Listening just got a new meaning

OZO Playback brings an ultimate listening experience for mobile devices. *Playback Panorama for loudspeakers* surrounds the listener with sound when any type of audio content is played back through the device’s stereo speakers. It expands the stereo image in music, videos and game audio in such a way that it appears to surround the listener at a much wider angle than the space between the physical locations of the device speakers, while keeping the vocals and the dialogue clear. Bass can be boosted at frequencies that that seem impossible for most small devices.

When plugging in headphones, *Playback Panorama for headphones* processing ensures that the listener is surrounded with sound. Music, videos and games sound bigger, wider and clearer thanks to advanced algorithms that adjust the spectrum for the ears, providing an optimal and pleasant headphone listening experience.

When paired with OZO Audio, OZO Playback can result in a sonic experience that defies all expectations in device audio.

**Benefits**

**Makes the device sound big**
Playback Panorama offers the best quality for listening to any stereo audio content with the integrated stereo speakers on the device.

**Get immersed with audio**
After being surrounded by the rich audio playback, playing games or watching movies will never be the same anymore.

**Optimized for all types of content**
Different processing modes can be tuned, for example for music and movie consumption.

**Complements OZO Audio capture solution**
Content captured with OZO Audio-processed soundtracks sound stunning with OZO Playback.

**Tuned for optimal quality**
The enhancement is carefully tuned for each product for reproducing the details of the stereo mixing and the sound spectrum of the playback content.

**Loud and clear**
Bass enhancement and dynamic range control maximizes the loudness of the speaker playback, enabling the best possible performance also in noisy conditions.
## Features and formats

### Product integration and support

Playback Panorama for loudspeakers can be tuned flexibly to both symmetric and asymmetric speaker positioning:
- Symmetric speakers enable optimal stereo quality
- Asymmetric speakers can be tuned to overcome the limitations set by the differences between the speakers and their positioning (for example, using of front-firing earpiece speaker and side-firing bottom speaker)

Playback Panorama for headphones introduces adaptive spatial audio processing that is done in the device (e.g., smartphone):
- Tuned to provide optimal audio quality and listening comfort for any audio content while reducing the listening fatigue
- Processing adapts to audio content

Android (ARM) audio processing SW library implementation with API specification and documentation for easy integration:
- Integration documentation, example code about the library API usage
- Guidelines for optimal speaker selection and integration
- ISO 9001 certified quality-management system
- Audio quality assurance support

### Playback Panorama

**Audio input**
- PCM stereo/2-channel audio, floating point format, 44.1 and 48 kHz

**Processing**
- High-quality audio processing, optimized for preserving the stereo quality, spectrum, and loudness during the playback
- Runs on ARM application processor
- Support for multiple listening modes

**Output**
- PCM stereo/2-channel audio, floating point format, 44.1 and 48 kHz
- High-quality playback taking the best out of the stereo speakers on the device
- Individual tuning optimized for each device characteristics