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(54) **Method for frequency transposition and use of the method in a hearing device and a communication device**

(57) 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.

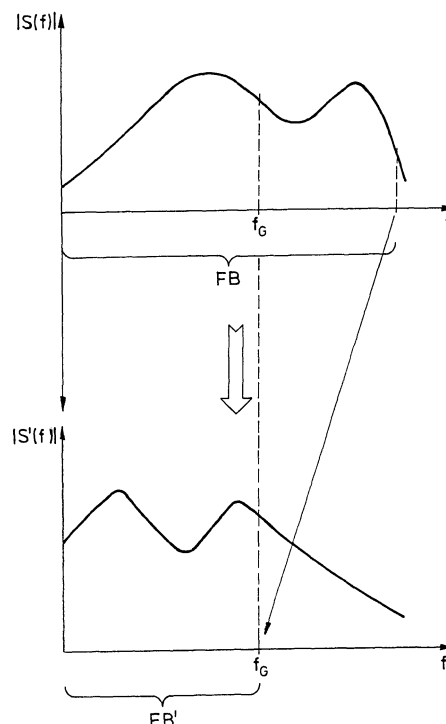


FIG.1



European Patent  
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# EUROPEAN SEARCH REPORT

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EP 04 00 5270

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| Category  | Citation of document with indication, where appropriate, of relevant passages   | Relevant to claim                                   | CLASSIFICATION OF THE APPLICATION (IPC) |
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| Place of search<br>Munich   |   | Date of completion of the search<br>11 October 2007 | Examiner<br>Kunze, Holger               |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>&amp; : member of the same patent family, corresponding document</p> |   |   |   |

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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