SIGMATEL D-MAJOR™ AUDIO-ENABLED FLASH DISK DRIVE APPLICATION BRIEF

FEATURES FOR:

STMP1342/3410/3420/3501/3505/3506/3510/ 3520/3550/3560

- **Decodes MP3 and WMA and is upgradeable to other digital music formats**
- **Supports WMA Digital Rights Management (DRM) and other security schemes**
- **Includes on-chip read-only unique ID for Digital Rights Management algorithms**
- **Hardware supports NAND Flash, SmartMedia, MMC and Secure Digital**
- **Flexible, efficient on-chip DC-DC converter**
- **GPIO and button I/O controls**
- **Voice record in ADPCM format**
- **Volume control on record and playback**
- **Full analog mixer configuration**
- **<0.05% THD headphone driver, including anti-pop and short-circuit protection**
- **High performance 18-bit $\Sigma\Delta$ technology**
- **Line-in to Line-out SNR >90 dB**
- **More than 35 hours of operation on a single AA battery**
- **Windows and Macintosh USB Mass Storage Class support**
- **Upgradeable firmware**
- **Energy saving dynamic power management**
- **Bass and Treble control; configurable multiple band control**
- **Multiple NAND as 1 drive**
- **Battery level detection using LRADC**
- **Power mass storage device from USB when connected to the PC**
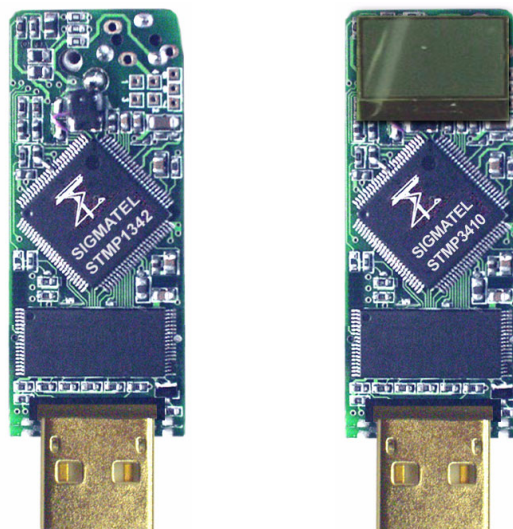
MPEG Layer 3 audio coding technology licensed from Fraunhofer IIS and THOMSON multimedia.
WMA audio coding technology includes technology owned by Microsoft Licensing, Inc. and cannot be distributed without a license from Microsoft Licensing, Inc..
Windows Media and WMA are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

D-MAJOR™ AUDIO DECODER SOLUTIONS FOR MASS STORAGE DRIVERS

SigmaTel's D-Major™ audio decoder solutions are ideal for flash disk drives that add audio and/or voice record functionality. SigmaTel's single-chip solution enables companies to add much more functionality to a flash disk drive without greatly changing the device size. SigmaTel integrates all the essential elements for an audio-enabled flash disk drive: USB or Hi-Speed USB, flash interface, DC-DC converter to enable power to the entire device, battery recharge, DAC and headphone amp for music playback, ADC for voice record, and an interface to an LED or LCD. Besides offering an integrated single-chip solution, SigmaTel also provides firmware support to operate the device in player mode, and when it is connected to the PC in mass storage mode. SigmaTel enables flash disk drives to use the mass storage drivers included with the Windows and Macintosh operating systems.

With an integrated DC-DC converter that is controlled through firmware, SigmaTel's audio decoder solutions are optimized for lower power consumption. Also, with external circuitry, SigmaTel-based flash disk drives can power from USB when connected to a PC, further conserving battery power consumption.

The SigmaTel D-Major™ audio decoders are ideal for audio-enabled flash disk drives because of size, integration, and low power consumption. SigmaTel offers a complete solution with a single IC and complete firmware support.

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.

www.sigmatel.com

Table 1: Product Features

Features	Product Name					
	STMP1342	STMP3410/ 3420	STMP3501	STMP3505/ STMP3506	SMTMP3510/ 3520	STMP3550/ 3560
Battery Life	35	35	25	50	50	50
USB	USB	USB	USB	USB	Hi-Speed USB	Hi-Speed USB
Integrated Battery Recharge						✓
Supported Battery Types	1XAA, 1XAAA	1XAA,1XAAA, Li-Ion, 2XAA, 2XAAA*	1XAA, 1XAAA	1XAA, 1XAAA, Li-Ion, 2XAA, 2XAAA*	1XAA, 1XAAA, Li-Ion, 2XAA, 2XAAA*	1XAA, 1XAAA, Li-Ion, 2XAA, 2XAAA*
MP3 Encode		STMP3420 only		STMP3506 Only	STMP3520 only	STMP3560 only
Packages	100-pin TQFP, 144-pin BGA	100-pin TQFP, 144-pin TQFP (STMP3410 Only), 144-pin BGA	100-pin TQFP	100-pin TQFP 144-pin BGA	100-pin TQFP 144-pin BGA	100-pin TQFP 144-pin BGA
LED/LCD	LED only	LED/LCD	LED/LCD	LED/LCD	LED/LCD	LED/LCD
Integrated RTC		✓		✓	✓	✓
Remote Control using LRADC		✓		✓	✓	✓
DSP speed	65MHz	65MHz	75MHz	75MHz	75MHz	75MHz
FM_in/Line_In and FM Control		✓		✓	✓	✓
Graphical EQ		✓		✓	✓	✓
Subdirectory Support		✓		✓	✓	✓
Playlist Support		✓		✓	✓	✓

*2XAA, 2XAAA and Li-Ion is supported with 100-pin package. Li-Ion is supported with 100-pin package but several external components are required.

STMP3510/3520/3550/3560

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