

## Encoder: MPEG-1 and MPEG-2 Layer III

SEDA Solutions® has re-designed and implemented a version of the MPEG-1 and MPEG-2 (Lower Sampling Frequency Extension) Layer III encoding algorithm desirable for floating or fixed point processors with a data width of multiples of 16 bits. The encoding algorithm is guaranteed to provide the **LOWEST MIPS**<sup>1</sup> for a given processor architecture core. The proprietary modified encoder algorithm is so simple that although it closely maintains the quality of a full encoder at bit rates of 64 kb/s and above, **it requires only 50% to 60% the complexity of a normal encoder algorithm**. The implementations have focused on maintaining a high quality and lowering the computational complexity while keeping the data precision to a minimum of required fixed-point bits. Table below shows a typical implementation by SEDA Solutions® of the MP3 algorithm described above on a conventional proprietary 16 bit fixed-point processor.

Module Name	MP3 Decoder	MP3 Encoder
Data Size	16/32	16/32
Instruction Width	32	32
Data RAM	12218	12888
Data ROM <sup>2</sup>	12004	12004
Program Size <sup>3</sup>	<8k	<8k
Cycle MIPS	43	49

### ■ Features

SEDA Solutions® MP3 Encoding implementation services will support all or a selection of the following options:

- MPEG-1 and MPEG2 (LSFE) Layer III only
- Sampling Rates: 16kHz, 22.05 kHz, 24 kHz, 32kHz, 44.1kHz, 48kHz
- Bit Rates: 8, 16, 24, 32, 40, 48, 56, 64, 80, 96, 112, 128, 144, 160, 176, 192, 224, 256, 288, 320, 352, 384, 416, 448 kbit/s
- Modes: Mono, Dual Channel, Stereo, Joint Stereo
- Constant bit rates

SEDA Solutions® offers pre-filtering options to enhance the quality of encoded signal. Other design options provided are technical system configurations for safeguarding against processing requirements that result in over usage of system resources.

### ■ Quality

Years of firmware services and multiple porting opportunities make SEDA Solutions® one of the leaders in providing high quality MP3 Encoder functionality on your system. Our rigorously tested implementations have been shipped out on several audio consumer products. No matter what the final target platform, SEDA Solutions'® MP3 proprietary encoder algorithm and its firmware services deliver not only a high quality encoding but also efficient implementation resulting in optimum usage of memory and clock cycles. Savings in resource utilization will ultimately reduce cost and power consumption.

For more information on Audio related products and services please visit our web site at [www.sedasolutions.com](http://www.sedasolutions.com) or contact us by email at [info@sedasolutions.com](mailto:info@sedasolutions.com).

<sup>1</sup> Million Instructions Per Second

<sup>2</sup> Shared by Encoder and Decoder

<sup>3</sup> Limit Set by Design Specifications

Audio

