

Ki Pro Encoding Guide

Application Note

Introduction

This document offers a guide to the encoding requirements of video with audio for compatible playback using Ki Pro devices. It lists the supported raster, frame rates, containers and codecs as well as a number of caveats.

Applicable AJA products

- Ki Pro Ultra 12G
- Ki Pro Ultra Plus
- Ki Pro Ultra
- Ki Pro Rack, v3.0

File Naming Compatibility - All Models

In order for your externally encoded content to be compatible for Ki Pro device playback it is important to only use standard, letters and numbers when creating your filename. The following characters are incompatible for use within a filename:

`\ / % + " ~ . _ | : < > ?`

Ki Pro Ultra 12G

To play back files successfully using a Ki Pro Ultra 12G (single channel playback only, multi-channel playback not supported), please ensure to encode your files within the parameters outlined as follows.

Supported Raster and Frame Rate for Ki Pro Ultra 12G

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1080i 50, 59.94, 60
- (HD) 720p 50, 59.94, 60

Audio Format Requirements

- 2,8 or 16 channel
- 24-bit
- 48kHz
- Little Endian

Codecs Supported for Playback on Ki Pro Ultra 12G

- Apple ProRes 4444 XQ, limited to a maximum 2K/60 fps
- Apple ProRes 4444, limited to a maximum 4K/30 fps
- Apple ProRes 422 (HQ)
- Apple ProRes 422
- Apple ProRes 422 (LT)
- Apple ProRes 422 (Proxy)
- Avid DNxHR HQX limited to a maximum 4K/29.97 fps
- Avid DNxHR SQ limited to a maximum 4K/29.97 fps
- Avid DNxHR LB limited to a maximum 4K/29.97 fps
- Avid DNxHD HQX (220x) limited to a maximum 1080p/59.94 fps
- Avid DNxHD SQ (145) limited to a maximum 1080p/59.94 fps
- Avid DNxHD LB (36) limited to a maximum 1080p/29.97 fps progressive format only

Supported Codec Containers

- .MOV for Apple ProRes
- .MOV for Avid DNxHD
- .MXF for Avid DNxHR and Avid DNxHD

Recommended Encoding Software

- Apple Final Cut Pro X (most recent release version)
- Apple Compressor (most recent release version)
- Adobe Premiere Pro (most recent release version)
- Adobe Media Encoder (most recent release version)
- Avid Media Composer (most recent release version)

Ki Pro Ultra Plus

To play back files successfully using a Ki Pro Ultra Plus (single channel playback only, multi-channel playback not supported), please ensure to encode your files within the parameters outlined as follows.

Supported Raster and Frame Rates on Ki Pro Ultra Plus

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1080i 50, 59.94, 60
- (HD) 720p 50, 59.94, 60

Audio Format Requirements

- 2,8 or 16 channel
- 24-bit
- 48kHz
- Little Endian

Codecs Supported for Playback on Ki Pro Ultra Plus

- Apple ProRes 4444 XQ, limited to a maximum 2K/60 fps
- Apple ProRes 4444, limited to a maximum 4K/30 fps
- Apple ProRes 422 (HQ)
- Apple ProRes 422
- Apple ProRes 422 (LT)
- Apple ProRes 422 (Proxy)
- Avid DNxHR HQX limited to a maximum 4K/29.97 fps
- Avid DNxHR SQ limited to a maximum 4K/29.97 fps
- Avid DNxHR LB limited to a maximum 4K/29.97 fps
- Avid DNxHD HQX (220x) limited to a maximum 1080p/59.94 fps
- Avid DNxHD SQ (145) limited to a maximum 1080p/59.94 fps
- Avid DNxHD LB (36) limited to a maximum 1080p/29.97 fps progressive format only

Supported Codec Containers

- .MOV for Apple ProRes
- .MOV for Avid DNxHD
- .MXF for Avid DNxHR and Avid DNxHD

Recommended Encoding Software

- Apple Final Cut Pro X (most recent release version)
- Apple Compressor (most recent release version)
- Adobe Premiere Pro (most recent release version)
- Adobe Media Encoder (most recent release version)
- Avid Media Composer (most recent release version)

Ki Pro Ultra

To play back files successfully using a Ki Pro Ultra, please ensure to encode your files using the parameters outlined as follows.

Supported Raster and Frame Rates for Ki Pro Ultra

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1080i 50, 59.94, 60
- (HD) 720p 50, 59.94, 60

Audio Format Requirements

- 2,8 or 16 channel
- 24-bit
- 48kHz
- Little Endian

Codecs Supported for Playback on Ki Pro Ultra

- Apple ProRes 4444, limited to a maximum 4K/30 fps
- Apple ProRes 422 (HQ)
- Apple ProRes 422
- Apple ProRes 422 (LT)
- Apple ProRes 422 (Proxy)
- Avid DNxHR HQX limited to a maximum 4K/29.97 fps
- Avid DNxHR SQ limited to a maximum 4K/29.97 fps
- Avid DNxHR LB limited to a maximum 4K/29.97 fps
- Avid DNxHD HQX (220x) limited to a maximum 1080p/59.94 fps
- Avid DNxHD SQ (145) limited to a maximum 1080p/59.94 fps
- Avid DNxHD LB (36) limited to a maximum 1080p/29.97 fps progressive format only

Supported Codec Containers

- .MOV for Apple ProRes
- .MOV for Avid DNxHD
- .MXF for Avid DNxHR

Recommended Encoding Software

- Apple Final Cut Pro X (most recent release version)
- Apple Compressor (most recent release version)
- Adobe Premiere (most recent release version)
- Adobe Media Encoder (most recent release version)
- Avid Media Composer (most recent release version)

Ki Pro Rack

To play back files successfully using a Ki Pro Rack, please ensure to encode your files using the parameters outlined as follows.

Supported Raster and Frame Rates for Ki Pro Rack

- 1080i 25, 29.97, 30
- 1080PsF 23.98, 24, 25*, 29.97*
- 1080p 23.98, 24, 25, 29.97
- 720p 23.98*, 25*, 29.97*, 50, 59.94, 60
- 625i 25
- 525i 29.97

*(Note: 25 and 29.97 require a valid camera source and the use of the Record Type>PsF selection)

Audio Format Requirements

- 2,4 or 8 channel
- 24-bit
- 48kHz
- Little Endian

Codecs Supported for Playback on Ki Pro Rack

- Apple ProRes 422 (HQ) limited to a maximum 1080p/29.97 fps
- Apple ProRes 422 limited to a maximum 1080p/29.97 fps
- Apple ProRes 422 (LT) limited to a maximum 1080p/29.97 fps
- Apple ProRes 422 (Proxy) limited to a maximum 1080p/29.97 fps
- Avid DNxHD HQX (220x) limited to a maximum 1080p/29.97 fps
- Avid DNxHD SQ (145) limited to a maximum 1080p/29.97 fps
- Avid DNxHD LB (36) limited to a maximum 1080p/29.97 fps progressive format only

Supported Codec Containers

- .MOV for Apple ProRes
- .MOV for Avid DNx only - note that Ki Pro Rack does not support .MXF for DNxHD playback

Recommended Encoding Software

- Apple Final Cut Pro X (most recent release version)
- Apple Compressor (most recent release version)
- Adobe Premiere (most recent release version)
- Adobe Media Encoder (most recent release version)

Technical Support

AJA Technical Support is free and available to help you answer questions or resolve issues with any of your AJA products.

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