STAC9460/62

Two and Six-Channel 24-Bit, 192 kHz Audio Codec

Integrated Mixed-Signal Solutions

OVERVIEW

Two and six channel general purpose 24-bit, full duplex, audio codec for use in consumer applications.

FEATURES

- High performance $\Sigma\Delta$ technology
- Two or six channels with independent volume controls
- 24-bit full duplex stereo DACs
- 20-bit full duplex stereo ADC
- 32, 44.1, 48, 88.2, 96, 176.4 and 192 kHz DAC sample rates
- 32, 44.1, 48, 88.2 and 96 kHz ADC sample rates
- Standard $I^2C^®$ compatible and I^2S serial interfaces
- Dual mic inputs with independent volume controls
- Digital de-emphasis capability
- DAC and ADC SNR >100 dB
- Differential Stereo Analog Inputs
- 28-pin SSOP package
- Energy saving dynamic power modes
- 5V Analog with 3.3V or 5V Digital capability

DESCRIPTION

SigmaTel's STAC9460/62 are six and two-channel general-purpose 24-bit, full duplex, audio codecs for use in consumer applications. The STAC9460/62 incorporate Sigma-Tel's proprietary Sigma-Delta technology to achieve ADC and DAC SNRs in excess of 100 dB. The DACs, and ADCs are integrated with analog I/Os, which include two differential analog and two MIC inputs. There are three audio I^2S inputs and an I^2S digital output. The STAC9460/62 communicates via a standard two-wire serial interface providing simplicity in the audio system design. Packaged in a 28-pin SSOP, the STAC9460 and STAC9462 require minimal PCB space for implementation.

The STAC9460 provides variable sample rate D-A and A-D conversion, as well as analog processing. Supported audio sample rates include 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz. The digital interface communicates via a standard I^2C compatible serial interface and I^2S digital audio interface. The two variable sample rate ADC's provide record capability from the microphone inputs or the differential inputs. DAC's operate at 24-bit resolution with the sample rate based on the Master Clock. The ADC operates at 20-bit resolution and supplys full 24-bit filter data.The STAC9460 supports three I^2S digital audio inputs and an I^2S digital audio output. These digital I/O options provide for a number of advance architectural implementations, with volume controls and mute capabilities built directly into the codec for each individual channel. The output volume ranges from 0 dB to -95 dB with .75 dB steps. For MIC input, the input volume ranges from 0 dB to 22.5 dB with 1.5 dB steps. The STAC9460 also supports a single-line format.The STAC9460 is designed primarily to support 6-channel audio. True AC-3 playback can be achieved for 6-speaker applications by taking advantage of the STAC9460 architecture and combining it with the appropriate processing. This product is ideal for home theatre, DVD, karaoke, and set-top-box applications.

ORDERING INFORMATION

Part Number	Channels	Package	Temperature Range	SUPPLY RANGE
STAC9460S	Six	28-pin SSOP	0 °C to +70 °C	AVdd = 5V, DVdd = 3.3V or 5V
STAC9462S	Two	28-pin SSOP	0 °C to +70 °C	AVdd = 5V, DVdd = 3.3V or 5V
Evaluation Boards: please send email request to apps@sigmatel.com				

Note: SigmaTel reserves the right to change specifications without notice.

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STAC9460
BLOCK DIAGRAM
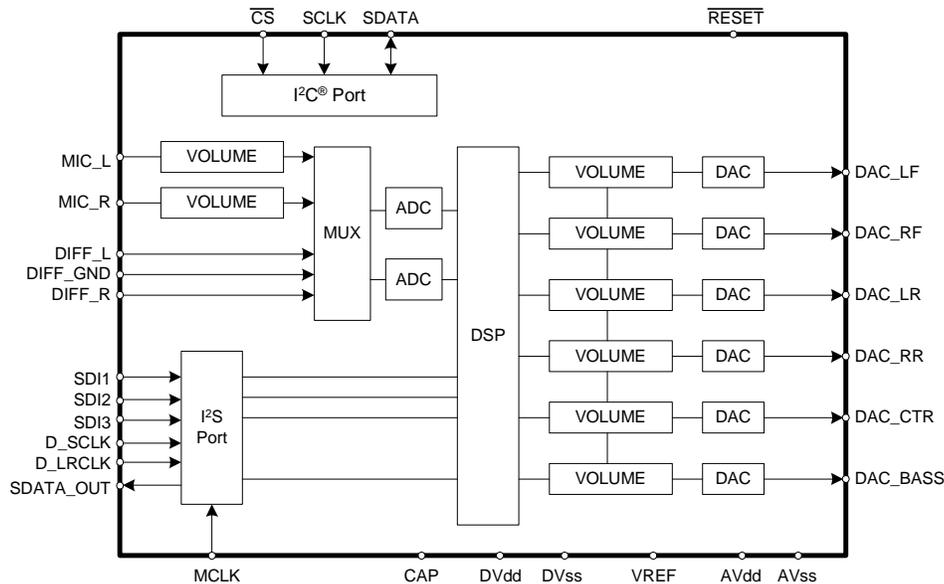
RELATED MATERIALS

- **Data Sheet**
- **Evaluation Boards**
- **Reference Designs**

ADDITIONAL SUPPORT

Additional product and company information can be obtained by going to the SigmaTel website at:

www.sigmatel.com