

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 March 2001 (29.03.2001)

PCT

(10) International Publication Number
WO 01/22610 A1

(51) International Patent Classification⁷: H04B 1/707

(72) Inventors; and

(21) International Application Number: PCT/US00/02621

(75) Inventors/Applicants (for US only): REZNIK, Alexander [US/US]; 94 Stonecutter Road, Levittown, NY 11756 (US). LUBECKI, Timothy, J. [US/US]; 350 Danbury Lane, Glen Mills, PA 19342 (US). ZEIRA, Ariela [US/US]; 8 Old Oak Road, Trumbull, CT 06611 (US).

(22) International Filing Date: 2 February 2000 (02.02.2000)

(25) Filing Language: English

(74) Agents: BOLES, Donald, M. et al.; Volpe and Koenig, P.C., Suite 400, One Penn Center, 1617 John F. Kennedy Boulevard, Philadelphia, PA 19103 (US).

(26) Publication Language: English

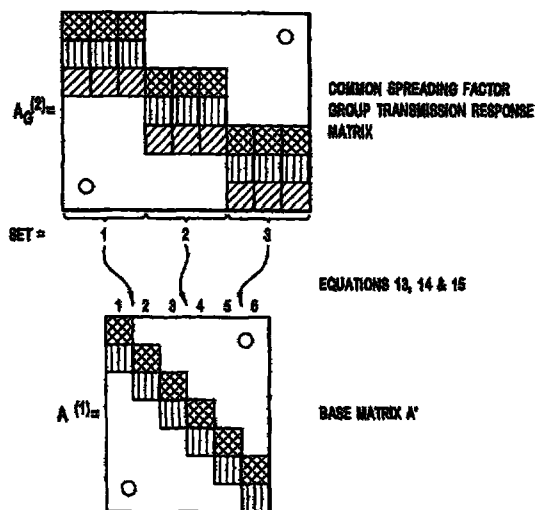
(30) Priority Data:
60/154,985 21 September 1999 (21.09.1999) US

(81) Designated States (national): 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, US, UZ, VN, YU, ZA, ZW.

(71) Applicant (for all designated States except US): INTER-DIGITAL TECHNOLOGY CORPORATION [US/US]; Suite 527, 300 Delaware Avenue, Wilmington, DE 19801 (US).

[Continued on next page]

(54) Title: MULTIUSER DETECTOR FOR VARIABLE SPREADING FACTORS



(57) Abstract: A multiuser detector that detects and decodes synchronous or asynchronous CDMA subchannels having different spreading factors with reduced computational complexity. The multiuser detector is compatible with ZF-BLE, MMSE, decorrelating detectors and the like using Cholesky decomposition to minimize numeric operations. The system and method arranges the columns of system transmission response matrices representing the response characteristics of individual users into a total system transmission response matrix which represents a plurality of matched-filter responses for a given block of received data. The invention in conjunction with Cholesky decomposition reduces the number of required mathematic operations prior to parallel matched filtering.

WO 01/22610 A1



(84) Designated States (*regional*): 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).

Published:

— *With international search report.*

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