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Declarations under Rule 4.17:

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: PROGRAMMABLE SWITCH CIRCUIT AND METHOD, METHOD OF MANUFACTURE, AND DEVICES AND SYSTEMS INCLUDING THE SAME

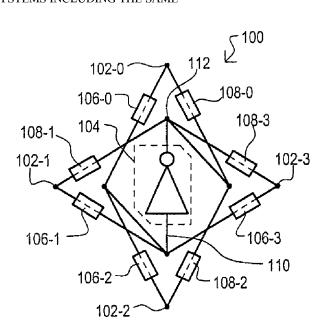


FIG. 1

(57) Abstract: A switching circuit can include a logic circuit having a logic circuit input and a logic circuit output and at least three input transistors coupled to provide three separate paths between three input/output (I/O) nodes and the logic circuit input. The switching circuit can further include at least three output transistors coupled to provide three separate paths between the three I/O nodes and the logic circuit output. Methods of fabricating such switch circuits and devices and/or systems including such switching circuits are also disclosed.



— as to the applicant's entitlement to claim the priority of — the earlier application (Rule 4.17(iii))

before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

Published:

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A. CLASSIFICATION OF SUBJECT MATTER

H03K 17/687(2006.01)i, H03K 19/177(2006.01)i

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)

IPC: H03K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal), IEEE & Keyword: "SWITCH," "FABRIC," "LOGIC," "PROGRAMMABLE," "TRANSISTOR," "FET," "JFET," and "MOS"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No		
X	US 6105106 A (Troy A. Manning) 15 August 2000	1, 3, 4, 8, 11		
Y	See the abstract; figures 4-6; claims 1-17	16-19		
X	US 5003200 A (Makoto Sakamoto) 26 March 1991	15		
Y	See the abstract; figures 1-5; claims 1-5	16-19		
A	US 2003-0012186 A1 (Brent Rowe and Lee Sledjeski) 16 January 2003 See the abstract; figures 1-7; claims 1-14	1-20		
A	US 6125379 A (Rong Lin) 26 September 2000 See the abstract; figures 4a-18; claims 1-22	1-20		
A	US 2004-0061578 A1 (Michael Wendell Vice) 01 April 2004 See the abstract; figures 1-6; claims 1-20	1-20		

		Further of	documents	are	listed	in	the c	ontinua	ıtion	of B	ox C.	
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See patent family annex.

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Date of the actual completion of the international search

05 JANUARY 2010 (05.01.2010)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 06105106 A	15.08.2000	US 2001-0037429 A1	01.11.2001
00 00100100 //	10.00.2000	US 06516382 B2	04.02.2003
		US 06522163 B1	18.02.2003
US 05003200 A	26.03.1991	EP 0360540 A3	12.09.1990
		EP 0360540 A2	28.03.1990
		EP 0360540 B1	03.08.1994
		JP 2723926 B2	09.03.1998
		JP 02-082814 A	23.03.1990
		KR 10-1994-0007002 B1	03.08.1994
US 2003-0012186 A1	16.01.2003	AU 2002-318467 A1	03.03.2003
		AU 2002-318467 A8	02.07.2002
		DE 10297046 T5	09.09.2004
		JP 04243182 B2	25.03.2009
		JP 2004-536520 A	02.12.2004
		TW 550884 B	01.09.2003
		US 07145378 B2	05.12.2006
		WO 2003-009515 A2	30.01.2003
		W0 2003-009515 A3	30.01.2003
US 6125379 A	26.09.2000	None	
US 2004-0061578 A1	01.04.2004	GB 0322616 D0	29.10.2003
22 200 . 000 101 0 711	0.,0.,2001	GB 2394610 A	28.04.2004
		GB 2394610 B	26.07.2006
		JP 2004-129251 A	22.04.2004
		US 06900711 B2	31.05.2005