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[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR PROVIDING DUTY CYCLE CORRECTION

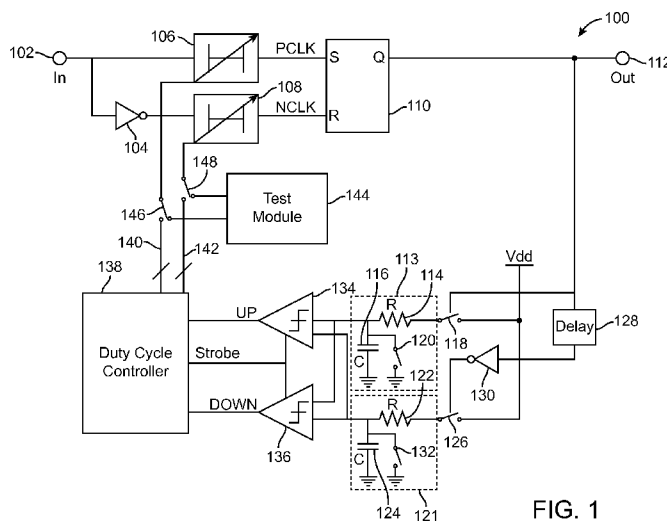


FIG. 1

(57) Abstract: Systems and methods are disclosed including a duty cycle module having two timer circuits (113, 121) to measure pulse widths of a clock signal. Two comparators (134, 136) are used to generate control signals (UP, DOWN) depending upon comparisons of the pulse width measurements. In response to the control signals, either the clock signal or an inverted clock signal may be programmably delayed such that combination of the clock signal and the inverted clock signal results in a corrected clock signal. Systems and methods are also disclosed for verifying operation of a duty cycle module.

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A. CLASSIFICATION OF SUBJECT MATTER INV. G06F1/04 H03K5/156 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) G06F H03K		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A A	US 2009/160516 A1 (GUO CHUNBING [US] ET AL) 25 June 2009 (2009-06-25) paragraph [0001] - paragraph [0008] paragraph [0018] - paragraph [0030]; figures 1-5b ----- US 7 898 309 B1 (DOGAN HAKAN [US]) 1 March 2011 (2011-03-01)  column 1, line 6 - column 2, line 29 column 3, line 26 - column 7, line 7; figures 2A-4B ----- -/--	1-17, 22-27 18  1,2,7,8, 10-12, 16-18, 22,23,27
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
Date of the actual completion of the international search  18 July 2014		Date of mailing of the international search report  30/07/2014
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer  Semple, Mark

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2007/241799 A1 (MINZONI ALESSANDRO [US] ET AL) 18 October 2007 (2007-10-18)  paragraph [0004] paragraph [0017] - paragraph [0055]; figures 2-6  -----	1,2, 9-12,18, 19,22,23

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Information on patent family members

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