



Introducing microQ

microQ™ is a compact and highly efficient software digital audio engine providing functions such as polyphonic ringtones, game sound, digital effects, music playback and recording for portable applications including internet appliances, hand-held and mobile devices.

microQ is inherently modular, scalable and portable. The core components consist of a digital audio playback engine, a wavetable synthesis engine with a scalable sample set, and a multi-channel stereo mixer. To this core may be added a wide range of processes to control frequency response, dynamics, and spatial enhancements as well as full 3D positional audio.

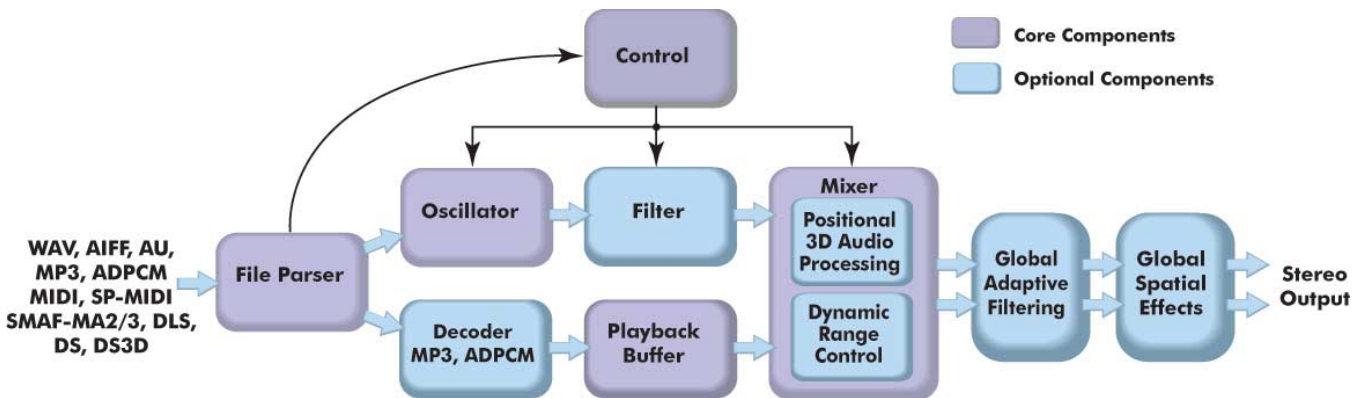
As a software solution, **microQ** offers the classic advantages of implementation flexibility, hardware independence, and low cost.

Proven Heritage

microQ represents the culmination of over twelve years of PC host and DSP audio software development and product deployment by QSound Labs, Inc., a world leader in sonic innovation.

microQ is based on the well-established QSound Virtual Engine™ (QVE) digital audio platform.

QVE provides core processing and advanced sonic capabilities to such products as the “Edge” line of critically-acclaimed sound cards from Philips Consumer Electronics, and powers QSound Labs’ own highly successful line of consumer PC audio applications.



The flow diagram shows a representative configuration of **microQ** components. However, **microQ** architecture is a library of functional blocks that can easily be custom assembled into a multitude of combinations.

Features

- Highly flexible modular architecture.
- Small memory footprint and high efficiency.
- Supports industry-standard content formats.
- Highly efficient send modules direct audio streams to multiple locations.
- Flexible sub-mixers handle different channel counts and sample rates.
- Sophisticated dynamic range control provides normalization and/or soft-knee limiting.
- Flexible filtering capabilities run the gamut from simple static tone control to the sophisticated dynamic frequency response enhancement of QSound QHD™ technology, that breathes life back into tightly compressed audio content.
- Proprietary spatial processing algorithms literally add new dimension to music playback and interactive game play, including full positional 3D audio mixing if desired.
- Proven track record and brand recognition.

Support for Standard Content Formats

microQ renders polyphonic sequenced content (MIDI, SP-MIDI, SMAF-MA2/MA3) with its native wavetable synthesizer sample set or using custom sounds provided via user downloadable sounds (DLS, DLS 2.0).

microQ plays multiple digital audio formats, both linear (WAV, AIFF, AU) and compressed (IMA, Microsoft and Yamaha ADPCM, MP3).



Applications

microQ is ideal for a broad range of hand-held computing and communications devices, enabling and enhancing

- polyphonic ringtones
- game audio
- music playback
- sonic branding
- multimedia messaging
- voice recording



Platforms and Implementations

Inherently portable, **microQ** is written in highly-optimized C++ using fixed-point math, featuring the combination of small footprint and high efficiency that is the hallmark of QSound audio platforms. Modular, scalable components make **microQ** readily adaptable to any target environment, with the requirement for platform-specific code reduced to input and output interfaces.

microQ is currently available for DSP and RISC hardware including ARM® and enhanced ARM architectures running Symbian OS® 7.0s or Windows®CE.

- Intel® XScale™
- DSP Group TeakDSPCore®
- LSI Logic® ZSP™
- TI® OMAP™

microQ can be provided in the form of object code, or custom ported by QSound Labs to suit your specifications.

microQ can be implemented at various system levels, e.g. within a driver, as a plug-in, or as a user application.

For Further Information

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