

that is a multiple of 16 since H.264 uses 16x16 macroblocks (Otherwise you will be wasting bits on resolution that is unused).

2.5 Supported Video Formats

The following is a summary of supported video formats that have been tested and/or are currently in-use. Other formats or encoding may be supported, but should be evaluated on a case by case basis.

	H.264 SD	H.264 HD	WMV9 SD	VC-1 HD
Aspect Ratio ¹	4:3	16:9	4:3	16:9
Dimension	Various to 720x480	Various to 1280x720 and 1920x1080 for 1080p	Various to 720x480	Various to 1280x720 and 1920x1080 for 1080p
Progressive/Interlaced	Progressive	Progressive	Progressive	Progressive
File Format	.mp4 (MPEG-4 Pt 14), .mov .m4v HLS: m3u8 & .ts	.mp4 (MPEG-4 Pt 14), .mov .m4v HLS: m3u8 & .ts	ASF (.asf, .wmv)	ASF (.asf, .wmv)
Frame Rate ²	23.976 fps or 29.97 fps	23.976 fps or 29.97 fps	23.976 fps or 29.97 fps	23.976 fps or 29.97 fps
Color Space	YUV	YUV	YUV	YUV
Video Codec	H.264/AVC	H.264/AVC	WMV9	VC-1 AP (WVC1)
Profile	Main/High	High	Main	Advanced
Level/Complexity	4.0	4.0	4.0	4.0
Video Mode	Constrained VBR	Constrained VBR	Constrained VBR	Constrained VBR
Average Streaming Video Bitrate ³	384Kbps - 1.6Mbps	1.6Kbps – 3.2Mbps	500Kbps-2.2Mbps	2.6Mbps – 4.0Mbps
Average USB Video Bitrate ³	384Kbps – 8.0Mbps	384Kbps – 8.0Mbps	384Kbps – 8.0Mbps	384Kbps – 8.0Mbps
Peak Video Bitrate	1.5x average	1.5x average	1.5x average	1.5x average
Key Frame Interval	< 10s	< 10s	< 10s	~3s
DRM	None	None	None	None
Audio Codec	AAC LC (CBR), AC3 Passthrough	AAC LC (CBR), AC3 Passthrough	WMA 9.2 (CBR)	WMA 9.2 (CBR)
Audio Bit Rate	128-256Kbps	32-256Kbps	64-128Kbps	64-256Kbps
Audio Sample Rate	44.1 Khz or 48Khz	44.1 Khz or 48 Khz	44.1 Khz or 48Khz	44.1 Khz or 48Khz
Audio Sample Size	16-Bit	16-Bit	16-bit	16-bit
Audio Channels	2-Ch Stereo	2-Ch Stereo	2-CH Stereo	2-CH Stereo

Notes:

- 1) The dimensions vary on a title-by-title basis depending on the source material and the target aspect ratio for the encoding (e.g. 4:3 or 16:9). Content should always be encoded at full width and the height is adjusted. For example, a 1.66 aspect ratio source is encoded as a 720x432 video and displayed as letterboxed for a 4:3 display.
- 2) The frame rate used for encoding depends on the source material. Film content is generally 23.976 fps, while video content is generally at 29.97.
- 3) For typical streaming video applications, we recommend a range of ~384Kbps to ~4.0Mbps. For USB playback, we recommend that you stay under 8.0 Mbps. This provides a good balance between quality and support for a wide number of users. In some cases lower and higher bitrates have been used, but this frequently results in poor quality or limits the % of the installed base that can view this encoding.