

Title (en)

Supporting structure for a parabolic reflector antenna for a satellite communication system.

Title (de)

Tragegestell für eine Satellitenfunk-Parabolreflektorantenne.

Title (fr)

Support d'antenne à réflecteur parabolique pour télécommunication par satellite.

Publication

EP 0227930 A1 19870708 (DE)

Application

EP 86115720 A 19861112

Priority

DE 3540612 A 19851115

Abstract (en)

1. Mounting frame, consisting of six struts (1 to 6) in all, two of which (5, 6) are designed to be adjustable in their length, of a symmetrical parabolic reflector antenna (14), which is to be directed at a geostationary communications satellite (ISV; DFS1; DFS2), moving in an equatorial orbit (OR), and which can be tilted about a declination axis (7), running in east-west direction, and a polar axis (8), crossing the said declination axis perpendicularly and thus aligned in parallel with the earth's axis, characterized in that in each case two (1, 2; 3, 4) of the four struts which are not adjustable in their length form an isosceles triangle with the declination axis (7) and are mounted together in two bearing locations (10, 11) on a foundation (9) so as to tilt about the declination axis (7), in that in each case the polar axis (8) runs through the two corners (12, 13) away from the declination axis (7) of the two superimposed isosceles triangles, in that the parabolic reflector antenna (14) is preferably articulated axially symmetrically at the two corners (12, 13) away from the declination axis (7) of the two triangles so as to tilt about the polar axis (8), to be precise such that, with the polar axis (8) running absolutely parallel to the earth's axis, the parabolic reflector antenna is inclined in relation to the polar axis (8) by an angle (γ_m) dependent on the terrestrial latitude of the antenna site (M), in that the strut (5) designed so as to be adjustable in its length for setting the polar axis inclination (α) is attached by a both-ended swivel-joint mounting between the corner (13) away from the declination axis (7) of the lower of the two isosceles triangles and a foundation location (15), through which the plane defined by the angle bisectors of the two isosceles triangles runs, this foundation location (15) lying to the south of the declination axis (Fig. 2) in the case of an antenna site (M) in the northern hemisphere and lying to the north of the declination axis in the case of an antenna site in the southern hemisphere, and in that the other strut (6) designed so as to be adjustable in its length for setting the polar angle, is likewise attached by a both-ended swivel-joint mounting between a bearing location (16), provided for it eccentrically to the left or right on the rear of the parabolic reflector, and the one of the two strut bearing locations (10, 11) which is further remote from it in each case, through which locations the declination axis (7) runs.

Abstract (de)

Von insgesamt sechs Streben (1 bis 6) bilden jeweils zwei (1,2 und 3,4) mit der in Ost-West-Richtung verlaufenden Deklinationsachse (7) gleichschenklige Dreiecke, die gemeinsam um die Deklinationsachse schwenkbar übereinander liegen und durch deren beide, nicht von der Deklinationsachse berührte Ecken (12,13) die parallel zur Erdachse auszurichtende Stundenachse (8) verläuft, gegenüber der die Antenne (14) um einen von der geografischen Breite des Antennenstandorts abhängigen Winkel (γ_m) gekippt ist. Die restlichen beiden Streben (5,6) sind längenverstellbar ausgebildet, an der Rückseite des Parabolreflektors angelenkt und ermöglichen die Drehung um die Deklinationsachse und Stundenachse. Antennen, die einen Tragegestell-Unterbau gemäß der Erfindung aufweisen, sind insbesondere für mobile Erdfunkstellen geeignet, aber auch für TV-Direkttempfang.

IPC 1-7

H01Q 1/12

IPC 8 full level

H01Q 1/12 (2006.01)

CPC (source: EP)

H01Q 1/125 (2013.01)

Citation (search report)

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- [A] PATENTS ABSTRACTS OF JAPAN, Band 3, Nr. 125 (E-45), 19. Oktober 1979, Seite 84E145; & JP-A-54 102 851 (NIPPON DENKI K.K.) 13-08-1979

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Designated contracting state (EPC)

AT BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)

EP 0227930 A1 19870708; EP 0227930 B1 19900808; AT E55513 T1 19900815; DE 3673363 D1 19900913

DOCDB simple family (application)

EP 86115720 A 19861112; AT 86115720 T 19861112; DE 3673363 T 19861112