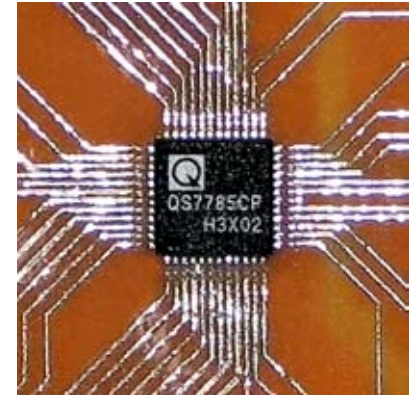




About QSound® Audio Processors

As a global supplier of audio software technology, **QSound** software is delivered for a wide range of devices and applications including stereos, televisions, speakers, home theater, computers, video games, headphones, Bluetooth headsets and other consumer electronics. QSound's proprietary audio algorithms truly deliver a fuller, more natural and immersive audio experience - users hear the difference!!

QSound's sonic technologies, algorithms and special effects include: 3D (three dimensional) audio, multi-speaker system surround synthesis, virtual surround, and 3D sound stage expansion among others. QSound's family of audio enhancement ICs deliver a variety of analog device solutions for OEMs to incorporate for their device needs. The summary table below and further detail overleaf provide additional information on the analog chips offered by QSound Labs.



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Component	Description	Applications
QX2020	Stereo Enhancement Processor Spatial / Widened Stereo Image	 Stereos TVs Speakers Home Theater Computers Video Games
QS7779CM QS7779PM	QSurround Matrix Surround Decoder/Virtualizer	 Car Stereos Speakers Home Theater
QS7785CF QS7785PF	QSurround Multi-Speaker System	 Car Stereos TVs Speakers Home Theater
QS7777CF QS7777PF	QSurround 3D Virtual Audio Processor for Multi-Channel Surround	 Car Stereos TVs Speakers Home Theater



QX2020

Stereo Enhancement Processor

The **QXpander**® **QX2020** is an analog stereo enhancement processor. It uses the patented **QXpander** algorithm to produce a spatial or widened stereo image from ordinary left and right channel inputs. **QXpander** is a stereo to 3D enhancement process and is a trademark of QSound Labs.

The **QX2020** processor has a TTL-compatible QEN/BYP control to select between **QXpander** enhancement and normal stereo audio. Audio enhancement is achieved using normal stereo signals and standard audio playback equipment including two ordinary speakers. It creates a stereo image with depth in three dimensions from ordinary left and right input channels.

Features

- 3D audio enhancement producing a widened sound image from normal stereo input
- No encoding of input signals or special output equipment is required
- TTL-compatible QXpander/Bypass mode selection
- Few external components required - uses internal filter circuit
- Low cost

QS7779

QSurround Matrix Surround Decoder/Virtualizer

The **QS7779** is an audio processor IC that implements a decoder for a stereo matrix encoded source material such as Dolby Surround, along with surround virtualization using **QSurround**® technology developed by QSound Labs. This chip also produces an enhanced stereo sound field for a stereo input signal. If the input signal contains matrix encoded surround sound, the chip automatically decodes it and produces virtualized surround sounds for two-speaker playback.

Features

- Dolby Surround decoder capability
- Stereo sound enhancement
- Center channel output option
- Two enhancement levels
- Parallel and serial digital interface for mode control:
 - QS7779CM for I2C 2-pin serial control interface (Data, Clock)
 - S7779PM for 3-pin serial control interface (Data, Clock and Strobe)
- DC 5 to 13 volt supply
- 24-pin SSOP packaging

QS7777

QSurround 3D Virtual Audio Processor for Multi-Channel Surround

The **QS7777** is a 3D audio processor IC using QSound's patented **QSurround**® technology for multi-channel surround. This chip processes decoded Dolby Digital (AC-3), Dolby Surround or other multi-channel formats and produces virtualized 3D sound for two speaker systems. In addition, various combinations of virtualization and sound field enhancement are employed to provide 3, 4 and 5 speaker systems with maximum spatial rendering effectiveness.

Features

- Enhanced playback with two enhancement levels and improved separation and better surround 3D
- Virtualize surround speakers for flexible speaker systems:
 - Audio signals will be processed to 5, 4, 3 & 2 speaker systems for Dolby Digital (AC-3)
 - Audio signals will be processed to 4, 3 & 2 speaker systems for Dolby Surround (Pro Logic)
- Monaural to stereo conversion for Pro Logic surround signal
- Satisfies certification requirements of Dolby Laboratories Licensing Corporation
- Parallel and serial digital interface for mode control:
 - QS7777CF for I2C 2-pin serial control interface
 - QS7777PF for 3-pin serial control interface (Data, Clock and Strobe)
- DC 5 to 13 volt supply & 48-pin QFP packaging

QS7785

QSurround Multi-Speaker System

The **QS7785** is a 3D audio processor that creates 5 speaker surround sound from 2 channel stereo source using QSound's proprietary **QSurround**® technology. This chip synthesizes and outputs surround sounds from 2 channel stereo signal for surround speakers as well as an enhanced stereo sound for front speakers.

Features

- 3D synthesized surround sound for left & right surround speakers
- 3D stereo sound enhancement for left & right front speakers
- Center speaker output
- Parallel and serial digital interface for mode control:
 - QS7785CF for I2C 2-pin serial control interface
 - QS7785PF for 3-pin serial control interface (Data, Clock and Strobe)
- DC 5 to 13 volt supply & 48-pin QFP packaging