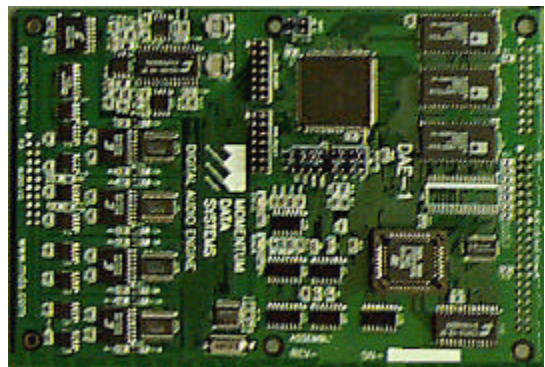




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Digital Audio Engine

The **Digital Audio Engine (DAE)** is a cost effective, 'off the shelf' product which performs all the functions required for a multi channel compressed digital audio surround sound system including **multichannel analog output**, and digital volume control if desired.

The DAE uses a **Motorola DSP56362** programmable Digital Signal Processor (DSP) which autodetects the format of the multichannel encoded bitstream and applies the appropriate **Dolby Digital, MPEG** or **DTS** decoder.

The DSP56362 processor also applies post processing which can be from a ROM **library of pre defined post processing phases** (for example equalisation or speaker compensation) or from customer defined modules.

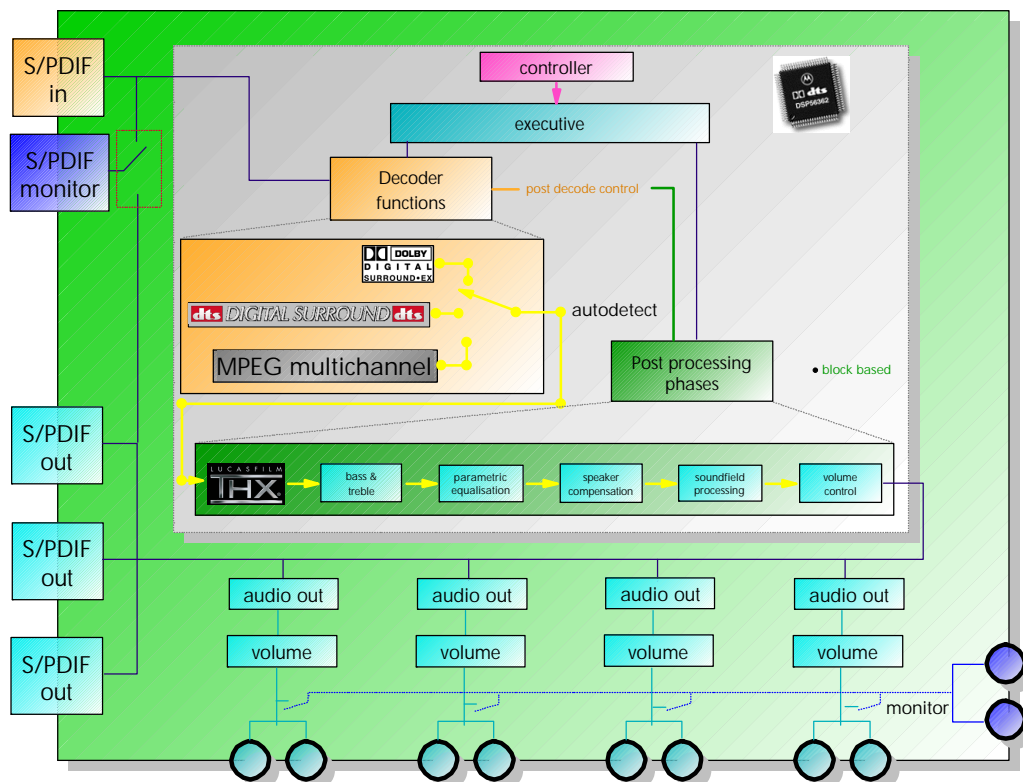
The DAE routes the six or eight channel uncompressed digital audio to high quality Digital to Analog Converters (DACs) which are followed by analog volume controls.

A **DAE Development Environment (DDE)** is available which provides power and I/O connections enabling the DAE to be used immediately, and serves as a test bed providing for monitoring of digital and analog audio inputs and outputs. The DDE has **eight analog outputs** and **four stereo digital outputs**, plus stereo analog and digital **monitor outputs**.

The **decompressed digital audio streams** are also brought off the DAE for monitoring and test purposes, and connectors for these are provided on the DDE.

Features:

- multichannel decoding
- post processing phases
- high quality multi channel analog output
- digital output for test and monitoring
- development environment and test bed



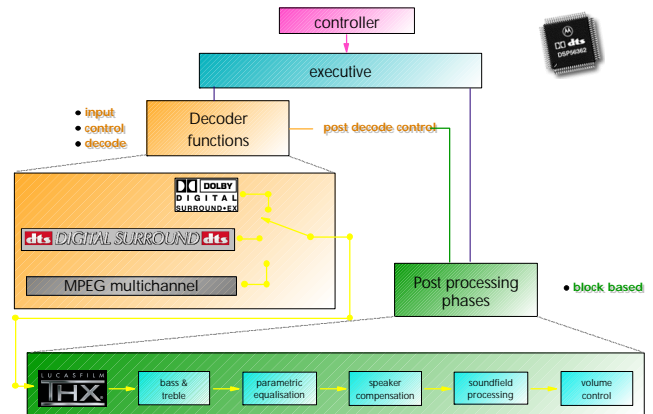
Digital Audio Engine data sheet

The DSP

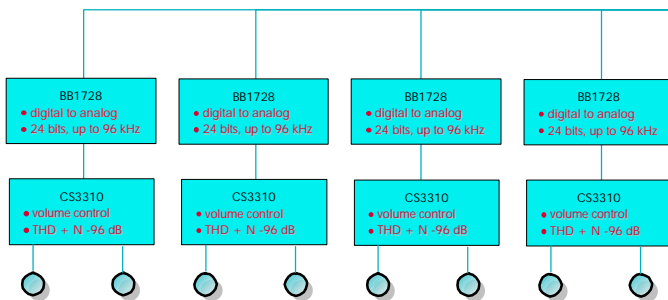
The **DSP56362** is a high speed, **24 bit**, Digital Signal Processor (DSP) for **multichannel decoding** and post processing. It **autodetects the compressed format** from the three main multichannel audio compression bitstream formats - **MPEG**, **Dolby Digital** and **DTS** - and decompresses to produce six or eight channels of audio.

It has processing power left after decompression to implement the **post processing phases (PPPs)** needed by home theatre and surround sound systems - such as subwoofer management, and Lucasfilm THX processing.

The Post Processing Phase architecture allows users to **insert custom modules easily**.



- high quality audio outputs
- good mixed signal design
- analog volume controls



Analog interface

The analog interface provides **six or eight channels** of **high quality analog output** at standard audio sample rates with **24 bit** resolution. The converters used have Total Harmonic Distortion plus Noise (**THD+N**) of **-96 dB**, which is matched by the **analog volume controls**.

The Digital Audio Engine is a '**mixed signal**' design - combining digital and analog signal processing on a single board. **Great care has been taken to preserve the highest analog quality** through appropriate choice of components and board layout.

Decompressed digital outputs are also available.

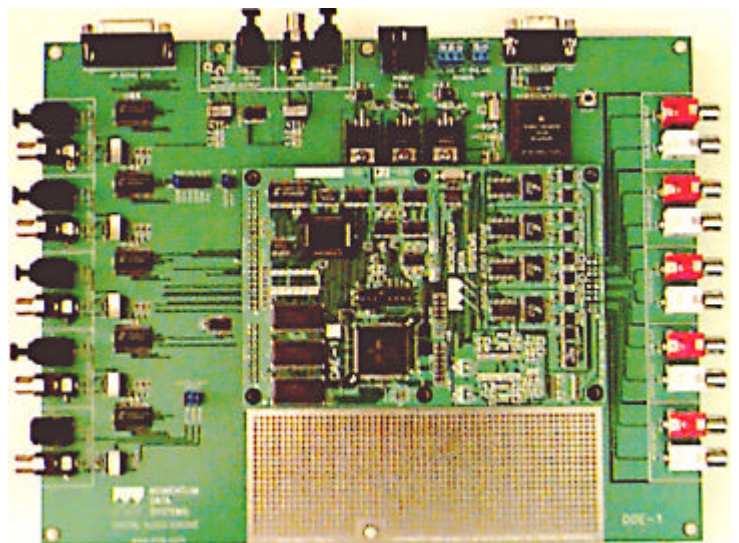
Development environment

The Digital Audio Engine Development Environment (DDE) provides a **ready made test bed** for development. It provides power and connections for digital and analog I/O.

There are eight connectors for analog output and four SPDIF transmitters which monitor the decompressed multi channel digital audio from the DAE.

Digital and analog monitor connectors can be jumpered to monitor analog or digital in, any of the digital audio outputs or any of the analog audio outputs.

Digital and analog input connections are also provided.



DAE data sheet 102999.fm - preliminary, subject to change



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