

Integrating Mixed-Signal Solutions

PRODUCT BRIEF

STAC9783/84

28-pin AC'97 Codec

OVERVIEW

Smallest AC-Link compliant AC'97 audio codec, 28-pins, for the most area- and cost-sensitive applications.

FEATURES

- High performance $\Sigma\Delta$ technology
- Energy saving power down modes
- 18-bit full duplex stereo ADC, DACs
- AC-Link protocol compliance
- Low-noise differential CD-ROM input
- SigmaTel Surround (SS3D) Stereo Enhancement
- Five analog line-level inputs
- 28-pin SSOP
- SNR > 90 dB through Mixer and DAC
- +3.3V (STAC9783) or +5V (STAC9784)

DESCRIPTION

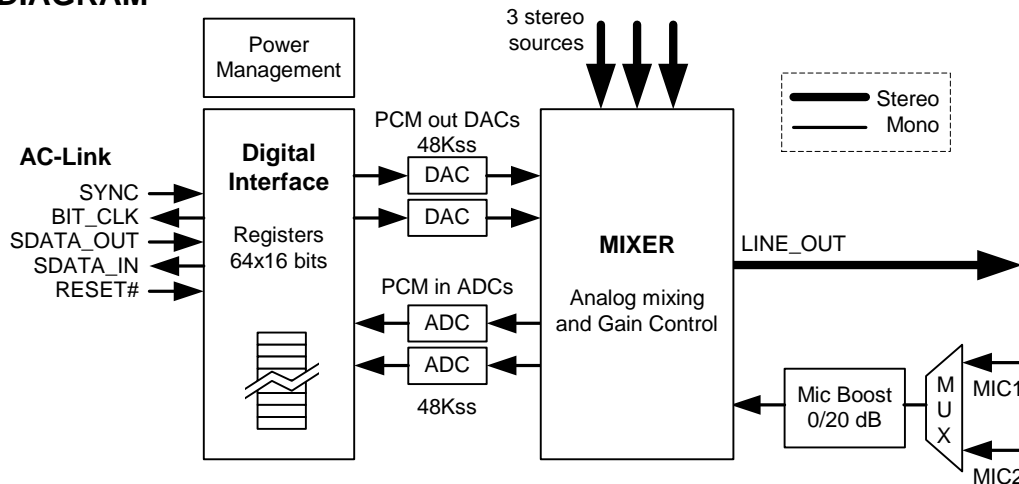
SigmaTel's STAC9783/84 are general-purpose 18-bit stereo, full duplex, audio codecs built around the analog component specification of AC'97. The STAC9783/84 incorporate SigmaTel's proprietary $\Sigma\Delta$ technology to achieve a DAC SNR in excess of 90 dB and line through SNR of greater than 95 dB. The DACs, ADCs, and mixer are integrated with analog I/Os, which include three analog line-level stereo inputs, one analog line-level mono input, and one stereo output channel. Also included is SigmaTel's 3D stereo enhancement (SS3D) for increased speaker separation when using typical low-cost PC speakers. The STAC9783/84 communicate via the five-wire AC-Link interface with any AC-Link capable controller or advanced core logic chip-set. Packaged in a 28-pin SSOP, the STAC9783/84 can be placed on motherboards, daughter cards, CNR, ACR, AMR cards, or docking stations. Choose between the STAC9783 with its 3V AVdd supply, or the STAC9784 and its 5V AVdd supply depending on the application.

ORDERING INFORMATION

Part Number	Package	Temp Range	Supply Range
STAC9783S	28-pin SSOP	0 °C to +70 °C	AVdd = 3V, DVdd = 3.3V
STAC9784S	28-pin SSOP	0 °C to +70 °C	AVdd = 5V, DVdd = 3.3V or 5V



STAC9783/84
BLOCK DIAGRAM



KEY SPECIFICATIONS

- Analog LINE_OUT SNR: 98 dB
- Digital DAC SNR: 96 dB
- Digital ADC SNR: 87 dB
- Total Harmonic Distortion: 0.02%
- Crosstalk between Input Channels: -70 dB
- Spurious Tone Rejection: 100 dB

RELATED MATERIALS

- Data Sheet
- AMR Reference Design
- STAC9784 Main Board Reference Design
- STAC9783 (3.3V) Main Board Reference Design

ADDITIONAL SUPPORT

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

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