Aim for audio perfection

SHEERSOUND™

PRODUCT SHEET

Sheersound™ by RTX is a supreme and unique audio codec (coder / decoder). The codec is specifically designed for wireless transfer of live audio signals providing extremely low latency and exceptional audio quality.

When transmitting high-quality audio over a wireless link, it is beneficial to code the audio signal to occupy less radio spectrum. In our search for the best software codec available on reasonable commercial terms and with the opportunity to tailor its characteristics in case of special requirements, we decided to develop our own codec: Sheersound™

ABILITY TO COMPRESS EVERY AUDIO SIGNAL

Sheersound is a lossy codec that is based on psychoacoustic properties to effectively compress the audio signal. It can therefore be used in any wireless application.

LOWEST POSSIBLE LATENCY

Sheersound belongs to a class of coders known as non-block-based which effectively gives the lowest possible algorithmic delay of only one sample, which is 20 μs at 48kHz sample rate.

EXCELLENT AUDIO QUALITY

Sheersound has been developed using both psychoacoustic models as well as extensive listening tests for evaluation and tuning of performance. The result today is a coder that has excellent performance with minimal or even inaudible effect on the signal it is compressing.

FLEXIBILITY

Sheersound can be configured for a wide range of sample and coding rates which makes it very flexible and can be adapted to many wireless protocols.

Choose superior audio and low latency

Sheersound by RTX is a supreme and unique audio codec (coder / decoder). The codec is specifically designed for wireless transfer of live audio signals providing extremely low latency and superior audio quality. Sheersound is a license free codec as it is part of the total solution we offer.

With over 25 years of experience, we have gained the expertise to develop highly innovative wireless solutions for major audio brands, enterprises, gaming- and consumer-oriented OEMs. Today, professional and semi-professional artists require extremely low latency (<3 ms) in all components of the wireless audio signal chain in products, such as microphones, speakers, music instruments, headphones, headsets, and In-Ear Monitoring.

We continually develop Sheersound to stay abreast of the codec technology. In the future, we will enhance the Sheersound codec with the following features:

AUDIO SIGNAL TYPE OPTIMIZATION

- allows for optimizing the audio processing depending on the type of audio being processed e.g., voice audio will be recognized and processed with an optimized algorithm for best possible quality.

VARIABLE BIT RATE ENCODING

– improved exploitation of the redundancy we have on the wireless link. With variable bit rate encoding, a changeable bit rate and bandwidth is used throughout the encoded audio transmission to maximize the use of our wireless link.

Product realization

Realize your product idea in mere minutes. To get a firsthand feeling of the audio quality, we can transcode (code and decode) your preferred audio reference files (WAV), allowing you to compare Sheersound processed audio with your original audio. Furthermore, we can offer you evaluation kits for proof of concept of the radio and audio performance or try out one of our product demonstrators.

Available on a variety of off-the-shelf platforms, the Sheersound codec provides excellent audio compression with a single sample latency with full HiFi bandwidths and beyond. Furthermore, Sheersound is optionally available on a range of demand-side platform (DSP) architectures from leading Integrated Communications Providers (ICPs) and is a perfect match with wireless radios.

With the Sheersound codec, we push the limit of technology and provide better audio quality and lower delays than any other HiFi audio processing codec available today. By deploying our wireless audio solutions, you can focus on the implementation of your product signatures without having to become an expert in radio technology. By choosing us as your technology or ODM partner, you gain technologies that are field tested and proven by professionals. It enables you to tap into the present and future RTX radio and audio technologies.

Technical Specification

FEATURES	SPECIFICATIONS
SAMPLING FREQUENCIES	Configurable, 16 – 96kHz
INPUT / OUTPUT WORD LENGTHS	16, 24, and 32 bit
BIT RATE	Configurable compression rates, 2 – 4 bits/sample (typical values 160 – 210kbit/s – specified at 48kHz sample rate)
ALGORITHMIC LATENCY	1 sample (20 µs - specified at 48kHz sample rate)
FREQUENCY RESPONSE	Flat from 10Hz to 22kHz - specified at 48kHz sample rate
DYNAMIC RANGE (TEST SIGNAL 1kHz – 140dBFS)	>128dB - specified at 4 bits per sample
SNR (TEST SIGNAL 1kHz – 1dBFS)	>85dB - specified at 4 bits per sample
THD @1kHz – 1dBFS	Better than -123dB - specified at 4 bits per sample

IMPLEMENTATIONS	SPECIFICATIONS
AVAILABLE ON A VARIETY OF DSP PLATFORMS	• Tensilica LX4 / HiFi-3 (Dialog DA14195 / DA14495) • Analog Devices Blackfin ADSP-BF592 • Texas Instrument Fixed Point C54
MIPS COUNT	• 60 MCPS (encoder at 48kHz sample rate) on the Tensilica LX4 HiFi-3 platform • 52 MCPS (decoder at 48kHz sample rate) on the Tensilica LX4 HiFi-3 platform

ORDERING DETAILS	DESCRIPTION
SHEERSOUND CODEC	Contact RTX for more information and offer at sales@rtx.dk