

## APPLICATION NOTE

No other encoder allows a smoother transition path from SD to HD and from Baseband to File-Based operations in a single expandable solution.

# MEMPHIS™

## for Broadcast Playout Applications

Today's Broadcasters are faced with the dilemma of setting up HD playout operations while planning and protecting their investment for tomorrow. In this changing world where traditional on-air playout is becoming only one of the numerous ways to deliver programs, thanks to emerging distribution methods such as on-demand and mobile delivery systems, Snell & Wilcox offers a unique solution that can grow with you.

### S&W Quality You Can Trust

With its high quality video input, pre-processing and encoding, Memphis gives you peace of mind and guarantees that you always get the best quality out of your programs. Designed to optimize signals prior to compression, the built-in pre-processor provides the dual benefits of improved picture quality for the viewer and lower bandwidth usage for the broadcaster.

In HD transmission, noise, grain and other signal artifacts can cause visible blockiness and "mosquito noise" when pictures are compressed. This can result in disappointment and complaints by viewers, especially in relation to premium channel services. With increasing viewers awareness and recognition of Broadcasters brands, Memphis ensures pristine image quality that enhances and protects visual signature of the Broadcaster.

The tight integration of the pre-processor in Memphis offers advanced Metadata handling and insertion, including flagging of cuts and 3:2 cadences in order to further maximize encoder efficiency which simply cannot be achieved when external pre-processors and encoders are combined.

Designed for seamless and transparent integration into your system, Memphis provides reliable, 24/7 performance wherever picture quality is essential.

### Optimized Storage Efficiency

Designed for demanding broadcasters, Memphis brings MPEG-2 compression to a whole new level of efficiency. Because MPEG-2 compression is deeply based on the reduction of temporally redundant information, the performance of an encoder is directly related to the quality of its motion estimation vectors. Based on the same Ph.C technology as our flagship Alchemist Standards Converter, Memphis brings compression efficiency to unprecedented levels.

This allows Memphis to achieve superior results at a given bitrate or yield to smaller files when compared to the competition for an equivalent quality.

This translates into reduced storage requirements and lower bandwidth usage. Moreover, the impact of storage reduction offers additional benefits in multi-channel environments, leveraging existing transport infrastructures and permitting existing server reallocation which can translate in substantial cost savings.

### Versatility

While many Broadcasters are required to invest in HD infrastructures today, an important part of the workload may still remain SD. With the ability to handle both SD and HD 1080/720 formats, uncompressed PCM, MP1L2, Dolby E and AC-3 audio, and encode at any MPEG-2 profile including 4:2:0/4:2:2, CBR/VBR, I-Frame/Long GOP up to 175 Mbps, Memphis is a workhorse that can handle a wide array of tasks in any facility.

### An Encoder with an Open Future

In order to insure continuity in staff and workflow, many Broadcasters prefer to deploy their HD infrastructure in multiple phases. Memphis can easily be integrated as a conventional encoder into a traditional ingest for playout environment where encoded content is stored directly on the playout server or on an intermediate server before it is forwarded to playout.

In this kind of environment, the encoding parameters of Memphis are controlled either using our standalone RollCall control panel or through an automation system. Memphis has been thoroughly tested with many automation and server systems on the market.

But as valuable programming content increasingly shifts from videotape storage and transport toward a file-based store and forward model, broadcasters are looking for more efficient ways to acquire and catalogue programs for longer term file archives to be made available for a multitude of delivery options. This new approach calls for the encoding process to evolve from multiple repetitive inline encoding passes for temporary storage on proprietary video servers toward a single, high-quality ingest where video and audio content is intended for long-term usage and repurposing.

### Snell & Wilcox Ph.C Phase Correlation



Camera  
pan direction

### Better Pixs, Fewer Bits

#### Conventional block matching techniques



Camera  
pan direction

**Benefits at a glance**

- Optimized quality and storage efficiency
- Proven interoperability with leading servers and automation systems
- Accepts a variety of video and audio inputs formats
- Dependable Snell & Wilcox quality
- Future Proof Investment enabling the deployment of file-based infrastructure

This allows for the usage of next-generation infrastructure which leverages less expensive general-purpose storage devices over current proprietary video servers.

Instead of being repetitively encoded, an original content master is ingested once in high quality before being sent to on-air playout as well as being repurposed and distributed to other platforms, maximizing content profitability through multiple delivery platforms.

The ability to upgrade a Memphis stand-alone encoder to a fully configured Asteroid workstation delays equipment obsolescence and preserves your investment by allowing relocation of previously dedicated stream encoders to file-based workstations.

An upgrade to Asteroid will add the following functionality:

- Open Standards: Record industry standard MXF files onto open storage servers
- Interoperability with Storage and Asset Management systems through exchange of MXF and XML files
- VDCP support and VTR Control and emulation
- Integrated MPEG and Audio Quality Control
- Template-based workflow to address any specific operation need
- Intuitive User Interface: Simple and robust operation
- Integrated SMPTE Descriptive Metadata (DMS-1) cataloguing tools

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