

Title (en)

Method for frequency transposition and use of the method in a hearing device and a communication device

Title (de)

Verfahren zur Frequenzumsetzung und Nutzung des Verfahrens in einem Hörgerät und einer Kommunikationsvorrichtung

Title (fr)

Procédé de transposition de fréquence et utilisation du procédé dans une prothèse auditive et un dispositif de communication

Publication

EP 1441562 A2 20040728 (EN)

Application

EP 04005270 A 20040305

Priority

- EP 04005270 A 20040305
- EP 03005047 A 20030306

Abstract (en)

A method for frequency transposition in a communication device or a hearing device, respectively, is disclosed by transforming an acoustical signal into an electrical signal (s) and by transforming the electrical signal from time domain into frequency domain to obtain a spectrum (S). A frequency transposition is being applied to the spectrum (S) in order to obtain a transposed spectrum (S'), whereby the frequency transposition is being defined by a nonlinear frequency transposition function. Thereby, it is possible to transpose lower frequencies almost linearly, while higher frequencies are transposed more strongly. As a result thereof, harmonic relationships are not distorted in the lower frequency range, and at the same time, higher frequencies can be moved to a lower frequency range, namely to an audible frequency range of the hearing impaired person. The transposition scheme can be applied to the complete signal spectrum without the need for switching between non-transposition and transposition processing for different parts of the signal. Therefore, no artifacts due to switching are encountered. A higher transmission quality is obtained because more information is taken into account for the transmission.

IPC 1-7

H04R 25/00

IPC 8 full level

G10L 21/02 (2013.01); **H04R 25/00** (2006.01); **G10L 21/06** (2013.01)

CPC (source: EP)

G10L 21/0364 (2013.01); **H04R 25/353** (2013.01); **G10L 2021/065** (2013.01); **H04R 2225/43** (2013.01)

Cited by

DE102009058415A1; DE102011006472A1; DE102011006148B4; DE102009058415B4; DE102011006472B4; EP1686566A3; AU2005201813B2; US2014105435A1; US9319804B2; EP2375782A1; US11184715B1; US11962980B2; US8824668B2; US10284978B2; US8949113B2; US10129659B2; WO2007045240A3; US9179222B2; US9794698B2; EP2506255A1; DE102011006515A1; WO2007135198A2; US8737631B2; EP2337378A2; US8908892B2; US8031892B2; EP2506254A1; EP2506602A2; DE102011006511A1; US8644538B2; US8811641B2; WO2007053896A1

Designated contracting state (EPC)

CH DE DK LI

DOCDB simple family (publication)

EP 1333700 A2 20030806; **EP 1333700 A3 20030917**; DE 602004026233 D1 20100512; DK 1441562 T3 20100719; EP 1441562 A2 20040728; EP 1441562 A3 20071121; EP 1441562 B1 20100331

DOCDB simple family (application)

EP 03005047 A 20030306; DE 602004026233 T 20040305; DK 04005270 T 20040305; EP 04005270 A 20040305