

## Product Brief

# TMS320DA255 DSP-Based Ra&a Reference Design for Portable Digital Music Players

Today's portable audio market is growing. Multiple data sources report that this market will exceed 25 million units over the next few years. Texas Instruments' TMS320DA255 Digital Signal Processor (DSP) Flash-based Ra&a reference design – the first in a series of TMS320C5000™ DSP-based turnkey, BOM-optimized platforms – helps you capture your share of this expanding market.

### Ultra-Low Power Processor

TI's TMS320DA255 DSP delivers an optimal combination of high performance, peripheral options and power-efficiency all in a small package. Using the latest process technologies available today, this innovative design can run over 45 hours on a single AA battery.

### Ra&a Design Features

- Turnkey, manufacturable reference design
- Includes all necessary software, schematics, documentation and netlists needed for production
- Provides support for MP3, WMA, AAC, MP3Pro and G.726 compressed audio playback

- Allows for MP3 encoding via analog line in or from built-in FM receiver and for G.726 voice recording from built-in microphone
- Includes TI's proprietary, high-quality Time Scale Modification (TSM) software that allows voice or music to speed up or slow down without changing the pitch or lowering the audio quality
- Supports MMC removable Flash card, but can be modified to support CF, MS, SD and multi-plate HDDs
- Future versions will have 1" HDD embedded
- 128-MB NAND memory
- Integrated FM tuner and microphone; can be removed to further reduce BOM
- USB 2.0 Full Speed with high speed option
- Multi-language support
- Multi-line, backlit LCD display
- Graphical user interface with system applications for battery monitoring, digital volume control, sample rate conversion, and equalizer
- Full support for USB mass storage class with media transfer protocol option
- Full support of Microsoft's DRM

- Over 300 MIPS of available headroom for additional differentiation

### Development Tools

TI has a variety of software tools available. You can move quickly through the DSP application design process and concentrate on differentiating your product instead of programming.

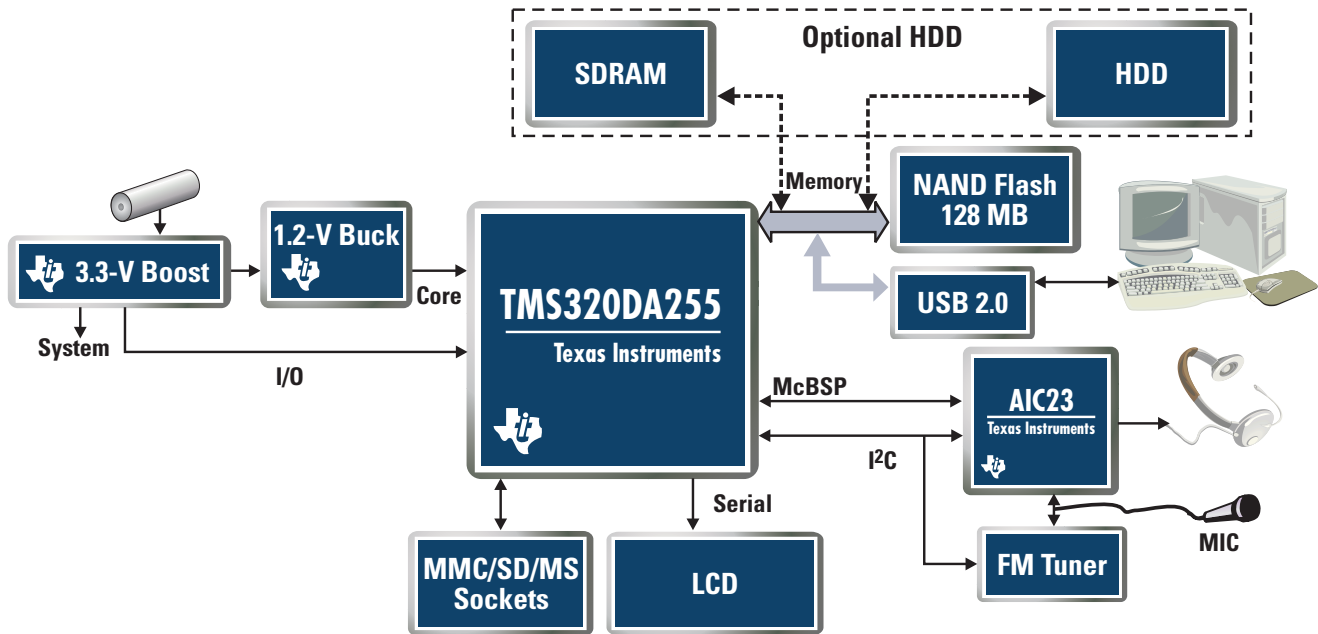
Code Composer Studio™, a component of eXpressDSP™ Software Technology, is a fully integrated suite of easy-to-use DSP software development tools, incorporating TI's efficient C5000™ DSP Platform C compiler with the Code Composer Integrated Development Environment (IDE), DSP/BIOS™ and Real-Time Data Exchange (RTDX™) technologies.

It provides real-time analysis, data visualization capabilities, an open architecture and advanced code-generation tools along with standard open Application Program Interfaces (APIs) that allow third parties to build higher-level products for more functionality. A wide variety of specialized third-party tool plug-ins are also available.

### Key Benefits

- **Long battery life:** Provides over 45 hours on a single AA; over 20 hours on a single AAA battery
- **Turnkey, production-ready design:** BOM-optimized design means extremely competitive retail prices
- **Fully integrated software library provides seamless listening:** Support for all the popular formats of digital audio content such as MP3, WMA, AAC™ and MP3Pro™ plus architecture that supports multiple DRM protection schemes and post-processing features
- **Time Scale Modification (TSM):** TI's proprietary, high-quality TSM software allows voice or music to speed up or slow down without changing the pitch or lowering audio quality
- **Design overhead:** Programmable processor capable of up to 400 MIPS allows for additional product differentiation and headroom for future design requirements

## TMS320DA255 DSP Ra&la Reference Design



TI's innovative solutions give you additional headroom for future product development; this allows you to not only future proof your current design, but your overall product portfolio as well. When pioneering features such as advanced audio, still image processing and video encoding and decoding become the standard for portable audio products, TI has you covered with our full line of portable digital media processors. With TI's complete chipset solutions including codecs, power management and connectivity, your product will stay ahead of the pack.

For more information contact your local TI sales office or Texas Instruments' Ra&la partner.



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