Creating Media for Modulo Player & Kinetic

modulo π
www.modulo-pi.com

Recommendations for media creation in Modulo Player 4.1.x and Kinetic 2.x.x

video files

You can read compressed files with the Mpeg2, or the H264, or the HAP, or the Apple ProRes codec. We rather recommend the HAP codec, lighter to decode and directly managing the alpha channel.

Apple Prores is a good option for a direct workflow, very good quality and less intensive than H264.

H264 requires more CPU resources from the server but it is preferable if you want to have small video files with multiplexed audio tracks.

The video files must be in **progressive**. It is **impossible to deinterlace** directly the files on Modulo Player.

If the servers have a base of **60** (EDID in 60) you have to play files in **30P or in 60P**.
If the servers have a base of **50** (EDID in 50) you have to play files in **25P or in 50P**.

mpeg2

Mpeg2 (extension mpv, mpg, m2v,....):

Files must have a **width divisible by 16** and a **height divisible by 8**.
Files must be compressed in **constant bitrate**, and preferably **between 10 and 40 MBit/s**.

H264

H264 (extension mp4 or mov):

Files must have a **width and a height divisible by 2** (pair).
Files must be compressed in **constant bitrate**, and preferably **between 5 and 40 MBit/s**.

The maximum resolution is 4096 x 2304 pixels. If your media is larger, you need to split your media.
Select a **High Profile** and **Level 5.1** (or **5.2**). Select **CBR** and a **bitrate** value.

bitrate parameters

The ideal bitrate depends on file resolution and scene complexity: the higher the resolution, the more necessary it is to increase bitrate.
Take into consideration the number of simultaneous files to play, including the crossfade*: If you play few and large in resolution files simultaneously, increase the bitrate. Instead, if you want to play multiple HD files simultaneously, it is preferable to lower the bitrate.

To be considered of the same quality a file encoded in H264 requires a two-times lower bitrate than the MPEG2. In comparison, a blueray H264 is usually encoded in a maximum bitrate of 15 MBit/s.

* For example, for 4 outputs playing simultaneously 4 videos that fade in to 4 other videos, the player will playback 8 videos during the transition.

modulo π
www.modulo-pi.com
31, rue de Vincennes 93100 MONTREUIL
+33 951 312 184
support@modulo-pi.com

HAP

HAP / HAP Alpha / HAP Q (extension mov):

Modulo Player natively supports the HAP codec with graphics acceleration support:
It is possible to playback a .mov video file encoded with the HAP, HAP Alpha or HAP Q codec.
Files must have a **width and a height divisible by 4** (pair).

HAP:

Reasonable image quality.

HAP Alpha:

Reasonable image quality with an Alpha channel.

HAP Q:

Good image quality at a higher data-rate,
No Alpha layer management.

NB : It is currently not possible to playback audio within a .mov HAP, HAP Alpha ou HAP Q codec.

Apple ProRes

Apple ProRes (extension mov):

Modulo Player natively supports the Apple ProRes codecs:
It is possible to playback a .mov video file encoded with the Apple ProRes 422 or Apple ProRes 4444 codec.
Files must have a **width and a height divisible by 16** (pair).

NB : It is currently not possible to playback audio within an Apple ProRes .mov file.
It is currently not possible to playback Alpha layer with an Apple ProRes 4444 codec.

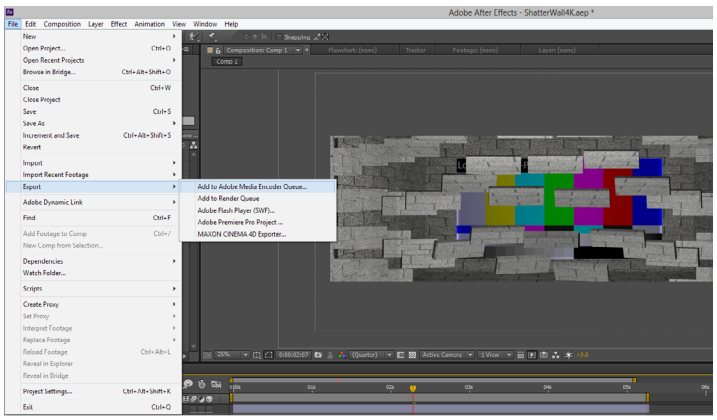
31, rue de Vincennes 93100 MONTREUIL
+33 951 312 184
support@modulo-pi.com

Creating Media for Modulo Player & Kinetic

modulo π
www.modulo-pi.com

export H264

export from After Effects CC



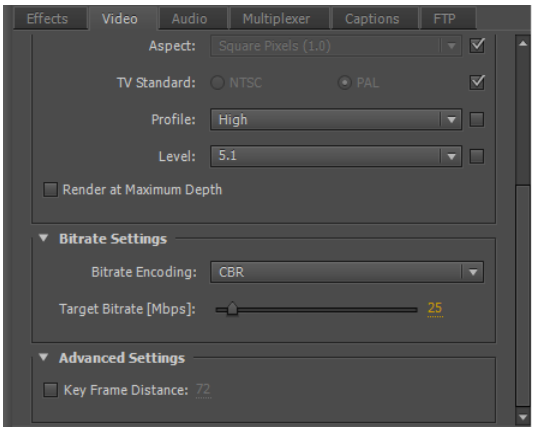
To export your media via After Effects CC, you will have to send your Composition to export using Adobe Media Encoder CC:

1. Select the Composition you want to export and go to File>Export

2. From the export list select " Add to Adobe Media Encoder Queue ": Adobe Media Encoder CC will then open automatically with the preloaded Composition.

Files must have a **width and a height divisible by 2** (pair).

export from Adobe Media Encoder CC



You can directly encode your media by importing it to Adobe Media Encoder.

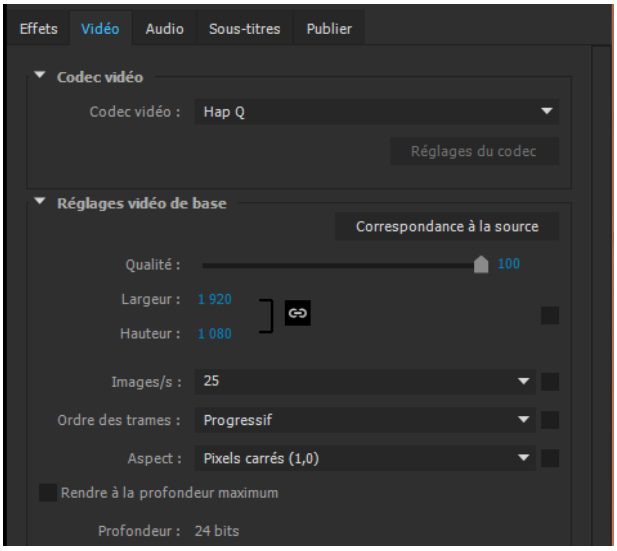
1. Choose the H264 codec
(**CERTAINLY DO NOT** use the Quicktime format with the H264 codec).

2. Choose **High** ***Profile*** and ***Level*** **5.1** (or **5.2**). Choose **CBR** and a ***bitrate*** value.

3. Make sure once the export is done, by importing it on After Effects that the file is readable and has the correct framerate.

export HAP

export from Adobe Media Encoder CC



To encode and playback the HAP codec,download the latest codec for Quicktime on the page : **https://github.com/Vidvox/hap-qt-codec/releases/**

Install the plugin (Mac ou PC).

Then, you can directly encode your media by importing it to Adobe Media Encoder.

1. Select the **QuickTime** format, and the **HAP**, **HAP Alpha** or **HAP Q** codec.

2. Select **100** ***Quality*** and ***Progressive***. Keep a ***Square pixel*** aspect ratio (1,0).

3. Make sure once the export is done, by importing it on After Effects that the file is readable and has the correct framerate.

Files must have a **width and a height divisible by 4**.

HAP and HAP Alpha have a quality setting. Although QuickTime displays a slider, it has only two effective settings: below «High» a fast low-quality encoder is used, and at «High» or above a slower high-quality encoder is used.

modulo π
www.modulo-pi.com
31, rue de Vincennes 93100 MONTREUIL
+33 951 312 184
support@modulo-pi.com

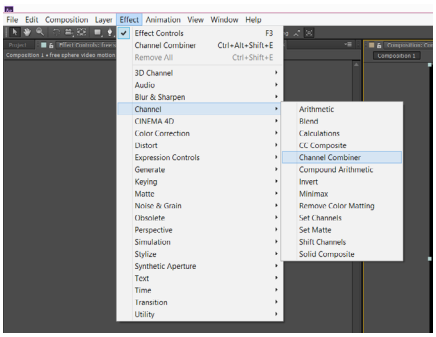
Mpeg2 / H 264 and Alpha channel

It is possible to playback a video Mpeg2 / H264 or image file with an Alpha Channel. To maintain an Alpha Channel from an After Effects composition, all you need is to import twice the media in Modulo Player and follow the example :

Alpha channel export

export from After Effects CC

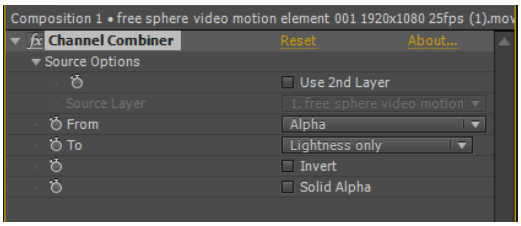
After following the export procedure of example I, re-import the Composition in After Effects CC.



1. From the **Effect** dropdown menu, select ***Channel*** > ***Channel Combiner***

2. Select **Alpha** for source (*From*)

3. Select **Lightness only** for target (*To*)



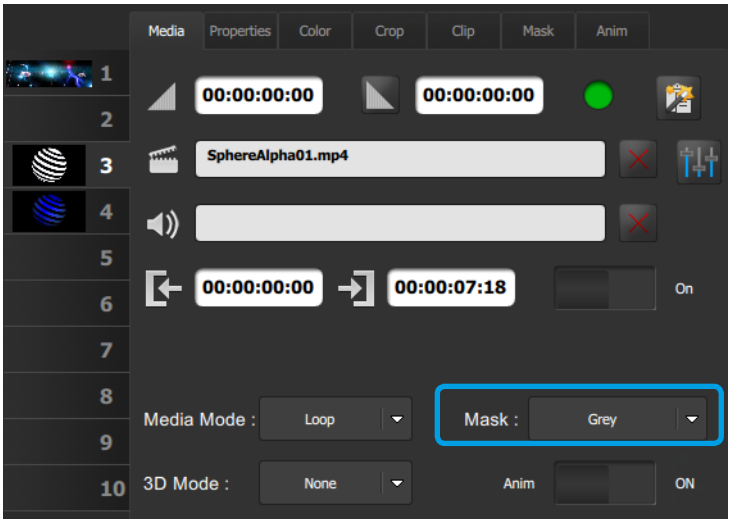
NB: To test the Alpha transparency you can add a solid color Layer under the video Layer, as shown in the example:
(Don't forget to hide the visibility of the color Layer before export)

4. Add the Alpha composition to the Adobe Media Encoder Render Queue, and export the separate Alpha Channel with the same parameters as Example I / above.

RGB export *Alpha test* *Alpha export*

Alpha layer configuration in Modulo Player

Follow the next steps to configure Alpha transparency in Modulo Player :



1. Import the file in RGB and Alpha mode.

2. Place Background media on Layer One.

3. On Layer 3, place the media exported in Alpha mode, from the Mask dropdown menu select *Grey*.

4. On Layer 4, place the media exported in RGB mode.

modulo π
www.modulo-pi.com
31, rue de Vincennes 93100 MONTREUIL
+33 951 312 184
support@modulo-pi.com

image

You can read the following image files: **PNG**, **JPG** and **TIFF** formats.

We rather recommend the PNG format as **lighter**, of **better quality** and above all **lossless**. PNG image format **preserves Alpha Channel transparency**.

audio

You can read the following audio files: **wav**, **aiff**. You can work with mono, stereo or multi-channel audio files.
It is recommended that audio files be **multiplexed with all channels inside.**

Modulo-Pi can manage (depending on the sound card) up to 7.1.
To read more than two channels, it is necessary to activate the ASIO mode in Modulo-Pi and use a compatible sound card.
In this case it is imperatively required to create all files on the same samplerate and configure Modulo-Pi in this samplerate beforehand.

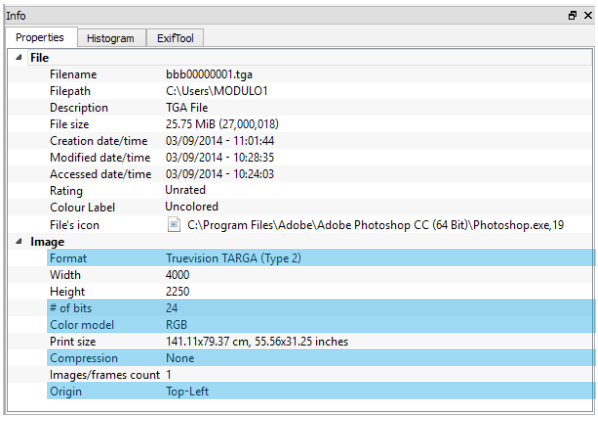
NB : It is possible to read video files with multiplexed audio within the video.
It is currently not possible to playback audio within a .mov HAP, HAP Alpha ou HAP Q codec.

uncompressed TGA image sequence (*optional*)

For Modulo-Pi servers with the uncompressed option, it is possible to read TGA image sequences directly.

For this option, you must prepare a folder with the following name: media-name.tga. This folder should contain the TGA image sequence numbered.
Attention: You should copy all the images in it: if an image is missing from the middle of the sequence, the duration of the media will be divided by 2!
Modulo supports the **24-bit RGB TGA (type 2)** format - without compression (**Attention : it must not be RLE compressed!**).
It is also possible to import images of a **32-bit RGBA (type 2)** format.

We recommend you download the software XnView (http://www.xnview.com/fr/xnviewmp) (MAC / PC) to confirm your TGA are in the right format.
Then you must verify the following information marked in blue:



modulo π
www.modulo-pi.com

31, rue de Vincennes 93100 MONTREUIL
+33 951 312 184

support@modulo-pi.com