

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 November 2004 (25.11.2004)

PCT

(10) International Publication Number
WO 2004/102739 A1

(51) International Patent Classification⁷: **H01Q 3/36**,
3/40, 1/24, 21/00

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(21) International Application Number:
PCT/GB2004/002016

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 10 May 2004 (10.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0311371.9 17 May 2003 (17.05.2003) GB
0311739.7 22 May 2003 (22.05.2003) GB

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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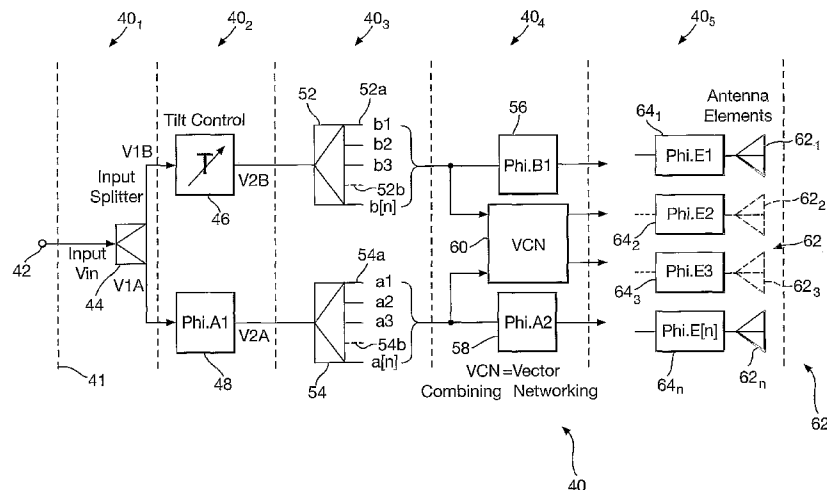
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Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: PHASED ARRAY ANTENNA SYSTEM WITH ADJUSTABLE ELECTRICAL TILT



(57) Abstract: A phased array antenna system with adjustable electrical tilt includes an array (62) of antenna elements 62₁, to 62₁₀. It has a splitter (44) dividing a radio frequency (RF) carrier signal into two signals between which a phase shifter (46) introduces a variable phase shift. Further splitters (52) and (54) divide the relatively phase shifted signals into two sets of five signals. Four of each of the sets of five signals are vectorially combined in a network of 180 degree hybrid couplers 60₁, to 60₄. This provides vector sum and difference components which together with the fifth members of the sets are fed to respective fixed phase shifters (56, 58) and 64₁, to 64₁₀. The phase shifters 64₁, to 64₁₀ provide signals which are appropriately phased for use as phased array drive signals for respective antenna elements 62₁, to 62₁₀. Adjustment of the single phase shift provided by the variable phase shifter (46) changes the angle of electrical tilt of the entire antenna array (62).

WO 2004/102739 A1



Published:

— with international search report

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