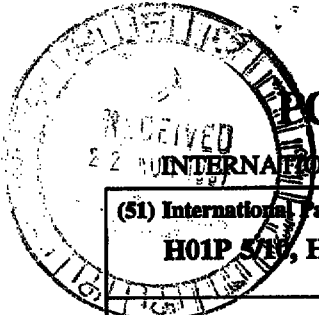


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(21) International Application Number: PCT/US96/13020 (22) International Filing Date: 9 August 1996 (09.08.96) (30) Priority Data: 513,163 9 August 1995 (09.08.95) US (71) Applicant: QUALCOMM INCORPORATED [US/US]; 6455 Lusk Boulevard, San Diego, CA 92121 (US). (72) Inventors: STANDKE, Randolph, E.; 13283 Boomer Court, San Diego, CA 92129 (US). THOMPSON, James, H.; 7523 Brava Street, Carlsbad, CA 92009 (US). (74) Agents: OGROD, Gregory, D. et al.; Qualcomm Incorporated, 6455 Lusk Boulevard, San Diego, CA 92121 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: **180° POWER DIVIDER FOR A HELIX ANTENNA**

(57) Abstract

A 180° power divider (1100) accepts an input signal and splits it into two output signals that are equal in amplitude and differ in phase by 180°. In a first region (1132), an unbalanced input signal travels along a trace (1108) on a circuit surface of a substrate (108). On the opposite surface is a ground plane (1104). In a second region (1134), the ground plane tapers (1146) to a width that is substantially equal to the width of the signal trace (1108). As a result, opposite the signal trace (1108) is a return signal trace (1109) of substantially the same width. In this region (1134), the signal is a balanced signal, and for the current flowing in the signal trace (1108), there is an equal but opposite current flowing in the return signal trace (1109) on the opposite side. In a third region (1136), the return signal trace (1109) is brought to the circuit surface of the substrate (108) and a second ground plane (1112) is provided on the opposite surface. This second ground plane (1112) plane is floating with respect to the first ground plane (1104). The return signal differs in phase from the other signal by 180°.

