The CS470xx Family audio SoC gives OEMs a cost-effective and simple-to-design audio processing solution with integrated high-performance mixed-signal that provides an extensive selection of enhanced audio features to maximize the end user’s listening experience within the automotive entertainment space.

**CS470xx FAMILY FEATURES**
- Multichannel 32-bit audio processing at 150 MHz with dual MACs & 72-bit accumulator
- Advanced Delta-Sigma converter architecture
- Single-ended or differential analog I/O
- Up to 4-channel 24-bit, 105 dB ADC
- Stereo 5:1 analog input MUX
- Up to 8-channel 24-bit, 105 dB DAC
- Integrated 192 kHz S/PDIF Rx and Tx
- Integrated multichannel, reassignable SRCs
- Supports both TDM (Time-division Multiplexed) and standard serial audio formats
- SPI™/I²C® serial control port
- Low-power standby: 350 µW
- 32 Kx32 RAM which is reassignable
- DSP Composer GUI simplifies programming and generation of custom signal processing using extensive library of primitives
- Licensed third party audio processing algorithms in ROM, plus extensive library of Cirrus proprietary downloadable and customizable firmware — see back for partial list of algorithms

**CS470xx FAMILY KEY BENEFITS**
- Excellent development tools to simply system design and provide faster time to market
- Easy to design — most standard processing features and some third party algorithms in ROM
- Best in class analog performance and sound quality
- High level of integration enables small PCB footprint and lower system cost
- No external memory needed

CS47024/28/48 Audio SoC
HIGH PERFORMANCE MULTICHANNEL CODEC + 32-BIT DSP

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LEARN MORE AT www.cirrus.com
## DSP GUI Programming Environment with CS470xx Development Platform

### CS470xx Ordering Information
- **Device(s)**
  - CS47048-DQZ (Automotive)
  - CS47048-CQZ (Commercial)
  - CS47028-DQZ (Automotive)
  - CS47028-CQZ (Commercial)
  - CS47024-DQZ (Automotive)
  - CS47024-CQZ (Commercial)

- **Package**
  - 100-Pin LQFP

### Evaluation Board
- CDB470XS-DC48/-DC28/-DC24 (Single-ended)
- CDB470XD-DC48/-DC28/-DC24 (Differential)

### Documentation
- CS470xx Data Sheet
- CS470xx System Designer’s Guide

### Tools
- DSP Composer™
- GUI Software Tool
- MicroCondenser™

### Standard Processing
- Advanced Bass Management
- Compressor/Limiter
- Crossbar Mixer
- Independent Channel Delay
- Matrix Mixer
- Multiband Parametric/Graphic EQ
- Multichannel Tone Control
- And many more…

### CS470xx Family Device & Features

<table>
<thead>
<tr>
<th>Part</th>
<th>Processor</th>
<th>Speed (MIPS)</th>
<th>Car Audio DSPs</th>
<th>General Audio DSPs</th>
<th>Resolution (bits)</th>
<th>Dynamic Range (dB)</th>
<th>A/D Channels</th>
<th>D/A Channels</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS470xx</td>
<td>Tiny, cost effective, mega-performance PCM processors with integrated CODEC targeted for mini-systems, DVD receivers, speakerbars, car audio, DTVs</td>
<td></td>
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</tr>
<tr>
<td>NEW CS47024</td>
<td>Single 32-bit</td>
<td>150</td>
<td>CS47024C-DQZ</td>
<td>CS47024C-CQZ</td>
<td>108 DAC</td>
<td>105 ADC</td>
<td>2</td>
<td>4</td>
<td>2 Ch ADC w/ 5:1 MUX, 4 Ch DAC, S/PDIF Tx, SRC (2 Ch)</td>
</tr>
<tr>
<td>NEW CS47028</td>
<td>Single 32-bit</td>
<td>150</td>
<td>CS47028C-DQZ</td>
<td>CS47028C-CQZ</td>
<td>108 DAC</td>
<td>105 ADC</td>
<td>2</td>
<td>8</td>
<td>2 Ch ADC w/ 5:1 MUX, 8 Ch DAC, S/PDIF Rx/Tx, SRC (8 Ch)</td>
</tr>
<tr>
<td>NEW CS47048</td>
<td>Single 32-bit</td>
<td>150</td>
<td>CS47048C-DQZ</td>
<td>CS47048C-CQZ</td>
<td>108 DAC</td>
<td>105 ADC</td>
<td>4</td>
<td>8</td>
<td>4 Ch ADC w/ 5:1 MUX on one 2 Ch ADC, 8 Ch DAC, S/PDIF Rx/Tx, SRC (8 Ch)</td>
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</tbody>
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