



About mQFX™

mQFX, also known as “microQ effects”, increases the audio impact of media players with a powerful set of enhancements that will set your products apart from the crowd.

mQFX is a compact, high-performance software digital audio processing package drawn from QSound Labs’ ground-breaking **microQ™** digital audio engine. mQFX shares with microQ inherent modularity, scalability and portability. You can easily choose the functions that suit your exact product application.

Product Suite

The mQFX suite enhances the music listening experience with:

QSound Spatial Enhancements

- **QXpander®** 3D stereo sound stage expansion.
- **QVerb™** digital reverberation effect.

QEQ Spectral Enhancements

- **QSizzle™** dynamic high-frequency enhancement.
- **QRumble™** dynamic low-frequency enhancement.
- **QLoudness™** Fletcher-Munson equalization adjustment.
- **QEQ™** static multi-band equalization.

QVolume

- **QDRC™** dynamic range control.
- **QLimiter™** anti-saturation dynamic range control.

Feature Set Description Suite

QXpander®

Proprietary **QXpander** 3D spatial processing literally adds new dimension to music playback, expanding the sound stage beyond the physical limitations of speaker locations, and expanding the acoustic image outside the listener’s head when listening with 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, and side-firing speaker configurations.



Mobile Phones



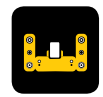
Music Players



Earphones



UMPCs



Docking Stations



The mQFX Competitive Edge

- Industry leading, ARM® optimised
- Proven track record and established brand recognition
- Single-vendor full audio solution:
 - Simplifies integration
 - Saves platform resources
- Selectable, scalable modular components for easy implementation
- Small memory footprint
- High efficiency processing
- Supports earphones and speakers
- Tunable 3D for all narrow geometry speaker configurations

Feature Set Description continued

- QVerb™** 3D acoustic environment simulation enables users to place their music in the sonic context of choice, with presets for stadium, concert hall, club and more.
- QSizzle™** An adaptive mid to high-frequency spectral enhancement, **QSizzle** restores a natural-sounding sonic punch to highly compressed audio formats like MP3 by selectively adding upper spectrum energy according to the real-time characteristics of the input signal. The result is lively, sparkling highs without the strident, harsh side-effects of simple frequency boosters.
- QRumble™** The low-frequency counterpart to QSizzle, **QRumble** also adds energy in a selective fashion, bringing substance and warmth to the low end spectrum without overloading on loud passages.
- QLoudness™** Compensates for human insensitivity to high and low frequencies at low listening levels, restoring natural frequency balance across the spectrum.
- QEQ™** A familiar multi-band equalizer option provides users with a familiar interface for shaping overall frequency response.
- QDRC™** Dynamic range control boosts soft passages to prevent them from being lost against ambient noise and reduces the need to adjust controls.
- 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.

Platforms & Implementations

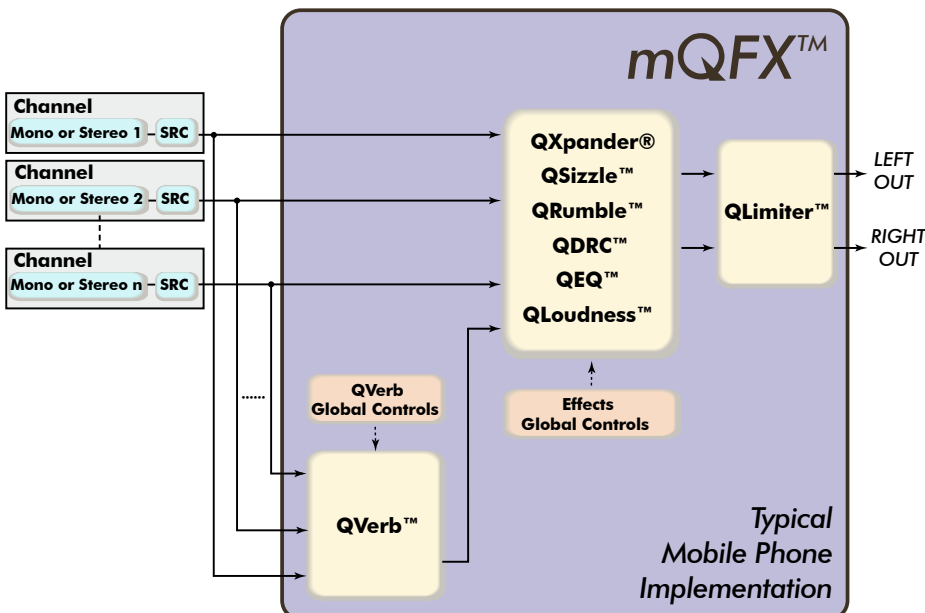
mQFX is written and available in highly optimized C or C++ using fixed-point math and features the unique combination of small footprint and high efficiency that is the hallmark of QSound audio platforms.

Modular, scalable components make **mQFX** easily adaptable to any target environment, with the requirement for platform-specific code reduced to input and output interfaces.

mQFX can be provided in the form of object code, or custom ported by QSound Labs to suit your specifications and can be implemented at various system levels, e.g. within a driver, as a plug-in or as a user application.

mQFX is currently available for DSP and RISC architectures, including ARM® and enhanced ARM architectures running Linux, Symbian OS®, Nokia® Series 60 and Microsoft® Windows Mobile.

- ARM7™ / ARM9™ / ARM11™ processors
- CEVA® Teak™ / TeakLite™ DSP cores
- Qualcomm® MSM 6xxx / MSM 7xxx
- Marvell® PXA300 / PXA310
- AMD® Imageon™
- Tensilica® Xtensa®
- Infineon® MP-E
- TI® OMAP™



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