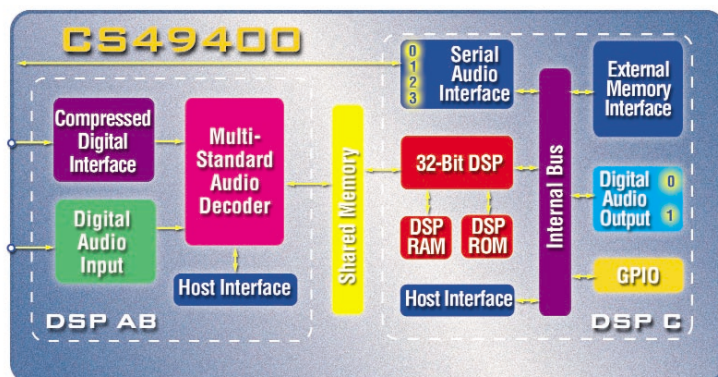# Multi-Standard Audio Decoder and Programmable DSP with an Audio-Optimized Software Framework

CS49400 Features

- Multi-standard audio decoder
- Powerful 32-bit audio DSP (up to 516 MOPS)
- Crystal Ware™ Software Library
  - Dolby® Digital EX, Dolby Pro Logic® II, Dolby Headphone, Dolby Virtual Speaker
  - DTS-ES 96/24™, DTS-ES™, Discrete 6.1™, DTS-ES Matrix 6.1™, DTS Digital Surround™ and DTS Virtual 5.1™
  - MPEG-2 (audio) & MPEG-4 AAC Multichannel 7.1, MPEG Multichannel and Musicam
  - MP3 ~ MPEG-1/2, Layer 3
  - DTS Neo:6™, Logic 7®, SRS Circle Surround II™
  - THX® Surround EX™, THX Ultra2 Cinema™
- DVD Audio/Video/SACD multichannel bass management
- 12-channel serial audio inputs
- 16-channel, 24-bit PCM output
- Large on-chip X, Y, and Program RAM
- Customer software security keys
- Supports SDRAM, SRAM, and FLASH memories
- Dual S/PDIF transmitters
- Flexible boot modes
- SPI control interface
- GPIO support for all common sub-circuits
- CS49400 (144 LQFP) Price: $19.71 (10K)

The CS49400 DSP integrates a multi-channel audio decoder and a 32-bit audio processor with an audio optimized software framework—it's the ideal, economical solution for AV receivers. Feature rich AVR designs can be easily developed using this framework, which includes both certified application programs and a modular programming envionment for easy customization. The framework includes state-of-the-art audio decoders and audio enhancement programs, such as DTS-ES 96/24, Dolby Digital, AAC, and THX. Framework API along with a comprehensive suite of development tools is available for manufacturers to incorporate unique sound processing.

The CS49400 DSP was designed to reduce system costs while providing features and flexibility for competitive system level solutions. It provides system level peripherals and internal memory—helping to drive down system costs. Difficult processing tasks of AAC, DTS-ES 96/24, and THX Cinema can be accomplished without the expense of external logic or memory. This DSP can meet the needs of I/O intensive designs supporting up to 12 input channels and 16 output channels. The CS49400 is an economical solution for a variety of applications including AV receivers, outboard decoders, DVD receivers, and DVD Audio/Video/SACD players.