



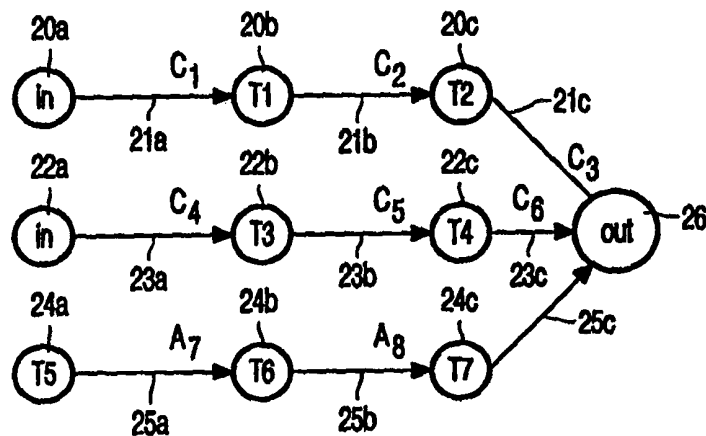
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(21) International Application Number: PCT/IB98/01564 (22) International Filing Date: 8 October 1998 (08.10.98) (30) Priority Data: 97203272.6 21 October 1997 (21.10.97) EP (71) Applicant: KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL). (71) Applicant (for SE only): PHILIPS AB [SE/SE]; Kottbygatan 7, Kista, S-164 85 Stockholm (SE). (72) Inventors: TIMMER, Adwin, Hugo; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). LEIJTEN, Jeroen, Anton, Johan; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). VAN MEERBERGEN, Jozef, Louis; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). (74) Agent: DE HAAS, Laurens, J.; Internationaal Octrooibureau B.V., P.O. Box 220, NL-5600 AE Eindhoven (NL).		(81) Designated States: JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> (88) Date of publication of the international search report: 5 August 1999 (05.08.99)

(54) Title: SIGNAL PROCESSING DEVICE AND METHOD OF PLANNING CONNECTIONS BETWEEN PROCESSORS IN A SIGNAL PROCESSING DEVICE

(57) Abstract

A signal processing device contains a plurality of processing elements with inputs and outputs coupled via a switch-matrix for communication of signal streams between a set of processes. An arbiter selects the connections made by the switch-matrix. The arbiter makes allocations of inputs and outputs that are to be connected to each other in each of successive time-slots. The allocations for communication of signal streams between the set of processes for a plurality of time-slots are made in advance. The arbiter can also receive requests for making further connections between inputs and outputs. In that case, the arbiter makes said further connection in a time-slot in which the requested inputs and outputs are not used by the set of processes. A method of planning is provided which ensures that full utilization of the switch-matrix is possible.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 98/01564

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: G06F 13/00, G06F 15/163
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)

IPC6: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5497373 A (JOHN S. HULEN ET AL), 5 March 1996 (05.03.96), column 2 - column 3, figures 2,6 --	1-9
A	WO 9427216 A1 (MASSACHUSETTS INSTITUTE OF TECHNOLOGY), 24 November 1994 (24.11.94), see the whole document --	1-9
A	US 5450557 A (RANDALL L. KOPP ET AL), 12 Sept 1995 (12.09.95), see the whole document --	1-9
A	US 5103311 A (ROBERT J. SLUIJTER ET AL), 7 April 1992 (07.04.92), see the whole document --	1-9

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PCT/IB 98/01564

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5475856 A (PETER M. KOGGE), 12 December 1995 (12.12.95), see the whole document --	1-9
A	EP 0623880 A2 (NEC CORPORATION), 9 November 1994 (09.11.94), see the whole document --	1-9
A	US 4814762 A (PETER A. FRANASZEK), 21 March 1989 (21.03.89), see the whole document -- -----	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

03/05/99

International application No.

PCT/IB 98/01564

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5497373 A	05/03/96	AU 1978495 A WO 9526088 A	09/10/95 28/09/95
WO 9427216 A1	24/11/94	US 5574939 A	12/11/96
US 5450557 A	12/09/95	NONE	
US 5103311 A	07/04/92	DE 68909425 D,T EP 0325310 A,B ES 2047103 T FI 94991 B,C FI 890066 A HK 20295 A JP 1217575 A NL 8800053 A US 5692139 A	07/04/94 26/07/89 16/02/94 15/08/95 12/07/89 24/02/95 31/08/89 01/08/89 25/11/97
US 5475856 A	12/12/95	US 5588152 A US 5617577 A US 5717944 A AT 177547 T CA 2073516 A CN 1072788 A DE 69228586 D EP 0544127 A,B JP 2647315 B KR 9708529 B MX 9206864 A US 5590345 A US 5625836 A US 5630162 A US 5708836 A US 5710935 A US 5713037 A US 5717943 A US 5734921 A US 5752067 A US 5754871 A US 5761523 A US 5765011 A US 5765012 A US 5765015 A US 5794059 A US 5809292 A US 5815723 A US 5828894 A US 5842031 A US 5870619 A US 5878241 A	24/12/96 01/04/97 10/02/98 15/03/99 28/05/93 02/06/93 00/00/00 02/06/93 27/08/97 24/05/97 01/05/93 31/12/96 29/04/97 13/05/97 13/01/98 20/01/98 27/01/98 10/02/98 31/03/98 12/05/98 19/05/98 02/06/98 09/06/98 09/06/98 09/06/98 11/08/98 15/09/98 29/09/98 27/10/98 24/11/98 09/02/99 02/03/99
EP 0623880 A2	09/11/94	CA 2122880 A JP 6314264 A US 5559970 A	07/11/94 08/11/94 24/09/96

INTERNATIONAL SEARCH REPORT

Information on patent family members

03/05/99

International application No.

PCT/IB 98/01564

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4814762 A	21/03/89	CA 1263729 A	05/12/89
		DE 3685599 A	16/07/92
		EP 0195589 A,B	24/09/86
		JP 1763592 C	28/05/93
		JP 4053358 B	26/08/92
		JP 61214694 A	24/09/86
		US RE34528 E	01/02/94
		US 4752777 A	21/06/88
