



and **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

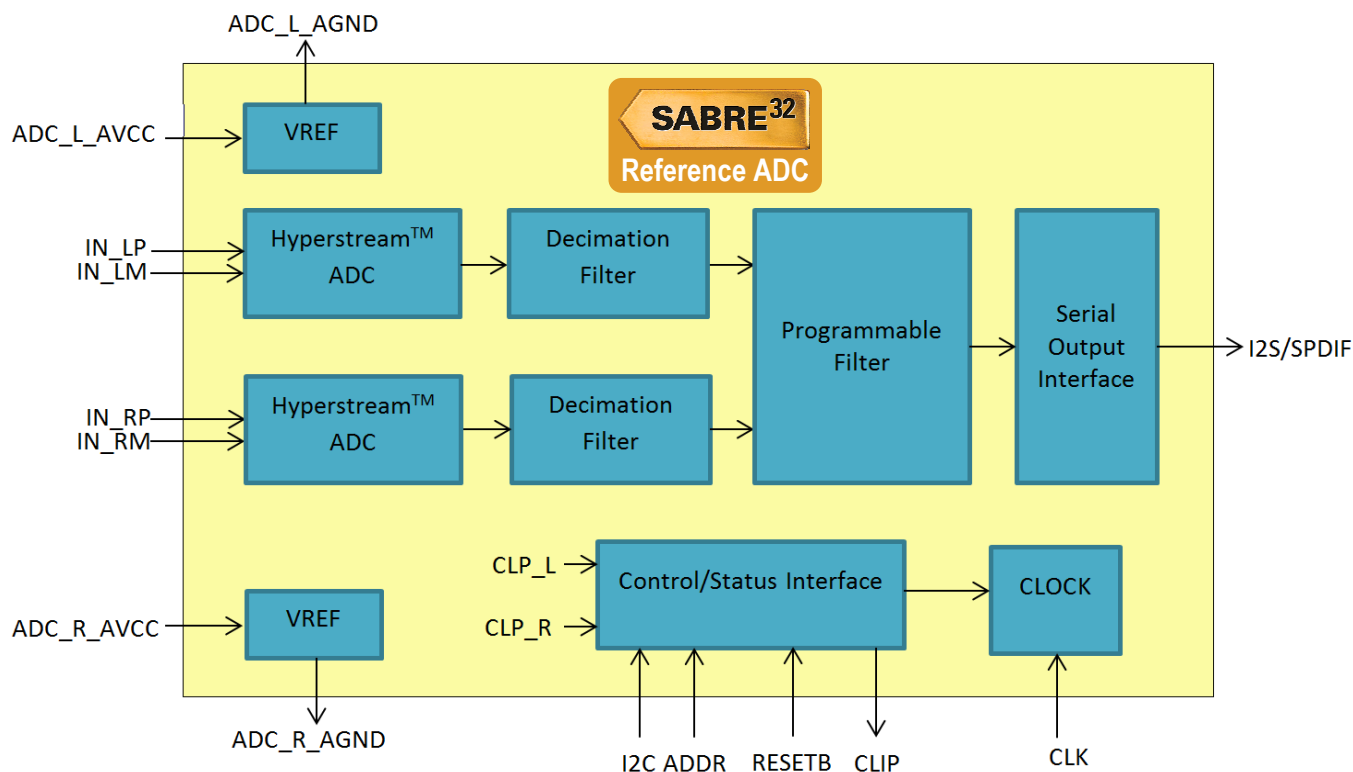
BENEFIT

32-bit Hyperstream™ ADC architecture <table border="1" data-bbox="110 1255 548 1354"> <thead> <tr> <th></th> <th>Reference</th> <th>Ultra</th> </tr> </thead> <tbody> <tr> <td>DNR (dB-A)</td> <td>Up to 127</td> <td>124</td> </tr> <tr> <td>THD+N (-dB)</td> <td>Up to 120</td> <td>112</td> </tr> </tbody> </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 <ul style="list-style-type: none"> ○ Built-in sharp or low-group delay filters, or ○ User customizable characteristics 	Customizable FIR decimation filters for any application									
Programmable 8-band biquad filter <ul style="list-style-type: none"> ○ Built-in RIAA filter ○ 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 <ul style="list-style-type: none"> ○ <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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