

(19) World Intellectual Property Organization
International Bureau



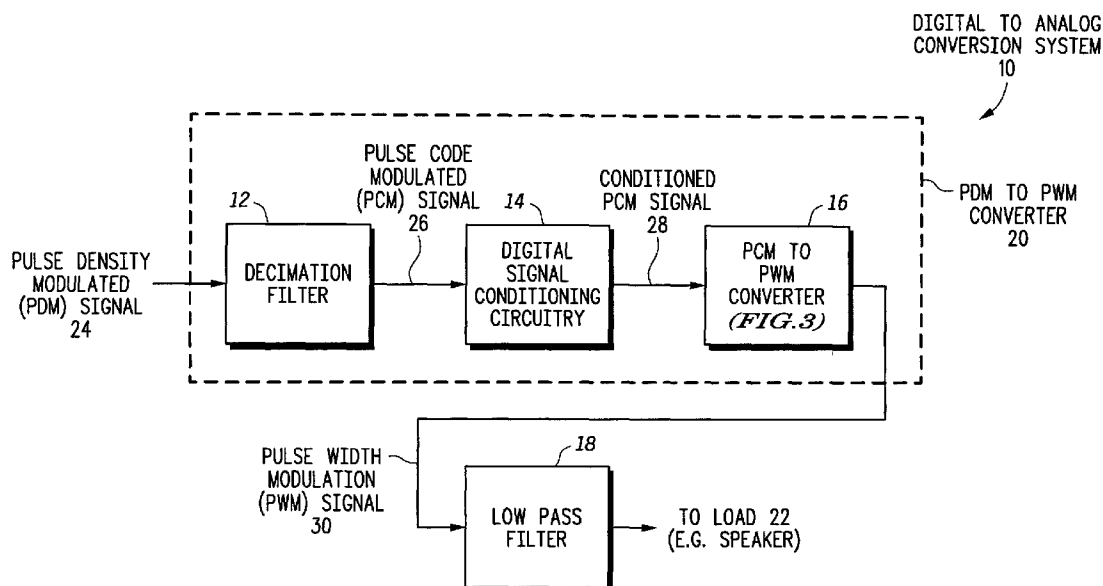
(43) International Publication Date
24 July 2003 (24.07.2003)

PCT

(10) International Publication Number
WO 03/061136 A1

- (51) International Patent Classification⁷: **H03M 5/08**, 1/82, H03F 3/217
- (21) International Application Number: PCT/US02/39957
- (22) International Filing Date:
13 December 2002 (13.12.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/034,909 2 January 2002 (02.01.2002) US
- (71) Applicant: **MOTOROLA, INC.** [US/US]; 1303 East Algonquin Road, Schaumburg, IL 60196 (US).
- (72) Inventors: **ROECKNER, William, J.**; 3005 Oak Knoll Line, Carpentersville, IL 60110 (US). **MIDYA, Pallab**; 765 West Hill Road, Palatine, IL 60067 (US). **WAGH, Poojan, A.**; 19 Plum Court, Sleepy Hollow, IL 60118 (US). **RINDERKNECHT, William, J.**; 173 North Oldendorf, Steamwood, IL 60107 (US).
- (74) Agent: **KOCH, William, E.**; Corporate Law Department, Intellectual Property Section, 3102 North 56th Street, MD: AZ11/56-238, Phoenix, AZ 85018 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- 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.

(54) Title: METHOD AND APPARATUS FOR GENERATING A PULSE WIDTH MODULATED SIGNAL



(57) Abstract: A method and apparatus for a pulse width modulated (PWM) signal (30, 130) is provided. The input is a digital signal which is a modulated signal (24, 124). In the illustrated form, the modulated input signal is either a PDM signal or a PCM signal. In one embodiment of the present invention a PCM to PWM converter (16, 116) includes correction of duty ratio circuitry (48). The methodology used may include recursion on the values obtained after prediction, interpolation, and correction. The digital to analog conversion system (10) uses a PDM to PWM converter (20) which operates in an all digital domain and includes no analog circuitry.



WO 03/061136 A1