



## 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

QSound Bluetooth audio suite enhances the listening experience with:

- **QXpander®** earphone/speaker 3D sound stage expansion.
- **QSizzle™** active mid/high-frequency spectral enhancement.
- **QRumble™** active low-frequency spectral enhancement.
- **QEqualizer™** multi-band equalization.
- **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. **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.

**QSizzle™** **QSizzle** is 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 strident, harsh side-effects of simple frequency boosters.

**QLimiter™** A high-efficiency, anti-saturation dynamic range controller, **QLimiter** handles any combination of signals and extreme effects settings, eliminating output distortion with surprisingly little CPU bandwidth.



## Applications



Mobile Phones



Media Players



Headphones



Speakers



Car Stereo



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

**QEqualizer™** Multi-band equalization for shaping frequency response with presets of Classical, Jazz, Rock and Pop.

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

### Proven Technology, Brand Recognition & Implementation Experience

QSound Labs' audio software is well known as one of the wireless industry's highest quality, most compact and efficient solutions for enriching the users' audio experience. Since its inception in 1986, QSound Labs, Inc. has established itself as one of the world's leading audio technology companies. QSound's expertise was born out of its roots in pro-audio recording of numerous artists, television shows and movies such as Madonna, Sting, Pink Floyd, X-Files, Wonder Years, Robin Hood Prince of Thieves and more.

Today, QSound Labs is well known and highly regarded for its proprietary audio solutions that include virtual surround sound, positional audio and stereo enhancement for the mobile devices, consumer electronics, PC/multimedia and Internet markets. Here is a partial list of companies who have used QSound technology:

Mobile Phones   Mobile Partners   Audio Products   PC/MultiMedia

		<u>Game</u>	<u>Software</u>

### Technical Specifications & Implementation Data

Audio solutions by QSound Labs have been rigorously optimized with the participation of major industry partners focusing on three critical requirements: **quality, processing performance and 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 representative as per the contact information below or email us at [info@qsound.com](mailto:info@qsound.com).

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