



- (51) International Patent Classification:
G10K 11/175 (2006.01)
- (21) International Application Number:
PCT/SG2024/050046
- (22) International Filing Date:
24 January 2024 (24.01.2024)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10202300315Y 08 February 2023 (08.02.2023) SG
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- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,

(54) Title: AN ACTIVE NOISE CONTROL SYSTEM

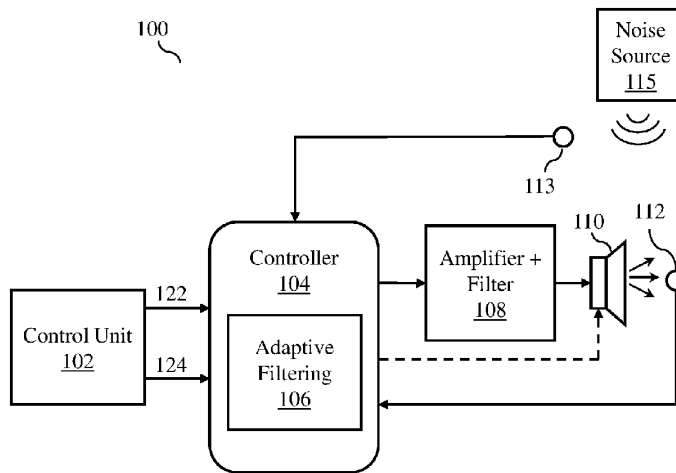


FIGURE 1

(57) **Abstract:** An active noise control system and a method of active noise control are disclosed. The active noise control system comprises an adaptive filtering module and a loudspeaker communicatively coupled to the adaptive filtering module. The adaptive filtering module is configured to compute estimated disturbance signals, time-dependent filtered reference signals and estimated power gains of a secondary path based on a Modified Filtered Least Mean Square (MFxLMS) model, to generate time-dependent variable penalty factors and to update a set of filter coefficients of an adaptive control filter of the MFxLMS model to compute a derivative term in a recursive-adaptive model of the adaptive control filter and to obtain an output set of the control signals. The active noise control system computes a variable penalty factor in real time based on a predefined maximum control signal output power to prevent an output of the system from saturating.

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RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))