

Title (en)

Distortion reduction for small loudspeakers by band limiting

Title (de)

Verzerrungsverringerng für kleine Lautsprecher durch Bandbegrenzung

Title (fr)

Réduction de la distorsion pour petits haut-parleurs par la limitation de bandes

Publication

**EP 2600636 A1 20130605 (EN)**

Application

**EP 11191329 A 20111130**

Priority

EP 11191329 A 20111130

Abstract (en)

The invention provides a method and a device for reducing distortion from an associated loudspeaker acoustically mounted such that it exhibits a lower resonance frequency  $F_c$ . A limited frequency band, including  $F_c$ , of an audio input signal is attenuated. Hereby distortion due to large diaphragm excursions in the frequency range around  $F_c$  can be eliminated. Especially, the amount of attenuation to be applied to this limited signal frequency range is determined in response to the peak signal level in this limited signal frequency range so as to only apply an attenuation when the signal level in this frequency range exceeds a predetermined level. Hereby, it is possible to take into account the properties of a miniature loudspeaker and ensure that sufficient attenuation is applied so as to avoid maximum diaphragm excursions which result in severe audible distortion. Thus, by controlling this attenuation in a narrow frequency band, e.g. 1 octave or even down to such as 1/3 octave, severe audible distortion can be eliminated, and the negative audible effect of such "band limitation" is hardly audible since the frequency range is so narrow. Most of the time the attenuation effect is completely inactive, since its effect is only required when large peak levels occur in the range near  $F_c$ .

IPC 8 full level

**H04R 3/00** (2006.01); **H04R 3/04** (2006.01)

CPC (source: EP)

**H04R 3/002** (2013.01); **H04R 3/04** (2013.01)

Citation (search report)

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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

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DOCDB simple family (publication)

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