

Title (en)

Audio processor for converting a mono signal to a stereo signal

Title (de)

Audioprozessor zur Umwandlung eines Monosignals in ein Stereosignal

Title (fr)

Processeur audio pour la conversion d'un signal mono en un signal stéréo

Publication

EP 2101517 A1 20090916 (EN)

Application

EP 08102617 A 20080314

Priority

EP 08102617 A 20080314

Abstract (en)

An audio processor (or mono-to-stereo converter) arranged to receive a single channel audio input signal X and generate a set of stereo audio output signals L, R in response. The outputs L, R are based on four delayed versions S1, S2, S3, S4 of the input signal X. S1 is delayed by delay d1 in relation to X, and S2 is delayed by delay d2 in relation to S1. S3 is delayed by a delay d3 in relation to X, and S4 is delayed by delay d4 in relation to S3. The output L is then generated as a sum of X, S1, and S4, while the output R is generated as a sum of X, S2, and S3. Delays d1 and d3 are selected to be different and within a range of 20 ms to 100 ms, e.g. d1=50 ms and d3 =60 ms. Delays d2 and d4 are selected to be within 50 μ s to 1 ms, e.g. 450-650 μ s. Such processor produces a stereo signal suited for headphone listening without the feeling of in-head localization and still with a natural timbre. Additionally, low-pass or band-pass filters and appropriate gains can be applied for further refinement. The audio processor can be implemented with a low signal processing requirement and is thus suited as mono-to-stereo converter in portable equipment such as mobile phones, hearing aids etc.

IPC 8 full level

H04S 5/00 (2006.01)

CPC (source: EP)

H04S 5/00 (2013.01); **H04S 1/005** (2013.01)

Citation (applicant)

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- M. KAHRIS; K. BRANDENBURG: "Applications of digital signal processing", 1998, KLUWER ACADEMIC

Citation (search report)

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- [Y] US 2002015505 A1 20020207 - KATZ ROBERT A [US]
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Designated contracting state (EPC)

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

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

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DOCDB simple family (application)

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