

CS47048 Audio SoC

HIGH PERFORMANCE MULTICHANNEL CODEC + 32-BIT DSP

CS47048 TARGET MARKETS



AUTOMOTIVE HEAD-END UNITS



AUTOMOTIVE OUTBOARD AMPLIFIERS



HOME THEATER IN A BOX

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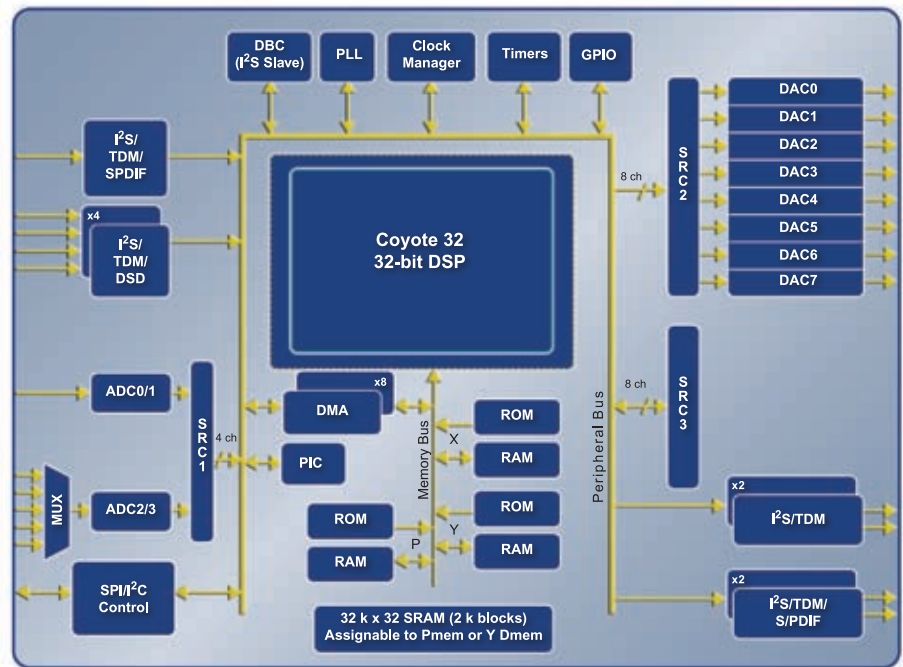
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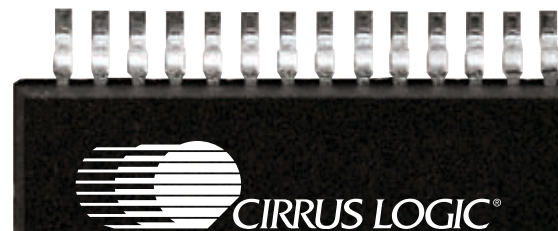
CS47048 FEATURES

- 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
- 4-channel 24-bit, 105 dB ADC
- Stereo 5:1 analog input mux
- 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 complete list of algorithms

The CS47048 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.

CS47048 KEY BENEFITS

- Excellent development tools to simplify 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



DSP GUI PROGRAMMING ENVIRONMENT WITH CS47048 DEVELOPMENT PLATFORM

CS47048 ORDERING INFORMATION

Device(s)

- CS47048-DQZ (Automotive)
- CS47048-CQZ (Commercial)

Package

100-Pin LQFP

Evaluation Board

- CDB470XS-DC48 (Single-ended)
- CDB470XD-DC48 (Differential)

Documentation

- CS47048 Data Sheet
- CS47048 System Designer's Guide

Tools

- DSP Composer™
- GUI Software Tool

Standard Processing

- Bass management
- Compressor/Limiter
- Graphic/Parametric EQ
- Matrix mixer
- Tone control, etc.

Cirrus Proprietary

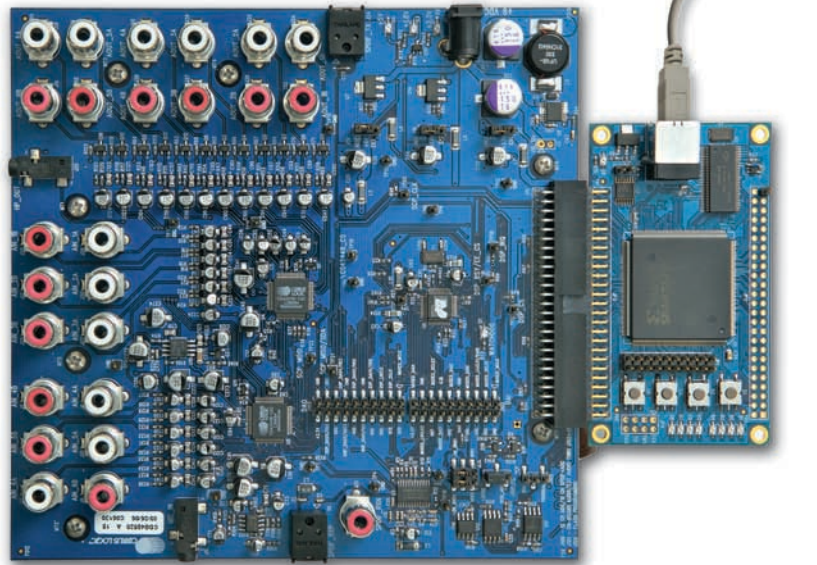
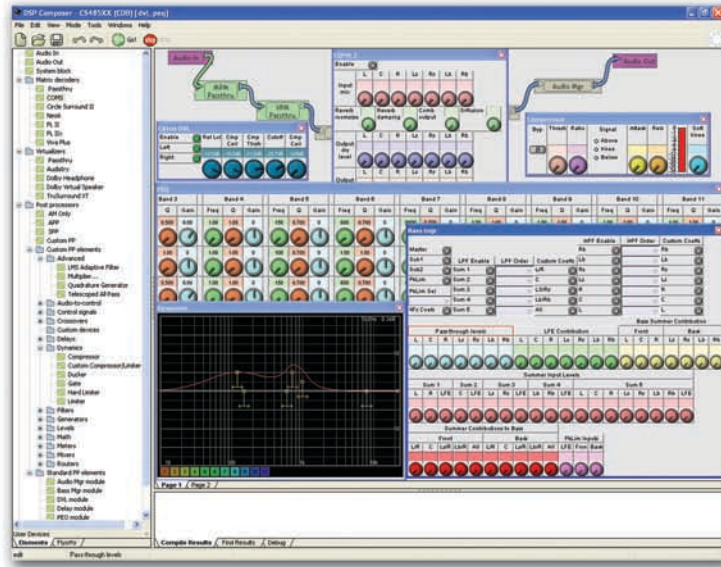
Cirrus BandXpander™

Algorithm Support

- Cirrus Original Surround™
- Cirrus Original Multichannel Surround™ / II (COMS/COMS2)
- Cirrus Dynamic Volume Leveler™
- Cirrus Intelligent Room Correction™ / II (IRC/IRC2)

Extensive Third Party Algorithm Support

- Audistry® by Dolby®
- Audyssey Dynamic EQ®
- Audyssey Dynamic Volume®
- Dolby® Pro Logic® II, IIx
- Dolby Headphone®
- DTS Neo:6™
- DTS Surround Sensation™ Headphone
- Neural-THX® Surround
- SRS® Automotive™
- SRS® CircleSurround® II
- SRS® Volume IQ™
- SRS® WOW/WOW HD™



The CS47048 is programmed using Cirrus Logic's proprietary GUI software development tool called DSP Composer™. An audio processing chain is designed using a drag and drop interface. The tool then configures the CS47048 through the SPI™/I²C® serial port. The firmware may be loaded from the ROM within the CS47048 or it may be downloaded through the serial control port.