

Spectrum™ X Plus

ADVANCED MEDIA SERVER



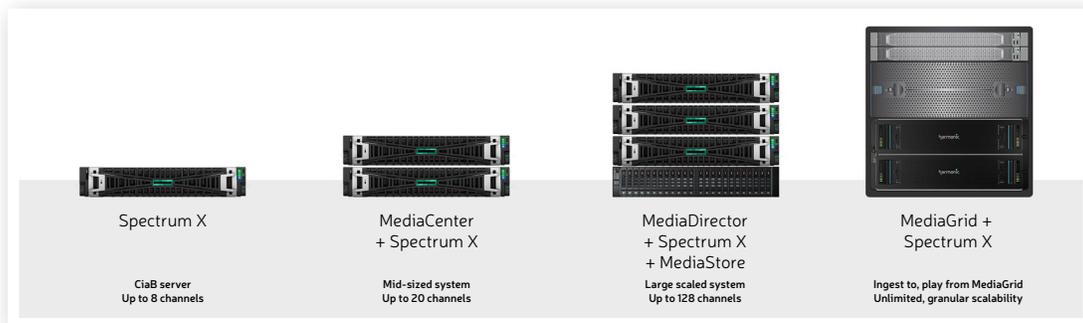
For decades Broadcasters have counted on Spectrum for high quality, reliable ingest, production and playout video workflows. The next generation Spectrum X Plus carries on the tradition with higher channel density and new advanced features.

A Tradition of Excellence

The Spectrum X Plus advanced media server delivers the broadcast quality and mission-critical reliability of the world's leading video server in a convenient and cost-effective package. Spectrum X Plus packs multiple video channels into a single chassis, supporting a wide range of video codecs, resolutions and I/O options with integrated features such as HTML5 graphics, audio processing and full HDR support. Spectrum X Plus leverages the newest generation of HPe servers and the industry's most trusted 3rd-party I/O cards running on Spectrum's time-proven, ultra-secure Linux operating system. An Nvidia GPU supercharges the processing power and improves efficiency by offloading demanding calculations from the server's CPUs.

Scalable Architecture

Spectrum X Plus can operate as a true channel-in-a-box (CiaB) when configured with onboard storage. Spectrum X Plus is also compatible with larger Spectrum MediaDirector, MediaCenter and MediaGrid shared storage systems. Servers can be customized with optional I/O cards and onboard HDD or SSD storage. All functionality is available via software license keying, resulting in a highly flexible system that allows for the easy addition of new features when needed.



Workflow Compatibility

The highly scalable Spectrum X Plus system is ideal for a wide range of applications, including:

- UHD and HDR workflows
- Studio and News production
- CiaB and integrated channel playout workflows
- SDI or IP I/O environments
- Ingest workflows
- Disaster recovery

Control of Spectrum X Plus can be performed manually with the Spectrum Media Studio suite of control tools, or with Polaris Play onboard automation, or with numerous other third-party automation and control applications.

HIGHLIGHTS

- Easy-to-deploy ingest and playout system for baseband and IP workflows
- Up to two UHD or eight HD channels per server drives lower cost and efficiency
- HDR conversions using 3D LUTs
- On-board integrated features such as HTML5 graphics, audio processing, and proxy generation
- Leverages the Nvidia GPU for high-performance, high-bandwidth operations
- Open API architecture makes system control available to third-party manual control and automation systems
- Hardened Linux-based software for maximum IT security
- Spectrum Media Studio Live delivers manual control of channels while Spectrum Media Studio Ingest 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

*Check Availability

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	Up to eight SD/HD channels Up to two UHD channels, 4x3G or 12G SDI
SDI Output	Up to four SD/HD channels Up to two UHD channels, 4x3G or 12G SDI Up to two simulcast outputs per channel Independently configurable
IP I/O	Optional 10GE ports for NDI® I/O* Optional 10GE ports for Ingest/Play from MediaGrid Optional 25GE ports for UHD/HD 2110 IP I/O
Connectors	Optional VITC card Optional RS-422 card Four 10GE ports for connection to the Server, SystemManager, file transfer or API control
Server Interface	1GE 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