

IGSAAC001A MPEG-2/4 AAC-LC Decoder on ARM9E

Features

- ◆ **Compliant to decoder part of ISO/IEC 13818-7 MPEG-2 AAC-LC and ISO/IEC 14496-3 Subpart 4 MPEG-4 AAC-LC specifications:**
 - **Sampling frequency: 8 / 11.025 / 12 / 16 / 22.05 / 24 / 32 / 44.1 / 48 / 64 / 88.2 / 96 kHz**
 - **Bit rates: 8kbps – 320kbps**
 - **Supports MPEG-2 ADIF, MPEG-2 ADTS, and MPEG-4 RAW* Format**
 - **Supports mono and stereo channel**
 - **Supports tools: MS / IS / TNS / PNS**
- ◆ **Optimized for ARMv5E processor family**
- ◆ **Requires low CPU load:**
 - **23 MHz @ 48kHz, 320kbps (TNS / PNS disabled)**
 - **20 MHz @ 48kHz, 128kbps (TNS / PNS disabled)**
- ◆ **Requires small memory space:**
 - **Program memory: 20.5 kB**
 - **Constant memory: 27.3 kB**
 - **Data memory: 21.1 kB**
- ◆ **Provides Compact software API:**
 - **Supports a simple C callable with flexible memory allocation scheme**
 - **Supports reentrant capability**

Overview

Advanced Audio Coding Low Complexity or AAC-LC is an implementation of MPEG-2 (ISO/IEC 13818-7) and MPEG-4 (ISO/IEC 14496-3) Audio Standard. The novel algorithms of AAC-LC have been designed to replace the MP3 by providing the superior audio performance than it at the same bit rate.

The IGSAAC001A MPEG-2/4 AAC-LC Decoder or GUC AAC-LC Decoder is a software library on ARMv5E processor family to implement MPEG-2/4 AAC-LC Decoder. This software library owns very good capabilities as low CPU power, small memory space, high sound quality, and compact software API to facilitate application development.

Applications

- ◆ Digital Audio Broadcasting
- ◆ Portable Personal Audio Player
- ◆ Portable Personal Audio-Video Player
- ◆ Internet Streaming

* IGSAAC001A MPEG-2/4 AAC-LC Decoder needs an additional MPEG-4 Parser to decode the track with MPEG-4 file format.

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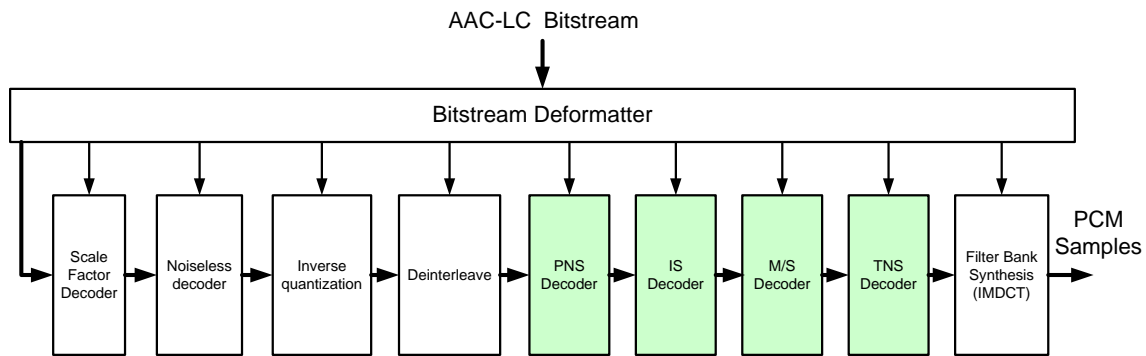
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Block Diagram



GUC AAC-LC Decoder block diagram

Description

The GUC AAC-LC Decoder can decode the MPEG-2/4 audio elements, which are packed with the ADIF, ADTS, and RAW data format, into 16-bit PCM samples. During decoding process, the compressed audio bitstream is parsed into memory buffer for decoding. The decoder parses the bitstream to get section and channel information, section data, scale factor and spectral compressed data of a frame. Then, the bitstream is forwarded into the Huffman decoder, Dequantizer, optional MS / IS / TNS / PNS decoder, and IMDCT filter bank to reconstruct the 1024 PCM samples per frame.

Deliverables

- ◆ The RVDS (v2.2) library package of AAC-LC Decoder on ARM9E
- ◆ The Linux GNU-ARM tool chain (v4.1.1) library package of AAC-LC Decoder on ARM9E
- ◆ The evaluation program (Win32 console on WinXP/2000) of AAC-LC Decoder on ARM9E
- ◆ Document Set including One Page Summary and Technical Manual

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