



ProMedia™ Carbon MP

Format Guide



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Format Guide

This format guide provides a list of the supported import and export formats for Harmonic ProMedia™ Carbon products. To transcode from one format to another, ProMedia™ Carbon decodes the input format and then encodes it into the output format. For example, if converting from a QuickTime DV25 file into a GXF MPEG-2 Long-GOP format, ProMedia™ Carbon Coder decodes the QuickTime DV25 files and then encodes the GXF MPEG-2 Long-GOP files.

Refer to the Table 1 to determine if your import and export requirements are supported. The table indicates if a format is supported for import and/or export. The table also indicates if a particular codec is included with ProMedia™ Carbon.

In addition to the codecs that are shipped with the product, you can install most DirectShow or QuickTime codecs for use with ProMedia™ Carbon. If a particular codec in the list is not included, Harmonic provides links for downloading that codec in Table 1. Some codecs are available for free and others require purchase from the codec developer. If you do not see a format that you need, contact Harmonic support at <http://www.harmonicinc.com/services-support>.

The formats in Table 1 are organized according to container type and then by codec. A container (also known as a “wrapper”) is a defined structure for how video data, audio data, and metadata are multiplexed into a final file. This is different from a codec, which only defines how video or audio data are compressed.

Note that although two devices can read the same codec, they are not necessarily compatible. Thus, it is possible to wrap the same codec in a incompatible container. For example, an MPEG-2 codec can be used to compress video that will be inserted into an MPEG-2 Transport Stream, an MPEG-2 Elementary Stream, a DVD VOB file, an MXF file, or an AVI file. When looking up formats in Table 1, verify that the required combination of container and codec are supported.

For more information about containers and codecs, refer to the following sources:

- Overview of Video Codecs: http://en.wikipedia.org/wiki/Video_codecs
- Video Compression (Includes Table of Compression and Container Formats): http://en.wikipedia.org/wiki/Video_compression
- Comparison of Video Container Formats: http://en.wikipedia.org/wiki/Comparison_of_container_formats
- Introduction to Video Compression: <http://www.videsignline.com/howto/showArticle.jhtml?articleID=185301351>
- Quantel Digital Factbook: http://www.quantel.com/site/en.nsf/html/library_dfb
- MPEG-2: <http://en.wikipedia.org/wiki/MPEG-2>
- MPEG-4: <http://en.wikipedia.org/wiki/MPEG-4>

Container	Codec/Compliance	Import	Export	Incl.	Comments
3GPP and 3GPP2					
3GPP	H.263	y	y	y	Requires QuickTime
3GPP	MPEG-4 Part 2 video (ISO/IEC 14496-2)	y	y	y	Requires QuickTime
3GPP	MPEG-4 Part 10 video (ISO/IEC 14496-10 ITU-T H.264)	y	y	y	Requires QuickTime
AVI					
AVI	AJA v210	y	y	N	http://www.aja.com
AVI	Blackmagic HD 10-bit 4:2:2	y	y	N	http://www.blackmagic-design.com
AVI	Blackmagic HD 10-bit 4:4:4	y	y	N	http://www.blackmagic-design.com
AVI	Blackmagic HD 8-bit 4:2:2	y	y	N	http://www.blackmagic-design.com
AVI	Canopus DV	y	y	y	DVCPRO25, AVI 1.0 and 2.0 (Open DML)
AVI	Canopus HQ	y	y	N	http://www.canopus.com
AVI	Cinepak	y	y	y	Not included on all Windows Platforms
AVI	DivX	y	y	N	http://www.divx.com/divx/windows/
AVI	DPS	y	y	N	http://www.leitch.com/custserv/webdl.nsf/FD/DPS_AVI_Codec15.exe
AVI	Indeo R3.2	y	y	y	
AVI	Indeo Video 4.5	y	y	y	
AVI	Indeo Video 5.1	y	y	y	
AVI	Intel IYUV	y	y	y	
AVI	Matrox AXIO	y	y	N	http://www.matrox.com
AVI	Microsoft DV	y	y	y	DVCPRO25, AVI 1.0 and 2.0 (Open DML), DV Type 1 and Type 2
AVI	Microsoft Video 1	y	y	y	
AVI	Motion JPEG	y	y	y	
AVI	Uncompressed RGB	y	y	y	

Container	Codec/Compliance	Import	Export	Incl.	Comments
AVI	xVID	y	y	N	http://www.xvid.org
GXF – Grass Valley					
GXF	DV25 525	y	y	y	DVCAM or DVCPRO
GXF	DV25 625	y	y	y	DVCAM or DVCPRO
GXF	DV50	y	N	y	
GXF	MPEG-2 I-frame 525	y	y	y	720x512i - 29.97 Generic MPEG, 720x480i - 29.97 Generic MPEG, 720x512i - 29.97 D10/IMX
GXF	MPEG-2 I-frame 625	y	y	y	720x608i - 25 Generic MPEG, 720x576i - 25, Generic MPEG, 720x608i - 25 D10/IMX
GXF	MPEG-2 I-frame HD	y	y	y	1920x1080i - 29.97, 1920x1080i - 25, 1280x720 - 59.94
GXF	MPEG-2 IPB 525	y	y	y	720x512i - 29.97 Generic MPEG, 720x480i - 29.97 Generic MPEG, 720x512i - 29.97 D10/IMX
GXF	MPEG-2 IPB 625	y	y	y	720x608i - 25 Generic MPEG, 720x576i - 25, Generic MPEG, 720x608i - 25 D10/IMX
GXF	MPEG-2 IPB HD	y	y	y	1920x1080i - 29.97, 1920x1080i - 25, 1280x720 - 59.95
Image Sequences					
Image Seq.	BMP	y	y	y	
Image Seq.	DPX	y	N	y	
Image Seq.	JPEG	y	y	y	
Image Seq.	JPEG2000	N	y	y	
Image Seq.	MacPaint	N	y	y	
Image Seq.	Photoshop	N	y	y	
Image Seq.	PICT	N	y	y	
Image Seq.	PNG	y	y	y	
Image Seq.	QT Image	N	y	y	
Image Seq.	SGI	N	y	y	

Container	Codec/Compliance	Import	Export	Incl.	Comments
Image Seq.	TGA	y	y	y	
Image Seq.	TIFF	y	y	y	
LXF – Leitch/Harris					
LXF	DV25	y	y	y	DVCAM or DVCPRO
LXF	MPEG-2 I-frame	y	y	y	4:2:0, 4:2:2, SD, and HD
LXF	MPEG-2 Long GOP	y	y	y	
MPEG Elementary Streams					
MPEG ES	MPEG-1	y	y	y	Proxy
MPEG ES	MPEG-2	y	y	y	SP@MP, MP@LL, MP@ML, MP@HL, MP@H14, HP@ML, HP@HL, HP@H14, 422P@ML, 422@HL
MPEG Program Streams					
MPEG PS	DVD	y	y	y	
MPEG PS	MPEG-2	y	y	y	SP@MP, MP@LL, MP@ML, MP@HL, MP@H14, HP@ML, HP@HL, HP@H14, 422P@ML, 422@HL
MPEG PS	SVCD	y	y	y	
MPEG PS	Avid MediaStream	y	y	y	Supports some features of MediaStream 8000. No other systems are supported.
MPEG Transport Streams					
MPEG TS	MPEG-4 Part 10 video (ISO/IEC 14496-10 ITU-T H.264)	y	y	y	
MPEG TS	HDV HD-1	y	y	y	MP@ML,MP@H-14, MP@HL (1280x720, 720x480, 720x576)
MPEG TS	HDV HD-2	y	y	y	MP@ML,MP@H-14, MP@HL (1440)
MPEG TS	MPEG-2	y	y	y	SP@MP, MP@LL, MP@ML, MP@HL, MP@H14, HP@ML, HP@HL, HP@H14, 422P@ML, 422@HL, 302M Audio
MPEG TS	ATSC (A/53)	y ¹	y	y	Incl. Dolby Digital (AC-3) ¹
MPEG TS	CableLabs	y ¹	y	y	SD and HD, Incl. Dolby Digital (AC-3) ¹

Container	Codec/Compliance	Import	Export	Incl.	Comments
MPEG TS	DVB	y ¹	y	y	ETSI TR 101 154, Incl. Dolby Digital (AC-3) ¹
MPEG-1 System Streams					
MPEG-1 SS	MPEG-1	y	y	y	VideoCD, Proxy
MPEG-4					
Container	Codec / Compliance	Import	Export	Incl.	Comments
MPEG-4	MPEG-4 Part 10 video (ISO/IEC 14496-10 ITU-T H.264)	y	y	y	
MPEG-4	MPEG-4 Improved	y	y	y	ISMA Profile 1 -- MPEG-4 ASP
MPEG-4	MPEG-4-Basic	y	y	y	ISMA Profile 0
MPEG-4	XDCAM EX	y	N	y	
MP4/M4V/ M4A	H.264	y	y	y	Use H.264 Exporter to create output files.
MXF (Material Exchange Format)					
MXF (OP1a)	D10 (IMX)	y	y	y	30, 40, 50 Mbit. Includes support for Quantel and XDCAM
MXF (OP1a)	DV25	y	N	y	
MXF (OP1a)	DV50	y	N	y	
MXF (OP1a)	DVCPProHD	y	N	y	
MXF	AS02	y	y	y	
MXF	EVS Motion JPEG	y	N	y	
MXF (OP1a)	JPEG 2000	y	N	y	Supported with WAV
MXF (OP1b)	JPEG 2000	y	N	y	
MXF (OP1a)	MPEG-2 I-frame	y	N	y	
MXF (OP1a)	MPEG-2 Long GOP	y	N	y	
MXF (OPAtom)	DV25	y	N	y	WAV only
MXF (OPAtom)	DV50	y	N	y	

Container	Codec/Compliance	Import	Export	Incl.	Comments
MXF (OPAtom)	DVCPProHD	y	N	y	
MXF (OPAtom)	JPEG 2000	y	N	y	DVS Clipster formats
MXF	XDCAM 4:2:0	y	y	y	SD and HD
MXF (OP1A)	XDCAM MPEG-2 4:2:2	y	y	y	MXF OP1A MPEG-2 HD 4:2:2
MXF	XDCAM MPEG-4 Proxy	N	y	y	
MXF	Panasonic P2	y	y	y	DV, DVCPPro, DVCPPro HD, and AVC-Intra
Harmonic (both MXF and QuickTime)					
Harmonic Spectrum	AVC-Intra Class 50 and 100	y	y	y	960x720p@50/59.94, 1440x1080i@25/29.97, 1280x720p@50/59.94, 1920x1080i@25/29.97
Harmonic Spectrum	OP1a IMX (MXF)	y	y	y	720x512i, 720x608i
Harmonic Spectrum	DV	y	y	y	720x486i, 720x576i
Harmonic Spectrum	IMX	y	y	y	720x512i, 720x608i
Harmonic Spectrum	MPEG-2 IBP	y	y	y	720x480i, 720x512i, 720x576i, 720x608i, 1280x720p, 1920x1080i
Harmonic Spectrum	MPEG-2 I-frame	y	y	y	720x480i, 720x512i, 720x576i, 720x608i, 1280x720p, 1920x1080i
Quantel					
Quantel	MXF OP1a IMX	y	y	y	40Mbit NTSC. 30 Mbit PAL.
Quantel	DVCPProHD	y	y	y	720p, 1080i
QuickTime					
QuickTime	Apple Animation	y	y	y	Requires QuickTime
QuickTime	Apple BMP	y	y	y	Requires QuickTime
QuickTime	Apple Cinepak	y	y	y	Requires QuickTime
QuickTime	Apple Component Video - YUV 422	y	y	y	Requires QuickTime
QuickTime	Apple DV/DVCPRO	y	y	y	Requires QuickTime
QuickTime	Apple Graphics	y	y	y	Requires QuickTime

Container	Codec/Compliance	Import	Export	Incl.	Comments
QuickTime	Apple H.261	y	y	y	Requires QuickTime
QuickTime	Apple Motion JPEG A	y	y	y	Requires QuickTime
QuickTime	Apple Motion JPEG B	y	y	y	Requires QuickTime
QuickTime	Apple MPEG-4	y	y	y	Requires QuickTime
QuickTime	Apple None	y	y	y	Requires QuickTime
QuickTime	Apple Photo - JPEG	y	y	y	Requires QuickTime
QuickTime	Apple Planar RGB	y	y	y	Requires QuickTime
QuickTime	Apple PNG	y	y	y	Requires QuickTime
QuickTime	Apple TGA	y	y	y	Requires QuickTime
QuickTime	Apple TIFF	y	y	y	Requires QuickTime
QuickTime	Apple Video	y	y	y	Requires QuickTime
QuickTime	Avid DNxHD	y	y	N	Requires Avid Codec Pack LE ² Requires QuickTime
QuickTime	Avid Media Composer Meridian 1:1	y	y	N	
QuickTime	Avid Media Composer Meridian JFIF	y	y	N	
QuickTime	HDV	y	y	y	Requires QuickTime
QuickTime	IMX	y	y	y	Requires QuickTime
QuickTime	BlackMagic 10-bit	y	y	N	http://www.blackmagic-design.com/support/software/ Requires QuickTime
QuickTime	BlackMagic RGB 10-bit	y	y	N	
QuickTime	DVCPro 50	y	y	y	Requires QuickTime
QuickTime	DVCPro 100/HD	y	y	y	Requires QuickTime
QuickTime	H.263	y	y	y	Requires QuickTime
QuickTime	H.264	y	y	y	Requires QuickTime
QuickTime	Intel Indeo Video 4.4	y	y	y	Requires QuickTime
QuickTime	JPEG 2000	y	y	y	Requires QuickTime
QuickTime	Harmonic Spectrum	y	y	y	See Harmonic container section for more detail
QuickTime	Sorenson Video	y	y	y	Requires QuickTime
QuickTime	Sorenson Video 3	y	y	y	Requires QuickTime
QuickTime	XDCAM MPEG-2 4:2:2	y	y	y	Requires QuickTime

Raw

Container	Codec/Compliance	Import	Export	Incl.	Comments
Raw	FLC	y	y	y	
Raw	Raw DV (DIF)	y	y	y	
Raw	H.264	y	y	y	
Raw	VC-1	y	y	y	
Real					
Real	Real Video 10	N	y	y	ProMedia™ Carbon is not licensed to decode Real Media video.
Real	Real Video 9	N	y	y	
Real	Real Video 8	N	y	y	
VOB					
VOB	MPEG-2	y	y	y	Requires an AC-3 audio decoder if embedded AC-3 is present on input side.
WMV/ASF					
WMV/ASF	Window Media Video 9	y	y	y	
WMV/ASF	Windows Media Video 8	y	y	y	
WMV/ASF	Windows Media Video 7	y	y	y	
WMV/ASF	WMV 9 Adv. Profile	y	y	y	
WMV/ASF	VC-1	y	y	y	
YUV – Uncompressed					
YUV	I420	y	y	y	
Audio Codecs					
	AAC	y	y	y	
	HE-AACv1	y	y	y	
	AES3-302	y	y	y	
	AES3-331	y	y	y	
	AIFF	y	y	y	
	Broadcast WAV	y	y	y	
	Dolby Digital (AC-3) ¹	y ¹	y	y	Audio-only files using the Dolby Digital Plus Exporter, and also embedded in the MPEG-2 and H.264 Exporters
	Dolby Digital Plus (E-AC-3) 1	y ¹	y	y	
	Dolby E	N	y	N ³	Export only. This is an option only available as a separate license.

Container	Codec/Compliance	Import	Export	Incl.	Comments
F4V, F4A, M4A, MP4	AAC, HE-AACv1	y	N	y	Added Support for the import of audio only files
F4V, MPEG-4 System Stream	AAC, HE-AACv1, Dolby Digital (AC-3), Dolby Digital Plus (E-AC-3)	N	y	y	Allow creation of audio only files in the H.264 exporter in F4V containers and MPEG-4 System Streams
MPEG-2 Transport Stream	MPEG-1 Layer II, MPEG-2 Layer II, AAC, HE-AACv1, Dolby Digital (AC-3), Dolby Digital Plus (E-AC-3)	N	y	y	Allow creation of audio only files in the H.264 exporter in MPEG-2 Transport Streams
	MPEG Audio	y	y	y	
	PCM	y	y	y	
	μLAW	y	y	y	
	WAV	y	y	y	
Other Compatible File Types					
SCC	ProMedia™ Carbon supports the import of SCC files to insert Closed Caption data into Line 21 or alternative carriers, such as MPEG User Data.				
XML	ProMedia™ Carbon supports insertion of Subtitling, Metadata, and Titling information via a structured XML file. ProMedia™ Carbon also supports the extraction of Line 21 Closed Captioning information into an XML file.				
EBU-STL	ProMedia™ Carbon supports reading and writing EBU-STL files compliant with specification: http://tech.ebu.ch/webdav/site/tech/shared/tech/tech3264.pdf . This is a binary format; text-based caption files (some of which may also have the ".stl" file extension) are not supported.				
Microsoft Smooth Streaming	The Microsoft Smooth Streaming Exporter creates compliant files that can be streamed with the appropriate third-party servers.				
HTTP Live Streaming	The HTTP Live Streaming Exporter creates compliant files that can be streamed with the appropriate third-party servers.				

Notes:

1. Dolby is a registered trademark of Dolby Laboratories. Dolby Digital is manufactured under license from Dolby Laboratories. DOLBY (R) DIGITAL (TM) and DOLBY (R) DIGITAL PLUS(TM) DECODE RESTRICTION. The use of the Dolby Digital (AC-3) and Dolby Digital Plus (E-AC-3) decoder is limited to verification of media created with ProMedia™ Carbon Dolby Digital (AC-3) and Dolby Digital Plus (E-AC-3) encoder.
2. Link to download Avid codec pack: <http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=372311>.
3. Dolby E is only available as a separate license, and is not included with a ProMedia™ Carbon license.

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