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(54) Title of the invention : COMPACT RING OSCILLATOR BASED DYNAMIC LOGIC TIMING CHARACTERIZATION SYSTEM AND METHOD THEREOF

(51) International classification	:H03K 3/03, H03K 3/354, G01R 31/28, G01R 31/3185, G01R 31/3183	(71)Name of Applicant : 1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY Address of Applicant :19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Uttar Pradesh India (72)Name of Inventor : 1)DR. RAJAN SINGH 2)KANIKA JINDAL 3)ASHUTOSH KUMAR SINGH 4)DR. VIJAY KUMAR PANDEY
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(57) Abstract :

Disclosed herein is a compact ring oscillator based dynamic logic timing characterization system (100) that comprises a ring oscillator unit (102) having a plurality of delay stages (104) arranged in a closed signal propagation loop for generating a continuous oscillation signal. A dynamic circuit under test unit (106) is integrated as one of the plurality of delay stages (104) and includes a dynamic node structure (108) connected with a precharge transistor (110), an evaluate transistor (112), and a keeper transistor (114). A precharge control path (116) and an evaluation control path (118) regulate operational phases of the dynamic circuit under test unit (106). An oscillation output node (120) provides an oscillation signal to a frequency measurement unit (122). A processing unit (124) determines timing characteristics based on oscillation frequency variation, and a user interface (126) presents timing characterization information.

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