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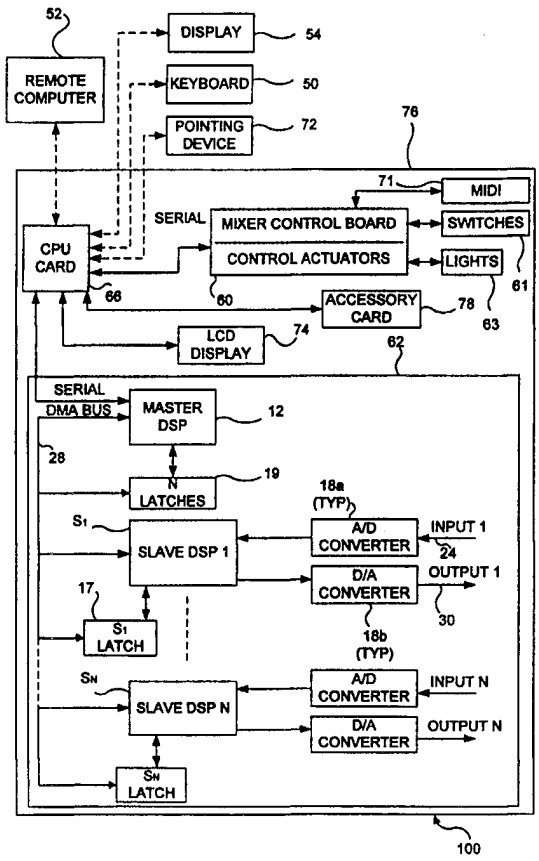
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(54) Title: DIGITAL SIGNAL MIXING ARCHITECTURE

(57) Abstract

An improved digital signal mixing architecture (100) for applications such as digital mixing consoles (76) is provided. The architecture provides a software configurable mixing system that is expanded up to more than 48 channels. The architecture comprises a master DSP (12) device coupled to a plurality of slave DSP devices (10) on a DMA bus (28). The master DSP (12) is interconnected to each of the slave DSPs (10) in a manner that enables the master DSP (12) to command each of the slave DSPs (10) to write the results of its input signal processing to the internal memory of each of the other slave DSPs (10). The master DSP (12) commands the slave DSPs (10) to transmit processed input signals to each other, so that each processed input signal is stored in the memory of each slave DSP (10). Once each slave DSP (10) has the results of every processed input signal, the master DSP (12) commands any combination of the slave DSPs (10) to mix any of the processed input signals to create a mixed signal that is sent to its outputs for conversion to an analog signal (18b). Mixing combinations are controlled by scripts that are interpreted by software. The digital mixing architecture (100) provides a system that is software configurable, so that mixing console is easily reconfigurable and upgradeable.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/00689

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H03H 7/30; G06F 17/00
US CL :375/229, 364/400.01, 381/119; 395/800.01
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. : 375/229; 364/400.01, 514R, 900; 381/119; 395/800, 800.01, 800.39, 800.35

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)

APS:(DSP, Analog-to-Digital, Mixer, real-time, Audio mixer, script, DMA, reconfiguration, mixed signals, coefficients, Digital-to-Analog)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,581,480 A (OLSON et al) 03 December 1996, see claims 16, and 17, figure 2, column 1, lines 33-64.	1-3
Y	US 5,361,373 A (GILSON) 01 November 1994, see claim 1, figures 1, and 3-4, column 7, lines 5-17.	2-3
X	US 5,212,733 A (DEVITT et al) 18 May 1993, see claims 1-5. column 2, lines 27-50, column 4, lines 1-35, columns 5-6, lines 52-	1
Y	67, and 1-8 respectively.	2-3
X	US 4,845,660 A (LUC et al) 04 July 1989, see claim 1, abstract, figures 1-7 and 12-13, columns 1-2, lines 41-61, and 5-12 respectively.	1-3

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

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