OVERVIEW

AM3D’s audio solution for Android enhances the gaming experience with amazing 3D positional audio. The user interface is supplemented with dynamic 3D audio effects, and the media player is significantly improved with enriched playback sound as well as 3D surround sound. The solution is software-based and easily integrated into Android.

Android is the most popular operating system for smartphones and it is becoming more advanced. Amazing functionality and applications can be created. This fact combined with the rapid increase of CPU power makes new opportunities for improving end-user experience a reality.

Today 3D graphics is utilized in many applications e.g. games, user interfaces and even 3D displays are available in smartphones. These rich visual capabilities are a core element in bringing today’s products alive.

Unfortunately, the audio performance in smartphones does not offer the same quality due to the limitations of built-in micro speakers.

ZIRENE® SOUND overcomes these limitations by adding audio enhancement features to optimise playback sound quality in HD quality. 3D Surround creates a perception of immersive sound and Voice Enhancement boosts the voice so it is clear and audible.

ZIRENE® 3D brings the product and user experience on Android devices alive with dynamic 3D audio effects.

In addition to the ZIRENE software, AM3D offers tuning tools for quick and easy adaption of the software to each device model.

ADVANTAGES

• Enhanced gaming experience and improved user interface with 3D audio
• Enhanced playback sound quality and enriched multi-channel 3D Surround
• Flexible end-user control panel to alter audio enhancement settings
• 3D audio and 3D Surround can be combined with head tracking for e.g. HMD
• Scalable solution where 3D audio can be combined with audio enhancement

ABOUT AM3D

AM3D is a provider of world-class audio technology providing software solutions for audio enhancement and 3D audio for mission-critical solutions, mobile devices, in-car and home entertainment systems. AM3D holds several patents on audio technologies.

AM3D has offices in Denmark, Japan, South Korea and Taiwan. AM3D is owned by Nordjyske which has more than 2,000 employees and a history that dates back to 1767. AM3D A/S was established in 1997 as a commercial offspring of research activities at Aalborg University in Denmark.
INTEGRATION

ZIRENE® 3D can be integrated in the Android OS by utilizing the build-in OpenSL ES API. The 3D audio engine is used to implement the missing 3D audio functionality of the Android OpenSL ES API. This solution consists of shared libraries containing the audio processing engine.

ZIRENE® SOUND is integrated in the Android OS by utilizing an Android service to control the audio processing engine. An .XML file is used for easy configuration. Applications e.g. media players, tuning tool and the dedicated end-user control panel can request the service to modify settings.

Alternatively, ZIRENE® 3D and ZIRENE® SOUND can be integrated into an Android application by embedding the audio processing engines.

The solution is designed to run on the application processor using assembly optimized code targeted at various CPU cores e.g. ARM. For Qualcomm platforms the audio enhancement processing can be off-loaded in the Qualcomm Hexagon DSP.

Figure 1: ZIRENE® SOUND control panel for end-user