

Title (en)
Antenna

Title (de)
Antenne

Title (fr)
Antenne

Publication
EP 0923158 A2 19990616 (EN)

Application
EP 98660138 A 19981210

Priority
FI 974481 A 19971210

Abstract (en)
The invention comprises an antenna structure particularly suitable for mobile stations operating on two frequency ranges. As a supporting component and also as component determining the electrical characteristics the antenna includes a dielectric plate (21). On one surface of the dielectric plate there is a radiating element (22) with a meander form, and on the opposite support of the dielectric plate there is a planar radiating element (23). The operation on two frequency ranges is based on the fact that the structure has two resonance frequencies, which are relatively far from each other. The strips are further relatively wide, due to which the antenna operates satisfactorily in different positions and in the vicinity of objects. The parasitic element can further have a gap operating as a separate radiator, whereby the antenna operates on three frequency ranges. The antenna according to the invention is flat, and therefore it can be fixed to the back wall of a mobile station, and the distance to the user's head is as large as possible. <IMAGE>

IPC 1-7
H01Q 9/30; **H01Q 1/36**; **H01Q 1/38**; **H01Q 5/00**

IPC 8 full level
H01Q 21/30 (2006.01); **H01Q 1/36** (2006.01); **H01Q 1/38** (2006.01); **H01Q 5/00** (2006.01); **H01Q 5/378** (2015.01); **H01Q 5/49** (2015.01); **H01Q 9/30** (2006.01)

CPC (source: EP)
H01Q 1/36 (2013.01); **H01Q 1/38** (2013.01); **H01Q 5/378** (2015.01); **H01Q 5/49** (2015.01); **H01Q 9/30** (2013.01)

Cited by
EP1432072A1; EP1359639A4; EP1122812A3; EP1609209A4; KR101284128B1; EP1439604A1; CN100459290C; US2019296436A1; US11245189B2; GB2377082A; EP1271690A3; KR100826403B1; DE10030402B4; DE102004029215B4; EP1439601A1; CN100438209C; KR100513314B1; EP2311142A4; US6937196B2; US9761951B2; US7239889B2; US6504511B2; US9979078B2; US9917346B2; US6963309B2; US9973228B2; WO0108260A1; WO2016075387A1; US9647338B2; US9680212B2; US7061430B2; US9906260B2; US7391378B2; US7728785B2; US9673507B2; US10069209B2; US9634383B2; US9948002B2; US10079428B2; US6963308B2; US6204826B1; US7501983B2; US7136019B2; US8704729B2; US9722308B2

Designated contracting state (EPC)
DE FR GB NL

DOCDB simple family (publication)
EP 0923158 A2 19990616; **EP 0923158 A3 20001011**; **EP 0923158 B1 20040602**; DE 69824262 D1 20040708; DE 69824262 T2 20050623; FI 112983 B 20040213; FI 974481 A0 19971210; FI 974481 A 19990611; JP 2006136017 A 20060525; JP H11243318 A 19990907

DOCDB simple family (application)
EP 98660138 A 19981210; DE 69824262 T 19981210; FI 974481 A 19971210; JP 2005379786 A 20051228; JP 35036198 A 19981209