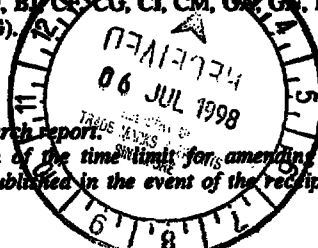


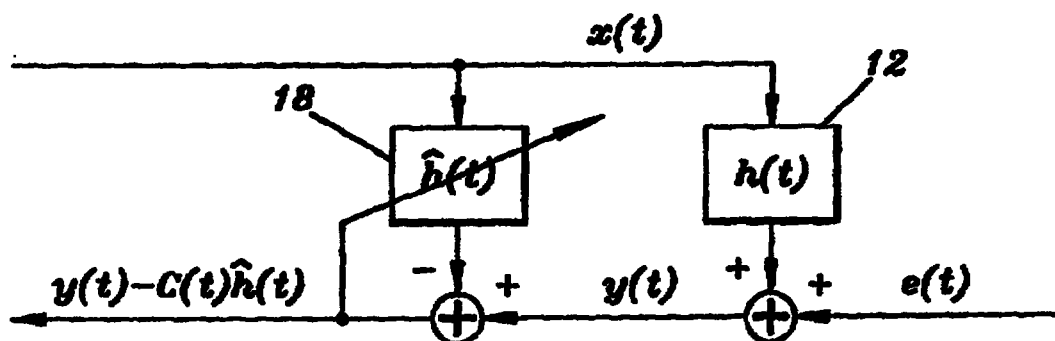
PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H04B 3/23, H03H 21/00	A1	(11) International Publication Number: WO 96/25805 (43) International Publication Date: 22 August 1996 (22.08.96)
(21) International Application Number: PCT/SE96/00178 (22) International Filing Date: 12 February 1996 (12.02.96) (30) Priority Data: 9500553-4 ✓ 15 February 1995 (15.02.95) SE (71) Applicant (for all designated States except US): TELEFON- AKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-126 25 Stockholm (SE). (72) Inventor; and (75) Inventor/Applicant (for US only): WIGREN, Torbjörn [SE/SE]; Ekvägen 9, S-756 53 Uppsala (SE). (74) Agents: MRAZEK, Werner et al.; Dr. Ludwig Brann Patentbyrå AB, P.O. Box 1344, S-751 43 Uppsala (SE).	(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AZ, BY, KG, KZ, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, JP, NL, PT, SE), OAPI patent (BF, BI, 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: ECHO CANCELLER HAVING KALMAN FILTER FOR OPTIMAL ADAPTATION



(57) Abstract

Kalman filtering is applied to obtain a fast converging, low complexity echo ($y(t)$) canceller (18). An averaged diagonal Riccati equation allows optimal time varying adaptation gains $\hat{K}(t)$ to be precomputed, or computed online with a small number of scalar Riccati equations.