

Psychoacoustic sound: Finally you can play music at top volume and the neighbours won't complain

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A Spanish sound engineer has developed a new sound management system that is able to boost volume without increasing sound pressure, meaning that it would be possible to blast music and sound without it affecting neighbouring buildings.

Masn'live is the brainchild of Xergio Córdoba from the Eternal Midnight Mastering Studio in Madrid, Spain. His patented sound system makes use of psychoacoustics – the relationship between acoustic sound signals, auditory system physiology and psychological perceptions to sound in order to understand how sounds affect the human ear and brain.

The system works by changing the brain's perception of how loud the music being played so that the brain thinks that the same sound wave is twice as loud, while keeping the actual sound pressure, measured in A-weighted decibels (dBA), at the same levels.

Masn'live eliminates low frequencies and replaces them with an "acoustic fingerprint" consisting of frequencies that the human ear perceives as bass, which is often known as the "subwoofer effect".

The music is able to preserve the fullness and strength, but the sound is changed and no longer conveys high frequencies that can permeate walls that don't have soundproofing.

Removing the potential for hearing damage

Hearing damage is caused by prolonged exposure to sound pressure that is at a dBA sound frequency that is too high. So in essence, if you were to listen to music with the system, your brain would think that the volume was actually very loud, but the system would in fact be preventing your ears from being exposed to high frequencies that might damage them.

"To give an example, it's like when you listen to an MP3 through headphones and there's a drum or a bass, but the headphones are too small to reproduce it correctly," Córdoba told Vice.

"This is instead done by evolutionary compensation. It's something that we use a lot in

mastering and have applied to our system in order to accomplish what we were after."

Córdoba's firm masters albums as well as producing sound live at large event venues. He got the idea from speaking to a nightclub owner who complained that complying with acoustic noise emission regulations meant that he had to keep the sound pressure levels low, which meant the sound quality was greatly deteriorated and bad for business.

Music artists are already giving their approval

So far, the Masn'live system has been used by DJs and artists in Madrid, Barcelona and London nightclubs like Laurent Garnier, Pendulum and Lee Foss. It's also been used at the Sonar Festival by Ellen Allien, Steve Lawler, Joris Voorn, and Miss Kittin, and at the Reverse Festival in Nottinghamshire by Oscar Mulero and Christian Wunsch.

"It has been tested at a house party in Barcelona, but above all, it's aimed at artists looking to transmit their musical message in the best quality possible. We can achieve real wonders with next to no sound issues," said Córdoba.

"It's basically the same as audio mastering, but at a venue instead of a studio. Pretty much everything sounds better, higher, sharper, and there's much more detail. We've tested it in a whole bunch of places, all with extremely surprising results. We've tried it with blues, pop, salsa, rock—all genres."