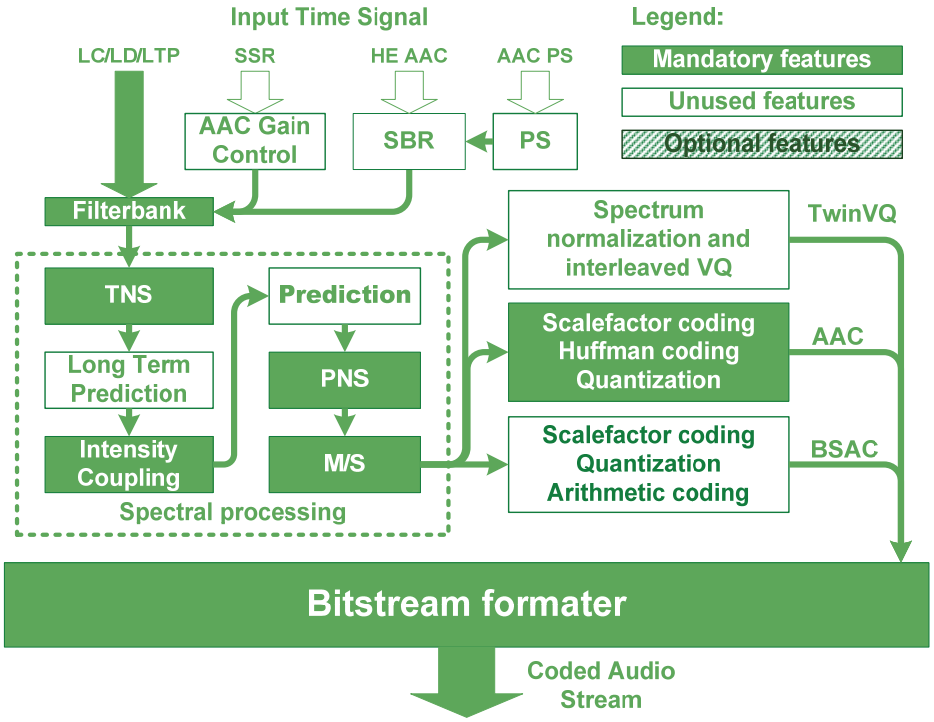
SPIRIT DSP
Embedded Voice Experience

AAC LC Encoder

Overview

MPEG-2/MPEG-4 Low Complexity Audio Codec (AAC-LC) is the simplest and most widely used and supported AAC profile. Despite its low computational complexity, AAC LC provides good sound quality at as low as 64 Kbps bitrate. Codec supports various sampling rates and bitrates. These features have made AAC LC codec a perfect solution for a wide range of application.

SPIRIT AAC LC Encoder is a highly efficient encoder solution, targeted to various embedded appliances. The encoder is optimized to achieve the best performance and save system resources.



Features

- Fully compliant to the ISO MPEG-2/MPEG-4 Low Complexity codec standard
- Low CPU usage and memory footprint
- Sampling rates from 8 to 96 kHz (compared to 48 kHz for MP3)
- Bit rates from 8 Kbps to 256 Kbps;
- Support for mono and stereo channels
- C6x version is 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
- Allows to save several hours of SoC battery life

Key features

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

Applications

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

Availability

- TI C6x Now
- ARM Call
- MIPS Call
- AudioDE Coming soon

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Specifications

- Coding tools supported: joint stereo, block switching
- TNS, PNS can be switched off/on
- Encoder includes Mid/Side Coding Tool used to reduce channel redundancy in stereo signals, thereby improving the compression ratio without significant loss of perceived quality
- Support for 1 or 2 channels
- All valid AAC bitrates are supported
- Fixed or variable bitrate encoding supported
- Encoder produces ADTS bitstream

Resource Requirements

Platform	C64	ARM9E
Peak MIPS	19.5	22
Average MIPS	15	15
Program Memory, KB	75	80
Const Memory, KB	21	25
Persistent Memory, KB per channel	10	40
Scratch Memory, KB	10	32
Stack, KB	12	12

MIPS are specified for 48 kHz at 320 kbps
MIPS are measured using simulator with 0-WS
MIPS figures are specified for PNS and TNS coding tools status on

SPIRIT delivers embedded voice and communication products and consulting services to the world's leading telecommunication equipment and semiconductor suppliers, as well as collaboration software vendors.

SPIRIT's clients include Adobe (Macromedia), Agere, Atmel, Compal, Ericsson, Furuno, HTC, Hyundai, JRC, Kyocera, LG, MediaRing, Microsoft, NEC, Nortel Networks, Oracle, Paltalk, Panasonic, Philips, Samsung, Siemens, Tadiran, Texas Instruments, and Toshiba, among over 200+ other communication OEMs.

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