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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
6 January 2005 (06.01.2005)

PCT

(10) International Publication Number
WO 2005/001891 A3

(51) International Patent Classification[7]: H03K 5/01

(21) International Application Number:
PCT/US2004/015616

(22) International Filing Date: 18 May 2004 (18.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
MI2003A001217 17 June 2003 (17.06.2003) IT

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(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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, 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, IT, LU, 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).

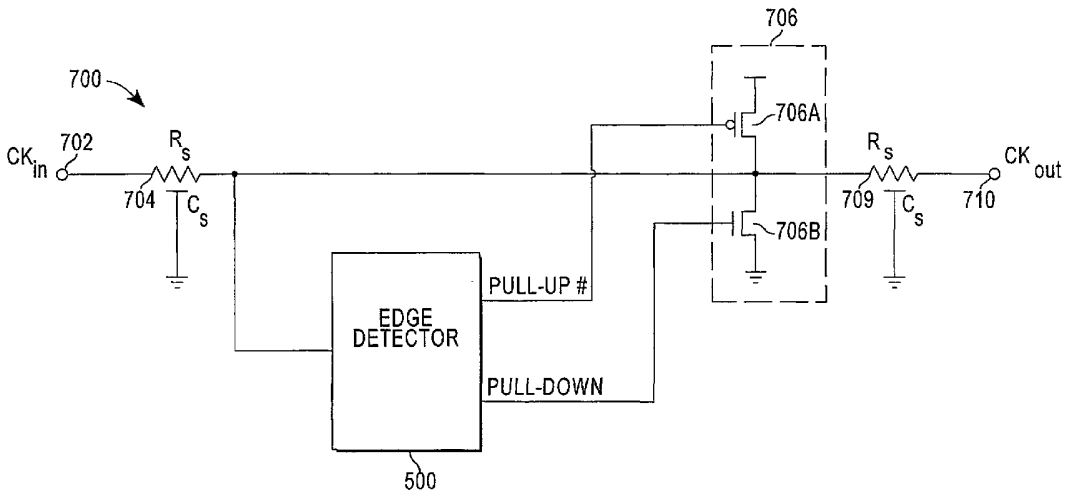
**Declarations under Rule 4.17:**
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

**Published:**
— *with international search report*

(88) Date of publication of the international search report:
6 October 2005

*[Continued on next page]*

(54) Title: REGENERATIVE CLOCK REPEATER




(57) Abstract: A regenerative clock repeater (Fig. 5; 700) comprises an edge detector (Fig. 6; 500) and an output driver means (706) to produce the clock signal (CK) by recovering its high logical level and low logical level. The output driver means further comprises a pull-up (706A) and a pull-down (706B) circuitry adapted to receive a pair of control signals (PULL-UP#, PULL-DOWN#). These control signals are generated by the edge detector to sense the rising edge and falling edge of the clock signal. Inside the edge detector, a pair of threshold level detectors (540, 550) detect a high and a low logical level of the clock signal and inputs the results to a combination of logic gates (562, 564, 568, 570) and a latch (566) to keep the locations of the signal markers fixed. These fixed-location of control signals trigger the output driver means to recover the high logical level and the low logical level of said clock signal.

WO 2005/001891 A3

*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.*

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/15616

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : H03K 5/01
US CL : 327/165
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)
U.S. : 327/165, 166, 167, 291, 292, 299

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | US 6,130,563 A (Pilling et al) 10 October 2000 (10.10.2000), Figure 2 | 1, 8 |
| A | US 5,414,312 A (Wong) 9 May 1995 (09.05.1995), Figure 1 | 1-9 |
| A | US 6,094,086 A (Chow) 25 July 2000 (25.07.2000), Figure 5 | 1-9 |

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

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"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

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Date of the actual completion of the international search
29 May 2005 (29.05.2005)

Date of mailing of the international search report
20 JUL 2005

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Form PCT/ISA/210 (second sheet) (January 2004)

**INTERNATIONAL SEARCH REPORT**

International application No.
PCT/US04/15616

Continuation of B. FIELDS SEARCHED Item 3:
EAST
search terms: clock repeater, edge detector, pull-up, pull-down, transistor, NAND, NOR, logic, gate, driver