M A
L I G H T I N G

Technical bulletin

Paderborn, 07.12.2016
Contact: tech.support@malighting.com

MA VPU Hap Specifications

With the SW version 3.2.2.3 the MA VPU supports two different codecs. In addition to the existing MPEG2 from Main Concept the MA VPU also supports the Hap codec. Specifications for the usage of Hap content and Hap converter inside the MA VPU are stated in this document.

Note:
File names must not exceed 63 characters.
Hap1: Good quality, higher compression, smaller files, higher CPU load (but less compared to MPEG-2), less hard disk load
HapQ: Best quality, lower compression, larger files, less CPU load, higher hard disk load
HapAlpha: Hap1 with support of Alpha channel

Hap Content

- ### Hap for Direct Show Codec
  Available for Windows only

  Creates a Hap video file inside an avi-container.
  We strongly recommend to use the Hap for Direct Show Codec Version 1.0.10.
  Video files created with other versions of the Hap for Direct Show Codec may not be played back.

  Supported formats: Hap1, HapQ, HapAlpha
  Frame rate: 24 fps, 25fps, 29.97 fps, 30fps, 50 fps, 60 fps (2)
  Bit rate: Variable Bit Rate (VBR) (3)
  Maximum resolution: depends on the MA VPU Hardware – the maximum resolution is 7680 x 4320 when using a MA VPU MK2 (5)
  File extension video: .avi
  Pixel aspect ratio: 1:1

- ### Hap for Quicktime Codec
  Available for OSX and Windows

  Creates a Hap video file inside a mov-container (1)
  We strongly recommend to use the Hap for Quicktime Codec Version 8.
  Video files created with other versions of the Hap for Quicktime Codec may not be played back.

  Supported formats: Hap1, HapQ, HapAlpha
  Frame rate: 24 fps, 25fps, 29.97 fps, 30fps, 50 fps, 60 fps (2)
  Bit rate: Variable Bit Rate (VBR) (3)
  Maximum resolution: 3840 x 2160 (4)(5)
  File extension video: .mov
  Pixel aspect ratio: 1:1

M A
L I G H T I N G

(1) Hap video files inside a mov-container can only be played back if the installation of additional third-party codecs was expressly accepted at the EULA (End User License Agreement)-prompt of the MA VPU (see chapter "Hap Converter").
(2) Please note that frame rates above 30 fps are extremely resource-consuming and will decrease the performance. Use these high frame rates only for specific reasons.
(3) The encoders do not support a bit rate being set to Mbit/s if set by the user. The bit rate is set automatically and depends on the content of the video file.
(4) Hap for Quicktime encoder does not support higher resolutions. If you need to encode a video clip with a higher resolution, we recommend to use the Hap for Direct Show Codec.
(5) Resolution of width as well as height of a Hap video file is to be divisible by 4.

Hap Converter

The MA VPU Hap converter is a part of the MA VPU application and offers the possibility to convert several video file formats to the Hap codec. Which video file formats can be converted to Hap, depends on whether the user has accepted or has not accepted the third-party codec EULA (End User License Agreement) which is displayed during the initial startup of the MA VPU after an installation or an update of the MA VPU software.

a) If the third-party codec EULA was not accepted, the following can be used:

Supported video codecs:	- MPEG-2
	- Hap (Hap1, HapQ, HapAlpha)
Supported audio codecs	- MPEG-1 Layer 2
	- MPEG-1 Layer 3 (mp3)
	- PCM / wav
Supported media containers:	- mpg, mpeg, m2v, mpv
	- avi

b) If the third-party codec EULA was accepted, the following media codecs can additionally be used (6)

Additional supported video codecs:	- H264 / AVC
	- H265 / HEVC
	- MPEG-4
	- Apple ProRes (7)
	- Quicktime Animation (8)
	- Theora
	- VP8
	- VP9
Additional supported audio codecs (9):	- AAC
	- AC3
	- Flac
	- Opus
	- Vorbis
Additional supported media containers:	- flv
	- m4v
	- mkv
	- mov
	- mp4
	- ogg
	- webm

MA Lighting International – An der Talle 24-28 – D-33102 Paderborn – Germany
Tel. +49 52 51/68 88 65-10 | Fax +49 52 51/68 88 65-88 | tech.support@malighting.com | www.malighting.com

2 of 3

(6) These codecs and containers can only be used as a source of the MA VPU Hap converter. Without conversion to Hap the playback of these media formats on a layer is not supported. Converting media files to Hap usually takes some time. Schedule enough time for it.

(7) Apple ProRes 4444 is not supported. Alpha transparency is not supported.

(8) Alpha transparency is supported.

(9) These audio codecs are only supported as an audio track of a video clip.