

Product Brief

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

Shown actual size.

Today's portable audio player market continues strong growth. IDC has forecasted that this market will exceed 60 million units in 2006. Texas Instruments' TMS320DA255 Digital Signal Processor (DSP) hard disk drive-based Ra&a reference design – the second 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 play music over 15 hours on a single charge of the built-in lithium ion 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 and WAV encoding and decoding
- JPEG decoding with simultaneous audio (slideshow)
- MPEG-4 decode
- 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
- 5-GB 1" hard disk drive
- Integrated FM tuner, microphone, and USB host can be removed to further reduce BOM cost
- USB 2.0 HS speed device with full speed host
- Multi-language support
- 128 × 160 color TFT display
- Graphical user interface with system applications for battery monitoring, digital volume control, sample rate conversion, and equalizer
- Support of Microsoft's DRM technology
- Optimized audio track and database management

Key Features

- TMS320DA255 DSP-based design
- 128 × 160 color TFT LCD
- MP3, WMA, WAV encode/decode
- JPEG decoding with simultaneous audio (slideshows)
- MPEG-4 decode
- TI's high-quality time scale modification (TSM) algorithm
- FM tuner with auto scan
- Voice recording with built-in mic
- Digital Rights Management (DRM)
- Records from line-in, mic or FM receiver
- Multi-language support with Unicode
- Customizable user interface with
 - Artist name, song title, total number of tracks
 - Track number, elapsed play time, bit rate
 - DSP mode (rock, jazz, flat, etc.), play mode
 - Volume level, battery monitor, etc.
- USB-based firmware upgrade
- USB device and host support
- Low power design-over 15 hours of playback on a single charge

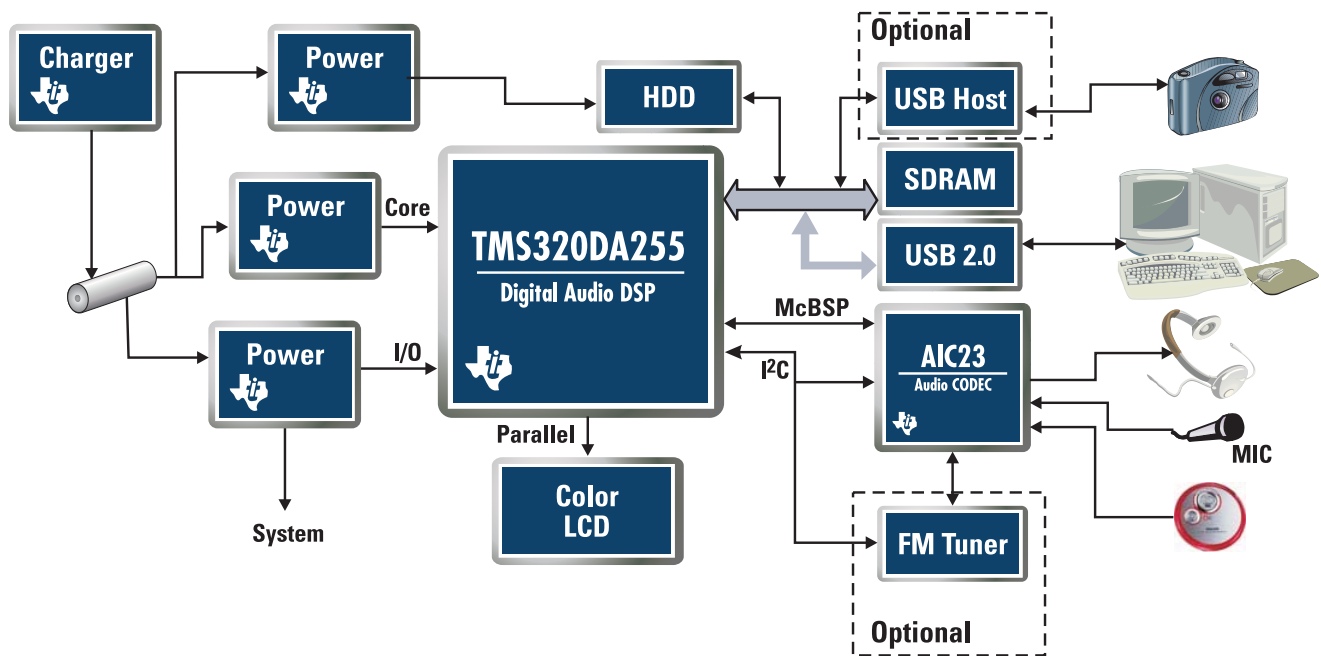
Development Tools

If you choose to develop on your own, 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.

TMS320DA255 DSP Ra&la HDD Reference Design



TI's reference design solutions provide you with the features and headroom to lead the market today and down the road. TI's broad offering of semiconductor solutions for consumer electronics markets enables you to also quickly address other emerging spaces. As features such as advanced audio, still-image processing, and multi-format, high-resolution video encoding and decoding become checkmarks for your portable products, TI has you covered with our full line of portable processors.

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



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