

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

(19) World Intellectual Property Organization
International Bureau



FOR MORE INFORMATION ON PCT, SEE THE PCT HANDBOOK, WHICH IS AVAILABLE FROM THE PCT INFORMATION SERVICE (PCTIS) AT THE PCT INFORMATION CENTRE (PIC) IN GENEVA, SWITZERLAND.

(43) International Publication Date
5 April 2001 (05.04.2001)

PCT

(10) International Publication Number
WO 01/24166 A1

- (51) International Patent Classification⁷: G10L 19/12 [CN/SG]; Block 285, 3 Choa Chu Kang Avenue #09-96, Singapore 680285 (SG).
- (21) International Application Number: PCT/SG99/00096
- (22) International Filing Date: 30 September 1999 (30.09.1999)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): STMICROELECTRONICS ASIA PACIFIC PTE LTD [SG/SG]; 28 Ang Mo Kio Industrial Park 2, Singapore 569508 (SG).
- (74) Agent: DONALDSON & BURKINSHAW; P.O. Box 3667, Singapore 905667 (SG).
- (81) Designated States (national): JP, SG, US.
- (84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).
- Published:
— With international search report.
- (72) Inventor; and
(75) Inventor/Applicant (for US only): TIAN, Wenshun
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 01/24166 A1

(54) Title: G.723.1 AUDIO ENCODER

(57) Abstract: The invention relates to a speech encoder and corresponding encoding method for a dual rate coding system generally in accordance with the ITU-T G.723.1 recommendation, the dual rate coding system using Multi-Pulse Maximum Likelihood Quantization (MP-MLQ) and Algebraic Code-Excited Linear Prediction (ACELP) implementations for respective higher and lower transmission rates, wherein if the higher transmission rate is applicable, the number of gain scale factors searched in quantization steps is reduced, and if the lower transmission rate is applicable, the coding system has a threshold test for entry into the third processing loop of the ACELP implementation. The decoder may be a normal decoder. For example, a G.723.1 decoder may also be used to decode the bit streams encoded by a low complexity G.723.1 encoder in accordance with the invention.