



and **SABRE³² Ultra ADC Series**

32-bit High Performance Audio ADC Product Brief

The **SABRE³² ADC** series is the world's highest performance 32-bit analog-to-digital (A/D) converter solution targeted for consumer applications such as audio pre-amplifier, audio processor, A/V receiver and professional audio applications such as recording systems, mixer consoles and digital audio workstations.

Part	Description	DNR (dB-A)	THD+N (dB)	32-bit Digital Filter	8-band Biquad Filter	I2S/SPDIF Output	Sample Rate	Package
ES9102	SABRE³² Reference 32-bit Stereo/Mono ADC	127 (Mono) 124 (Stereo)	-120 (Mono) -118 (Stereo)	Programmable	Programmable	Yes	Up to 384kHz	48LQFP
ES9112	SABRE³² Ultra 32-bit Stereo ADC	124	-112	Programmable	Programmable	Yes	Up to 384kHz	28SOP

Using the ESS proprietary 32-bit Hyperstream™ ADC architecture, the **SABRE³² Reference ADC** delivers an unprecedented DNR of 127dB and THD+N of -120dB in mono mode (or DNR of 124dB and THD+N of -118dB in stereo mode), a performance level that will satisfy the most demanding audio enthusiasts.

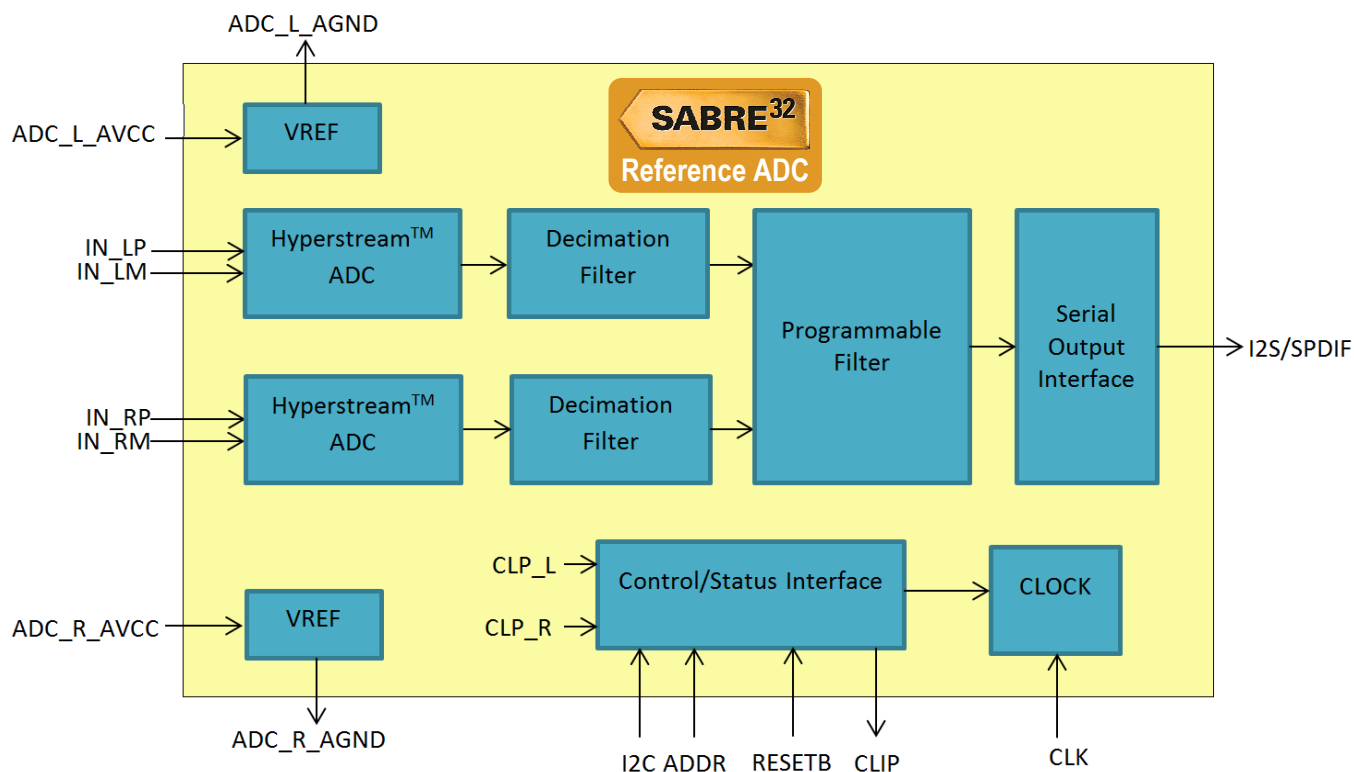
For highest performance, the **SABRE³² ADC** series implements a 32-bit programmable decimation filter and outputs the full 32-bit resolution in I2S mode, or 24-bit resolution in SPDIF mode. A digital high-pass filter is available for DC removal. Additionally, a programmable 8-band biquad filter is implemented for RIAA or custom equalization. The **SABRE³² ADC** series supports synchronous SPDIF or I2S master/slave output, or asynchronous I2S slave output relative to the master clock for up to 384kHz sample rate and consumes less than 200mW.

FEATURE	BENEFIT									
32-bit Hyperstream™ ADC architecture <table><tr><td></td><th>Reference</th><th>Ultra</th></tr><tr><th>DNR (dB-A)</th><td>Up to 127</td><td>124</td></tr><tr><th>THD+N (-dB)</th><td>Up to 120</td><td>112</td></tr></table>		Reference	Ultra	DNR (dB-A)	Up to 127	124	THD+N (-dB)	Up to 120	112	Unprecedented dynamic range and ultra low distortion
	Reference	Ultra								
DNR (dB-A)	Up to 127	124								
THD+N (-dB)	Up to 120	112								
Build-in mono mode (Reference only)	Mono (with additional performance) or stereo configuration without external components									
32-bit Programmable decimation (FIR) filter - o Built-in sharp or low-group delay filters, or - o User customizable characteristics	Customizable FIR decimation filters for any application									
Programmable 8-band biquad filter - o Built-in RIAA filter - o User customizable characteristics	Customizable equalization for any application									
Programmable Digital High-pass filter	Eliminates input DC offset									
Up to 384kHz sampling rate	Compatible with DVD-audio and professional applications									
I2C or hardware based control	Configured by microcontroller or used standalone									
Flexible SPDIF/I2S digital output modes	Synchronous SPDIF or I2S master/slave output, or asynchronous I2S slave output relative to master clock									
Low power in a small package o <200mW power consumption	Simplifies power supply design									

SABRE³² ADC Series Product Brief



FUNCTIONAL BLOCK DIAGRAM



APPLICATIONS

- Professional recording systems
- Studio mixing console
- Digital audio workstations
- Audio/Video receivers
- Audio preamplifiers
- Audio processor

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