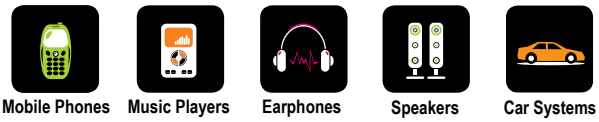
Application Overview

QSound® Bluetooth® Audio

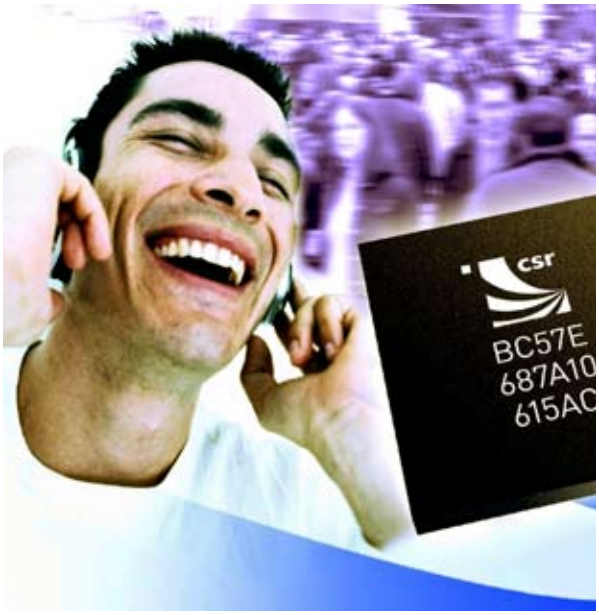
stereo enhancement for CSR BC MP3 Player & BC3/5 Multimedia IC's



About QSound® Bluetooth® Audio

In today's consumer environment, wireless means flexibility, freedom and mobility – no cables, no clutter, no hassles. Whether wired or not, consumers expect excellent performance and quality. QSound and CSR deliver exactly that – top quality Bluetooth wireless capability. CSR's BlueCore3/5-Multimedia single chip radio and baseband IC enhanced with QSound's leading audio technologies surpass consumer expectations with an impressively detailed audio experience.

QSound Bluetooth Audio is a compact, high-performance digital audio processing software solution drawn from QSound Labs' ground-breaking 3D spatial algorithms. This technology represents the culmination of over 20 years of PC host and DSP audio software development and product deployment by QSound Labs, Inc., a world leader in sonic innovation.



Feature Set Description

The QSound Bluetooth audio suite enhances CSR Bluecore 3/5 multimedia ICs with:

- **QXpander®** natural sounding, less fatiguing 3D sound stage expansion for earphones/speakers.
- **QSizzle™** active mid/high-frequency spectral enhancement.
- **QRumble™** active low-frequency spectral enhancement.
- **QEQ™** static multi-band equalization with presets.
- **QLimiter™** anti-saturation dynamic range control.

QXpander®

QSound's proprietary QXpander 3D spatial processing literally adds new dimensions to music playback, expanding the sound stage beyond the physical limitations of speaker locations, and enlarging the acoustic image outside the listener's head when using headphones. This results in a more natural and less fatiguing listening experience. QXpander employs purpose-specific algorithms for maximum spatial impact on headphones or speakers. Speaker-targeted 3D processing is optimized for narrow speaker geometries and can be OEM-tuned for peak performance on front, rear, or side-firing speaker configurations.

csr eXtension

QSound Labs, Inc., Partner
CSR eXtension Program

The QSound Competitive Edge

- *Top quality audio enhancement algorithms for stereo headphones, speakers / docking stations*
- *Industry's best performance:*
  - *Lowest memory and MIPS*
  - *Ultra low system overhead*
  - *Minimal effect on headset playback times*
  - *Tunable for all narrow geometry speaker configurations*
- *Proven track record and established brand recognition*

Feature Set Description continued

QSizzle™

An adaptive mid to high-frequency spectral enhancement, selectively adding upper spectrum energy according to the real time characteristics of the input signal. QSizzle restores a natural sounding sonic punch to highly compressed audio formats like MP3 resulting in lively, sparkling highs without the harsh side-effects of simple frequency boosters.

QRumble™

The low-frequency counterpart to QSizzle, QRumble also adds energy selectively, bringing substance and warmth to the low end of the spectrum without overloading on loud passages.

QEQ™

Multi-band equalization for custom shaping frequency response with 17 different presets including Classical, Jazz, Rock and Pop.

QLimiter™

A high-efficiency, anti-saturation dynamic range controller, QLimiter handles any combination of signals and extreme effects settings. Eliminates output distortion with surprisingly little CPU bandwidth use, ensuring consistent high-quality playback.

BlueCore™ Player

Single-Chip Bluetooth® MP3 Player with QSound®

BlueCore™ Player is an MP3 Player reference design developed by CSR, based on the latest Bluetooth technology. The BlueCore MP3 Player integrates QSound's QXpander® and QEQ™ audio enhancement effects with Bluetooth on a single chip, allowing high-quality audio to be streamed wirelessly to Bluetooth stereo headphones for maximum listening pleasure. Measuring just 56mm by 37mm, BlueCore Player offers a low cost, low power integrated audio Bluetooth solution for MP3 players, DAB radios, hi-fi systems and more. It can stream music over Bluetooth for over 18 hours from an 800mAh Li ion battery.

Technical Specifications & Implementation Data

Audio solutions by QSound Labs have been rigorously optimized with the participation of our major industry partners focusing on three critical requirements:

- Quality
- Processing performance
- Memory footprint.

You can expect at least 25 to 50 percent savings on MIPS and memory footprint when compared to competing solutions. For detailed technical information and implementation data, please contact a QSound Labs representative.

Contact Us

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