CONEXANT AD1884A Audio Codec Manual

http://www.manuallib.com/conexant/ad1884a-audio-codec-manual.html

The AD1884A audio codec and software provide superior high definition audio quality and performance. The AD1884A has two 192 kHz DAC pairs, two 192 kHz ADC pairs, an S/PDIF output, and digital and analog PCBeep. These features make the AD1884A the right choice for embedded systems where performance is key. The AD1884A is available in a 48-lead, RoHS compliant lead frame chip scale package in both reels and trays.

ManualLib.com collects and classifies the global product instrunction manuals to help users access anytime and anywhere, helping users make better use of products.

http://www.manuallib.com



AD1884A SoundMAX HD Audio Codec With 4 DACs, 4 **ADCs, SPDIF Out**

Features

- 2 stereo headphone amplifiers
- Line outputs and inputs
- Analog microphone inputs
- Retaskable ports 192 kHz DACs/ADCs
 - 2 independent stereo DAC/ADC
 - pairs Simultaneous record of 2 stereo channels
 - Simultaneous playback of 2 stereo channels
 - All independent sample rates, 8 kHz through 192 kHz
 - 16-, 20-, and 24-bit resolution Selectable stereo mixer on
- outputs S/PDIF Output
- Supports 44.1 Hz through 192 kHz sample rates
- 16-, 20-, and 24-bit data; PCM and AC3 formats
- Digital PCM gain control Auxiliary Pins
- Impedance and presence detection on all jacks
- Full analog mixer with DAC inputs
- 3 independent microphone bias pins
- Digital and analog PCBeep
- 3 general-purpose digital I/O (GPIO) pins
- 3.3 V analog supply voltage 1.7 V to 1.9 V or 3.3 V digital supply voltages
- 1.5 V or 3.3 V HD Audio link signaling voltage
- Advanced power management modes
- Security feature prevents unauthorized recording
- 48-lead, RoHS compliant QFN package

Software

- Voice input enhancements
- Output enhancements

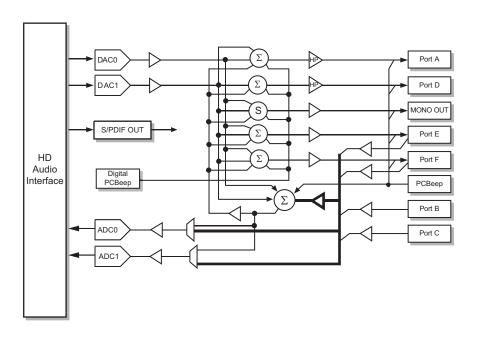
Applications

- **Embedded Audio**
- Point Of Sale Systems

Overview

The AD1884A audio codec and software provide superior high definition audio quality and performance. The AD1884A has two 192 kHz DAC pairs, two 192 kHz ADC pairs, an S/PDIF output, and digital and analog PCBeep. These features make the AD1884A the right choice for embedded systems where performance is key. The AD1884A is available in a 48-lead, RoHS compliant lead frame chip scale package in both reels and

Block Diagram



Part Number AD1884A

Description SoundMAX HD Audio Codec

Table 1. Performance Characteristics

Parameter	Min	Тур	Max	Unit
Line-Out Drive (10 kΩ Loads—DAC to Pin) Total Harmonic Distortion (THD + N) Dynamic Range (–60 dB in Ref to f _S A-Weighted) Signal-to-Noise Ratio		-84 90 90		dB dB dB
Headphone Drive (32 Ω Loads—DAC to Pin) Total Harmonic Distortion (THD + N) Dynamic Range (–60 dB in Ref to f _S A-Weighted) Signal-to-Noise Ratio		-74 90 90		dB dB dB
Microphone/Line-In (Pin to ADC, Mic Boost = 0 dB) Total Harmonic Distortion (THD + N) Dynamic Range (–60 dB in Ref to f _S A-Weighted) Signal-to-Noise Ratio		-78 85 85		dB dB dB

Table 2. Specifications

Parameter	Min	Тур	Max	Unit		
Analog-to-Digital Converters						
Resolution		24		Bits		
Gain Error (Full-Scale Span Relative to Nominal Input Voltage)			±10	%		
Interchannel Gain Mismatch (Difference of Gain Errors)		<u>+</u> 0.2	±0.5	dB		
ADC Offset Error			±5	mV		
ADC Crosstalk						
Line Inputs (Input L, Ground R, Read R; Input R, Ground L, Read L)				dB		
Line_In to Other		-100	-80	dB		
Digital to Analog Converters	l .		- 11			
Resolution		24		Bits		
Gain Error (Full-Scale Span Relative to Nominal Input Voltage)			±10	%		
Interchannel Gain Mismatch (Difference of Gain Errors)			±0.5	dB		
Total Audible Out-of-Band Energy (Measured from 0.6 x f _s to 20 kHz)		-85		dB		
DAC Crosstalk (Input L, Zero R, Measure R_OUT; Input R, Zero L, Measure L_OUT)		-95		dB		
Analog Mixer	I		<u> </u>	1		
Signal-to-Noise Ratio Input to Output—Ports B, C, E, or F to Port D Output	90		dB	dB		
Step Size: All Mixer Inputs		1.5		dB		
Input Gain/Attenuation Range: All Mixer Inputs	-34.5		+12.0	dB		

Ordering Information

Device Set Order ID	Package Type	Package	Operating Temperature			
AD1884AJCPZ*	QFN	48-Lead QFN, 7 x 7 mm	0°C to 70°C			
*Lead-free (Pb Free) and RoHS compliant						

© 2012 Conexant Systems, Inc. All Rights Reserved. Conexant and the Conexant logo are registered trademarks of Conexant Systems, Inc. All other trademarks are owned by their respective owners. Although Conexant strives for accuracy in all its publications, this material may contain errors or omissions and is subject to change without notice. THIS MATERIAL IS PROVIDED AS IS AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING MERCHANT ABILITY, FITNESS FOR A PAPARTICULAR PURPOSE AND NON-INFRINGEMENT. Conexant shall not be liable for any special, indirect, incidental or consequential damages as a result of its use.

www.conexant.com General Information: U.S. and Canada: (888) 855-4562 International: 1+ (949) 483-3000 Headquarters 4000 MacArthur Blvd. Newport Beach, CA 92660

Doc# PBR-203105

