

**CARBONITE** UltraA

**MID-SIZE PRODUCTION SWITCHER.**

UltraA

CARBONITE

CARBONITE

**ROSS**<sup>®</sup>

LIVING LIVE!

# CARBONITE Ultra

MORE POWERFUL, MORE COMPACT AND MORE AFFORDABLE THAN EVER. Carbonite Ultra uses the latest technology to distill the best of the Carbonite production switcher series into a single, next-generation platform.



PRODUCTION WIZARDRY.



# WHAT IS PRODUCTION WIZARDRY?



## THE BIGGEST 1RU PRODUCTION SWITCHER EVER

Carbonite Ultra's 1RU chassis packs up to 3 full MEs & 4 built-in MiniMEs, equivalent to a 7ME switcher with 20 key channels.



## MORE AFFORDABLE THAN EVER

With a starting price of \$10,900\*, Carbonite Ultra reduces the cost of the essential Ross mid-size production switcher feature set by a huge margin.\*

\*USA pricing, international pricing will vary.



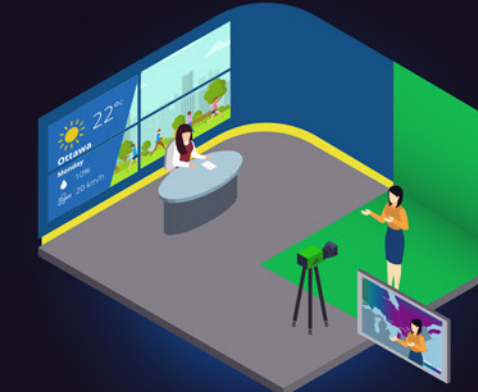
## ENGAGING MEDIA RICH PRODUCTIONS

Boost your visuals with full-length video clips, animated logos, lively media-effect transitions, and great-looking still graphics. Carbonite Ultra includes a dedicated single-channel USB media player, 4 key+fill MediaStores and XPression LiveCG graphics software.



## CREW FOR YOUR PRODUCTION. NOT YOUR GEAR.

A full suite of user-tailored control interfaces – ergonomic switcher panels, custom-programmed software interfaces, and touchscreen control – make it easy to hire and retain operations staff.



## ADVANCED FEATURES, ALWAYS AVAILABLE

Every part of this production switcher is backed by dedicated hardware. Engage all the resources you need for a stunning production, without any trade-offs or surprises.



## THE VIDEO ENGINEER'S SWISS ARMY KNIFE

Handle wild signals, mixed video formats and extensive production monitoring from a single box. Configure your Carbonite Ultra system with full I/O signal processing resources and up to 4 MultiViewers, and be ready for anything a production can throw at you.



## MAXIMUM QUALITY VISUALS

Support for HDR and WCG formats, along with bi-directional format conversion and quick-select colour temperature presets.



## WISE INVESTMENT FOR THE 12G/UHD FUTURE

Major 12G/UHD Feature set that can't be matched by other mid-size production switchers.



## SOFTWARE-DEFINED MAGIC

Carbonite Ultra isn't just a production switcher, it's a software-defined live production engine. A product that remains cutting-edge for years to come, that's the magic of going Ross.



## 7ME ROSS PERFORMANCE

### 1-3 Full MEs

Major effects and keying power in every ME. Carbonite Ultra's main MEs have 5 powerful keys: 4 for luma, linear, chroma and DVE key types - and a 5th for dedicated transition keyer for DVE and MediaWipe transitions. Each ME also contains 2 advanced pattern generators for wipes, pattern masks and color washes. Clean feed outputs are available for every ME.

### 4 Built-in MiniMEs

MiniMEs aren't so mini anymore. Carbonite Ultra's MiniMEs function exactly like full next-transition / preview MEs, with 2 full function keyers and full look-ahead preview. MiniMEs are great for pre-branding inputs, pre-building a chroma key, or putting an overlay on a DVE key-heavy ME output.

### Total Layering Freedom

Compose MEs and MiniMEs anyway you desire. Carbonite Ultra isn't restrained by a fixed signal flow. Use your switcher resources in the way that best suits your final program output.

### 8 Floating DVEs

Each channel of floating DVE is accessible to any ME or MiniME in the system, making it easy to compose multi-box shots where you choose.

### 3D Borders with Lighting and Shadows

Add cool borders with perspective, lighting and shadows to your production for maximum visual impact. Available on every DVE channel in all MEs and MiniMEs.

### Monitor Everything

In today's live productions, you have to deal with multiple sources, multiple outputs and lots of different destinations. Carbonite Ultra can be configured with up to 4 MultiViewers for viewing of up to 64 independent video channels, to give you the extensive monitoring you need:

### 16-window MultiViewers

- 2 I/O MultiViewers: Monitor the physical inputs and outputs of the switcher.
- 2 System MultiViewers: Monitor anything - ME outputs, keyer outputs, MediaStores, chroma keyers, anything.
- 2 MultiViewers (1 of each) are included as standard, the 2 additional MultiViewers are available via software license.

Each MultiViewer has user-selectable layouts with the individual choice of border tally and UMD label display for each source. In addition, a user-configurable clock can be sized and positioned anywhere on the MultiViewer screen.



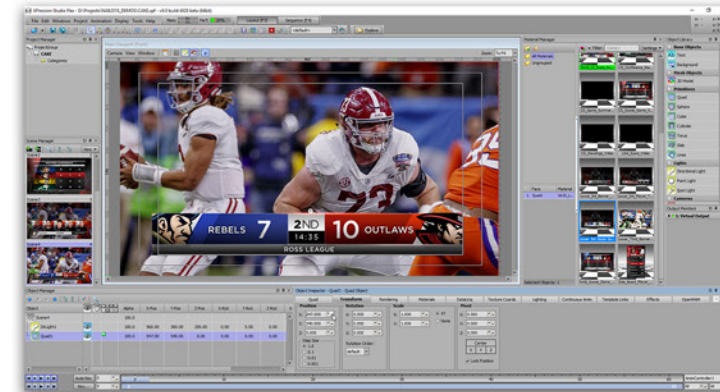
**WORK YOUR MAGIC.**  
THE BIGGEST TRU PRODUCTION SWITCHER EVER.





#### **Sounds as Good as it Looks**

Professional Audio Mixing built right inside. With 384 input channels and 13 x 48 channel stereo mixers you can produce pristine sound in tandem with those great looking visuals. Audio sample rate conversion, embed/disembed, EQ, Limiting and Compression come right along with Ultra's powerful RAVE audio license. You can even add up to 24 mic inputs with the optional audio breakout boxes.



#### **CREATE YOUR LOOK**

##### **USB Media Player**

When operating in SD or HD production formats, Carbonite Ultra offers a dedicated single-channel clip player for playback of compressed MPEG-4 AVC media directly from a connected USB-media drive. Load media files onto a USB drive, plug it into Carbonite Ultra and playback full-length video clips as part of your production - with clip audio readily-available to your audio mixer via Carbonite Ultra's assignable AES audio outputs. Assign the internal clip-player to any bus in the switcher and control playback from a dedicated DashBoard interface, Custom Controls, or AMP commands. This is a Ross-exclusive feature not found in any other production switcher on the market.

##### **4 Key + Fill MediaStores**

Incorporate stills, logos, and animated graphics in virtually any common file format. Each of the 4 MediaStore channels handles key+fill media with audio, with support for standalone WAV files for audio effects and music beds. All MediaStores are available switcher-wide as a source or key, while the 8GB cache of MediaStore is manageable from the highly-visual and intuitive MediaManager interface.

##### **Included XPression LiveCG**

Includes high-end XPression LiveCG still graphics software. XPression is one of the industry's leading graphics packages, used in major live broadcasts across the world. From an Ethernet-connected laptop, XPression LiveCG renders still graphics directly into the switcher MediaStores for use in your production.





## BRILLIANCE IN ANY APPLICATION

### Leading-Edge Chroma Keying

Carbonite Ultra's UltraChrome chroma key technology is simply stunning in virtual set productions. After several years of development, we've created a chroma key that rivals the quality of an external chroma keyer. Unique quality-of-life features like soft-edge masks and auto-image analysis make it easy to setup quickly and get the best results from your green screen.

### Large & On-Set Display Processing

Carbonite Ultra's 4 MiniMEs form the foundation of Carbonite Ultra's Multi-Canvas Display Processing, for high-quality video scaling across large or multi-screen displays. Each MiniME becomes a scaler-tile for creation of composited canvas images across multiple screens. Normally you need an external display controller, but this functionality is built right into Carbonite Ultra.

MiniMEs are also great as on-set display outputs, with access to format conversion and colour correction resources to nail the on-set look.

### Post Production Assistance

LiveEDL is a tribute to the people who've spent tons of time in the post-production process. The LiveEDL feature creates an edit decision list based on your timecode input, recording every source cut and transition. When your event is over, take that EDL file and plug it into your non-linear editing suite and camera ISOs to recreate the event exactly as you cut it (and correct those small mistakes and bad cuts). With LiveEDL you can recreate your productions in a fraction of the time.

## LIGHTNING-FAST OPERATION

### Custom Control Timelineable Macros

Condense multi-step events - including internal switcher resources and external gear - into a single-button push with Carbonite Ultra's powerful custom control macros. Record events, recalls, pauses, holds and control devices directly from a Carbonite Black panel or Dashboard GUI - and edit your macro timeline as needed.

### Memories

Patented Memory AI Recall mode to automatically assign free resources to create the Effect in Preview without breaking Program no matter what resources were used in the memory. The memory system of a big production switcher with a vast level of creative control. Take a snapshot of everything going on in the switcher - ME sources & key settings, PGM & preview channels, DVE scales and positions, chroma keys, Mediastore settings and more - and recall the specific elements you want. Carbonite Ultra's granular memory gives you tons of flexibility in how you put together your show. Truly masterful live production maneuvers are achievable by tethering memory recalls and custom control macros.



**EDITOR**  
For editor and RS-422 control

**ETHERNET CONNECTIVITY**  
For panel connections and use with ViewControl, DashBoard LiveAssist, XPression LiveCC, LiveEDL, FTP, browser-based GUI, diagnostics and more!

**TALLY & GPIO INTERFACE**  
• 24 Contact Closure Tallies  
• 24 GPIO individually selectable to input or output

**TIME CODE INPUT**  
For use with LiveEDL, to generate an EDL file for post-production suites

**AES DIGITAL AUDIO OUTPUTS**  
For audio assignable outputs from RAVE audio engine.



**OPTIONAL REDUNDANT POWER**  
Compatible with standard or Ultripower rackmount power supply. Power both Carbonite Ultra and Ultrix Routers from a single Ultripower unit.

**BUILT-IN REFERENCE GENERATOR**  
• Black Burst or Tri-Level sync input  
• Black Burst output is configurable for H/V offset from input reference

**4 MULTIVIEWER OUTPUTS**  
• 4 x 16 window MultiViewer outputs  
• 2 outputs in 12G/UHD mode

**10 CONFIGURABLE OUTPUTS**  
• Supporting SD/HD/3G  
• 10 outputs in 12G/UHD mode

**24 INPUTS**  
• Supporting SD/HD/3G  
• 18 inputs in 12G/UHD mode

**FrameGlow**

Customize the look of your switcher with a programmable RGB LED bar, because there's no reason live productions can't look cool behind the scenes. FrameGlow also provides at-a-glance diagnostics such as boot-up cycle, upgrade progress and temperature/status alerts.





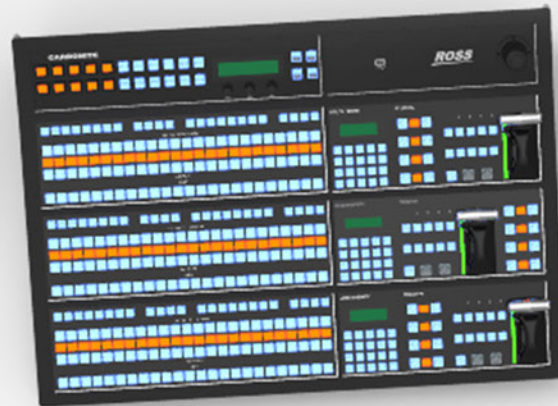
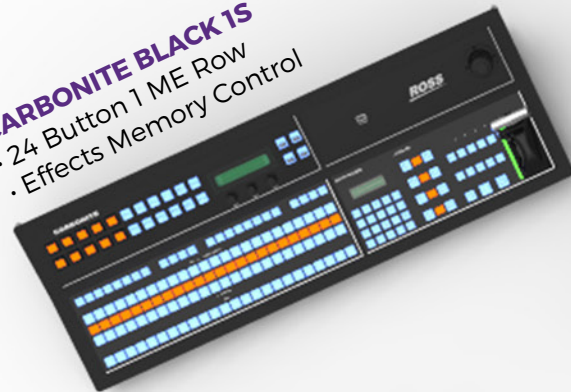
## CREW FOR YOUR PRODUCTION

Carbonite Ultra makes you productive immediately with a range of control choices for operators of any caliber:

Compatible with the wide range of Carbonite Black panels. Super-ergonomic design with a dedicated button for every function and the legendary Ross fader bar. Operators simply love Carbonite Black panels for their speed and efficiency.

### CARBONITE BLACK 1S

- 24 Button 1 ME Row
- Effects Memory Control



### CARBONITE BLACK 3S

- 24 Button 3 ME Row
- Effects Memory Control



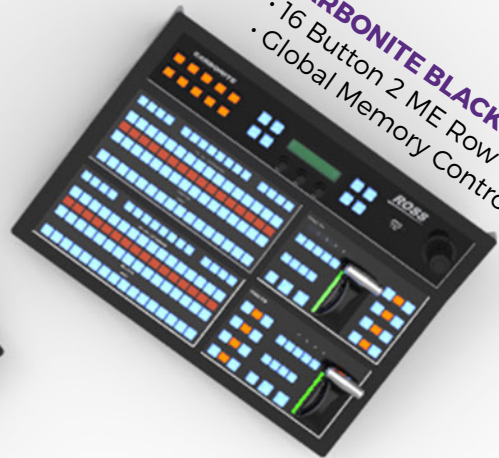
### CARBONITE BLACK 1

- 16 Button 1 ME Row
- Global Memory Control



### CARBONITE BLACK 3X

- 32 Button 3 ME Row
- Effects Memory Control



### CARBONITE BLACK 2

- 16 Button 2 ME Row
- Global Memory Control



### SOLO CB9

- 9 Button 1 ME Row
- Global Memory Control

### DIRECT ACCESS TO MEMORIES

- MemoryAI™ Recalls make for impressive productions

### HIGHLY VISIBLE MENU

- Intuitive auto-follow menu

### ME EFFECTS MEMORY CONTROL

- Instant access to individual ME effects memories.

### HIGH END 3-AXIS JOYSTICK

- Position wipes, patterns, washes, camera control and DVE effects

### MULTI-PURPOSE BUTTONS

- Quickly select patterns, DVE effects, memories, media, or menu functions

### POWERFUL MACRO EDITING

- Easy to create, amazing to use

### KEY TYPE SELECTIONS

- Choose between self-keying, linear keying, chroma keying, and DVE picture in picture keying

### TOP BUS DELEGATION

- Reassign the top bus to keyer, AUX bus, or macro recall control

### SOURCE MNEMONICS

- Name sources, select text size, choose color and even invert

### MACRO NAMES

- Give macros names for worry-free recall during live productions

### PANEL GLOW

- User-adjustable for various lighting environments

### SELECTION CONTROL

- Configurable AUX, ME, MiniME & MultiScreen control selection

### 16 / 24 / 32 WIDE SELECTOR BUS

- (Depending on panel) 32 wide on Carbonite Black 3X
- Access to every internal and external source in the switcher

### ROLL CLIP

- Automatically roll a clip cued on Preview bus with next transition

### LEGENDARY ROSS FADER

- Robust and Guaranteed for Life

### DEDICATED CUT AND AUTO TRANS BUTTONS

- Rapid live keyer control

### SOURCE MNEMONICS

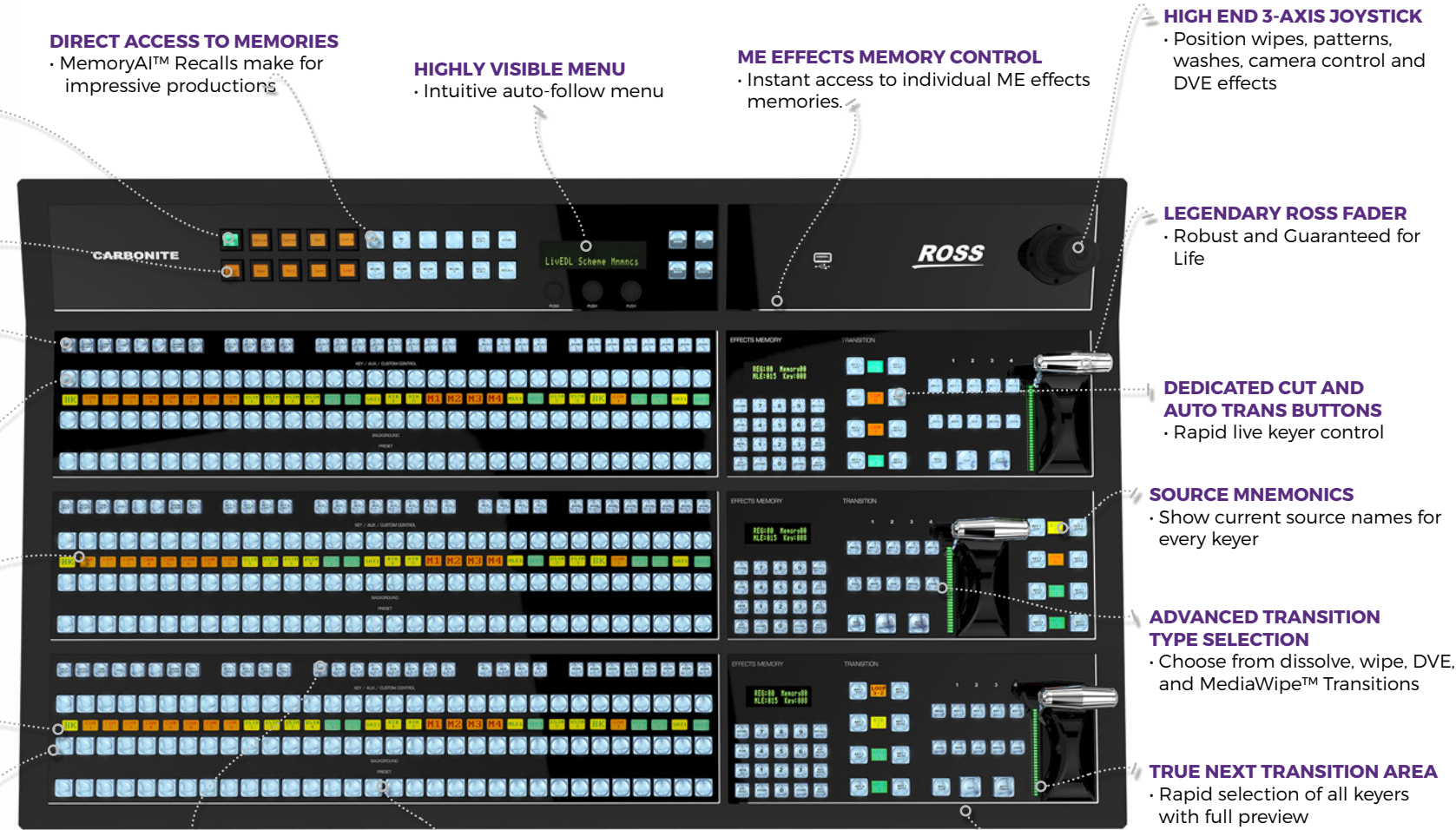
- Show current source names for every keyer

### ADVANCED TRANSITION TYPE SELECTION

- Choose from dissolve, wipe, DVE, and MediaWipe™ Transitions

### TRUE NEXT TRANSITION AREA

- Rapid selection of all keyers with full preview







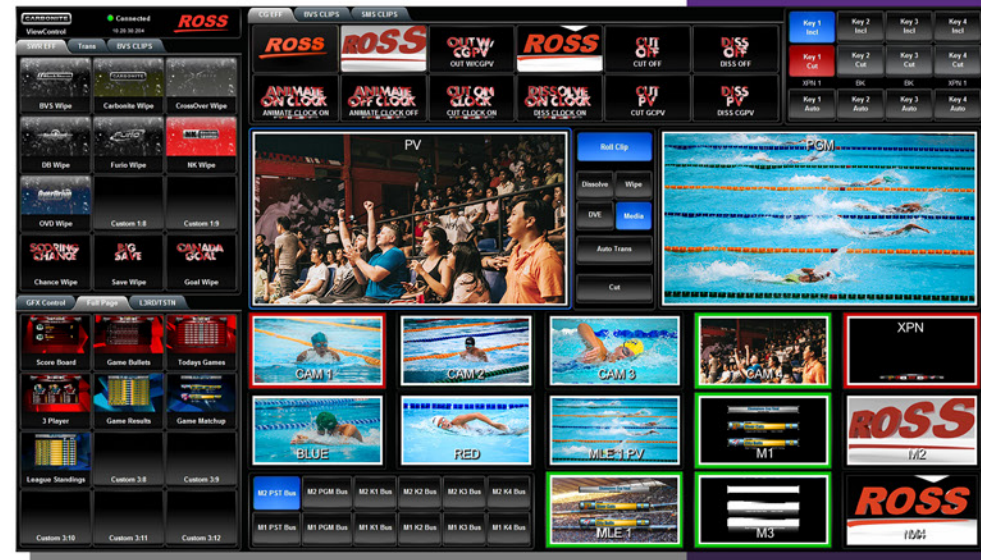
DashBoard SoftPanel



DashBoard CustomPanel



DashBoard Audio Mixer Panel



ViewControl



Ultritouch Panel

## DASHBOARD

Fully-integrated with the DashBoard control ecosystem, the open control platform that makes Ross solutions so well-integrated and unique. With the DashBoard software application you can setup, configure and operate Carbonite Ultra from any computer with a network connection.

DashBoard allows you to rethink the traditional method of operating equipment and to create something much more efficient for your unique workflow. DashBoard is:

- A central component of Ross solutions
- Third-party friendly with numerous devices that don't have a Ross label.
- Open, programmable, and customizable to your workflow
- Downloadable from the Ross website
- Something you can master on your own
- Something we can help you with

Once you get started with custom-tailored control, you're going to be producing shows at a quality and speed you never thought possible.

## RAVE AUDIO MIXING

Comprehensive control over the RAVE audio mixers, assign sources and outputs, manage EQ, Compression and Limiting. Connect hardware control panels via Midi Control Protocol.

## VIEWCONTROL TOUCHSCREEN INTERFACE

A great choice for single operator production. The ViewControl touchscreen interface combines a live MultiViewer with DashBoard control software for self-directed production. Control your switcher, graphics system, video servers, audio devices and more - from a live touchscreen surface.

## ULTRITOUCH SYSTEM CONTROL & MONITORING PANEL

Ultritouch is an adaptable touchscreen control and monitoring system, which leverages DashBoard PanelBuilder technology for creation of custom-programmed interfaces that streamline control of your show. Direct integration between Ultritouch and Carbonite Ultra make it easy to get started with purpose-built menu layouts which include: Status, Bus Assignment, Custom Control Shotbox and more.



### **VIDEO THE WAY YOU NEED IT.**

Handle wild signals, mixed video formats, and differing video colour with a full toolkit of video processing resources. Carbonite Ultra ensures you're ready for anything a live production can throw at you with a single-box solution.

#### **Carbonite Ultra includes 8 swappable and freely-assignable video processing resources as standard:**

##### **Input Frame Syncs**

Make sure all your gear is on the same page with frame synchronization resources.

##### **Input/Output Format Converters**

Match external video sources to your native production format and tune video outputs to the necessary receiving-end format.

##### **Input/Output Proc Amps and Colour Correctors**

Apply all video corrections needed to external sources. Great for tuning onset monitors so video on the monitor will match the direct source!

**For productions with serious video processing requirements, Carbonite Ultra can be outfitted with the PLUS I/O license for dedicated processing resources on every input and output.**

##### **Standalone Reference Generator**

While Carbonite Ultra accepts a reference input, this production switcher can act as a standalone reference generator – great for syncing up gear in a small flight-pack or mobile application.

##### **High Dynamic Range (HDR) & Wide Colour Gamut (WCG)**

Carbonite Ultra's 10-bit SDI infrastructure handles HDR and WCG video with ease. In SD & HD formats, Carbonite Ultra can bi-directionally convert between HDR-HLG & SDR video. In UHD formats, Carbonite Ultra can convert between SDR video and a variety of HDR formats such as HLG, PQ, and S-LOG3. Carbonite Ultra also supports bi-directional WCG conversion (Rec.709 <-> Rec.2020) when operating in UHD. HDR and WCG technology is a great way to affordably improve the quality of image delivered to your audience and presents exciting opportunities for re-thinking traditional set lighting.

**In UHD formats, Carbonite Ultra is the same flexible and easy-to-operate switcher you know and love!**

##### **12G/UHD PRODUCTION SWITCHER**

Carbonite Ultra offers a 12G/UHD production switcher feature set that is unlike anything you've ever seen in a mid-size class production switcher:

- 2160p 23.98/24/25/29.97/30/50/59.94/60
- 18 x 12G inputs or 16 x 12G & 2 Quad-Link 2SI inputs
- 10 x 12G outputs
- 1 full ME standard - 2nd ME requires license
- 2 UHD MiniMEs
- 2 UHD channels of DVE
- 2 UHD channels of MediaStore with Key+Fill
- 2 UHD chroma keys
- Up to 2 MultiViewers (1080P) – 2nd MultiViewer requires license

##### **UHD Video Processing Resources**

The standard Carbonite Ultra configuration provides:

- 2 Frame Sync/Format Converters – assignable to any input or output
- 2 Proc Amps / Colour Correctors – assignable to any input or output

The PLUS I/O license provides more video processing resources in UHD:

- 7 frame sync / format converter – assignable to any input
- 1 input format converter assignable to any input
- 4 Format Converters – assignable to any output
- 8 Proc Amps / Colour Correctors – assignable to any input or output

# 12G/UHD/HDR





## CONFIGURATIONS & OPTIONS

Carbonite Ultra makes insane mid-sized production horsepower more affordable than ever.

### Build Your Carbonite Ultra

FEATURE	DESCRIPTION
<b>CUF-124</b>	Base unit, 1 ME, 4 MiniMEs, 8 2D DVEs, 8FSFC+ (Frame Syncs/Format Converters, Proc Amps/Colour Correctors)
<b>CUF-ADD-ME2</b>	Adds ME 2 option to the CUF-124 engine. Enables UHD ME1
<b>CUF-ADD-ME3</b>	Adds ME3 option to the CUF-124 engine. Enables UHD ME2
<b>CUF-ADD-MV2&amp;4</b>	Adds MultiViewer 2 & MultiViewer 4 to the CUF-124 engine – each with 45 layouts to choose from, with up to 16 windows: <ul style="list-style-type: none"> <li>Includes 1 additional System MultiViewer (MV 2) with access to all physical I/O, internal sources and internal buses.</li> <li>Includes 1 additional I/O MultiViewer (MV 4) with access to all physical inputs and physical outputs</li> <li>Enables 2nd MultiViewer in UHD mode</li> </ul>
<b>CUF-ADD-I/OPLUS</b>	Add FSFC+ to all inputs and outputs: <ul style="list-style-type: none"> <li>Standard system includes 8 assignable FSFC+. Option enables a total of 34*** when operating in HD/SD formats.</li> <li>Increases processing resource in UHD mode: 7 input frame syncs, 8 input format converters, 4 output format converters, 8 freely-assignable proc amps / colour correctors</li> </ul>
<b>CUF-PSU</b>	Standard Power Supply
<b>CUF-RACKPWR</b>	Ultrapower 1RU Redundant Rackmount Power Supply: <ul style="list-style-type: none"> <li>Can power multiple Carbonite Ultra and Ultrix Router frames simultaneously</li> </ul>
<b>CUF-HDBNC-BNC</b>	HDBNC to BNC kit with 8 cables: <ul style="list-style-type: none"> <li>Kit includes 8 x 1-foot HDBNC to BNC cables</li> <li>Ultra has 40 total HDBNC I/O</li> <li>5 kits required for conversion of all HDBNC I/O</li> </ul>
<b>CUF-RAVE-AUDIO</b>	Adds Rave Audio engine with Sample Rate Conversion.
<b>GRAPHITE-1RU-AUDBKM</b>	RAVE 1RU Audio Breakout Module

\*\*\* RAVE Audio - Input Sample Rate Conversion reduces HD FSFC+ to 24 inputs and 2 outputs



## PART OF THE ROSS PRODUCTION ECOSYSTEM

### RAVE Audio Breakout Box

With the addition of up to 3 optional audio breakout panels, RAVE gains access to discrete Analog and Digital audio I/O with microphone pre-amps and phantom power.

### XPression Motion Graphics

Take your production to the echelon of top Hollywood productions, pro-sports teams, and television networks – with XPression motion graphics. XPression and Carbonite Ultra are the most effective graphics/switcher combo you can work with in a live production, thanks to smart RossTalk protocols. XPression is available in a variety of configurations to suit any budget or application.

### Tria Production Servers

Available in a wide array of channel-counts, storage capacities, and price points - Tria production servers meet the artistic demands of live program creation with clips, finished video segments and animated switcher transitions. Tight integration with Carbonite Ultra via AMP control protocol makes it easy to control Tria playout and ingest entirely from the switcher.

### Mira Replay Systems

Producing instant replay of live-televised sporting events is always a fast-paced and demanding endeavor. The Mira Replay line makes it easy with operator-minded control, reliable hardware and streamlined file workflows.

### RCP Ethernet Aux Panels

Simple and cost-effective remote control panels that are ideally-suited for XY or cut-bus control applications. The RCP-ME model includes 40 soft, fully programmable back-lit keys for convenient function key layout, while the RCP-QE series offers greater ease of use with programmable LED button labels - available in 18 or 36 button models.

### Ultritouch Control Panel

Shallow 2RU or 4RU rack-mountable touchscreen that combines the customization power of DashBoard with smart-phone-like functionality. Make Carbonite Ultra part of a custom Ultritouch interface or monitor & control the switcher from an intuitive touchscreen system.

### PIVOTCam PTZ

An excellent choice for highly-repeatable productions. PIVOTCam is a quality-image camera with quiet, accurate PTZ functionality. Mark your preset shot positions and recall them in an instant from a Carbonite Black panel, while making any necessary PTZ fine-tuning from the panel joystick. Like all Ross products, PIVOTCam is tightly-integrated with DashBoard for total production control.



## SPECIFICATIONS

### CARBONITE ULTRA FRAME / OPERATIONAL FEATURES

CARBONITE ULTRA FEATURE	DESCRIPTION
<b>MULTI-DEFINITION INPUTS</b>	24 SDI inputs (HDBNC)
<b>MULTI-DEFINITION OUTPUTS</b>	14 SDI outputs (HDBNC) 10 configurable, 4 MultiViewer only
<b>MIX EFFECT BUSES (MEs)</b>	Configurable with up to 3 MEs, each with 4 full function keyers + transition keyer for animated MediaWipes and DVE transitions. Ships with 1ME as standard and is configurable with MEs 2 and 3 via software license.
<b>MINIME EFFECT BUSES</b>	4 MiniMEs, each with 2 full function keyers, independent mixer and preview bus. All 4 MiniMEs are included as standard with every system.
<b>CHROMA KEYERS</b>	4 floating UltraChrome chroma keyers can be utilized by any keyer in the system
<b>DVEs</b>	8 floating DVEs can be utilized by any keyer in the system
<b>USB MEDIA PLAYER</b>	The USB media player allows for playback of ITU-T H.264 (MPEG-4 AVC) codec video clips when operating in SD/HD video formats. Video clips must be formatted into a 1280x720 resolution for use in the clip player, while the required clip frame rate is determined by the operating video format of the production switcher.
<b>STILLS &amp; ANIMATIONS</b>	4 Channels of MediaStore with a total storage capacity of 8 GB. Each channel can render stills and animations with alpha. Supports animations with audio or audio-only playback. Files can be directly rendered to the MediaStores via Ethernet.
<b>SUPPORTED MEDIA FILE TYPES</b>	Stills: .BMP Stills & Animations: .JPG & .JPEG (no Alpha), TGA & PNG (with Alpha & 48K WAV audio files)
<b>GRAPHICS SOFTWARE</b>	Included XPression LiveCG software creates still graphics from a network-connected PC workstation and renders directly into MediaStores via IP.
<b>PATTERN GENERATORS</b>	2 per ME
<b>EFFECTS &amp; TRANSITIONS</b>	Support for standard transitions along with Animated MediaWipes with audio and overlay effects on main MEs. Dissolve transitions are available to MiniMEs.
<b>MEMORIES</b>	100 Memories per ME and MiniME per Show File. Multiple show files can be stored on the USB drive. Effects memory functionality allows for animated memory recalls, while MemoryAI ensure memory recalls will not adversely affect what is currently on-air.
<b>CUSTOM CONTROL MACROS</b>	Up to 256 Custom Controls can be created in DashBoard or from the Control Panel surface.
<b>INPUT / OUTPUT PROCESSING</b>	Equipped with 8 FSFC+ that can be assigned to any input or output. Each FSFC+ offers Frame Syncs for inputs - along with Color Correction, Proc Amps and Format Conversion for inputs and outputs. Optional FSFC+ on every input and output via software license.***
<b>MONITORING</b>	Offers up to 2 System MultiViewers and 2 dedicated I/O MultiViewers. Ships with 1 I/O MultiViewer & 1 System MultiViewer as standard, additional I/O and System MultiViewers via software license.
<b>RAVE AUDIO ENGINE (OPTIONAL)</b>	384 input channels (embedded SDI), Main 48 channel stereo mixer, 12 x 48 channel stereo AUX mixers,
<b>RAVE AUDIO SRC (WITH RAVE OPTION)</b>	Audio Sample Rate Conversion available on all Inputs***
<b>RAVE AUDIO BREAKOUT EXTERNAL BREAKOUT UNIT (OPTIONAL)</b>	8 Analog / Microphone Inputs, 5 Analog Outputs, 1 AES Input, 1 AES Output

\*\*\* RAVE Audio - Input Sample Rate Conversion reduces HD FSFC+ to 24 inputs and 2 outputs

CARBONITE ULTRA FEATURE Con't	DESCRIPTION
<b>DEVICE CONTROL</b>	Includes device control for Video Servers, XPression Graphics, Robotics, PBus, GPO, Trackless Virtual Sets and PTZ Cameras.
<b>IP, SERIAL AND PARALLEL TALLY</b>	24 Contact Closure Tallies
<b>GPI/O</b>	24 GPI/O connections
<b>AES DIGITAL AUDIO</b>	2 AES digital audio outputs
<b>TIME CODE INPUT</b>	For use with MultiViewer System Clock and Live EDL Feature
<b>ETHERNET PORTS</b>	1 Ethernet port
<b>REFERENCE INPUT &amp; OUTPUT</b>	Black or Tri-Level - Output is configurable for H/V Offset from Input Reference or internally generated
<b>EDITOR / SERIAL TALLY PORT</b>	1 (RS-422)
<b>EDIT DECISION LISTS</b>	LiveEDL can capture EDL data in a file that you load into your non-linear editing (NLE) suites

### 12G/UHD FEATURES

12G / UHD FEATURES	DESCRIPTION
<b>12G SDI INPUTS</b>	18 x 12G Inputs or 16 x 12G & 2 Quad-Link 2SI Inputs
<b>12G SDI OUTPUTS</b>	12 x 12G Outputs (10 configurable, 2 MultiViewer only)
<b>MIX EFFECT BUSES (MEs)**</b>	1 or 2 UHD MEs, each with 4 full function keyers + transition keyer for MediaWipes and DVE transitions
<b>MINIMES</b>	2 UHD MiniMEs, each with 2 full function keyers, independent mixer and preview bus.
<b>CHROMA KEYERS</b>	2 floating UltraChrome chroma keyer can be utilized by any keyer in the system
<b>DVES</b>	2 floating DVEs can be utilized by any keyer in the system
<b>STILLS &amp; ANIMATIONS</b>	2 Channels of MediaStore with Key+Fill
<b>MONITORING</b>	Up to 2 MultiViewers (1080P) - 2nd MultiViewer available via software license.
<b>INPUT / OUTPUT PROCESSING</b>	Standard UHD Video Processing: <ul style="list-style-type: none"> <li>• 2 Frame Sync / Format Converters - assignable to any input or output</li> <li>• 2 Proc Amp / Colour Correctors - assignable to any input or output</li> </ul> PLUS I/O Video Processing: <ul style="list-style-type: none"> <li>• 7 Frame Sync / Format Converters - assignable to any input</li> <li>• 1 Input Format Converter</li> <li>• 4 Format Converters - assignable to any output</li> <li>• 8 Proc Amps / Colour Correctors - assignable to any input or output</li> </ul>

\*12G/UHD Operation Mode requires the standard ADD-ME2 license

\*\*UHD ME1 requires standard ADD-ME2 license / UHD ME2 requires standard ADD-ME3 license

### SIGNAL PROCESSING STANDARDS

FORMAT	LINE/ FRAME RATES
<b>STANDARD DEFINITION</b>	480i/59.94 - 4:3 and 16:9   576i/50 - 4:3 and 16:9
<b>HIGH DEFINITION</b>	720p & 1080i 50/59.94   1080pSF 23.98/24/25/29.97/30
<b>3G 1080P</b>	1080p 23.98/24/25/29.97/30/50/59.94/60
<b>12G UHD</b>	2160p 23.98/24/25/29.97/30/50/59.94/60 (Available with ADD-2ME license)

### CONTROL INTERFACES

CONTROL INTERFACES	
<b>Carbonite Black Control Panels</b>	✓
<b>DashBoard LiveAssist</b>	✓
<b>ViewControl Touchscreen Interface</b>	✓

### CARBONITE BLACK CONTROL PANELS

KEY FEATURES	SOLO CB9	CB1	CB1S	CB2	CB2S	CB3S	CB3X
<b>DIRECT ACCESS CROSSPOINT BUTTONS</b>	9	16	24	16	24	24	32
<b>NUMBER OF ME ROWS</b>	1	1	1	2	2	3	3
<b>ME EFFECTS MEMORY KEYPAD</b>	No - Global only	No - Global only	1 per ME + Global	No - Global only	1 per ME + Global	1 per ME + Global	1 per ME + Global
<b>THEME-ABLE PANEL GLOW RGB BUTTONS</b>	✓	✓	✓	✓	✓	✓	✓
<b>8 CHARACTER INPUT AND KEY SOURCE COLOR MNEMONICS</b>	X	✓	✓	✓	✓	✓	✓
<b>CUSTOM CONTROL MACRO BUTTONS WITH SPLIT ROW MNEMONICS</b>	72 (No Mnemonics)	128	192	128	192	192	256

### POWER SUPPLIES

UNIT	DESCRIPTION
<b>Standard Power Supplies</b>	Standard brick-style power supplies, with support for dual-unit redundant power.
<b>Ultripower Rackmount Power Supply</b>	Ultripower is a 1RU rackmount power supply that can simultaneously power multiple Ultrix routers and Carbonite Ultra chassis. In environments where equipment ruggedness, security, and maximum space saving is critical, Ultripower is a great fit. Perfect for flypacks, OB production, or equipment rooms where rack space is at a premium.



# CARBONITE Ultra

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

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

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

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

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

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

## Contact Us

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Global: +800 1005 0100  
Email: [solutions@rossvideo.com](mailto:solutions@rossvideo.com)

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

## ROSS VIDEO PRODUCTION TECHNOLOGY AND SERVICES

### 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  
Media Asset Management & Storage

### SERVICES

Creative Services  
Mobile Production

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