

Title (en)

Satellite beam-forming network system having improved beam shaping.

Title (de)

Satelliten-Strahlsteuerungssystem mit verbesserter Strahlformung.

Title (fr)

Système de commande de faisceau pour satellite avec formation de faisceau améliorée.

Publication

EP 0427201 A2 19910515 (EN)

Application

EP 90121219 A 19901106

Priority

US 43405989 A 19891108

Abstract (en)

A steerable beam antenna system (24) for use in satellite communication systems and including a main reflector (32) and an antenna array having a plurality of feed elements (50) is disclosed. Additional feed elements (314, 316) are positioned along with the array (116-119) and are used to cancel undesirable side lobes which appear as the beam is steered towards the end portions of a target area (324, 330). The antenna array is positionable at or near at least one focal point of the main reflector (48), and its feed elements can receive microwaves from or transmit microwaves toward the main reflector. A Butler matrix (110) having multiple input ports (310) and multiple outputs (312) is connected to the array of feed elements and substantially performs a spatial discrete Fourier transformation on a generated set of signals to be transmitted which have a predetermined phase relationship between the signals, which is necessary to create the steerable beam. The Butler matrix also can perform an inverse spatial transformation on a set of incoming signals focused on the array by the reflector and received by the feed elements.

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CPC (source: EP)

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Cited by

EP0756762A1; EP0982803A3; US10116061B2; US9590300B2; WO2015171020A1; US9768500B2; EP0611500B1

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