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(54) Title: APPARATUS AND METHOD FOR FUSION OF COMPUTE AND SWITCHING FUNCTIONS OF EXASCALE SYSTEM INTO A SINGLE COMPONENT BY USING CONFIGURABLE NETWORK-ON-CHIP FABRIC WITH DISTRIBUTED DUAL MODE INPUT-OUTPUT PORTS AND PROGRAMMABLE NETWORK INTERFACES

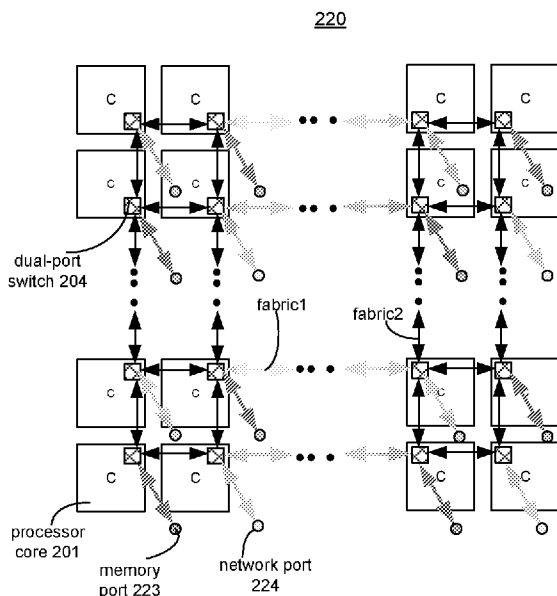


Fig. 2B

(57) Abstract: Described is an apparatus which comprises: a Network-On-Chip fabric using crossbar switches, having distributed ingress and egress ports; and a dual-mode network interface coupled to at least one crossbar switch, the dual-mode network interface is to include: a dual-mode circuitry; a controller operable to: configure the dual-mode circuitry to transmit and receive differential signals via the egress and ingress ports, respectively, and configure the dual-mode circuitry to transmit and receive signal-ended signals via the egress and ingress ports, respectively.



PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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**A. CLASSIFICATION OF SUBJECT MATTER****G06F 13/40(2006.01)i, G06F 13/16(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)  
G06F 13/40; G06F 9/02; G06F 15/80; H03K 19/094; G06F 9/06; G06F 13/28; G06F 13/16Documentation 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  
Japanese utility models and applications for utility modelsElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
eKOMPASS(KIPO internal) & Keywords: multiprocessors, crossbar switch, dual mode, differential signal, single-ended signal, ports, and similar terms.**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004-0160242 A1 (ARIFUR RAHMAN) 19 August 2004 See paragraphs [0006], [0018]-[0022], and [0027]; claims 12-16; and figure 3.	1-25
Y	US 2014-0143470 A1 (COHERENT LOGIX, INCORPORATED) 22 May 2014 See paragraphs [0012], [0014], [0056], [0061], [0068], [0074], [0120], [0136]-[0137] and [0178]; and figures 4, 5A, and 9.	1-25
A	US 2010-0229020 A1 (MICHAEL B. DOERR et al.) 09 September 2010 See paragraphs [0102]-[0117] and figure 4.	1-25
A	US 2009-0024833 A1 (MARTIN M. DENEROFF et al.) 22 January 2009 See paragraphs [0112]-[0117] and figures 7A-7B.	1-25
A	US 2014-0047157 A1 (FUJITSU LIMITED) 13 February 2014 See paragraphs [0023]-[0032] and figure 1.	1-25

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

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Information on patent family members

International application No.

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