



Mobile Phones



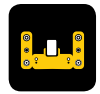
Music Players



Earphones



UMPCs



Docking Stations

About mQSynth™

Today's mobile phones and UMPCs are highly integrated multi-media communications and entertainment devices with demanding audio needs requiring high performance algorithms and low resource requirements.

With **mQSynth™**, QSound Labs delivers a high-efficiency real-time MIDI synthesizer for polyphonic ringtones, game music and interactive sound events.

mQSynth offers the optimal audio solution for mobile devices, rendering polyphonic sequenced content including SMF, SP-MIDI, SMAF, MXMF and JSR135, with architectural efficiencies and performance levels that greatly surpass industry benchmarks.

Feature Set Description

mQSynth™ Software MIDI Synthesizer

mQSynth plays polyphonic ringtone files, game music as well as interactive real-time sound events using digital wavetable instruments. **mQSynth** can produce as many simultaneous notes (polyphony) as platform resources allow, and is typically configured for 32, 64 or 128-note capability.

To meet the needs of a broad range of hardware, our standard wavetables start as small as 50KB in size, and range up to over 1MB. Wavetable customization can be provided if special emphasis is desired for certain types of instruments. **mQSynth** is compatible with the industry-standard DLS (.dls) wavetable format.

mQSynth also supports formats such as Mobile XMF (.mxmf) that include, in addition to the event list comprising the musical score, custom instrument definitions. Real-time interactivity is supported through the Java JSR-135 interactive synthesizer interface and the Java JSR-234 compatible implementation of QSound's **microQ** library.

mQSynth's innovative QSound Realtime Ringtone Remixer (QR3™) automatically re-authors non-optimized content on the fly to produce consistent, high-energy output, free of distortion.



The mQSynth Competitive Edge

- *Optimized for ARM® platforms and Tensilica HiFi Audio DSP*
- *Replaces dedicated hardware music synthesizer*
- *Realistic wavetable instruments in a range of footprints.*
- *High-efficiency stereo processing*
- *Selectable, scalable modular components for easy implementation*
- *Proven track record and established brand recognition*
- *Multiformat support for all regions*



Feature Set Description continued

QR3™ Realtime Ringtone Remixer

Performance-based ringtone files (i.e. in formats such as MIDI) are mainly composed of instructions to the synthesizer (polyringer), rather than digitized audio. Unfortunately, they are not always well-authored for mobile devices. Wide variability in effective signal levels is the result.

QR3 analyses and automatically modifies the performance data before it is rendered into audio by the synthesizer engine, significantly reducing variability. This is especially important for files authored at very high levels, that might otherwise saturate the output.

A second component of QR3 is dynamic range compression applied to the audio output of the synthesizer. This stage reduces variability and increases average signal level.

The net result of QR3 real-time optimization is clean, consistent, high energy output. QR3 helps every ringtone – regardless of style, level or instrumentation – to punch through background noise.

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, please contact a QSound Labs representative.



Samsung J750
Proprietary OS



Pantech
IM-A630K
Android



LG KC550 Orsay
Proprietary OS



ZTE U981
Linux OS



Lenovo P930
Symbian OS

Support for APIs and Standard Formats

mQSynth renders polyphonic sequenced content (MIDI, SP-MIDI, MXMF, iMelody, MFi v4.0, SMAF-MA2/MA3/MA5/MA7 with LED, Vibration and .SPF Phrases) with its native wavetable synthesizer sample set or by using downloadable custom instrument sounds (DLS, DLS2.0, Mobile DLS).

mQSynth API support:

JSR-135, JSR-234, OpenSL ES™

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