

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



9805679-9

WOS

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H03H 17/06	A1	(11) International Publication Number: WO 97/50174 (43) International Publication Date: 31 December 1997 (31.12.97)
(21) International Application Number: PCT/US97/10925 (22) International Filing Date: 23 June 1997 (23.06.97) (30) Priority Data: 672,205 27 June 1996 (27.06.96) US (71) Applicant: QUALCOMM INCORPORATED [US/US]; 6455 Lusk Boulevard, San Diego, CA 92121 (US). (72) Inventors: EASTON, Kenneth, D.; 7379 Calle Cristobal #217, San Diego, CA 92126 (US). BLACK, Peter, J.; 8558 Villa La Jolla Drive #258, La Jolla, CA 92037 (US). (74) Agents: OGROD, Gregory, D. et al.; Qualcomm Incorporated, 6455 Lusk Boulevard, San Diego, CA 92121 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, 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). 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: ROM-BASED FINITE IMPULSE RESPONSE FILTER FOR USE IN MOBILE TELEPHONE

(57) Abstract

The finite impulse response (FIR) filter (20) is implemented as a table (104) using read-only memory (ROM). The FIR filter table stores a pre-calculated output filter value for each permissible combination of input values (102) to be filtered. Streams of input values are successively shifted into the table using a shift register (106) and corresponding output values are successively output. The telephone employs a data burst randomizer (18) to provide a data signal composed of sequences of null or 0 values and sequences of antipodal values (+1's and -1's). Hence, the permissible input combinations for the FIR filter include only patterns containing either all antipodal signals, all null signals, leading antipodal signals followed by trailing null signals, or leading null signals followed by trailing antipodal signals. The FIR filter look up is configured to exploit these limitations on the input streams yielding a look up table having relatively few entries.

