

Title (en)

LINEARLY POLARIZED MULTI-BEAM ANTENNA BASED ON METAMATERIALS

Title (de)

LINEAR POLARISIERTE MEHRSTRAHLANTENNE AUF BASIS VON METAMATERIALIEN

Title (fr)

ANTENNE MULTIFAISCEAU À POLARISATION LINÉAIRE BASÉE SUR DES MÉTAMATÉRIAUX

Publication

**EP 3902060 B1 20230809 (EN)**

Application

**EP 21158613 A 20210223**

Priority

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Abstract (en)

[origin: EP3902060A1] The present invention relates to a printed linearly polarized multi-beam antenna based on metamaterial technology. It consists of a circular metasurface divided into four independent quadrants. The antenna consists of a single dielectric support, on which a large number of elliptical patches, of a small size with respect to the wavelength, is printed, and four connectors, corresponding to the input of the four quadrants of the antenna. There is no power supply network, since the patches are surface wave powered. The antenna pattern is obtained by means of multiple holographies, patterns obtained by means of the diffraction from a dielectric on which a surface wave travels, made on a single surface and launched by means of as many connectors or couplings in the guide. In a particular four-beam embodiment of the antenna, the combination of said patterns allows to obtain the four sum and delta signals of a monopulse. The antenna may replace the radiating plate of monopulse antennas with a reduction in size, weight and cost, while substantially maintaining the same performance.

IPC 8 full level

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CPC (source: EP)

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