

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 May 2006 (18.05.2006)

PCT

(10) International Publication Number
WO 2006/052305 A1

(51) International Patent Classification⁷: **G01R 31/319**

(21) International Application Number:
PCT/US2005/026689

(22) International Filing Date: 27 July 2005 (27.07.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/980,578 3 November 2004 (03.11.2004) US

(71) Applicant (for all designated States except US): **TER-ADYNE, INC.** [US/US]; 321 Harrison Avenue, Boston, Massachusetts 02118 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SALMI, Jacob Alvin** [US/US]; 1358 138th Lane N.W., Andover, Minnesota 55304 (US). **REPUCCL, Thomas A.** [US/US]; 742 96th Lane N.E., Blaine, Minnesota 55434 (US).

(74) Agents: **MOOSEY, Anthony T.** et al.; Teradyne, Inc., Legal Department, MS-H61, 321 Harrison Avenue, Boston, Massachusetts 02118 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

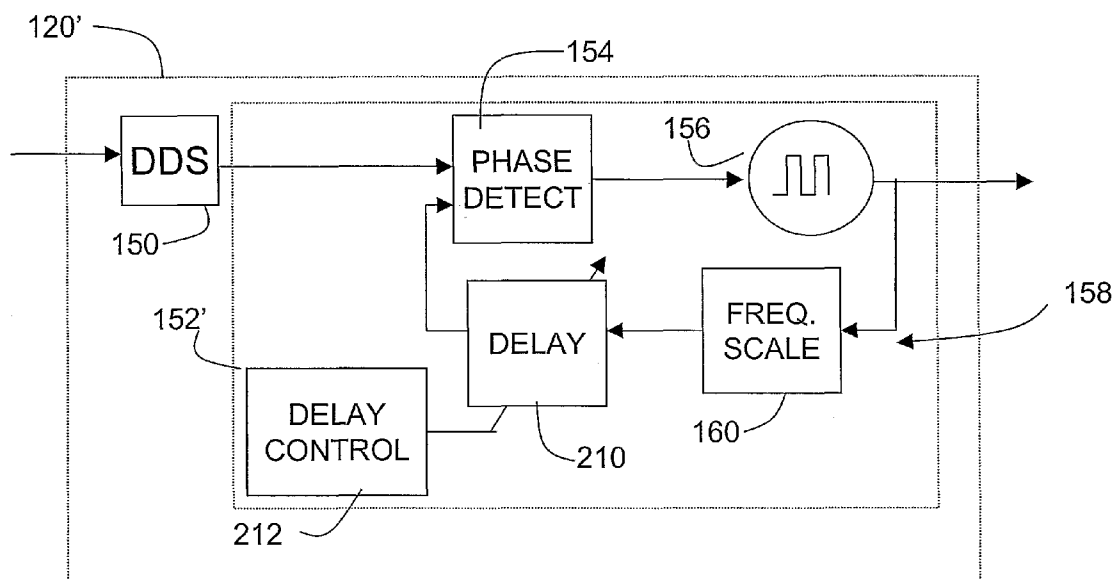
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report

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 CONTROLLING VARIABLE DELAYS IN ELECTRONIC CIRCUITRY



(57) Abstract: A circuit with delay compensation for variable delays, such as those caused by environmental conditions. A delay compensation element having a delay pattern that matches the delay pattern of the circuit to be compensated is included in the feedback path of a phase locked loop. The delay compensation is described as a programmable delay, which has a rate of change in relation to temperature that varies with the programmed value of the delay. Such a circuit is used in a channel of automatic test equipment. The delay element is incorporated in the feedback path of a phase locked loop used in a clock generation circuit. The structure provides for edge placement accuracies below 250 picoseconds, even if CMOS components are used in the channel.

WO 2006/052305 A1