

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 April 2001 (19.04.2001)

PCT

(10) International Publication Number
WO 01/28222 A3

(51) International Patent Classification⁷: G06F 12/02, 12/08, 17/30, 17/60, G06T 1/60, G11B 19/00, G10L 3/02, 5/00, 7/00, 9/00, H04N 7/16, 5/93

(21) International Application Number: PCT/IB00/01837

(22) International Filing Date: 11 October 2000 (11.10.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/158,809 12 October 1999 (12.10.1999) US

(71) Applicant (for all designated States except US): PERCEPTION DIGITAL TECHNOLOGY (BVI) LIMITED [—/—]; P.O. Box 957, Offshore Incorporations Centre, Road Town, Tortola (VG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LAU, Jack [US/CN]; Flat C2, 33/F, Imperial Court, 62G Conduit Road, Mid-Levels, Hong Kong (CN). TSUI, Chi, Ying [CN/CN];

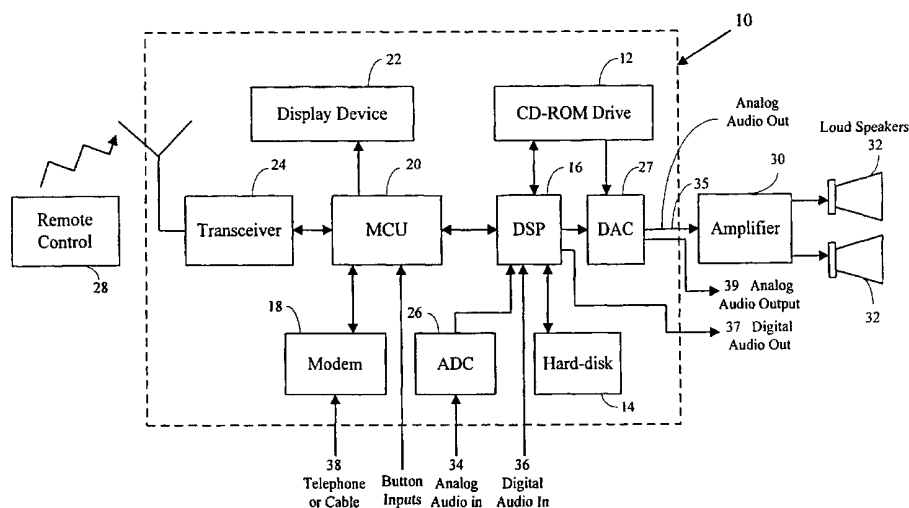
Room 816, UG Hall 1, Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong (CN). CHENG, Roger, Shu, Kwan [US/CN]; 2/F, Flat H, Tower 2, Nan Fung Plaza, Tseung Kwan O, Hong Kong (CN). YUNG, Chi, Wai [CN/CN]; 10F, 2B, Nassau Street, Mei Foo Sun Chuen, Kowloon, Hong Kong (CN). TANG, Jimmy, Tai, Kwan [CN/CN]; M1606, Kornhill, Wuarry Bay, Hong Kong (CN). NG, Kin, Ping [CN/CN]; Room 2, 5/F, Hiu Kwong Court, 32 Hiu Kwong Street, Kwun Tong, Kowloon, Hong Kong (CN). LAI, Sai, Kit [CN/CN]; Room 2012, Hang Yee House, Cheung Hang Estate, Tsing Yi, New Territories, Hong Kong (CN). CHAN, Kai, Kin [CN/CN]; Flat G, 16/F, Block 3, Bay View Garden, Nagau Chi Wan, Kowloon, Hong Kong (CN). CHAN, Wing, Chau [CN/CN]; Flat 8G, Block 1, Hong Sing Garden, Tseung Kwan O, Kowloon, Hong Kong (CN).

(74) Agent: DEROSA, Frank, J.; Brown Raysman Millstein Felder & Steiner LLP, 900 Third Avenue, New York, NY 10022-4728 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,

[Continued on next page]

(54) Title: DIGITAL MULTIMEDIA JUKEBOX



(57) Abstract: A musical jukebox (10) is disclosed which provides for: fast archiving of songs; a flexible user interface; easy and convenient entry of, access to and/or display (22) of data relating to songs archived by the jukebox (10); easy and convenient search and locate capabilities for locating, reviewing, retrieving and/or playing songs stored in the jukebox; and low cost relative to the functionality, features, conveniences and user-friendliness provided by the jukebox (10). Fast of flush archiving of songs (as well as other data and signals) is accomplished by first saving sets of data without compression, which allows the data to be entered quickly, and then, compressing later at an appropriate time. An unique MP3 bit allocation encoding scheme is used to compress data. An unique memory allocation supports fast data archiving. The user interface employs two-way communication (24) between a remote control (28) and the jukebox (10). A searchable song database is structured to enable very fast searching by music category, and also by title and artist. The jukebox (10) is provided with an on-board song track database to automatically identify new songs input to the jukebox (10).



WO 01/28222 A3



DE, DK, DM, DZ, 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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

-- with international search report

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

28 February 2002

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/IB00/01837

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : Please See Extra Sheet.
US CL : Please See Extra Sheet.

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. : 710/68; 705/1; 709/236

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST 1.1, WEST 2.0

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X | US 5,694,334 A (DONAHUE ET AL.) 02 DECEMBER 1997, NOTE ABSTRACT, COL.3, LINES 15-COL. 8 | 48-55 |
| X | US 5,781,889 A (MARTIN ET AL.) 14 JULY 1998, NOTE ABSTRACT, COL. 3, LINES 1- COL. 8, LINES 1-12, FIGS. 1-5 | 1-34 |
| X | US 5,742,797 A (CELI, JR. ET AL.) 21 APRIL 1998, NOTE ABSTRACT, COL. 4, LINES 55-COL. 5, LINES1-61 | 35-40 |
| X | US 5,581,736 A (SMITH) 03 DECEMBER 1996, NOTE ABSTRACT, COL. 6, LINES 21 - COL. 15, LINES 1-16 | 35-40 |

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

| | |
|--|---|
| <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> | <p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p> |
|--|---|

| | |
|--|---|
| <p>Date of the actual completion of the international search</p> <p style="text-align: center;">07 AUGUST 2001</p> | <p>Date of mailing of the international search report</p> <p style="text-align: center; font-size: 1.2em;">24 OCT 2001</p> |
| <p>Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230</p> | <p>Authorized officer <i>James R. Matthews</i> TAMMARA PEWTON Telephone No. (703) 305-9717</p> |

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/IB00/01837

| 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 5,784,699 A (MCMAHON ET AL.) 21 JULY 1998, NOTE ABSTRACT, COL. 3, LINES 1-66, COL. 4, LINES 32 - COL. 6, LINES 1-64, FIGS.1,2 | 35-40 |
| X | US 5,625,608 A (GREWE ET AL.) 29 APRIL 1997, NOTE ABSTRACT, COL. 2, LINES 24-53, FIGS.1,3,7 | 41-45 |
| X | US 5,621,856 A (AKAGIRI) 15 APRIL 1997, NOTE ABSTRACT, COL. 2, LINES 47-COL. 3, LINES 1-65 | 46,47 |
| X | US 5,651,093 A (NISHIGUCHI) 22 JULY 1997, NOTE ABSTRACT, COL. | 46,47 |
| X | US 5,794,179 A (YAMABE) 11 AUGUST 1998, NOTE ABSTRACT, COL. 3, LINES 19-COL.9, LINES 1-16 | 46,47 |
| X | US 5,845,243 A (SMART ET AL.) 01 DECEMBER 1998, NOTE ABSTRACT, COL. 4, LINES 38 - COL. 9, LINES 1-31 | 46,47 |
| X | US 5,918,223 A (BLUM ET AL.) 29 JUNE 1999, NOTE ABSTRACT, COL. 2, LINES 52- COL. 4, LINES 1-14 | 48-55 |
| X | US 5,926,624 A (KATZ ET AL.) 20 JULY 1999, NOTE ABSTRACT, COL. 2, LINES 12-30 | 56-58 |
| X | US 5,909,638 A (ALLEN) 01 JUNE 1999, NOTE ABSTRACT, COL. 1,LINES 11- COL. 4, LINES 1-8 | 56-58 |
| X | US 5,778,135 A (OTTESEN ET AL.) 07 JULY 1998, NOTE ABSTRACT, COL. 5, LINES 23-COL. 6, LINES 1-52 | 59,60 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB00/01837

A. CLASSIFICATION OF SUBJECT MATTER:
IPC (7):

G06F 12/02, 12/08, 17/30, 17/60; G06T 1/60; G11B 19/00; G10L 3/02, 5/00, 7/00, 9/00; H04N 7/16, 5/93

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

710/68; 705/1; 711/170, 171; 340.825.24; 704/229, 230; 707/1; 369/30.32 ;386/52; 709/146, 217, 247