VISION OCTANE

Version 11
Octane/QMD-X

CONFIGURATION GUIDE

www.rossvideo.com

ROSS
Live Production Technology™

Vision • Octane/QMD-X Configuration Guide

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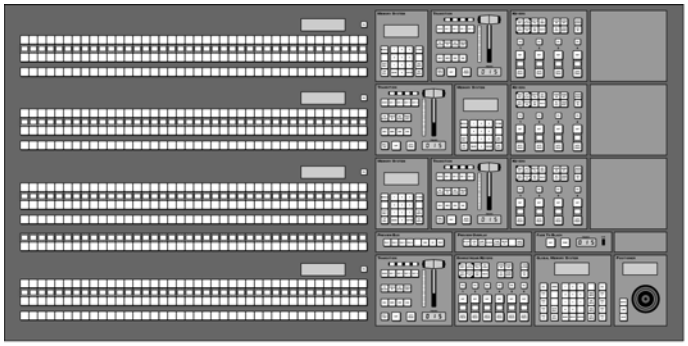
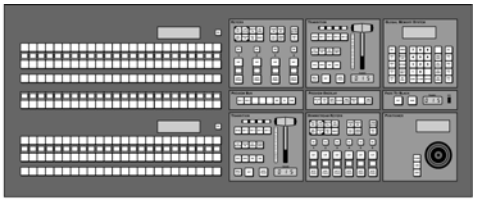
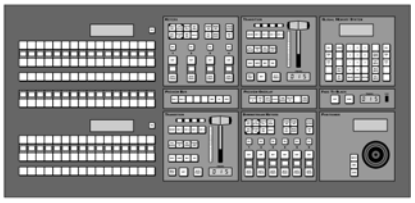


Vision 4



Vision 2M



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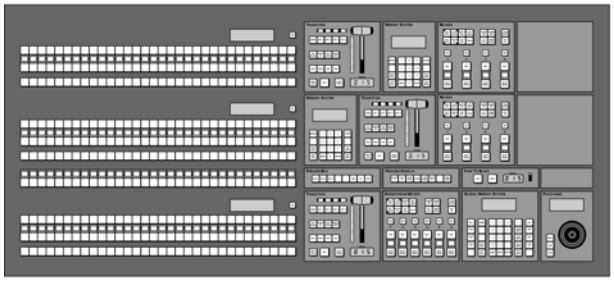

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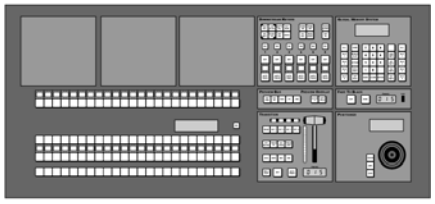
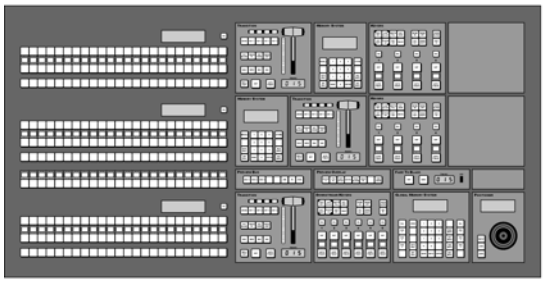
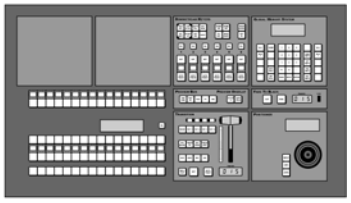


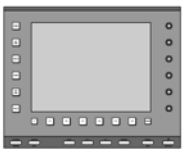
Vision 1M



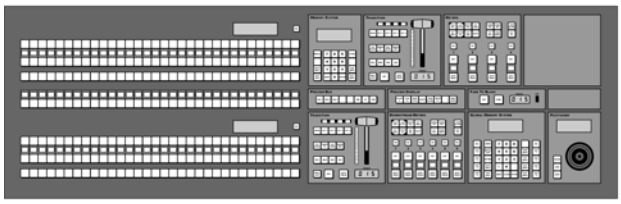
Vision 3M



Vision 1



Touchscreen



Vision 2X

Thank you for considering the purchase of a Vision™ Octane™ Multi-Definition Digital Production Switcher. Each switcher in the Vision Octane family is a true multi-definition production switcher and comes fully equipped with support for a wide variety of SD and HD video formats. Vision Octane is based on the latest technology in both hardware and software, offering a readiness for the future that is unmatched in the industry. Unlike other products on the market, no costly upgrades are required when moving from SD to HD. All that is required is a simple software setting change. Whether your production is in HD or SD, Vision Octane will work for you - right out of the box.

Designed for Live!

Vision Octane builds on the Ross Video reputation for designing switchers for live news, live sports, and live production. At the center of the action, it is important that the switcher be powerful and versatile, yet maintain its ease of operation. This frees the operator to concentrate on the programming instead of the equipment, delivering a cleaner, more professional production.

Designed for Linear!

The Vision Octane family of switchers continues to build on Ross Video's reputation for setting the standard for multi-definition linear editing suites. The traditional layout and familiar controls of the Vision control panel provide the power and ease of use you expect from a Ross switcher.

Vision Octane cleanly connects to virtually any editor using the industry standard GVG100/110, GVG200, and GVG4000 protocols.

Designed for You!

With production switchers installed in over 125 countries world-wide, our sales, demonstration, and training people get a lot of ongoing feedback from customers. This feedback is carefully tracked and considered in the design and feature set development of our production switchers. The Vision Octane series, our sixth generation of switchers, was designed with the direct input of video professionals experienced in news, sports, drama, mobile, and post production. Key members of the Vision Octane design team are part of an ongoing program in which they provide switcher demonstrations, assist with switcher installation, and train operators. As a result, the Vision Octane line continues to offer our legendary combination of power and ease of use.

Join our Growing Customer Base!

Deciding to purchase a Vision Octane switcher will put you in good company, with many thousands of Ross switchers installed worldwide. Vision Octane continues to build on a family of multi-definition switchers that have been delivering the goods every day in live sports, stadium scoreboards, and drama productions, as well as local and network newscasts.

Experience Great Support!

Ross Video has designed and manufactured production switchers for over thirty years. We believe that an important factor of our success is our focus on providing a superior customer experience. We continually benchmark our warranty and technical support to ensure that they are the best in the industry.

We hope that you join the many thousands of satisfied video professionals around the world that are proud owners of Ross production switchers. Please do not hesitate to contact us with any questions or comments you have related to this Configuration Guide at Tel: +1-613-652-4886, Fax: +1-613-652-4425 or email us at solutions@rossvideo.com.

Product Overview

Multi-Definition — Future-proof right out of the box, Vision Octane allows you to work in either SD or HD. Vision Octane supports 480i (SD 525), 576i (SD 625), 720p, 1080i, 1080pSF 24, 1080pSF 23.98, and 1080p 24.

Incredibly Powerful Vision Octane — The Octane Live Production Engine is, by far, the most powerful switcher in the world. It has support for up to 8 MLEs, 96 multi-definition inputs, 48 multi-definition configurable outputs, 24 DVE channels, 56 internal keyers, 6 WARP generators, 35 internal Ethernet-connected media stores, and 18 classes of external interfaces. Add Proc Amps, RGB Color Correctors, Utility Buses, FlexiClean™, Preview Overlay, Linux OS, and a whole lot more, and the result is nothing short of revolutionary. Amazingly, it fits into a rack-saving 8 RU.

OverDrive® Compatible — Ross Video switchers have evolved to control every single piece of equipment in the control room. The next step in this evolution is the revolutionary OverDrive Production Control System. With dual touch screens, the Technical Director can now automate a production when required. Thumbnail based, the TD can step through the show's run-down or instantly break away to unscripted events. When connected to a newsroom automation system, a live MOS-based link keeps the two systems in constant and instant synch, providing clear communication between the producer and the TD. OverDrive requires at least 2 MLEs to operate.

Flexible Control Panel Layout — The Vision control panel allows unprecedented flexibility in the placement of MLE crosspoints, and the number of dedicated sources you can access for each MLE. Each MLE on the switcher can be assigned to a different crosspoint group, or row, on the Vision control panel. Place MLE 1 on the bottom crosspoint row and MLE 4 on the top, or assign two crosspoint groups to the same MLE. Along with MLE assignment, you can also adjust the size of the crosspoint groups that the MLEs are assigned to. Want one crosspoint group with 64 source buttons? You can assign crosspoint modules to crosspoint groups across different rows allowing for an MLE with source buttons that span multiple rows on the control panel.

MultiPanel — Connect multiple Vision control panels to a single Octane Live Production Engine. Have each Vision panel control some, or all, of the MLEs from the frame seamlessly. Perfect for multiple-production environments where space and ease of maintenance are key! Each MultiPanel system consists of a Master Panel, and up to eight (8) Satellite Panels.

Mnemonics — Mnemonics are perfect for mobiles and other applications that require different source names from one production to another. Mnemonics are available for every MLE, as well as the Custom Control button row. Every display can have individual settings for color, text size, and backlighting to provide clear naming and source group separation.

Preview Overlay — This unique option allows the Technical Director to keep his/her eyes on the action by presenting key information overlaying the preview monitor output. Included are a VTR and video server time code display, a count up/down timer, source ID, safe title, and more - each element individually selectable via handy control panel buttons.

Squeeze & Tease® MD — Squeeze & Tease MD is a high quality, powerful multi-definition 3D DVE option. Great for sophisticated looking boxes, it allows every type of key to be squeezed or zoomed, cropped, repositioned, and rotated in 3D space. It can also perform 3D key or background transitions, or build sequences with complex timelines, keyframe editing, and quick "shot box" sequence recall. Squeeze & Tease MD comes equipped with a positionable light source, preprocessor effects such as defocus, mosaic, posterization, colorization, strobe, picture frame borders, timeline sequences with holds, and a lot more.

Squeeze & Tease WARP® MD — Stunning curvilinear transitions and creative effects are possible when this option, which provides warp capability to Squeeze & Tease MD, is added. Several WARP effects such as page roll, ripple, globe, star, heart, and lens flare are included. Squeeze & Tease MD cannot be used with a 1080p 24 video format at this time.

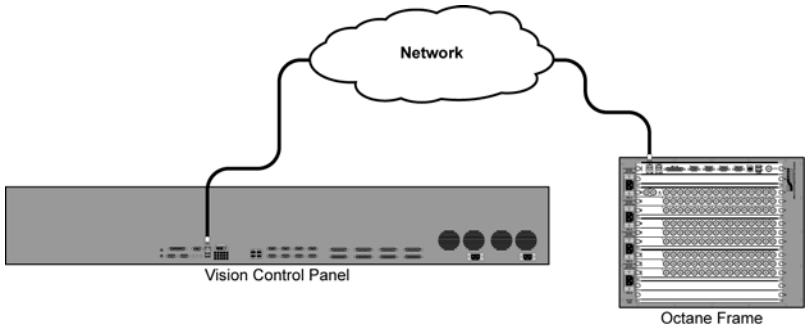
UltraChrome™ Advanced Chroma Keying — Our new UltraChrome chroma keyer uses new Ross technology to perform detailed keying in the most demanding applications. Each full MLE includes two UltraChrome chroma keyers as a standard feature.

3 Channel Global-Store™ — Three independent channels of stills are available switcher-wide. Thousands of stills and logos can be stored on the hard drive and are transferable to other control-room devices via Ethernet using WebDAV™.

MLE-Store™ — Every full MLE can have four channels of dedicated still store. These channels can be paired for video + key operation. MLE-Store has rapid access to all of the stills stored on the system hard drive.

MediaCache™ — In addition to the 3 Channel Global-Store that comes standard with Vision Octane, animated logos, moving graphics, and short uncompressed clips can optionally be played out of the Global-Store and the MLE-Store.

Ethernet Connectivity — Vision Octane connects the control panel and frame using a standard Ethernet connection. No need to run a dedicated cable, simply connect the frame and control panel to the same subnet and you are done. The Ethernet connection also allows for a painless upgrade process. Upgrades can be done from any computer connected to the same subnet. Images and animations can be copied from a computer to the switcher's internal hard drive for use by the still stores and MediaCache™ throughout the system. The Ethernet port can also be used to transfer images and animations from the hard drive on the switcher to a computer. This allows images captured on the switcher to be used elsewhere in the studio.



Multi-Definition Networked Still and Clip Server — Imagine hours of video storage, virtually unlimited stills and animations all playing out with their companion key channels. Next, combine live video and key capture with Ethernet drag and drop capability and you have the perfect marriage of video and networkability. Even better, this solution comes bundled with Video Server Control.

AuxKeys™ — Brand or add titles to Auxiliary Bus outputs or mix between Aux Buses. Feed the result to external monitors or send them back into the switcher to further increase the switcher's production power. This revolutionary option adds mixing and keying capability to Aux Bus outputs. Mix and key sources are fed from adjacent Aux Buses that have access to every signal in the switcher. Of particular interest in this application are Global-Store outputs that, with MediaCache enabled, can provide animated logo capability.

MultiDSK™ — Time, temperature, and bug logos are often added downstream. This option adds two downstream keyers to Vision Octane. The keyers have full access to the internal crosspoint matrix, making every source available as a downstream key.

Internal Proc Amps — Vision Octane makes your sources look great even when they have been misadjusted. Fixes are easy, as every video input can have luma gain, chroma gain, and chroma phase adjustments applied.

RGB Color Correction — Creative color adjustments are available with the optional RGB Color Correction option. Every video bus can have RGB Color Correction applied.

MLE Memory Attributes — Vision Octane gives you more flexibility than ever before. With MLE Memory Attributes, you can specify what sources, or still-store images, are recalled with each memory, as well as have a transition or custom control performed after each memory recall. For each MLE you can include or omit the source selections on the Program, Preset, Keyers, and Aux Buses, or the images. Need to recall a memory, but do not want to change the selection on the Program bus, or the image loaded into Global-Store channel one? Simply deselect those items for the desired MLE and perform your recall.

Powerful MLEs — Vision Octane packs major effects and keying power into each full MLE. Each MLE can be dynamically assigned to any row on the Vision control panel. Each full MLE has standard access to four fully featured keyers with luma, linear, and preset patterns, plus two advanced UltraChrome chroma keyers. Each full MLE has an assignable pair of utility buses for video-in-border and garbage mask applications, as well as a positionable clean feed output. Two advanced pattern generators include rotary wipes, matrix wipes, heart, star, spade, modulation, and pattern rotation. Two additional pattern generators are dedicated to color wash generators.

FlexDevice™ — Need the latest and greatest device support on your switcher, but don't want to upgrade the switcher software yet? FlexDevices separate device control from the version of switcher software by using device specific drivers

that are installed into the Vision Octane switcher. Simply download the latest FlexDevice driver for your device, install it onto the switcher, and assign it to a communications port.

VTR Control — Select a VTR on the PST bus, display its current timecode on the preview monitor, roll it from the transition area, and take it to air. Fast forward, rewind, and cue to timecode are also available at the touch of a button on the Vision control panel.

Video Server Control — Select, play, and monitor server clips by name right from the Vision control panel. The clip menu keeps track of clips and allows instant recall and cue.

Audio Server Control — Dial up the desired clip and see the name and duration. Use a Custom Control macro button to link audio clips to a switcher or DVE transition.

Router Control — This option makes your router sources easily selectable directly from Vision Octane. Any number of the switcher inputs can be fed from a router output. Router mnemonics are supported, with the router 8-character source name being displayed on the system control area and Preview Overlay source ID text. Also supported is the ability to use switcher Remote Aux panels that take advantage of the switcher routing matrix with audio-follow coming from the router. The Vision Octane switcher automatically matches the appropriate audio sources on the router with the video selected on the Aux panels.

Serial Tally Interface — Interfacing to Under Monitor Displays and Tally Systems is easy with this option. The Serial Tally Interface uses industry standard tally protocols to communicate tally information on an RS-422 serial port to other devices.

The Serial Tally Interface can also support TSL UMD input. This provides mnemonic names to the switcher for assigned sources. These names are displayed on the crosspoint mnemonics and menus for these assigned sources.

Peripheral Bus Interface (Pbus) — This option provides support for Thompson GVG™ P-bus Protocol for external device integration. Coordinate the store and recall of the settings of some still stores, CGs, and device controllers with the store and recall of your Vision Octane settings.

Audio Mixer Interface — Large or small mixers can be controlled serially from your Vision control panel, making an integrated A/V production possible.

Robotic Camera System Interface — Pan, tilt, zoom, focus, shot recall and more, are directly controllable from your control panel with this option.

Custom Control Macro Buttons — Dedicated, shiftable macro buttons have been positioned close to the operator for powerful single touch control. Recall any combination of switcher memories, button pushes, and external device control with our editable macro system.

Growth Path — The same video-processing frame is used for our 1, 2, 3, 4, 5, 6, 7, and 8 MLE switchers. Buy a smaller system now, then add another MLE or a larger control panel as your needs grow.

Compatible Vision Octane Boards — Most boards used in the compact 8RU Octane rack frame also plug into the 3RU QMD compact rack frame. This allows for consistent operation, maintenance, and spare parts across the entire product line.

Hot Swappable Boards — All the boards and cards in the Octane frame can be safely removed with the power on. If any board is plugged into the wrong slot, the board and system hardware will not be damaged. In addition, the frame is designed to support emergency swapping of some circuit boards even during live operation.

Upgrades from the Web — Software and even some firmware can be upgraded by downloading files from our web site. It's fast, easy, and it's FREE!

Affordable — A powerful switcher at a great price!

Built to Last — Ross warranties save thousands in operational costs over competitive products. It's no secret that Ross products are tough. They're built to handle years of demanding, continuous use. The Vision Octane series is backed by a comprehensive 1-year transferable warranty that can be extended. The design of our fourth generation fader bars is so good that they are guaranteed for life.

Your purchase decision must be based on a careful look at your present and future programming requirements. To ensure your investment is an informed one, and that the switcher is equipped for your programming needs, Ross Video has put together this Configuration Guide for the Vision Octane switchers. In this guide, we describe the Vision Octane switchers and their many standard and optional features. As you go through the information, please feel free to call us. We will be happy to address any of your questions.

Product Comparison

Use the following table to compare the different switchers in the Vision Octane product line.

Vision Control Panel

	Vision 1	Vision1M	Vision 2	Vision 2M	Vision 2X	Vision 3M	Vision 3	Vision 4
Control Panel								
Panel Source Buttons per Control Panel Row	16	24	16	24	32	24	32	40
Number of Control Panel Rows	1	1	2	2	2	3	3	4
Total Panel Source Buttons	16	24	32	48	64	72	96	160[1]
Maximum Number of MLEs Supported	8	8	8	8	8	8	8	8
Dedicated Custom Control Buttons[2]	16	24	16	24	32	24	32	40
Mnemonics Available	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dedicated MLE Recall Keypads	No	No	No	No	Yes	Yes	Yes	Yes
VESA Mountable 12 inch Touchscreen Display	Standard[3]	Standard	Standard[3]	Standard	Standard	Standard	Standard	Standard
USB Media Drive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Preview Bus Buttons	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dedicated Preview Overlay Buttons	No (Menu)	No (Menu)	Yes	Yes	Yes	Yes	Yes	Yes
Legendary Ross Fader Handle with Lifetime Guarantee	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Width × Depth (desk cutout size is smaller)	28.5”×16.5” (72.4cm× 41.9cm)	35”×16.5” (88.9cm× 41.9cm)	34.0”×16.5” (86.36cm× 41.9cm)	39.5”×16.5” (100.3cm× 41.9cm)	51.0”×16.5” (129.5cm× 41.9cm)	45.3”×20.5” (115.1cm× 52.1cm)	51.0”×20.5” (129.5cm× 52.1cm)	55.5”×26.2” (141.0cm× 66.6cm)
Engineering and Networking								
Redundant Power	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethernet Connectivity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linux OS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peripheral Interfacing								
Number of Standard Serial Ports (for external interfacing)	8	8	8	8	8	8	8	8
FlexDevice™ Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OverDrive® Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
All Ross Interfaces Available	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PS/2, or USB, Mouse and Keyboard Ports	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Vision 1	Vision1M	Vision 2	Vision 2M	Vision 2X	Vision 3M	Vision 3	Vision 4
Maximum Assignable Tallies	36	72	36	72	108	108	108	144
USB Ports	4 A-Type	4 A-Type	4 A-Type	4 A-Type	4 A-Type	4 A-Type	4 A-Type	4 A-Type
Editor Protocols (GVG)	100/200/4000	100/200/4000	100/200/4000	100/200/4000	100/200/4000	100/200/4000	100/200/4000	100/200/4000

1. You can only map 120 buttons to a single Bus Map.
2. Shiftable to increase the total number of custom controls.
3. Can be removed.

Octane Live Production Engine

MLEs	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
Video Input/Output																
Multi-Definition HD/SD[1]	1080pSF 24, 1080pSF 23.98, 1080i 50/59.94/60, 720p 50/59.94/60, 1080p 24															
Standard Definition Processing	525, 625															
Maximum Inputs	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Maximum Outputs	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Configurable Outputs	42	48	42	48	42	48	42	48	42	48	42	48	42	48	42	48
Internal Proc Amps per MLE	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
RGB Color Correctors per MLE	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Preview Overlay	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FlexiClean™ Clean Feed System	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Positionable Clean Feed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Internal Look Ahead Preview	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SmartConversion™ Option	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Engineering																
Reference Format	Analog black / tri-level															
Rack Frame Redundant Power	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hot-Swappable Boards	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rack Frame Height (RUs)	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Effects Capabilities																
Maximum Keys Including AuxKeys and MultiDSKs	**13**	**16**	**17**	**20**	**21**	**24**	**25**	**28**	**29**	**32**	**33**	**36**	**37**	**40**	**41**	**44**
Traditional Keyers	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32

MLEs	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
AuxKeys™	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10
Additional MultiDSKs™	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Internal DVE Channels	0	8	8	8	8	16	16	16	16	20	20	20	20	24	24	24
WARP Engines	0	2	2	2	2	4	4	4	4	6	6	6	6	6	6	6
Border Generators	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
UltraChrome™ Chroma Keys	0	2	2	4	4	6	6	8	8	10	10	12	12	14	14	16
Internal DVE Pre-Layered Sends	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Storage and Networking																
Maximum Media Stores	**3**	**7**	**7**	**11**	**11**	**15**	**15**	**19**	**19**	**23**	**23**	**27**	**27**	**31**	**31**	**35**
Global-Store™ Still Store Channels	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
MLE-Store™ Still Store Channels	0	4	4	8	8	12	12	16	16	20	20	24	24	28	28	32
MediaCache Animated Logo Players (video and alpha)	1	3	3	5	5	7	7	9	9	11	11	13	13	15	15	17
Ethernet Connectivity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linux OS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Internal Hard Drive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Networked Still and Clip Server Option	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peripheral Interfacing																
Number of Standard Serial Ports (for external interfacing)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
OverDrive® Compatible	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
All Ross Interfaces Available	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Editor Protocols (GVG)	100/200/4000															
GPI I/O	10/10 (expandable to 34/34)															

1. Standard for Octane Multi-Definition Live Production Engine and upgrade for the Octane Standard-Definition Live Production Engine.

Standard Features

16 Multi-Definition Serial Digital Inputs

The Octane Multi-Definition, and Standard Definition, Live Production Engines comes standard with 16 inputs (optionally expandable in groups of 16 up to 96). Any input can be assigned to any control panel pushbutton - simplifying installation. These inputs can be used for video, alpha channel, or mask.

Analog Reference Input

Vision Octane provides you with maximum flexibility and cost effectiveness when choosing the reference signal for your facility. Although tri-level sync is recommended as your reference source for all applications, analog black burst can be used when operating the switcher in SD mode only.

A looping reference connector is provided for your convenience.

See the table in the **Specifications** section, at the rear of the Configuration Guide, for detailed reference information.

3 Channel Global-Store

Three independent channels of stills are available switcher-wide. Thousands of full screen stills and logos can be stored in the on-board hard drive and are transferable to other control-room devices via Ethernet using the WebDAV™ protocol.

Global-Store comes standard with 1 Gigabyte of RAM storage. Thousands of additional images can be loaded quickly from the system hard drive. When the optional MediaCache for Global-Store is enabled, the playout capabilities of the Global-Store include animation support. The number of images stored increase considerably when smaller, non-full screen images like logos are stored.

Multi-Definition MLE Effects System

The MLE® (Multi-Level Effect) systems are standard with Vision Octane. The number of MLEs depends on the chosen switcher model as shown in the table.

Switcher Model	Number of Full MLEs
1 MLE Octane	1
2 MLE Octane	2
3 MLE Octane	3
4 MLE Octane	4
5 MLE Octane	5
6 MLE Octane	6
7 MLE Octane	7
8 MLE Octane	8

Each MLE provides four keyers supporting matte fill, key invert, pattern mask, box mask, garbage mask, self-key, linear key, and preset pattern key. Two UltraChrome advanced chroma keyers are standard for each MLE and are available to each keyer. Key bordering may be added as an option.

Every MLE has a dedicated utility bus for video-in-border applications. The switcher has powerful internal DVE send/return paths. Up to eight channels of optional 3D DVE and two WARP engines can be dedicated to each full MLE.

Two wash generators that incorporate extensive wash patterns, matte video effects, and noise effects while a full preview is always available to reduce on-air surprises.

MLEs can be assigned to one, or multiple, rows on the control panel. This allows you to assign MLEs where you want them, or to control multiple MLEs on a smaller control panel. Each crosspoint group on the Vision control panel can be quickly assigned to any MLE on the fly. Assigning MLEs to different crosspoint groups does not affect the on-air status, or settings of the MLE.

Pattern Generators

Each MLE has eight (8) pattern generators consisting of two (2) complex pattern generators that float between the transition area and keyers, four (4) simple pattern generators for keyers, and two (2) simple pattern generators for washes.

The complex pattern generators come equipped with classic, matrix, rotary, modulation, heart, and star wipes. All wipe types can be rotated, bordered, and repositioned. The simple pattern generators are identical to the complex pattern generators except that matrix capability has been removed.

Switcher Model	Number of Pattern Generators
1 MLE Octane	8
2 MLE Octane	16
3 MLE Octane	24
4 MLE Octane	32
5 MLE Octane	40
6 MLE Octane	48
7 MLE Octane	56
8 MLE Octane	64

Matte Generators

Each MLE has access to color generators that can be assigned to COLOR BKGD1 and 2, key fill 1 through 4, key border 1 and 2, wipe pattern edges 1 and 2, and wash matte generators 1 and 2. Note that each full MLE has its own dedicated COLOR BKGD video inputs to make memory recalls of individual MLEs simple and predictable.

Switcher Model	Number of Matte Generators
1 MLE Octane	12
2 MLE Octane	24
3 MLE Octane	36
4 MLE Octane	48
5 MLE Octane	60
6 MLE Octane	72
7 MLE Octane	84
8 MLE Octane	96

UltraChrome Advanced Chroma Keying

The Ross UltraChrome™ (patent pending) uses advanced video processing technology to provide exceptional blue spill reduction and clean edges, even with difficult source material. Glass, smoke, translucent materials, and natural shadows are handled superbly.

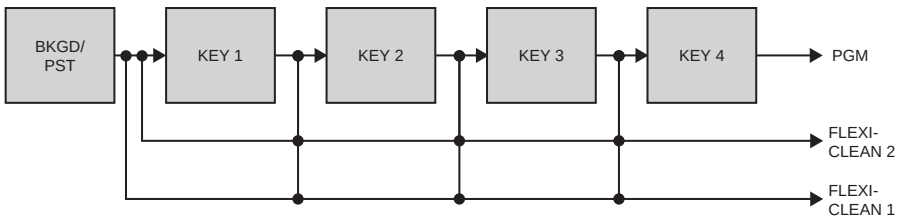
Chroma key shadows can either be extracted from the source image or simulated using the switcher's optional border generators.

Vision Octane switchers come standard with two UltraChrome chroma keys per full MLE, easily assignable to any Keyer.

FlexiClean Clean Feed Output

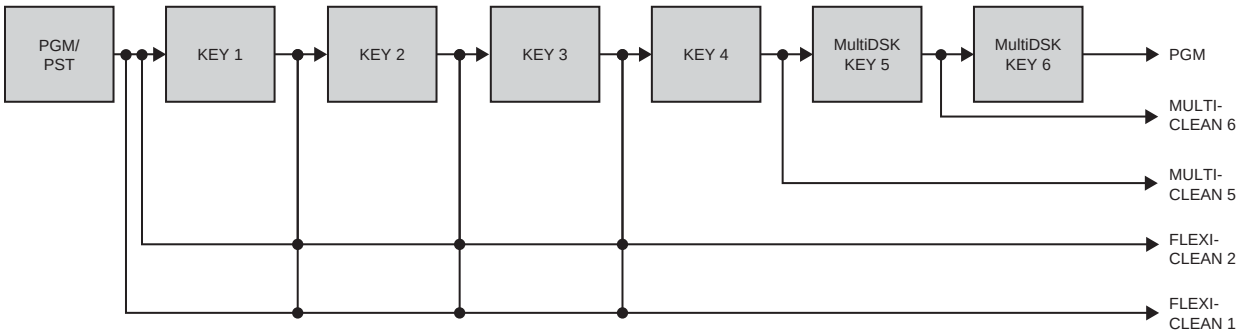
Each MLE can have two fully programmable clean feed outputs. This feature is used for multi-language and live-to-tape productions. It provides a second Program output that is derived from a different location than the standard program output. A frequent application is the recording of shows for later airing without call-in phone numbers inserted.

The clean feed outputs can come from before or between the keyers in the MLE. Each MLE has its own, independently configured clean feed output separate from all other clean feed outputs. The diagram below illustrates the possible clean feed configurations.



Clean Feed Modes

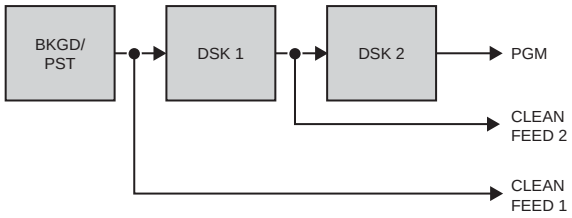
The diagram below illustrates the clean feed output configurations available on the bottom Program/Preset MLE with the **MultiDSK** (**Key 5** and **Key 6**) option installed.



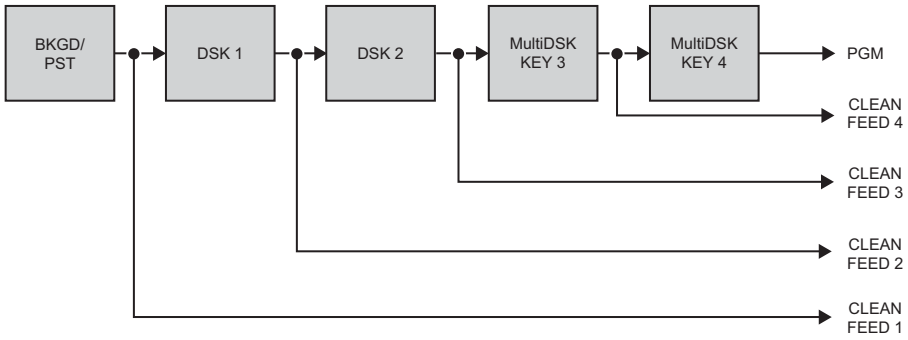
Clean Feed Modes for MultiDSK

Half MLE

The upper full MLEs of the switcher operate as described above. The bottom, half MLE, has a dedicated clean feed output for before and between the keyers. The diagrams below illustrate the possible clean feed configurations for the half MLE.



Clean Feed Modes for Half MLEs



Clean Feed Modes for Half MLE Program/Preset with MultiDSK

Preview Overlay

This feature makes it possible to display various types of useful information on the main preview output. This information is color-coded, and can be positioned and re-sized according to user preferences. There are eight buttons in the Preview Overlay area of the switcher panel to control and display overlay information. The following types of information are available:

Source Identification

Source ID displays the name of the current background video, current preset video, and transition type. When the **Routing Switcher Interface** option is installed, router source names are displayed in addition to switcher source names.

VTR Time Code

If a VTR, disk recorder, video server, or other device using a time code is the current background of your main preview output, its current time code will be displayed (e.g., 12:59:59:23), as well as a countdown timer for the on-air servers. The device's remote port must be connected to the switcher, and the **VTR Remote Control** and/or **Video Server Control** option must also be purchased.

Configurable Safe Title, Safe Area, and Center Cross Hairs

This places a SMPTE standard safe title, safe area, and center indication over the main preview output, all of which can then be adapted to fit your specific application. This is great for ensuring a clean 4:3 extraction from a 16:9 shot, and for talent and graphic positioning.

Time Clock

This places a configurable timer on the main preview output. This timer can be made to restart every time a background transition occurs on air. This is ideal as a show, commercial, or segment timer.

Mask Preview

This places a thin outline on the main preview output around the current active box mask.

Intuitive Control Panel with Mouse and Keyboard Ports

The Vision control panel includes two standard PS/2 ports. One for a keyboard and one for a mouse. The USB ports on the Vision control panel can also be used for a USB keyboard and mouse.

MultiPanel

This feature allows you to connect multiple Vision control panels to a single Octane Live Production Engine. Each of the Vision control panels can control some, or all, of the MLEs from the frame seamlessly. MLE assignment is easily done from the MultiPanel Menu allowing you to quickly switch between MultiPanel configurations.

Each MultiPanel system consists of a Master Panel, and up to eight (8) Satellite Panels. Only the Master Panel supports device control or OverDrive.

USB Media Drive and Hard Drive

This feature makes it possible to store and recall complete switcher setups including memory functions, switcher personalities, installation parameters, and more, to a USB media drive. This allows operators and technical staff to back up their switcher setups and easily transfer these settings to other Vision Octane production switchers.

The system hard disk drive is located in the Octane frame. Switcher settings can also be stored here for quick recall. This is the same hard disk drive that is used to store stills, logos, animated logos, and short video clips. Memories and graphics files are accessible over the Ethernet network port for easy remote load and backup.

Touchscreen Display

The dual-menu touchscreen display allows you to quickly and easily navigate through the intuitive menu system of the Vision Octane switcher. The dual-menu design allows you to place a commonly used menu, such as the Global-Store or a device control menu in the upper display region, and allow the bottom display region to auto follow crosspoint selections. In addition to the dual-menus, quick navigation buttons are provided that allow you to quickly jump to the most commonly used menus on the switcher. Jump from the Custom Control to the Video Correction menus at the touch of a button.

In addition to the menus, the touchscreen display has dedicated soft-buttons and soft-knobs that are used to configure the switcher and to provide advanced operational features.

Control Panel	Touchscreen
Vision 1	Standard[1]
Vision 1M	Standard
Vision 2	Standard[1]
Vision 2M	Standard
Vision 2X	Standard
Vision 3M	Standard
Vision 3	Standard
Vision 4	Standard

1. Can be Removed

The Touchscreen Display can be mounted on any extension arm using the VESA 75 or 100 standard mounting configuration.

Custom Control Macros

This feature brings the power of macros to the switcher operator. A series of button presses can be easily recorded and assigned to any button on the control panel, or one of the dedicated custom control buttons that are positioned close to the operator. Step through complex show openings as easily as pressing Custom Control buttons 1, 2, then 3. Confusing timeline programming is a thing of the past.

The Vision Octane switcher supports up to 12 banks of 48 custom controls, providing a total of 576 possible custom controls. Up to 480 custom controls can be accessed using the Custom Control ShotBox menu.

Control Panel	Dedicated Custom Control Buttons
Vision 1	48
Vision 1M	144
Vision 2	48
Vision 2M	144
Vision 2X	240
Vision 3M	144
Vision 3	240
Vision 4	336

Custom Controls can also be used to control remote devices or other optional switcher features such as:

- Trigger a GPI to advance to the next page of your still store
- Play, stop, or shuttle multiple VTRs or video servers
- Trigger an audio server and tie sound effects to wipes and DVE effects
- Recall a robotic camera shot along with a switcher memory
- Recall an audio mixer setting for an integrated audio follow video production
- Any number of pauses, holds, and events can be added to any macro
- And many additional sophisticated features

Custom Control macros can be viewed and edited directly on the switcher menu.

When the **Mnemonics for Custom Control Macros** option is installed, color-coded macro names are presented directly above the buttons. This is especially useful when several banks of macros are in use.

100 Event Switcher Memory

Vision Octane comes standard with storage for 100 complete switcher snapshots that are easily stored and recalled at the touch of a single button. Each memory can be recalled completely, or only in part with the MLE Memory Attributes feature. Store a single memory and then select which crosspoint buses, still-store images, or keyer on-air status you want recalled on a particular MLE. Use a single memory to create multiple shots.

If you don't want to recall the entire switcher at once, you can recall any area of the switcher in any combination you desire from a keypad dedicated to that MLE.

All of these memories can be stored to a USB media drive, providing custom tailored memories for every operator and every show.

You can even give your memories names, such as SPORTS. An alphanumeric display will tell you what you've recalled, or what you're about to recall.

Clear and Intuitive Displays and Buttons

Vision Octane always lets you know what's going on. Quickly identify each MLE or AuxKey by assigning a unique glow color to all the buttons on the MLE, or you can select from a number of the pre-loaded color schemes. Give your switcher a new look by applying one of the many menu themes. Choose between high contrast, large font, themes or bright crystal-clear themes for the look that works for you.

Red-lit on-air sources and color assignable selected sources allow you to easily identify the sources, MLEs, and Keys that are on-air.

Every auto transition rate is constantly visible, including the main transition rates, the dedicated keyer rates, and the fade to black rate. The last memory recalled is also displayed along with an associated eight-character memory name.

General Purpose Interface

Vision Octane is equipped with ten dedicated GPI inputs and ten dedicated GPI outputs.

The GPI inputs allow the switcher to interface with peripheral equipment such as editors. Each GPI input can be used to perform simple editing and switcher functions such as fade to black or an auto transition on the switcher's MLE. GPI inputs can trigger Custom Control macros, making it possible to trigger complex timelines. For industry standard serial editing capability, the **Editor and Automation Interface** option is available.

GPI outputs are used to trigger remote events like *Still Store Next Page* and are triggered either through the Custom Controls of the switcher or when a video source is selected. GPI outputs can be assigned to a video source with a preroll time. When the Roll Clip is active on the Transition Module, the GPI will trigger when the transition is activated, but the transition is delayed by the preroll time.

Tally Outputs

Each Vision Octane switcher has 36 tally relays located in the control panel conveniently close to your monitors. Any tally can be assigned to any video input or MLE program output. As each tally is assignable, more than one tally can be assigned to the same source. This can simplify system cabling in situations such as when camera tallies must be supplied to both the camera itself and the control room monitor wall.

FlexDevice™ Driver Support

Devices are connected to the switcher using either the built-in device drivers or individual FlexDevice™ drivers. Refer to the *Ross Video External Device Setup Sheet* for your device for information on which interface must be used with your device.

Individual FlexDevice drivers are uploaded to the switcher using the QMD/X Web Interface. Once a driver has been uploaded to the switcher, an instance of that driver is initialized and assigned to the port that the device is connected to. A single instance of a FlexDevice driver controls a single device. If you are connecting multiple devices of the same type to the switcher, you must activate multiple instances of that driver.

System Manuals

Vision Octane comes with a complete set of system documentation that includes an Operator's Manual, an Engineering Manual, and a series of Quick-Start posters.

Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 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 standard 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 the call will be returned shortly. These people are available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

Repair and Warranty Policy

The Vision Octane is backed by a comprehensive one-year warranty on all components. Vision Octane fader handles are covered with a lifetime warranty. For a more detailed description, please see our warranty document.

Standard Systems

We at Ross Video believe in letting you build the best switcher for your needs. Select the size of frame you need for today, and can grow with in the future. Select the number of MLEs you need to produce your show. Select the Vision control panel that you want to connect to your Octane frame. Finally, select the number of inputs and outputs you need to meet your production needs.

Octane 4-Keyer Multi-Definition Live Production Engine

QMDX-00*x*
x MLE

QMDX-00*x*-5
x.5 MLE

Do you have a highly demanding show that requires multiple MLEs and dozens of inputs and outputs? Do you want the most powerful Multi-Definition Live Production Engine on the market today? You need the heavy powerhouse of switchers that is the Octane Multi-Definition Live Production Engine.

With support for up to 8 MLEs, 4 Keyers per MLE, and an impressive matrix of up to 96 multi-definition inputs, and 48 multi-definition configurable outputs, Octane can satisfy even the most demanding production needs. It is like having the power of two switchers in a single box.

A Video Output Board, **QMDX-021** or **QMDX-021-SD**, must be purchased to provide video outputs for the switcher. At least one **QMDX-021** is required for the half MLE (x.5) switchers.

MLE	Option
MLE 0.5	QMDX-000-5
MLE 1	QMDX-001
MLE 1.5	QMDX-001-5
MLE 2	QMDX-002
MLE 2.5	QMDX-002-5
MLE 3	QMDX-003
MLE 3.5	QMDX-003-5
MLE 4	QMDX-004
MLE 4.5	QMDX-004-5
MLE 5	QMDX-005
MLE 5.5	QMDX-005-5
MLE 6	QMDX-006
MLE 6.5	QMDX-006-5
MLE 7	QMDX-007
MLE 7.5	QMDX-007-5
MLE 8	QMDX-008

Octane 2-Keyer Multi-Definition Live Production Engine

QMDX2K-00*x*
x MLE

QMDX2K-00*x*-5
x.5 MLE

Do you have a highly demanding show that requires multiple MLEs and dozens of inputs and outputs? Do you want the most powerful Multi-Definition Live Production Engine on the market today? You need the heavy powerhouse of switchers that is the Octane Multi-Definition Live Production Engine.

With support for up to 8 MLEs, 2 Keyers per MLE, and an impressive matrix of up to 96 multi-definition inputs, and 48 multi-definition configurable outputs, Octane can satisfy even the most demanding production needs.

A Video Output Board, **QMDX-021** or **QMDX-021-SD**, must be purchased to provide video outputs for the switcher. At least one **QMDX-021** is required for the half MLE (x.5) switchers.

MLE	Option
MLE 1	QMDX2K-001
MLE 1.5	QMDX2K-001-5
MLE 2	QMDX2K-002
MLE 2.5	QMDX2K-002-5
MLE 3	QMDX2K-003
MLE 3.5	QMDX2K-003-5
MLE 4	QMDX2K-004
MLE 4.5	QMDX2K-004-5
MLE 5	QMDX2K-005
MLE 5.5	QMDX2K-005-5
MLE 6	QMDX2K-006
MLE 6.5	QMDX2K-006-5
MLE 7	QMDX2K-007
MLE 7.5	QMDX2K-007-5
MLE 8	QMDX2K-008

Octane Standard-Definition Live Production Engine

QMDXSD-00*x*
x MLE

QMDXSD-00*x*-5
x.5 MLE

Do you require the power of the Octane Live Production Engine but don't need High-Definition yet? Start off with the Octane Standard Definition Live Production Engine now and upgrade to Multi-Definition when you need it.

With the same support for up to 8 MLEs, 4 Keyers per MLE, and 96 multi-definition inputs as the Octane Multi Definition Live Production Engine, the Octane Standard-Definition Live Production Engine can satisfy your demanding production needs now and into the future.

A Video Output Board, **QMDX-021** or **QMDX-021-SD**, must be purchased to provide video outputs for the switcher. At least one **QMDX-021** is required for the half MLE (x.5) switchers.

MLE	Option
MLE 1	QMDXSD-001
MLE 1.5	QMDXSD-001-5
MLE 2	QMDXSD-002
MLE 2.5	QMDXSD-002-5
MLE 3	QMDXSD-003
MLE 3.5	QMDXSD-003-5
MLE 4	QMDXSD-004
MLE 4.5	QMDXSD-004-5
MLE 5	QMDXSD-005
MLE 5.5	QMDXSD-005-5
MLE 6	QMDXSD-006
MLE 6.5	QMDXSD-006-5
MLE 7	QMDXSD-007
MLE 7.5	QMDXSD-007-5
MLE 8	QMDXSD-008

Vision Control Panel

V1P-001
V1P-D-001
(no Touchscreen)

V1MP-001
V2P-001
V2P-D-001
(no Touchscreen)

V2MP-001
V2XP-001
V3P-001
V3MP-001
V4P-001

Select the Vision control panel that meets the needs of your production environment and that utilizes the power of your Octane Live Production Engine.

With the Vision 1 and Vision 2 control panels, you have the option of ordering them without the Touchscreen Display. An LCD computer monitor with a DVI-D connector is required.

System Options

Options are typically ordered when the switcher is purchased. However, if you are not 100% certain which options you will need in the future, you don't need to feel pressured into making that decision today. All of our options can be easily installed in the field. You can take comfort in knowing that you can purchase options as your needs develop and that installation at your site will be a smooth process.

Octane Frame MLE Configuration

QMDX-050

This option configures boards in the Octane frame so that MLEs 1 though 4 can share a single Squeeze & Tease Carrier. With the Squeeze & Tease option installed, each MLE-pair (MLEs 1 and 2, and MLEs 3 and 4) have access to 4 channels of Squeeze & Tease DVE, and a dedicated channel of Squeeze & Tease MD WARP.

The Squeeze & Tease Carrier, Squeeze & Tease MD, and Squeeze & Tease WARP options are required for Squeeze & Tease resources to be available.

Control Panel Endblocks

V*n*P-501

This option provides a set of endblocks that are installed on either side of the Vision control panel to allow it to be installed at a comfortable angle in a desk or console. The endblocks can be easily installed, or removed, as your needs change.

Specify the Vision control panel you are ordering for by replacing the "*n*" in the product number with the panel number (e.g., **V2P-501** is the product number for the endblocks on a Vision 2).

Mnemonics for MLE Sources

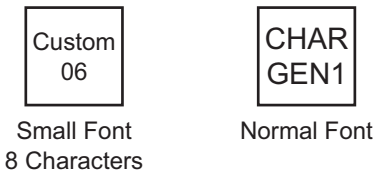
V*n*P-*x*05

This option puts mnemonic indicators for the display of source names directly above the program (background) bus of the selected MLE. This option is ordered once per MLE that you wish to have mnemonics for. Mnemonics can be ordered for any combination of MLEs on your switcher.

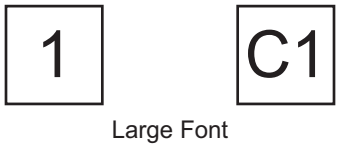
Specify the Vision control panel and MLE you are ordering for by replacing the "*n*" in the product number with the panel number, and the "*x*" with the MLE number (e.g., **V2P-105** is the product number for the MLE 1, the top crosspoint row by default, on a Vision 2).

Source names can be displayed in three formats, and all formats can be intermixed on a single bus as desired:

- Eight-character mnemonics. The full eight-character source name is displayed in two lines, in either small or normal font. If the shift button is pressed, the display changes to the shifted source name.

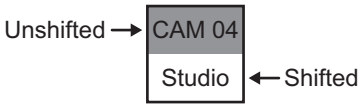


- One or two character large font mnemonics. These large characters fill the entire display. This is an ideal way to identify sources like cameras as **1**, **2**, **3** and VTRs as **A**, **B**, **C**.



Large Font

- Dual six character mnemonics. This uses the small font to simultaneously display the first six characters of the shifted and unshifted source names associated with a crosspoint button. The shifted crosspoint appears in reverse video mode.



Mnemonics can be displayed with green, yellow, or orange backlighting, chosen on a source-by-source basis. Backlighting can also be turned off for sources that have been deactivated, or are unused, on a given production. Source names can also be displayed in normal or inverted (reverse video) modes. These extensive display appearance choices provide an excellent way of differentiating between source buttons during a live production.

When the Routing Switcher Interface option is installed, switcher source names are replaced by router source names.

This option is ideal for mobile and other applications where sources are constantly being associated with different crosspoint buttons from one production to another. This option is also useful when it is desirable to simplify a production by showing only those sources that will be used in that production and not all of the sources currently connected to the switcher.

Mnemonics for Custom Control Macro Buttons

V*n*P-005

This option puts mnemonic indicators for the display of Custom Control macro names directly above the Custom Control macro row of the switcher.

It is common for operators to create and name their own Custom Control macros for a given production. This option allows those customized macros to be named for easy selection.

Specify the Vision control panel you are ordering for by replacing the "*n*" in the product number with the panel number (e.g., **V2P-005** is the product number for custom control mnemonics on a Vision 2).

A very important feature to note is that Vision supports up to twelve banks of Custom Control macros simultaneously. Up to twelve macro buttons can be configured as "shift" buttons that change the assignment of all of the other macro buttons. Installing the mnemonics makes this feature considerably easier to use by instantly re-labelling all of the Custom Control buttons when a new bank of macros is selected.

All Custom Control macros can have names of up to eight characters, and can be displayed in any of the formats outlined in Mnemonics for MLE Sources above.

Mnemonics can be displayed with green, yellow, or orange backlighting, chosen on a macro-by-macro basis. Backlighting can also be turned off for macros that are empty. Macro names can also be displayed in normal and inverted ("reverse video") modes. These extensive display appearance choices provide an excellent way of differentiating between Custom Control buttons during a live production.

Vision Touchscreen Display

V-100A

This option adds the Touchscreen Display to the **V1P-D-001** and **V2P-D-001** Vision control panels, or provides a replacement Touchscreen for any Vision control panel.

Vision Panel Row Deletion

V*n*P-049-DEL

Note: Only specific Vision control panels can support the Panel Row Deletion option.

This option removes the top row of crosspoint buttons and control modules from the Vision control panel. This gives you the expandability you will need for the future without the initial cost.

Panels Supporting Row Deletion

Vision Panel	Number of Options
Vision 2X	1 option
Vision 3M	2 options
Vision 3	2 options
Vision 4	3 options

Specify the Vision control panel you are ordering for by replacing the "*n*" in the product number with the panel number (e.g., V3P-049-DEL is the product number for removing a panel row on a Vision 3 control panel).

Vision Panel Row Addition

V*n*P-049-ADD

This option adds the top panel row to a Vision control panel that was ordered with the V*n*P-049-DEL option. One option must be ordered for each panel row that you want to add back to the Vision control panel.

Specify the Vision control panel you are ordering for by replacing the "*n*" in the product number with the panel number (e.g., V3P-049-ADD is the product number for adding a panel row on a Vision 3 control panel).

MediaCache™ for Global-Store™

QMDX-010

MediaCache enables the playout of animated logos, moving graphics, and short uncompressed clips from the Global-Store. Each output is capable of playing full bandwidth clips independently and simultaneously.

The duration of the clips depend upon the size of the clips being used. Full screen 1080i images will take 5 times the storage of a 480i clip. However, a small, animated logo in 1080i will take much less storage than a full screen 480i clip.

Clips and animations are loaded from the system hard drive to local Still Store RAM at power-up or when new clips are requested. Clips are transferred from external computers to Vision Octane via Ethernet using the WebDAV protocol.

Note: The **XFX Board with MLE-Store and MediaCache** option is also available.

Proc Amps, System Wide

QMDX-012

This option adds seven (7) Processing Amplifiers to every full MLE. Four of these sit on the Background, Preset, and Keyers. The fifth one is used for modifying an Aux Bus output. These Proc Amps are configured either "per input" or "per bus".

Every video input or bus can have luma gain, chroma gain, black and white offset, and chroma phase adjustments. In addition, you can set up Proc Amp values for multiple particular inputs and then apply a bus setting as well. When you select one of these particular inputs, the two sets of values are calculated together to provide input-plus-bus correction.

This option is particularly useful for correcting analog level and chroma phase errors caused by system timing errors, transmission losses, and incorrect equipment calibration.

RGB Color Correction, System Wide

QMDX-013

This option adds seven (7) RGB Color Correctors to every full MLE. One of these Color Correctors is used for modifying an Aux Bus output. The other four are tied to the MLE's Program, Preset, Keyers, and can be used to apply color correction to either an individual input on the associated bus, or to the entire bus. In addition, you can set up Color Correction values for multiple particular inputs and then apply a bus setting as well. When you select one of these particular inputs, the two sets of values are calculated together to provide input-plus-bus color correction.

This feature is particularly useful for correcting lighting temperature variations and differences in camera calibration, or for adding creative effects, which can then be stored to a memory and used to perform Effects Dissolves.

Color correction cannot be applied to Alphas, or MultiDSK Keyers, if purchased.

Comtrol® DeviceMaster® Port Expander (adds RS-422 or RS-232 Ports)

QMDX-015-NET
4 Serial Ports

This option provides a Comtrol® DeviceMaster® with four (4) serial ports, effectively increasing the number of available panel ports by three. Each Comtrol DeviceMaster connects to the Vision Octane switcher over a single TCP/IP link and then to each device over a dedicated serial port that can be configured as either RS-232 or RS-422.

Using the Comtrol® PortVision® software, you configure the Comtrol DeviceMaster for each device you are connecting to it. With the serial connection established, you set the device up on the Vision Octane switcher using the IP address of the Comtrol DeviceMaster and the serial port the device is connected to.

This option includes the Comtrol DeviceMaster Interface option (**QMDX-955**) for free!

Fiber-Optic Input/Output Adapter

QMDX-FIN
QMDX-FOUT

This option adds a single Fiber-Optic Input, **QMDX-FIN**, QMD (GearLight FSR-9241-ST) or Fiber-Optic Output, **QMDX-FOUT**, (GearLight FST-9241-ST) adapter to a Video Input BNC or Video Output BNC on the back of the Octane Live Production Engine.

Supported Transmission Types
19.4Mbps SMPTE 310M
143 to 540Mbps 259M/344M
1.5Gbps SMPTE 292M HDTV
DVB/ASI 270Mbps

Multi-Definition Network Still and Clip Server

QMDX-016

This option adds a fully integrated **SoftMetal™ Production Server**.

The SoftMetal Production Server accepts networked transfers of Targa stills, Targa animations, QuickTime® files and pre-compressed graphics and clips with available SoftMetal codecs. SoftMetal offers the ability to link Video and Alpha channel clips and adjust and lock timing for production playback, right in the server.

As a multi-definition server, the SoftMetal Production Server comes equipped with on-the-fly scaling on every output, converting clips from SD to HD or HD to SD automatically as they play.

The **Video Server Control** (**QMDX-903**) option is included with this option and does not need to be purchased separately. Any of the control panel remote ports are now able to control this and any other supported video server.

Octane Inputs

QMDX-020

All digital inputs can be used direct to air, as key alpha channels, or as chroma key sources.

Inputs for Octane can be purchased in groups of 16 up to a maximum of 96 Multi-Definition digital inputs. Therefore, quantities of 16, 32, 48, 64, 80, or 96 inputs are possible.

Inputs can be freely assigned to any panel pushbutton or shifted pushbutton. They can also be hidden and accessed only as alpha channels or they can be locked out if they are not used. Also, if the **Mnemonics for MLE Sources** option is purchased, different shows can use completely different sets of inputs optimally arranged on the control panel with labelling.

Octane Inputs, Additional Plus Analog Reference/Tri-Level Sync Input

QMDX-020R

This Input Board is ordered as an emergency backup to the primary reference input in the Octane Live Production Engine.

This input board is identical to the **QMDX-020**, except that it has additional circuitry for a system reference input. One input board like this comes standard with every system. Purchasing a second board allows for redundancy, in the unlikely event of a primary reference input failure. If one board fails or is removed, the other board automatically takes over the reference function. The remaining 16 inputs will function as normal.

Octane Outputs, Additional

QMDX-021

All digital outputs are fully configurable to be program, preview, clean feed, or Aux Bus outputs. It is recommended that you carefully map out your requirements to determine the number of outputs needed.

Note: The Octane **Live Production Engine** requires at least one **QMDX-021**, or **QMDX-021-SD**, to provide video outputs for the switcher.

The MultiDSK option consumes 6 additional digital outputs. Refer to the **MultiDSK** option for more details if this applies to your configuration.

Additional outputs for Octane can be purchased in groups of 16 up to a maximum of 48 Multi-Definition digital outputs. Therefore, quantities of 16, 32, or 48 outputs are possible.

Octane SD-Only Outputs, 16 Untimed Outputs

QMDX-021-SD

All digital outputs are fully configurable to be program, preview, clean feed, or Aux Bus outputs. It is recommended that you carefully map out your requirements to determine the number of outputs needed.

Note: The **Octane Live Production Engine** requires at least one **QMDX-021**, or **QMDX-021-SD**, to provide video outputs for the switcher. The MultiDSK, AuxKeys, or x.5 MLE options are **NOT** supported by the **QMD-021-SD**. At least one **QMDX-021** must be installed to support the MultiDSK and x.5 MLE options. The number and type of AuxKeys required will determine the number of **QMDX-021**s you need.

Additional outputs for Octane can be purchased in groups of 16 up to a maximum of 48 Standard-Definition digital outputs. Therefore, quantities of 16, 32, or 48 outputs are possible.

$1 Conversion Frame (cooling unit extra)

FBK-8110
DFR-8110A

FBK-8110-C
DFR-8110A-C

Note: The following RossGear® Converters and Distribution equipment apply only to Standard-Definition products.

All Standard-Definition inputs and outputs are 10-bit 4:2:2 serial digital. Signal sources of other video formats must be converted to serial digital. Ross Video chose to do this conversion externally to ensure that the very latest conversion technology and most competitive pricing is available to our customers. An added bonus of external conversion is the ability to use those converters elsewhere in your facility as you eventually upgrade your switcher sources to serial digital.

All the **DFR-8110A** RossGear frames come with a single power supply as standard. The **DFR-8110A-C** includes the cooling fan unit in the door.

Ross Video is known as a world-class and competitive supplier of encoders, decoders, A-Ds, and D-As. In order to encourage you to purchase the entire system from Ross, sets of conversion rack frames and power supplies can be purchased for the nominal price of $1 US each (cooling fan unit extra) according to the following conditions:

- The order for conversion frames is made at the same time as the order for the switcher.
- The number of frames covered is equal to the number of converters ordered, divided by 10, with all fractions rounded up (i.e., 1 converter = 1 frame, 9 converters = 1 frame, 15 converters = 2 frames, etc.).

Contact your Ross Video Sales Representative for a list of RossGear cards that qualify for the $1 openGear Frame promotion.

If your system requires power redundancy, don't forget to order an additional power supply per conversion rack frame (PS-8102). These additional power supplies are not included in the $1 offer. Please obtain a current Ross Video Catalogue for detailed information on Ross Video's complete line of converters. You may also want to consult with Ross Video or check out our web site at www.rossvideo.com to determine if new converters have been added to our product line since the catalogue was released.

Note: Ross Video also offers the GearLite™ line of converters. Contact your Ross representative or visit our website to determine the best solution for your needs.

$1 openGear Frame (cooling unit extra)

FBK-8321
DFR-8321

FBK-8321-C
DFR-8321-C

FBK-8321-CN
DFR-8321-CN

All switcher inputs and outputs are 10 bit, 4:2:2 serial digital in HD and SD formats. Signal sources of other video formats must be converted to serial digital. Ross Video chose to do this conversion externally to ensure that the very latest conversion technology and most competitive pricing are available to our customers. An added bonus of external conversion is the ability to use those converters elsewhere in your facility as you eventually upgrade your switcher sources to serial digital.

All the **DFR-8321** openGear® frames come with a single power supply as standard. The **FBK-8321-C** includes the cooling fan unit in the door.

The **FBK-8321-CN** openGear frame option includes a network connection for use with the openGear DashBoard Control System™ interface. DashBoard allows you to monitor and control the openGear cards installed into your openGear frame from any computer on the same network. For more information on openGear, please contact your Ross Video sales representative.

Ross Video is known as a world-class supplier of encoders, decoders, A-Ds, and D-As. In order to encourage you to purchase your entire system from Ross, sets of conversion rack frames and power supplies can be purchased for the nominal price of $1 US each (cooling fan/networking unit extra) according to the following conditions:

- The order for conversion frames is made at the same time as the order for the switcher.

- The number of frames covered is equal to the number of converters or frame synchronizers ordered, divided by 10, with all fractions rounded up (i.e. 1 converter = 1 frame, 9 converters = 1 frame, 15 converters = 2 frames, etc.).

Contact your Ross Video Sales Representative for a list of openGear cards that qualify for the $1 openGear Frame promotion.

If your system requires power redundancy, don't forget to order an additional power supply per conversion rack frame (PS-8300). These additional power supplies are not included in the $1 offer.

Additional 4-Keyer Multi-Definition MLE

QMDX-049-*x*

This option adds additional, 4-Keyer, Multi-Definition MLEs to the Octane Live Production Engine. Customers who already have a Multi-Definition Octane Live Production Engine, and want to add additional MLEs to their switcher, can select the MLE, or MLEs that they want. The "*x*" in the product number refers to the associated MLE.

Additional MLEs must be added in order. For example, if you have 1 MLE and want to add 2 additional MLEs, you must order **QMDX-049-2** and **QMDX-049-3** to give you a total of 3 MLEs.

MLE	Option
add MLE 1	QMDX-049-1
add MLE 2	QMDX-049-2
add MLE 3	QMDX-049-3
add MLE 4	QMDX-049-4
add MLE 5	QMDX-049-5
add MLE 6	QMDX-049-6
add MLE 7	QMDX-049-7
add MLE 8	QMDX-049-8

Additional 2-Keyer Multi-Definition MLE

QMDX-049-*x*-2KEY

This option adds additional, 2-Keyer, Multi-Definition MLEs to the Octane Live Production Engine. Customers who already have a Multi-Definition Octane Live Production Engine, and want to add additional MLEs to their switcher, can select the MLE, or MLEs that they want. The "*x*" in the product number refers to the associated MLE.

Additional MLEs must be added in order. For example, if you have 1 MLE and want to add 2 additional MLEs, you must order **QMDX-049-2-2KEY** and **QMDX-049-3-2KEY** to give you a total of 3 MLEs.

MLE	Option
add MLE 2	QMDX-049-2-2KEY
add MLE 3	QMDX-049-3-2KEY
add MLE 4	QMDX-049-4-2KEY
add MLE 5	QMDX-049-5-2KEY
add MLE 6	QMDX-049-6-2KEY
add MLE 7	QMDX-049-7-2KEY
add MLE 8	QMDX-049-8-2KEY

Additional Standard-Definition MLE

QMDX-049-*x*-SD

This option adds additional Standard-Definition MLEs to the Octane Live Production Engine. Customers who already have a Standard-Definition Octane Live Production Engine, and want to add additional MLEs to their switcher, can select the MLE, or MLEs that they want. The "*x*" in the product number refers to the associated MLE.

Additional MLEs must be added in order. For example, if you have 1 MLE and want to add 2 additional MLEs, you must order **QMDX-049-2-SD** and **QMDX-049-3-SD** to give you a total of 3 MLEs.

MLE	Option
add MLE 2	QMDX-049-2-SD
add MLE 3	QMDX-049-3-SD
add MLE 4	QMDX-049-4-SD
add MLE 5	QMDX-049-5-SD
add MLE 6	QMDX-049-6-SD
add MLE 7	QMDX-049-7-SD
add MLE 8	QMDX-049-8-SD

Vision Octane SD Only Live Production Engine HD Upgrade

QMDX-00*x*-HDUPG
x MLE

QMDX-00*x*-5-HDUPG
x.5 MLE

The Octane Standard-Definition Live Production Engine can be upgraded to full Multi-Definition with this option. Start out with the Octane Standard-Definition Live Production Engine and upgrade to full Multi-Definition when you need to. The "*x*" in the product number refers to the associated MLE.

MLE	Option
upgrade MLE 1	QMDX-001-HDUPG
upgrade MLE 1.5	QMDX-001-5-HDUPG
upgrade MLE 2	QMDX-002-HDUPG
upgrade MLE 2.5	QMDX-002-5-HDUPG
upgrade MLE 3	QMDX-003-HDUPG
upgrade MLE 3.5	QMDX-003-5-HDUPG
upgrade MLE 4	QMDX-004-HDUPG
upgrade MLE 4.5	QMDX-004-5-HDUPG
upgrade MLE 5	QMDX-005-HDUPG
upgrade MLE 5.5	QMDX-005-5-HDUPG
upgrade MLE 6	QMDX-006-HDUPG
upgrade MLE 6.5	QMDX-006-5-HDUPG
upgrade MLE 7	QMDX-007-HDUPG
upgrade MLE 7.5	QMDX-007-5-HDUPG
upgrade MLE 8	QMDX-008-HDUPG

Vision Octane 4-Keyer Upgrade

QMDX-00*x*-4KEY
x MLE

QMDX-00*x*-5-4KEY
x.5 MLE

The Octane 2-Keyer, Multi-Definition Live Production Engine can be upgraded to 4 Keyers per MLE with this option. Start out with the Octane 2-Keyer, Multi-Definition Live Production Engine and upgrade to 4 Keyers per full MLE when you need to.

The 4-Keyer option can only be applied to full MLEs. For example, if you have a 2.5 MLE switcher, the **QMDX-002-5-4KEY** option increases the number of Keyers for MLE 1 and MLE 2 to 4 Keyers, but the remaining MLE remains at 2 Keyers because it is the half MLE. The "*x*" in the product number refers to the associated MLE.

MLE	Option
upgrade MLE 1	QMDX-001-4KEY
upgrade MLE 1.5	QMDX-001-5-4KEY
upgrade MLE 2	QMDX-002-4KEY
upgrade MLE 2.5	QMDX-002-5-4KEY
upgrade MLE 3	QMDX-003-4KEY
upgrade MLE 3.5	QMDX-003-5-4KEY
upgrade MLE 4	QMDX-004-4KEY
upgrade MLE 4.5	QMDX-004-5-4KEY
upgrade MLE 5	QMDX-005-4KEY
upgrade MLE 5.5	QMDX-005-5-4KEY
upgrade MLE 6	QMDX-006-4KEY
upgrade MLE 6.5	QMDX-006-5-4KEY
upgrade MLE 7	QMDX-007-4KEY
upgrade MLE 7.5	QMDX-007-5-4KEY
upgrade MLE 8	QMDX-008-4KEY

Squeeze & Tease MD Carrier

QMDX-140
MLEs 1 and 2

QMDX-340
MLEs 3 and 4

QMDX-540
MLEs 5, 6, 7, and 8

The Squeeze & Tease MD Carrier Board provides the platform onto which Squeeze & Tease MD, and Squeeze & Tease MD WARP options are installed. Each Squeeze & Tease MD Carrier supports up to four (4) Squeeze & Tease MD channel cards, and two (2) Squeeze & Tease MD WARP cards. The "*x*" in the product number refers to the associated MLE.

The Octane Live Production Engine can support up to three (3) Squeeze & Tease MD Carrier boards.

Migrating Multi-Definition Squeeze & Tease MD

QMDX-x41A
QMDX-x41B

Requires the Squeeze & Tease MD Carrier for the MLE.

Note: Squeeze & Tease MD cannot be used with a 1080p 24 video format at this time.

The Squeeze & Tease MD options available to you depends on the configuration of your Octane Live Production Engine and the number of MLEs you have. The "*x*" in the product number refers to the associated MLE.

In the **Standard Configuration**, MLEs 5 through 8 use a single Squeeze & Tease MD Carrier Board. This restricts the number of Squeeze & Tease channels you can order for these MLEs to two (2) per MLE.

If the **Octane Frame MLE Configuration** (**QMDX-050**) option is installed, MLEs 1 through 4 use a single Squeeze & Tease MD Carrier Board.

Standard MLE Configuration

MLE	Channels	Carrier Option	MD Card Option
MLE 8	1 & 2	QMDX-540	QMDX-841A
MLE 7	1 & 2		QMDX-741A
MLE 6	1 & 2		QMDX-641A
MLE 5	1 & 2		QMDX-541A
MLE 4	1 & 2	QMDX-340	QMDX-441A
	3 & 4		QMDX-441B
MLE 3	1 & 2		QMDX-341A
	3 & 4		QMDX-341B
MLE 2	1 & 2	QMDX-140	QMDX-241A
	3 & 4		QMDX-241B
MLE 1	1 & 2		QMDX-141A
	3 & 4		QMDX-141B

Octane Frame MLE Configuration

MLE	Channels	Carrier Option	MD Card Option
MLE 1	1 & 2	QMDX-140	QMDX-141A
MLE 2	1 & 2		QMDX-241A
MLE 3	1 & 2		QMDX-341A
MLE 4	1 & 2		QMDX-441A

Squeeze & Tease MD channels float between the keyers of an MLE-pair (MLE 1&2 for example). This means that, regardless of where the Squeeze & Tease MD cards are situated on the Squeeze & Tease carrier for an MLE-pair, all of the channels can be assigned to any of the keyers in the MLE-pair.

If WARP effects are desired on these Squeeze & TeaseMD channels, the **Squeeze & Tease MD WARP** option is required.

Squeeze & Tease is an extremely popular option that is sold with almost every Ross digital switcher.

Fly ANY kind of key
Pressing the FLY KEY button easily activates Squeeze & Tease MD, allowing you to transform self keys, linear keys, and chroma keys. A comprehensive and intuitive menu is available where you can set up your desired effects. If you prefer, the 3-axis joystick can also be used to adjust the parameters of your key.

Preprocessor Effects
Preprocessor effects include wide range defocus with separate H and V controls, mosaic, posterization, colorization, and a strobe effect that allows you to vary the number of on and off frames to provide enhanced creative possibilities. All preprocessor effects are available to be combined simultaneously.

Planar Transforms with Lighting
Squeeze & Tease MD has dedicated circuitry incorporating 10-bit processing, superb filtering, and full sub-pixel resolution to manipulate 2D images in 3D space with crystal clear quality.

Planar transforms include squeeze or zoom, crop, reposition, aspect, and rotate. These effects can be applied to images and keys.

All images and keys can also have realistic natural lighting applied to them. Squeeze & Tease MD makes it easy with quick presets, a positionable light source, and powerful ambient and min/max lighting controls.

Advanced Picture Frame Border Generator
Squeeze & Tease MD can add a picture frame to border over-the-shoulder boxes. This variable width border perfectly tracks all image resizing and special effects. The picture frame generator instantly adds a polished, professional look to your squeeze backs.

This picture frame can be the simple, single color type, or one of many fancy picture frame effects including roman column, tubular, beveled, computer style, tri-color, and more. These picture frame effects have the following adjustable controls:

- hard or variable edge softness
- edge width/scaling
- inside/outside edge softness symmetry
- diagonal, horizontal, and vertical corner joint selection
- full control of all three picture frame color generators

Advanced Planar Controls
The following advanced controls make building the ideal look for your show just that much easier:

- **Front Side/Back Side** in one channel and one keyer. When you look at the backside of an effect, you can have it automatically select a different video signal on the key bus. This makes it possible, for example, to rotate between 2 channels of still store in an over-the-shoulder box in a single keyer, using only 1 channel of Squeeze & Tease MD.
- **Auto Flip**. When you rotate an image in normal mode, the backside appears upside down or mirrored. Turning on Auto Flip ensures that the front side of an image is always presented. This is great for the manipulation of still store and CG text.
- **Internal Key Combiner**. Squeeze backs can be combined and displayed in a single keyer. This effectively adds additional keyers to the MLE.
- **Key Combiner Priority Control**. Getting the channels the way you want them is easy with Squeeze & Tease MD. When several squeeze backs are combined in a single keyer, you can choose fixed priorities, auto-priority, or intersecting planes. Auto-priority automatically calculates the channel priority based on their relative positions in 3D space. With the intersecting planes choice, channels will cut into each another hiding the portions that are hidden behind them.

Pre-Built Effects, User-Built Timelines, and Key Sequences
Squeeze & Tease MD ships with dozens of prebuilt effects that are ready to take to air. More effects can be downloaded from our website. All of these effects can be easily user modified to meet your needs. You can also build entirely new effects of your own from scratch.

Effects can be built to start when a macro button is pressed, when an auto transition is pressed, or can be run under manual fader control. Effects can be used as a transition, or as a sequence of keyframes running inside one or more keyers.

Migrating Standard-Definition Squeeze & Tease MD (SD-Only)

QMDX-*x*41A-SD
QMDX-*x*41B-SD

Requires the Squeeze & Tease MD Carrier for the MLE.

The Squeeze & Tease MD options available to you depends on the configuration of your Octane Live Production Engine and the number of MLEs you have. The "*x*" in the product number refers to the associated MLE.

In the **Standard Configuration**, MLEs 5 through 8 use a single Squeeze & Tease MD Carrier Board. This restricts the number of Squeeze & Tease channels you can order for these MLEs to two (2) per MLE.

If the **Octane Frame MLE Configuration** (**QMDX-050**) option is installed, MLEs 1 through 4 use a single Squeeze & Tease MD Carrier Board.

Squeeze & Tease MD channels float between the keyers of an MLE-pair (MLE 1&2 for example). This means that, regardless of where the Squeeze & Tease MD cards are situated on the Squeeze & Tease carrier for an MLE-pair, all of the channels can be assigned to any of the keyers in the MLE-pair.

Standard MLE Configuration

MLE	Channels	Carrier Option	MD Card Option
MLE 8	1 & 2	QMDX-540	QMDX-841A-SD
MLE 7	1 & 2		QMDX-741A-SD
MLE 6	1 & 2		QMDX-641A-SD
MLE 5	1 & 2		QMDX-541A-SD
MLE 4	1 & 2	QMDX-340	QMDX-441A-SD
	3 & 4		QMDX-441B-SD
MLE 3	1 & 2		QMDX-341A-SD
	3 & 4		QMDX-341B-SD
MLE 2	1 & 2	QMDX-140	QMDX-241A-SD
	3 & 4		QMDX-241B-SD
MLE 1	1 & 2		QMDX-141A-SD
	3 & 4		QMDX-141B-SD

Octane Frame MLE Configuration

MLE	Channels	Carrier Option	MD Card Option
MLE 1	1 & 2	QMDX-140	QMDX-141A-SD
MLE 2	1 & 2		QMDX-241A-SD
MLE 3	1 & 2		QMDX-341A-SD
MLE 4	1 & 2		QMDX-441A-SD

The **Migrating Standard-Definition Squeeze & Tease MD** (**QMDX-*x*41A-SD** or **QMDX-x41B-SD**) has the same features as the **Migrating Multi-Definition Squeeze & Tease MD** (**QMDX-*x*41A** or **QMDX-*x*41B**) except it operates in SD video formats only.

Migrating Multi-Definition Squeeze & Tease MD WARP

QMDX-*x*42

Requires the Squeeze & Tease MD Carrier for the MLE.

Note: Squeeze & Tease MD WARP cannot be used with a 1080p 24 video format at this time.

Squeeze & Tease MD WARP adds extensive curvilinear effects with Squeeze & Tease MD installed. These effects can be applied to transitions or keys where a planar channel or key-combined group of channels is being used.

The Squeeze & Tease MD WARP options available to you depends on the configuration of your Octane Live Production Engine and the number of MLEs you have. The "*x*" in the product number refers to the associated MLE.

In the **Standard Configuration**, MLEs 5 through 8 use a single Squeeze & Tease MD Carrier Board. This restricts the number of Squeeze & Tease MD WARP channels you can order for these MLEs to one (1) per MLE-pair.

Standard MLE Configuration

MLE	Carrier Option	MD WARP Option
MLE 8	QMDX-540	QMDX-742
MLE 7		
MLE 6		QMDX-542
MLE 5		
MLE 4	QMDX-340	QMDX-442
MLE 3		QMDX-342
MLE 2	QMDX-140	QMDX-242
MLE 1		QMDX-142

Octane Frame MLE Configuration

MLE	Carrier Option	MD WARP Option
MLE 1	QMDX-140	QMDX-142
MLE 2		
MLE 3		QMDX-342
MLE 4		

If the **Octane Frame MLE Configuration** (**QMDX-050**) option is installed, MLEs 1 through 4 use a single Squeeze & Tease MD Carrier Board.

Squeeze & Tease MD WARP channels float between the keyers of an MLE-pair (MLE 1&2 for example). This means that, regardless of where the Squeeze & Tease MD cards are situated on the Squeeze & Tease carrier for an MLE-pair, all of the channels can be assigned to any of the keyers in the MLE-pair.

Warp Effects

Warp effects include page roll, ripple, globe, split, star, heart, and lens flare.

Creative possibilities are endless as Squeeze & Tease MD WARP effects can be easily combined with preprocessor, planar transformation, lighting, and picture frame effects!

All of the Squeeze & Tease MD WARP effects are user modifiable to help you get just the look you want.

Migrating Standard-Definition Squeeze & Tease MD WARP (SD-Only)

QMDX-*x*42-SD

Requires the Squeeze & Tease MD Carrier for the MLE.

Note: Squeeze & Tease MD WARP cannot be used with a 1080p 24 video format at this time.

Squeeze & Tease MD WARP adds extensive curvilinear effects with Squeeze & Tease MD installed. These effects can be applied to transitions or keys where a planar channel or key-combined group of channels is being used.

The Squeeze & Tease MD WARP options available to you depends on the configuration of your Octane Live Production Engine and the number of MLEs you have. The "*x*" in the product number refers to the associated MLE.

In the **Standard Configuration**, MLEs 5 through 8 use a single Squeeze & Tease MD Carrier Board. This restricts the number of Squeeze & Tease MD WARP channels you can order for these MLEs to one (1) per MLE-pair.

Standard MLE Configuration

MLE	Carrier Option	MD WARP Option
MLE 8	QMDX-540	QMDX-742-SD
MLE 7		
MLE 6		QMDX-542-SD
MLE 5		
MLE 4	QMDX-340	QMDX-442-SD
MLE 3		QMDX-342-SD
MLE 2	QMDX-140	QMDX-242-SD
MLE 1		QMDX-142-SD

Octane Frame MLE Configuration

MLE	Carrier Option	MD WARP Option
MLE 1	QMDX-140	QMDX-142-SD
MLE 2		
MLE 3		QMDX-342-SD
MLE 4		

If the **Octane Frame MLE Configuration** (**QMDX-050**) option is installed, MLEs 1 through 4 use a single Squeeze & Tease MD Carrier Board.

Squeeze & Tease MD WARP channels float between the keyers of an MLE-pair (MLE 1&2 for example). This means that, regardless of where the Squeeze & Tease MD cards are situated on the Squeeze & Tease carrier for an MLE-pair, all of the channels can be assigned to any of the keyers in the MLE-pair.

Migrating Standard-Definition Squeeze & Tease MD HD Upgrade

QMDX-*x*41A-SD-HDUPG
QMDX-*x*41B-SD-HDUPG

All Squeeze & Tease MD HD Upgrades must be ordered at the same time.

Each **Migrating Standard-Definition Squeeze & Tease MD** option can be upgraded to full Multi-Definition with this option. Start out with the SD-Only Squeeze & Tease MD options and upgrade when you need to.

The first upgrade ordered uses the suffix "**A**" and the second upgrade ordered uses the suffix "**B**". The "*x*" in the product number refers to the associated MLE.

Migrating Standard-Definition Squeeze & Tease MD WARP HD Upgrade

QMDX-*x*42-SD-HDUPG

All Squeeze & Tease MD WARP HD Upgrades must be ordered at the same time.

Each **Migrating Standard-Definition Squeeze & Tease MD WARP** option can be upgraded to full Multi-Definition with this option. Start out with the SD-Only Squeeze & Tease MD WARP options and upgrade when you need to.

XFX Board with MLE-Store, Dual Border and MediaCache Options

QMDX-*x*43-SBC

This option adds an XFX Extra Effects Processor Board, and includes the Multi-Def MLE-Store, Dual Border, MediaCache, and Trails options. The "*x*" in the product number refers to the associated MLE. One board per full MLE can be ordered.

Available Still-Stores

MLE	Total Still-Store
MLE 1	7
MLE 2	11
MLE 3	15
MLE 4	19
MLE 5	23
MLE 6	27
MLE 7	31
MLE 8	35

MLE-Store — The MLE-Store option adds four channels of Still Store. Still store channels can be paired for video + key operation.

MLE-Store comes standard with 1GB of RAM storage, enough for up to 4 seconds of uncompressed 1080i playout or 25 seconds of 480i playout. The number of images stored increases considerably when smaller, non-full screen images like logos are stored. Thousands of additional images can be loaded quickly from the system hard drive. When the optional MediaCache is enabled, the playout capabilities and storage capacity of the MLE-Store is increased considerably. All images stored in this memory are available simultaneously to all MLE-Store outputs in the MLE.

MLE-Store has a production advantage over the Global-Store because stills are automatically recalled with MLE memory recalls. The Global-Store feeds sources switcher-wide and are therefore not part of memory recalls.

MLE-Stores are accessed as Program, Preset, and Key Bus source buttons on the Vision control panel for the MLEs that the option is installed on.

Dual Border Generator — The Dual Border option provides border, shadow, and outline effects to both keyers in the MLE with either hard or glowing edges. You can then move the border to any position on the screen - even above the key. Borders are flown in real time with the joystick in the same manner as wipe patterns and DVE effects. This border generator was designed as a creative tool and it can add an impressive visual impact to your keys.

All border edge effects can be modified through the parameters of x and y position, border size, border color (including color washes), density, and glow (giving a soft defocused look).

The border generator can enhance any kind of switcher key including self keys, linear keys, chroma keys, and preset pattern keys. In Vision Octane, borders are particularly effective for enhancing Squeeze & Tease over-the-shoulder boxes making them appear to float over their backgrounds.

MediaCache for MLE-Store — MediaCache for MLE-Store works the same as MediaCache for Global-Store. Each MLE-Store output is capable of playing full bandwidth clips independently and simultaneously.

Trails — The Trails feature comes standard with the Dual Borders, and allows you to add trail effects to any key type on the switcher. Trail effects include Soft, Hard, Key, and Key Smear trails. Soft and Hard trails apply to the video in the key, and Key and Key Smear trails apply to the key itself. In the case of a shaped key, the trails are only visible within the key itself if a Soft or Hard Trail is used. Select a Key or Key Smear Trail if you need the trails to appear outside of the key.

Auxiliary Control Panel

V-159-16
16-Button Panel
(rack mountable)

V-159-16-NM
16-Button Panel
(rack mountable)

V-159-24
24-Button Panel
(rack mountable)

V-159-32
32-Button Panel

V-159-40
40-Button Panel

When you need quick access to all 6 Aux Banks and 8 Aux Buses from a single panel, with clear source name mnemonics for each crosspoint, you need an Auxiliary Control panel. It has dedicated buttons for all 6 Aux Banks and 8 Aux Buses as well as 16 to 40 crosspoint buttons with source mnemonics. The **V-159-16-NM** comes without source mnemonics.

The Auxiliary Control panel is a self contained unit that has both primary and redundant power supplies. It is designed to mount either on the back of the Vision control panel or into a desk. The **V-159-24**, **V-159-16**, and **V-159-16-NM** can also be installed into a standard equipment rack.

Each Auxiliary Control panel is designed to install onto the back of a particular Vision control panel, and has the same number of crosspoint buttons per bus. If you want to mount your Auxiliary Control panel onto the back of your Vision control panel, you must select the correct size.

Panel Mountable Auxiliary Panel

Vision Panel	Auxiliary Panel
Vision 1	V-159-16/16-NM
Vision 1M	V-159-24
Vision 2	V-159-16/16-NM
Vision 2M	V-159-24
Vision 2X	V-159-32
Vision 3M	V-159-24
Vision 3	V-159-32
Vision 4	V-159-40

Auxiliary Panel Chains

Auxiliary Panel	Max. Number Daisy-Chained
V-159-16/16-NM	Up to 14
V-159-24	Up to 7
V-159-32	Up to 7
V-159-40	Up to 4

The Auxiliary Control panel connects to the Vision Octane switcher through the External Link ports on the back of the Vision control panel using a standard RJ-45, CAT5 ethernet cable. The number of Auxiliary Control panels that can be daisy chained together on a single port depends on the size of the Auxiliary Control panels.

See the **Specifications** section at the back of this guide for a picture of an Auxiliary Control panel.

Assignable Remote Aux Panel (includes 10 meter Control Cable)

V-053B

When control of multiple Aux Buses is needed either for permanent direct access or for a remote location, an assignable remote Aux panel is required.

A remote panel is a self-contained unit that has its own power supply. It is designed to be mounted in a 19-inch rack and fills 1 RU. Pushbuttons on the remote panel allow direct access to 16 source buttons, the MLE program and preview outputs, and clean feed. The remote panel is connected to an External Link port on the Vision control panel using an RJ-45 to RJ-11 adapter.

This assignable control panel offers access to Aux Buses 1:1 through 2:4, 2:1 through 3:4, 3:1 through 4:4, 4:1 through 5:4, or 5:1 through 6:4, depending on how you set it up. Buttons on the remote Aux panel determine which group of the switcher's Aux Buses is currently being selected. See the **Specifications** section at the back of this guide for a picture of an assignable remote Aux panel.

Custom Remote Aux Panel Cable (per meter, replaces 10 meter Control Cable)

QMDX-054-*xxx*

The Assignable Remote Aux panel (**V-053B**) comes standard with a 10-meter control cable. If lengths of other than 10 meters are needed, this option is required. The "*xxx*" portion of the product number indicates the length, in meters of the cable. For example, if a seven-meter cable is needed, order a **QMDX-054V-007**.

AuxKeys™, System Wide

QMDX-055

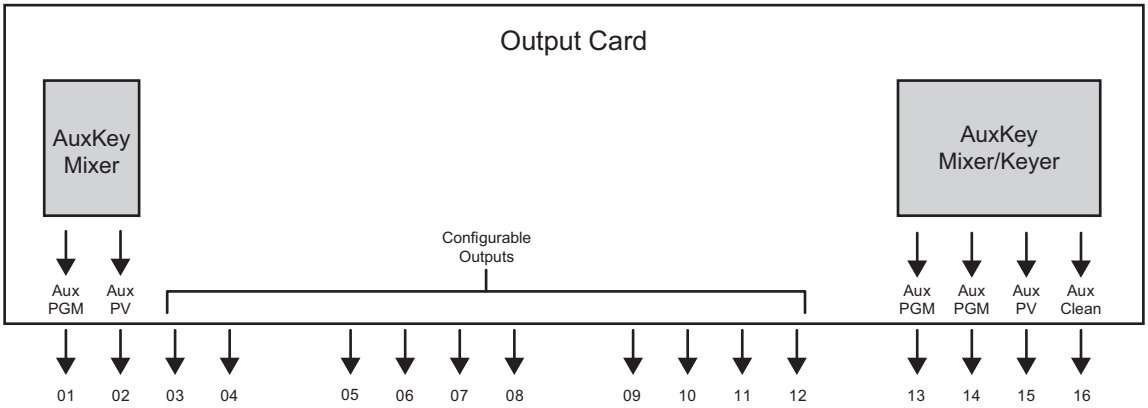
AuxKeys can only be set up on an QMDX-021 Video Output Board.
This revolutionary and highly recommended option turns Aux Buses into A/B mixers or mixer/keyers. AuxKey mixers and mixer/keyers have access to every signal in the switcher. Mix or key operations can

be previewed and clean feed is also available - this is very much like a simple MLE. **The use of a single AuxKey can free up your entire switcher in many applications**. Of particular interest in this application are Global-Store outputs that, with MediaCache enabled, can provide animated logo capability.

AuxKeys have two user-selectable configurations:

- Mixer (requires two video buses)
- Mixer/Keyer (requires four video buses)

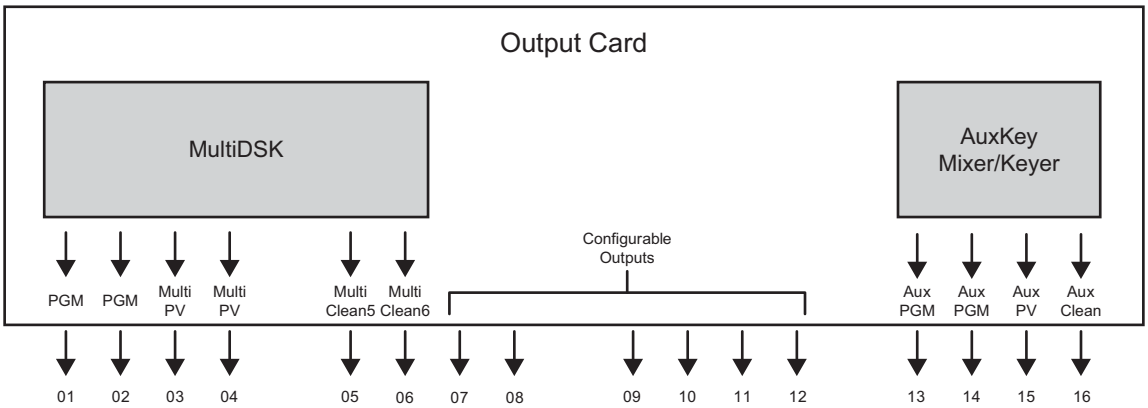
Switcher outputs are assigned to AuxKeys in groups of four. A maximum of 12 AuxKeys can be enabled on Octane. This would require the installation of three output cards. If the MultiDSK option is installed, the maximum possible number of AuxKeys is reduced by two. The diagrams below show sample configurations of AuxKeys, both with and without the MultiDSK option installed:



AuxKey Configuration without MultiDSK Option Installed

In the above example:

- The first group of four is configured as a simple mixer, freeing up outputs K03 and K04 to be used as fully configurable outputs.
- The second and third groups of four are not configured as AuxKeys and are fully configurable.
- The last group of four is configured as a mixer/keyer. Outputs K13 and K14 are identical AuxKey program outputs, output K15 is the AuxKey preview output, and output K16 is AuxKey Clean feed output taken after the mix stage but before the keyer.



AuxKey Configuration with MultiDSK Option Installed

In the above example:

- The first two groups of four are used to provide the MultiDSK optional circuitry with video sources for DSK 5 and 6. Outputs K07 and K08 are fully configurable outputs.
- The third group of four is not configured as AuxKeys and is fully configurable.
- The last group of four is configured as a mixer/keyer. Outputs K13 and K14 are identical AuxKey program outputs, output K15 is the AuxKey preview output, and output K16 is AuxKey Clean feed output taken after the mix stage but before the keyer.

AuxKeys significantly increase the keying power of the switcher but do so without tying up an MLE. AuxKeys are configured using the menu system, and controlled via Custom Control macro buttons, or by temporarily using the buttons of an MLE.

Applications for AuxKeys include:

- **Downstream bug insertion**. This can ensure that a logo remains inserted regardless of what is being done in the rest of the switcher. *This frees up the keyers.*
- **Multi-language applications**. Add CG keys to clean feed outputs. *This frees up the keyers.*
- **Multi-client applications**. Add keys to the outputs that present a variation on the main program output. *This frees up the keyers.*
- **Multi-casting**. Produce programming for two regions simultaneously but brand them differently without using the MLE and adding production complexity. *This frees up the keyers.*
- **Stadium concourse and box seat monitors**. Add different sponsor branding to different stadium locations. *This frees up the MLE and eliminates the need for costly and complex external keyers.*
- **Pre-keying**. Add keys to sources before they are brought into the switcher. Time the AuxKeys early and the MLEs late and sources can be fed back into the switcher as inputs. *This frees up the MLE or unwieldy external keyers.*
- **Pre-mixing**. Mix between two sources before they are brought into the switcher MLEs. This makes it possible to dissolve inside any number of DVE boxes while only consuming a single MLE. *This effect would normally take one MLE for every DVE box!*
- **Studio Displays**. If your set has multiple live displays with images that require keys to be inserted, AuxKeys are an ideal, cost-effective solution. *This frees up the MLE or external keyers.*

MultiDSK™

QMDX-056
QMDX-056-UPG
Field Upgrade

The MultiDSK option can only be set up on a QMDX-021 Video Output Board.
This option adds two linear downstream keyers to Vision Octane. These downstream keyers have access to every video source, and are fully integrated into the bottom MLE transition system with full preview.

If you already have a Vision control panel, select **QMDX-056-UPG** as the product number to order the field upgrade kit.

A 6-Keyer Downstream Keyer module replaces the standard 4-Keyer module to allow control over all 6 keyers.

Output Number	PGM MLE
K01	Program
K02	Program
K03	Multi Preview
K04	Multi Preview
K05	Multi Clean 5
K06	Multi Clean 6
K07	configurable
K08	configurable

This option resides on the output card in **Slot K** in the Octane Live Production Engine, and will always provide the outputs listed.

One clean feed precedes MultiDSK Keyer 5 and the other precedes MultiDSK Keyer 6.

Note: If you have a half MLE switcher, or the 2-Keyer option, the MultiDSK option provides a total of 4 Downstream keyers.

Extended Tallies

V-705

The standard switcher includes 36 tally relays. Any tally can be assigned to any video input (or MLE Program output). Additional tallies can be installed in 36 tally increments, depending on the Vision control panel you have, to allow for large input matrix configurations, red/green preview tally systems, Aux Bus tally systems that require twice as many tallies, or for cases where every single input must be tallied.

A preview tally system has a red output indicating that a source is on-air and, a green output indicating that a source has been selected on a preset bus. This gives the talent an additional warning as to the director's next move.

Maximum Tallies

Vision Panel	Tallies
Vision 1	36 maximum
Vision 1M	36 and 72 maximum
Vision 2	36 maximum
Vision 2M	36 and 72 maximum
Vision 2X	36, 72, and 108 tallies
Vision 3M	36, 72, and 108 tallies
Vision 3	36, 72, and 108 tallies
Vision 4	36, 72, 108 and 144 tallies

Redundant Power (Control Panel only)

V*n*P-076

This is redundant power for those who have purchased a Vision control panel and already have redundant power in their Octane Live Production Engine.

Specify the Vision control panel you are ordering for by replacing the "*n*" in the product number with the panel number. For example, **V2P-076** is the product number for the redundant power option for the Vision 2.

Redundant Power (Frame only)

QMDX-077

This is redundant power for those who have replaced, or upgraded, their Octane Live Production Engine and already have redundant power in their control panel.

The Octane Live Production Engines use an N+1 power supply organization. The additional power supply purchased with this option adds redundancy in the event that one power source or power supply is lost. If you require full redundancy for your Octane Live Production Engine, quantity 2 of this option is required.

The redundant power option for the Octane Live Production Engine is required for the Squeeze & Tease WARP option.

Backup Switcher, CrossOver 12

CPS-BACKUP
Multi-Definition

CPSSD-BACKUP
Standard-Definition

The Backup Switcher option adds the powerful and compact CrossOver 12 to your live production environment. Just as you would add Redundant Power to your switcher to ensure operation in the event of the failure of a power source, the CrossOver 12 Backup Switcher can be added to your facility to ensure that you can stay on the air.

The CrossOver 12 Live Production Engine supports 12 Serial Digital inputs, 3 Serial Digital Aux Bus outputs, 2 Serial Digital Program outputs, 1 Serial Digital Preview output, a single user configurable composite output, three Keyers, a single Reference input with 3 adjustable Reference outputs, and a 2-axis positioner.

The **CPS-BACKUP** adds the **CrossOver 12 Multi-Definition Live Production Engine**, and the **CPSSD-BACKUP** adds the **CrossOver 12 Standard-Definition Live Production Engine**. Both options come with Redundant Power, and the Mounting Kit for the CrossOver 12.

Spare Parts Kit

QMDX-073-V

The Spare Parts Kit contains a number of parts that are field replaceable.

Parts were chosen for the kit using the following criteria:

- The part comes into frequent contact with the user.
- The part can be easily damaged or may wear out with excessive use.
- The part can be damaged by excessive external voltage, and is easily repairable in the field.
- The part is used in system power management and is easily repairable in the field.
- The part can be easily lost.

Parts that fall outside of the above criteria are not included. An exception to the above criteria is the frame and control panel power supplies. These are expensive parts and spares are ordered separately.

Two major items included in this kit are a **loaded replacement system hard drive for the Octane Live Production Engine**, and a **loaded replacement compact flash for the Vision control panel**. This Ross-approved equipment contains boot software, Linux OS, and switcher system software. The hard drive also contains standard video images. This option is recommended for critical on-air applications.

Critical Spare Boards Kit

QMDX-074-V

The Critical Spare Boards Kit contains critical control panel and frame boards that there is no redundancy for within the switcher, and that cannot be purchased as individual options.

This kit includes the following boards:

- Frame CPU Board (Main Chassis CPU)
- Octane Crosspoint Board
- Frame Fan Boards
- Panel Controller CPU Module

The Midplane Board of the frame is not included, as it contains no active components.

PanelView Display Module

V-170-*x*
V-170-UPG
Field Upgrade

The PanelView Display Module adds a two channel, 960×234 pixel, LCD display module that installs directly into your Vision control panel.

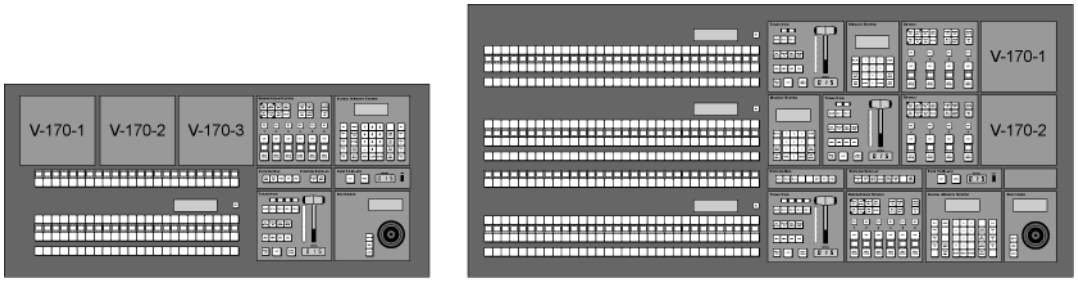
Each PanelView Display supports analog NTSC/PAL video signals. If you want to route video signals from the Vision Octane switcher to the PanelView Display, you require a video down converter (such as the openGear UDC-8225A).

If you already have a Vision control panel, select V-170-UPG as the product number to order the field upgrade kit.

Available PanelView Displays

Vision Panel	PanelView Options
Vision 1	V-170-1/2
Vision 1M	V-170-1/2/3
Vision 2	n/a
Vision 2M	n/a
Vision 2X	V-170-1
Vision 3M	V-170-1/2
Vision 3	V-170-1/2
Vision 4	V-170-1/2/3

Specify the row or slot on your Vision control panel that you want to install the PanelView Display Module in when you are ordering by replacing the "*x*" in the product number with the slot or row number. For example, **V-170-2** is the product number for a PanelView Display Module for the second to the left blank module slot on a **Vision 1**, or the second from the top on the **Vision 3**.



PanelView Display Module Installation Examples

Note: The **Vision 1M** control panel can accept up to three PanelView Display Modules. To install the third PanelView Module, one of the two inputs to the other PanelView Modules must be swapped with the Input 1 for the third PanelView Module.

Custom Control Shot Box Module

V-145-*x*
V-145-UPG
Field Upgrade

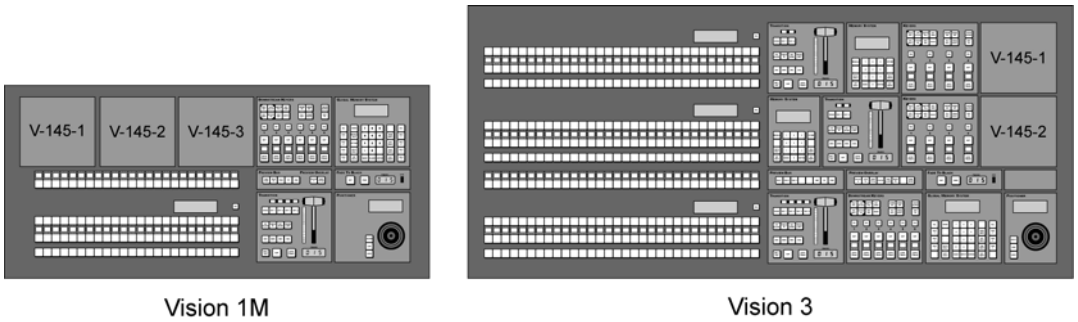
The Custom Control Shot Box Module provides you with an additional 28 assignable custom control buttons. Custom Controls from various banks can be grouped together on a single Shot Box Page. Each Shot Box can access up to 28 pages of buttons.

If you already have a Vision control panel, select **V-145-UPG** as the product number to order the field upgrade kit.

Specify the row or slot on your Vision control panel that you want to install the Custom Control Shot Box Module in when you are ordering by replacing the "*x*" in the product number with the slot or row number. For example, **V-145-2** is the product number for a Custom Control Shot Box Module for the second to the left blank module slot on a **Vision 1**, or the second from the top on the **Vision 3**.

Available Shot Box Modules

Vision Panel	Shot Box Options
Vision 1	V-145-1/2
Vision 1M	V-145-1/2/3
Vision 2	n/a
Vision 2M	n/a
Vision 2X	V-145-1
Vision 3M	V-145-1/2
Vision 3	V-145-1/2
Vision 4	V-145-1/2/3



Custom Control Shot Box Module Installation Examples

Crosspoint Module

V-110-MOD-*x*
V-110-MOD-UPG
Field Upgrade

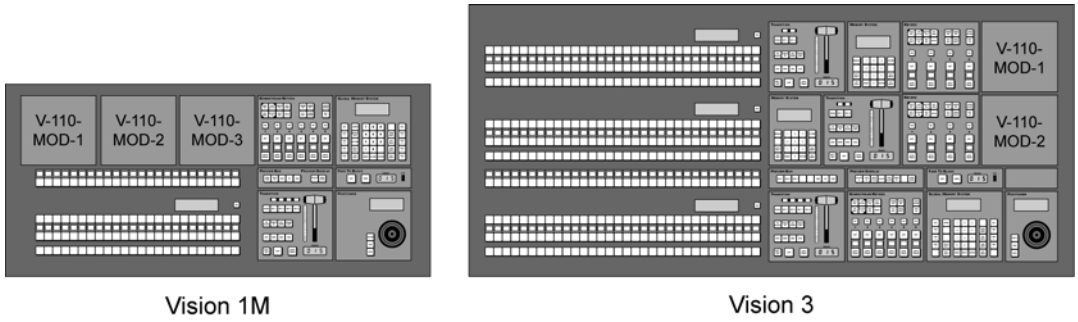
The Crosspoint Module provides you with an additional 24 assignable crosspoint buttons, or 8 sources. Any available video source can be assigned to the crosspoint buttons, just like the buttons on the main crosspoint buses.

If you already have a Vision control panel, select **V-110-MOD-UPG** as the product number to order the field upgrade kit.

Specify the row or slot on your Vision control panel that you want to install the Crosspoint Module in when you are ordering by replacing the "*x*" in the product number with the slot or row number. For example, **V-110-MOD-2** is the product number for a Crosspoint Module for the second to the left blank module slot on a **Vision 1**, or the second from the top on the **Vision 3**.

Available Crosspoint Modules

Vision Panel	Crosspoint Options
Vision 1	V-110-MOD-1/2
Vision 1M	V-110-MOD-1/2/3
Vision 2	n/a
Vision 2M	n/a
Vision 2X	V-110-MOD-1
Vision 3M	V-110-MOD-1/2
Vision 3	V-110-MOD-1/2
Vision 4	V-110-MOD-1/2/3



Crosspoint Module Installation Examples

SideShot™

V-145-SBX

The SideShot provides you with the Custom Control Shot Box Module (**V-145-*x***) in a SideBox enclosure.

The innovative and compact SideBox allows you to mount a single Custom Control ShotBox module separate from your Vision control panel. Each SideBox has independent primary and secondary power supplies and a PREV and NEXT External Link Port to connect one, or several SideBoxes to your switcher.

Up to 14 SideBoxes can be daisy-chained off of a single External Link Port.

SideTrans™

V-128A-SBX

The SideTrans provides you with the Vision Transition module in a SideBox enclosure.

The innovative and compact SideBox allows you to mount a single Transition module separate from your Vision control panel. Each SideBox has independent primary and secondary power supplies and a PREV and NEXT External Link Port to connect one, or several SideBoxes to your switcher.

Up to 14 SideBoxes can be daisy-chained off of a single External Link Port.

SideKeyer™

V-126A-SBX

The SideKeyer provides you with the Vision Keyers module in a SideBox enclosure.

The innovative and compact SideBox allows you to mount a single Keyers module separate from your Vision control panel. Each SideBox has independent primary and secondary power supplies and a PREV and NEXT External Link Port to connect one, or several SideBoxes to your switcher.

Up to 14 SideBoxes can be daisy-chained off of a single External Link Port.

SideCrosspoint™

V-110-MOD-SBX

The SideCrosspoint provides you with the Vision Crosspoint module in a SideBox enclosure.

The innovative and compact SideBox allows you to mount a single Crosspoint module separate from your Vision control panel. Each SideBox has independent primary and secondary power supplies and a PREV and NEXT External Link Port to connect one, or several SideBoxes to your switcher.

Up to 14 SideBoxes can be daisy-chained off of a single External Link Port.

Editor and Automation Interface

QMDX-900

It is common to use an editor to control a video production switcher. With the editor interface option, Vision Octane can interface to all popular editing systems. Any MLE or combination of MLEs can be controlled using an industry-standard GVG100, GVG200, or GVG4000 editor protocol. The editor can be used to read and write switcher functions including video input selection, pushbutton enable and disable, control settings, and memory registers. If complete control of all switcher parameters from an editor or remote device is necessary, this option is required.

The editor and automation interface option also allows control over the Vision Octane switcher from the OverDrive® Production Control System. Ask your Ross Video sales representative for more information on OverDrive.

An alternative to the serial interface is GPI triggers, which come standard with Vision Octane. GPI triggers can be assigned to press any button on the control panel via a Custom Control. GPIs can also be programmed to press cut or auto-transition buttons directly.

VTR Remote Control

QMDX-901

This option makes it possible to control VTRs, disk recorders, video servers, or other devices that use the near-universal Sony BVW-75 Betacam protocol - directly from the switcher panel.

The transition area of every MLE has a ROLL CLIP button. When that button is pressed, a play command is sent to the device selected on the preset bus. Once the pre-roll time is over, the operator takes the source to air - with precise timing guaranteed. The ROLL CLIP button can also be assigned to “arm” the cut and auto transition buttons. In this mode, pressing the cut and auto buttons will roll the VTR on preset, wait the pre-roll time associated with that device, and then proceed with the transition.

VTR Remote Control can also be tied into the Custom Control buttons. Any Custom Control button can be attached to functions such as cue to time-code, play, stop, rewind, fast-forward, frame advance, gang roll, and more.

Video Server Control

QMDX-903

This is a very powerful interface. It allows control over multiple channels of video servers using the VDCP (Harris/Louth) Protocol. The Video Server interface can be used to cue and roll clips that are used during a live production. This is ideal for commonly used clips, such as opening animations and animated backgrounds, that are used again and again during a production.

While setting up a clip for later recall, Vision Octane can download up to 1000 clip ID's from the server and then sort them alphanumerically. The user then easily chooses the clip for later recall. The

server clips can also be chosen directly by name. Once chosen, in points and out points can be added to the clip on the switcher without affecting the original clip on the server. This is done while moving through the video in real time. A constantly updated bar graph summarizes the process. The current timecode is also displayed on the preview overlay. Finally, the clip can be given a unique name on Vision Octane to simplify later recall.

During a live production, clips from any device can be cued directly from the Global Memory Module keypad. Clips for a particular server channel can be accessed by selecting the channel on a preset bus and then choosing from a list of named clips. The dedicated menu for that server channel also provides controls for cue, play, stop, fast-forward, and rewind.

Audio Server Control

QMDX-904

The Audio Server Control option enables control for Audio Servers using the native protocol. This allows the switcher operator to dial up hard drive, directory, and clip number directly from the Vision Octane switcher.

The clip name and duration is displayed on the switcher. Clips can be saved into a clip list and recalled instantly with VTR and Video Server Clips. Using Custom Controls, audio clips can be tied to video effects for the "whoosh-on-page-turn" and other effect types.

Routing Switcher Interface

QMDX-905

This option adds routing switcher interface capability to your Vision Octane digital production switcher.

Any number of switcher inputs can be assigned as a router input. When you select a source fed by a router on the program or preset bus, the router control menu automatically displays on the switcher. The router menu shows the switcher's name for the source (e.g., ROUTER1) and the router's name for the source (e.g., VTR12). The router menu also displays every source available on that router by name and by router input number. The menu knobs allow for fast access to every available source. A single button push automatically assigns the chosen source to the switcher.

Preview Overlay also comes into play with routers. When the Source ID display is active on the preview monitor, router sources selected on the background or preset buses are given extra identification. In the example above, the switcher would display both ROUTER 1 and VTR 12 to give the full picture of the source's origins.

Also supported is the ability to use switcher remote Aux panels that take advantage of the switcher routing matrix with audio-follow coming from the router. The switcher automatically matches the appropriate audio sources on the router with the video selected on the Aux panels.

Vision Octane can connect to multiple routers, and even different brands of routers, *simultaneously.*

Call for a list of all currently supported routers, or view the Interface List on our web site. If your router is not on the list, please contact your Ross sales representative as new routers are being added all the time.

Serial Tally Interface

QMDX-906

This enables Serial Tally Interface using industry standard Kalypso Serial Tally Protocol to Under Monitor Displays and Tally Systems. The standard parallel tally interface will continue to operate normally when this option is enabled.

The Serial Tally Interface can also support TSL UMD input. This provides mnemonic names to the switcher for assigned sources. These names are displayed on the crosspoint mnemonics and menus for these assigned sources.

Peripheral Bus 2 Interface (Pbus)

QMDX-907

This enables support for the Thomson GVG Peripheral Bus 2 Protocol for external device integration. Devices that support this protocol (such as some still stores, CGs, and device controllers) will be directed to store their settings when Vision Octane stores its settings and then do a co-ordinated recall when Vision Octane performs a recall.

Still Store (Chyron Aprisa) Interface

QMDX-908

This enables serial ports for control over the Chyron Aprisa Still & Clipstore. It allows a user to randomly access any still or clip under control from Vision Octane. Custom Control macros can also be created for quick and direct access to clips and switcher scene recalls.

Audio Mixer Ganging

QMDX-910

This option provides the protocol converters required to control a pair of cascaded Yamaha audio mixers simultaneously. Either the Small Audio Mixer Interface option or the Large Audio Mixer Interface option must also be purchased.

This option includes the Serial to MIDI converter box and adapter, and the Midi signal merging unit.

Small Audio Mixer Interface (16 and fewer inputs)

QMDX-911
QMDX-911Y
Yamaha Mixer

This option enables serial control for enhanced audio-follow-video from the switcher over small audio mixers, making an integrated A/V production possible.

QMDX-911YE
Yamaha Mixer for Europe

Vision Octane goes far beyond simple audio-follow-video. It allows for easy audio over, easy attachment of several audio sources to one video source, and quick level control of master and individual audio levels. Even audio voice-over control directly from the Vision control panel is possible.

If you are controlling a Yamaha Audio Mixer, select the **QMDX-911Y**, or **QMDX-911YE** if you are in Europe. Call for the list of other currently supported mixers.

The **QMDX-911Y** and **QMDX-911YE** includes the Serial to MIDI converter box and adapter, as well as an 8-pin Mini DIN to DB9 Interface cable.

Large Audio Mixer Interface (more than 16 inputs)

QMDX-912
QMDX-912Y
Yamaha Mixer

This enables serial control for enhanced audio-follow-video from the switcher over large audio mixers, making an integrated A/V production possible.

QMDX-912YE
Yamaha Mixer for Europe

Vision Octane goes far beyond simple audio-follow-video. It allows for easy audio over, easy attachment of several audio sources to one video source, and quick level control of master and individual audio levels. Even audio voice-over control directly from the Vision control panel is possible.

If you are controlling a Yamaha Audio Mixer, select the **QMDX-912Y**, or **QMDX-912YE** if you are in Europe. Call for the list of other currently supported mixers.

The **QMDX-912Y** and **QMDX-912YE** includes the Serial to MIDI converter box and adapter, as well as an 8-pin Mini DIN to DB9 Interface cable.

Flex Cam Support and Robotic Camera System Interface

QMDX-913

This enables control over robotic camera systems using either a Flex Cam, FlexDevice™ driver, or the the built-in device drivers. Robotic Camera support includes actions such as pan, tilt, zoom, focus, and scene recall, to name a few.

Call for the list of currently supported robotic camera systems.

Character Generator Interface

QMDX-914

This option allows you to control your CG directly from the Vision control panel. Using the keyboard attached to the switcher, you can load pages, view the text on the control panel display, and even change the text directly on some CGs. Fixing typos has never been easier! As well, you can load and view play lists, move pages within play lists, and set up custom control macros to instantly load frequently used CG pages such as “Breaking News”, “Coming Up At Six”, or talent names.

SmartConversion Cross Converter Tie Line Management

QMDX-915

SmartConversion™, with Aux Bus Tie Line Management technology, is an up/down conversion loop-through that allows you to produce an output video that uses both SD and HD inputs simultaneously. With all buses in the switcher supported, including key and utility buses, true multi-format production is extremely easy. Simply route the signal to be converted through one of the Aux Bus outputs to an external cross converter, and re-enter the converted signal back into a switcher input.

As not all of your video sources are used at the same time, there is no need to convert them all simultaneously. With SmartConversion, you share your expensive up/down conversion resources by switching them into the signal path only when needed. Better yet, the converters are engaged automatically, making the operation seamless.

In keeping with our tradition of superior interface capabilities, SmartConversion can be used with any brand of the external cross converters available in the market, including the openGear UDC-8225A(-W): MD-SDI Universal Up/Down/Cross Converter with Wings Input, which allows additional inputs to be inserted into the unused portion of the raster of the Letter Boxed and/or Pillar boxed image.

Monitor Wall Interface

QMDX-916

This software option adds the ability to interface between Vision Octane and a multi-image display system, providing advanced monitoring capabilities.

Using the Custom Controls, you can perform functions such as load a preset layout, change the input channel on a particular monitor, or edit dynamic text.

Call for the list of currently supported Monitor Walls.

Comtrol® DeviceMaster® Interface

QMDX-955

This software option adds the ability to interface between the Vision Octane and the Comtrol DeviceMaster serial port expander.

If you already have a Comtrol DeviceMaster for controlling your peripheral devices, this option allows you to control those devices from the switcher, through the Comtrol DeviceMaster.

Individual software options for the classes of devices you want to control are still required.

Additional Engineering Manual

QMDX-080-V

This manual contains instructions on how to install the switcher into a facility and how to connect various external devices. It also covers after-sale option installation and provides some basic information on system maintenance.

Additional Operator's Manual

QMDX-081-V

This manual contains instructions on how to operate the Vision Octane switcher. It covers such operations as performing transitions, keying, and using the Squeeze & Tease option.

Onsite Operational Training

QMDX-090
North America

SWR-OTR-1DAY
All Other Regions

Although Vision Octane was designed to be as easy as possible to install and operate, training is highly recommended to ensure that the process of taking your Ross Video switcher to air is a smooth one.

North America (QMDX-090) — Training is provided on the customer's equipment at their site, or at a Ross Video facility. Expenses are included. Two (2) days, or more, of training is recommended for multiple MLE systems. Four (4) weeks advanced scheduling notice is required. Addition days of training can be added with the **QMDX-091** option. Please quote 1×**QMDX-091** for each additional day of training required.

All Other Regions (SWR-OTR-1DAY) — Training is provided on the customer's equipment at their site. Expenses are extra, and billed at the completion of the visit. Ross Video cannot guarantee the availability of a local Trainer, as such, travel costs to all locations will be invoiced at cost. Two (2) days, or more, of training is recommended for multiple MLE systems. Four (4) weeks advanced scheduling notice is required. Additional days of training can be added with the **SWR-OTR-1DAY** option. Please quote 1×**SWR-OTR-1DAY** for each additional day of training required.

Customers cancellation or rescheduling of onsite services without seven (7) calendar days advanced notice will incur full invoice.

Onsite Vision Octane Upgrade Implementation, Three Days

V-090

This training course is designed to introduce existing Synergy MD or Vision MD operators to the Vision Octane switcher. One full day of upgrade and installation assistance is provided, followed by two days of switcher training.

Training courses can be conducted at the customer's site or at Ross facilities. Expenses are included in North America. A minimum of four weeks advance notice is required for training to ensure that we can efficiently schedule the best possible training staff for your requirements. Onsite training is provided on the customer's switcher.

Customers are not charged for the travel time of the trainer.

Onsite Technical Training

QMDX-092
North America

SWR-OTT-1DAY
All Other Regions

Vision Octane onsite technical training introduces the user to some of the technical aspects of switcher operation and maintenance. This includes, but is not limited to; Basic operation, Switcher installation and configurations, Peripheral interfaces, Video signal flow, System timing requirements, Circuit block diagrams, Circuit board overviews, Jumpers and indicators, Troubleshooting tips, Software upgrading, and Routine maintenance.

North America (QMDX-092) — Training is provided on the customer's equipment at their site, or at a Ross Video facility. Expenses are included. Two (2) days of training is provided. Four (4) weeks advanced scheduling notice is required.

All Other Regions (SWR-OTT-1DAY) — Training is provided on the customer's equipment at their site. Expenses are extra, and billed at the completion of the visit. Ross Video cannot guarantee the availability of a local Trainer, as such, travel costs to all locations will be invoiced at cost. Two (2) days, or more, of training is recommended for multiple MLE systems. Four (4) weeks advanced scheduling notice is required. Additional days of training can be added with the **SWR-OTT-1DAY** option. Please quote 1×**SWR-OTT-1DAY** for each additional day of training required.

Customers cancellation or rescheduling of onsite services without seven (7) calendar days advanced notice will incur full invoice.

Onsite Commissioning

QMDX-093
North America

SWR-COM-1DAY
All Other Regions

Vision Octane Onsite Commissioning is a great way to ensure that your switcher is properly installed into your facility and tuned to maximum performance.

Once the customer has installed and cabled the equipment, a Ross Commissioning expert will come on site to get the switcher configured, verify that all peripheral interfaces are operating properly, provide a basic technical orientation, and help you get on the air.

North America (QMDX-093) — Training is provided on the customer's equipment at their site, or at a Ross Video facility. Expenses are included. Two (2) days of training is provided. Four (4) weeks advanced scheduling notice is required. Addition days of training can be added with the **QMDX-094** option. Please quote 1×**QMDX-094** for each additional day of training required.

All Other Regions (SWR-COM-1DAY) — Training is provided on the customer's equipment at their site. Expenses are extra, and billed at the completion of the visit. Ross Video cannot guarantee the availability of a local Trainer, as such, travel costs to all locations will be invoiced at cost. Two (2) days, or more, of training is recommended for multiple MLE systems. Four (4) weeks advanced scheduling notice is required. Additional days of training can be added with the **SWR-COM-1DAY** option. Please quote 1×**SWR-COM-1DAY** for each additional day of training required.

Customers cancellation or rescheduling of onsite services without seven (7) calendar days advanced notice will incur full invoice.

Please note that commissioning does not replace operator or technical training. Contact your Ross representative to discuss which types of assistance are best suited to your needs.

Extended Warranty, Frame

QMDX-999-*xx*

This extends the standard one-year warranty on your Octane Live Production Engine by one year. Additional years can be purchased if required.

Specify the Octane Live Production Engine you are ordering for by replacing the "*xx*" in the product number with the number of MLE you have purchased. For example, **QMDX-999-1** is the product number for the extended warranty option for an Octane with 1 MLE.

Extended Warranty, Panel

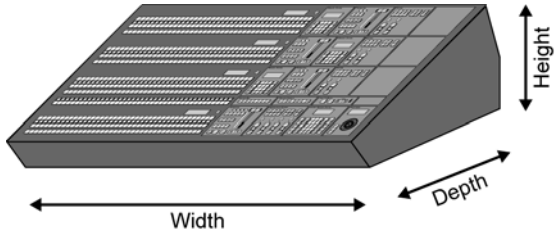
V*n*P-999

This extends the standard one-year warranty on your Vision control panel by one year. Additional years can be purchased if required.

Specify the Vision control panel you are ordering for by replacing the "*n*" in the product number with the panel number. For example, **V2P-999** is the product number for the extended warranty option for the Vision 2.

Specifications

Physical Characteristics – Vision Control Panel



	Vision 1	Vision 1M	Vision 2	Vision 2M	Vision 2X	Vision 3M	Vision 3	Vision 4
Vision Control Panel Size								
Width	28.5" (72.4 cm)	35" (88.9cm)	34" (86.4 cm)	39.5" (100.3cm)	51" (129.5 cm)	45.3" (115.1 cm)	51" (129.5 cm)	55.5" (141.0 cm)
Depth	16.5" (41.9 cm)	16.5" (41.9 cm)	16.5" (41.9 cm)	16.5" (41.9 cm)	16.5" (41.9 cm)	20.5" (52.1 cm)	20.5" (52.1 cm)	26" (66.0 cm)
Height	6" (15.2 cm)	6" (15.2 cm)	6" (15.2 cm)	6" (15.2 cm)	6" (15.2 cm)	6.7" (17.0 cm)	6.7" (17.0 cm)	7.9" (20.1 cm)
Height Above Desktop	2.81" (7.1 cm)	2.81" (7.1 cm)	2.81" (7.1 cm)	2.81" (7.1 cm)	2.81" (7.1 cm)	2.81" (7.1 cm)	2.81" (7.1 cm)	2.81" (7.1 cm)
Panel Source Buttons	16	24	16	24	32	24	32	40
Connector Types								
Remote Ports	D-Type, 9-pin	D-Type, 9-pin	D-Type, 9-pin	D-Type, 9-pin	D-Type, 9-pin	D-Type, 9-pin	D-Type, 9-pin	D-Type, 9-pin
External Link Ports (Aux)	RJ-45	RJ-45	RJ-45	RJ-45	RJ-45	RJ-45	RJ-45	RJ-45
Tally Ports	D-Type, 25-pin	D-Type, 25-pin	D-Type, 25-pin	D-Type, 25-pin	D-Type, 25-pin	D-Type, 25-pin	D-Type, 25-pin	D-Type, 25-pin
AC Power	3-pin IEC with Locking Retainer	3-pin IEC with Locking Retainer	3-pin IEC with Locking Retainer	3-pin IEC with Locking Retainer	3-pin IEC with Locking Retainer	3-pin IEC with Locking Retainer	3-pin IEC with Locking Retainer	3-pin IEC with Locking Retainer
USB Ports	A-Type	A-Type	A-Type	A-Type	A-Type	A-Type	A-Type	A-Type
Mouse Ports[1]	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type
Keyboard Ports[1]	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type	IBM PS/2 Type

1. A USB Mouse or Keyboard can be used in the provided USB ports, instead of using the PS/2 ports.

Physical Characteristics – Octane Live Production Engine

	All Octane Frames
Octane Dimensions	
Width	19” (48.3 cm)
Height (8 RU)	14.13” (35.8 cm)
Depth	26” (66.0 cm)
Connector Types	
Video I/O	BNC-Type
Peripheral Ports	D-Type, 9-pin
GPI I/O	D-Type, 25-pin
Ethernet Ports	RJ-45
Timecode	BNC-Type
AC Power 1, 2, 3, 4 (N+1 configuration)	3-pin IEC

Power Rating – Tallies

	All Vision Octane Switchers
Input Voltage	24VAC (rms) / 40VDC
Maximum Current	170mA
Impedance	< 15 ohms

Power Consumption

	All Vision Octane Switchers
Power Consumption – Vision Control Panel (average/peak)	
Input Voltage	90V~250V AC, 47~63Hz
Vision 4	206W / 526W
Vision 3M	150W / 340W
Vision 3	161W / 379W
Vision 2X	133W / 289W
Vision 2M	120W / 247W
Vision 2	111W / 216W
Vision 1M	99W / 177W
Vision 1	94W / 159W

	All Vision Octane Switchers
Power Consumption – Octane Live Production Engine	
Input Voltage	100 - 120V~ 220 - 240V~ 47-63Hz 9A 650W (Canada 120V~ Only)
Octane with No options	~ 225W
Octane with All options	~ 1160W

Environmental Characteristics

	All Vision Octane Switchers
Ambient Temperature Range	0 - 35°C (32 - 95°F)
Ambient Frame Cooling	Active, Side-to-Side airflow
Frame Power Supply Cooling	Active, Side-to-Side airflow
Control Panel Cooling	Power Supply (Active, Front-to-Back airflow)

Video Characteristics

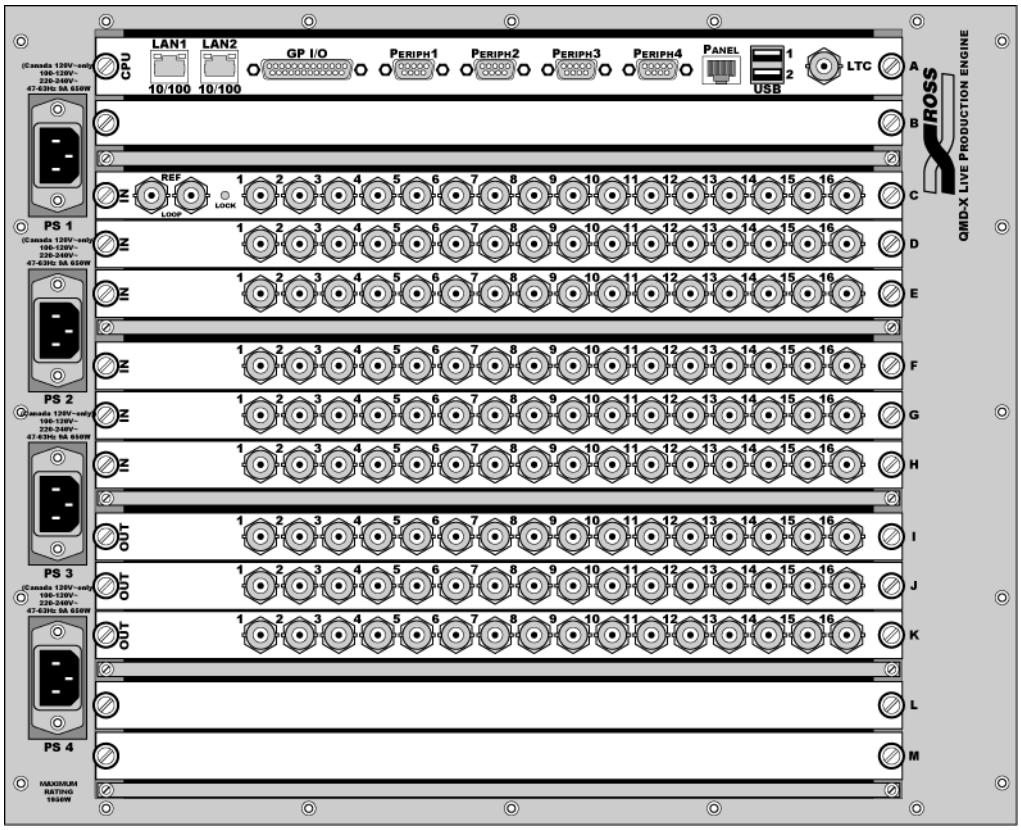
	All Vision Octane Switchers
Supported Video Formats	
480i/59.94 (SD 525)	SMPTE 125M, SMPTE 259M
576i/50 (SD 625)	ITU-R BT.601-5, SMPTE 259M
720p/59.94	SMPTE 296M, SMPTE 292M
720p/50	SMPTE 296M, SMPTE 292M
1080p 24	SMPTE 292M
1080pSF 24, 1080pSF 23.98	SMPTE RP 211, SMPTE 292M
1080i/50, 1080i/59.94, 1080i/60	SMPTE 274M, SMPTE 292M
• 10 bit 4:2:2 component digital video and key processing • 4:3 and anamorphic 16:9 switchable aspect ratio where applicable • Contract Ross Video for additional format compatibility	
Video Inputs	
Number of Inputs	16, 32, 48, 64, 80, or 96
Equalization (using Belden 1694 cable)	> 75m @ 1.5Gb/s > 150m @ 270Mb/s
Impedance	75 ohm, terminating
Return Loss	> 20dB @ 1.5HHz
• All inputs are SMPTE-259M/292M serial digital non-looping. • Additional inputs are purchased in groups of 16. • Inputs can be used for either key or video. • The reference input is selectable, analog black for Standard Definition operation, and the recommended tri-level sync for High Definition operation. • The reference input is a looping, non-terminated input.	

	All Vision Octane Switchers
Video Outputs	
Number of Outputs[1]	16, 32, or 48
Return Loss	> 18dB @ 1.5GHz
Rise and Fall Time	800ps +/- 10% (SD) 240ps +/- 10% (HD)
Signal Level	800mV +/- 10%
DC Offset	0 volts
Overshoot	< 8%
• All video outputs are 10-bit SMPTE-259M-C (SD Mode) or 10-bit SMPTE-292M serial digital (HD Mode). • EDH is inserted into all MLE outputs and can be disabled. Aux Bus outputs do not have EDH insertion but do pass previously inserted EDH. (SD Video Mode). • Line CRCs are inserted into all MLE outputs and can be disabled. Aux Bus outputs do not have line CRCs inserted but do pass previously inserted line CRCs. (HD Video Mode).	
Jitter	
Video Mode	
HD – Tri-Level Sync	Alignment (> 100KHz) < 0.2UI Timing (<10Hz) < 1.0UI
HD – Composite Reference	Performance not guaranteed with composite reference
SD – Tri-Level Sync	Alignment (> 1KHz) < 0.2UI Timing (<10Hz) < 0.2UI
SD – Composite Reference	Alignment (> 1KHz) < 0.2UI Timing (<10Hz) < 0.5UI
System Timing	
• All video inputs zero time relative to reference input, auto timing will correct for inputs out of time by up to +/- 0.25 line. • System delay approximately 500 pixels.	
System Reference	
Reference Format	**Video Format**
480i/59.94	480i/59.94, 480i 16:9/59.94, 1080i/59.94
576i/50	576i/50, 576i 16:9/50, 1080i/50
720p/50	720p/50
720p/59.94	720p/59.94
1080p 24	1080p 24
1080pSF 23.98	1080pSF 23.98
1080pSF 24	1080pSF 24
1080i/50	576i/50, 576i 16:9/50, 1080i/50, 720p/50
1080i/59.94	480i/59.94, 480i 16:9/59.94, 720p/59.94, 1080i/59.94
1080i/60	1080i/60

1. The Octane Standard-Definition Live Production Engine does not provide video outputs as standard.

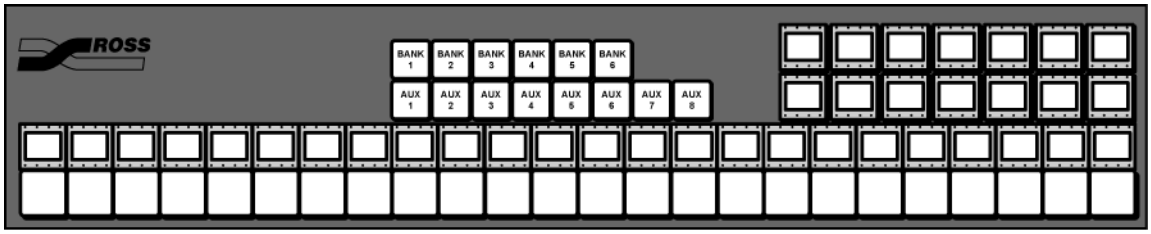
Note: Specifications are subject to change without notice.

Note: Vision Octane switchers meet applicable world standards for safety, emissions, and immunity.



Octane Live Production Engine — Rear View, Fully Loaded

Vision Control Panel — Rear View, Fully Loaded



Auxiliary Control Panel (V-159-24)

Assignable Remote Aux Panel (V-053B)

Option Summary

Vision Control Panel

	Vision 1	Vision 1M	Vision 2	Vision 2M	Vision 2X	Vision 3M	Vision 3	Vision 4
Control Panel								
Vision Control Panel	V1P-001	V1MP-001	V2P-001	V2MP-001	V2XP-001	V3MP-001	V3P-001	V4P-001
Mnemonics for MLE 1 Sources	V1P-105	V1MP-105	V2P-105	V2MP-105	V2XP-105	V3MP-105	V3P-105	V4P-105
Mnemonics for MLE 2 Sources	n/a	n/a	V2P-205	V2MP-205	V2XP-205	V3MP-205	V3P-205	V4P-205
Mnemonics for MLE 3 Sources	n/a	n/a	n/a	n/a	n/a	V3MP-305	V3P-305	V3P-305
Mnemonics for MLE 4 Sources	n/a	n/a	n/a	n/a	n/a	n/a	n/a	V4P-405
Mnemonics for Custom Controls	V1P-005	V1MP-005	V2P-005	V2MP-005	V2XP-005	V3MP-005	V3P-005	V4P-005
Vision Endblocks	V1P-501	V1MP-501	V2P-501	V2MP-501	V2XP-501	V3MP-501	V3P-501	V4P-501
Vision Panel Row Deletion	n/a	n/a	n/a	n/a	V2XP-049-DEL	V3MP-049-DEL	V3P-049-DEL	V4P-049-DEL
Vision Panel Row Addition	n/a	n/a	n/a	n/a	V2XP-049-ADD	V3MP-049-ADD	V3P-049-ADD	V4P-049-ADD
Vision Touchscreen Display	V-100A	V-100A	V-100A	V-100A	V-100A	V-100A	V-100A	V-100A
Additional Options								
PanelView Display Module (Row/Slot 1)	V-170-1	V-170-1	n/a	n/a	V-170-1	V-170-1	V-170-1	V-170-1
PanelView Display Module (Row/Slot 2)	V-170-2	V-170-2	n/a	n/a	n/a	V-170-2	V-170-2	V-170-2
PanelView Display Module (Row/Slot 3)	n/a	V-170-3[1]	n/a	n/a	n/a	n/a	n/a	V-170-3
PanelView Display Module Upgrade	V-170-UPG	V-170-UPG	n/a	n/a	V-170-UPG	V-170-UPG	V-170-UPG	V-170-UPG
Custom Control Shot Box Module (Row/Slot 1)	V-145-1	V-145-1	n/a	n/a	V-145-1	V-145-1	V-145-1	V-145-1
Custom Control Shot Box Module (Row/Slot 2)	V-145-2	V-145-2	n/a	n/a	n/a	V-145-2	V-145-2	V-145-2
Custom Control Shot Box Module (Row/Slot 3)	n/a	V-145-3	n/a	n/a	n/a	n/a	n/a	V-145-3
Custom Control Shot Box Module Upgrade	V-145-UPG	V-145-UPG	n/a	n/a	V-145-UPG	V-145-UPG	V-145-UPG	V-145-UPG

	Vision 1	Vision 1M	Vision 2	Vision 2M	Vision 2X	Vision 3M	Vision 3	Vision 4
Crosspoint Module (Row/Slot 1)	V-110-MOD-1	V-110-MOD-1	n/a	n/a	V-110-MOD-1	V-110-MOD-1	V-110-MOD-1	V-110-MOD-1
Crosspoint Module (Row/Slot 2)	V-110-MOD-2	V-110-MOD-2	n/a	n/a	n/a	V-110-MOD-2	V-110-MOD-2	V-110-MOD-2
Crosspoint Module (Row/Slot 3)	n/a	V-110-MOD-3	n/a	n/a	n/a	n/a	n/a	V-110-MOD-3
Crosspoint Module Upgrade	V-110-MOD-UPG	V-110-MOD-UPG	n/a	n/a	V-110-MOD-UPG	V-110-MOD-UPG	V-110-MOD-UPG	V-110-MOD-UPG
SideShot™	V-145-SBX	V-145-SBX	V-145-SBX	V-145-SBX	V-145-SBX	V-145-SBX	V-145-SBX	V-145-SBX
SideTrans™	V-128A-SBX	V-128A-SBX	V-128A-SBX	V-128A-SBX	V-128A-SBX	V-128A-SBX	V-128A-SBX	V-128A-SBX
SideKeyer™	V-126A-SBX	V-126A-SBX	V-126A-SBX	V-126A-SBX	V-126A-SBX	V-126A-SBX	V-126A-SBX	V-126A-SBX
SideCrosspoint™	V-110-MOD-SBX	V-110-MOD-SBX	V-110-MOD-SBX	V-110-MOD-SBX	V-110-MOD-SBX	V-110-MOD-SBX	V-110-MOD-SBX	V-110-MOD-SBX
Redundant Power, Panel Only	V1P-076	V1MP-076	V2P-076	V2MP-076	V2XP-076	V3MP-076	V3P-076	V4P-076
Extended Tallies (max. options)	n/a	V-705	n/a	V-705	2 × V-705	2 × V-705	2 × V-705	3 × V-705
Auxiliary Panel								
Auxiliary Control Panel (16-Button)	V-159-16	n/a	V-159-16	n/a	n/a	n/a	n/a	n/a
Auxiliary Control Panel (24-Button)	n/a	V-159-24	n/a	V-159-24	n/a	n/a	n/a	n/a
Auxiliary Control Panel (32-Button)	n/a	n/a	n/a	n/a	V-159-32	V-159-32	V-159-32	n/a
Auxiliary Control Panel (40-Button)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	V-159-40
Assignable Remote Aux Panel	V-053B	V-053B	V-053B	V-053B	V-053B	V-053B	V-053B	V-053B
Custom Remote Aux Panel Cable	QMDX-054-xxx	QMDX-054-xxx	QMDX-054-xxx	QMDX-054-xxx	QMDX-054-xxx	QMDX-054-xxx	QMDX-054-xxx	QMDX-054-xxx
Extended Warranty								
Extended Warranty, Panel	V1P-999	V1MP-999	V2P-999	V2MP-999	V2XP-999	V3MP-999	V3P-999	V4P-999
Training and Commissioning								
Onsite Vision Upgrade Implementation, 3 Days	V-090	V-090	V-090	V-090	V-090	V-090	V-090	V-090

1. The Vision 1M control panel can accept up to three PanelView Display Modules. To install the third PanelView Module, one of the two inputs to the other PanelView Modules must be swapped with the Input 1 for the third PanelView Module.

Octane Live Production Engine

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Frame Options								
Video Inputs (16)	QMDX-020	QMDX-020	QMDX-020	QMDX-020	QMDX-020	QMDX-020	QMDX-020	QMDX-020
Video Inputs (16 with Reference)	QMDX-020R	QMDX-020R	QMDX-020R	QMDX-020R	QMDX-020R	QMDX-020R	QMDX-020R	QMDX-020R
Multi-Definition Video Outputs (16)[1]	QMDX-021	QMDX-021	QMDX-021	QMDX-021	QMDX-021	QMDX-021	QMDX-021	QMDX-021
SD-Only Video Outputs (16 untimed)[2]	QMDX-021-SD	QMDX-021-SD	QMDX-021-SD	QMDX-021-SD	QMDX-021-SD	QMDX-021-SD	QMDX-021-SD	QMDX-021-SD
Comtrol® DeviceMaster® Port Expander (Adds 4 RS-422 or RS-232 Ports)	QMDX-015-NET	QMDX-015-NET	QMDX-015-NET	QMDX-015-NET	QMDX-015-NET	QMDX-015-NET	QMDX-015-NET	QMDX-015-NET
Fiber-Optic Input Adapter	QMDX-FIN	QMDX-FIN	QMDX-FIN	QMDX-FIN	QMDX-FIN	QMDX-FIN	QMDX-FIN	QMDX-FIN
Fiber-Optic Output Adapter	QMDX-FOUT	QMDX-FOUT	QMDX-FOUT	QMDX-FOUT	QMDX-FOUT	QMDX-FOUT	QMDX-FOUT	QMDX-FOUT
Octane Frame MLE Configuration[3]	QMDX-050	QMDX-050	QMDX-050	QMDX-050	n/a	n/a	n/a	n/a
Gear								
$1 Conversion Frame (DFR-8110A, Includes One Power Supply)	FBK-8110	FBK-8110	FBK-8110	FBK-8110	FBK-8110	FBK-8110	FBK-8110	FBK-8110
Conversion Frame (As Above with Cooling Fan Unit in Door)	FBK-8110-C	FBK-8110-C	FBK-8110-C	FBK-8110-C	FBK-8110-C	FBK-8110-C	FBK-8110-C	FBK-8110-C
$1 openGear Frame (DFR-8321, Includes One Power Supply)	FBK-8321	FBK-8321	FBK-8321	FBK-8321	FBK-8321	FBK-8321	FBK-8321	FBK-8321
openGear Frame, As Above with Cooling Fan Unit in Door	FBK-8321-C	FBK-8321-C	FBK-8321-C	FBK-8321-C	FBK-8321-C	FBK-8321-C	FBK-8321-C	FBK-8321-C
openGear Frame, As Above with DashBoard	FBK-8321-CN	FBK-8321-CN	FBK-8321-CN	FBK-8321-CN	FBK-8321-CN	FBK-8321-CN	FBK-8321-CN	FBK-8321-CN
System Wide Options								
4-Keyer 1 MLE Upgrade	QMDX-001-4KEY	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4-Keyer 1.5 MLE Upgrade	QMDX-001-5-4KEY	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4-Keyer 2 MLE Upgrade	n/a	QMDX-002-4KEY	n/a	n/a	n/a	n/a	n/a	n/a

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
4-Keyer 2.5 MLE Upgrade	n/a	QMDX-002-5-4KEY	n/a	n/a	n/a	n/a	n/a	n/a
4-Keyer 3 MLE Upgrade	n/a	n/a	QMDX-003-4KEY	n/a	n/a	n/a	n/a	n/a
4-Keyer 3.5 MLE Upgrade	n/a	n/a	QMDX-003-5-4KEY	n/a	n/a	n/a	n/a	n/a
4-Keyer 4 MLE Upgrade	n/a	n/a	n/a	QMDX-004-4KEY	n/a	n/a	n/a	n/a
4-Keyer 4.5 MLE Upgrade	n/a	n/a	n/a	QMDX-004-5-4KEY	n/a	n/a	n/a	n/a
4-Keyer 5 MLE Upgrade	n/a	n/a	n/a	n/a	QMDX-005-4KEY	n/a	n/a	n/a
4-Keyer 5.5 MLE Upgrade	n/a	n/a	n/a	n/a	QMDX-005-5-4KEY	n/a	n/a	n/a
4-Keyer 6 MLE Upgrade	n/a	n/a	n/a	n/a	n/a	QMDX-006-4KEY	n/a	n/a
4-Keyer 6.5 MLE Upgrade	n/a	n/a	n/a	n/a	n/a	QMDX-006-5-4KEY	n/a	n/a
4-Keyer 7 MLE Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-007-4KEY	n/a
4-Keyer 7.5 MLE Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-007-5-4KEY	n/a
4-Keyer 8 MLE Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-008-4KEY
SD-Only 1 MLE HD Upgrade	QMDX-001-HDUPG	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SD-Only 1.5 MLE HD Upgrade	QMDX-001-5-HDUPG	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SD-Only 2 MLE HD Upgrade	n/a	QMDX-002-HDUPG	n/a	n/a	n/a	n/a	n/a	n/a
SD-Only 2.5 MLE HD Upgrade	n/a	QMDX-002-5-HDUPG	n/a	n/a	n/a	n/a	n/a	n/a
SD-Only 3 MLE HD Upgrade	n/a	n/a	QMDX-003-HDUPG	n/a	n/a	n/a	n/a	n/a
SD-Only 3.5 MLE HD Upgrade	n/a	n/a	QMDX-003-5-HDUPG	n/a	n/a	n/a	n/a	n/a
SD-Only 4 MLE HD Upgrade	n/a	n/a	n/a	QMDX-004-HDUPG	n/a	n/a	n/a	n/a
SD-Only 4.5 MLE HD Upgrade	n/a	n/a	n/a	QMDX-004-5-HDUPG	n/a	n/a	n/a	n/a

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
SD-Only 5 MLE HD Upgrade	n/a	n/a	n/a	n/a	QMDX-005-HDUPG	n/a	n/a	n/a
SD-Only 5.5 MLE HD Upgrade	n/a	n/a	n/a	n/a	QMDX-005-5-HDUPG	n/a	n/a	n/a
SD-Only 6 MLE HD Upgrade	n/a	n/a	n/a	n/a	n/a	QMDX-006-HDUPG	n/a	n/a
SD-Only 6.5 MLE HD Upgrade	n/a	n/a	n/a	n/a	n/a	QMDX-006-5-HDUPG	n/a	n/a
SD-Only 7 MLE HD Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-007-HDUPG	n/a
SD-Only 7.5 MLE HD Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-007-5-HDUPG	n/a
SD-Only 8 MLE HD Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-008-HDUPG
Add 4-Key Multi-Definition MLE 1	QMDX-049-1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Add 4-Key Multi-Definition MLE 2	QMDX-049-2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Add 4-Key Multi-Definition MLE 3	QMDX-049-3	QMDX-049-3	n/a	n/a	n/a	n/a	n/a	n/a
Add 4-Key Multi-Definition MLE 4	QMDX-049-4	QMDX-049-4	QMDX-049-4	n/a	n/a	n/a	n/a	n/a
Add 4-Key Multi-Definition MLE 5	QMDX-049-5	QMDX-049-5	QMDX-049-5	QMDX-049-5	n/a	n/a	n/a	n/a
Add 4-Key Multi-Definition MLE 6	QMDX-049-6	QMDX-049-6	QMDX-049-6	QMDX-049-6	QMDX-049-6	n/a	n/a	n/a
Add 4-Key Multi-Definition MLE 7	QMDX-049-7	QMDX-049-7	QMDX-049-7	QMDX-049-7	QMDX-049-7	QMDX-049-7	n/a	n/a
Add 4-Key Multi-Definition MLE 8	QMDX-049-8	QMDX-049-8	QMDX-049-8	QMDX-049-8	QMDX-049-8	QMDX-049-8	QMDX-049-8	n/a
Add 2-Key Multi-Definition MLE 2	QMDX-049-2-2KEY	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Add 2-Key Multi-Definition MLE 3	QMDX-049-3-2KEY	QMDX-049-3-2KEY	n/a	n/a	n/a	n/a	n/a	n/a
Add 2-Key Multi-Definition MLE 4	QMDX-049-4-2KEY	QMDX-049-4-2KEY	QMDX-049-4-2KEY	n/a	n/a	n/a	n/a	n/a
Add 2-Key Multi-Definition MLE 5	QMDX-049-5-2KEY	QMDX-049-5-2KEY	QMDX-049-5-2KEY	QMDX-049-5-2KEY	n/a	n/a	n/a	n/a
Add 2-Key Multi-Definition MLE 6	QMDX-049-6-2KEY	QMDX-049-6-2KEY	QMDX-049-6-2KEY	QMDX-049-6-2KEY	QMDX-049-6-2KEY	n/a	n/a	n/a
Add 2-Key Multi-Definition MLE 7	QMDX-049-7-2KEY	QMDX-049-7-2KEY	QMDX-049-7-2KEY	QMDX-049-7-2KEY	QMDX-049-7-2KEY	QMDX-049-7-2KEY	n/a	n/a

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Add 2-Key Multi-Definition MLE 8	QMDX-049-8-2KEY	QMDX-049-8-2KEY	QMDX-049-8-2KEY	QMDX-049-8-2KEY	QMDX-049-8-2KEY	QMDX-049-8-2KEY	QMDX-049-8-2KEY	n/a
Additional Standard-Definition MLE 2	QMDX-049-2-SD	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Additional Standard-Definition MLE 3	QMDX-049-3-SD	QMDX-049-3-SD	n/a	n/a	n/a	n/a	n/a	n/a
Additional Standard-Definition MLE 4	QMDX-049-4-SD	QMDX-049-4-SD	QMDX-049-4-SD	n/a	n/a	n/a	n/a	n/a
Additional Standard-Definition MLE 2	QMDX-049-5-SD	QMDX-049-5-SD	QMDX-049-5-SD	QMDX-049-5-SD	n/a	n/a	n/a	n/a
Additional Standard-Definition MLE 3	QMDX-049-6-SD	QMDX-049-6-SD	QMDX-049-6-SD	QMDX-049-6-SD	QMDX-049-6-SD	n/a	n/a	n/a
Additional Standard-Definition MLE 4	QMDX-049-7-SD	QMDX-049-7-SD	QMDX-049-7-SD	QMDX-049-7-SD	QMDX-049-7-SD	QMDX-049-7-SD	n/a	n/a
Additional Standard-Definition MLE 2	QMDX-049-8-SD	QMDX-049-8-SD	QMDX-049-8-SD	QMDX-049-8-SD	QMDX-049-8-SD	QMDX-049-8-SD	QMDX-049-8-SD	n/a
AuxKeys™, Switcher Wide	QMDX-055	QMDX-055	QMDX-055	QMDX-055	QMDX-055	QMDX-055	QMDX-055	QMDX-055
MultiDSK™	QMDX-056	QMDX-056	QMDX-056	QMDX-056	QMDX-056	QMDX-056	QMDX-056	QMDX-056
MediaCache for Global-Store	QMDX-010	QMDX-010	QMDX-010	QMDX-010	QMDX-010	QMDX-010	QMDX-010	QMDX-010
Proc Amps, System Wide	QMDX-012	QMDX-012	QMDX-012	QMDX-012	QMDX-012	QMDX-012	QMDX-012	QMDX-012
RGB Color Corrector	QMDX-013	QMDX-013	QMDX-013	QMDX-013	QMDX-013	QMDX-013	QMDX-013	QMDX-013
Multi-Definition Networked Still & Clip Server (SoftMetal Production Server)	QMDX-016	QMDX-016	QMDX-016-	QMDX-016	QMDX-016	QMDX-016	QMDX-016	QMDX-016
Squeeze & Tease MD Options without QMDX-050								
Squeeze & Tease Carrier (MLE 1 and 2)	QMDX-140	QMDX-140	QMDX-140	QMDX-140	QMDX-140	QMDX-140	QMDX-140	QMDX-140
Squeeze & Tease Carrier (MLE 3 and 4)	n/a	n/a	QMDX-340	QMDX-340	QMDX-340	QMDX-340	QMDX-340	QMDX-340
Squeeze & Tease Carrier (MLE 5-8)	n/a	n/a	n/a	n/a	QMDX-540	QMDX-540	QMDX-540	QMDX-540
Migrating Multi-Definition Squeeze & Tease MD, MLE 1 Channel Resources 1&2	QMDX-141A	QMDX-141A	QMDX-141A	QMDX-141A	QMDX-141A	QMDX-141A	QMDX-141A	QMDX-141A

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Migrating Multi-Definition Squeeze & Tease MD, MLE 1 Channel Resources 3&4	QMDX-141B	QMDX-141B	QMDX-141B	QMDX-141B	QMDX-141B	QMDX-141B	QMDX-141B	QMDX-141B
Migrating Multi-Definition Squeeze & Tease MD, MLE 2 Channel Resources 1&2	n/a	QMDX-241A	QMDX-241A	QMDX-241A	QMDX-241A	QMDX-241A	QMDX-241A	QMDX-241A
Migrating Multi-Definition Squeeze & Tease MD, MLE 2 Channel Resources 3&4	n/a	QMDX-241B	QMDX-241B	QMDX-241B	QMDX-241B	QMDX-241B	QMDX-241B	QMDX-241B
Migrating Multi-Definition Squeeze & Tease MD, MLE 3 Channel Resources 1&2	n/a	n/a	QMDX-341A	QMDX-341A	QMDX-341A	QMDX-341A	QMDX-341A	QMDX-341A
Migrating Multi-Definition Squeeze & Tease MD, MLE 3 Channel Resources 3&4	n/a	n/a	QMDX-341B	QMDX-341B	QMDX-341B	QMDX-341B	QMDX-341B	QMDX-341B
Migrating Multi-Definition Squeeze & Tease MD, MLE 4 Channel Resources 1&2	n/a	n/a	n/a	QMDX-441A	QMDX-441A	QMDX-441A	QMDX-441A	QMDX-441A
Migrating Multi-Definition Squeeze & Tease MD, MLE 4 Channel Resources 3&4	n/a	n/a	n/a	QMDX-441B	QMDX-441B	QMDX-441B	QMDX-441B	QMDX-441B
Migrating Multi-Definition Squeeze & Tease MD, MLE 5 Channel Resources 1&2	n/a	n/a	n/a	n/a	QMDX-541A	QMDX-541A	QMDX-541A	QMDX-541A
Migrating Multi-Definition Squeeze & Tease MD, MLE 6 Channel Resources 1&2	n/a	n/a	n/a	n/a	n/a	QMDX-641A	QMDX-641A	QMDX-641A
Migrating Multi-Definition Squeeze & Tease MD, MLE 7 Channel Resources 1&2	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-741A	QMDX-741A
Migrating Multi-Definition Squeeze & Tease MD, MLE 8 Channel Resources 1&2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-841A
Migrating Standard-Definition Squeeze & Tease MD, MLE 1 Channel Resources 1&2	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 1 Channel Resources 3&4	QMDX-141B-SD	QMDX-141B-SD	QMDX-141B-SD	QMDX-141B-SD	QMDX-141B-SD	QMDX-141B-SD	QMDX-141B-SD	QMDX-141B-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 2 Channel Resources 1&2	n/a	QMDX-241A-SD	QMDX-241A-SD	QMDX-241A-SD	QMDX-241A-SD	QMDX-241A-SD	QMDX-241A-SD	QMDX-241A-SD

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Migrating Standard-Definition Squeeze & Tease MD, MLE 2 Channel Resources 3&4	n/a	QMDX-241B-SD	QMDX-241B-SD	QMDX-241B-SD	QMDX-241B-SD	QMDX-241B-SD	QMDX-241B-SD	QMDX-241B-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 3 Channel Resources 1&2	n/a	n/a	QMDX-341A-SD	QMDX-341A-SD	QMDX-341A-SD	QMDX-341A-SD	QMDX-341A-SD	QMDX-341A-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 3 Channel Resources 3&4	n/a	n/a	QMDX-341B-SD	QMDX-341B-SD	QMDX-341B-SD	QMDX-341B-SD	QMDX-341B-SD	QMDX-341B-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 4 Channel Resources 1&2	n/a	n/a	n/a	QMDX-441A-SD	QMDX-441A-SD	QMDX-441A-SD	QMDX-441A-SD	QMDX-441A-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 4 Channel Resources 3&4	n/a	n/a	n/a	QMDX-441B-SD	QMDX-441B-SD	QMDX-441B-SD	QMDX-441B-SD	QMDX-441B-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 5 Channel Resources 1&2	n/a	n/a	n/a	n/a	QMDX-541A-SD	QMDX-541A-SD	QMDX-541A-SD	QMDX-541A-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 6 Channel Resources 3&4	n/a	n/a	n/a	n/a	n/a	QMDX-641A-SD	QMDX-641A-SD	QMDX-641A-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 7 Channel Resources 1&2	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-741A-SD	QMDX-741A-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 8 Channel Resources 3&4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-841A-SD
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 1	QMDX-142	QMDX-142	QMDX-142	QMDX-142	QMDX-142	QMDX-142	QMDX-142	QMDX-142
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 2	n/a	QMDX-242	QMDX-242	QMDX-242	QMDX-242	QMDX-242	QMDX-242	QMDX-242
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 3	n/a	n/a	QMDX-342	QMDX-342	QMDX-342	QMDX-342	QMDX-342	QMDX-342
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 4	n/a	n/a	n/a	QMDX-442	QMDX-442	QMDX-442	QMDX-442	QMDX-442
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 5	n/a	n/a	n/a	n/a	QMDX-542	QMDX-542	QMDX-542	QMDX-542
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 6	n/a	n/a	n/a	n/a	QMDX-542	QMDX-542	QMDX-542	QMDX-542

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 7	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-742	QMDX-742
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 8	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-742	QMDX-742
Migrating Standard-Definition Squeeze & Tease WARP MLE 1	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD
Migrating Standard-Definition Squeeze & Tease WARP MLE 2	n/a	QMDX-242-SD	QMDX-242-SD	QMDX-242-SD	QMDX-242-SD	QMDX-242-SD	QMDX-242-SD	QMDX-242-SD
Migrating Standard-Definition Squeeze & Tease WARP MLE 3	n/a	n/a	QMDX-342-SD	QMDX-342-SD	QMDX-342-SD	QMDX-342-SD	QMDX-342-SD	QMDX-342-SD
Migrating Standard-Definition Squeeze & Tease WARP MLE 4	n/a	n/a	n/a	QMDX-442-SD	QMDX-442-SD	QMDX-442-SD	QMDX-442-SD	QMDX-442-SD
Migrating Standard-Definition Squeeze & Tease WARP MLE 5	n/a	n/a	n/a	n/a	QMDX-542-SD	QMDX-542-SD	QMDX-542-SD	QMDX-542-SD
Migrating Standard-Definition Squeeze & Tease WARP MLE 6	n/a	n/a	n/a	n/a	QMDX-542-SD	QMDX-542-SD	QMDX-542-SD	QMDX-542-SD
Migrating Standard-Definition Squeeze & Tease WARP MLE 7	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-742-SD	QMDX-742-SD
Migrating Standard-Definition Squeeze & Tease WARP MLE 8	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-742-SD	QMDX-742-SD
Migrating Standard-Definition Squeeze & Tease MD, MLE 1 Channel 1&2 HD Upgrade	QMDX-141A-SD-HDUPG	QMDX-141A-SD-HDUPG	QMDX-141A-SD-HDUPG	QMDX-141A-SD-HDUPG				
Migrating Standard-Definition Squeeze & Tease MD, MLE 1 Channel 3&4 HD Upgrade	QMDX-141B-SD-HDUPG	QMDX-141B-SD-HDUPG	QMDX-141B-SD-HDUPG	QMDX-141B-SD-HDUPG				
Migrating Standard-Definition Squeeze & Tease MD, MLE 2 Channel 1&2 HD Upgrade	n/a	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 2 Channel 3&4 HD Upgrade	n/a	QMDX-241B-SD-HDUPG	QMDX-241B-SD-HDUPG	QMDX-241B-SD-HDUPG	QMDX-241B-SD-HDUPG	QMDX-241B-SD-HDUPG	QMDX-241B-SD-HDUPG	QMDX-241B-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 3 Channel 1&2 HD Upgrade	n/a	n/a	QMDX-341A-SD-HDUPG	QMDX-341A-SD-HDUPG	QMDX-341A-SD-HDUPG	QMDX-341A-SD-HDUPG	QMDX-341A-SD-HDUPG	QMDX-341A-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 3 Channel 3&4 HD Upgrade	n/a	n/a	QMDX-341B-SD-HDUPG	QMDX-341B-SD-HDUPG	QMDX-341B-SD-HDUPG	QMDX-341B-SD-HDUPG	QMDX-341B-SD-HDUPG	QMDX-341B-SD-HDUPG

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Migrating Standard-Definition Squeeze & Tease MD, MLE 4 Channel 1&2 HD Upgrade	n/a	n/a	n/a	QMDX-441A-SD-HDUPG	QMDX-441A-SD-HDUPG	QMDX-441A-SD-HDUPG	QMDX-441A-SD-HDUPG	QMDX-441A-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 4 Channel 3&4 HD Upgrade	n/a	n/a	n/a	QMDX-441B-SD-HDUPG	QMDX-441B-SD-HDUPG	QMDX-441B-SD-HDUPG	QMDX-441B-SD-HDUPG	QMDX-441B-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 5 Channel 1&2 HD Upgrade	n/a	n/a	n/a	n/a	QMDX-541A-SD-HDUPG	QMDX-541A-SD-HDUPG	QMDX-541A-SD-HDUPG	QMDX-541A-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 6 Channel 1&2 HD Upgrade	n/a	n/a	n/a	n/a	n/a	QMDX-641A-SD-HDUPG	QMDX-541A-SD-HDUPG	QMDX-541A-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 7 Channel 1&2 HD Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-741A-SD-HDUPG	QMDX-741A-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD, MLE 8 Channel 1&2 HD Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-841A-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 1 HD Upgrade	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 2 HD Upgrade	n/a	QMDX-242-SD-HDUPG	QMDX-242-SD-HDUPG	QMDX-242-SD-HDUPG	QMDX-242-SD-HDUPG	QMDX-242-SD-HDUPG	QMDX-242-SD-HDUPG	QMDX-242-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 3 HD Upgrade	n/a	n/a	QMDX-342-SD-HDUPG	QMDX-342-SD-HDUPG	QMDX-342-SD-HDUPG	QMDX-342-SD-HDUPG	QMDX-342-SD-HDUPG	QMDX-342-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 4 HD Upgrade	n/a	n/a	n/a	QMDX-442-SD-HDUPG	QMDX-442-SD-HDUPG	QMDX-442-SD-HDUPG	QMDX-442-SD-HDUPG	QMDX-442-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 5 HD Upgrade	n/a	n/a	n/a	n/a	QMDX-542-SD-HDUPG	QMDX-542-SD-HDUPG	QMDX-542-SD-HDUPG	QMDX-542-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 6 HD Upgrade	n/a	n/a	n/a	n/a	QMDX-542-SD-HDUPG	QMDX-542-SD-HDUPG	QMDX-542-SD-HDUPG	QMDX-542-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 7 HD Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-742-SD-HDUPG	QMDX-742-SD-HDUPG
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 8 HD Upgrade	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-742-SD-HDUPG	QMDX-742-SD-HDUPG

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Squeeze & Tease MD Options with QMDX-050								
Squeeze & Tease Carrier (MLE 1, 2, 3, and 4)	QMDX-140	QMDX-140	QMDX-140	QMDX-140	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 1 and 2 Channel Resources 1&2	QMDX-141A	QMDX-141A	QMDX-141A	QMDX-141A	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 1 and 2 Channel Resources 3&4	QMDX-241A	QMDX-241A	QMDX-241A	QMDX-241A	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 3 and 4 Channel Resources 1&2	n/a	n/a	QMDX-341A	QMDX-341A	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 3 and 4 Channel Resources 3&4	n/a	n/a	QMDX-441A	QMDX-441A	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE 1&2 Channel Resources 1&2	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD	QMDX-141A-SD	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE 1&2 Channel Resources 3&4	QMDX-241A-SD	QMDX-241A-SD	QMDX-241A-SD	QMDX-241A-SD	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE 3&4 Channel Resources 1&2	n/a	n/a	QMDX-341A-SD	QMDX-341A-SD	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE 3&4 Channel Resources 3&4	n/a	n/a	QMDX-441A-SD	QMDX-441A-SD	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 1 and 2 Channel Resources 1&2	QMDX-141A	QMDX-141A	QMDX-141A	QMDX-141A	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 1 and 2 Channel Resources 3&4	QMDX-241A	QMDX-241A	QMDX-241A	QMDX-241A	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 3 and 4 Channel Resources 1&2	n/a	n/a	QMDX-341A	QMDX-341A	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD, MLE 3 and 4 Channel Resources 3&4	n/a	n/a	QMDX-441A	QMDX-441A	n/a	n/a	n/a	n/a
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 1 and 2	QMDX-142	QMDX-142	QMDX-142	QMDX-142	n/a	n/a	n/a	n/a

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Migrating Multi-Definition Squeeze & Tease MD WARP MLE 3 and 4	n/a	n/a	QMDX-342	QMDX-342	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 1 and 2	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD	QMDX-142-SD	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 3 and 4	n/a	n/a	QMDX-342-SD	QMDX-342-SD	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE1&2 Channel 1&2 HD Upgrade	QMDX-141A-SD-HDUPG	QMDX-141A-SD-HDUPG	QMDX-141A-SD-HDUPG	QMDX-141A-SD-HDUPG	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE1&2 Channel 3&4 HD Upgrade	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	QMDX-241A-SD-HDUPG	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE3&4 Channel 1&2 HD Upgrade	n/a	n/a	QMDX-341A-SD-HDUPG	QMDX-341A-SD-HDUPG	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD, MLE3&4 Channel 3&4 HD Upgrade	n/a	n/a	QMDX-441A-SD-HDUPG	QMDX-441A-SD-HDUPG	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 1 and 2 HD Upgrade	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	QMDX-142-SD-HDUPG	n/a	n/a	n/a	n/a
Migrating Standard-Definition Squeeze & Tease MD WARP MLE 3 and 4 HD Upgrade	n/a	n/a	QMDX-342-SD-HDUPG	QMDX-342-SD-HDUPG	n/a	n/a	n/a	n/a
Video Processor and MLE Options								
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 1	QMDX-143-SBC	QMDX-143-SBC	QMDX-143-SBC	QMDX-143-SBC	QMDX-143-SBC	QMDX-143-SBC	QMDX-143-SBC	QMDX-143-SBC
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 2	n/a	QMDX-243-SBC	QMDX-243-SBC	QMDX-243-SBC	QMDX-243-SBC	QMDX-243-SBC	QMDX-243-SBC	QMDX-243-SBC
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 3	n/a	n/a	QMDX-343-SBC	QMDX-343-SBC	QMDX-343-SBC	QMDX-343-SBC	QMDX-343-SBC	QMDX-343-SBC
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 4	n/a	n/a	n/a	QMDX-443-SBC	QMDX-443-SBC	QMDX-443-SBC	QMDX-443-SBC	QMDX-443-SBC
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 5	n/a	n/a	n/a	n/a	QMDX-543-SBC	QMDX-543-SBC	QMDX-543-SBC	QMDX-543-SBC
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 6	n/a	n/a	n/a	n/a	n/a	QMDX-643-SBC	QMDX-643-SBC	QMDX-643-SBC

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 7	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-743-SBC	QMDX-743-SBC
XFX Board, MLE-Store, XFX Border, and MediaCache, MLE 8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-843-SBC
Engineering Options								
Spare Parts Kit	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V
Critical Spare Boards Kit	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V
Interface and Control Options								
Editors and Automation Interface	QMDX-900	QMDX-900	QMDX-900	QMDX-900	QMDX-900	QMDX-900	QMDX-900	QMDX-900
VTR Remote Control	QMDX-901	QMDX-901	QMDX-901	QMDX-901	QMDX-901	QMDX-901	QMDX-901	QMDX-901
Video Server Control	QMDX-903	QMDX-903	QMDX-903	QMDX-903	QMDX-903	QMDX-903	QMDX-903	QMDX-903
Audio Server Control	QMDX-904	QMDX-904	QMDX-904	QMDX-904	QMDX-904	QMDX-904	QMDX-904	QMDX-904
Routing Switcher Interface	QMDX-905	QMDX-905	QMDX-905	QMDX-905	QMDX-905	QMDX-905	QMDX-905	QMDX-905
Serial Tally Interface	QMDX-906	QMDX-906	QMDX-906	QMDX-906	QMDX-906	QMDX-906	QMDX-906	QMDX-906
Peripheral Bus Interface (Pbus)	QMDX-907	QMDX-907	QMDX-907	QMDX-907	QMDX-907	QMDX-907	QMDX-907	QMDX-907
Still Store (Chyron Aprisa) Interface	QMDX-908	QMDX-908	QMDX-908	QMDX-908	QMDX-908	QMDX-908	QMDX-908	QMDX-908
Audio Mixer Ganging	QMDX-910	QMDX-910	QMDX-910	QMDX-910	QMDX-910	QMDX-910	QMDX-910	QMDX-910
Small Audio Mixer Interface (16 or fewer inputs)	QMDX-911	QMDX-911	QMDX-911	QMDX-911	QMDX-911	QMDX-911	QMDX-911	QMDX-911
Small Yamaha Audio Mixer Interface (16 or fewer inputs)	QMDX-911Y	QMDX-911Y	QMDX-911Y	QMDX-911Y	QMDX-911Y	QMDX-911Y	QMDX-911Y	QMDX-911Y
Small Yamaha Audio Mixer Interface (16 or fewer inputs) for Europe	QMDX-911YE	QMDX-911YE	QMDX-911YE	QMDX-911YE	QMDX-911YE	QMDX-911YE	QMDX-911YE	QMDX-911YE
Large Audio Mixer Interface (16 or more inputs)	QMDX-912	QMDX-912	QMDX-912	QMDX-912	QMDX-912	QMDX-912	QMDX-912	QMDX-912
Large Yamaha Audio Mixer Interface (16 or more inputs)	QMDX-912Y	QMDX-912Y	QMDX-912Y	QMDX-912Y	QMDX-912Y	QMDX-912Y	QMDX-912Y	QMDX-912Y
Large Yamaha Audio Mixer Interface (16 or more inputs) for Europe	QMDX-912YE	QMDX-912YE	QMDX-912YE	QMDX-912YE	QMDX-912YE	QMDX-912YE	QMDX-912YE	QMDX-912YE
Robotic Camera System Interface	QMDX-913	QMDX-913	QMDX-913	QMDX-913	QMDX-913	QMDX-913	QMDX-913	QMDX-913

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Character Generator Interface	QMDX-914	QMDX-914	QMDX-914	QMDX-914	QMDX-914	QMDX-914	QMDX-914	QMDX-914
SmartConversion™ Cross Converter Tie-Line Management	QMDX-915	QMDX-915	QMDX-915	QMDX-915	QMDX-915	QMDX-915	QMDX-915	QMDX-915
Monitor Wall Interface	QMDX-916	QMDX-916	QMDX-916	QMDX-916	QMDX-916	QMDX-916	QMDX-916	QMDX-916
Comtrol® DeviceMaster® Interface	QMDX-955	QMDX-955	QMDX-955	QMDX-955	QMDX-955	QMDX-955	QMDX-955	QMDX-955
Redundant Power and Spares								
Redundant Power (Rack Frame only)	QMDX-077	QMDX-077	QMDX-077	QMDX-077	QMDX-077	QMDX-077	QMDX-077	QMDX-077
Backup Switcher, CrossOver 12 (Multi-Definition)	CPS-BACKUP	CPS-BACKUP	CPS-BACKUP	CPS-BACKUP	CPS-BACKUP	CPS-BACKUP	CPS-BACKUP	CPS-BACKUP
Backup Switcher, CrossOver 12 (Standard-Definition)	CPSSD-BACKUP	CPSSD-BACKUP	CPSSD-BACKUP	CPSSD-BACKUP	CPSSD-BACKUP	CPSSD-BACKUP	CPSSD-BACKUP	CPSSD-BACKUP
Spare Parts Kit (includes Vision parts)	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V	QMDX-073-V
Critical Spare Boards Kit	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V	QMDX-074-V
Manuals								
Additional Engineering Manuals	QMDX-080-V	QMDX-080-V	QMDX-080-V	QMDX-080-V	QMDX-080-V	QMDX-080-V	QMDX-080-V	QMDX-080-V
Additional Operator's Manuals	QMDX-081-V	QMDX-081-V	QMDX-081-V	QMDX-081-V	QMDX-081-V	QMDX-081-V	QMDX-081-V	QMDX-081-V
Training and Commissioning								
Onsite Operational Training, 1 Day (North America)	QMDX-090	QMDX-090	QMDX-090	QMDX-090	QMDX-090	QMDX-090	QMDX-090	QMDX-090
Onsite Operational Training, Additional Day (North America)	QMDX-091	QMDX-091	QMDX-091	QMDX-091	QMDX-091	QMDX-091	QMDX-091	QMDX-091
Onsite Operational Training, 1 Day (All Other Regions)	SWR-OTR-1DAY	SWR-OTR-1DAY	SWR-OTR-1DAY	SWR-OTR-1DAY	SWR-OTR-1DAY	SWR-OTR-1DAY	SWR-OTR-1DAY	SWR-OTR-1DAY
Onsite Technical Training, 2 Days (North America)	QMDX-092	QMDX-092	QMDX-092	QMDX-092	QMDX-092	QMDX-092	QMDX-092	QMDX-092
Onsite Technical Training, 1 Day (All Other Regions)	SWR-OTT-1DAY	SWR-OTT-1DAY	SWR-OTT-1DAY	SWR-OTT-1DAY	SWR-OTT-1DAY	SWR-OTT-1DAY	SWR-OTT-1DAY	SWR-OTT-1DAY
Onsite Commissioning, 2 Days (North America)	QMDX-093	QMDX-093	QMDX-093	QMDX-093	QMDX-093	QMDX-093	QMDX-093	QMDX-093
Onsite Commissioning, Additional Day (North America)	QMDX-094	QMDX-094	QMDX-094	QMDX-094	QMDX-094	QMDX-094	QMDX-094	QMDX-094

	1 MLE	2 MLE	3 MLE	4 MLE	5 MLE	6 MLE	7 MLE	8 MLE
Onsite Commissioning, 1 Day (All Other Regions)	SWR-COM-1DAY	SWR-COM-1DAY	SWR-COM-1DAY	SWR-COM-1DAY	SWR-COM-1DAY	SWR-COM-1DAY	SWR-COM-1DAY	SWR-COM-1DAY
Extended Warranty								
Extended Warranty, 1 Year (1 MLE)	QMDX-999-1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (1.5 MLE)	QMDX-999-15	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (2 MLE)	n/a	QMDX-999-2	n/a	n/a	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (2.5 MLE)	n/a	QMDX-999-25	n/a	n/a	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (3 MLE)	n/a	n/a	QMDX-999-3	n/a	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (3.5 MLE)	n/a	n/a	QMDX-999-35	n/a	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (4 MLE)	n/a	n/a	n/a	QMDX-999-4	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (4.5 MLE)	n/a	n/a	n/a	QMDX-999-45	n/a	n/a	n/a	n/a
Extended Warranty, 1 Year (5 MLE)	n/a	n/a	n/a	n/a	QMDX-999-5	n/a	n/a	n/a
Extended Warranty, 1 Year (5.5 MLE)	n/a	n/a	n/a	n/a	QMDX-999-55	n/a	n/a	n/a
Extended Warranty, 1 Year (6 MLE)	n/a	n/a	n/a	n/a	n/a	QMDX-999-6	n/a	n/a
Extended Warranty, 1 Year (6.5 MLE)	n/a	n/a	n/a	n/a	n/a	QMDX-999-65	n/a	n/a
Extended Warranty, 1 Year (7 MLE)	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-999-7	n/a
Extended Warranty, 1 Year (7.5 MLE)	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-999-75	n/a
Extended Warranty, 1 Year (8 MLE)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	QMDX-999-8

1. The Octane Live Production Engine requires a video output board to operate.
2. The MultiDSK, AuxKeys, or x.5 MLE options are **NOT** supported by the **QMDX-021-SD**.
3. This option cannot be used with more than four (4) MLEs

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Notes:

Notes:

Request for Quotation

PAGE ____ of ____

Customer Information

Company _____

Contact Name _____

E-mail _____

Telephone (s) _____

Address _____

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Item #	Option Number	Option Name	Quantity

Ross Video Incorporated, P.O. Box 880, Ogdensburg, New York, USA 13669 0880
Ross Video Limited, P.O. Box 220, 8 John St., Iroquois, ON., Canada K0E 1K0

Tel. +1 (613) 652-4886
Fax. +1 (613) 652-4425