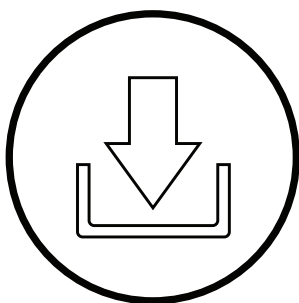# CARBONITE BLACK

UHD Switcher
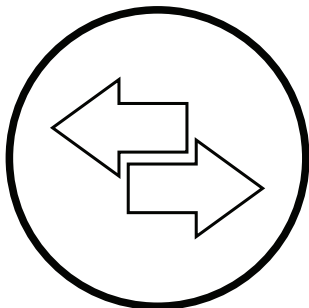
Carbonite Black switchers now offer native UHD processing and deliver on the promise of a true UHD production switcher - at no extra cost:
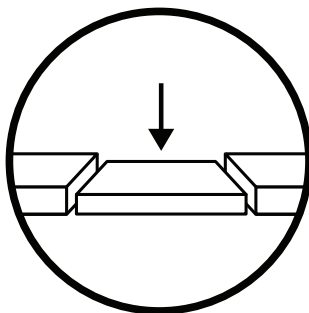
ACTIVATED VIA SOFTWARE DOWNLOAD
Carbonite Black UHD Operation Mode is part of the Carbonite v14 software upgrade. Available for download from the Carbonite Software Upgrades page for all Carbonite Black and Carbonite Black Plus models.

THE FULL CARBONITE BLACK FEATURE SET IN UHD
In UHD Operation Mode, the Carbonite Black becomes a 3 ME UHD switcher with a total of 9 UHD Keyers!

SWITCHING AS USUAL
Carbonite Black UHD operation requires no special treatment. Simply select your format of operation - 2160p50 or 2160p59.94 - and operate just as you would in SD/HD or 3G formats!
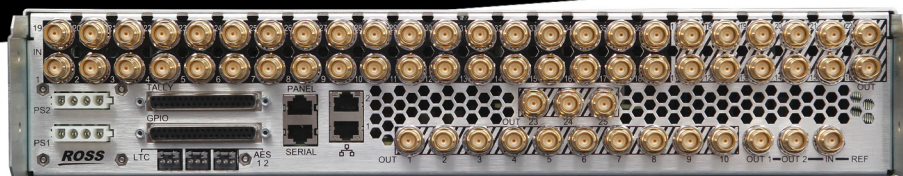
CARBONITE BLACK
Standard UHD Features

In UHD mode, all Carbonite Black and Black Plus models use a full complement of tools:

UHD Format	3840 x 2160 (50p or 59.94p)
UHD Inputs	9 UHD Inputs via Quad Link 2SI 3G 1080p Level A
UHD Outputs	5 UHD Outputs via Quad Link 2SI 3G 1080p Level A 2 Outputs (copies) of the System MultiViewer in 1080p Level A
Mix/Effect Buses (M/E)	1 Full ME, with 4 Keyers and a dedicated 5th Transition Keyer.
MiniMEs	2 MiniMEs, each with 2 Keyers and Full Preview
Media	2 UHD MediaStore Channels with Audio and dedicated Alpha channels. These can be used for Stills, Animations and MediaWipes – all run from the internal Ram Cache. XPression LiveCG stills in UHD are also supported.
Digital Video Effects (DVE)	2 UHD DVEs (2D) float system wide to any of the 8 UHD Keyers and also the Full ME's Transition Keyer for use in standalone DVE Wipes, or as part of a MediaWipe that needs a DVE to complete the look
Memories	Each MiniME and Full ME have a complete Memory System with advanced Memory Attributes. All recall modes are available, including Effects Dissolve and the patented Memory AI intelligent recall to preview.
Macros	The standard 8 Banks of 32 Custom Controls are available, with up to 999 events each. Up to 10 Custom Controls can be run simultaneously and each can be embedded to run from other Custom Controls.
Chroma Key	2 UHD Chroma Keyers. These Chroma Keyers function separately from the ME keyers, individually processing their Video and Alpha channels. The chroma key is then fed to the internal Crosspoint, making it available to any of the keyers. This allows you to use the same chroma key on multiple backgrounds or compositions.
MultiViewer	Single 1080p System MultiViewer with up to 16 Windows (1 source/bus per window) to monitor all Inputs, Outputs and Internal Sources.
Integration	Integration with Video Servers, Graphics Engines, Robotic Cameras and Audio Mixers is still fully supported. TSL UMD protocol for supporting Mnemonics to/from Router and Facility control systems means that all names are seamlessly passed through the production workflow, including Tally Data!

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CARBONITE BLACK
Black Plus & Black Plus 12G UHD Features

Carbonite Black Plus and Black Plus 12G use powerful I/O processing to offer additional UHD features. In UHD Operation mode, these models provide:

9 Processing Inputs - each of these include:	
Format Converters / Frame Synchronizers	Conversion of inputs from Quad Link Square Division to Quad Link 2SI. Support for 720p/1080i and 1080p Level A inputs when operating at UHD for mixed format support!
Input Colour Correctors and Proc Amps	Apply all video corrections needed to external sources whether in UHD or HD formats!

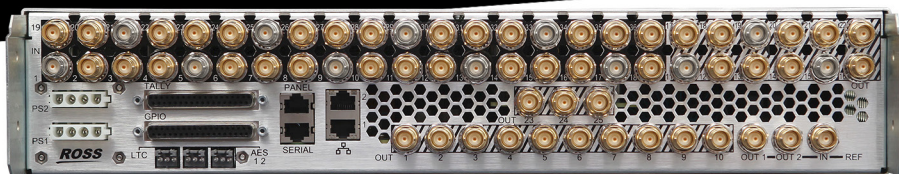| 3 Processing Outputs - each of these include:	
Output Format Conversion	Format conversion of outputs from Quad Link 2SI to Quad Link Square Division and HD Downconversion to 720p/1080i or 1080p Level A.
Output Colour Correctors and Proc Amps	Great for onset displays that need to be corrected so video will match in the Monitor as seen by the Camera or when taken as a direct source! This saves a lot of budget by eliminating the need for external UHD colour correctors!

3 Additional MultiViewers:	
Black Plus MultiViewers	3 Additional I/O MultiViewers supporting 3 Inputs and 1 Output each. These have dedicated 1080p Level A outputs in addition to the previous mentioned UHD and MV outputs.

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CARBONITE BLACK
Black Plus 12G UHD Features

Carbonite Black Plus 12G provides 12G Single Link I/O for added flexibility during UHD productions:

12G Inputs	9 12G SDI Single Link Inputs
12G Outputs	3 12G SDI Single Link Outputs

UHD Quad Link and Standard HD Capable:

The Carbonite Black Plus 12G features the same processing inputs and outputs as the original Carbonite Black Plus. The key difference is, every fourth input and output is 12G SDI. These inputs and outputs are clearly identified as silver-colored BNCs on the chassis. You still have access to the same Quad Link 2SI and Quad Link SQD I/O, and HD Downconverted outputs - offered by the original Carbonite Black Plus.

Have Questions about Carbonite Black UHD?

Visit the Carbonite page on the [Ross Video Community Forum](#), post your question and one of our production technology experts will reply with an answer as soon as possible.

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