Analog Reinvented

# ES9008
# SABRE *Reference* 8-Channel Audio DAC
## Product Brief

## OVERVIEW

The Sabre Reference (ES9008) Highest Performance Audio DAC is the world's first 8-channel audio DAC to bring true professional digital audio to the consumer home entertainment market.

Using ESS' patented HyperStream® architecture and patent-pending Time Domain Jitter Eliminator, the Sabre Reference Audio DAC outperforms the best audiophile equipment with unprecedented 134dB DNR and –118dB THD+N, delivering true studio quality audio to digital audio applications such as Blu-ray, SACD, DVD-Audio, DVD, CD, home theatre, set top boxes and digital TV.

The Sabre Reference's flexible input architecture accepts SPDIF or PCM data from 16-24 bits up to a 192 kHz sampling rate, and also accepts 1-bit DSD data supporting native SACD audio.

The Sabre Reference sets a new standard for high quality audio performance in a cost effective, compact, easy to use form factor for today's most demanding digital audio applications.

| FEATURE | BENEFIT |
|---|---|
| *Patented* HyperStream® Architecture<br>o DNR: +134dB (mono mode)<br>o DNR: +128dB (8-channel mode)<br>o THD+N: –118dB | Unprecedented dynamic range and low distortion allowing true reproduction of audio as it is mastered at recording studio |
| *Patent-pending* Time Domain Jitter Reduction | Unmatched audio clarity free from input clock jitter allowing simple system design and layout |
| 48-bit accumulator and 28-bit processing | Distortion free signal processing |
| Auto-detect PCM / DSD converter | Universal (e.g. DVD / SACD) audio playback |
| 8-channel DAC in 64-LQFP | Reduces PCB footprint and simplifies board layout |
| Low power (100mW for 8 channels) | Simplifies power supply design |
| Customizable output configuration | Mono, stereo, 4 or 8-channel output in current or voltage mode based on performance criterion |
| Universal digital input | All-digital SPDIF, PCM ($I^2S$, MSB / LSB justified 16-, 20- or 24-bit) or DSD input |
| Integrated DSP functions | Click-free soft mute and volume control<br>Programmable filter characteristics for PCM / DSD<br>Programmable Zero detect<br>De-emphasis for 32kHz, 44.1kHz, and 48kHz sampling |

## APPLICATIONS

- Blu-ray players
- SACD / DVD-Audio players
- Audio receivers
- Home theater receivers
- Professional audio equipment

# FUNCTIONAL BLOCK DIAGRAM