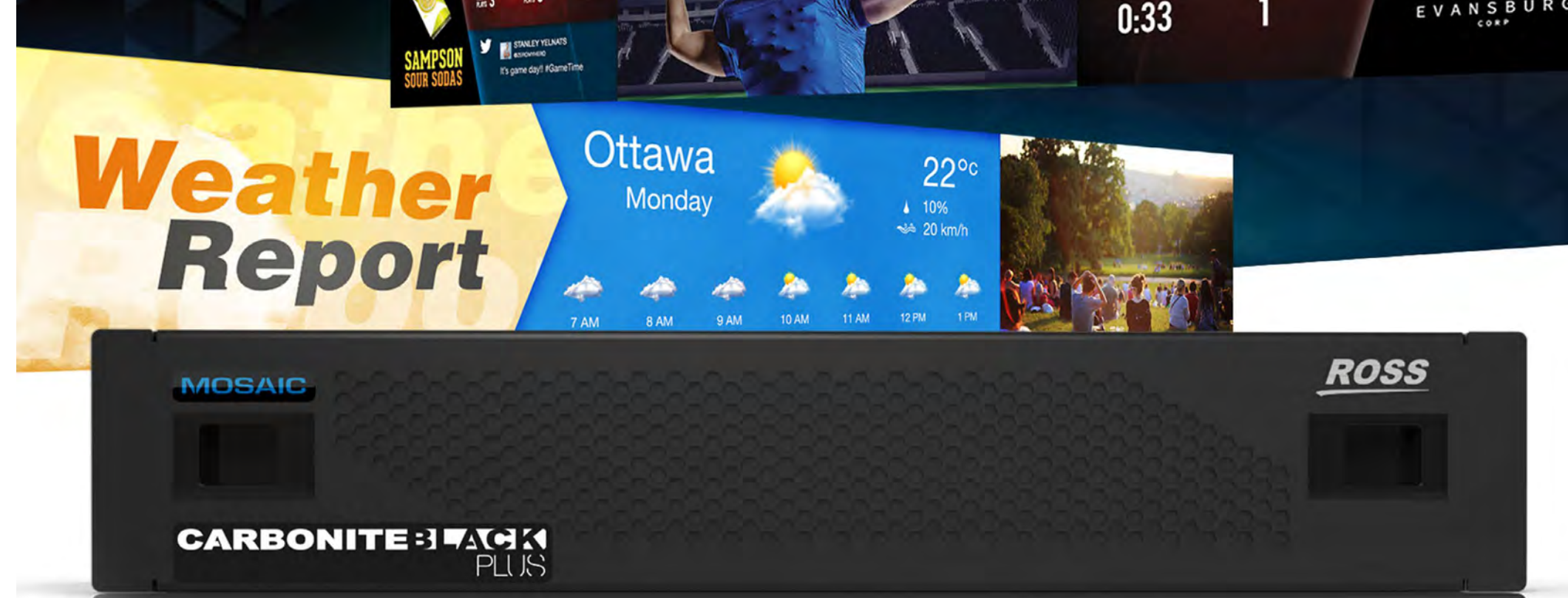
A complete set of video processing resources guarantees a uniform look across your display. For ultra-high-quality imagery, Carbonite Mosaic supports 10bit HDR formats.

### SMART CONTROL

Like all Ross products, Carbonite Mosaic is part of the DashBoard Control Ecosystem. DashBoard makes it easy to control your display layouts or even your entire venue, from a single interface.

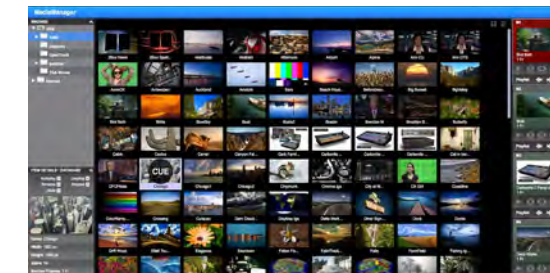
## MULTI-SCREEN POWER

# CARBONITE MOSAIC



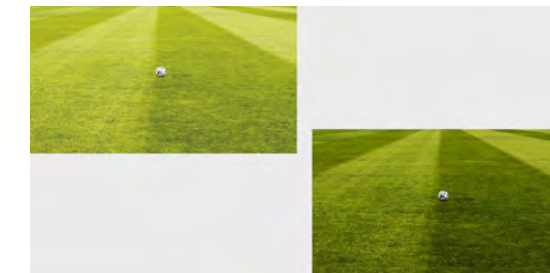
### 10 CANVAS OUTPUTS

Each independent tile output has up to 5 layers each (1 background and 4 key layers) along with programmable recall and dynamic animated effects. By weaving the tile outputs into a canvas, you can put together a massive single screen or feed multiple large displays across your venue.



### STILL & ANIMATED MEDIA

Any of Carbonite Mosaic's 36 inputs can be loaded with a still image. This is great for simple branding or as a backup source for your screens. Alternatively, any of the 18 scaler engines that are not in use, can be converted to MediaStores for still or animated playback with key+fill.



### VIDEO PROCESSING & HDR

Every one of the 36 inputs have dedicated proc amps, color correctors and format converters. On 12 of the 25 outputs, video proc amps, color correctors and format converters are available.



## MC1 MASTER CONTROL

MC1 is a cost-effective, modular Master Control Switcher and Branding solution. The MC1 system scales from stand-alone branding to multi-channel master control installations adapting easily to manual or automated control.



As part of an integrated solution, MC1 delivers the complete functionality of a Master Control system, offering Multiviewers, frame synchronizers and advanced audio connectivity.

### MIX, KEY, BRAND

At its core, MC1 is a powerful AV mixer, offering 4 keys, logo payout, transitions with full preview. You get the tools you need to build your on-air brand.

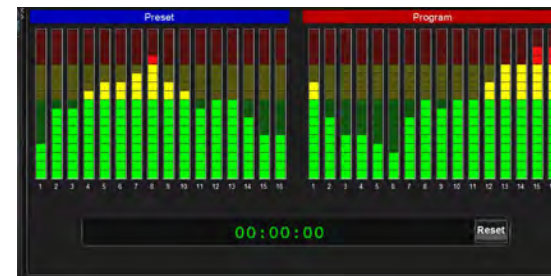
### FLEXIBILITY CONTROL

Manage multiple Master Controls with ease from an intuitive DashBoard touchscreen or tactile hardware control panel. Run in manual or automated or semi-automated, supporting most popular automation systems.

### ROBUST

It features hardware bypass to keep your channel on air in any situation. MC1 can also be used as great backup to Channel-in-a-box and IP playout systems.

## COST-EFFECTIVE MASTER CONTROL



### AUDIO CONTROL

MC1 features flexible audio shuffling, ensuring all your audio channels are in order, with adjustable gain and downmix. Each source can be independently configured with multiple presets to handle changing feeds with ease.



### AUDIO MIXING

An integrated multi-channel audio mixer allows simultaneous mixing of up to 16 audio channels, complete with programmable transition types and rates.

At the push of a button, a program audio can be ducked (to a user-selected level) and VO inserted, with fully programmable audio gain level.



### SQUEEZEBACK

Perform smooth on-air Squeezeback transitions to reveal another video source or graphic with ease. Squeezebacks can be integrated into standard transitions, either with or without keys. Squeezeback size, position and aspect can be stored as preset for clean, repeatable squeezes every time!



## OPENGear OGX MODULAR PLATFORM

openGear® is the industry standard platform of choice for modular signal processing. As the world's first modular infrastructure platform open to other manufacturers, openGear provides solutions derived from hundreds of individual cards from dozens of companies. This cooperative effort gives users best of breed product and budget options, all while ensuring common control and monitoring within the DashBoard ecosystem.



We decided that we should create an industry standard for terminal equipment. This fit perfectly with our code of ethics “#1: We will always act in our customers’ best interest”

### CONTROL

DashBoard provides one unified control system across openGear products from all manufacturers. This allows for easy setup, monitoring, alarms and management. With the included CustomPanel Panel Builder, it is easy to create custom workflows across multiple products to suit your exact needs.

### OPEN

The Emmy®-award winning openGear platform, designed by Ross has been adopted by dozens of manufacturers offering hundreds of signal processing solutions. This provides you with the freedom to choose best in breed solutions to meet your needs and budget.

### RELIABLE

oGx is the 4th generation openGear modular infrastructure platform built for 24/7 operation. Featuring redundant power and cooling, service is a snap with zero downtime. Front-loading modules and passive backplane ensure ease of maintenance and maximum reliability.

## THE INDUSTRY STANDARD OF CHOICE



### SDI, IP OR HYBRID

The oGx platform has been designed to meet the demands of today's complex IP and hybrid infrastructures. With lots of power and cooling, and careful consideration to shielding, the most complex processing can be achieved, supporting evolving IP and UHD applications.



### DATASAFE

DataSafe dramatically reduces downtime when failed modules are swapped out. All module parameters are stored on the local frame network card and automatically restored when a hot-swap is performed.



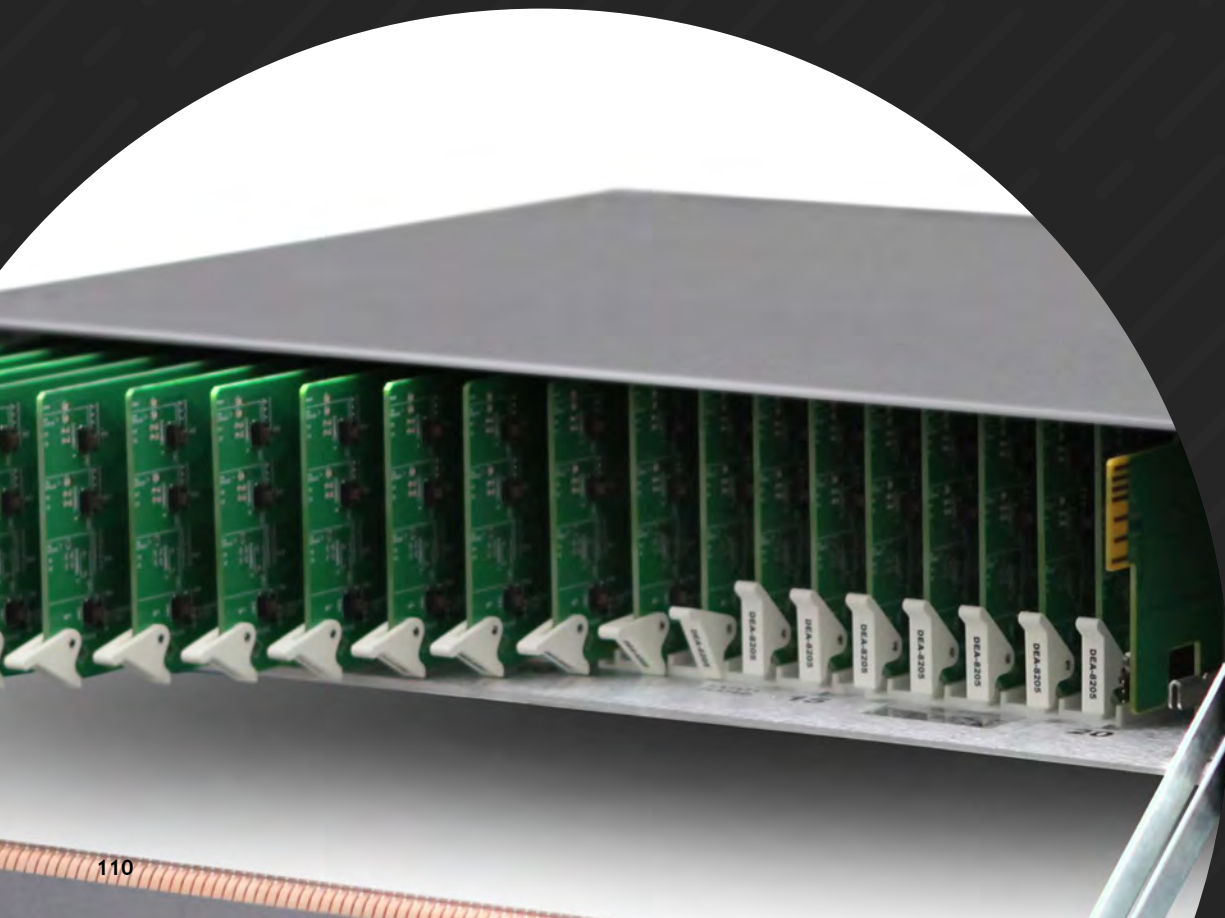
### SNMP

SNMP is loaded direct to the frame eliminating the need for any external gateways and runs on a separate software port allowing for simultaneous control from both DashBoard and SNMP clients.



## OPENGear MODULAR INFRASTRUCTURE

Ross openGear is a wide range of modular infrastructure products designed to manage analog, SD, HD, UHD and IP signal-types and ranging from signal conversion and processing to signal distribution and keying with solutions for all your audio, video, and metadata needs.



Built on a 30 year history of technical excellence, Ross leads the industry, in mission-critical and cost-effective solutions designed for existing and evolving standards.

### SOLUTIONS

Ross openGear offers a variety of solutions for Distribution, Conversion, Keying & Branding, Processing & Monitoring, Fiber, IP Solutions, Timing & Sync, Audio Embedding and Data processing.

### CONTROL

DashBoard provides unified control across all of our openGear products. This allows for easy configuration and full feature control with monitoring, alarms and management. The included PanelBuilder software makes it easy to create custom workflows across multiple products to suit your exact needs. DashBoard can also be paired with our 2RU rackmount Ultritouch, for the ultimate convenience.

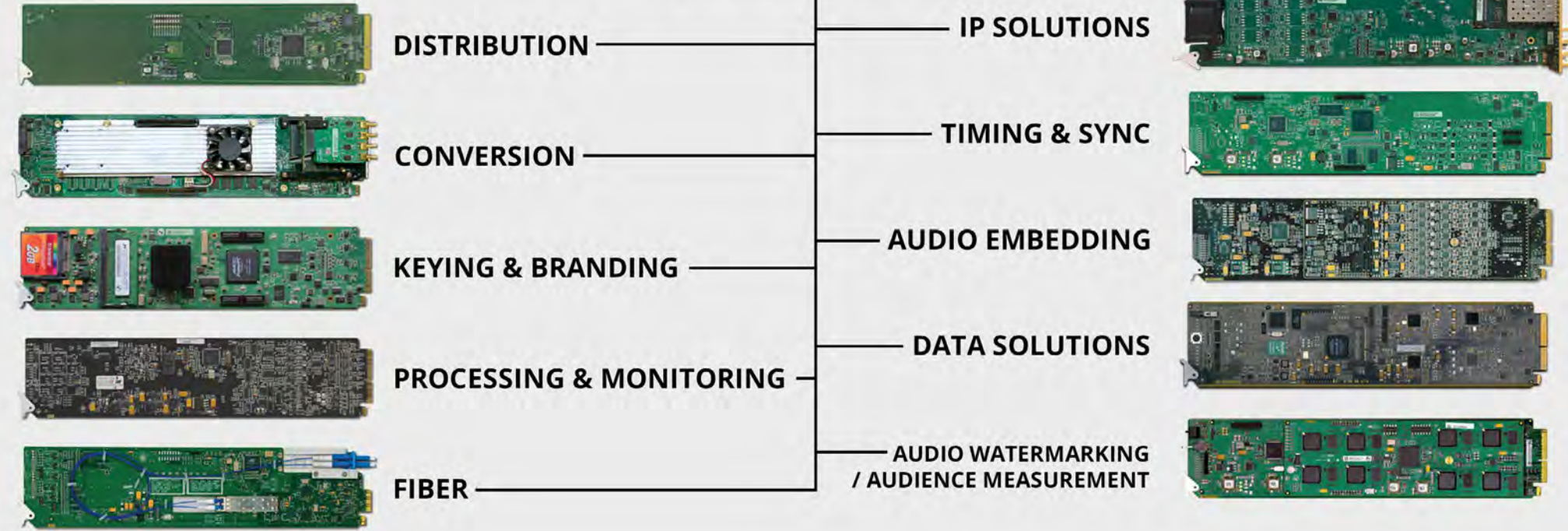
### SERVICEABILITY

openGear modular infrastructure is built for 24 / 7 operation. Front-loading modules with passive backplanes (no active components) and DataSafe backup ensure ease of maintenance and maximum reliability.

## THE INDUSTRY STANDARD OF CHOICE



# SOLUTIONS



### SMART MODULAR DESIGN

openGear modular products offer the flexibility of independent rear modules for connectivity to a wide array of interfaces such as BNC, twisted-pair audio, and fiber, supporting analog to UHD and IP. The independent rear modules are available in different I/O configurations for select cards, including high density split rear modules allowing up to 20 independent openGear® cards in the oGx frame.



### MODULAR IP PROCESSING

Raptor lifts openGear to new purposes, adapting software-defined modular processing to native IP or hybrid IP/SDI infrastructures. Raptor is fluent in many open control protocols such as NMOS, EmBER+, and DashBoard (to name but a few), thus giving you the freedom to soar through the IP environment of your choice.



### MODULAR UHD PROCESSING

Gator is the ultimate in adaptation, bringing software-defined UHD media processing functions to baseband infrastructure. Gator is a platform for a new series of UHD capable signal processing products, the first of which are a multichannel frame synchronizer, and a new branding and keying product.



## SOFTGEAR VIRTUALIZED MEDIA PROCESSING PLATFORM

softGear™ is the future-facing software technology platform that creates new ways to acquire, process, manage and distribute content. softGear utilizes microservices that can be chained together in custom configurations to build scalable workflows while preserving high-quality performance and reliability.

As the demand for new content grows, you need more versatile ways to create new workflows with more efficiencies to reduce your initial investment. With the goal of increasing flexibility, cost reduction, and investment protection, our team created the softGear platform based on a microservices architecture that empowers media processing applications with reliable real-time performance in audio and video processing environments.

### EASY TO USE INTERFACE

The DashBoard interface can be deployed across numerous product applications to simplify operational command and control. Get consistency in your multi-channel distribution through a centralized control interface.

### COTS BASED

Since softGear™ based solutions do not require specialized hardware, products using the platform are faster and easier to provision and deploy. The platform also enables solutions to be more scalable, flexible, and easy to upgrade in the field.

### SOFTWARE BASED PROCESSING

In the softGear architecture, algorithms are implemented in software encapsulated Docker containers, targeting x86 or GPU rather than FPGA or DSP. In addition, media processing services are deployed as microservices, instead of proprietary physical cards.



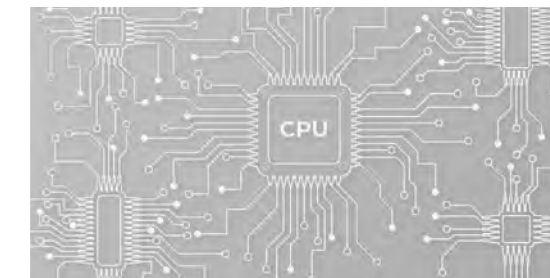
### COMMON UI

As requirements change, softGear allows you to repurpose existing systems by creating new workflows via a single user interface.



### SOFTWARE MEDIA PROCESSING

Since softGear™ solutions are based on software SDKs and do not require specialized hardware, the platform can enable these solutions more quickly and they become easier to provision and deploy.



### FIELD UPGRADABLE

softGear's media processing units are based on software, so their processing algorithms can be updated with new software releases in the field. This model allows updated systems to be created without hardware redesign.



## SOFTGEAR PRODUCTS AND SOLUTIONS

softGear™ unlocks high-density, scalable processing from industry leaders such as Dolby®, Nielsen® and Orban® for radio and television pre-distribution. Organizations can meet changing programming needs with softGear solutions deployed on commercial off-the-shelf (COTS) hardware.

We partnered with legendary algorithm providers to deliver state-of-the-art solutions for both television and radio transmission. Leveraging the flexibility of softGear, we offer best-of-breed signal processing solutions in a flexible platform, which is easy to deploy, manage and scale in both IP and baseband environments. With integrated DashBoard control, it is easy to monitor and control all your channels from any location.

### FLEXIBILITY

softGear leverages best-of-breed audio processing for radio and television from providers such as Orban, Nielsen and Dolby. The softGear microservice platform enables multiple solutions to be married into a cohesive workflow that matches your transmission and distribution environment.

### COMMON HARDWARE

All product applications are hosted on commercial off-the-shelf (COTS) hardware, offering superior solution density while simplifying system deployment and maintenance. softGear solutions allow for easy integration into Audio-over-IP or SDI installations.

### SCALABILITY

The microservices architecture lets you scale up multiple instances of Nielsen watermark encoders, Dolby processing or Orban radio processors on the same platform. This is ideal for centralized network operations (NOC), playout, and distribution centers to save on costs and complexity.



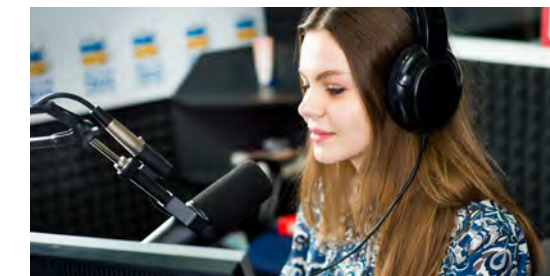
### BROADCAST AUDIO PROCESSOR

The Broadcast Audio Processor is your versatile playout application combining Dolby Real-Time Loudness Levelling, Nielsen Watermarks and Dolby Digital encoding, with support for up to 8 independent audio programs.



### NWE-IP

Ideal for native IP installations, the Nielsen Watermark Encoder IP (NWE-IP) offers multi-program audio watermarking for Nielsen and Numeris audience measurement with robust ST 2110-30 and AES67, including ST 2022-7 redundant networking.



### RADIO & STREAMING AUDIO PROCESSOR

Powered by legendary Orban® radio processing, the Radio and Streaming Audio Processor (RSAP) offers an unmatched set of audio processing algorithms for FM, HD and streaming applications for up to 8 radio services.



## GEARLITE, NEWT AND IGGY POINT OF USE MODULES

A range of modules designed for point of use conversion and processing of audio and video signals, GearLite, NEWT and IGGY are system problem solvers.



It can take a lot of different pieces to make a smoothly running system. Timing, interconnect, and monitoring points are crucial to keep operations efficient and quality high. The Ross point-of-use modules are renowned for their performance and reliability.

### SOLUTION FOR EVERY FORMAT

Solve system connectivity challenges with a wide range of solutions with support for common video and audio standards such as AES, AES67, MAD1, SDI, 12G SDI, ST 2110 & 2022-6 IP Video and more.

### FITS RIGHT IN

Easy to install with a range of mounting options including wall, rack mount and VESA. Locking signal and power connections let you deploy these modules anywhere with confidence.

### HIGH QUALITY

Get quality signal processing with Ross Point of Use Modules developed to the same exacting standards as our openGear modular platform.

## SMALL AND POWERFUL



### IGGY

Our live audio-over-IP to MAD1 converter, offers the most broadly interoperable, flexible and robust AES67 & ST 2110 implementation on the market today.



### NEWT

SMPTTE ST 2110 & 2022-6 to/from SDI, HDMI conversion and 4K UHD support. Flexible support for the new IP video standards.



### DETOUR

12G Distribution Amplifier with bypass relay. Great for 12G UHD systems and redundancy applications.



## SRG-4500 AND SRG-2200 MASTER SYNC GENERATORS

Sync Generator solutions from Ross provide you with accurate, reliable system timing that is the critical heartbeat to your production facility.



Dependable timing is the heartbeat of a facility. The SRG Series provide an accurate dependable and flexible drumbeat for the rest of the facility to follow with confidence. With flexible timing and signal generation, these master sync generators address the requirements from simple fly packs to large multi-format institutions.

### CHOICE

Ross offers Master Reference generators for any application. From a small openGear card, ideal for fly-packs and remote locations, up to fully-redundant, flexible SRG-Series platforms for large multi-format facilities.

### FLEXIBLE

The SRG-series Master Sync Generators support a wide range of output signals and formats from composite to UHD. These reference generators can even provide multiple video standards simultaneously. Integrated video pattern generators with idents and motion are great for remote feeds.

### RELIABLE

Built to last and redundancy in mind, Ross Sync Generators will keep the heartbeat of your facility alive. All units feature redundant power and easy servicing. Automatic changeover units are available to ensure you never skip a beat.

## SYNC PULSE GENERATORS



### SYSTEM WIDE TIMING

Synchronize virtually anything in your facility from a wide range of video and audio outputs ensuring the distribution of reference signals from a single source.

### MISSION CRITICAL

Pair a redundant system with an Automatic Changeover Switch (ACO) to provide superior performance and reliability in the most critical of environments.

### MULTIPLE MODES OF OPERATION

Set up as a master sync system in freerun, lock to GPS or NTP, or even lock to another Master Generator as a system slave. Ross timing solutions can meet the needs of any system.



## MB-651 AND MB-652 AUDIO MONITORING BRIDGES

In control room or in engineering, you need to hear your production. Ross Audio Monitors offer great value and provide you with the essential audio monitoring tools.



The MB-series are compact, integrated audio monitoring solutions for your studio gallery, engineering rack or mobile installation.

### CHOICE

Offering a choice of 1RU and 2RU monitoring bridges, the MB-series fits your rack or console with ease. Choose the model with embedded SDI or discrete audio inputs to match your installation.

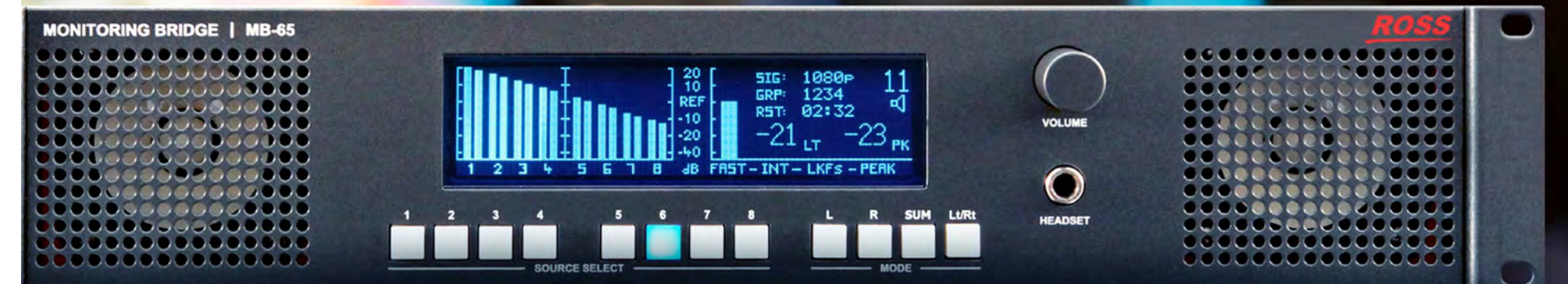
### VERSATILE

The MB-series feature surround mix-down, channel summing, easy channel selection and loudness measurement – all the tools you need to ensure your audio is in check.

### CONTROL

Front panels include large, bright displays and intuitive tactile controls to easily tailor your audio monitoring experience. Quickly choose what you want to listen to, they way you like it. Full DashBoard control and GPI interfaces round out a complete control solution.

## AUDIO MONITORING



### EASE OF USE

Simple, easy to read front panel allows you to quickly choose the audio channel(s) you need to monitor and outputs them in the desired format.



### SELF CONTAINED

Integrated speakers with a built in amplifier, as well as a front panel mounted headphone jack means no external equipment required to monitor signals.



### RELIABILITY

Redundant power supplies, as well as control, monitoring, and upgrades enabled via Dashboard means robust, reliable hardware that integrates seamlessly into your facility.



## OEM DEVELOPER PROGRAM ECOSYSTEM PARTNERSHIPS

Ross OEM Developer Solutions offer a broad spectrum of market-ready platforms with proven AES67 / ST 2110 and baseband connectivity. Our openGear frames, modules, chips and software enable you to quickly tap into an award-winning ecosystem that enjoys broad adoption across our industry.



AES67 / ST 2110 and baseband connectivity are moving targets; this technology is difficult, expensive and risky to develop, and worse, these functions do not differentiate your products. Ross OEM Developer Solutions are mission-proven and offer freedom to choose the deployment option that best suits your needs.

### OPEN CONTROL

Don't get handcuffed to a generic controller. Own your customer's experience and satisfy their needs better than anyone. Ross offers a variety of open control solutions, including Dashboard, to make it easy to create custom workflows and satisfy your target user.



**DashBoard**  
OPEN. CUSTOM. CONTROL

### PROVEN ROBUST PLATFORMS

Ross OEM offers a variety of mission-critical solutions with built-in redundancy and guaranteed interoperability designed to support the most demanding workflows.

### FASTER TIME TO MARKET

Market ready platforms and proven technology allow you to leverage on years of research and development, getting you to market fast with your own flexible and unique solution.

## GUARANTEED INTEROPERABLE



### OPENGear PARTNER ECOSYSTEM

Leverage the power of a broad ecosystem of over 100 partners and the widely deployed openGear frame with DashBoard open control for fast and efficient time to market.



### IP AND UHD SOLUTIONS

Take advantage of the latest modular and point of use market ready solutions for AES67 / ST 2110 and UHD applications with OEM versions of NEWT, IGGY and RAPTOR.



### BACH AOIP TECHNOLOGY

Quickly give your products the freedom and power to perform across markets with Ross' embedded live audio networking AES67 / ST 2110 modules, chips and software solutions.



## OPENTRUCK MOBILE PRODUCTION

openTruck™ delivers huge opportunities in the regional sports and live-event market by enabling production companies to build and staff trucks that meet the demanding requirements of today's sophisticated media delivery networks.



openTruck™ delivers a standardized yet customizable way to design a new generation of cost-effective remote production vehicles that deliver the highest quality video and audio content from sports and other live events.

### EXPAND COVERAGE

Coverage of local and regional sporting and other live events, including things like political rallies, music concerts and festivals, has traditionally been resource intensive. openTruck delivers huge opportunities for these applications by enabling production companies to cost-effectively build and staff mobile production implementations that meet the demanding requirements of today's sophisticated media-delivery networks.

### A GROUNDBREAKING MOBILE MODEL.

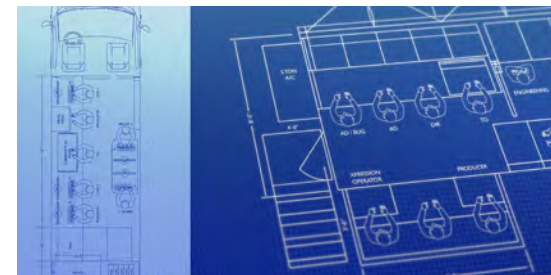
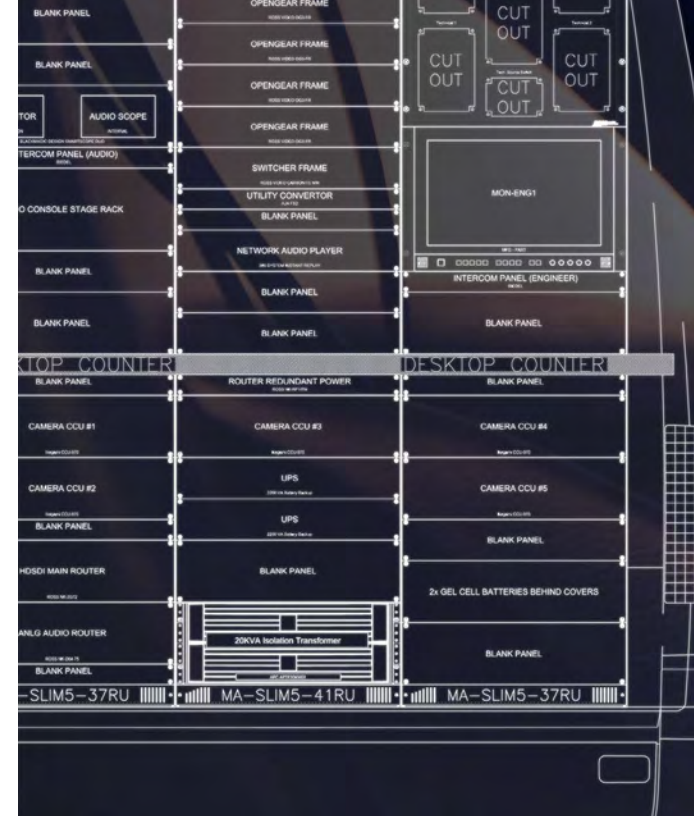
openTruck's proven blueprints include open protocols, specifications and schematics. Some design models specify a number of Ross products, which must be used for an implementation to qualify as openTruck. Other products are optional and can be selected from leading technology suppliers many of which are participants in the openTruck initiative.

### MAXIMIZE PHYSICAL SPACE. MINIMIZE RISK. DELIVER GREAT CONTENT.

Rather than using overly expensive technologies that lack smooth integration, this new construct emphasizes equipment and workflows that complement each other for better efficiencies at lower costs.

BEST-IN-CLASS SYSTEMS.  
SEAMLESS INTEGRATION

openTruck



### OPENTRUCK LAYOUTS

openTruck is versatile and can be deployed in everything from a flight pack to a truck body of your choosing that provides sufficient operator space and payload.



### OPENCREW COMMUNITY

openCrew provides a talented pool of operators listed in the openCrew community and available for openTruck operators to hire.

Having experienced professionals that know the equipment and processes is key to ensuring the delivery of a predictable and consistent production with outstanding results.



### QUALITY AND AFFORDABILITY UNITED

With openTruck™, broadcasters and other producers get reliable and ready access to less-expensive production models while maintaining the high-quality production values, sophisticated graphics packages and consistency of final product that ensure a healthy return on investment.



## ROCKET SURGERY ROSS CREATIVE SERVICES

Rocket Surgery offers unmatched design, workflow, and data integration expertise for XPression and Voyager customers in video, broadcast, and venue production. The Ross Creative Services organization has the expertise you need for a wide variety of applications, and can be your one-stop-shop for leading-edge design.



Today's graphic systems are more powerful and complex than ever, and, having unused functionality destroys competitive advantage - Rocket Surgery can help you get it back. With Ross as our parent company, we have exclusive insight, input, and influence into its advanced systems.

### ROCKET SURGERY VIRTUAL PRODUCTIONS (RSVP)

As the industry leader in live event augmented reality, RSVP works with both Ross XPression, and Voyager systems and can bring virtual augmented reality to life in your production. From concept and creation, to on-air implementation and operation, we have the team to make it happen.

### CUSTOM DASHBOARD

Graphics are only part of the story; playback control is what makes it all sing, and Rocket Surgery creates scalable DashBoard control systems specific to your needs. As with XPression, the Rocket has access to Ross resources, ensuring the highest-quality control system through proven API development.

### UNRIVALED EXPERTISE

Rocket Surgery owns the heavy design jobs and projects others cannot fulfill, and with fast turns that cannot be beat.

## UNMATCHED EXPERIENCE



### SPORTS IN-VENUE INTEGRATION & GRAPHIC DESIGN

New stadiums are going up and displays are getting bigger and more complex everywhere. Show producers are demanding more and more with every game and performance, and Rocket Surgery has become the go-to place to bring your vision to life using Ross XPression.



### BROADCAST DESIGN & INTEGRATION

Using the unmatched real-time 3D power of the Ross XPression render engine, Rocket Surgery optimizes the performance power of the hardware and translates it to some of the most impactful display graphics in use in the world today.



### VIRTUAL SET DESIGN & AUGMENTED REALITY

Be it Virtual Set design or Augmented Reality, Rocket Surgery can bring your vision to life in new and exciting ways using either XPression or the power of the Unreal Engine on Voyager.



## ROSS MOBILE PRODUCTIONS MOBILE SOLUTION

With its new generation of cost-effective, full service, remote-production vehicles, Ross Mobile Productions (RMP) delivers consistent, high-quality video and audio content from sports and other live events, and ensures a predictable production experience and outstanding results—all the time, every time.



RMP trucks are designed around powerful best-in-class broadcast systems using the Ross openTruck design model. Highly-interoperable, these systems combine leading technology from Ross and other vendors designed to fit and work together seamlessly.

### HIGH QUALITY REMOTE & STUDIO BROADCASTS

Full HD video transmission over satellite and fiber connectivity. HD quality streaming to all popular devices. Access to sophisticated graphics packages and other customization services.

### MOBILE FLEXIBILITY

Modular architecture combined with custom-configurable workflows, make for efficient productions which can scale to suit any event.

### PROVEN

Leverage the most experienced team in mobile production. Customers include ESPN, NBC, Fox, Red Bull, and many others. Ross Mobile Productions delivers results for demanding customers while meeting the reality of today's budgets.

## THE NEXT GENERATION MOBILE PRODUCTION

**ROSS** mobile productions



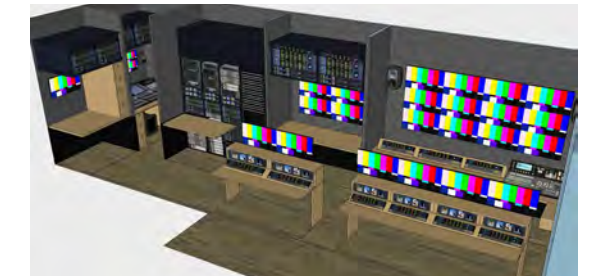
### TRUCK, TRAILER OR FLIGHTPACK

As the pioneer of mobile productions, RMP provides the ultimate in versatility and agility, allowing rapid deployment between events and locations, 24 hours a day 7 days a week.



### STUDIO PRODUCTION

In 2015, RMP began operation of Blackdoor Studios, a complete production facility utilizing the equipment and workflow found in our mobile units, complemented by two green screen rooms paired with Ross ACIDCam.



### CUSTOM ENGINEERING & CONSULTING

RMP has a unique partnership with Ross, that lets us scale up or down for each individual production. Not sure which equipment you need? RMP offers dedicated EIC's that can recommend the perfect solution.



## SUPPORT & SERVICES

### TECHNICAL SUPPORT

No charge for the life of your Ross product. Ross will always take your call, answer your emails and point you in the right direction. Ross prides itself in the quality of its products, but if problems occur, help is as close as the nearest telephone. A 24 Hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross personnel. During business hours (Eastern time), technical support personnel are available by telephone any time. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support personnel who is on call does not answer this line immediately, a voice message can be left and your call will be returned shortly.

[www.rossvideo.com/support](http://www.rossvideo.com/support)

### WEB RESOURCES

The Ross website offers tips and techniques. Some products have forums that you can join to network and share experiences with other users and Ross staff. The "Ask the Product Manager" feature in each product area on the website permits you to directly connect with Ross Product Management staff to ask a technical question or suggest a new feature or product.

### USER MANUALS

Manuals are continually updated. Each Ross product is provided with a comprehensive user guide that covers operation, installation and maintenance of your Ross product. These are updated and available simultaneously with new software releases. These are available for download from the Ross web or FTP site at no additional charge.

### ROSSCARE+ WARRANTY

Ross products are covered with a full one year transferable warranty which includes advance replacement service. Ross has a network of strategically located, global logistics hubs to provide prompt local delivery of necessary replacement parts. This quick ship service is available to all customers during their warranty period.

### ROSSCARE+ EXTENDED WARRANTY

RossCare+ Extended Warranty for a fixed annual fee extends the warranty period on your Ross hardware, providing total protection against unexpected repair fees. The program also includes our Advanced Exchange Program, to get you back online as quickly as possible.

### ROSSCARE+ SOFTWARE MAINTENANCE

RossCare+ Software Maintenance is available for "software centric" products and keeps you current by offering access to ongoing software updates. Ross invests 25% of our annual revenue into research and development. A current Software Maintenance program means you can take advantage of the most current feature set of your product.

# RossCare+



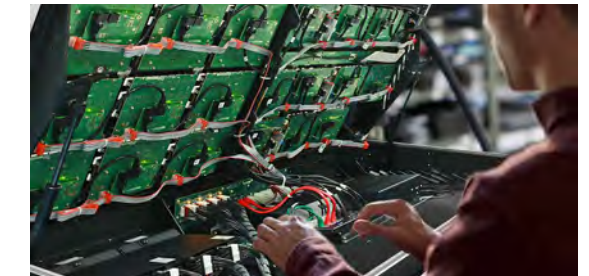
### ONSITE COMMISSIONING

Get the advantage of Ross technical experts to assist you in shaking down your Ross equipment, configuring it and helping you get it up and running. This team has been there/ done that and will save your staff valuable time in bringing your new system online.



### ONSITE OPERATIONAL TRAINING

Ross trainers don't just know the product, they understand the tele-production environment. They can assist you in getting the most out of your new Ross product in a way that is relevant to your production.



### ONSITE TECHNICAL TRAINING

Ross technical staff are available to travel to your site to lead your technical staff through the key aspects of configuring, maintaining and troubleshooting your Ross equipment. Technical courses can be tailored to meet the specific needs of your organization.

#### Contact Us

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North America: 1-844-652-0645

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Technical Support

Emergency: +1 613 349-0006

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[www.rossvideo.com](http://www.rossvideo.com)

## ROSS VIDEO LIVING LIVE!

### SOLUTIONS

Broadcast & Production

Augmented Reality & Virtual Sets

Sport & Live Events

Legislative

Mobile Production

House of Worship

Education

Corporate

### PRODUCTS

Production Switchers

Motion Graphics & Clip Servers

Replay & Production Servers

Robotic & Camera Systems

Control Systems

Routing Infrastructure

Signal Processing Infrastructure

News, Live & Social Production Management

Asset Management & Storage

### SERVICES

Creative Services

Mobile Production

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