

General Purpose Audio Codec 2ADC / 2DAC Ch 32-Pin VQFN EP T/R

Manufacturer:	Texas Instruments, Inc
Package/Case:	QFN32
Product Type:	Communication & Networking ICs
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

[Inquiry](#)

General Description

The TLV320AIC3104 is a low-power stereo audio codec with stereo headphone amplifier, as well as multiple inputs and outputs that are programmable in single-ended or fully differential configurations. The device includes extensive register-based power control is included, thus enabling stereo 48-kHz DAC playback as low as 14 mW from a 3.3-V analog supply, making the device ideal for portable battery-powered audio and telephony applications.

The record path of the TLV320AIC3104 contains integrated microphone bias, digitally controlled stereo microphone preamplifier, and automatic gain control (AGC), with mix/mux capability among the multiple analog inputs. During record, programmable filters can remove audible noise that can occur during optical zooming in digital cameras. The playback path includes mix/mux capability from the stereo DAC and selected inputs, through programmable volume controls, to the various outputs.

The TLV320AIC3104 contains four high-power output drivers as well as two fully differential output drivers. The high-power output drivers can drive a variety of load configurations, including up to four channels of single-ended 16-Ω headphones using AC-coupling capacitors, or stereo 16-Ω headphones in a capacitor-free output configuration.

The stereo audio DAC supports sampling rates from 8 kHz to 96 kHz and includes programmable digital filtering in the DAC path for 3D, bass, treble, midrange effects, speaker equalization, and de-emphasis for 32-kHz, 44.1-kHz, and 48-kHz sample rates. The stereo audio ADC supports sampling rates from 8 kHz to 96 kHz and is preceded by programmable gain amplifiers or AGC that can provide up to 59.5-dB analog gain for low-level microphone inputs. The TLV320AIC3104 provides an extremely high range of programmability for both attack (8–1,408 ms) and for decay (0.05–22.4 seconds). This extended AGC range allows the AGC to be tuned for many types of applications.

For battery-saving applications where neither analog nor digital signal processing are required, the device can be put in a special analog signal passthrough mode. This mode significantly reduces power consumption, as most of the device is powered down during this passthrough operation.

The serial control bus supports the I2C protocol, whereas the serial audio data bus is programmable for I2S, left- and right-justified, DSP, or TDM modes. A highly programmable PLL is included for flexible clock generation and support for all standard audio rates from a wide range of available MCLKs, varying from 512 kHz to 50 MHz, with special attention paid to the most-popular cases of 12-MHz, 13-MHz, 16-MHz, 19.2-MHz, and 19.68-MHz system clocks.

The TLV320AIC3104 operates from an analog supply of 2.7 V to 3.6 V, a digital core supply of 1.525 V to 1.95 V, and a digital I/O supply of 1.1 V to 3.6 V. The device is available in a 5-mm × 5-mm 32-pin QFN package.

Key Features

Stereo Audio DAC

102-dBA Signal-to-Noise Ratio

16-, 20-, 24-, or 32-Bit Data

Supports Sample Rates From 8 kHz to 96 kHz

3D, Bass, Treble, EQ, or De-Emphasis Effects

Flexible Power Saving Modes and Performance are Available

Stereo Audio ADC

92-dBA Signal-to-Noise Ratio

Supports Sample Rates From 8 kHz to 96 kHz

Digital Signal Processing and Noise Filtering Available During Record

Six Audio Input Pins

One Stereo Pair of Single-Ended Inputs

One Stereo Pair of Fully Differential Inputs

Six Audio Output Drivers

Stereo Fully Differential or Single-Ended Headphone Drivers

Fully Differential Stereo Line Outputs

Low Power: 14-mW Stereo 48-kHz Playback With 3.3-V Analog Supply

Ultra-Low-Power Mode With Passive Analog Bypass

Programmable I/O Analog Gains

Automatic Gain Control (AGC) for Record

Programmable Microphone Bias Level

Programmable PLL for Flexible Clock Generation

I2C Control Bus

Audio Serial Data Bus Supports I2S, Left- and Right-Justified, DSP, and TDM Modes

Extensive Modular Power Control

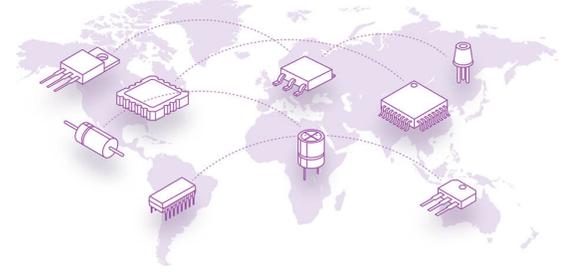
Power Supplies:

Analog: 2.7 V to 3.6 V.

Digital Core: 1.525 V to 1.95 V

Digital I/O: 1.1 V to 3.6 V

Package: 5-mm × 5-mm 32-Pin QFN



Recommended For You

TLV320AIC23BIPWR

Texas Instruments, Inc
TSSOP28

TL16C554AIPN

Texas Instruments, Inc
LQFP80

TLV320AIC3101IRHBR

Texas Instruments, Inc
QFN32

TL16C554APN

Texas Instruments, Inc
LQFP80

TLV320AIC24KIPFBR

Texas Instruments, Inc
TQFP-48

TL16C554PN

Texas Instruments, Inc
QFP

TLV320AIC24KIPFB

Texas Instruments, Inc
TQFP-48

TL16C752BLPTREP

Texas Instruments, Inc
LQFP-48

TL16C550DIPFBR

Texas Instruments, Inc
48-TQFP

TLIC320AC01CFN

Texas Instruments, Inc
PLCC28

TL16C552AFN

Texas Instruments, Inc
PLCC

TL16C450FN

Texas Instruments, Inc
PLCC44

TL16C554FN

Texas Instruments, Inc
PLCC

TLV320AIC311RHBR

Texas Instruments, Inc
VQFN32

TLV320AIC3100IRHBR

Texas Instruments, Inc
QFN32