

SPIRIT Audio Engine

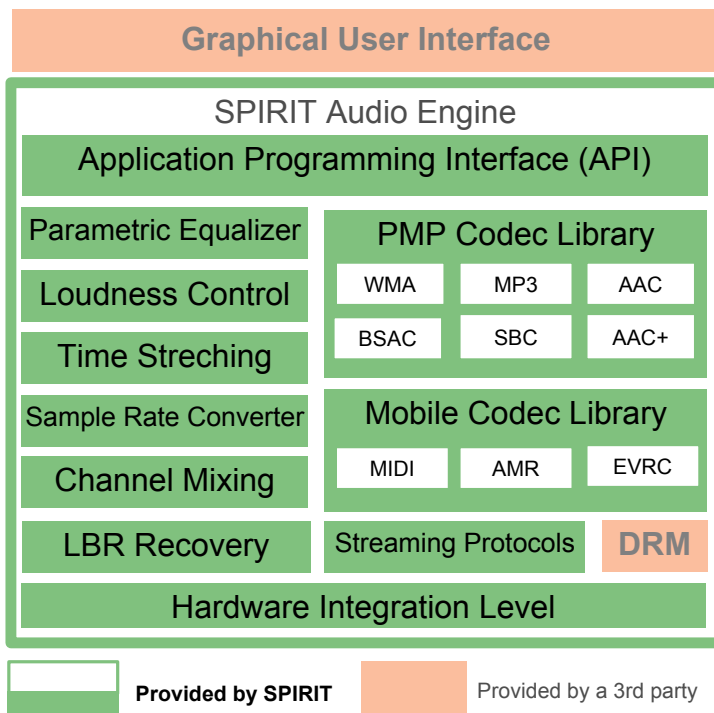
The market for portable multimedia players (PMP) and digital audio for mobile phones presents numerous challenges for OEM/ODMs. Players are shrinking in size and there is strong demand for longer battery life. Customers expect their PMPs to deliver high quality music in days, not hours on single battery charge. Leading SOC/PMP vendors constantly struggling to reduce power consumption in their designs while packing new features and music formats.

New audio formats are constantly emerging towards to higher complexity and efficiency. Better algorithms play a key role in extending battery life not only because CPU utilization translates directly into power consumption, but also because of smaller footprint means less FLASH and DRAM to keep chip cost at minimum.

Overview

SPIRIT Audio Engine brings all the features audio SOC/PMP vendors demand of complete player solutions to deliver high-quality music experience even on tightly-constrained SOC platforms.

It supports all key formats, including MP3, AAC, AAC+ v1, AAC+ v2, BSAC, SBC and WMA, wrapped in essential set of must-have add-ons like EQ, Sample Rate Converter, Dynamic Range Control, Mixer to provide complete plug-n'-play solution for any vendor.



Benefits

- Allows to increase battery life by 10-15 hours as against industry standards
- Highly optimized code ideal for resource constrained applications
- Easy integration and fast time to market
- Saves the area thus reducing production costs
- Time-proven solution – already used in numerous devices worldwide
- Highest sound quality for most demanding applications

Key Features

- Low CPU usage - below 10 MHz for MP3, WMA and AAC
- Small memory footprint
- Support for most popular profiles
- Simple and efficient API
- Fully compliant to open standards

Applications

- Audio SoCs
- Portable media players
- Digital audio players
- Electronic book readers
- Set-top boxes
- Car electronics

Availability

- TI C6xx
- ARM
- AudioDE
- BlackFin
- MIPS
- Tensilica Xtensa HiFi 2 Audio Engine

SPiRiT Audio Engine Applications

COMPONENT	APPLICATIONS		
	Player Basic package	Player Extended package	Audio book reader
Codec Library			
MP3	✓	✓	✓
AAC LC	✓	✓	✓
AAC+v1	<i>optional</i>	✓	✓
AAC+v2	<i>optional</i>	✓	✓
WMA	✓	✓	✓
BSAC	–	<i>optional</i>	<i>optional</i>
SBC	–	<i>optional</i>	<i>optional</i>
MP2	–	<i>optional</i>	<i>optional</i>
MP3 Encoder	✓	✓	✓
AAC LC Encoder	<i>optional</i>	<i>optional</i>	<i>optional</i>
Audio Utilities			
Parametric Equalizer	✓	✓	✓
Loudness Control	✓	✓	✓
Sample Rate Converter	✓	✓	✓
Time Stretching	–	<i>optional</i>	✓
Channel Mixer / Cross Fader	✓	✓	✓
SPiRiT LBR Recovery	✓	✓	✓

SPiRiT Audio Engine Components

COMPONENT		DESCRIPTION
Codec Library	MP3, WMA, AAC LC, AAC+ v1, AAC+ v2 and more	All codecs are optimized to get minimal CPU load and memory footprint. Codecs are compliant to appropriate standards and recommendations.
Audio Utilities	Parametric equalizer, Loudness Control, Time Stretching and more	Complete set of audio utilities enriches audio processing system with value added functionality
Special Effects	LBR Recovery	SPiRiT patented algorithm for reconstructing lost frequencies of low-bitrate (LBR) audio files. Allows to restore CD quality for old low-bitrate audio files. Compatible with mp3, wma and aac-lc formats.
File Format Parsers	mp3, m4a, 3gp	File format parsers are necessary to playback audio files in various formats
Copy Protection	OMA DRM, WMDRM or other	3 rd party DRM software

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