

# CS424XX

## MULTICHANNEL SURROUND-SOUND CODECS IDEAL FOR HOME THEATER AND AUTOMOTIVE AUDIO SYSTEMS



52-PIN MQFP

(actual size: 13.2 mm x 13.2 mm)



64-PIN LQFP

(actual size: 12 mm x 12 mm)



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Part	Resolution (bits)	Dynamic Range (dB)	THD+N (dB)	Sample Rate (kHz)	Analog Outputs	Power Supply (V)	Type	Comments	Package
<b>CS42432/35/36/38</b>	24	105/108 DACs; 102/105 ADCs	-95/-98 DACs; -95/-98 ADCs	192	Single-Ended or Differential DACs and ADCs	VA=3.3 or 5; VD=3.3; VL=1.8 to 5	Multi-channel	Multichannel CODEC, 6/8 DACs, 4/6 ADCs, TDM I/F	52 MQFP
<b>CS42448/888</b>	24	105/108 DACs; 102/105 ADCs	-95/-98 DACs; -95/-98 ADCs	192	Single-Ended or Differential DACs and ADCs	VA=3.3 or 5; VD=3.3 or 5; VL=1.8 to 5	Multi-channel	Multichannel CODEC, 8 DACs, 4/6 ADCs, TDM and PCM I/F	64 LQFP

### CS42432/35/36/38 AND CS42448/888

The CS424XX from Cirrus Logic are highly integrated CODECs that are engineered to simplify the design process and enhance listening enjoyment in today's home theater and automotive audio systems.

With a wide dynamic range, negligible distortion and low-noise operation, this family is loaded with high-demand features that designers will appreciate.

The CS424XX are the most highly integrated surround-sound CODECs on the market today, allowing system designers to incorporate up to eight single-ended or six differential audio input sources and up to eight single-ended or differential output sources. This high level of integration is a boost to designers of audio systems, as it eliminates the need for external analog-to-digital (A/D) converters in order to pass multiple audio channels to a DSP chip for audio processing.

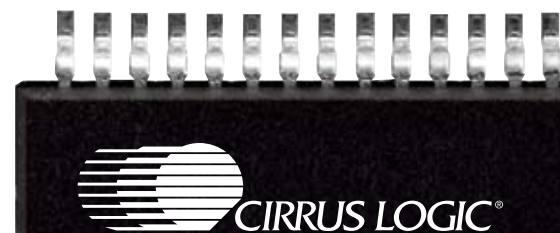
The increased input capability allows design of A/V receivers that can receive audio from multiple sources such as set-top boxes, home theater systems, or automotive entertainment systems. The audio input sources could include in-car navigation systems, mobile phones, CD/DVD players, and the radio tuner. Each of these CODECs features multibit Delta-Sigma modulators, resulting in low out-of-band noise, as well as separate control port and serial port supplies for a glueless interface to DSPs.

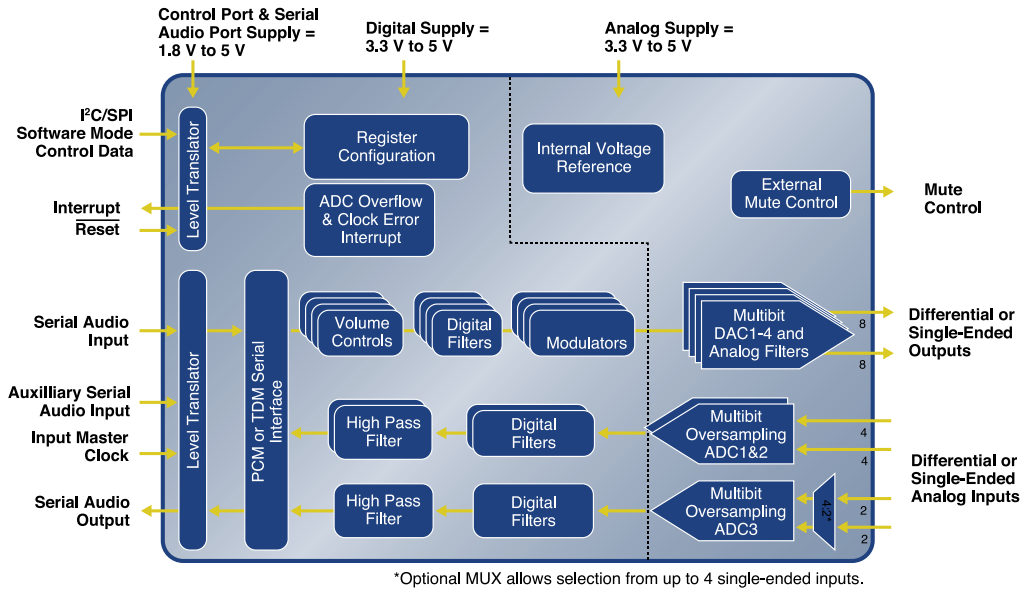
The CS42432/35/36/38 includes a Time Division Multiplexing only serial port. The CS42448 and CS42888 feature a complete serial port that supports all standard audio data formats, as well as TDM mode.

All D/A converters are 24 bit, with support for sample rates up to 192 kHz, and provide impressive dynamic range of up to 108 dB. In addition, all devices feature 24-bit A/D converters and provide dynamic range up to 105 dB.

The CS424XX outputs feature Cirrus Logic's Popguard® technology to eliminate powercycling clicks and pops. By eliminating external components, Popguard® technology enhances the listening experience for the consumer while simplifying system design and reducing BOM costs.

The CS424XX family delivers advanced performance, design flexibility, reduction in BOM costs, and a competitive price-point, providing exactly what designers need to get their next product to market fast!





**FEATURES**

- Four to six 24-bit A/D converters & six to eight 24-bit D/A converters
  - Multibit Delta-Sigma architecture
  - Input mux allows up to 8 inputs
- System sampling rates up to 192 kHz
- A/D dynamic range
  - 105 dB differential
  - 102 dB single-ended
- D/A dynamic range
  - 108 dB differential
  - 105 dB single-ended
- THD+N (A/D & D/A)
  - -98 dB differential
  - -95 dB single-ended
- Programmable A/D high pass filter for DC offset calibration
- Auxiliary input source for additional external A/D or S/PDIF receiver
- Logarithmic digital-volume control
- I<sup>2</sup>C®/SPI™ host-control port
- Cirrus Logic Popguard® technology minimizes clicks and pops
- Support logic levels between 5V and 1.8 V
- Available in automotive (-40°C to +105°C) and commercial (-40°C to 85°C) grades
- CS42432/35/36/38 available in a 52-pin MQFP
- CS42448 and CS42888 available in a 64-pin LQFP