

Technology Overview

QSurround®HD

surround virtualization engine

About QSurround®HD

QSurround[®]HD meets the challenge of multi-channel audio delivery formats as only QSound Labs can.

DVD, DVD-HD, HD television broadcast, and new streaming Internet video formats all employ discrete multi-channel digital audio, with the potential for bringing an immersive, theatre-like surround sound experience to consumers everywhere.

However, in applications restricted by space, budget or simple practicality, manufacturers and consumers will often choose not to implement full multi-speaker surround systems, leaving the spatial potential of today's digital formats largely untapped.

The QSurroundHD family of 3D audio processes easily bridges the technology gap.

For conventional two-channel output over speakers, the QSurroundHD process creates a phantom center channel, enhances front-channel reproduction, and creates virtual surround speakers to render all channels in their correct positions. The expansive sound field created by the QSurroundHD virtual speakers is nothing less than stunning. The audio quality is unmatched in the industry – a direct result of QSound Labs' long history in positional 3D audio technologies for recording professionals.

QSurround for Headphones also renders multi-channel surround via stereo output, employing uniquely specialized headphone virtualization algorithms in conjunction with ambient environment simulation (a virtual room) that provides context for the content.

As valuable as surround virtualization is, the QSurroundHD process family provides even more. Using target-tuned signal processing combining bass management, multi-channel



The QSurround HD Competitive Edge

- Unparalleled experience in 3D audio and surround virtualization
- Patented sound imaging technology
- Industry proven solution

virtualization, and 3D sound stage enhancement, QSurroundHD adds value to any speaker configuration from 2 to 7.1 channels. QSurroundHD fills weak areas in the gaps between speakers, creating a smooth, seamless surround sound stage.

The clarity, quality, and efficiency of QSound's patented imaging technology is unparalleled. This field-proven technology has been incorporated into hundreds of QSound Labs and third party hardware and software products, with total shipments in the millions.

The QSurround algorithms have met the stringent certification requirements of Dolby Laboratories Licensing Corporation, both for Dolby Digital and Pro Logic processes.

QSoundLabs



QSurround HD Applications









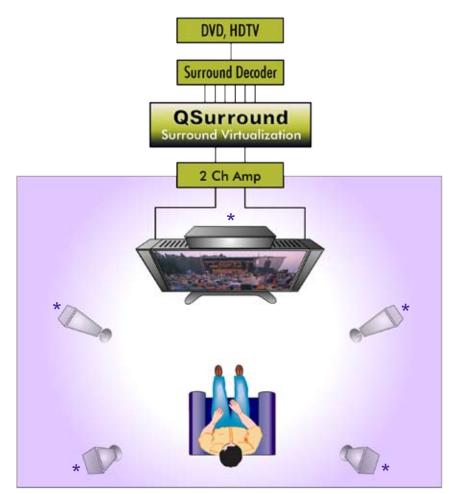
Hardware Partners

(Std / BT)

• AKM

- ST MicroelectronicsTexas Instruments
- Genesis Microchip
- Motorola
- Pixelworks
- VeriSiliconZoran

QSurround Virtualization



*Virtual Speakers generated by QSurroundHD

QSoundLabs



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