

Title (en)

ACTIVE ELECTRONIC SCAN MICROWAVE REFLECTOR

Title (de)

AKTIVER HF REFLEKTOR UNTER VERWENDUNG VON ELEKTRONISCHER STRAHLSCHWENKUNG

Title (fr)

REFLECTEUR HYPERFREQUENCE ACTIF A BALAYAGE ELECTRONIQUE

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Application

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Abstract (en)

[origin: WO0139325A1] The invention concerns an active electronic scan microwave reflector, capable of being illuminated by a microwave source to form an antenna. The inventive reflector comprises a set of elementary cells arranged side by side on a surface, each cell comprising a phase-shifting microwave circuit and a conductor plane arranged substantially parallel to the microwave circuit, the phase-shifting circuit comprising at least two half-phase-shifters (50). One half-phase-shifter comprises at least a dielectric support, at least two electrically conductive wires (42) substantially parallel to the given direction Oy, arranged on the support and bearing at least each a two-state semiconductor element (D1, D2), each wire being connected to conductors (43, 44, 45) controlling the semiconductor elements, said conductors being substantially normal to the wires, and two conductor zones (48) arranged towards the periphery of the cell, substantially parallel to the control conductors. The control conductors are at least three in number in each half-phase-shifter and are electrically insulated from one half-phase-shifter to the next to control the state of all the semiconductor elements independently from one another. The geometrical and electrical characteristics of the half-phase-shifters are such that to each of the states of the semiconductor elements corresponds a given phase-shifting value ($d\phi_1$, , $d\phi_8$) of the electromagnetic wave which is reflected by the cell. The reflector further comprises an electronic circuit (38) controlling the state of the semiconductor elements.

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