

Spectrum™ X

VSX2 ADVANCED MEDIA SERVER SYSTEM



The VSX2 Spectrum™ X advanced media server leverages Harmonic’s custom Diamond I/O card and the latest COTS server generation from HPe. VSX2 provides high quality, reliable ingest, production and playout video workflows, now with even better performance.

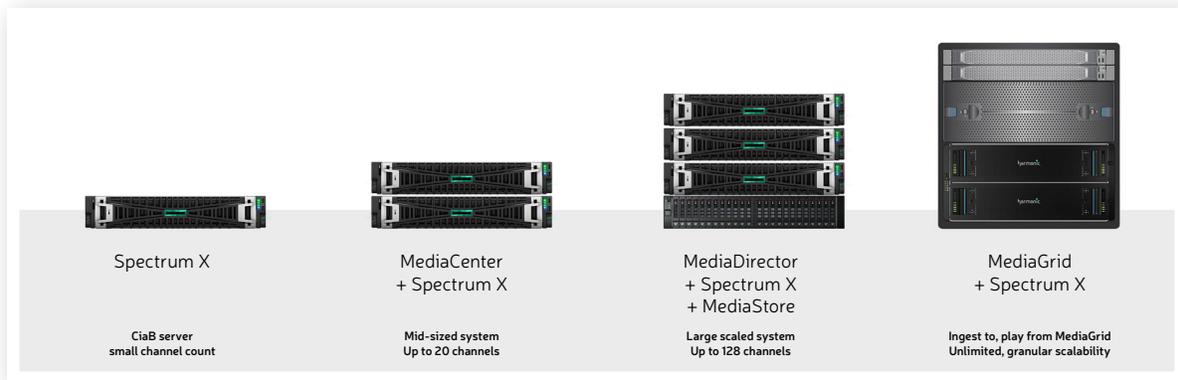
Designed for mission-critical, low-latency production and playout applications, VSX2 combines file, baseband and IP ingest with comprehensive integrated channel playout (ICP) capabilities, including HTML5 graphics, branding, DVE, and live switching of baseband and compressed IP sources. Flexible I/O supports multiple inputs and simulcast outputs for each channel, configurable for your specific workflow. By reducing the number of discrete devices required to produce and distribute branded programming, VSX2 lowers capital expenditures, simplifies workflows and reduces operational costs.

VSX2 supports a broad range of SD, HD and UHD formats. It can operate as a true channel-in-a-box (CiaB) or as part of a Spectrum shared storage infrastructure that includes everything from simple ingest and playout to feature-rich ICP capabilities. Open APIs enable control of media workflows and facilitate the integration with any third-party automation system. All functionality is available via software licenses, resulting in a highly flexible system that grows with customer needs.

Spectrum X systems are ideal for a wide range of applications, including:

- CiaB and ICP workflows
- Studio production
- Hybrid baseband/IP ingest & playout
- Integrated master control room (iMCR) workflows
- News production
- Disaster recovery

Fully compatible with Spectrum MediaDirector and MediaCenter servers, VSX2 is a highly scalable system enabling single channel to massive multi-channel deployments. By integrating SDI and IP I/O on the same chassis, VSX2 also eases the migration to IP playout workflows, allowing broadcasters to transition away from baseband at their own pace.



Spectrum media server systems offer a high-quality, comprehensive approach to production and channel playout. With its function integration, workflow flexibility and cost-efficiency, VSX2 Spectrum X powers the most demanding workflows with the utmost reliability.

HIGHLIGHTS

- Ingest and playout system for SDI & IP workflows (SMPTE-2110, SMPTE-2022-6, NDI)
- Support for many SD, HD and UHD formats and workflows
- Hardened Linux-based software for maximum IT security
- On-board HTML-5 graphics and branding, single and dual integrated DVEs for sophisticated content presentation
- CIAB/ ICP control available with Harmonic Polaris and third-party automation systems
- Spectrum Media Studio Live application enables manual control of your channels
- Spectrum Media Studio Ingest application facilitates instant and scheduled recordings

SPECIFICATIONS

FEATURE SUMMARY

Proxy generation	Real time proxy file generation during ingest
Branding & Graphics	Adobe® Creative Cloud, Google Web Designer Integrated DVE; single and dual 2D DVE mode Independent branding for each primary and simulcast channel Up to eight layers of graphics per channel Static and animated graphics, logo, full-screen slate, rolls, crawls, voice-over
Graphics Formats	PNG, JPG, TIFF, GIF, Targa, WEBM, MP4, with HTML5
Master Control Switching (MCS)	1-6 live inputs (configurable) Switch between live and recorded clips Key + fill support
Confidence Monitor	Low-latency, low-resolution version of ingested or playing video & audio, streamed over IP
Automation Support	Polaris Play, Spectrum Media Studio All Oxtel protocol automation systems (Ethernet or RS-422) Clip playback control via Spectrum API, VDCP (RS-422) and VDCP-over-IP
Audio Watermarking	Kantar® Media Watermarking
Delay Service	Realtime program delay capability
Captions & Subtitles	Localized and customized open captions Live & file-based open- and closed-caption insertion
EAS Support (U.S. only)	Text and audio sourced from customer's EAS equipment
Loop Record Service	Continuously records short clip segments from an incoming video feed

CODECS

SD	
MPEG-2 DV	3-24.9 Mbps LGOP; 25-50 Mbps I-frame DV 25, DVCPRO25, DVCPRO50
HD 1.5 G (1080i 50/60, 720p 50/60)	
MPEG-2 DV	18-85 Mbps LGOP; 50-100 Mbps I-frame DVCPRO HD
XDCAM HD	18, 25, 35, 50 Mbps
RP 2027 Class 50/100 (Generic)	Class 100, 1920x1080i (25/29.97 Hz); 1280x720p (50/59.94 Hz)
AVC-Ultra (Panasonic)	Class 50 and Class 100, 1920x1080i (25/29.97 Hz); 1280x720p (50/59.94 Hz)
XAVC-I Class 100 (Sony)	Class 100, 1920x1080i (25/29.97 Hz); 1280x720p (50/59.94 Hz)
XAVC-L	High 422, Level 4, 25, 50 Mbps
AVC-LongG	Record: 25, 50 Mbps; Playback: 12, 25, 50 Mbps
VC-3 (SMPTE 2019-1) ProRes	120, 145, 220 Mbps 122, 147, 220 Mbps; SQ and HQ modes
HD 3G (1080p 50/60)	
AVC I-Frame	XAVC-I, AVC-Intra, AVC-I RP 2027 Class 100 (generic)
XAVC-L	XAVC, High 422, Level 4.2, up to 50 Mbps
AVC-LongG	35, 40, 45, 50 Mbps
AVCU-LongG	12, 25, 50 Mbps
VC-3 (SMPTE 2019-1) ProRes	190, 220, 367, 440 Mbps, HQX mode 440 Mbps, LT mode
UHD	
XAVC	I-Frame, Class 300, 422, 10-bit, 50p/60p L-Gop 10bit 4.2.2 200mbs 50p/60p
AVCU	I-Frame, Level 5.2, 422, 10-bit, 50p/60p
VC-3 (SMPTE 2019-1) ProRes	145-180 Mbps, LB mode 821 Mbps LT mode

RASTER

SD	525i @ 29.97 fps 625i @ 25 fps
HD 1.5 G	1080i @ 25, 29.97 fps 720p @ 50, 59.94 fps
HD 3G	1080p @ 50, 59.94 fps
UHD 4 x 3G	2160p@50, 59.94 fps
UHD 12G, 2RU only	2160p@50, 59.94 fps

MEDIA STORAGE OPTIONS

Four or eight (2RU only) optional internal 3.5" 4- or 8-TB HDDs or 1.9-TB SSDs 3+1 modified RAID 4 (single parity)
Connect to Spectrum MediaCenter (MCP-2200 series) via GbE
Connect to Spectrum SAN (MediaDirector, MCP-2250 series) via GbE
Ingest to Harmonic MediaGrid as MXF OP1a wrapped media
Preview/Playout from Harmonic MediaGrid via 10GbE

AUDIO PROCESSING

Channels	SMPTE 299M/272M, up to 16 embedded per video channel
Formats	Uncompressed: 16, 24, PCM @ 48 kHz Compressed: audio pass-through, Dolby® encode and decode
Features	Audio up-mix and down-mix, Audio loudness control Audio track swapping; track tagging, language rules Audio mix effects; VO insertion

DATA

Closed, Open, Live Captions	EIA-608, EIA-708
Ancillary Data	VBI, VANC
Reference	Analog black with color burst, PTP for 2110 IP I/O

CONNECTIVITY

SDI Input	SDI inputs for Live or Recording for multiple configurable channels. Integrated frame-accurate MCS switching.
SDI Output	SDI output options for primary video plus up to two secondary video outputs per channel. Independently configurable up-, down-, cross-conversion.
IP I/O	Optional dual 10GE ports for NDI® I/O Optional dual 10GE ports for Ingest/Play from MediaGrid Optional dual 25GE ports for UHD/HD 2110 IP I/O (2RU only)
Connectors	RS-422, AES, LTC and GPIO (multi-pin connector; available adapter cable) Four 10GE ports (1RU) or four 1GE ports (2RU) for connection to the Server, SystemManager, file transfers or API control
Server Interface	Private, point-to-point, non-switchable gigabit Ethernet to MediaDirector or MediaCenter Server

POWER

Power Supplies	Dual, redundant, hot-swappable
1RU Power Consumption	550W at 20C (typical), 800W at 35C (max)
2RU Power Consumption	725W at 20C (typical), 950W at 35C (max)

PHYSICAL

1RU Dimensions (W x H x D)	17.11 x 1.7 x 30.43 in (1 RU) 43.46 x 4.32 x 77.3 cm
2RU Dimensions (W x H x D)	17.53 x 3.44 x 28.75 in (2RU) 44.55 x 8.74 x 73.03 cm