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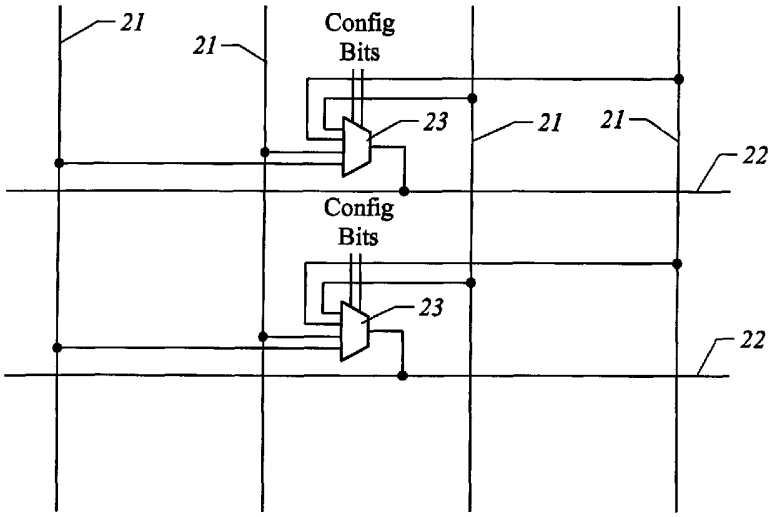
(54) Title: HIERARCHICAL MULTIPLEXER-BASED INTEGRATED CIRCUIT INTERCONNECT ARCHITECTURE FOR SCALABILITY AND AUTOMATIC GENERATION



(57) Abstract: This invention consists of a hierarchical multiplexer-based interconnect architecture (Fig.2) and is applicable to Field Programmable Gate Arrays, multi-processors, and other applications that require configurable interconnect networks. In place of traditional pass transistors (15) or gates, multiplexers (23) are used and the interconnect architecture is based upon hierarchical interconnection units (25). Bounded and predictable routing delays, compact configuration memory requirements, non-destructive operation in noisy environments, uniform building blocks and connections for automatic generation, scalability to thousands of interconnected elements, and high routability even under high resource utilization are obtained.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/23486

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :H04L 12/56
US CL : 370/539

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. : 370/539

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,833,673 A (CHAO ET AL) 23 MAY, 1989, ALL	1-14
A	US 5,136,587 A (OBANA ET AL) 04 AUGUST, 1992, ALL	1-14

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

*	Special categories of cited documents:	"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier document published on or after the international filing date	"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
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"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		

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