

REVISED VERSION

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 September 2003 (25.09.2003)

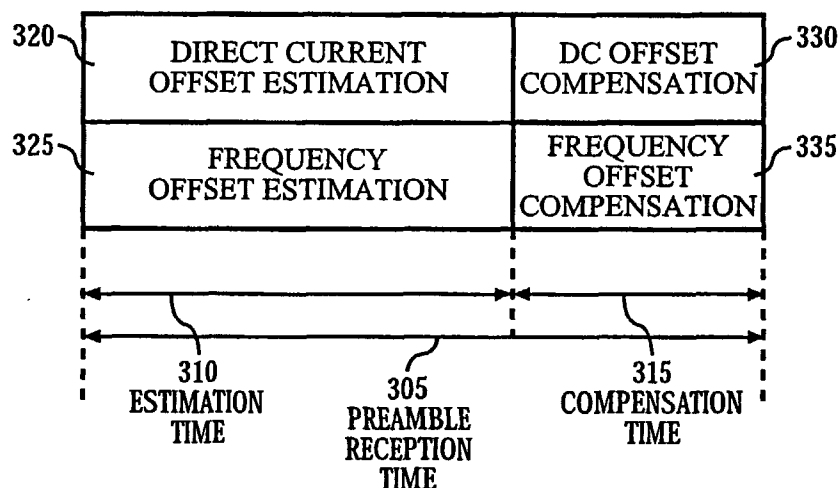
PCT

(10) International Publication Number
WO 2003/079552 A1

- (51) International Patent Classification⁷: **H03L 7/00**,
H04L 7/00, 27/16
- (21) International Application Number:
PCT/SG2003/000030
- (22) International Filing Date: 25 February 2003 (25.02.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/098,726 15 March 2002 (15.03.2002) US
- (71) Applicant: **THE NATIONAL UNIVERSITY OF SINGAPORE** [SG/SG]; 10 Kent Ridge Crescent, Singapore 119260 (SG).
- (72) Inventors: **HO, Chin, Keong**; Blk 94E Bedok North Avenue 4, #04-1435, Singapore 464094 (SG). **HE, Ping**; Blk 215 Choa Chu Kang Central, #06-180, Singapore 680215 (SG). **SUN, Sumei**; Blk 469 Jurong West Street 41, #12-489, Singapore 640469 (SG).
- (74) Agent: **LAWRENCE Y D HO & ASSOCIATES PTE LTD**; 30 Bideford Road, #07-01 Thongsia Building, Singapore 229922 (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, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, 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, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR FREQUENCY OFFSET ESTIMATION, AND SYSTEM UTILIZING SAME



(57) **Abstract:** A direct current (DC) offset estimation, frequency offset estimation, and compensation system (200), receives data packet (204) with preamble (206). A DC offset estimator (210) and a frequency offset estimator (212) operate concurrently to produce estimates of DC and frequency offsets of the data packet (204), which are determined from a portion of the preamble (206) as it is received. As the data packet (204) is received, a compensator (214) receives the estimates of DC and frequency offsets and compensates the remaining portion of the data packet (204) to produce a DC and frequency compensated data packet (218). Concurrent operation of the DC estimator (210) and the frequency offset estimator (212) advantageously allows more time to produce the estimates of DC and frequency offsets.

WO 2003/079552 A1



(88) Date of publication of the revised international search report:

25 March 2004

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.

(15) Information about Correction:

see PCT Gazette No. 13/2004 of 25 March 2004, Section II