

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 September 2004 (02.09.2004)

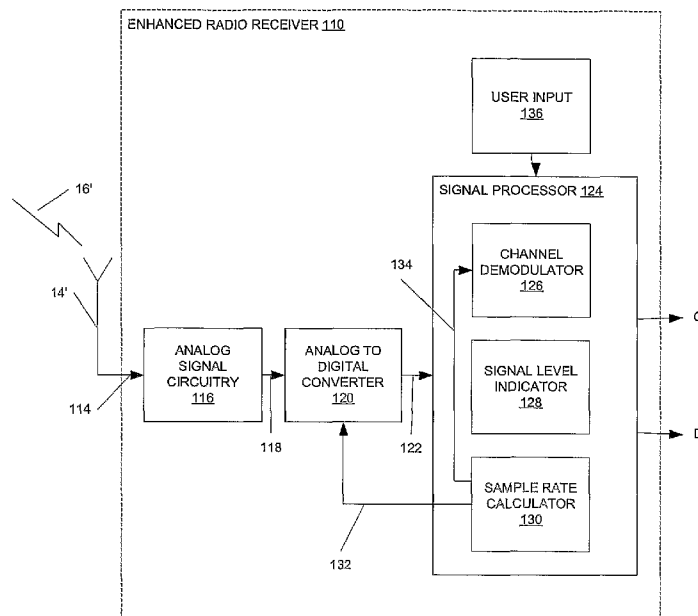
PCT

(10) International Publication Number
WO 2004/075425 A1

- (51) International Patent Classification⁷: **H04B 1/28**, (74) Agents: **HOIRIIS, David et al.**; Honeywell International Inc., 101 Columbia Road, P.O. Box 2245, Morristown, NJ 07960 (US).
H04M 1/08, 1/12
- (21) International Application Number: PCT/US2004/003884 (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 February 2004 (10.02.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 10/365,827 13 February 2003 (13.02.2003) US
- (71) Applicant: **HONEYWELL INTERNATIONAL INC.** [US/US]; 101 Columbia Road, P.O. Box 2245, Morristown, NJ 07960 (US). (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, 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, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (72) Inventors: **RICHEY, Manuel, F.**; 29005 Orchard Road, Paola, KS 66071 (US). **GIBSON, Timothy, P.**; 5020 Millridge, Shawnee, KS 66226 (US). **HUNTER, Jeffrey, K.**; 14541 S. Alden Street, Olathe, KS 66062 (US).

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR REDUCING HARMONIC INTERFERENCE EFFECTS IN ANALOG TO DIGITAL CONVERSION



(57) Abstract: Systems and methods are described for increasing the effective dynamic range of a digital data stream in a software-defined radio receiver. In one system the sample rate of an analog to digital ("A/D") conversion process is adjusted dynamically to shift harmonic signal interference induced by the A/D conversion process to outside the channels of interest. In another system the sample rate of an A/D conversion process is constant and the frequency of a dynamically controlled local oscillator in a frequency translator is adjusted dynamically to shift harmonic signal interference induced by the A/D conversion process to outside the channels of interest.

WO 2004/075425 A1

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.