



Product Bulletin

TAS3204: Audio System on Chip

The TAS3204 audio processor is a dual-core device consisting of a powerful DSP and microcontroller (MCU) along with audio quality analog-to-digital converters (ADCs) and digital-to-analog converters (DACs). The TAS3204 is a fully integrated solution offering analog input, digital processing and analog output functionality. Operating at 135 MHz, the DSP core is capable of five simultaneous operations per cycle. The MCU is an industry standard 8051 core. It optimizes the TAS3204's system performance by handling the I²C interface and controlling the audio algorithms.

The DSP's 48-bit data path enables superior audio processing,

and its unique single-cycle 76-bit (48 × 28) multiply-accumulate operation accelerates the processing of most audio algorithms. The TAS3204 incorporates all the functionality required to perform demanding audio applications. Three stereo input channels MUXed to two stereo ADCs provide the capability to process audio from up to three independent sources. Also included are two stereo DAC channels, making the TAS3204 ideal for bi-amped or 2.1 speaker solutions.

Enhanced Audio Faster

High quality audio systems with lower bill-of-material costs can be implemented with the TAS3204

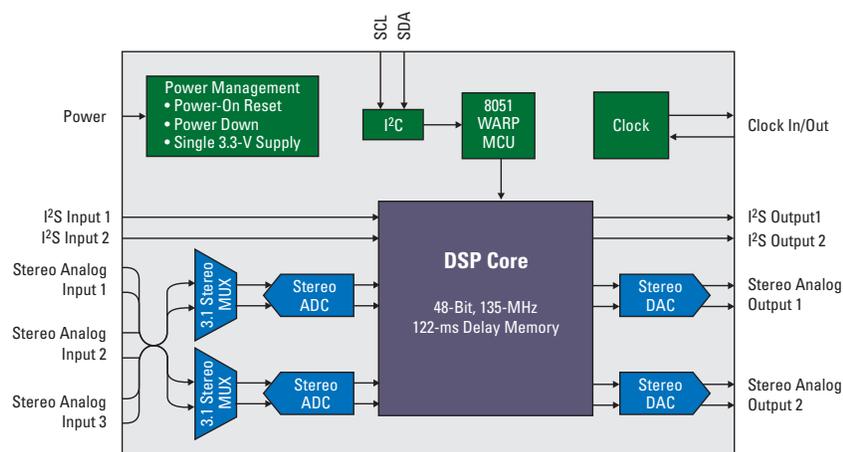
Key Features

- High-performance dual-core DSP/MCU audio processor
- 135-MHz 48-bit fixed data path DSP core
- Two stereo 101-dB ADCs
- Two stereo 104-dB DACs
- Ideal for iPod™ docks, mini/micro systems, multimedia speakers
- Fast time-to-market and easy customization with extensive selection of already-optimized audio algorithms, as well as graphical and integrated development environments
- Powerful processing capabilities for advanced audio features such as third-party algorithms (SRS®, QSound™, BBE™, etc.)

because of its integrated analog data converters and full suite of quality-enhancing features such as equalization, tone and volume control and loudness. Dynamic range compression eliminates the need for discrete devices to support these capabilities.

Developers have full control of audio processing and can implement a range of algorithms such as matrix decoding, sound enhancement and surround sound. Because the device is supported by leading third-party IP developers such as BBE, QSound, SRS and others, TAS3204 designs will always have timely access to the latest innovations in audio technology.

The powerful processing supported by the TAS3204's dual-core architecture gives developers the ability to easily add post-processing and proprietary audio algorithms for differentiated features.



TAS3204 Audio Processor Block Diagram

Software and Development Tools

Fully supported by PurePath Studio™, an efficient drag-and-drop graphical development environment, the TAS3204 will accelerate a new product's time-to-market and ease the development of differentiated features. PurePath Studio includes a code

editor with contextual help facilities, a simulator for debugging code and other tools. Pre-optimized software components as well as third-party algorithms can be quickly integrated by simply dragging and dropping the software module into PurePath Studio. In addition, the TAS3204 is supported by a traditional integrated

development environment (IDE). The device's MCU core is fully supported by C compilers, macro assemblers, debuggers and real-time kernels.

For More Information

For more information on the TAS3204, contact your local TI field sales office.

TI Worldwide Technical Support

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TI Semiconductor KnowledgeBase Home Page

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