

(19) World Intellectual Property Organization
International Bureau



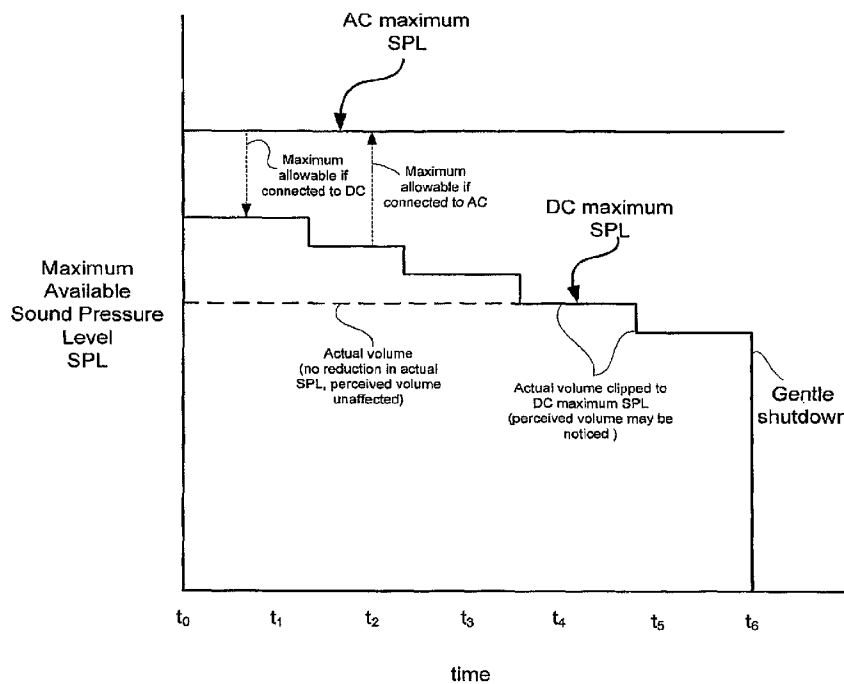
(43) International Publication Date
7 September 2007 (07.09.2007)

(10) International Publication Number
WO 2007/100707 A3

- (51) International Patent Classification: **G06F 1/32** (2006.01) **G06F 1/30** (2006.01) **Jeffrey Allan** [US/US]; 945 Rosewood Avenue, San Carlos, CA 94070 (US).
- (21) International Application Number: PCT/US2007/004810
- (22) International Filing Date: 23 February 2007 (23.02.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 11/364,610 27 February 2006 (27.02.2006) US
- (71) Applicant (for all designated States except US): **APPLE INC.** [US/US]; 1 Infinite Loop, Cupertino, CA 95014 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DOROGUSKER, Jesse L.** [US/US]; 350 Sharon Park Drive, L-205, Menlo Park, CA 94025 (US). **NOVOTNEY, Donald J.** [US/US]; 1749 Harmil Way, San Jose, CA 95125 (US). **KRUEGER, Scott** [US/US]; 1860 Washington, San Francisco, CA 94109 (US). **MICHELET, Robert** [US/US]; 23 Pinkney Street, Annapolis, MD 21401 (US). **HAMMERSTROM,**
- (74) Agents: **FERRAZANO, Michael J.** et al.; BEYER WEAVER LLP, P.O. Box 70250, Oakland, CA 94612-0250 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DYNAMIC POWER MANAGEMENT IN A PORTABLE MEDIA DELIVERY SYSTEM



(57) Abstract: A consumer electronic product (e.g., a portable media player ported to a media delivery accessory) is powered by a limited capacity DC power source (such as a battery or mini-fuel cell). The consumer electronic product limits the maximum allowable sound pressure level (SPL) that can be produced by the speakers. In one embodiment, the maximum allowable SPL is based upon an amount of stored energy available in the limited capacity DC power source.

WO 2007/100707 A3



Published:

— *with international search report*

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

21 February 2008

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/004810

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F1/32 G06F1/30

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)
G06F H03G

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 6 108 426 A (STORTZ JAMES L [US]) 22 August 2000 (2000-08-22) column 1, line 1 - column 3, line 48; figures 1-3	1-7, 9-19, 21-25, 34-40, 42-46
X	JP 2001 312338 A (SONY CORP) 9 November 2001 (2001-11-09) the whole document	1-4, 10-17, 22-25, 34-37, 43-46
	----- -/--	

Further documents are listed in the continuation of Box C.

See patent family 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.
- * & * document member of the same patent family

Date of the actual completion of the international search

15 November 2007

Date of mailing of the international search report

05/12/2007

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

Vertua, Arturo

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/004810

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 59 023610 A (MATSUSHITA ELECTRIC IND CO LTD) 7 February 1984 (1984-02-07) the whole document	1-4, 10-17, 22-25, 34-37, 43-46
X	US 5 920 728 A (HALLOWELL WILLIAM C [US] ET AL) 6 July 1999 (1999-07-06) column 11, line 38 - line 55; figure 5	26-33
A	EP 0 127 139 A (SIEMENS AG [DE]) 5 December 1984 (1984-12-05) page 5, line 9 - line 24; figures 1,2	5,6,18, 38,39
A	US 4 908 523 A (SNOWDEN GREGORY O [US] ET AL) 13 March 1990 (1990-03-13) the whole document	5,6,18, 38,39
A	US 4 951 171 A (TRAN THANH T [US] ET AL) 21 August 1990 (1990-08-21) column 3, line 60 - column 4, line 6 column 4, line 45 - line 50 column 5, line 39 - line 56 figure 3	6,7,19, 39,40
A	EP 0 757 437 A (COMPAQ COMPUTER CORP [US]) 5 February 1997 (1997-02-05) column 4, line 9 - line 25 figures 1,2,4a	26,30
A	JP 2000 224099 A (NEC SHIZUOKA LTD) 11 August 2000 (2000-08-11) abstract	9,21,42
A	JP 2000 299834 A (CANON KK) 24 October 2000 (2000-10-24) the whole document	1-46
P,A	-& US 7 084 921 B1 (OGAWA YASUYUKI [JP]) 1 August 2006 (2006-08-01) column 7, line 56 - column 8, line 8; figure 2	
A	WO 2005/048644 A (MOTOROLA INC [US]; BEBOODIAN ALI [US]; PATTERSON AUDLEY F [US]) 26 May 2005 (2005-05-26) the whole document	1-46

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/004810

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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 No. III Observations where unity of invention is lacking (Continuation of item 3 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 allsearchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
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.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- 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: 1-4, 10-13, 14-17, 22-25, 34-37, 43-46

Method and product for shutting down a media delivery system or change the maximum allowable SPL based on the charge status of the internal power supply.

2. claims: 5-9, 18-21, 38-42

Method and product for generating a shutdown signal if the downward going voltage crosses a threshold and a subsequent upward going voltage does not re-cross the threshold voltage level in a predetermined length of time.

3. claims: 26-33

Method of shutting down a consumer electronic product comprising: muting an audio amplifier and providing user feedback.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/004810

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6108426	A	22-08-2000	NONE	
JP 2001312338	A	09-11-2001	NONE	
JP 59023610	A	07-02-1984	NONE	
US 5920728	A	06-07-1999	DE 69728824 D1 DE 69728824 T2 EP 0819999 A1 SG 53011 A1 US 5822600 A	03-06-2004 07-10-2004 21-01-1998 28-09-1998 13-10-1998
EP 0127139	A	05-12-1984	DE 3319308 A1	29-11-1984
US 4908523	A	13-03-1990	NONE	
US 4951171	A	21-08-1990	NONE	
EP 0757437	A	05-02-1997	DE 69621711 D1 DE 69621711 T2 US 5818299 A	18-07-2002 07-11-2002 06-10-1998
JP 2000224099	A	11-08-2000	JP 3068588 B2	24-07-2000
JP 2000299834	A	24-10-2000	US 7084921 B1	01-08-2006
US 7084921	B1	01-08-2006	JP 2000299834 A	24-10-2000
WO 2005048644	A	26-05-2005	AU 2004310375 A1 CN 1879297 A EP 1683391 A2 JP 2007512733 T KR 20060086380 A US 2005100179 A1	26-05-2005 13-12-2006 26-07-2006 17-05-2007 31-07-2006 12-05-2005