Title (en)

FIXED MULTIBEAM STEREOSCOPIC HELICAL ANTENNA ARRAY AND HELICAL ANTENNA FLEXIBLE SUPPORT DEVICE THEREOF

Title (de)

STARRE MEHRSTRAHLIGE STEREOSKOPISCHE WENDELGRUPPENANTENNE UND FLEXIBLE TRÄGERVORRICHTUNG FÜR WENDELANTENNE DAFÜR

Title (fr)

RÉSEAU D'ANTENNES HÉLICOÏDALES STÉRÉOSCOPIQUE MULTIFAISCEAU FIXE, ET DISPOSITIF DE SUPPORT FLEXIBLE D'ANTENNE HÉLICOÏDALE ASSOCIÉ

Publication

EP 3316397 B1 20190904 (EN)

Application

EP 17769236 A 20170118

Priority

- CN 201610167974 A 20160323
- CN 2017071578 W 20170118

Abstract (en)

[origin: EP3316397A1] The invention provides a fixed multi-beam helical antenna stereoscopic array, comprising helical antenna units and a frustum structure which comprises a top surface and a plurality of side surfaces, the upper ends of the side surfaces are connected with the edge of the top surface, the side edges of the adjacent side surfaces are connected, and the top surface and side surfaces are provided with helical antenna units respectively, wherein, the top surface of the frustum structure is in the shape of a regular polygon, and the side surfaces are in the shape of isosceles trapezoids. Each helical antenna unit is isolated by a beam isolation plate, and the helical antenna of the helical antenna unit is mounted on the dielectric plates. The helical antenna has a folding and unfolding function, and the effective control over the pitch and rigidity of the helical antenna is achieved by flexible support wires and a pitch fine-adjustment device. The invention realizes antenna beam pointing deflection by the stereoscopic frustum structure, so as to realize a beam coverage in the airspace in a wider field of view, without using the phase-shifting feeding network; mutual-coupling among the antenna units is reduced and the frustum structure is downsized by the beam isolation plate, and the antenna stereoscopic array is better from the electrical performance, cost and weight.

IPC 8 full level

H01Q 1/14 (2006.01); **H01Q 1/36** (2006.01); **H01Q 11/08** (2006.01); **H01Q 21/00** (2006.01); **H01Q 21/20** (2006.01)

CPC (source: CN EP)

H01Q 1/14 (2013.01 - CN EP); **H01Q 1/362** (2013.01 - EP); **H01Q 11/08** (2013.01 - EP); **H01Q 21/205** (2013.01 - EP)

Citation (examination)

JP 3649516 B2 20050518

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 3316397 A1 20180502; **EP 3316397 A4 20180829**; **EP 3316397 B1 20190904**; CN 105762483 A 20160713; CN 105762483 B 20190219; WO 2017161959 A1 20170928

DOCDB simple family (application)

EP 17769236 A 20170118; CN 201610167974 A 20160323; CN 2017071578 W 20170118