



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <p>(21) International Application Number: <b>PCT/US99/28394</b></p> <p>(22) International Filing Date: <b>30 November 1999 (30.11.99)</b></p> <p>(30) Priority Data:<br/><b>09/204,026</b>      <b>1 December 1998 (01.12.98)</b>      <b>US</b></p> <p>(71) Applicant: <b>QUALCOMM INCORPORATED [US/US]; 5775 Morehouse Drive, San Diego, CA 92121-1714 (US).</b></p> <p>(72) Inventor: <b>SOLIMAN, Samir, S.; 11412 Cypress Canyon Park Drive, San Diego, CA 92131 (US).</b></p> <p>(74) Agent: <b>GREENHAUS, Bruce, W.; Qualcomm Incorporated, 5775 Morehouse Drive, San Diego, CA 92121-1714 (US).</b></p> |           | <p>(81) Designated States: <b>AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b></p> <p><b>Published</b><br/><i>With international search report.<br/>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> |

(54) Title: FORWARD AND REVERSE LINK POWER CONTROL USING POSITION AND MOBILITY INFORMATION

## (57) Abstract

A method and apparatus for dynamically adjusting a power control loop that attempts to maintain either the transmit power of a signal sent from a base station to a mobile station or the signal to noise ratio of a signal sent from the mobile station (300) to the base station (400) above a minimum threshold and below a maximum threshold. Location information that is representative of the distance and morphology between the mobile station (300) and the base station (400) and the velocity of the mobile station (300) are determined. The minimum and the maximum thresholds of the power control loop are then adjusted in accordance with the location and the mobility information such that the minimum and the maximum threshold vary as the distance and the morphology between the mobile station (300) and the base station (400) and the velocity of the mobile station (300) change. In addition, the step size used to increase or decrease the transmit signal power, is adjusted in accordance with the velocity of the mobile station (300). A transmitter sends the signal at a power level that is controlled by the power control loop with the adjusted minimum threshold.

