RTMP's COPY 9700175-4

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H04L 25/03, H04B 7/08 | A1

(11) International Publication Number: **WO 96/04738**

(43) International Publication Date: 15 February 1996 (15.02.96)

(21) International Application Number: PCT/US95/09484

(22) International Filing Date: 28 July 1995 (28.07.95)

(30) Priority Data:
284,775 2 August 1994 (02.08.94) US

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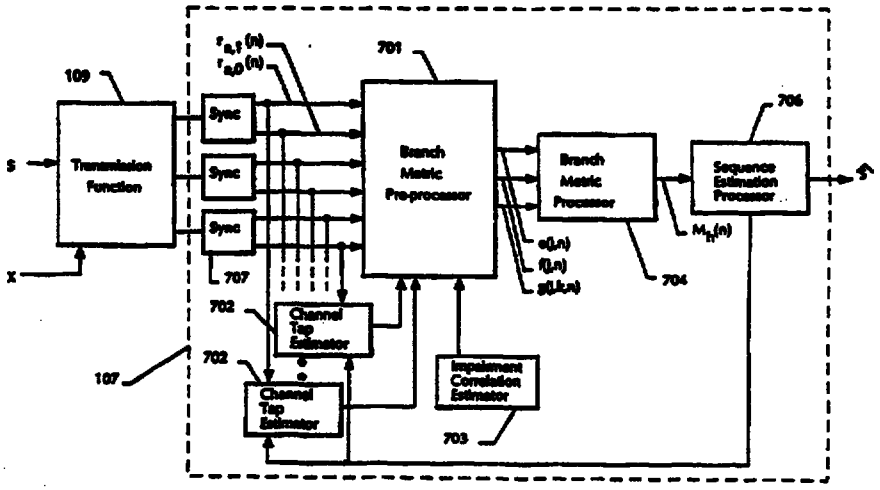
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(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, 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), ARIPO patent (KE, MW, SD, SZ, UG).

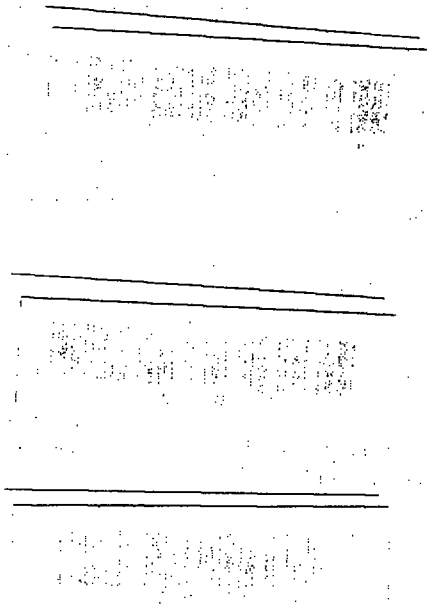
Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHOD OF AND APPARATUS FOR INTERFERENCE REJECTION COMBINING IN MULTI-ANTENNA DIGITAL CELLULAR COMMUNICATIONS SYSTEMS



(57) Abstract

A digital radio communications system is presented in which the deleterious effects of fading, time dispersion and interference found in the channel are mitigated by using interference rejection and diversity combining. Digital signals representative of digital symbol sequences are transmitted through a radio channel in which the signals may be corrupted by fading, time dispersion and interference. The corrupted signals are received by a receiver having one or more antennas. The received signals are processed to form a received signal sample stream $r_d(kT_s)$ for each of the antennas. Estimated received signal samples for each of the antennas are produced by combining hypothesized signal sequences and models of each channel. The received signal samples and the estimated received signal samples are processed in conjunction with an estimate of the impairment correlation properties to produce branch metrics to be used by a Viterbi, or other sequence estimation, algorithm. The branch metric processor may assume one of several configurations depending on whether or not the channel is time-varying.



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