Audio Metadata Test Bitstreams

General

All test bitstreams are included in ADTS and LOAS/LATM transport formats (directories *adts* and *loas*). The test sequences are available as AAC Low Complexity (suffix *_lc*) and High Efficiency AAC (suffix *_he*). All bitstreams were encoded using a sampling rate of 48kHz, assuming a decoder target reference level of -23dB for line mode and -20dB for RF mode.

Test1: Program Reference Level

Channel configuration: stereo

Audio: 1kHz sine wave

Metadata: Program reference level alternates between -20dB and -14dB

Output: If the decoder applies the program reference level, the output level changes every second, alternating between two levels with a difference of 6dB.

Test2: AAC DRC

Channel configuration: stereo

Audio: 1kHz sine wave

Metadata: DRC gain smoothly increasing from -12dB to +6dB every ten seconds

Output: If the decoder applies DRC, the output level smoothly increases by 18dB every ten seconds.

Test3: ETSI Heavy Compression

Channel configuration: stereo

Audio: 1kHz sine wave

Metadata: Compression gain smoothly increasing from -12dB to +6dB every ten seconds

Output: If the decoder applies heavy compression, the output level smoothly increases by 18dB every ten seconds.

Test4, Test40: AAC Mixdown Coefficient

Channel configuration: 5.1

Audio: White noise in front channels, 1kHz sine wave in rear channels

Metadata: Mixdown coefficient -3dB, -6dB, -9dB, 0 (each for one second)

If the decoder applies stereo downmixing, the white noise has a constant level in the output while the level of the sine wave decreases by 3dB every second before disappearing for one second.

Test5: ETSI Center Downmix Level

Channel configuration: 5.1

Audio: White noise in left and right front and rear channels, 1kHz sine wave in center channel

Metadata: Center downmix coefficient 0dB, -1.5dB, -3dB, -4.5dB, -6dB, -7.5dB, -9dB, 0 (each for one second)

Output: If the decoder applies stereo downmixing, the white noise has a constant level in the output while the level of the sine wave decreases by 1.5dB every second before disappearing for one second.

Test6: ETSI Surround Downmix Level

Channel configuration: 5.1

Audio: White noise in front channels, 1kHz sine wave in rear channels

Metadata: Surround downmix coefficient 0dB, -1.5dB, -3dB, -4.5dB, -6dB, -7.5dB, -9dB, 0 (each for one second)

Output: If the decoder applies stereo downmixing, the white noise has a constant level in the output while the level of the sine wave decreases by 1.5dB every second before disappearing for one second.

Test7: Downmix Limiting

Channel configuration: 5.1

Audio: 30Hz sine wave in all channels with amplitude increasing linearly from zero to full scale every ten seconds

Metadata: Center and surround downmix coefficients -3dB, DRC gains prevent stereo downmix clipping, heavy compression gains prevent stereo and mono downmix clipping

Output: If the decoder applies stereo downmixing in line or RF mode or mono downmixing in RF mode, the DRC/compression gains prevent the downmix from clipping.

Test8: AAC Multiband DRC

Channel configuration: stereo

Audio: Mix of eight sine waves (one in each DRC band)

Metadata: Eight DRC bands, gains: one band +12dB, one band -12dB, other bands 0dB, shift by one band every second

Output: If the decoder applies DRC, six of the eight frequencies will have the same level while the remaining two have levels of +12dB and -12dB. Every second the gains are shifted (cyclically) upward by one band.

Test9: AAC Multiband DRC

Channel configuration: stereo

Audio: White noise

Metadata: Eight DRC bands, gains: one band +12dB, one band -12dB, other bands 0dB, shift by one band every second

Output: If the decoder applies DRC, six of the eight frequency bands have the same level while the remaining two have levels of +12dB and -12dB. Every second the gains are shifted (cyclically) upward by one band. The output spectrograms for AAC LC and HE AAC are show below: