

Title (en)
Intermodulation scattering communications apparatus

Title (de)
Kommunikationsgerät mit Streuung von Intermodulation

Title (fr)
Dispositif de communication à dispersion d'intermodulation

Publication
EP 0786826 A3 19990602 (EN)

Application
EP 97300507 A 19970128

Priority
US 59360096 A 19960129

Abstract (en)
[origin: EP0786826A2] Multiple beam, multi-frequency communication apparatus (10) that provides for significant intermodulation scattering improvements for multiple beam, multi-frequency communications systems implemented using directly radiating active phased array (15), or multi-feed reflector systems fed from composite, multiple shared transmit amplifiers (13). The multiple beam, multi-frequency communications apparatus (10) comprises a defocused antenna array (15) having a plurality of antenna elements (15a) and a plurality of feeds (15b). A hybrid amplifier structure (18) is coupled to the feeds (15b) of the defocused antenna array (15) and shares the plurality of transmit amplifiers (13) among the feeds (15b) of the antenna array (15). Assignment apparatus (20) is coupled to the hybrid amplifier structure (18) for assigning particular transmit amplifier (13) to be contributors to particular beams (16) radiated by the antenna array (15) in response to a desired beam profile (11). Improvements result from judiciously combining the effects of the shared transmit amplifiers (13) (that carry all the signals in the frequency reuse system), with phasing effects inherent in the multiple beam radiating structure in order to realize the desired zonal frequency reuse pattern 21. An optimal assignment algorithm implemented in the assignment apparatus (20) results in a uniform distribution of power over the transmit amplifiers (13), resulting in corresponding improvements in system performance in the far field. <IMAGE>

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H01Q 25/00; **H01Q 21/22**; **H01Q 3/26**

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Citation (search report)

- [X] WO 8801456 A1 19880225 - HUGHES AIRCRAFT CO [US]
- [X] GB 2281009 A 19950215 - NORTHERN TELECOM LTD [CA]
- [A] US 5132694 A 19920721 - SREENIVAS AJAY [US]
- [A] EGAMI S AND KAWAI M: "An Adaptive Multiple Beam System Concept", IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, vol. SAC-5, no. 4, May 1987 (1987-05-01), New York, USA, pages 630 - 636, XP002099075
- [A] ROEDERER A G: "SEMI-ACTIVE REFLECTOR ANTENNAS", PROCEEDINGS OF THE ANTENNAS AND PROPAGATION SOCIETY INTERNATIONAL SYMPOSIUM (APIS), ANN ARBOR, JUNE 28 - JULY 2, 1993, vol. 3, 28 June 1993 (1993-06-28), INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, pages 1338 - 1341, XP000452529

Cited by
EP0963006A3; FR2751494A1; EP0963005A3; CN100455075C; DE19756363A1; EP0877444A1; US6104935A; US6650876B1; WO9931758A1; WO9804017A1

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