**Product Bulletin**

**Aureus™ TMS320DA708**

High-Performance Multichannel Audio DSP with Powerful and Flexible System Software Solution

Texas Instruments’ Aureus™ DSPs are ideal for applications requiring multi-channel audio decoding and post-processing as well as high-speed encoding for both commercial and automotive markets. Applications benefitting from Aureus DSPs include AV and DVD receivers, HDTVs and automotive multimedia systems.

The TMS320DA708 floating-point DSP is a high-performance member of the second generation of the Aureus family of DSPs. The DA708 DSP supports differentiating features such as true dual-zone decoding for multi-zone AVRs and conversion to PCM and post-processing of SACD content. Standard decoding and post-processing is automatically managed in a very small performance footprint leaving an abundance of headroom for customization, including implementing better sounding virtualizers or room simulators, higher-quality room correction, or simultaneous high-speed encode with multichannel decode.

**Enhanced TMS320C67x™ CPU**

The CPU is based on TI’s 32-/64-bit TMS320C6000™ DSP architecture and utilizes the Code Composer Studio™ development environment including the best-in-class C compiler. Key features include:

- Powerful 32-/64-bit floating-point DSP core
- Software compatible with DA6xx Aureus devices
- New audio-specific enhancements

Additional features of the DA708 DSP include large on-chip ROM and RAM as well as program cache and single-cycle access to on-chip data; 16-bit EMIF supporting SDRAM, Flash, SRAM; three multichannel Audio Serial Ports (McASPs) with five clock zones and 16 stereo IIS pins that support SPDIF transmit; DMAX dual data movement accelerator optimized for audio; two SPI ports with 3-, 4-, 5-pin options and two FC ports.

The DA708 DSP is available in commercial or extended temperature range in a 144-pin TQFP package. Additional security features are available. Contact your local TI field sales representative for more information.

**Performance Audio Software**

TI provides a complete system software solution for multichannel audio decoding and post-processing for the Aureus DSPs. The Performance Audio (PA) software solution reduces development time by allowing users to focus on their value-added differentiating algorithms and not on the base solution and integration.
The PA software solution features:
- Certified implementations of industry-standard decoders and post-processing algorithms
- The TI Effects library which includes configurable modules for graphical EQ, matrix decoding and room simulators
- Performance Audio Framework (PAF), a powerful system framework that auto-detects incoming bitstreams and provides a simple I/O and control interface. The PAF was built upon TI’s TMS320™ DSP Algorithm Standard, which allows developers to easily plug custom algorithms into the framework, resulting in modular solutions. The PAF features audio stream management, audio and control drivers; multiple I/O topologies; single zone, dual zone, stream split, stream merge; multiple bootload options; Flash, SPI, FC; as well as support for Flash upgrade

**Industry Standard Software**
The PA software solution includes
- **Decoders**
  Dolby® Digital, Dolby Digital EX; DTS® Digital Surround, DTS-ES Discrete 6.1, DTS-ES Matrix 6.1, DTS 96/24; MPEG-2 AAC multichannel, MPEG-4 AAC stereo; Windows Media® Audio version 9, WMA9 Pro, MP3, HDCALL, ATRAC3plus; DSD-to-PCM conversion
- **Encoders**
  Stereo: MP3, Windows Media Audio version 8, ATRAC3plus, MPEG-2 AAC; Multichannel: Dolby® Digital 5.1 creator
- **Audio Stream Processing**
  Dolby® Pro Logic® IIx, Dolby headphone, Dolby virtual speaker; DTS Neo:6; Double-precision (64-bit) bass management; THX Select2, THX Ultra2; TI Effects library; FIL – optimized floating-point filter library
- Third-party IP available on Aureus™ DSPs
  - Audyssey MultEQ X™, MultiEQ™, PreEQ
  - SRS® Circle Surround II, WOW™, TruBass™
  - Waves MaxxBass®
  - Neural XM Surround

**Development Tools**
Code Composer Studio™ IDE with the best-in-class C compiler simplifies the development of software while hardware development is supported by an EVM from Momentum Data Systems.

**For More Information**
If you’d like additional information about TI’s Aureus DSPs or the PA software solution, go to www.ti.com/da708.