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# Ittiam HE-AAC Multichannel Decoder

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## HE-AAC (aacPlus) Multichannel Decoder

AAC is a popular audio coding technique recommended by MPEG committee. SBR is a tool used in combination with the AAC general audio codec resulting in aacPlus (also known as HEAAC). It provides significant increase in coding gain. In SBR, the high-band, i.e. the high frequency part of the spectrum is replicated using the low-band. The bit-rate is by far below the bit-rate required when using conventional AAC coding. This translates into better quality at lower bit-rates. It can be used in consumer applications like mobile streaming and download, digital terrestrial, cable & satellite television broadcasting and Internet Video on demand service.

## Features

Features supported:

- MPEG2 and MPEG4 AAC LC (Low complexity), SBR.
- Supports all sampling frequencies & bit rates for AAC only bit-streams.
- Multi-channel Decoder Features
  - Channels: Upto 8 channels.
  - LFE (Low Frequency Element) Decoding
  - Decoding of Independent switched CCE (Channel Coupling Element)
  - Supports down-mix of multi-channel stream to stereo.
- Tools: TNS (Temporal Noise Shaping), PNS (Perceptual Noise Shaping), Intensity Stereo & Mid/Side Stereo
- Bit-streams: ADIF, ADTS, GA Header
- Compliance:
  - ISO/IEC 13818 - 4, 14496 – 4 (MPEG AAC and PNS Conformance)
  - ISO/IEC 14496 - 4:AMD8 (MPEG SBR Conformance)
- Performs Low Power SBR Decoding
- SBR Level 5
- For SBR bit-streams supports AAC sampling frequency up to 48 kHz & SBR sampling frequency up to 96 kHz.
- SBR Signaling: Implicit, hierarchical explicit and backward compatible explicit.
- Robust against erroneous bit-streams
- Optimized for low footprint & processing power
- Supports a simple C callable API / TI XDMI API
- 16 bit WAV Output format support
- Supports memory allocation based on max number of channels to be decoded
- Skips the unused Independent CCE & DRC elements.

Features not supported:

- More than 8 channels of audio.
- Parametric Stereo Decoding
- Dependently switched CCE
- DRC

## Decoder Validation

The MPEG-4 HE-AAC Multichannel decoder implementation has been validated using the latest conformance tool given by MPEG-4.

### Notice

Ittiam Systems reserves the right to make changes to its products or discontinue any of its products or offerings without notice. Ittiam warrants the performance of its products to the specifications applicable at the time of sale in accordance with Ittiam's standard warranty.



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