The TAS3204 audio processor is a dual-core device consisting of a powerful DSP and microcontroller (MCU) along with high performance audio 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 FC 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 differential input channels MUXed to two stereo ADCs provide the capability to process audio from up to three independent sources. Also included are two stereo differential 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 because of its integrated analog data converters and full suite of quality-enhancing features such as equalization, tone and volume control, loudness and 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.
Software and Development Tools

Fully supported by PurePath™ Studio, an efficient drag-and-drop graphical development environment, the TAS3204 will shorten a new product’s time-to-market and ease the development of differentiated features. PurePath Studio includes a context-sensitive smart text editor, a DSP simulator and other traditional and graphical software development tools. Customers can quickly create process flow software by simply dragging and dropping and inter-connecting pre-optimized modular audio software components from standard library (mixers, DRC, loudness control, …), third-party algorithms (from Dolby, SRS, BBE, QSound, Audyssey, …) and royalty-free TI-algorithms (voice enhancement, bass enhancement, …). GUIs are provided to facilitate intuitive customization and tuning of complex audio components. Source code of audio components is provided to customer to accelerate software development process. Component Publisher SDK enables quick integration of software components from customers and third parties in to PurePath Studio. The device’s MCU core is fully supported by C compiler, assembler, debugger and real-time kernel.

For More Information

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