(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 13 March 2003 (13.03.2003)

PCT

(10) International Publication Number WO 03/021446 A3

(51) International Patent Classification⁷: G06F 11/36

(21) International Application Number: PCT/US02/27758

(22) International Filing Date: 29 August 2002 (29.08.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/315,655 29 August 2001 (29.08.2001) US

(71) Applicant: ANALOG DEVICES, INC. [US/US]; One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106 (US).

- (72) Inventor: SCHWEMMLEIN, Joerg; 10 Wells Street, Gloucester, MA 01930 (US).
- (74) Agent: POWERS, Jeffrey, B.; Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210 (US).

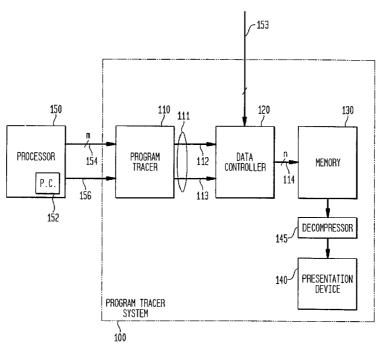
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: HIGH-SPEED PROGRAM TRACING



(57) Abstract: A high speed program tracer providing compression using linear increment run length values, displacement values corresponding to discontinuities, and loop compression. A program count sequencer receives program count values from a processor, and outputs various program count values and signals to allow compression calculations to be made based upon linear increment run lengths, discontinuity detection, and detection of repeating instruction loops. Compression may be achieved using selected numbers of words to represent various compression values.



03/021446 A3

WO 03/021446 A3



(88) Date of publication of the international search report: 19 June 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No PCT. 302/27758

		PC	1,s U2/21/58						
A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G06F11/36									
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 GO6F									
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched									
	ata base consulted during the international search (name of data ba	•	ch terms used)						
EPO-In	ternal, IBM-TDB, WPI Data, INSPEC, F	AJ							
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT								
Category °	Citation of document, with indication, where appropriate, of the rel	evant passages	Relevant to claim No.						
х	EP 0 992 907 A (TEXAS INSTRUMENTS ;TEXAS INSTRUMENTS INC (US))	1-7							
	12 April 2000 (2000-04-12) paragraph '0043! - paragraph '0056!								
	paragraph '0094! - paragraph '0105!								
	paragraph '0125! - paragraph '01 figures 8,9,14,15,17,20,21								
A	US 5 724 505 A (ARGADE PRAMOD VAS AL) 3 March 1998 (1998-03-03) the whole document	1-7							
Α	 EP O 762 276 A (MOTOROLA INC)	1-7							
,	12 March 1997 (1997-03-12) page 10, line 14 -page 15, line 3	- ,							
Furth	ner documents are listed in the continuation of box C.	X Patent family memb	ers are listed in annex.						
° Special categories of cited documents: "T* later document published after the international filing date									
'A' document defining the general state of the art which is not considered to be of particular relevance or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention									
"E" earlier o	levance; the claimed invention								
"L" docume	ovel or cannot be considered to be when the document is taken alone								
which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or document is combined with one or more other such document is combined with one or more other such document is combined with one or more other such document is combined with one or more other such document is combined with one or more other such document is combined with one or more other such document is combined with one or more other such document is combined with one or more other such document is combined with one or more other such document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the 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 document is combined with									
other n	n being obvious to a person skilled								
later th	same patent family								
	actual completion of the international search 2 April 2003	Date of mailing of the international search report 02/05/2003							
<u> </u>	nailing address of the ISA	Authorized officer							
Haile allull	naimig address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk	Adminized officer							
	Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Bozas, I							

INTERNATIONAL SEARCH REPORT

mation on patent family members

International Application No
PCT/US 02/27758

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0992907	Α	12-04-2000	EP	0992916 A1	12-04-2000
			EP	0992907 A2	12-04-2000
			JP	2000267884 A	29-09-2000
			US	6507921 B1	14-01-2003
			EP	0992902 A2	12-04-2000
			EP	1004959 A2	31-05-2000
			ΕP	0992904 A2	12-04-2000
			EP	0992905 A2	12-04-2000
			EP	0992890 A2	12-04-2000
			EP	0992887 A2	12-04-2000
			EP	0992897 A2	12-04-2000
			EΡ	0992882 A2	12-04-2000
			EP	0992906 A2	12-04-2000
			US	6516408 B1	04-02-2003
			US	2003055860 A1	20-03-2003
			US	6499098 B1	24-12-2002
			US	6487576 B1	26-11-2002
US 5724505	Α	03-03-1998	NONE		
EP 0762276	———— А	12-03-1997	US	5964893 A	12-10-1999
	• •		DE	69616462 D1	06-12-2001
			DE	69616462 T2	23-05-2002
			ΕP	0762276 A1	12-03-1997
			JР	9218803 A	19-08-1997