Title (en)

Method for frequency compression with harmonic adjustment and corresponding device

Title (de)

Verfahren zur Frequenzkompression mit harmonischer Korrektur und entsprechende Vorrichtung

Title (fr)

Procédé de compression fréquentielle à l'aide d'une correction harmonique et dispositif correspondant

Publication

EP 2437521 B2 20170913 (DE)

Application

EP 11178306 A 20110822

Priority

DE 102010041644 A 20100929

Abstract (en)

[origin: EP2437521A1] The method involves providing the audio signal into several frequency channels (31,32). The frequency associated with the fundamental frequency, in the frequency channel (32) is estimated as harmonic (20,30). The harmonics of the audio signal is moved or mapped from a frequency channel (31) in frequency channel (32). An independent claim is included for device for frequency compression of audio signal.

IPC 8 full level

H04R 25/00 (2006.01)

CPC (source: EP US)

H04R 25/353 (2013.01 - EP US); H04R 2225/43 (2013.01 - EP US)

Citation (opposition)
  Opponent :
• US 2008123886 A1 20080529 - ANDERSEN HENNING HAUGAARD [DK], et al
• DE 2613513 A1 19771006 - KREMER ALBERT DIPL ING
• US 2009312820 A1 20091217 - NIE KAIBAO [US], et al
• WO 2007006658 A1 20070118 - OTICON AS [DK], et al
• US 5864813 A 19990126 - CASE ELIOT M [US]
• EP 0542711 A1 19930519 - VIENNATONE GMBH [AT]
• US 2009226016 A1 20090910 - FITZ KELLY [US], et al
• EP 0279451 A2 19880824 - FUJITSU LTD [JP]
• AU 2002300314 A1 20040212 - HEARWORKS PTY LTD
• EP 2337378 A2 20110622 - SIEMENS MEDICAL INSTR PTE LTD [SG]
• EP 0054450 A1 19820623 - LAFON JEAN CLAUDE
• SIMPSON A.: "Frequency-Lowering devices for managing high-frequency hearing loss: A review", TRENDS IN AMPLIFICATION, vol. 13, no. 2, June 2009 (2009-06-01), pages 87 - 106

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

DOCDB simple family (publication)

EP 2437521 A1 20120404; EP 2437521 B1 20140430; EP 2437521 B2 20170913; AU 2011226820 A1 20120412; AU 2011226820 B2 20131003; CN 102436817 A 20120502; CN 102436817 B 20131030; DE 102010041644 A1 20120329; DE 102010041644 B4 20190711; DK 2437521 T3 20140811; DK 2437521 T4 20171218; US 2012076332 A1 20120329; US 9258655 B2 20160209

DOCDB simple family (application)

EP 11178306 A 20110822; AU 2011226820 A 20110922; CN 201110295910 A 20110928; DE 102010041644 A 20100929; DK 11178306 T 20110822; US 201113248157 A 20110929