

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number
WO 2004/032348 A1

(51) International Patent Classification⁷: **H04B 1/10**

(21) International Application Number:
PCT/SG2002/000196

(22) International Filing Date: 28 August 2002 (28.08.2002)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **NATIONAL UNIVERSITY OF SINGAPORE** [SG/SG];
10 Kent Ridge Crescent, Singapore 119260 (SG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HUANG, Kai, Bin** [CN/SG]; Blk 403, #12-20 Pandan Gardens, Singapore 600403 (SG). **QUEK, Quee, Seng** [SG/SG]; Blk 341, 5 Clementi Ave, #05-152, Singapore 120341 (SG).

(74) Agent: **ELLA CHEONG MIRANDAH & SPRUSONS PTE LTD**; Robinson Road Post Office, P.O. Box 1531, Singapore 903031 (SG).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, 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, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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

Declaration under Rule 4.17:

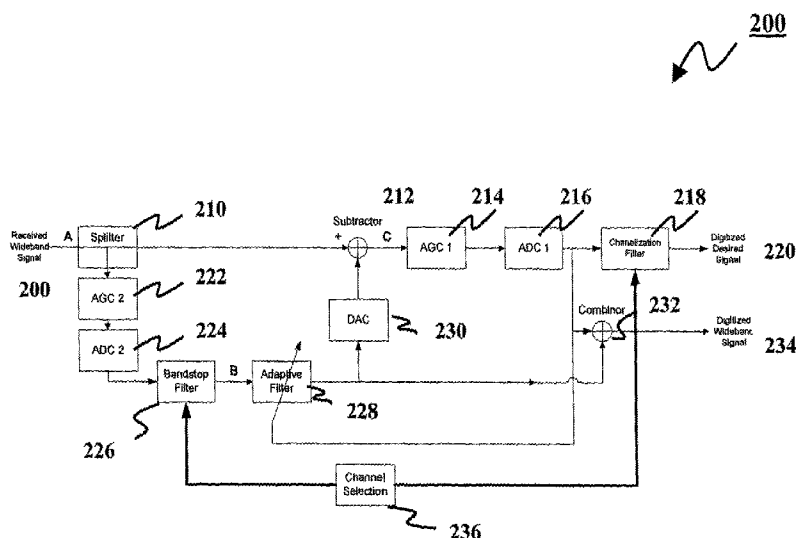
— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR DYNAMIC RANGE REDUCTION IN A WIDEBAND RECEIVER



(57) **Abstract:** Methods and apparatus for processing an input wideband signal containing a desired signal and a plurality of interfering signals are disclosed. In one method, the input wideband signal (200) is split (210) into a first signal for a first signal path and a second signal for a second signal path. The second signal is digitized (224) to provide a digitized second signal. The desired signal is suppressed (226) in the digitized second signal to provide interference-dominant signals. A phase shift is applied (228) to the interference-dominant signals to provide a plurality of digital, phase-shifted signals through the second path that is substantially the same as a phase shift through the first path. The digital, phase-shifted signals are converted (230) into analog form to provide analog regenerated signals. The plurality of analog regenerated signals from the second signal path and the first signal are combined (212) to provide an interference-suppressed, input wideband signal based on a difference of the plurality of analog regenerated signals and the first signal.