



## HD COMMERCIAL FILE DELIVERY SPECIFICATIONS

APPLE PRORES 422 HQ	1080/50 AVID DNxHD 185X 1080/50	XDCAM 1080/50	MPEG-2 TRANSPORT STREAM 1080/50
<b>Container:</b> MOV	<b>Container:</b> MOV or MXF	<b>Container:</b> MOV or MXF	<b>Container:</b> MPEG-2 TS

VIDEO			
<b>Codec:</b> Apple Quicktime ProRes 422 (HQ) <b>Profile:</b> HQ <b>Chroma Subsample:</b> 4:2:2 <b>Interlacing:</b> Upper/Top Field First <b>Frame Size:</b> 1920x1080 <b>Frame Rate:</b> 25 FPS <b>Aspect Ratio:</b> 16:9	<b>Codec:</b> 10bit DNxHD <b>Bitrate:</b> 185Mb/s <b>Chroma Subsample:</b> 4:2:2 <b>Interlacing:</b> Upper/Top Field First <b>Frame Size:</b> 1920x1080 <b>Frame Rate:</b> 25 FPS <b>Aspect Ratio:</b> 16:9	<b>Codec:</b> XDCAMHD422 <b>Profile:</b> MPEG-2 422P@HL <b>Bitrate:</b> 50Mb/s CBR <b>Chroma Subsample:</b> 4:2:2 <b>Interlacing:</b> Upper/Top Field First <b>GOP Structure:</b> Long GOP <b>Frame Size:</b> 1920x1080 <b>Frame Rate:</b> 25 FPS <b>Aspect Ratio:</b> 16:9	<b>Codec:</b> MPEG-2 <b>Profile:</b> 4:2:2 Profile @HighLevel (422P@HL) <b>Bitrate:</b> 100Mb/s CBR <b>Chroma Subsample:</b> 4:2:2 <b>Interlacing:</b> Upper/Top Field First <b>GOP Structure:</b> I Frame Only <b>Frame Size:</b> 1920x1080 <b>Frame Rate:</b> 25 FPS

AUDIO			
<b>Codec:</b> Integer (Little Endian) PCM <b>Sample Rate:</b> 48kHz <b>Sample Size:</b> 24bit <b>Channels:</b> Stereo	<b>Codec:</b> PCM <b>Sample Rate:</b> 48kHz <b>Sample Size:</b> 24bit <b>Channels:</b> Stereo	<b>Codec:</b> Integer (Big/Little Endian) PCM <b>Sample Rate:</b> 48kHz <b>Sample Size:</b> 24bit <b>Channels:</b> Stereo	<b>Codec:</b> Integer (Little Endian) PCM <b>Sample Rate:</b> 48kHz <b>Sample Size:</b> 24 bit <b>Channels:</b> Stereo

## ADDITIONAL INFORMATION

VIDEO	AUDIO
<p><b>TV Format</b> : HDTV</p> <p><b>Aspect Ratio</b> : 16:9</p> <p><b>Title Safe</b>: 16:9 as per EBU R.95-1</p> <p>All video signals should comply with ITU-R BT.709-5 and video signals should not exceed the specified limits.</p> <p>Video levels should not exceed 700mV, or fall below 0mv</p> <p><b>Out of gamut tolerance</b></p> <p>Whilst Adstream and the Broadcasters will reject illegal video levels they understand there may be instances where it is difficult to completely avoid, and following EBU recommendation Rec.103-2000 will allow a small tolerance, assuming that no more than 1% of the active picture is in error.</p> <ul style="list-style-type: none"> <li>•Luminance (Y) -1% and 103% (ie between -7mV and 721mV)</li> <li>RGB video levels -5% and 105% (ie between -35mV and 735mV)</li> </ul>	<p>The loudness level of the programme material must be in agreement with the EBU R128-2014 directive, including the following delivery specifications:</p> <p><b>EBU R.128-2014</b></p> <ul style="list-style-type: none"> <li>•Integrated Loudness Program : -23 LUFS</li> <li>•Target Level Tolerance : +/-0.5 LU</li> <li>•Maximum True Peak : -3dBFS</li> <li>•Maximum Momentary : -15 LUFS</li> <li>•Maximum Short Term Momentary (3 Sec) : -20 LUFS</li> <li>•Loudness Range : 20 LU</li> </ul> <p><b>Note:</b></p> <p>'Integrated Loudness' is the definition for the target of the 'Programme Loudness' stated in metres in conformity with EBU Tech 3341.</p>