

SOUNDbout[®]



Complete Bluetooth[®] wireless audio solution

SOUNDbout[®] Suite[™] includes all the software components necessary to develop Bluetooth wireless audio applications such as headphones, headsets, and speakers. Combining the best in class audio codec software with the highly efficient embedded Bluetooth protocol stack BLUEmagic[®] 3.0, SOUNDbout Suite enables OEMs to accelerate the creation of wireless audio solutions while optimizing their audio quality and performance.

SOUNDbout Suite includes the following components:

BLUEmagic 3.0

A thorough implementation of a fully configurable, resource efficient protocol stack targeted at embedded Bluetooth devices and applications. It is scalable, modular and portable, with an innovative, high-performance, compact architecture ideal for embedded devices. BLUEmagic 3.0 is used in millions of devices today.

SOUNDbout Application Development Platform (ADP) ver. 2.0

Handles all the complexities of developing Bluetooth audio applications. It abstracts such functions as pairing, connecting, switching between stereo audio and handsfree voice data, and maintains compatibility with remote device's supported features. Simplified APIs are fully documented in HTML format for easy reference. An extensive set of debugging commands helps rapid application development.

SOUNDbout eSBC[™] Codec

Proprietary audio codec software that provides significantly higher quality audio than the standard Bluetooth SBC codec. It maintains compatibility with standard SBC codec.

SOUNDbout Reference Applications

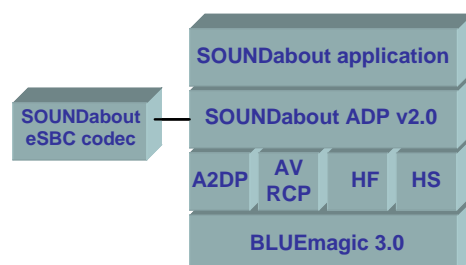
Audio Transmitter for portable music player adaptors.

Audio Receiver for stereo headphones and speakers.

Audio Receiver with Handsfree and Headset: for stereo headphones that also have handsfree capability.

SOUNDbout reference applications can be modified without recompiling using the Software Configuration Tool.

SOUNDbout Suite Diagram



Highlights

Peerless Audio Performance

The SOUNDbout eSBC codec software provides significantly higher quality than the standard Bluetooth SBC codec while maintaining compatibility with standard SBC.

Shortened Time to Market

Reference application programs provide turn-key solutions for OEMs. SOUNDbout ADP v2.0 abstracts layers necessary to develop high quality Bluetooth audio application, requiring minimum knowledge of Bluetooth.

Low Power Consumption

Designed for high efficiency to achieve low memory and CPU usage, SOUNDbout Suite enables long battery life, an essential requirement for mobile devices.

Bluetooth v2.0 + EDR Compliant

Fully Bluetooth v2.0+EDR compliant, SOUNDbout Suite has been tested rigorously for interoperability.

Supported Profiles

A2DP (Audio Source, Sink)
AVRCP (Controller, Target)
Handsfree v1.5 (Unit)
Headset (Headset)

SOUNDbout eSBC Technical Information

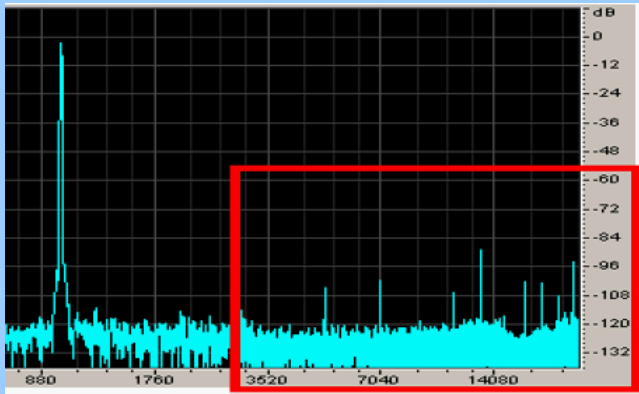
Bit Rate

SOUNDbout eSBC codec is capable of streaming high quality stereo audio at up to 510Kbps, the maximum bit rate defined by the A2DP specification.

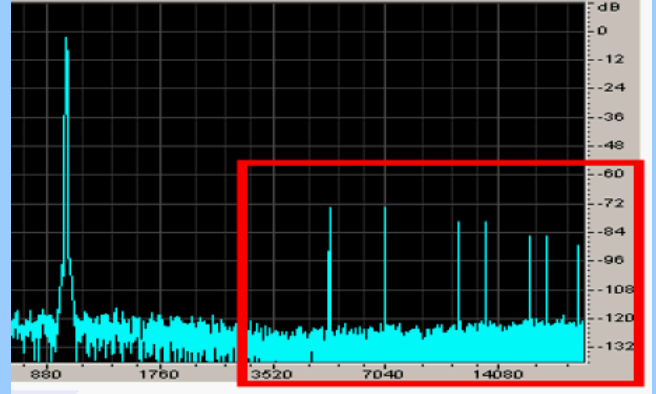
Total Harmonic Distortion + Noise

The graphs below show the response to a sine wave at 997Hz. The reference standard SBC codec is limited to a best-case THD+N (total harmonic distortion plus noise) of -72dB due to filter bank aliasing. SOUNDbout eSBC codec measured a much improved -83.4dB level (unweighted).

SOUNDbout eSBC codec



Standard SBC codec



Power Consumption

The table below compares CPU load measured on ARM7.

	SOUNDbout eSBC	SOUNDbout SBC	Conditions	
Encode	18.8 MHz (16.9 ARM7 Dhrystone 2.1 MIPS)	16.1 MHz (14.5 ARM7 Dhrystone 2.1 MIPS)	Sample rate:	44.1 kHz
Decode	16.8 MHz (15.1 ARM7 Dhrystone 2.1 MIPS)	14.1 MHz (12.7 ARM7 Dhrystone 2.1 MIPS)	Subband:	8 bands
			Blocks per frame:	16 blocks
			Channel Mode:	Joint Stereo
			Bit Allocation:	SNR Allocation
			Bitpool size:	86
			Bit rate:	510kbps

SOUNDbout Package Options

SOUNDbout Suite is available in 3 different package options based on customers' development needs.

Package Option	Description
SOUNDbout Suite Binary	<ul style="list-style-type: none"> For OEMs whose top priority is time to market Includes 3 reference applications ready to be flashed onto a standard platform Reference applications can be personalized without recompiling
SOUNDbout Suite SDK	<ul style="list-style-type: none"> For OEMs who focus on application development on Standard Platform Includes binary files of BLUEmagic 3.0, SOUNDbout eSBC codec and SOUNDbout ADP v2.0 for a standard platform Reference applications provided as source code and binary
SOUNDbout Suite Source Code	<ul style="list-style-type: none"> For OEMs who wish maximum flexibility to develop a highly customized Bluetooth audio application and integration with other profiles or applications Includes source code of BLUEmagic 3.0, SOUNDbout eSBC codec, and SOUNDbout ADP v2.0. Reference applications provided as source code SOUNDbout Suite Source Code includes BLUEmagic 3.0 Source Code

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