Title (en)

Antenna device for hearing instruments

Title (de)

Antenneneinrichtung für Hörinstrumente

Title (fr)

Dispositif d'antenne pour appareils auditifs

Publication

EP 2811761 B1 20190508 (DE)

Application

EP 14157657 A 20140304

Priority

DE 102013210689 A 20130607

Abstract (en)

[origin: US2014363037A1] An antenna system is provided for hearing instruments to be worn in the auditory canal. A hearing instrument has a data transmission system improved in respect of transmission bandwidth with no increase or only an insignificant increase in space and energy requirement. The antenna system has an antenna with a preferred send and receive spatial direction, and a hearing instrument component which emits noise radiation predominantly in a noise radiation spatial direction. The antenna and the hearing instrument component are disposed so that the send and receive spatial direction and the noise radiation spatial direction are oriented transverse to one another such that a coupling-in of noise radiation into the antenna is reduced. The reduction of the noise couplings into the antenna make possible a higher send and receive bandwidth, with the installation volume and energy requirement remaining the same. The hearing instrument component is a receiver.

IPC 8 full level

H04R 25/00 (2006.01); **H01Q 1/22** (2006.01); **H01Q 1/27** (2006.01); **H01Q 7/00** (2006.01)

CPC (source: EP US)

H01Q 1/22 (2013.01 - US); **H01Q 1/273** (2013.01 - EP US); **H01Q 7/00** (2013.01 - EP US); **H04R 25/55** (2013.01 - US); **H04R 25/554** (2013.01 - EP US); **H04R 25/60** (2013.01 - EP US); **H04R 25/604** (2013.01 - EP US); H04R 25/552 (2013.01 - EP US); H04R 25/609 (2019.04 - EP US); H04R 2225/025 (2013.01 - EP US); H04R 2225/49 (2013.01 - EP US); H04R 2225/51 (2013.01 - EP US); H04R 2225/57 (2019.04 - EP US)

Citation (opposition)

Opponent : GN Hearing A/S

- EP 2278828 A2 20110126 - STARKEY LAB INC [US]
- US 2004028251 A1 20040212 - KASZTELAN THOMAS [DE], et al
- US 2009274328 A1 20091105 - GEBHARDT VOLKER [DE], et al
- US 2008226108 A1 20080918 - HEERLEIN MARKUS [SG], et al
- US 2008212812 A1 20080904 - CHAN HOONG YIH [SG], et al
- US 2010195857 A1 20100805 - GEBHARDT VOLKER [DE], et al
- US 2011194717 A1 20110811 - HANSEN JACOB HOLDT [DK], et al
- US 2005162331 A1 20050728 - ENDO TAKANORI [JP], et al
- US 2009315553 A1 20091224 - ARIMURA KUNITAKA [JP]
- US 2005244024 A1 20051103 - FISCHER THOMAS [DE], et al
- US 5640457 A 19970617 - GNECCO LOUIS THOMAS [US], et al
- US 2006018495 A1 20060126 - GESCHIERE ONNO [NL], et al
- US 2013064406 A1 20130314 - MILLER THOMAS E [US]
- US 2005168396 A1 20050804 - VICTORIAN THOMAS A [US], et al
- "Principles of Inductive Near Field Communications for Internet of Things", 2011, article JOHNSON IHYEH AGBINYA: "6 Circuit models and power estimates of antennas in inductive near field communications links", pages: 65 - 76, XP055684248

Cited by

DE102017215372A1; EP3451703A1; DE102019217861B3; CN112825565A; EP3826327A1; US11343627B2; US11627423B2

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)

DE 102013210689 B3 20141002; AU 2014202868 A1 20150115; AU 2014202868 B2 20151210; CN 104244156 A 20141224; CN 104244156 B 20171013; DK 2811761 T3 20190812; EP 2811761 A1 20141210; EP 2811761 B1 20190508; US 2014363037 A1 20141211; US 9521494 B2 20161213

DOCDB simple family (application)

DE 102013210689 A 20130607; AU 2014202868 A 20140527; CN 201410250412 A 20140606; DK 14157657 T 20140304; EP 14157657 A 20140304; US 201414299144 A 20140609