

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

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Application

EP 04005270 A 20040305

Priority

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- EP 03005047 A 20030306

Abstract (en)

[origin: EP1333700A2] The present invention is related to a method for frequency transposition in a hearing device 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). According the present invention, 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 into a lower frequency range, namely in an audible range of the hearing impaired. 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 when applying the present invention. <IMAGE>

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

- [X] WO 9914986 A1 19990325 - UNIV IOWA RES FOUND [US]
- [X] EP 0542711 A1 19930519 - VIENNATONE GMBH [AT]
- [A] WO 0075920 A1 20001214 - ERICSSON TELEFON AB L M [SE]
- [A] US 4982434 A 19910101 - LENHARDT MARTIN L [US], et al
- [A] US 5590417 A 19961231 - RYDBECK NILS [US]
- [A] US 5479522 A 19951226 - LINDEMANN ERIC [US], et al

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

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