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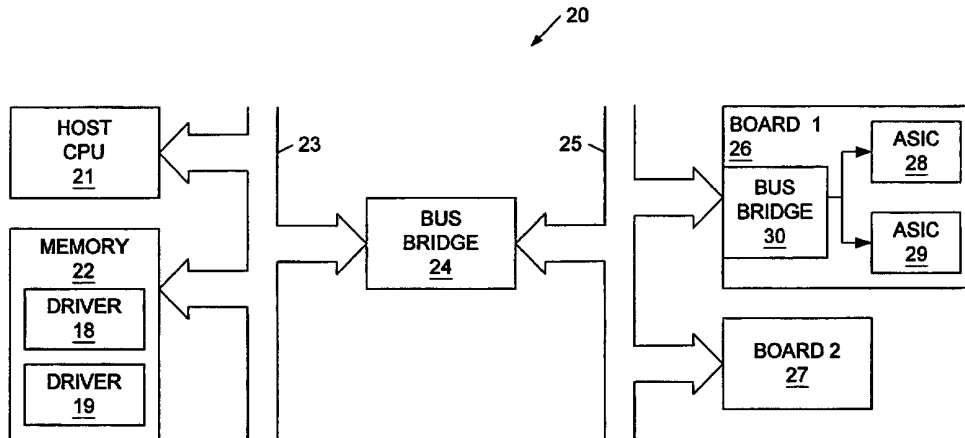
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(54) Title: SYSTEM AND METHOD FOR PROVIDING HOT SWAP CAPABILITY USING EXISTING CIRCUITS AND DRIVERS WITH MINIMAL CHANGES



(57) Abstract: A system and method for providing hot swap capability with minimal changes in a system which uses existing circuitry and drivers. In one embodiment, a computer system has a host processor and a hot-swap-capable device, each coupled to a Compact PCI bus. The device includes one or more pre-existing circuits (ASICs and/or standard off-the-shelf circuits) and corresponding pre-existing drivers. A hot-swap-capable bus bridge is interposed between the circuits and the Compact PCI bus to provide hot swap functionality while allowing the pre-existing circuits and drivers to be used without modification. In one embodiment, an Intel 21554 is used as the hot-swap-capable bus bridge. The 21554 is programmed to emulate a transparent bridge. Modified drivers in the OBP firmware and OS software allow the system to recognize the 21554 in this transparent configuration and to probe the secondary side of the 21554 for the circuits.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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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 7 G06F

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 practical, search terms used)

WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 875 308 A (EGAN ET AL) 23 February 1999 (1999-02-23) column 2, line 59 -column 5, line 38; figures -----	1-23
A	EP 0 772 134 A (IBM CORP.) 7 May 1997 (1997-05-07) page 5, column 7, line 20 -page 6, column 10, line 8; figures 6-8 -----	1-23
A	US 5 784 576 A (GUTHRIE ET AL) 21 July 1998 (1998-07-21) column 1, line 66 -column 7, line 25; figures 3,4 -----	1-23

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Patent family members are listed in annex.

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5875308 A	23-02-1999	CN 1202656 A	23-12-1998
EP 0772134 A	07-05-1997	JP 9146875 A	06-06-1997
US 5784576 A	21-07-1998	CN 1235683 A	17-11-1999
		DE 19782087 T	25-11-1999
		WO 9819246 A	07-05-1998
		GB 2334120 A,B	11-08-1999
		PL 333006 A	08-11-1999
		TW 388018 B	21-04-2000