

Title (en)
Antenna element

Title (de)
Antennenelement

Title (fr)
Élément d'antenne

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Application
EP 14360005 A 20140318

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Abstract (en)
A radiating antenna element (100), comprising a metallic patch (1), the patch (1) having a cup-shaped form and comprising a substantially rectangular substantially planar member (102) and a sidewall (5a, 5b, 5c, 5d) extending transverse to the plane of the planar member (102) from each edge (106a, 106b, 106c, 106d) of the planar member (102). A cut-out (6a, 6b, 6c, 6d) is defined at each corner of the patch (1), whereby at each corner edges of respective pairs of sidewalls (5a, 5b, 5c, 5d) are spaced apart by a distance such that the radiating antenna element is capable of ultra-wideband operation (e.g. signal bandwidth greater than or equal to (i) 25%, (ii) 30%, (iii) 35% or (iv) 39% of the centre frequency). The antenna element (100) further includes at least a metallic first feed probe (4a), the first feed probe (4a) being coupled to the patch (1) at a position at or adjacent a first corner thereof, providing for operation with a first slant linear polarisation. A second feed probe (4b) may be coupled to the patch (1) at a position at or adjacent a second corner of the patch (1), the second corner being at an opposite end of one of the sidewalls (5a, 5b, 5c, 5d) extending to the first corner of the patch (1). The second feed probe (4b) provides for operation with a second slant linear polarisation, whereby the direction of that second polarisation is oriented at substantially 90° to the direction of the first slant linear polarisation. The feed probe(s) (4a, 4b) may be mounted within the cut-outs (6a, 6b, 6c, 6d). The antenna element (100) may further include a metallic pedestal (3), the patch (1) being mounted so as to define a spacing (7a) between the patch (1) and the pedestal (3), wherein (i) the spacing (7a) comprises an air gap, (ii) a dielectric spacer is disposed in said spacing (7a), or (iii) the spacing (7a) is provided by a combination of an air gap and a dielectric spacer. Further feed probes, or support elements (8c, 8d) may be provided at the corners opposite the at least first (4a) and second (4b) feed probes. A cup-shaped patch for use in the antenna element (100) is also disclosed.

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Citation (search report)
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