Title (en)

Antenna with stacked resonating structures and multiband radiocommunication device using the same

Title (de)

Antenne mit übereinanderliegenden Resonanzstrukturen und Multibandfunkkommunikationsendgerät mit einer derartigen Antenne

Title (fr)

Antenne à empilement de structures résonantes et dispositif de radiocommunication multifréquence incluant cette antenne

Publication

EP 1075043 A1 20010207 (FR)

Application

EP 00402192 A 20000731

Priority

FR 9910180 A 19990805

Abstract (en)

[origin: JP2001077623A] PROBLEM TO BE SOLVED: To obtain a small-sized antenna in a stack structure with sufficient passing band width by eliminating mutual interference by coupling a resonance structure which has a high center frequency ratio on both sides of a coupling layer made of the planar conductive layer with an external processing unit via a slit formed in the coupling layer. SOLUTION: A lower conductive layer A, a lower dielectric layer B, a coupling layer C, an upper dielectric layer D, and an upper conductive layer E are stacked vertically in order, and the layers A, B, and C form a lower resonance structure and the layers C, D, and E form the upper resonance structure. The coupling layer C has two coupling slits CF extending from a back end along a length DL and a coupling strip CR form a coplanar line and an internal coupling device. The upper and lower resonance structures are both a patch type, the coupling layer C constitutes the patch of the lower resonance structure and an internal part of a base plate of the upper resonance structure, and the patch of the upper resonance structure is composed of the upper conductive layer E. Furthermore, the lower and upper resonance structures are made into quarter-wavelength and half-wavelength types respectively and substrate which are equal in thickness and dielectric constant can be used.

Abstract (fr)

Une antenne à empilement de structures résonantes inclut : une ligne de guidage (CR, CF) pour ondes électromagnétiques, cette ligne étant formée dans une couche conductrice (C) s'étendant dans un plan, et deux structures résonantes (ABC,CDE) ayant deux fréquences de résonance respectives mutuellement différentes, ces deux structures étant formées de part et d'autre de ce plan de manière à être toutes deux couplées directement à cette ligne tout en étant sensiblement découplées l'une de l'autre par cette couche conductrice (C). De préférence la ligne de guidage est du type coplanaire, et les deux structures résonantes sont du type quart d'onde. L'invention s'applique notamment aux radiotéléphones bi-bandes. <IMAGE>

IPC 1-7

H01Q 5/00; H01Q 1/24; H01Q 9/04

IPC 8 full level

H01Q 1/24 (2006.01); **H01Q 1/38** (2006.01); **H01Q 5/00** (2006.01); **H01Q 5/01** (2006.01); **H01Q 5/10** (2015.01); **H01Q 5/385** (2015.01); **H01Q 9/04** (2006.01); **H01Q 13/08** (2006.01); **H01Q 21/30** (2006.01)

CPC (source: EP US)

H01Q 1/242 (2013.01 - EP US); **H01Q 5/385** (2015.01 - EP US); **H01Q 9/0407** (2013.01 - EP US); **H01Q 9/0414** (2013.01 - EP US); **H01Q 9/0421** (2013.01 - EP US); **H01Q 9/045** (2013.01 - EP US)

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DOCDB simple family (application)

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