

(51) International Patent Classification:
H04B 15/00 (2006.01)(21) International Application Number:
PCT/US2009/004478(22) International Filing Date:
5 August 2009 (05.08.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/191,669 14 August 2008 (14.08.2008) US(71) Applicant (for all designated States except US): **DTS, INC.** [US/US]; 5220 Las Virgenes Rd., Calabasas, CA 91302 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **JOHNSTON, James, D.** [US/US]; 11321 165th Court NE, Redmond, WA 98052 (US).(74) Agent: **MOHINDRA, Gaurav, K.**; Intellectual Property Counsel, DTS, Inc., 5220 Las Virgenes Rd., Calabasas, CA 91302 (US).

(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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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

Published:

- with international search report (Art. 21(3))
- with amended claims and statement (Art. 19(1))

(54) Title: SOUND FIELD WIDENING AND PHASE DECORRELATION SYSTEM AND METHOD

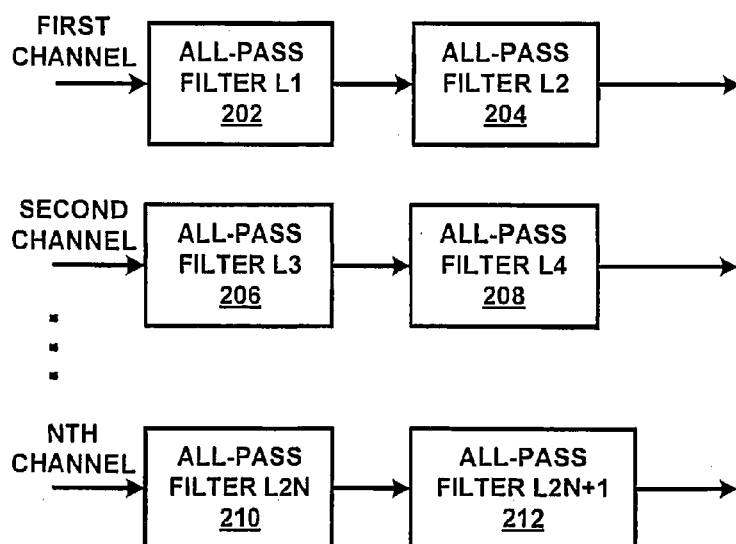


FIGURE 2

200 ↑

(57) Abstract: A system for decorrelating signals including a first all pass filter, having a first delay length, processing a first signal. A second all pass filter, having a second delay length, is connected to the first all pass filter and processes the first signal after processing by the first all pass filter. A third all pass filter, having a third delay length, processes a second signal. A fourth all pass filter, having a fourth delay length, is connected to the third all pass filter and processes the second signal after processing by the third all pass filter. The first delay length, the second delay length, the third delay length and the fourth delay length each have a unique value, and the sum of the first delay length and the second delay length is equal to the sum of the third delay length and the fourth delay length.