

Title (en)
Multi-frequency antenna

Title (de)
Mehrfrequenzantenne

Title (fr)
Antenne multifréquence

Publication
EP 1560287 A1 20050803 (EN)

Application
EP 04002213 A 20040202

Priority
EP 04002213 A 20040202

Abstract (en)
A multi-frequency antenna includes a antenna body, a patch antenna, and a ground plane. The antenna body has first and second radiation arms, a feed-in terminal, and a ground terminal disposed in one side of the antenna body for signal feeding, and grounding. The first and second radiation arms are arranged in a symmetrically inward spiral structure. Two current paths with different lengths are created, along with the two radiation arms from the feed-in terminal, and thereby the antenna is operable at two frequencies. An additional patch antenna can be disposed beside the antenna body to allow the antenna to have more operational frequencies. In practice, the length of the patch antenna can be designed according to the bandwidth of Bluetooth signals to meet the requirement of Bluetooth communication. The ground plane is disposed beneath the antenna body and the patch antenna for the purpose of grounding of the antenna's signals. In implementation, a section of the ground plane, which is above the endfire direction, can be hollowed to increase antenna's bandwidth. The hollowed section can also be used to dispose other components to increase the component density.

IPC 1-7
H01Q 1/24; **H01Q 5/00**; **H01Q 9/04**; **H01Q 21/28**

IPC 8 full level
H01Q 1/24 (2006.01); **H01Q 5/00** (2006.01); **H01Q 5/371** (2015.01); **H01Q 5/40** (2015.01); **H01Q 9/04** (2006.01); **H01Q 21/28** (2006.01)

CPC (source: EP)
H01Q 1/243 (2013.01); **H01Q 5/371** (2015.01); **H01Q 5/40** (2015.01); **H01Q 9/0421** (2013.01); **H01Q 21/28** (2013.01)

Citation (applicant)
• EP 1079462 A2 20010228 - FILTRONIC LK OY [FI]
• US 6166694 A 20001226 - YING ZHINONG [SE]
• WO 0205382 A1 20020117 - ALLGON AB [SE], et al
• US 2002089454 A1 20020711 - EGGLESTON STEVE [US], et al
• US 2003160728 A1 20030828 - FUKUSHIMA SUSUMU [JP], et al
• FU-REN HSIAO ET AL.: "MICROWAVE AND OPTICAL TECHNOLOGIEY LETTERS", vol. 32, 20 February 2002, JOHN WILEY, article "A dual-band planar inverted-F patch antenna with a branch-line slit", pages: 310 - 312

Citation (search report)
• [X] WO 0120714 A1 20010322 - GALTRONICS LTD [IL], et al
• [X] EP 1079462 A2 20010228 - FILTRONIC LK OY [FI]
• [X] US 6166694 A 20001226 - YING ZHINONG [SE]
• [A] WO 0205382 A1 20020117 - ALLGON AB [SE], et al
• [A] US 2002089454 A1 20020711 - EGGLESTON STEVE [US], et al

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