

Title (en)
REFLECTOR ANTENNA WITH A SELF-SUPPORTED FEED

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Application
EP 87903452 A 19870603

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Abstract (en)
[origin: WO8707771A1] A reflector antenna with a dish-shaped main reflector (10), and a self-supporting feed (11) for the transmission or reception of polarized electromagnetic waves. The feed (11) consists of a tube (12) which is attached to the middle of the main reflector (10) and is terminated by a subreflector (13) so that an intermediate space (14) is formed between the subreflector and the end of the tube. The part of the tube that is nearest the intermediate space (14) contains a cylindrical waveguide (15), or is the waveguide itself, and has an approximately circular or quadratic cross-section. Externally, the intermediate space (14) is bounded by a circular, cylindrical surface (16) with the same diameter as the outer diameter of the tube (12) this being called the aperture surface. The surface of the subreflector (13) which is located just outside the surface of the aperture (16) has circular corrugations (17), or other means of creating a reactive, anisotropic surface impedance, to ensure that the electromagnetic waves are propagated along the surface disregardless of whether the electrical field is tangential to the surface or is normally on it. The part of the subreflector (13) that is located within the aperture surface (16) is shaped as a central conical element (18) with reflecting characteristics and which is inclined towards the tube (12).

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