

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
13 February 2003 (13.02.2003)

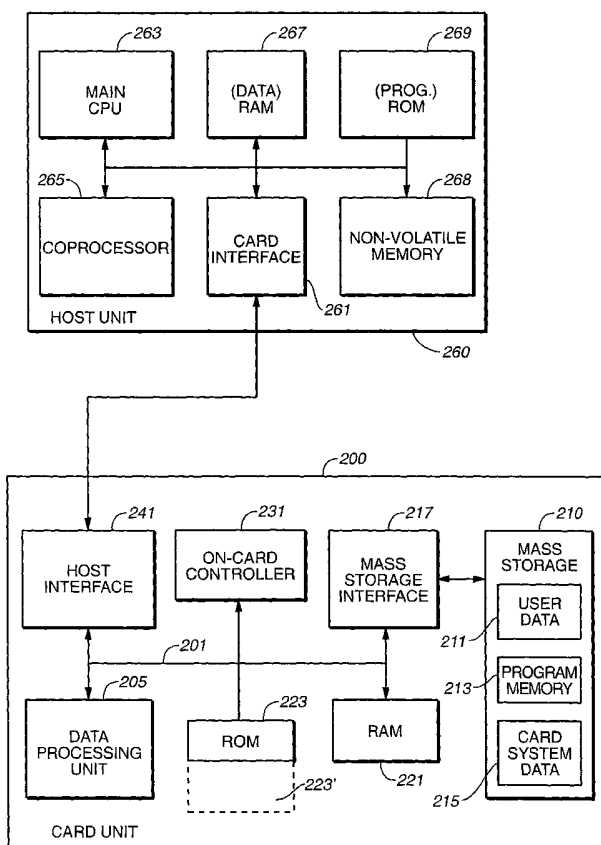
PCT

(10) International Publication Number  
WO 03/012657 A3

- (51) International Patent Classification<sup>7</sup>: G06F 9/38, G06K 19/07
- (74) Agent: CLEVELAND, Michael, G.; Skjerven Morrill LLP, Three Embarcadero Center, 28th Floor, San Francisco, CA 94111 (US).
- (21) International Application Number: PCT/US02/24541
- (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, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 2 August 2002 (02.08.2002)
- (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).
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 09/924,185 2 August 2001 (02.08.2001) US
- (71) Applicant: SANDISK CORPORATION [US/US]; 140 Caspian Court, Sunnyvale, CA 94089 (US).
- (72) Inventors: HOLTZMAN, Michael; Naaman Street #34, 25147 Kfar Vradim (IL). PINTO, Yosi; 2 Mishol Hanarkis, 25147 Kfar Vradim (IL).

[Continued on next page]

(54) Title: REMOVABLE COMPUTER WITH MASS STORAGE



(57) Abstract: The present invention provides a detachable add-on card unit to a host system that combines mass storage capability and a processor on the same card. The card can receive data from the host, process the data, and store it in processed form, as well as the reverse process of retrieving stored data, processing it, and supplying it to the host. The non-volatile mass storage memory may contain program storage as well as card system data and user data. The end user of the card can program applications into the program storage. The combination of mass storage and a processor also adds to the capabilities of the on-card processor, allowing the card to store and execute programs. The present invention is able to provide a programmable add-on card unit to a host system. A number of applications can be stored in the card's mass storage and loaded as needed by the on-card micro-controller.

WO 03/012657 A3



**Published:**

— *with international search report*

*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.*

**(88) Date of publication of the international search report:**

30 May 2003

## INTERNATIONAL SEARCH REPORT

 Inter application No  
 PCT/US 02/24541

 A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 G06F9/38 G06K19/07

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 G06K

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)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 047 342 A (DEPEW JOHN M) 4 April 2000 (2000-04-04) column 1, line 40 - column 2, line 37 column 3, line 12 - line 33 column 4, line 25 - line 37 column 5, line 40 - line 57 column 7 column 9, line 20 - line 52 abstract	1-55
X	--- EP 0 292 248 A (GEN ELECTRIC CO PLC) 23 November 1988 (1988-11-23) column 1 - column 2 --- -/--	1-55

 Further documents are listed in the continuation of box C.

 Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or 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 other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

27 November 2002

Date of mailing of the international search report

24. 02. 03

Name and mailing address of the ISA

 European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Prins, L

## INTERNATIONAL SEARCH REPORT

 Intern. Application No  
 PCT/US 02/24541

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No:
X	US 5 850 230 A (GRAHAM CARL N ET AL) 15 December 1998 (1998-12-15) column 1, line 10 - line 19 column 2, line 40 - line 59 column 3, line 12 - line 37 column 4, line 25 - line 40 column 5, line 26 - line 33 ---	1-55
X	SMITH S W PALMER E R WEINGART S: "Using a high-performance, programmable secure coprocessor", FINANCIAL CRYPTOGRAPHY. INTERNATIONAL CONFERENCE, XX, XX, PAGE(S) 1-17 XP002954812 paragraph [03.3] paragraph [0005] ---	1-55
X	DE 298 06 899 U (ILLIES THOMAS) 28 May 1998 (1998-05-28) page 1, line 16 - line 28 ---	1-55
A	LAPERE ET AL: "User Authentication in Mobile Telecommunication Environments Using Voice Biometrics and Smartcards", PROCEEDINGS. INTERNATIONAL CONFERENCE ON INTELLIGENCE IN SERVICES AND NETWORKS, XX, XX, PAGE(S) 437-443 XP002106691 paragraph [0001] paragraph [0003] paragraph [0005] ---	1-55
A	US 6 209 077 B1 (ROBERTSON PERRY J ET AL) 27 March 2001 (2001-03-27) column 1, line 10 -column 2, line 64 column 5, line 1 - line 7 ---	1-55
A	US 4 851 654 A (NITTA TSUNEO) 25 July 1989 (1989-07-25) column 1, line 5 - line 46 column 2, line 58 -column 3, line 34 -----	1-55

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 02/24541

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-55

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-55

An add-on card with host interface and processing unit.

2. Claims: 56-58

A secured communication system for transferring voice data, utilising card units to process and unprocess the voice data.

3. Claims: 59-62

A secured apparatus using a card unit to compare user inputs with data stored on the card unit to verify the authorisation of the user to access the apparatus.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/24541

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6047342	A	04-04-2000	NONE	
EP 0292248	A	23-11-1988	GB 2204973 A AU 1643488 A EP 0292248 A2 JP 1064033 A NO 882140 A ZA 8803412 A	23-11-1988 24-11-1988 23-11-1988 09-03-1989 21-11-1988 22-02-1989
US 5850230	A	15-12-1998	US 5388841 A US 2001040577 A1 US 2002050999 A1 US 2001043224 A1 AT 229197 T AU 657147 B2 AU 2060392 A CA 2074554 A1 CN 1076378 A ,B DE 69232865 D1 EP 1262921 A2 EP 0553532 A2 JP 3335695 B2 JP 6089567 A	14-02-1995 15-11-2001 02-05-2002 22-11-2001 15-12-2002 02-03-1995 19-08-1993 31-07-1993 22-09-1993 16-01-2003 04-12-2002 04-08-1993 21-10-2002 29-03-1994
DE 29806899	U	28-05-1998	DE 29806899 U1	28-05-1998
US 6209077	B1	27-03-2001	NONE	
US 4851654	A	25-07-1989	JP 2085793 C JP 7121630 B JP 63299996 A FR 2615984 A1	23-08-1996 25-12-1995 07-12-1988 02-12-1988