



## FEATURES

- True Single-Chip Solution
- Supports multiple decoding algorithms including MP3, WMA, WMA DRM (Digital Rights Management), and IM-ADPCM
- Flexible software architecture allows for the integration of additional decoding algorithms
- Upgradeable firmware
- Hardware Interfaces for Flash memory, SmartMedia, MMC, Secure Digital, CD, IDE and CompactFlash
- High-performance 18-bit Sigma-Delta technology
- Voice record in ADPCM format
- Low noise with SNR >95 dB
- Dynamic power management, for up to 35 hours on a single AA battery\*
- Available in multiple battery configurations such as 1xAA, 1xAAA, 2xAA, 2xAAA or Lilon\*\*
- Integrated interface for:
  - USB for data transfer
  - Memory
  - LCD controller
  - LEDs
  - FM radio input and control
  - Buttons and switch inputs
  - Headphones and microphone
- USB host drivers for Microsoft® Windows® 98SE, Windows ME, Windows 2000, Windows XP and MacOS9
- Interface to host chip/ processor
- 5-band graphic EQ

\* Alkaline AA rated at 2850 mAh or higher.

\*\* 2xAA and 2xAAA configuration require 144-pin package.

## OVERVIEW

D-Major™ audio decoder solutions provide high quality audio playback for portable devices such as MP3-style flash players, language learners, jukeboxes, and MP3 CD players. These solutions contain market-leading benefits including 35 hours of life on a single AA battery, incredibly small form factors (14.5 cm<sup>2</sup>), flexible software support for current and future digital audio formats, and security functionality that can evolve as future standards are defined. D-Major is a true single-chip solution that maintains a flexible interface with other integrated circuits for incorporation into PDAs or cell phones. With D-Major's high level



**D-Major**  
**Audio Decoder**  
**Solutions**

**SIGMATTEL®**

**35 hours of battery life**  
**For MP3 player designs**  
**as small as 14.5 cm<sup>2</sup>**

AT&T Time To Go  
Across the Tracks  
Radio, Radio  
River Murray  
Hanna J. J. J.  
I Can Drive  
www.sigmatel.com  
Before I Go  
Old School  
New School

of integration and quality, portable audio devices are attractive to a larger audience because of a lower system cost.

The D-Major standard solution integrates many features, including LCD interface, voice record, FM tuner interface, and headphone amplifier. The D-Major value-line solution offers a cost-saving option for applications that do not require an LCD interface, voice record function, or FM tuner interface. Both solutions offer high-performance benefits and features including USB download and upload capabilities, long battery life, memory interface options, and standard digital audio format support including MP3.

The D-Major STMP3410 solution is the newest addition to the product family. Building upon the features in the STMP3400 solution, the STMP3410 also includes WMA and WMA DRM (Digital Rights Management). Improved integrated DC-DC converter technology has increased battery life to 35 hours using a single AA battery. In addition, the internal memory of the system has doubled allowing for more customizable features and programming flexibility.



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*SigmaTel, a provider of integrated circuit (IC) design, is converting the real world into a digital experience with its innovative mixed-signal solutions for the digital audio and wireless infrared markets.*

## D-MAJOR™ AUDIO DECODER SOLUTIONS

SigmaTel's D-Major audio decoder solutions deliver high performance digital audio with an integrated USB interface and other key interface components. The combination of SigmaTel's high performance audio codec, DSP, USB interface, and general purpose I/O creates a powerful single-chip audio decoder for low-cost designs.

The USB interface can download digital music to on-board memory or memory cards and upload voice recordings. The hardware memory interface supports NAND flash, SmartMedia, MMC, Secure Digital, CD, IDE or CompactFlash. The audio decoder is capable of decoding audio files while also controlling the display, buttons, headphones, microphone, and FM radio. With the addition of an external FM tuner circuit, the STMP3400 standard solution can support FM radio tuning and playback. D-Major audio decoders can be the host chip or interface to a host processor chip.

All digital pins on SigmaTel audio decoders, except one, can be configured for general purpose I/O, which offers great flexibility in customizing audio-enabled devices.

*MPEG Layer 3 audio coding technology licensed from Fraunhofer IIS and THOMSON multimedia.*

### STMP3300: VALUE-LINE DECODER

*does not include LCD interface, voice record or FM tuner interface.*

Provides a cost-effective solution for gift and promotional players that have an LED interface.

(PLEASE SEE STMP3410 FOR NEW DESIGNS)



### STMP3400: STANDARD DECODER

Provides the greatest integrated solution for MP3-style players that want LCD, voice record, and FM-tuner functionality.

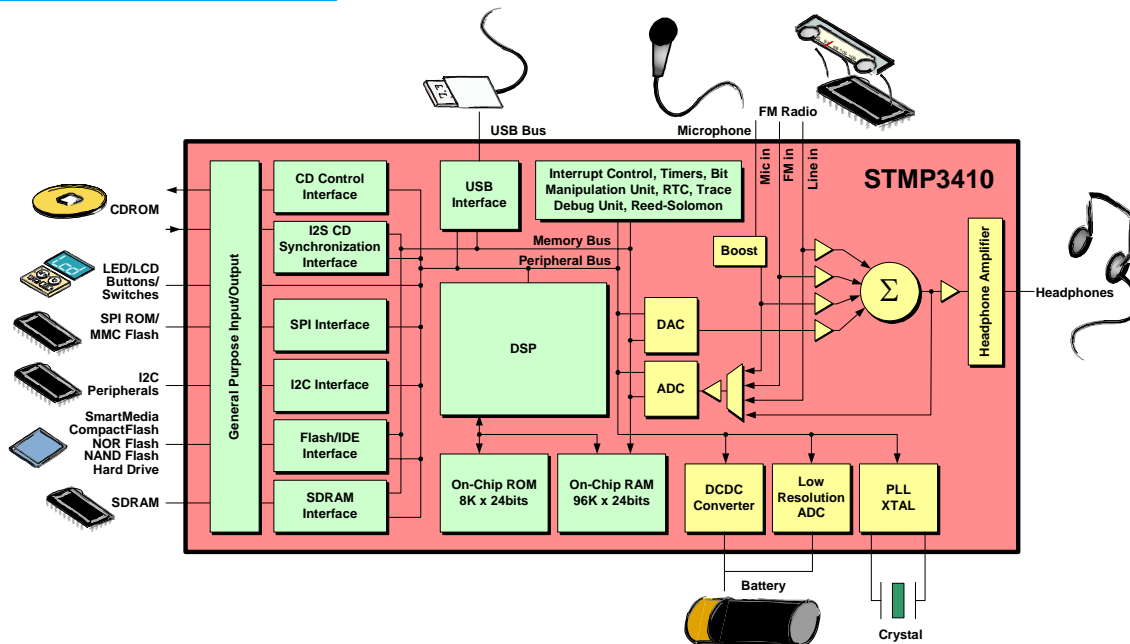
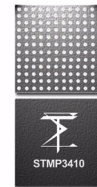
(PLEASE SEE STMP3410 FOR NEW DESIGNS)



### STMP3410: PREMIUM DECODER

**RECOMMENDED FOR NEW DESIGNS**

The STMP3410 offers additional decoding algorithm support for WMA and WMA DRM (Digital Rights Management). This solution is software upgradeable so the latest algorithms can be added to released products. The STMP3410 is available in fpBGA and LQFP packages.



SigmaTel, Inc. — 3815 S. Capital of TX Hwy, Ste.300 — Austin, TX 78704, USA

www.sigmatel.com — tel: (512) 381-3700 — fax: (512) 744-1700