

# DATA SHEET

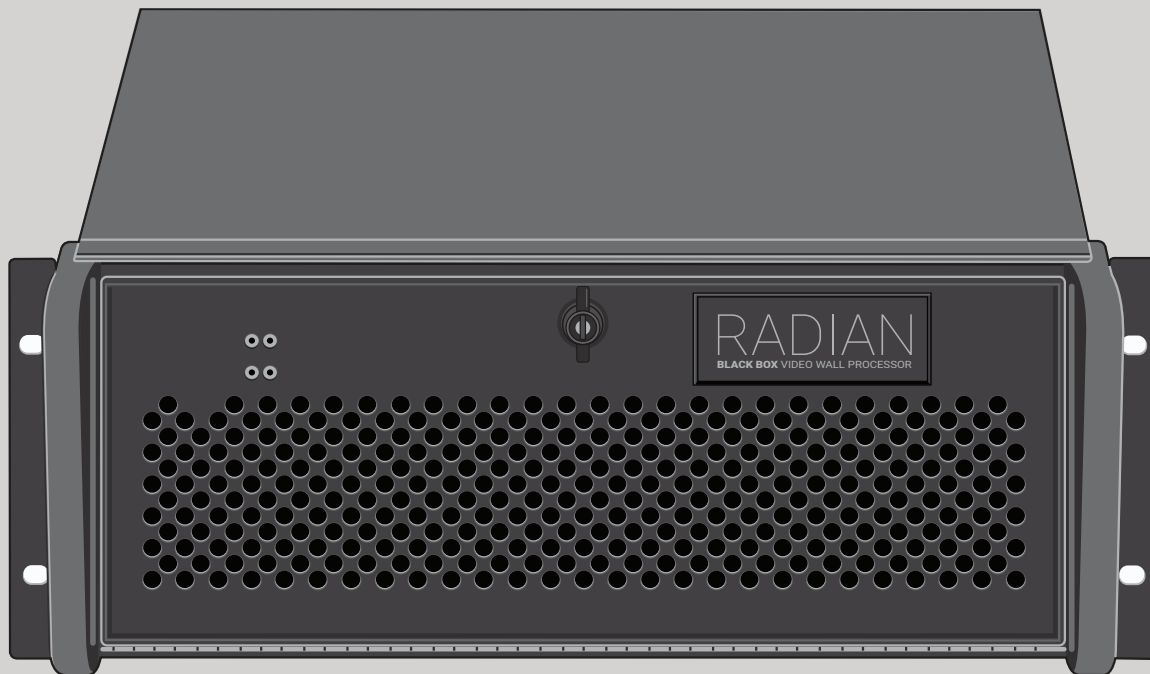
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VWP-FLEX-451, VWP-FLEX-961, VWP-FLEX-1182 SERIES

# RADIAN CHASSIS AND MODULES

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24/7 TECHNICAL SUPPORT AT 877.877.2269 OR VISIT [BLACKBOX.COM](http://BLACKBOX.COM)



# OVERVIEW

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## RADIAN FLEX CHASSIS AND MODULES DATA SHEET

### INTRODUCTION

Radian is a hybrid hardware and software solution. It's part of a complete solution that includes the chassis, graphics cards, video capture cards, expansion cards, and software. To help you get the right combination of chassis and cards for your specific application, Black Box offers free 24/7 tech support. Talk to one of our technical experts and we'll design a solution for you. And, we'll ship the chassis fully loaded with cards and software.

The heart of the system is the 4-, 9- or 11-slot controller chassis. It uses a high-performance enterprise-grade motherboard that connects to a Radian PCIe backplane. The backplane contains 4, 9 or 11 half-length PCIe slots for use with compatible Radian cards, including video capture, graphics and IP decoding cards.

### FEATURES

- EXPANDABLE WITH MULTIPLE CHASSIS CONFIGURATION
- SUPPORTS UP TO 64 VIDEO OUTPUTS
- SUPPORTS HUNDREDS OF VIDEO INPUTS
- AVAILABLE IN 4-, 9- AND 11-SLOT FRAMES
- FREELY POSITION ANY SOURCE ANYWHERE ON THE VIDEO WALL
- EASY TO USE—DRAG, DROP, RESIZE, AND SCALE
- TRUE 4K60 INPUT AND OUTPUT SUPPORT VIA DISPLAYPORT
- WIDE RANGE OF INPUT CARDS FOR ANY VIDEO FORMAT: COMPONENT, COMPOSITE, SDI, HDMI, VGA, DP, DVI, IP (H.264)
- MIX LIVE CAPTURE, IP STREAMS, AND LOCAL MEDIA IN ONE APPLICATION
- OUTPUTS INCLUDE DISPLAYPORT, DVI, AND HDMI
- REAL-TIME, MULTI-USER WALL CONTROL
- PROVIDES THE ABILITY TO RUN SOFTWARE APPLICATIONS ON THE WALL CONTROL PROCESSOR



# COMPARISON CHART

RADIAN FLEX CHASSIS AND MODULES COMPONENTS		
CHASSIS		
PRODUCT CODE	NUMBER OF SLOTS	SIGNAL FORMAT
VWP-FLEX-451	4	Depends on cards installed
VWP-FLEX-962	9	Depends on cards installed
VWP-FLEX-961	9	Depends on cards installed
VWP-FLEX-962X	9	Depends on cards installed
VWP-FLEX-1182	11	Depends on cards installed
VWP-FLEX-1182X	11	Depends on cards installed
VWP-FLEX-1182DX	11	Depends on cards installed
VIDEO CAPTURE CARDS		
PRODUCT CODE	INPUTS	SIGNAL FORMAT
VCC-SD-HD-A-2	(1) HD channel + (1) SD channel + AM2 + cable, full height	HD, SD
VCC-SD-HD-3	(2) HD channels + (1) SD channel, full height	HD, SD
VCC-SDI-SD-HD-3	(1) HD channel + (1) HD-SDI channel + (1) SD channel, full height	HD, HD-SDI, SD
VCC-HD-4	(4) channel DVI/RGB/HD capture card	DVI, RGB, HD
VCC-DP-2	(2) channels DisplayPort 4K card	DisplayPort 4K
VCC-HD-4-H	(4) channels HD capture card with HDMI splitter cables	HD, HDMI
VCC-HD-4-D	(4) channels HD capture card with DVI splitter cables	HD, DVI
VCC-SDI-4	(4) channels 3G-SDI capture card	3G-SDI
VCC-HDMI2-2	(2) Channel HDMI 4K Capture (4 Channel HDMI 1080 capture w/ adapter)	HDMI 4K, HD
DECODING CARD		
PRODUCT CODE	INPUT	SIGNAL FORMAT
VCC-STREAM	H.264 Decoder Card with dual Ethernet ports	H.264
VIDEO GRAPHICS CARDS		
PRODUCT CODE	OUTPUTS	SIGNAL FORMAT
VGC-DP-4-R2	4-port DisplayPort graphics card	DisplayPort
VGC-DP-4-D-R2	4-port DisplayPort graphics card with DVI adapters	DisplayPort, DVI
VGC-DP-4-H-R2	4-port DisplayPort graphics card with HDMI adapters	DisplayPort, HDMI
EXPANSION CHASSIS		
PRODUCT CODE	NUMBER OF SLOTS	SIGNAL FORMAT
VWX-2090	9	Depends on cards installed
VWX-2110	11	Depends on cards installed
VIDEO WALL CONTROL WINDOWS 10 SOFTWARE		
PRODUCT CODE	DESCRIPTION	
VWS-VWM10-STD	Radian Standard Video Wall Software	
VWS-VWM10-PRO	Radian Pro Video Wall Software	
VWS-VWM10-VMS	Includes plug-in for Milestone X-Protect Video Management Software	



# PRODUCT PHOTOS: CHASSIS

## RADIAN FLEX CHASSIS AND MODULES DATA SHEET



11-slot chassis,  
front view,  
door open



4-slot chassis,  
back view



11-slot chassis,  
front view,  
close-up #1



11-slot chassis,  
front view,  
close-up #2



VWP-2040,  
back view

# PRODUCT PHOTOS: CHASSIS

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## RADIAN FLEX CHASSIS AND MODULES DATA SHEET



4-, 9-, or 11-slot chassis,  
front view,  
door closed

# SPECIFICATIONS: CHASSIS

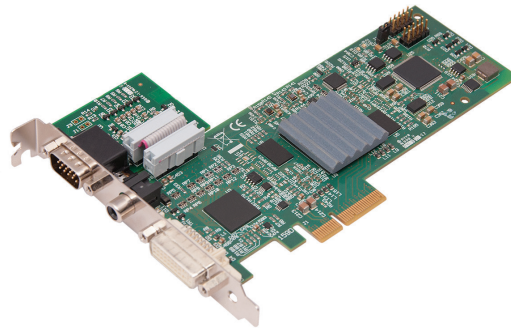
## RADIAN FLEX CHASSIS AND MODULES DATA SHEET

RADIAN FLEX CHASSIS SPECIFICATIONS	
<b>MOTHERBOARD</b>	
<b>TYPE</b>	VWP-FLEX-961, VWP-FLEX-962, VWP-FLEX-1182: Portwell ROBO8113-Q170; VWP-FLEX-962X, VWP-FLEX-1182X: Portwell ROBO8113-C236; VWP-FLEX-451: ATX motherboard with HDMI DisplayPort control screen; VWP-FLEX-1182DX: Advantech PCE-9228G2
<b>PROCESSOR</b>	VWP-FLEX-961, VWP-FLEX-962, VWP-FLEX-1182: Latest generation Intel® Core i7; VWP-FLEX-962X, VWP-FLEX-1182X: Single E3 Xeon; VWP-FLEX-451: Intel Core i5; VWP-FLEX-1182DX: Dual E5 XEonn (ES-2618L v3)
<b>CLOCK SPEED</b>	VWP-FLEX-961, VWP-FLEX-962, VWP-FLEX-962X: 3.6 GHz, 8 MB cache; VWP-FLEX-1182, VWP-FLEX-1182X: 3.6 GHz, 8 MB L3 cache; VWP-FLEX-451: 3.5 GHz, 6 MB Cache VWP-FLEX-1182DX: Dual 3.6 GHz, 8 MB L3 Cache
<b>MEMORY</b>	VWP-FLEX-961, VWP-FLEX-962, VWP-FLEX-1182, VWP-FLEX-451: 16 GB as standard, 32 GB available on request; VWP-FLEX-962X, VWP-FLEX-1182X: 32 GB as standard (maximum available); VWP-FLEX-1182DX: 64 GB (128 GB optional upgrade)
<b>ETHERNET</b>	VWP-FLEX-451: (2) Intel Gigabit LAN; All others: Dual 10/100/1000BASE-T
<b>ON-BOARD GRAPHICS</b>	VWP-FLEX-1182DX: VGA; All others: HDMI and DisplayPort for control screen
<b>RS-232</b>	For control
<b>DISK STORAGE</b>	
<b>SSD</b>	(2) 240 GB; Upgrade option: (2) 480 GB SSD
<b>CONNECTIVITY</b>	
<b>USB</b>	VWP-FLEX-451: (2) USB 3.1 ports (1 Type A, 1 Type C), (4) USB 3.0 ports, (4) USB 2.0 ports; All others: (2) USB 3.0 (back panel), (6) USB 2.0 (2 front, 2 back, 2 internal)
<b>OPERATING SYSTEM</b>	
	Windows 10 LTSB
<b>BACKPLANE</b>	
<b>FEATURES</b>	3rd generation PCIe switched fabric; 1 slot x 8 - 8GB/s uplink and downlink; 8 slot x 4 - 4GB/s uplink and downlink; 11 slot x 8 - 8GB/s uplink and downlink
<b>EXPANSION SLOTS</b>	VWP-FLEX-451: (4) PCIe x8 Gen3
<b>POWER</b>	
<b>POWER SUPPLY</b>	VWP-FLEX-451: 500 watt ATX; VWP-FLEX-961, VWP-FLEX-962: 600 watt ATX; All others: 800 watt RPSU dual redundant
<b>ENVIRONMENT</b>	
<b>OPERATING TEMPERATURE</b>	32 to 95° F (0 to 35° C)
<b>STORAGE TEMPERATURE</b>	-4 to +158° F (-20 to +70° C)
<b>RELATIVE HUMIDITY</b>	5 to 90% noncondensing
<b>NOISE</b>	48.6 dB (A) up to 67.9 dB (A), dependent on system config and ambient temp
<b>PHYSICAL</b>	
<b>DIMENSIONS</b>	6.9" H x 19" W x 19.6" D (17.5 x 48.2 x 50 cm)
<b>WEIGHT</b>	Product weight: 41.8 to 55 lb. (19 to 25 kg); Shipping weight: 66 to 72.6 lb. (30 to 33 kg)
<b>COMPLIANCE</b>	
<b>STANDARDS</b>	FCC, CE, RoHS, UL, CCC



# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-SD-HD-A-2)

VIDEO CAPTURE CARD (VCC-SD-HD-A-2): (1) HD CHANNEL + (1) SD CHANNEL + AM2 + CABLE, FULL HEIGHT



## VIDEO CAPTURE CARD (VCC-SD-HD-A-2): (1) HD CHANNEL + (1) SD CHANNEL + AM2 + CABLE, FULL HEIGHT SPECIFICATIONS

### PHYSICAL

#### CONNECTORS

Main board: DVI-I, RCA female;  
 Audio board: HD15 male, used to connect audio breakout cable (included);  
 Stereo line in: (2) RCA;  
 Stereo balanced in: (2) XLR;  
 Stereo line out: (2) RCA  
 For connection to main board: 16-way header

### PERFORMANCE

#### HDMI CAPTURE

- Supports HDMI 1.3 to 225 MHz (including deep color modes);
- Audio streaming source: HDMI audio;
- TMDS equalizer supports up to 20 m cables

#### DVI CAPTURE

- Supports DVI 1.0 RGB 24-bit capture to 165 MHz;
- TMDS equalizer supports up to 20 m cables

#### VGA/YPBPR CAPTURE

Sampling: Triple ADCs up to 170 Msp/s,  
 Full 4:4:4, 8 bits per color;  
 Formats: 5-wire, 4-wire, or sync-on-green signal

#### COMPOSITE VIDEO CAPTURE

Sampling: CCIR601, automatically detects PAL, NTSC, SECAM formats

#### AUDIO CAPTURE

Stereo Line-In/Stereo balanced inputs with programmable gain ( $\pm 12$  dB);  
 16-bit sampling at 44.1/48/96 kHz;  
 Analog stereo line-out for direct passthrough of selected input at up to 64 kHz sampling, sourced from analog input or HDMI channel;  
 Analog stereo line-out for direct passthrough of selected input at up to 64 kHz sampling, sourced from analog input or HDMI channel

#### VIDEO CAPTURE MEMORY

256 MB high-bandwidth frame buffer supports triple buffering of HD and SD video;  
 Local storage of complex scatter-gather tables for DMA engine (eliminates read overhead)

#### VIDEO PROCESSING

Polyphase FIR scaling engine (7x5) for hardware downscaling and upscaling;  
 Color space conversion allows captured data to be transferred in any format:  
 • RGB: 16-bit (5:5:5, 5:6:5), 24-bit (8:8:8), or 32-bit (8:8:8 alpha),  
 • YUV: 16-bit (4:2:2)  
 • Mono: 8-bit

#### DMA ENGINE

Direct DMA to physical or virtual memory buffers with full scatter-gather support;  
 DMA bandwidth: Up to 800 Mbps;  
 16 independent DMA streams: Any mix of HD and SD sources, color space, cropping, and scaling parameters

#### OPERATING SYSTEM SUPPORT

Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support

### ENVIRONMENTAL

#### OPERATING TEMPERATURE

32 to 96° F (0 to 35° C)

#### STORAGE TEMPERATURE

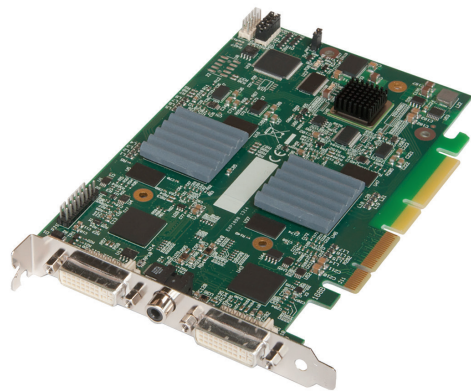
-4 to +158° F (-20 to +70° C)

#### RELATIVE HUMIDITY

5 to 90%, noncondensing

# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-SD-HD-3)

VIDEO CAPTURE CARD (VCC-SD-HD-3): (2) HD CHANNELS + (1) SD CHANNEL, FULL HEIGHT



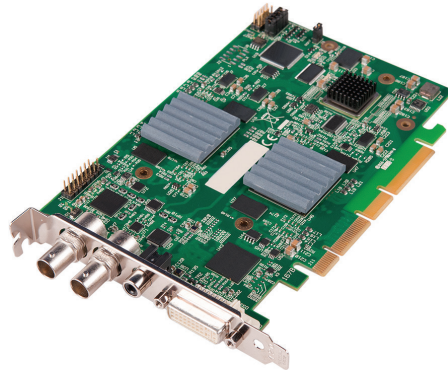
VIDEO CAPTURE CARD (VCC-SD-HD-3): (2) HD CHANNELS + (1) SD CHANNEL, FULL HEIGHT SPECIFICATIONS	
<b>PHYSICAL</b>	
<b>CONNECTORS</b>	Main board: (2) DVI-I, (1) RCA female
<b>PERFORMANCE</b>	
<b>HDMI CAPTURE</b>	<ul style="list-style-type: none"> <li>• Supports HDMI 1.3 to 225 MHz (including deep color modes);</li> <li>• Audio streaming source: HDMI audio;</li> <li>• TMDS equalizer supports up to 20 m cables</li> </ul>
<b>DVI CAPTURE</b>	<ul style="list-style-type: none"> <li>• Supports DVI 1.0 RGB 24-bit capture to 165 MHz;</li> <li>• TMDS equalizer supports up to 20 m cables</li> </ul>
<b>VGA/YPBPR CAPTURE</b>	Sampling: Triple ADCs up to 170 Msps, Full 4:4:4, 8 bits per color; Formats: 5-wire, 4-wire, or sync-on-green signal
<b>COMPOSITE VIDEO CAPTURE</b>	Sampling: CCIR601, automatically detects PAL, NTSC, SECAM formats
<b>AUDIO CAPTURE</b>	Stereo Line-In/Stereo balanced inputs with programmable gain ( $\pm 12$ dB); 16-bit sampling at 44.1/48/96 kHz; Analog stereo line-out for direct passthrough of selected input at up to 64 kHz sampling, sourced from analog input or HDMI channel; Analog stereo line-out for direct passthrough of selected input at up to 64 kHz sampling, sourced from analog input or HDMI channel
<b>VIDEO CAPTURE MEMORY</b>	256 MB high-bandwidth frame buffer supports triple buffering of HD and SD video; Local storage of complex scatter-gather tables for DMA engine (eliminates read overhead)
<b>VIDEO PROCESSING</b>	Polyphase FIR scaling engine (7x5) for hardward downscaling and and upscaling; Color space conversion allows captured data to be transferred in any format: <ul style="list-style-type: none"> <li>• RGB: 16-bit (5:5:5, 5:6:5), 24-bit (8:8:8), or 32-bit (8:8:8 alpha,</li> <li>• YUV: 16-bit (4:2:2)</li> <li>• Mono: 8-bit</li> </ul>
<b>DMA ENGINE</b>	Direct DMA to physical or virtual memory buffers with full scatter-gather support; DMA bandwidth: Up to 800 Mbps; 16 independent DMA streams: Any mix of HD and SD sources, color space, cropping, and scaling parameters
<b>OPERATING SYSTEM SUPPORT</b>	Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support
<b>POWER</b>	
<b>CURRENT (MAXIMUM)</b>	1 A @ 12 V; 1 A @ 3.3 V
<b>THERMAL DISSIPATION</b>	15.5 W
<b>ENVIRONMENTAL</b>	
<b>OPERATING TEMPERATURE</b>	32 to 96° F (0 to 35° C)
<b>STORAGE TEMPERATURE</b>	-4 to +158° F (-20 to +70° C)
<b>RELATIVE HUMIDITY</b>	5 to 90%, noncondensing





# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-SDI-SD-HD-3)

VIDEO CAPTURE CARD (VCC-SDI-SD-HD-3): (1) HD CHANNELS +(1) HD-SDI CHANNEL + (1) SD CHANNEL, FULL HEIGHT



VIDEO CAPTURE CARD (VCC-SDI-SD-HD-3): (1) HD CHANNELS + (1) HD-SDI CHANNEL + (1) SD CHANNEL, FULL HEIGHT SPECIFICATIONS	
<b>PHYSICAL</b>	
<b>BOARD FORMAT</b>	Main board: (4) PCI-Express half-length, full-height card, 4.3" x 6.7" (11 x 17 cm)
<b>CONNECTORS</b>	(1) DVI-I, (1) RCA, (2) BNC
<b>INDICATORS</b>	(1) input LED (green); (1) Loophrough output LED (blue)
<b>PERFORMANCE</b>	
<b>HDMI CAPTURE</b>	<ul style="list-style-type: none"> <li>• Supports HDMI 1.3 to 225 MHz (including deep color modes);</li> <li>• Audio streaming source: HDMI audio;</li> <li>• TMDS equalizer supports up to 20 m cables</li> </ul>
<b>DVI CAPTURE</b>	<ul style="list-style-type: none"> <li>• Supports DVI 1.0 RGB 24-bit capture to 165 MHz;</li> <li>• TMDS equalizer supports up to 20 m cables</li> </ul>
<b>VGA/YPBPR CAPTURE</b>	Sampling: Triple ADCs up to 170 Msps, Full 4:4:4, 8 bits per color; Formats: 5-wire, 4-wire, or sync-on-green signal
<b>COMPOSITE VIDEO CAPTURE</b>	Sampling: CCIR601, automatically detects PAL, NTSC, SECAM formats
<b>SDI CAPTURE</b>	SD-SDI: 480i/576i; HD-SDI: Up to 1080i; 3G-SDI: Up to 1080p;;Digital cinema modes: 2 K; Audio streaming source: SDI audio
<b>ANALOG AUDIO CAPTURE</b>	Balanced and unbalanced analog audio capture (through optional audio module)
<b>VIDEO CAPTURE MEMORY</b>	256 MB high-bandwidth frame buffer supports triple buffering of HD and SD video; Local storage of complex scatter-gather tables for DMA engine (eliminates read overhead)
<b>VIDEO PROCESSING</b>	Polyphase FIR scaling engine (7x5) for hardward downscaling and and upscaling; Color space conversion allows captured data to be transferred in any format: <ul style="list-style-type: none"> <li>• RGB: 16-bit (5:5:5, 5:6:5), 24-bit (8:8:8), or 32-bit (8:8:8 alpha,</li> <li>• YUV: 16-bit (4:2:2)</li> <li>• Mono: 8-bit</li> </ul>
<b>DMA ENGINE</b>	Direct DMA to physical or virtual memory buffers with full scatter-gather support; DMA bandwidth: Up to 800 Mbps; 16 independent DMA streams: Any mix of HD and SD sources, color space, cropping, and scaling parameters
<b>OPERATING SYSTEM SUPPORT</b>	Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support
<b>POWER</b>	
<b>CURRENT (MAXIMUM)</b>	0.5 A @ 12 V; 0.9 A @ 3.3 V
<b>THERMAL DISSIPATION</b>	15.5 W
<b>ENVIRONMENTAL</b>	
<b>OPERATING TEMPERATURE</b>	32 to 96° F (0 to 35° C)
<b>STORAGE TEMPERATURE</b>	-4 to +158° F (-20 to +70° C)
<b>RELATIVE HUMIDITY</b>	5 to 90%, noncondensing



# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-HD-4)

VIDEO CAPTURE CARD (VCC-HD-4): (4) CHANNEL DVI/RGB/HD CAPTURE CARD



VIDEO CAPTURE CARD (VCC-HD-4): (4) CHANNEL DVI/RGB/HD CAPTURE CARD SPECIFICATIONS	
<b>PHYSICAL</b>	
<b>BOARD FORMAT</b>	Full-size, 8-lane PCIe 3.0 interface; PCI Express card: 4.3" x 12.3" (11.1 x 31.2 cm)
<b>CONNECTORS</b>	(2) MDS59 high-density video connectors
<b>PERFORMANCE</b>	
<b>MAXIMUM DATA RATE</b>	800 Mbps bandwidth per capture processor, 3.2 Gbps for the card
<b>VIDEO SAMPLING</b>	24 bits per pixel/8:8:8 format
<b>VIDEO CAPTURE MEMORY</b>	256 MB high-bandwidth frame buffer supports triple buffered
<b>ANALOG RGB MODE SUPPORT</b>	640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1600 x 1200, 1920 x 1080, 1920 x 1200, and custom modes
<b>DVI SINGLE LINK MODE SUPPORT</b>	640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1600 x 1200, 1920 x 1080, 1920 x 1200, and custom modes
<b>HD MODES</b>	1080i, 1080p, 720p, 576p, 480p, and 480i using a Component DVI connector; For HDCP support, contact Black Box Technical Support at 877-877-2269 or info@blackbox.com
<b>INPUT MODE DETECTION</b>	Automatically detects input modes in hardware, enabling tracking of mode changes in the source signal. DirectShow streams are maintained at a fixed resolution across mode changes.
<b>PIXEL TRANSFER FORMATS</b>	RGB: 5:5:5, 5:6:5, or 8:8:8 (24-bit/32-bit) pixels; YUV: 4:2:2; Mono: 8-bit
<b>UPDATE RATE</b>	User-defined, captured frame rate will match the source as long as the maximum data rate (800 Mbps) is not exceeded.
<b>VIDEO FORMAT OPTIONS</b>	Analog RGB plus HSync and VSync (5-wire); Analog RGB with Composite Sync (4-wire); Analog RGB with Sync on Green/YPbPr (3-wire); DVI single link: HDMI 1.3
<b>OPERATING SYSTEM SUPPORT</b>	Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support (not audio)
<b>POWER</b>	
<b>CURRENT (MAXIMUM)</b>	1.9 A @ 12 V; 1.5 A @ 3.3 V
<b>THERMAL DISSIPATION</b>	31 W (typical)
<b>ENVIRONMENTAL</b>	
<b>OPERATING TEMPERATURE</b>	32 to 96° F (0 to 35° C)
<b>STORAGE TEMPERATURE</b>	-4 to +158° F (-20 to +70° C)
<b>RELATIVE HUMIDITY</b>	5 to 90%, noncondensing



# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-DP-2)

## VIDEO CAPTURE CARD (VCC-DP-2): (2) CHANNEL DISPLAYPORT 4K CAPTURE CARD



### VIDEO CAPTURE CARD (VCC-DP-2): (2) CHANNEL DISPLAYPORT 4K CAPTURE CARD SPECIFICATIONS

PHYSICAL	
BOARD FORMAT	PCIe x 8 plug-in card)
CONNECTORS	Locking dual DisplayPort 1.2
PERFORMANCE	
MAXIMUM CAPTURE RESOLUTION	616 Mpps capture bandwidth per channel; Captures up to 4096 x 2160p @ 60 Hz per input
FRAME BUFFER	768 MB
INPUT MODE DETECTION	Decodes Main Stream Attribute (MSA) data to determine video geometry
PIXEL TRANSFER FORMATS	RGB: 5:5, 5:6:5 (16-bit) or 8:8:8 (24-bit); YUV: 4:2:2 (16-bit); Mono: 8-bit
PIXEL CAPTURE FORMAT	RGB with 18, 24 bits per pixel
UPDATE RATE	User-defined. Captured frame rate will match the source providing max. data rate (6.4 Gbps) is not exceeded. Multi-buffered to eliminate tearing artefacts
OPERATING SYSTEM SUPPORT	Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support (not audio)
POWER	
CURRENT (MAXIMUM)	12 V @ 1.0 A
THERMAL DISSIPATION	12 W
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 96° F (0 to 35° C)
STORAGE TEMPERATURE	-4 to +158° F (-20 to +70° C)
RELATIVE HUMIDITY	5 to 90%, noncondensing

# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-HD-4-H)

VIDEO CAPTURE CARD (VCC-HD-4-H): (4) CHANNEL HD CAPTURE CARD WITH (2) HDMI SPLITTER CABLES



VIDEO CAPTURE CARD (VCC-HD-4-H): (4) CHANNEL HD CAPTURE CARD WITH (2) HDMI SPLITTER CABLES SPECIFICATIONS	
<b>PHYSICAL</b>	
<b>BOARD FORMAT</b>	8-lane PCIe interface; PCI Express card: 4.3" x 6.9" (11.0 x 17.7 cm), including heat sink
<b>CONNECTORS</b>	(2) DSM59 high-density video connectors plus (2) HDMI adapters
<b>PERFORMANCE</b>	
<b>UPDATE RATE</b>	Channels 1 and 3: 297 Mpps; Channels 2 and 4: 165 Mpps
<b>MAXIMUM CAPTURE RESOLUTION</b>	Channels 1 and 3: (2) 3840 x 2160p @ 30 Hz; Channels 2 and 4: (2) 1920 x 1080p @ 60 Hz
<b>FRAME BUFFER</b>	768 MB
<b>PIXEL TRANSFER FORMATS</b>	RGB: 5:5:5, 5:6:5, or 8:8:8 (24-bit/32-bit); YUV: 4:2:2; Mono: 8-bit
<b>VIDEO MODES</b>	HDMI 1.4, HDMI 1.3, DVI
<b>OPERATING SYSTEM SUPPORT</b>	Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support (not audio)
<b>POWER</b>	
<b>CURRENT (MAXIMUM)</b>	3.3 V @ 0.45 A; 12 V @ 0.85 A
<b>THERMAL DISSIPATION</b>	18 W. maximum
<b>ENVIRONMENTAL</b>	
<b>OPERATING TEMPERATURE</b>	32 to 96° F (0 to 35° C)
<b>STORAGE TEMPERATURE</b>	-4 to +158° F (-20 to +70° C)
<b>RELATIVE HUMIDITY</b>	5 to 90%, noncondensing



# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-HD-4-D)

VIDEO CAPTURE CARD (VCC-HD-4-D): (4) CHANNEL HD CAPTURE CARD WITH (2) DVI SPLITTER CABLES



## VIDEO CAPTURE CARD (VCC-HD-4-D): (4) CHANNEL HD CAPTURE CARD WITH (2) DVI SPLITTER CABLES SPECIFICATIONS

### PHYSICAL

<b>BOARD FORMAT</b>	8-lane PCIe interface; PCI Express card: 4.3" x 6.9" (11.0 x 17.7 cm), including heat sink
<b>CONNECTORS</b>	(2) DSM59 high-density video connectors plus (2) HDMI adapters
<b>PERFORMANCE</b>	
<b>UPDATE RATE</b>	Channels 1 and 3: 297 Mpps; Channels 2 and 4: 165 Mpps
<b>MAXIMUM CAPTURE RESOLUTION</b>	Channels 1 and 3: (2) 3840 x 2160p @ 30 Hz; Channels 2 and 4: (2) 1920 x 1080p @ 60 Hz
<b>FRAME BUFFER</b>	768 MB
<b>PIXEL TRANSFER FORMATS</b>	RGB: 5:5:5, 5:6:5, or 8:8:8 (24-bit/32-bit); YUV: 4:2:2; Mono: 8-bit
<b>VIDEO MODES</b>	HDMI 1.4, HDMI 1.3, DVI
<b>OPERATING SYSTEM SUPPORT</b>	Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support (not audio)
<b>POWER</b>	
<b>CURRENT (MAXIMUM)</b>	3.3 V @ 0.45 A; 12 V @ 0.85 A
<b>THERMAL DISSIPATION</b>	18 W. maximum
<b>ENVIRONMENTAL</b>	
<b>OPERATING TEMPERATURE</b>	32 to 96° F (0 to 35° C)
<b>STORAGE TEMPERATURE</b>	-4 to +158° F (-20 to +70° C)
<b>RELATIVE HUMIDITY</b>	5 to 90%, noncondensing

# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-SDI-4)

## VIDEO CAPTURE CARD (VCC-SDI-4): (4) CHANNEL 3G-SDI CAPTURE CARD



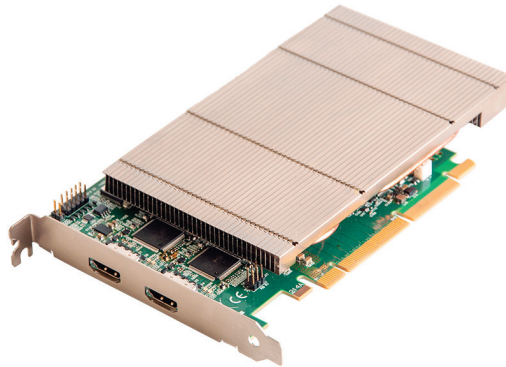
### VIDEO CAPTURE CARD (VCC-SDI-4): (4) CHANNEL 3G-SDI CAPTURE CARD SPECIFICATIONS

PHYSICAL	
BOARD FORMAT	8-lane PCIe interface
CONNECTORS	(4) BNC
DIMENSIONS	4.3" x 6.9" (11 x 17.7 cm)
PERFORMANCE	
MAXIMUM CAPTURE RESOLUTION	2.97 Gbps bandwidth per channel; (4) x 1920 x 1080p @ 60 Hz
FRAME BUFFER	768 MB
INPUT MODE DETECTION	Supports SMPTE-352 payload identifiers
SAMPLE FORMATS	RGB: 4:4:4 (+A); YUV: 4:2:2 (+A), 4:4:4 (+A)
SMPTE STANDARDS	ST-259, 272, 291, 292, 293, 296, 299, 352, 424, 425, 2048
UPDATE RATE	User-defined. Captured frame rate will match the source as long as the maximum data rate (2.9 Gbps per channel) is not exceeded. Multi-buffered to eliminate tearing artifacts.
VIDEO MODES	480i, 576i, 720p, 1080i, 1080p, 1080psF, 2048 x 1080p, 2048 x 1080psF
SUPPORTED FRAME RATES	23.98, 24, 25, 29.97, 30, 50, 59.94, and 60 Hz
OPERATING SYSTEM SUPPORT	Windows® XP, Windows Server 2003/2008/2012, Windows Vista, Windows 7/8, and Linux support (not audio)
POWER	
CURRENT (MAXIMUM)	3.3 V @ 0.45 A; 12 V @ 0.85 A
THERMAL DISSIPATION	18 W. maximum
ENVIRONMENTAL	
OPERATING TEMPERATURE	32 to 96° F (0 to 35° C)
STORAGE TEMPERATURE	-4 to +158° F (-20 to +70° C)
RELATIVE HUMIDITY	5 to 90%, noncondensing



# SPECIFICATIONS: VIDEO CAPTURE CARD (VCC-HDMI2-2)

VIDEO CAPTURE CARD (VCC-HDMI2-2): HDMI 2.0 4K 60 HZ 4:4:4



VIDEO CAPTURE CARD (VCC-HDMI2-2): HDMI 2.0 4K 60 HZ 4:4:4 SPECIFICATIONS	
<b>PHYSICAL</b>	
BOARD FORMAT	PCIe x8 plug-in card
CONNECTORS	(2) HDMI 2.0
DIMENSIONS	4.3" H x 6.9" L (11 x 17.7 cm) (including heat sink)
<b>PERFORMANCE</b>	
UPDATE RATE	Captured frame rate will match the source providing PCIe bandwidth is not exceeded
MAXIMUM CAPTURE RATE	600 MHz TMDS Clock; Max. capture surface of 8K x 8K
FRAME BUFFER	2 GB
INPUT MODE DETECTION	Automatic
PIXEL TRANSFER FORMATS	R RGB10 (10-bit), 8-8-8 (24/32) 5-6-5, 5-5-5, 8-bit mono Y410 (10-bit), 4:2:2, YUY2, UYVY, YVYU Planar Modes: NV12, YV12
COLOR SPACES	BT2020, BT709, BT601 with selectable limited and full range encoding
VIDEO STANDARD	HDMI 2.0, HDMI 1.4, HDMI 1.3
<b>POWER</b>	
CURRENT (MAXIMUM)	3.3 V @ 1 A; 12 V @ 1.6 A,
POWER (MAXIMUM)	22 W
<b>ENVIRONMENTAL</b>	
OPERATING TEMPERATURE	32 to 96° F (0 to 35° C)
STORAGE TEMPERATURE	-4 to +158° F (-20 to +70° C)
RELATIVE HUMIDITY	5 to 90%, noncondensing



# SPECIFICATIONS: DEDICATED DECODING CARD (VCC-STREAM)

## DEDICATED DECODING CARD (VCC-STREAM)



### DEDICATED DECODING CARD (VCC-STREAM) SPECIFICATIONS

#### PHYSICAL

BOARD FORMAT	PCIe x4 gen.2 plug-in card, half-length, full-height
CONNECTORS	(2) RJ-45, (1) DisplayPort output connector (reserved for future use)

#### PERFORMANCE

ETHERNET	(2) 1000BASE-T Ethernet ports, DHCP or Static IP support, IPv4 and IPv6
STREAMING PROTOCOLS	HTTP, RTSP, MPEG2-TS support, Multicast and Unicast support
CODEC SUPPORT	H.264 (Mpeg4 Part 10 AVC), VC-1 (WMV), and MPEG2 PART 2 and MJPEG
DECODE DENSITY	Up to (3) 4096 x 2160p at 30 fps or (6) 1920 x 1080p @ 60 fps/12 @ 30 fps, 50 + D1 @ 30 fps
DE-INTERLACING	Supported
STREAM AUTHENTICATION	Basic and Digest Stream Authentication
VIDEO CAPTURE MEMORY	4 GB
H.264 PROFILES	Constrained Baseline Profile (CBP), Main Profile (MP), High Profile (HP)
H.264V LEVELS	Level 3, 3.1, 4, 4.1, 5, 5.1, 5.2
COLOR FORMAT	NV12 4:2:0
DMA ENGINE	Direct DMA to physical or virtual memory buffers with full scatter-gather support DMA bandwidth up to 1.3 Gbps
SCALING	Hardware downscaling prior to DMA transfer. One to one (1:1) transfer for upscale after DMA
CAROUSEL	IP Window carousel supported including the hardware based pre-buffering of IP decodes for smoother playback
OPERATING SYSTEM SUPPORT	Windows® 7, 64-bit/Server 2012

#### POWER

CURRENT (MAXIMUM)	3.3 V @ 1.9 A; 12 V @ 1.9 A
THERMAL DISSIPATION	14 W, average

#### ENVIRONMENTAL

OPERATING TEMPERATURE	32 to 96° F (0 to 35° C)
STORAGE TEMPERATURE	-4 to +158° F (-20 to +70° C)
RELATIVE HUMIDITY	5 to 90%, noncondensing





# SPECIFICATIONS: VIDEO GRAPHICS CARD (VGC-DP-4-R2)

VIDEO GRAPHICS CARD (VGC-DP-4-R2): (4) PORT DISPLAYPORT GRAPHICS CARD



VIDEO GRAPHICS CARD (VGC-DP-4-R2): (4) PORT DISPLAYPORT GRAPHICS CARD SPECIFICATIONS	
<b>PHYSICAL</b>	
BOARD FORMAT	16-lane PCI Express
CONNECTORS	(4) DisplayPort
DIMENSIONS	4.3" H x 6.9" L (11 x 17.7 cm) (including heat sink)
<b>PERFORMANCE</b>	
MAXIMUM OUTPUT RESOLUTION	(4) 2560 x 1600 @ 60 Hz (max. 359 Mpixels or (2) 3840 x 2160 @ 30 Hz
MAXIMUM CARDS PER SYSTEM	(16) (64 display channels)
GRAPHIC CARD MEMORY	512 MB total
<b>POWER</b>	
CURRENT (MAXIMUM)	3.3 V @ 0.25 A (1.8 A when powering four channels); 12 V @ 1.2 A
THERMAL DISSIPATION	15 W, maximum
<b>ENVIRONMENTAL</b>	
OPERATING TEMPERATURE	32 to 96° F (0 to 35° C)
STORAGE TEMPERATURE	-4 to +158° F (-20 to +70° C)
RELATIVE HUMIDITY	5 to 90%, noncondensing
MTBF	Over 180,000 hours



# SPECIFICATIONS: VIDEO GRAPHICS CARD (VGC-DP-4-D-R2)

VIDEO GRAPHICS CARD (VGC-DP-4-D-R2): (4) PORT DISPLAYPORT GRAPHICS CARD WITH DVI ADAPTERS



VIDEO GRAPHICS CARD (VGC-DP-4-D-R2): (4) PORT DISPLAYPORT GRAPHICS CARD WITH DVI ADAPTERS SPECIFICATIONS	
<b>PHYSICAL</b>	
BOARD FORMAT	16-lane PCI Express
CONNECTORS	(4) DisplayPort on card, (4) DisplayPort to DVI on included adapters
DIMENSIONS	4.3" H x 6.9" L (11 x 17.7 cm) (including heat sink)
<b>PERFORMANCE</b>	
MAXIMUM OUTPUT RESOLUTION	(4) 2560 x 1600 @ 60 Hz (max. 359 Mpixels or (2) 3840 x 2160 @ 30 Hz
MAXIMUM CARDS PER SYSTEM	(16) (64 display channels)
GRAPHIC CARD MEMORY	512 MB total
<b>POWER</b>	
CURRENT (MAXIMUM)	3.3 V @ 0.25 A (1.8 A when powering four channels); 12 V @ 1.2 A
THERMAL DISSIPATION	15 W, maximum
<b>ENVIRONMENTAL</b>	
OPERATING TEMPERATURE	32 to 96° F (0 to 35° C)
STORAGE TEMPERATURE	-4 to +158° F (-20 to +70° C)
RELATIVE HUMIDITY	5 to 90%, noncondensing
MTBF	Over 180,000 hours



# SPECIFICATIONS: VIDEO GRAPHICS CARD (VGC-DP-4-H-R2)

VIDEO GRAPHICS CARD (VGC-DP-4-H-R2): (4) PORT DISPLAYPORT GRAPHICS CARD WITH HDMI ADAPTERS



VIDEO GRAPHICS CARD (VGC-DP-4-H-R2): (4) PORT DISPLAYPORT GRAPHICS CARD WITH HDMI ADAPTERS SPECIFICATIONS	
<b>PHYSICAL</b>	
BOARD FORMAT	16-lane PCI Express
CONNECTORS	(4) DisplayPort on card, (4) DisplayPort to HDMI on included adapters
DIMENSIONS	4.3" H x 6.9" L (11 x 17.7 cm) (including heat sink)
<b>PERFORMANCE</b>	
MAXIMUM OUTPUT RESOLUTION	(4) 2560 x 1600 @ 60 Hz (max. 359 Mpixels or (2) 3840 x 2160 @ 30 Hz
MAXIMUM CARDS PER SYSTEM	(16) (64 display channels)
GRAPHIC CARD MEMORY	512 MB total
<b>POWER</b>	
CURRENT (MAXIMUM)	3.3 V @ 0.25 A (1.8 A when powering four channels); 12 V @ 1.2 A
THERMAL DISSIPATION	15 W, maximum
<b>ENVIRONMENTAL</b>	
OPERATING TEMPERATURE	32 to 96° F (0 to 35° C)
STORAGE TEMPERATURE	-4 to +158° F (-20 to +70° C)
RELATIVE HUMIDITY	5 to 90%, noncondensing
MTBF	Over 180,000 hours

# SPECIFICATIONS: EXPANSION CHASSIS (VWX-2090)

EXPANSION CHASSIS (VWX-2090): EXPRESS9 GEN3 EXPANSION CHASSIS + 600 W RPSU



## EXPANSION CHASSIS (VWX-2090) SPECIFICATIONS

<b>COMPLIANCE</b>	FCC
<b>BACKPLANE</b>	3rd generation PCIe switched fabric; (1) x8 slot, 8-Gbps uplink and downlink, (8) x4 slots, 4 Gbps uplink and downlink
<b>COOLING</b>	Dual cooling fans with removable air filter
<b>DIMENSIONS</b>	6.9"H x 18.9"W x 19.7"L (17.5 x 48.2 x 50 cm)
<b>POWER</b>	600 Watts redundant power supply; Thermal dissipation: 600 W
<b>WEIGHT</b>	41.8 to 55 lb (19 to 25 kg)



# SPECIFICATIONS: EXPANSION CHASSIS (VWX-2110)

EXPANSION CHASSIS (VWX-2110): EXPRESS11 GEN3 EXPANSION CHASSIS + 800 W RPSU



## EXPANSION CHASSIS (VWX-2110) SPECIFICATIONS

COMPLIANCE	FCC
BACKPLANE	3rd generation PCIe switched fabric; (11) x8 slot, 8-Gbps uplink and downlink
COOLING	Dual cooling fans with removable air filter
DIMENSIONS	6.9"H x 18.9"W x 19.7"L (17.5 x 48.2 x 50 cm)
POWER	800 Watts redundant power supply; Thermal dissipation: 800 W
WEIGHT	41.8 to 55 lb (19 to 25 kg)

# VIDEO WALL CONTROL SOFTWARE

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## VIDEO WALL CONTROL SOFTWARE FOR WINDOWS 10 (VWS-VWM10-STD, VWS-VWM10-PRO, VWS-VWM10-VMS)

The Video Wall Controller software takes video and encodes it for streaming or remote storage and to decodes compressed data for use on a video wall or monitor. These versions are available:

- VWS-VWM10-STD, Radian Standard Video Wall Software
- VWS-VWM10-PRO, Radian Pro Video Wall Software
- VWS-VWM10-VMS, Radian Standard Video Wall Software - Security Administration Client and Milestone™ Xprotect Plug-In

### RADIAN STANDARD AND PRO VIDEO WALL SOFTWARE (VWS-VWM10-STD AND VWS-VWM10-PRO) SPECIFICATIONS

<b>COMPLIANCE</b>	FCC
<b>DECODE SUPPORT</b>	H.264 Mpeg4 (Part 10 AVC), Mpeg4 Part 2 and MJPEG
<b>INTERNET PROTOCOL</b>	IPv4, IPv6
<b>DE-INTERLACING</b>	Supported
<b>STREAMING PROTOCOLS</b>	HTTP, RTSP, and MPEG2-TS support multicast and unicast
<b>OS SUPPORT</b>	Windows 7 and 10



# ORDERING INFORMATION

ITEM	CODE
Radian Flex Chassis and Modules	
Chassis	
500 W, 4-slot, 1 power supply, i5	VWP-FLEX-451
600 W, 9-slot, redundant power supplies, i7	VWP-FLEX-962
600 W, 9-slot, 1 power supply, i7	VWP-FLEX-961
600 W, 9-slot, 1 power supply, Xeon	VWP-FLEX-962X
800 W, 11-slot, redundant power supplies, i7	VWP-FLEX-1182
800 W, 11-slot, redundant power supplies, Xeon	VWP-FLEX-1182X
800 W, 11-slot, redundant power supplies, i7, dual Xeon	VWP-FLEX-1182DX
Video Capture Cards	
1 Channel HD + 1 Channel SD +AM2	VCC-SD-HD-A-2
2 Channel HD + 1 Channel SD	VCC-SD-HD-3
1 Channel HD + 1 Channel SD	VCC-SDI-SD-HD-3
4 Channel DVI/RGB/HD	VCC-HD-4
2 Channel DisplayPort 4K	VCC-DP-2
4 Channel HD with HDMI Splitter Cables	VCC-HD-4-H
4 Channel HD with DVI Splitter Cables	VCC-HD-4-D
4 Channel 3G-SDI	VCC-SDI-4
HDMI 2.0 4K 60 Hz 4:4:4	VCC-HDMI2-2
Decoder Card	VCC-STREAM
Video Graphics Cards	
4-Port DisplayPort	VGC-DP-4-R2
4-Port DisplayPort with DVI Adapters	VGC-DP-4-D-R2
4-Port DisplayPort with HDMI Adapters	VGC-DP-4-H-R2
Expansion Chassis	
9-Slot	VWX-2090
11-Slot	VWX-2110
Video Wall Control Software for Windows 10	
Standard	VWS-VWM10-STD
Pro	VWS-VWM10-PRO
Milestone Xprotect Plug-In	VWS-VWM10-VMS

NOTES \_\_\_\_\_  
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