

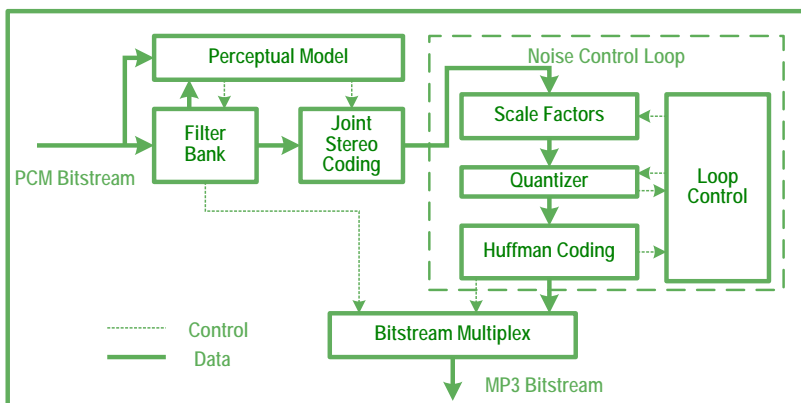
SPiRiT MP3 Encoder

MP3, also known as MPEG-1/MPEG-2 Audio Layer 3, is a popular digital audio encoding and lossy compression format standardized by Moving Picture Experts Group (MPEG). Three layers (layer 1, 2, 3) are supported based on the complexity, compression and quality. Layer 3 offers the highest compression for a given audio fidelity.

MPEG-2 Audio standard extends MPEG-1 standard with:

- forward and backwards compatible coding of multichannel signals
- support for 16, 22.05 and 24 kHz sampling frequencies.

SPiRiT MP3 Encoder supports MPEG 1, 2 Audio Layer III standards and their low bit rate extension MPEG 2.5. It can be effectively used in such applications as portable audio systems, wireless communications, car audio systems, set-top boxes, Internet appliances and PDAs.



Features

- Low CPU load (as little as 20 MHz peak load)
- Low memory requirements
- Highest objective encoding quality scores
- MPEG 1 / 2 / 2.5 LAYER III, compliant to ISO MPEG standards
- Supports bitrates from 8 Kb/s up to 320 Kb/s
- 1- or 2-channel modes are supported

Specifications

The MP3 (MPEG layer 3) audio encoder supports ISO/IEC 11172-3 MPEG-1 and ISO/IEC 13818-3 MPEG-2 formats, Layer 3, VBR and Free-Format streams, mono or stereo output streams as well as MPEG-2.5 low bit rate extension.

Input is raw PCM with sampling rates of 8000, 11025, 12000, 16000, 22050, 24000, 32000, 44100, 48000 samples per channel per second.

**Average CPU load for 48 kHz stereo measured on ARM9E simulator with 0-WS*

Benefits

- Highly optimized code
- Ideal for resource constrained applications
- Easy integration and fast time to market
- Industry-leading encoding quality
- Low CPU usage for longest battery life

Key Features

- Full MPEG compliance
- High accuracy
- Only 20 MHz* CPU load
- Small memory footprint
- Simple API

Applications

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

Availability

| | |
|-------------------|------|
| • ARM9E | Now |
| • Cortex-M3/4 | Now |
| • Blackfin | Now |
| • AudioDE | Now |
| • Tensilica HiFi2 | Now |
| • TI OMAP | Call |
| • TI C6xx | Call |
| • TI C5xx | Call |
| • MIPS | Call |

Resource Requirements

| PLATFORM | ARM7 | ARM9 | ARM9E | ARM11 |
|----------------------------------|------|------|-------|-------|
| Peak MIPS* | 36 | 30 | 21 | 25 |
| Average MIPS** | 31 | 26 | 14 | 21 |
| Program Memory, KB | 19 | 19 | 18.7 | 19 |
| Constant Memory, KB | 6.4 | 6.4 | 5.3 | 6.4 |
| Persistent Memory, KB per stereo | 8.1 | 8.1 | 8.1 | 8.1 |
| Scratch, KB | 7.3 | 7.3 | 7.3 | 7.3 |
| Stack, KB | 0,5 | 0,5 | 0,5 | 0,5 |

| PLATFORM | Tensilica HiFi2 | Cortex-M3/4 | Blackfin | TI C55xx |
|----------------------------------|-----------------|-------------|----------|----------|
| Peak MIPS* | 18 | 33 | 21 | 27 |
| Average MIPS** | 15 | 27 | 17 | 23 |
| Program Memory, KB | 35 | 20.3 | 18 | 15.3 |
| Constant Memory, KB | 6 | 5.4 | 6.6 | 6.7 |
| Persistent Memory, KB per stereo | 9 | 8.1 | 16.4 | 10.8 |
| Scratch, KB | 8 | 7.3 | 0 | 7.3 |
| Stack, KB | 3.5 | 0,5 | 0.6 | 0,5 |

* 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

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