

Lightspeed Server

Product Sheet



Transcoding @ Lightspeed

Telestream® Lightspeed™ Server can be added to any Vantage Transcode product or Post Producer to accelerate video processing and H.264 transcoding. Lightspeed Server accelerates video processing with GPUs and multicore CPUs to provide the best image quality in the least amount of time. Housed in an efficient 1 RU chassis, Lightspeed K40SSD and K80SSD Servers reduce rack space, power and cooling requirements while meeting increased output capacity needs.



Accelerated Video Processing

Lightspeed Server accelerates compute-intensive image processing within Vantage workflows, including scaling, deinterlacing, frame rate conversion, motion vector calculation, and other tasks that require computation and analysis to modify or create new video frames. Faster video preprocessing acceleration benefits the output quality of all video output formats, for both transcoding and automated content assembly.

Deinterlacing

Deinterlacing is required when converting interlaced broadcast content for web and mobile distribution and is also the first step in high-quality frame rate conversion. High-quality deinterlacing produces far sharper and clearer image quality than is possible with simple field blending techniques.

Video Image Scaling

Advanced image scaling is crucial to maintaining high-quality results. Both up-scaling and down-scaling require significant processing to preserve image sharpness. Lightspeed image scaling eliminates banding and ringing artifacts that are associated with video upconversion. This is particularly useful when converting broadcast content into web and mobile formats.

Frame Rate Conversion

Frame rate conversion is increasingly important for internationalization and inverse telecine workflows. Lightspeed accelerates both standards conversion and the conversion of broadcast content to 23.976 film rates, with reliable, high-quality results.



16-bit YUV Video Processing

Vantage employs Lightspeed technology to efficiently process 16-bit, 4:4:4:4, YUV video, achieving sparkling video quality and color fidelity for any Vantage output format. Lightspeed accelerates sophisticated image processing algorithms that have previously required purpose-built hardware to produce pristine video.

Accelerated x264 Encoding

Lightspeed Server also speeds x264 video encoding. x264 is renowned for producing the best video image quality across the spectrum of bitrates needed for screens of any size. Lightspeed accelerates x264 to produce the best possible H.264 images, at any bitrate, in the shortest possible time.

Lightspeed Server Technical Specifications

Telestream Lightspeed Servers ship with the following hardware configuration:

- 1RU server:
 - Lightspeed K40SSD: 1600W Dual redundant power supplies (80+ Platinum Level 94%+)
 - Lightspeed K80SSD: 1600W Dual redundant power supplies (80+ Platinum Level 94%+)
- CPU:
 - Lightspeed K40SSD: Dual 10-Core Intel Haswell CPU 2.6Ghz (E5-2660 v3) with HTT (40 virtual cores)
 - Lightspeed K80SSD: Dual 12-Core Intel Haswell CPU 2.6Ghz (E5-2690 v3) with HTT (48 virtual cores)
- 32GB RAM
- GPU:
 - Lightspeed K40SSD: NVidia Tesla K40 Single Kepler-based GPU card with 12GB RAM
 - Lightspeed K80SSD: NVidia Tesla K80 Dual Core Kepler-based GPU card with 12GB RAM for each GPU core
- OS:
 - Windows Server 2012 R2 Standard Edition 64-bit (installed on SSD partition)
- Media Drive:
 - Lightspeed K40SSD/K80SSD 2.0TB RAID-0 (Two (2) enterprise class 1TB SATA 6Gb/s SSD drives)
- Dual RJ45 10GBase-T ports (Intel X540 Dual Port 10GBase-T with support for 10BASE-T, 100BASE-TX, and 1000BASE-T)
- Available I/O:
 - Lightspeed K40SSD: 2 (x16) PCI-E 3.0, 1 (x8) PCI-E 3.0 (in x16), 2 USB 3.0
 - Lightspeed K80SSD: 2 (x16) PCI-E 3.0, 1 (x8) PCI-E 3.0 (in x16), 2 USB 3.0
- Physical Dimensions –Height 1.7” (43mm) x Width 17.2” (437mm) x Depth 30.6” (716mm)
- Gross Weight 52lbs (23.6 kg)

Telestream Lightspeed Servers are qualified with the following optional hardware:

Fibre Channel Cards:

- ATTO Celerity FC-162E Dual channel 16Gb/s HBA
- ATTO Celerity FC-161E Single channel 16Gb/s HBA
- ATTO Celerity FC-81EN Single-Channel 8Gb/s HBA
- ATTO Celerity FC-82EN Dual-Channel 8Gb/s HBA
- QLogic QLE2560 Single-Channel 8Gb/s HBA
- QLogic QLE2562 Dual-Channel 8Gb/s HBA

Ethernet Network Interface Cards:

- Intel PRO/1000 PT Quad Port Server adapter
- ATTO FastFrame NS-11 Single-Channel SFP+ 10GbE
- ATTO FastFrame NS-12 Dual-Channel SFP+ 10GbE
- MYRICOM 10G-PCIE-8B-S+E 10GbE
- MYRICOM 10G-PCIE2-8B2 Dual Port 10GbE

Power and Temperature requirements:

- Operating Temperature: 10°C to 35°C (50°F to 95°F); Non-operating Temperature: -40°C to 70°C (-40°F to 158°F)
- Maximum power:
 - Lightspeed K40SSD/K80SSD: 6.0 amps (660 watts) with GPUs and CPUs operating at 100%
- Cooling:
 - Lightspeed K40SSD/K80SSD: Servers generate 2252 BTU/h with GPUs and CPUs operating at 100%

Certifications:

- FCC, CE, UL or CSA, CB, VCCI, Ctick
- Certifications are valid for the following regions: North America, EU, Japan, AUS/NZ

