

## Alchemist Ph.C - HD Dolby®E Option

### Low Cost of Ownership

- Easy set up, intuitive GUI minimises time to perform jobs
- Dolby®E processing integrated with converter; no need to setup and configure external boxes
- Lip-sync maintained, guard band protected: no more rejects

### Applications

- Live Events, Concerts and Sports
- Post Production, creation of deliverables for domestic and international distribution
- Dubbing & Duplication

Seamlessly handle Dolby®E with ease whilst performing any type of up, down, cross and standards conversion with the Alchemist Ph.C – HD. The Dolby®E option provides an integrated transcoding and decoding solution for up to two streams of Dolby®E audio.



Multi-channel audio has been with us for many years and with the advent of HD direct to home (DTH) services it is increasingly used for major live sporting events and concerts, as well as drama, documentary and features. Dolby®E provides content owners and distributors with a solution to manage these multiple channels. However Dolby®E must be correctly referenced and aligned to the video, this poses a problem when standards converting, as the Dolby®E must be transcoded to the new video reference and correctly aligned with the new frame rate. The Dolby®E option for the Alchemist Ph.C - HD provides a complete integrated solution to solve this problem for broadcasters and post production.

### Key Features:

- Eliminates the need for external black boxes and infrastructure
- Dolby®E processing available in all conversion modes
  - Frame rate standards conversion as well as up, down and cross conversion modes
  - Transcode
  - Decode
- Dolby®E Guard band alignment
- Fully integrated latency compensation
  - Automatic audio and video alignment
  - Lip-sync maintained
- Range of features to accommodate all potential user applications
- Unique Map mode to route decoded Dolby®E to AES and embedded outputs
- Powerful, easy to use control interface
- Dolby®D-decode



The Dolby®E option for Alchemist Ph.C – HD is capable of providing transcoding and decoding for up to two Dolby®E audio streams within the 3RU form factor of the Alchemist Ph.C – HD without impacting on the processing of other PCM audio channels. Set up and control is integrated with the existing user interface through simple, easy to use control screens or RollCall remote control.

In complicated systems it can be difficult to maintain lip-sync, Alchemist Ph.C – HD automatically compensates for the decoder and encoder delay as well as video processing delay. In addition to this there is capability to adjust the global audio delay, and the individual delays of the separate audio channels being processed.

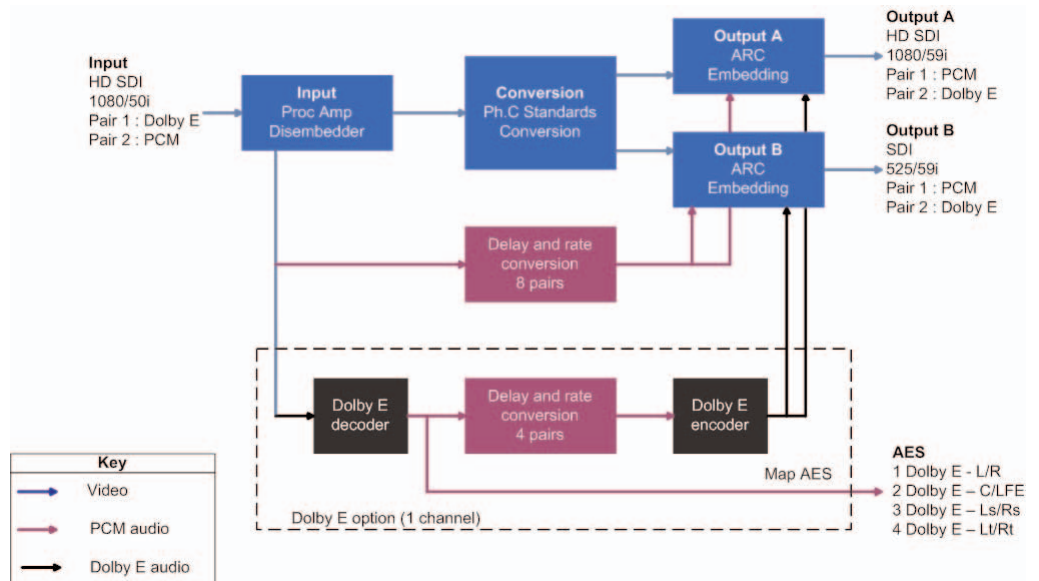
Many broadcasters require that the compressed Dolby®E audio is embedded a frame in advance to allow for the frame of delay in downstream decoders, this can be catered for at both input and output stage simplifying set up and operation in live and dubbing environments.

The Dolby®E option can automatically handle audio program switches from Dolby®E to PCM.

The Dolby®E audio output will be positioned correctly maintaining the required guard band specification, however if there are errors in the Dolby®E alignment on the input compromising the guard band spacing, the Alchemist Ph.C HD Dolby option can compensate for this with its Automatic Realignment tool. It can also process audio material that is originated from an off speed VTR or with a mismatched frame rate. Combined with this, the Alchemist Ph.C HD handles Dolby®E in SD, 720P and 1080i, making this a truly versatile option in live, dubbing and post production environments.

In the complicated world of multi-channel audio unique Map modes are provided which automatically configure the AES and embedded outputs. The Map AES monitor mode routes the Dolby®E decoder output directly to the AES outputs, leaving the embedded outputs configured for the program output. The Map decode mode maps the co-timed Dolby®E decoder outputs to both the embedded and AES outputs. The diagram below illustrates an example conversion.

**Example Conversion with Dolby®E**



### Option

Dolby®E (1 channel) for Alchemist Ph.C – HD, adds Dolby®E Transcoding and decoding (5045002)

Dolby®E (2 channels) for Alchemist Ph.C – HD, adds Dolby®E Transcoding and decoding (5045012)

### Processing

- Dolby®E - 1 Channel**
- 1 Dolby®E transcoder path
  - 1 x Dolby®D/E decoder
  - 1 x Dolby®E encoder
  - Includes delays and rate converter
- Dolby®E - 2 Channels**
- 2 Dolby®E transcoder paths
  - 2 x Dolby®D/E decoder
  - 2x Dolby®E encoder
  - Includes delays and rate converter

### Controls (per Dolby®E Channel)

- Source** Any Embedded or AES Input  
 Group 1 pair 1, Group 1 pair 2  
 Group 2 pair 1, Group 2 pair 2  
 Group 3 pair 1, Group 3 pair 2  
 Group 4 pair 1, Group 4 pair 2  
 AES1 , AES2, AES3, AES4  
 AES5, AES6, AES7, AES8
- Decode Input Alignment** Dolby®E is co-timed, advanced or delayed by one frame
- Auto Re-align** Automatic correction of guard band errors
- Map AES monitor** Enables automatic assignment of decoded Dolby®E audio to AES outputs (Embedded outputs unchanged)
- Map decode** Enables automatic assignment of decoded Dolby®E audio to both embedded and AES outputs
- Status** Source type  
 Bit depth  
 Program configuration  
 Decoder source
- Encode Output Alignment** Dolby®E is co-timed, advanced or delayed by one frame

### Controls (Output)

- Audio Channel Selection** Selectable for each output pair (1 to 8)
- AES [1:8]
  - EMB [1:8]
  - DEC1 [1:4]
  - DEC2 [1:4]
  - ENC1
  - ENC2
- Input Type**
- PCM – treat as PCM audio, rate-convert, delay and co-time
  - Data – treat as data, and delay and co-time
  - Dolby®E – automatic detection, pass through Dolby®E transcoder chain, delay and co-time.
- Up to two inputs may be selected depending on options loaded.

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