



# ES9010K2M

## Premier Stereo Mobile Audio DAC

### Product Brief

The **ES9010K2M SABRE Premier DAC** is a high-performance 32-bit, 2-channel audio D/A converter targeted for portable high-fidelity audio applications such as mobile phones and digital music players, consumer applications such as Blu-ray players, audio pre-amplifiers and A/V receivers, as well as professional applications such as recording systems, mixer consoles and digital audio workstations.

Using the critically acclaimed ESS patented Hyperstream™ DAC architecture and Time Domain Jitter Eliminator, the **ES9010K2M SABRE Premier DAC** delivers a DNR of up to 116dB and THD+N of –106dB, a performance level that will satisfy the most demanding audio enthusiasts.

The **ES9010K2M SABRE Premier DAC**'s Hyperstream™ architecture can handle up to 32-bit, 384kHz PCM data via I<sup>2</sup>S, DSD-11.2MHz data as well as mono mode for highest performance applications. Both synchronous and ASRC (asynchronous sample rate conversion) modes are supported.

The **ES9010K2M SABRE Premier DAC** is powered by a single VCCA supply, with internal regulators generating the core and analog supplies. The DAC comes in a 28-QFN package, supports 1.8V logic levels and consumes less than 40mW in normal operation mode (< 1mW in standby mode).

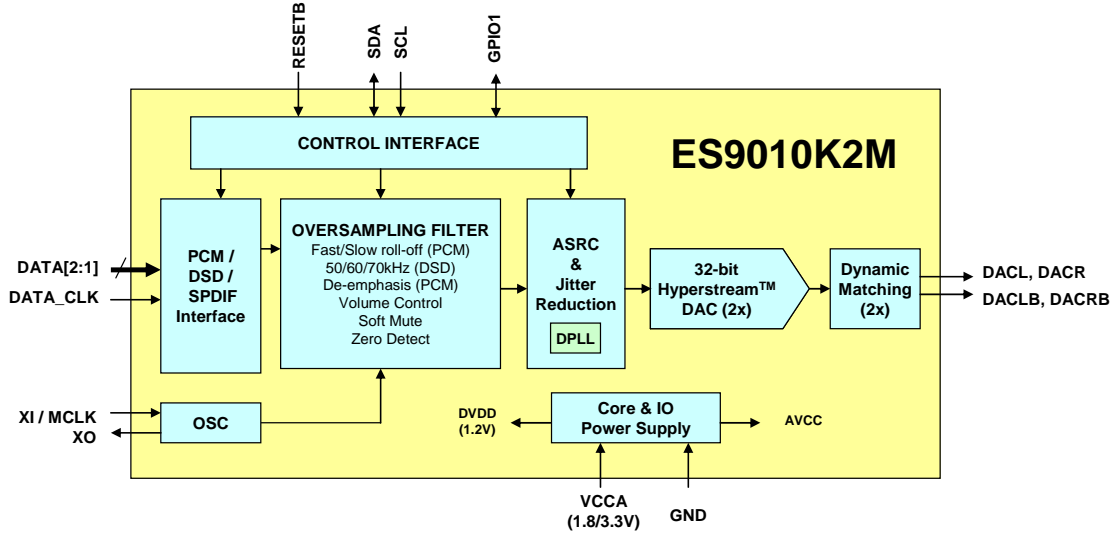
FEATURE	DESCRIPTION
Patented 32-bit Hyperstream™ DAC <ul style="list-style-type: none"> <li>+116B DNR</li> <li>–106dB THD+N</li> </ul>	<ul style="list-style-type: none"> <li>32-bit audio DAC powered by Sabre<sup>32</sup> DAC architecture with ultra high dynamic range and low distortion</li> <li>Supports both synchronous and ASRC (asynchronous sample rate converter) modes</li> </ul>
Patented Time Domain Jitter Eliminator	<ul style="list-style-type: none"> <li>Unmatched audio clarity free from input clock jitter</li> </ul>
Integrated DSP Functions	<ul style="list-style-type: none"> <li>Click-free soft mute and volume control</li> <li>Programmable Zero detect</li> <li>De-emphasis for 32kHz, 44.1kHz, and 48kHz sampling</li> </ul>
Customizable output configuration	<ul style="list-style-type: none"> <li>Current or voltage mode based on performance criterion</li> </ul>
I <sup>2</sup> C control	<ul style="list-style-type: none"> <li>Allows software control of DAC features</li> </ul>
28-QFN (5mm x 5mm) package	<ul style="list-style-type: none"> <li>Minimizes PCB footprint</li> </ul>
< 40mW operational power < 1mW standby power	<ul style="list-style-type: none"> <li>Maximizes battery life</li> </ul>
Single VCCA (1.8V to 3.3V) power supply	<ul style="list-style-type: none"> <li>Reduces power and simplifies power supply design</li> </ul>
1.8V digital logic supported	<ul style="list-style-type: none"> <li>Connects to Application Processor without level shifter</li> </ul>
Versatile digital input	<ul style="list-style-type: none"> <li>Supports SPDIF, PCM (I<sup>2</sup>S, LJ 16-32-bit) or DSD input</li> </ul>
Customizable filter characteristics (revision V only)	<ul style="list-style-type: none"> <li>User-programmable filter allows custom roll-off response</li> <li>Bypassable oversampling filter</li> </ul>

## APPLICATIONS

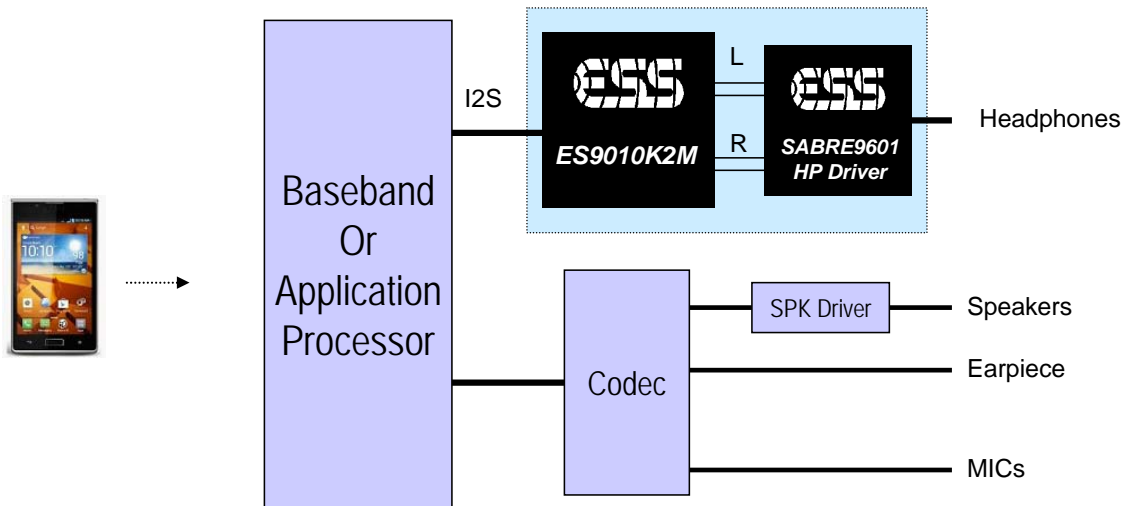
- Mobile phones / Tablets / Digital music players / Portable multimedia players
- Blu-ray / SACD / DVD-Audio player
- Audio preamplifier and A/V receiver
- Professional audio recording systems / Mixing consoles / Digital audio workstation

# ES9010K2M Product Brief

## FUNCTIONAL BLOCK DIAGRAM



## APPLICATION DIAGRAM



No part of this publication may be reproduced, stored in a retrieval system, transmitted, or translated in any form or by any means, electronic, mechanical, manual, optical, or otherwise, without the prior written permission of ESS Technology, Inc. ESS Technology, Inc. makes no representations or warranties regarding the content of this document. All specifications are subject to change without prior notice. ESS Technology, Inc. assumes no responsibility for any errors contained herein. U.S. patents pending.