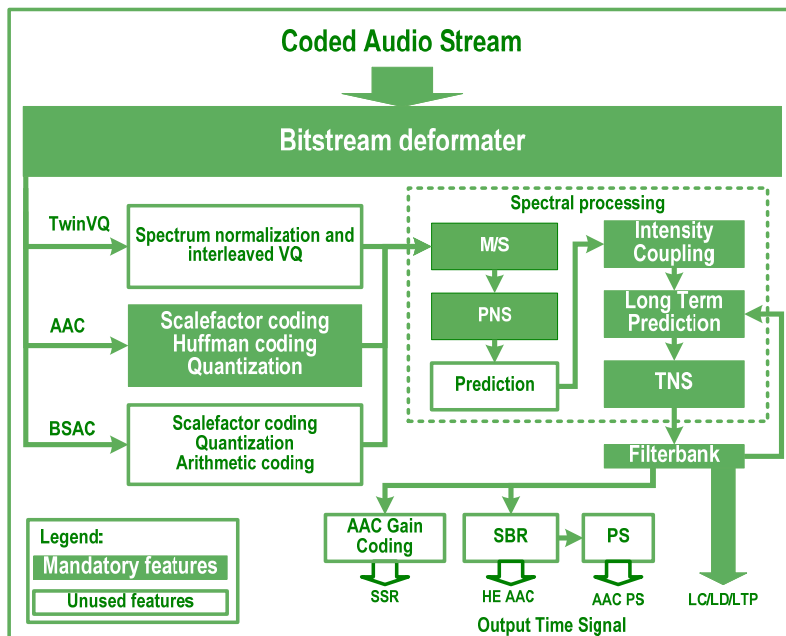


SPIRIT AAC LD Codec

The MPEG-4 Low Delay Audio Coder (AAC-LD) combines the advantages of perceptual audio coding with low delay necessary for two way communication. The main requirements are an algorithmic delay of no more than 20 ms and high audio quality for both speech and music. In this way, the AAC LD coding scheme bridges the gap between speech and audio coding schemes. Compared to known speech codecs, the AAC LD codec is capable of coding both music and speech signals with high quality. Unlike speech coders, the achieved coding quality scales up with bitrate.

SPiRiT AAC LD Codec is a highly efficient codec solution targeted to various embedded appliances. The codec is optimized for TI and ARM platforms to achieve the best performance and save more system resources.



Features

- Fully compliant to the ISO MPEG-4 Low Delay codec standard
- Profiles supported: LD
- 512 or 480 samples per frame
- Low CPU usage and memory footprint
- Sampling rates from 22.05 to 48 kHz
- Bit rates from 8 Kbps to 288 Kbps for mono and from 16 Kbps to 576 Kbps for stereo signal
- TI C6xx version is fully XDAIS-compliant (including parent/child support for paging tables)
- Code is reentrant, supports multithreading and dynamic memory allocation

Benefits

- Highly optimized code ideal for resource constrained applications
- Easy integration and fast time-to-market
- Increases channel capacity and reduces power consumption
- Wide application area

Key Features

- LD profile supported
- Low CPU usage
- Small memory footprint
- Simple API
- Fully compliant to the ISO MPEG standard

Applications

- Video conferencing
- Mobile phones
- Set-top boxes
- Communicators
- Audio streaming/ Digital radio
- Internet appliances
- Portable media players
- Car electronics

Availability

- | | |
|-------------------|------|
| • TI C6xx | Now |
| • Tensilica HiFi2 | Now |
| • TI OMAP3 | Call |
| • ARM | Call |
| • MIPS | Call |

Specifications

Decoder:

- Tools supported: TNS, PNS, Joint Stereo, LTP, Error Resilience coding for spectral data, scale factors and section data
- 512 and 480 samples frame length supported
- Support for all standard bitrates (48 Kbps, 56 Kbps, 64 Kbps, 96 Kbps among others)
- Output channels configuration: 1 or 2 output channels (multichannel output also available)
- Input channels configuration: any number of channels, only 2 initial channels decoded.
- Supports raw bitstream formats
- Example of integration with MP4 file format demultiplexor provided

Encoder:

- 512 or 480 samples frame length supported
- Support for all standard bitrates (48 Kbps, 56 Kbps, 64 Kbps, 96 Kbps among others)
- Mono/Stereo channels supported
- Includes Mid/Side Coding Tool to reduce channel redundancy in stereo signals, thereby improving the compression ratio without significant loss of perceived quality
- Produces raw bitstream

Resource Requirements

PLATFORM	TI C64xx		Tensilica HiFi2	
	Decoder	Encoder	Decoder	Encoder
Average MIPS*	10	16.5	15	18
Peak MIPS**	15	20.7	20	30
Program Memory, KB	51	80	45	35
Constant Memory, KB	17.9	22	18	20
Persistent Memory, KB per stereo	12.5	15	13	16
Scratch, KB	20	8	20	8
Stack, KB	1.5	3	2	3

* Average MIPS are specified for 44.1 kHz at 128 Kbps

** Peak MIPS are specified for 48 kHz at 320 Kbps

MIPS are measured using simulator with 0-WS

Decoder MIPS are specified with Error Resilience on

Encoder MIPS are specified with LTP on

Resource requirements for other platforms are available upon request.

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