



## ES9260Q 32-bit Stereo SABRE QUAD DAC with Headphone Amplifier, APLL, and Output Switch

The **ES9260Q** is a high-performance System-on-Chip for driving headphones, it features a 32-bit, 2-channel audio **SABRE** D/A converter with QUAD DAC technology, a headphone amplifier, USB 1.1 PHY, integrated analog gain resistors, and analog PLL. The ES9260 is designed for low-power audiophile-grade applications such as mobile phones and digital music players, consumer applications such as USB DACs and dongles, as well as professional applications such as mixer consoles and digital audio workstations.

Using the critically acclaimed ESS patented 32-bit HyperStream II® QUAD DAC™ architecture and Time Domain Jitter Eliminator, the **ES9260Q** delivers up to 118dBA DNR and -106dB THD+N in HiFi mode, a performance level that will satisfy the most demanding audio enthusiasts.

The integrated SABRE DAC supports up to 32-bit 384kHz PCM and DSD256 audio data via master/slave I<sup>2</sup>S/DSD interface in synchronous and asynchronous sampling modes. The integrated SABRE Headphone Amp supports up to 1V<sub>rms</sub> output. An integrated analog PLL can operate from the digital audio clock signal eliminating the need for a dedicated external clock and reducing PCB size and BOM cost. PCB footprint and BOM cost are further minimized by the integrated feedback resistors, integrated low-noise DAC reference regulator and small die size. Residual distortion from suboptimal components and PCB layout can be minimized using the unique THD compensation circuit.

The **ES9260Q** sets the standard for HD audio performance for today's most demanding digital-audio applications in a compact 40 pin QFN package. Experience **SABRE audio quality** all the way to the headphones.

### FEATURE

### DESCRIPTION

Patented 32-bit HyperStream II® QUAD DAC™ Architecture +123dBA SNR, +118dBA DNR w/DRE -106dB THD+N, @ 600Ω -101dB THD+N. 20mW @ 32Ω	High performance 32-bit mobile audio DAC/HPA with high dynamic range, ultra-low distortion, and low power consumption Supports synchronous and asynchronous sampling modes Experience Sabre HiFi all the way to headphones
Patented Time Domain Jitter Eliminator	Unmatched audio clarity free from input clock jitter
Analog PLL	Simplifies clocking requirements and reduces PCB size and BOM cost
64-bit accumulator & 32-bit processing	Distortion free signal processing
Versatile digital input	Supports master/slave PCM (I2S, LJ 16-32-bit), DSD or DoP
Integrated low noise reference regulators	Reduced BOM cost and improved DNR
Integrated analog gain resistors	Eliminate external thin film resistors and reduce PCB size and BOM cost.
Small Package Size	40 pin 5mm x 5mm QFN, 0.4mm spacing
Jack Detect with MIC & Button detection	Jack detect can wake the ES9260Q automatically and prevent false positives
Crosstalk Compensation	Ability to minimize crosstalk
Integrated USB 1.1 PHY	Reduced BOM cost for dongle and system integration

## APPLICATIONS

- Mobile phones / Tablets / Laptops / Digital music players / Portable multimedia players
- Consumer and Audiophile USB DAC headphone amplifiers and A/V receivers
- Professional digital audio workstations and mixer consoles



# Functional Block Diagram

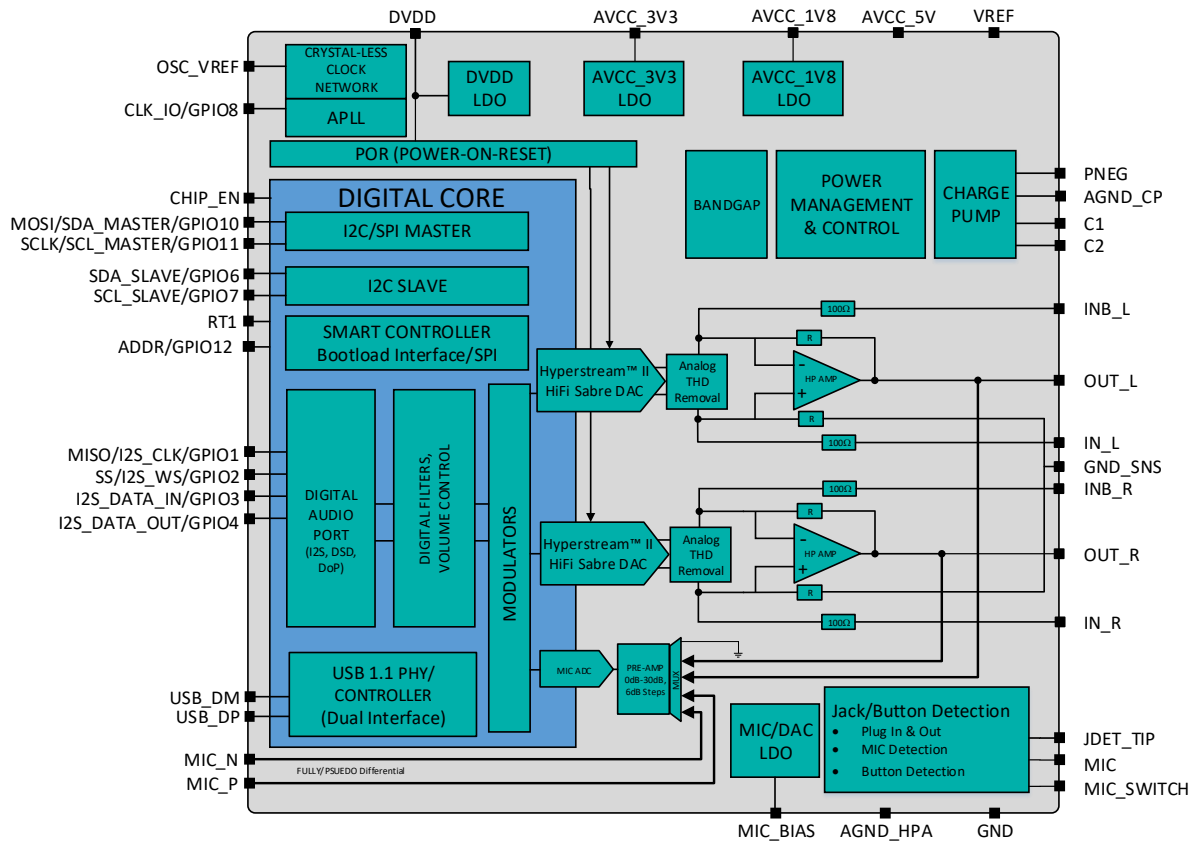


Figure 1 - ES9260Q Block Diagram

# ES9260Q Datasheet



## 40 QFN Pinout

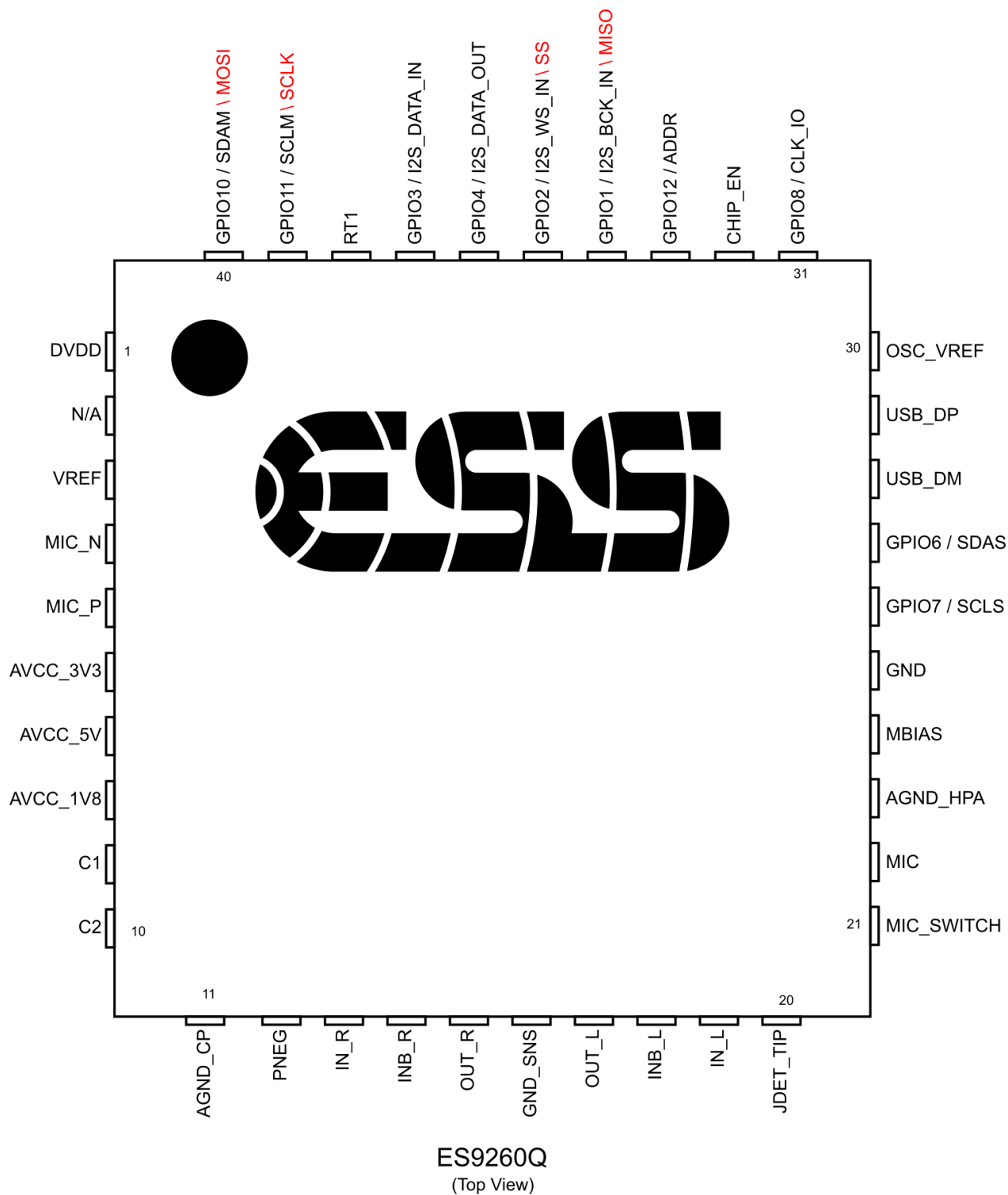


Figure 2 - ES9260Q 40pin QFN Pinout, 0.4mm pitch