

Title (en)
Antenna device for hearing instruments

Title (de)
Antenneneinrichtung für Hörinstrumente

Title (fr)
Dispositif d'antenne pour appareils auditifs

Publication
EP 2894880 B1 20170315 (DE)

Application
EP 15150094 A 20150105

Priority
DE 102014200524 A 20140114

Abstract (en)
[origin: CN104779439A] The present invention relates to an antenna device for hearing instruments, in particular suited for ITE hearing instruments to be worn in the auditory canal. An antenna arrangement with a coil core of magnetically permeable material has a preferred transmit and receive spatial direction. A further electric hearing instrument component emits electromagnetic interference radiation. A partially planar shield of magnetically permeable material is disposed between the antenna arrangement and the further component transversely to the transmit and receive spatial direction of the antenna arrangement and at a distance of 50 to 150 micrometers from the coil core. The distance is optimized to the fact that the signal-to-noise ratio has a maximum around 100 micrometers and undergoes a first-increase and a then-decrease process along with the increasing distance. The shield effect between antenna and further hearing instrument component initially increases with increasing distance and passes into saturation at about 100 micrometers. Additionally, a minimum distance should be maintained due to whole size of the structure.

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H04R 25/00 (2006.01)

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H04R 2225/51 (2013.01 - EP US); **H04R 2225/67** (2013.01 - US)

Citation (opposition)
Opponent : Oticon A/S
• WO 2013135307 A1 20130919 - PHONAK AG [CH], et al
• DE 102007042590 A1 20090326 - SIEMENS MEDICAL INSTR PTE LTD [SG]
• WO 0152598 A1 20010719 - MICROTRONIC NETHERLAND B V [NL], et al
• US 7333786 B2 20080219 - KIKUCHI AKIHIRO [JP], et al
• US 2981950 A 19610425 - SKIDMORE WILLIAM S
• DE 102006043909 B3 20080417 - SIEMENS AUDIOLOGISCHE TECHNIK [DE]
Opponent : Oticon A/S, GN Hearing A/S
• EP 2680366 A1 20140101 - GN RESOUND AS [DK]
• EP 1450379 A2 20040825 - PHONAK AG [CH]
• DE 4326358 C1 19941124 - SIEMENS AUDIOLOGISCHE TECHNIK [DE]
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• "Konstruktionselemente", 2 December 2007, article ETTEMEYER: "chapter 4", pages: 4-2 - 4-18, XP055661852

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EP3209032A1; AU2017200327B2; WO2016146487A1; US10097932B2; US10231063B2

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DOCDB simple family (publication)
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JP 2015133703 A 20150723; JP 6479482 B2 20190306; US 2015201290 A1 20150716; US 9253582 B2 20160202

DOCDB simple family (application)
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DK 15150094 T 20150105; JP 2015004167 A 20150113; US 201514596385 A 20150114