

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
16 December 2021 (16.12.2021)



(10) International Publication Number
WO 2021/252748 A1

(51) International Patent Classification:

G10L 19/008 (2013.01) G10L 19/02 (2013.01)
G10L 19/04 (2013.01)

(21) International Application Number:

PCT/US2021/036789

(22) International Filing Date:

10 June 2021 (10.06.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/037,635 11 June 2020 (11.06.2020) US
63/193,926 27 May 2021 (27.05.2021) US

(71) Applicant: **DOLBY LABORATORIES LICENSING CORPORATION** [US/US]; 1275 Market Street, San Francisco, California 94103 (US).

(72) Inventor: **MCGRATH, David S.**; c/o Dolby Laboratories, Inc., 1275 Market Street, San Francisco, California 94103 (US).

(74) Agent: **MA, Xin et al.**; Dolby Laboratories Inc., Intellectual Property Group, 1275 Market Street, San Francisco, California 94103 (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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, 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, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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, 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).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

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

(54) Title: ENCODING OF MULTI-CHANNEL AUDIO SIGNALS COMPRISING DOWNMIXING OF A PRIMARY AND TWO OR MORE SCALED NON-PRIMARY INPUT CHANNELS

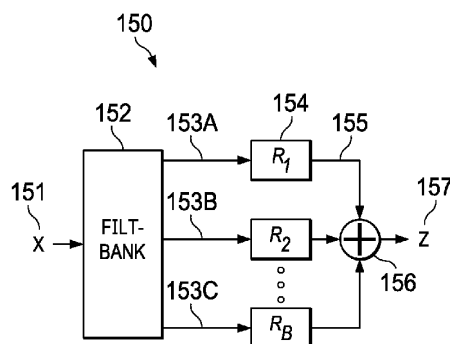


FIG. 4

(57) Abstract: Systems, methods, and computer program products are disclosed for adaptive downmixing of audio signals with improved continuity. An audio encoding system receives an input multi-channel audio signal including a primary input audio channel and L non-primary input audio channels. The system determines a set of L input gains. For each of the channels and gains, the system forms a respective scaled non-primary input audio channel. The system forms a primary output audio channel from the sum of the primary input audio channel and the scaled non-primary input audio channels. The system determines a set of L prediction gains. The system forms a prediction channel from the primary output audio channel. The system forms L non-primary output audio channels. The system forms an output multi-channel audio signal from the primary output audio channel and the L non-primary output audio channels.