

Record and playback up to 10 high definition H.264 video streams simultaneously and synchronously!!!

HaiVision's **SHARE-HD** network video recorder is uniquely designed to capture, manage, and playout multiple industry standard H.264 HD or SD video streams simultaneously. **SHARE-HD** takes full advantage of the benefits of performance network video encoders, decoders, set top boxes, and soft player environments.

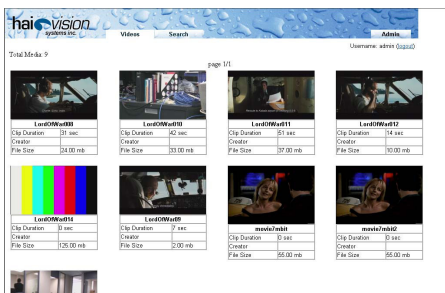
Network video based systems deliver tremendous benefits to institutions including 1) enhanced communications between remote rooms and facilities, 2) delivery of media to the desktop, and 3) significant cost reductions over traditional audio/video distribution infrastructure. Perhaps the most important benefit of establishing a network video infrastructure is that once live and on the network, video streams can be easily and securely recorded. **SHARE-HD** is a performance tuned network video recorder. **SHARE-HD** captures video streams that have been encoded and sent to it over the network. **SHARE-HD** can capture and playout multiple high definition video streams with audio, simultaneously, and in perfect synchronization. The most significant benefit of network video – the ability to record and playback the purest quality video from or to any location, without the need to provision local recorders in each room, without DVDs, tapes, or hard to use specialized recorders. The further benefits – industry standard high quality video files accessible for reviewing, classifying, event tagging, editing, and publishing.



SHARE-HD Key Features

- High Definition / Standard Definition / Computer
- 1080p, 1080i, 720p, 480p, 480i, WXGA, XGA
- Up to 20 Simultaneous Record Streams
- Synchronized Multi-Stream Capture and Playback
- Up to 1.8 TB of RAID storage for over 2000 media hours

An essential element of **SHARE-HD** is the concept of a session. Multiple media streams initiated and recorded concurrently pertaining to a single event or procedure can be considered a **SHARE-HD** session (currently, up to 8 streams per session are provided for). Each contributing stream of a session is recorded simultaneously with a single trigger to initiate and terminate the recording. Further, as a true multi-stream device, **SHARE-HD** can present an entire session to multiple soft players or playout devices (decoders or set top boxes) for true contextual review. This is critical for the review of events that may have many contributing video sources (such as medical procedures or complex training simulations) or for complex multi-point communications such as telepresence.



SHARE-HD is a network appliance, and once configured for its network video environment, controlled via basic commands issued by standard room controllers such as Crestron or AMX. In addition, **SHARE-HD** incorporates a web based user interface with strict access control. All user accesses, actions, and modifications are registered within daily account log files enabling audit and compliance. User accounts belong to one or many groups; each group defining a number of privileges with respect to viewing, editing, and deleting their own data and that of their group. Account information can easily be imported from and exported to external databases. Users with Administrator privileges have full access to critical system data, metrics, and the overall health and maintenance of the **SHARE-HD** system.

TELEPRESENCE SUITES

...record complete sessions at full resolution including all participants and computer screen data

MEDICAL SYSTEMS

...capture, manage, and review procedural video from multiple sources simultaneously, including scopes, room cameras, and visualization sources.

EDUCATION

...record and distribute combined video and data presentations with real time accuracy and using industry standards for distribution to virtually any device or media infrastructure.

SHARE-HD provides the full capability to organize and classify media through session based metadata. Such metadata can be applied in a structured format or as free form notations. Media assets are searchable against both fixed metadata tags and freeform commentary. Future releases of *SHARE-HD* will provide time based event data inserted both live through encoder or IP interfaces and during the review tagging process. Further processes for event seeking and automated editing and publishing of points of interest will be made available.



The most specified network video standard today is certainly H.264. The video compression standard (also known as MPEG-4 part 10, or MPEG-4 AVC) is the basis of all HaiVision products due to its efficiency and flexibility. HaiVision’s acclaimed *MAKO-HD high definition* codec supports up to 1080p HD at bit rates from under 2 Mbps to over 10 Mbps. HaiVision **standard definition** encoders produce excellent quality video at bit rates from under 1 Mbps to over 5 Mbps. Certainly, understanding your network, content, and performance requirements is key to estimating the required bit rate for any challenge. Within the medical community for example, many have settled on about 3.5 Mbps for excellent quality SD and 6 Mbps for excellent quality 1080i HD. Given these metrics, the below table may be useful in architecting a network video storage plan.

SHARE-HD Storage Requirements

<i>SHARE-HD</i> Capacity vs. Bitrate			
Video Bit Rate (Mbps)	Audio Bit Rate (kbps)	Base 900GB System Capacity (Hours)	Optional 1.8TB System Capacity (Hours)
1	64	1196.6	2991.8
2	128	598.3	1495.9
3	128	406.9	1017.2
4	256	299.2	747.9
5	256	242.2	605.5
6	256	203.4	508.6
7	256	175.4	438.5
8	256	154.1	385.3
9	256	137.5	343.7
10	256	124.0	310.1

The absolute storage in hours of course is dependent on the fully adjustable encoding bitrates applied at the encoder level (shown above). *SHARE-HD's* online storage is extensible by installing performance qualified “off the shelf” internal disk and network attached storage (NAS) technology. *SHARE-HD* implements RAID5 data protection for all media and related information. With RAID5 a portion of the data drives is allocated for redundancy allowing for the recovery of video media should a drive fail. Further, *SHARE-HD* supports industry standard archival methods.

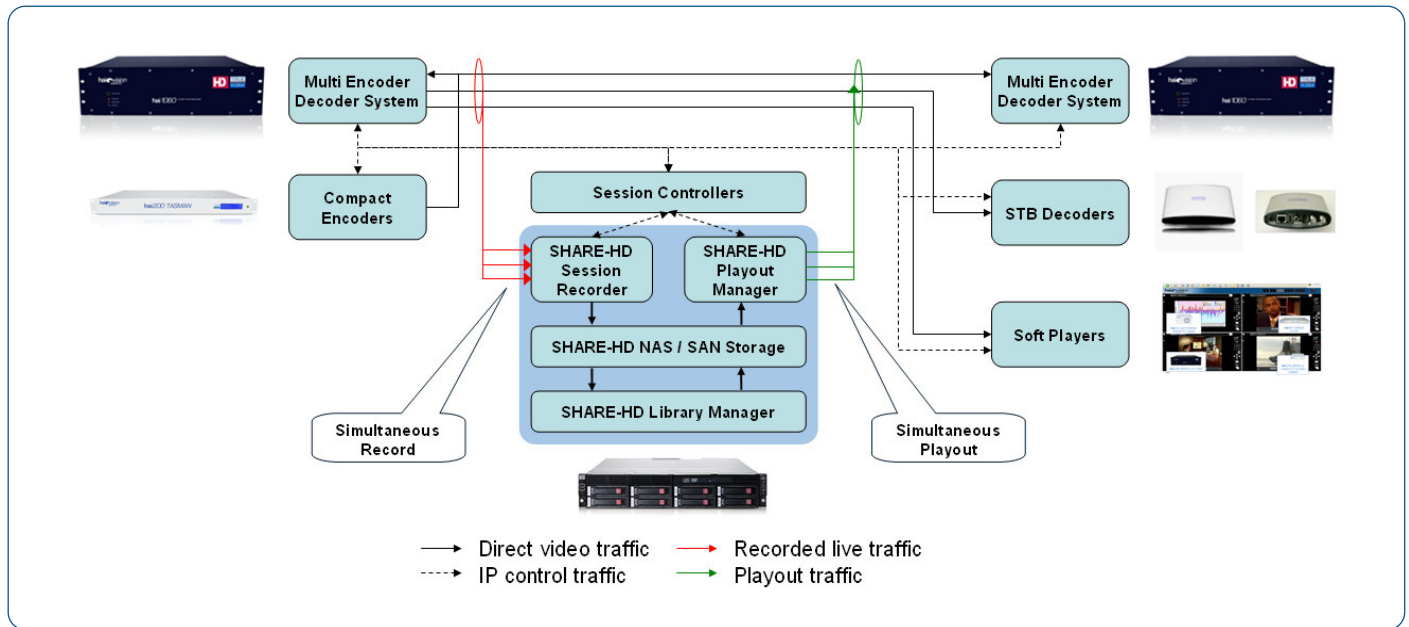
SHARE-HD is performance tuned to support the simultaneous capture and playout of multiple streams. As *SHARE-HD* supports multiple resolutions, it is limited to discrete numbers of SD or HD streams. Currently the system supports a minimum of 20 inputs and 20 outputs of SD video or 10 inputs and 10 outputs of HD streams, or any mix of SD, HD, and XGA respecting the above capacity balance.

SHARE-HD maintains synchronization through accurate stream time stamping. Frame accurate session stream synchronization is available when coupling *SHARE-HD* with HaiVision’s *hai 1000* multi-stream codec system. Further releases of *SHARE-HD* will take

advantage of encoder based timecode to allow frame accurate synchronization of encoders not contained within a single system, or even those remote from each other.

SHARE-HD is integrated by HaiVision on a Hewlett-Packard server platform, whose CPUs, network interface, disks, disk controller, and memory configuration have been selected to deliver a guaranteed service level and product quality. The base configuration is built on the latest quad-core CPU technology and includes redundant power supplies, redundant system disks, and RAID 5 data protection for its 0.9 TB of media storage (using 3 x 300GB drives). Optionally, **SHARE-HD** is available with a second internal 0.9 TB of media storage. Unlike many digital video recording devices, **SHARE-HD** is a very reliable network appliance and relies on robust network video encoding device - **SHARE-HD** does not contain complex video capture cards.

System Overview Diagram - **SHARE-HD** network video recorder system



Ordering Information (please obtain complete system quotations from HaiVision or an authorized HaiVision integration partner)

S-SHARE-100	Network video recording appliance - Record, organize, tag, playout network video streams, SD/HD/WXGA, H.264. Rack mounted server, Quad-Core CPU, 900 GB (3x300GB) RAID5 media storage (expandable), redundant system disk, redundant power supply. Simultaneous streams: 20SD / 10HD (100Mbps input and output).
D-SHARE-1TB	SHARE-HD 900GB additional internal storage – 3x300GB RAID5 media storage

Specifications - **SHARE-HD** network video recorder system

SYSTEM PERFORMANCE & CAPACITY	SERVER HARDWARE	STORAGE SYSTEM
<p>Maximum Performance</p> <p>Up to 10 HD record and 10 HD playback streams simultaneously</p> <p>Up to 20 SD record and 20 SD playback streams simultaneously</p> <p>Any mix of HD, SD, and Computer (XGA, WXGA) respecting a maximum combined bandwidth of 100 Mbps input and 100 Mbps output</p> <p>Capacity</p> <p>See storage table above</p> <p>Base 900 GB system has 559 GB useable</p> <p>Expanded 1.8 TB system has 1.4 TB useable</p>	<p>Integrated on a Hewlett Packard 2U Rack Mounted Server System</p> <p>CPU</p> <p>Quad Core Intel Xeon</p> <p>Memory</p> <p>4 GB PC2-5300</p> <p>Redundant System Disks</p> <p>2 x 72 GB RAID1</p> <p>Network</p> <p>Dual Port Gigabit Ethernet</p> <p>Redundant Power Supply</p> <p>2 x 750W Hot Plug AC 110/220V</p>	<p>RAID Internal Media Storage</p> <p>3 x 300 GB RAID5</p> <p>Expandable to 6 x 300GB RAID5</p> <p>External Media Storage</p> <p>Expandable with NAS</p> <p>Network Attached Storage</p> <p>Removable Media Storage</p> <p>DVD- RW</p>

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