



(12) **United States Patent**  
**Park et al.**

(10) **Patent No.:** **US 8,151,105 B2**  
(45) **Date of Patent:** **\*Apr. 3, 2012**

(54) **CONVERTIBLE COMPUTER WITH SELECTIVE ACTIVATION OF INPUT DEVICES AND POWER CONSUMPTION LEVEL BASED ON A TABLET OR NOTEBOOK MODE**

(52) **U.S. Cl.** ..... **713/100; 713/1; 713/2; 713/300; 710/1; 710/8**

(58) **Field of Classification Search** ..... None  
See application file for complete search history.

(75) Inventors: **Jun Hyung Park**, Anyang-si (KR); **Jong Won Kim**, Suwon-si (KR); **Jeong Hun Kim**, Suwon-si (KR)

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,200,913 A 4/1993 Hawkins et al.  
(Continued)

FOREIGN PATENT DOCUMENTS

KR 2000-0050394 8/2000  
(Continued)

OTHER PUBLICATIONS

Korean Office Action dated Sep. 25, 2009.

(Continued)

*Primary Examiner* — Ji H Bae

(74) *Attorney, Agent, or Firm* — KED & Associates, LLP

(73) Assignee: **LG Electronics Inc.**, Seoul (KR)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 443 days.  
  
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **12/276,813**

(22) Filed: **Nov. 24, 2008**

(65) **Prior Publication Data**

US 2009/0083562 A1 Mar. 26, 2009

**Related U.S. Application Data**

(62) Division of application No. 11/598,777, filed on Nov. 14, 2006, now Pat. No. 7,472,267, which is a division of application No. 10/812,905, filed on Mar. 31, 2004, now Pat. No. 7,506,152.

(30) **Foreign Application Priority Data**

Aug. 11, 2003 (KR) ..... 03-55520  
Sep. 3, 2003 (KR) ..... 03-61548  
Sep. 3, 2003 (KR) ..... 03-61549  
Sep. 9, 2003 (KR) ..... 03-63107

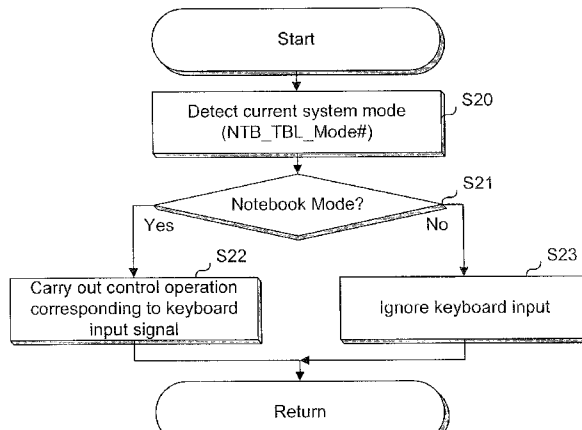
(51) **Int. Cl.**

**G06F 9/00** (2006.01)  
**G06F 9/24** (2006.01)  
**G06F 15/177** (2006.01)  
**G06F 1/00** (2006.01)  
**G06F 3/00** (2006.01)

(57) **ABSTRACT**

A convertible computer is equipped with a notebook computer function and a tablet computer function. When a system power supply is turned on, a functionality or physical configuration such as rotation state of a display module can be detected, and an environment can be controlled such as an operating system (OS) for a tablet computer or notebook computer is selectively booted. Input signals of input units can also be controlled in an activation or inactivation state according to a system mode. An operation of switch sensing an open/closed state of a liquid crystal display (LCD) can be controlled by a signal generated by the rotation operation of the display module. In a state in which at least one control value necessary for setting a system environment is stored in a memory, the system mode switching operation is monitored and the system environment is set according to the switched system mode.

**10 Claims, 11 Drawing Sheets**



U.S. PATENT DOCUMENTS

5,375,076 A 12/1994 Goodrich et al.  
 6,327,653 B1 12/2001 Lee  
 6,366,935 B2 4/2002 Hawkins et al.  
 6,415,388 B1\* 7/2002 Browning et al. .... 713/322  
 6,654,826 B1 11/2003 Cho et al.  
 6,684,338 B1\* 1/2004 Koo ..... 713/300  
 6,711,004 B2 3/2004 Yen et al.  
 6,735,663 B2 5/2004 Watts, Jr. et al.  
 6,771,494 B2 8/2004 Shimano  
 6,788,527 B2 9/2004 Doczy et al.  
 6,903,927 B2 6/2005 Anlauff  
 7,148,877 B2 12/2006 Chang et al.  
 7,472,267 B2\* 12/2008 Park et al. .... 713/100  
 2001/0020940 A1\* 9/2001 Nakazato et al. .... 345/418  
 2002/0162444 A1 11/2002 Yu et al.  
 2002/0181722 A1 12/2002 Hibino et al.  
 2002/0198006 A1 12/2002 Hirayama et al.  
 2003/0093659 A1 5/2003 Wen et al.  
 2003/0188144 A1 10/2003 Du et al.

2003/0204708 A1 10/2003 Hulme et al.  
 2004/0001306 A1 1/2004 Oakley  
 2004/0006690 A1 1/2004 Du et al.  
 2004/0027337 A1 2/2004 Hunt et al.  
 2004/0140967 A1 7/2004 Kojo  
 2005/0039081 A1\* 2/2005 Chang et al. .... 714/36  
 2005/0144432 A1\* 6/2005 Wu ..... 713/2  
 2005/0219217 A1 10/2005 Longobardi et al.

FOREIGN PATENT DOCUMENTS

WO WO 01/84729 11/2001

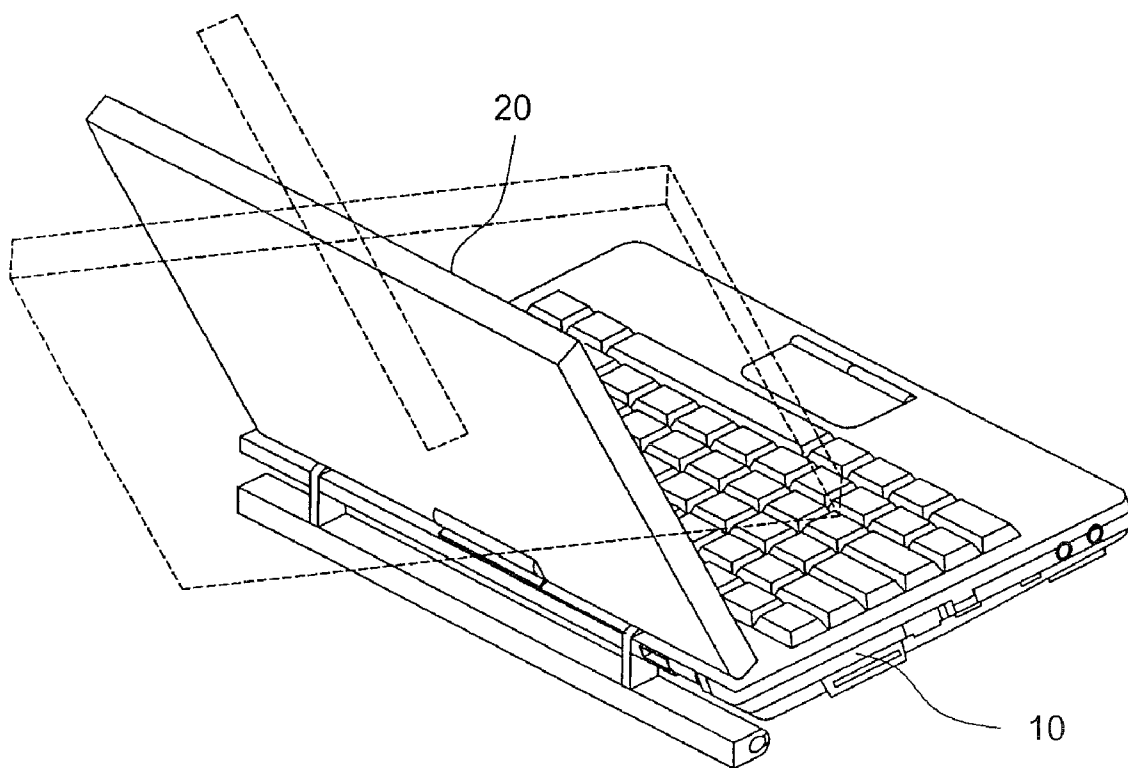
OTHER PUBLICATIONS

European Search Report dated Jun. 6, 2007.  
 J. Wittgen: "Riesencabrio Tablet PC Toshiba Portege 3500;" CT  
 Magazin Fuer Computer Technik, Heise Zeitschriften Verlag, Han-  
 nover, DE, No. 3, Jan. 27, 2003, p. 67.

\* cited by examiner

# FIG. 1 (Prior Art)

## Notebook Computer Mode



**FIG. 2**  
**(Prior Art)**

**Tablet Computer Mode**

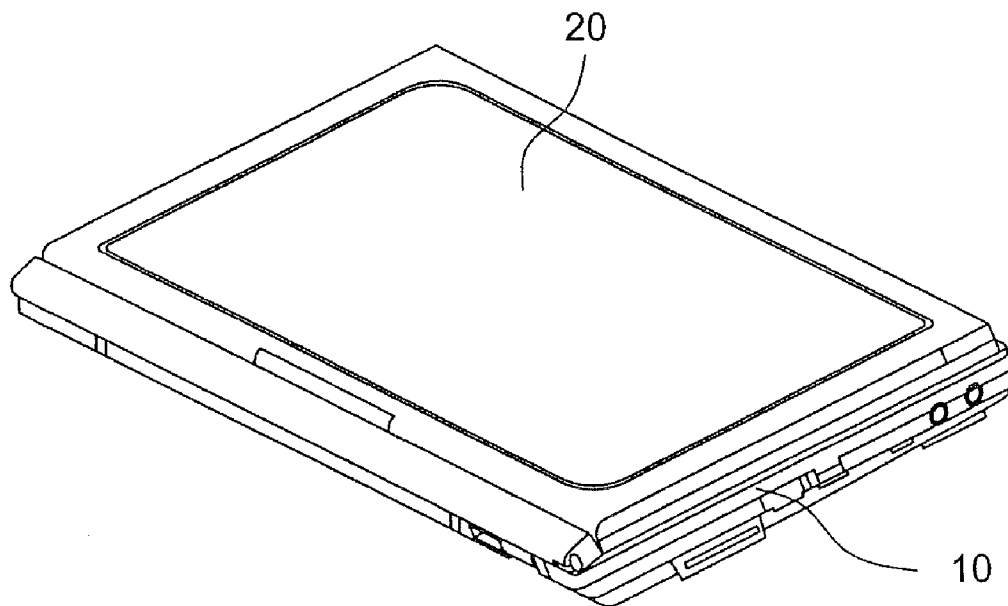
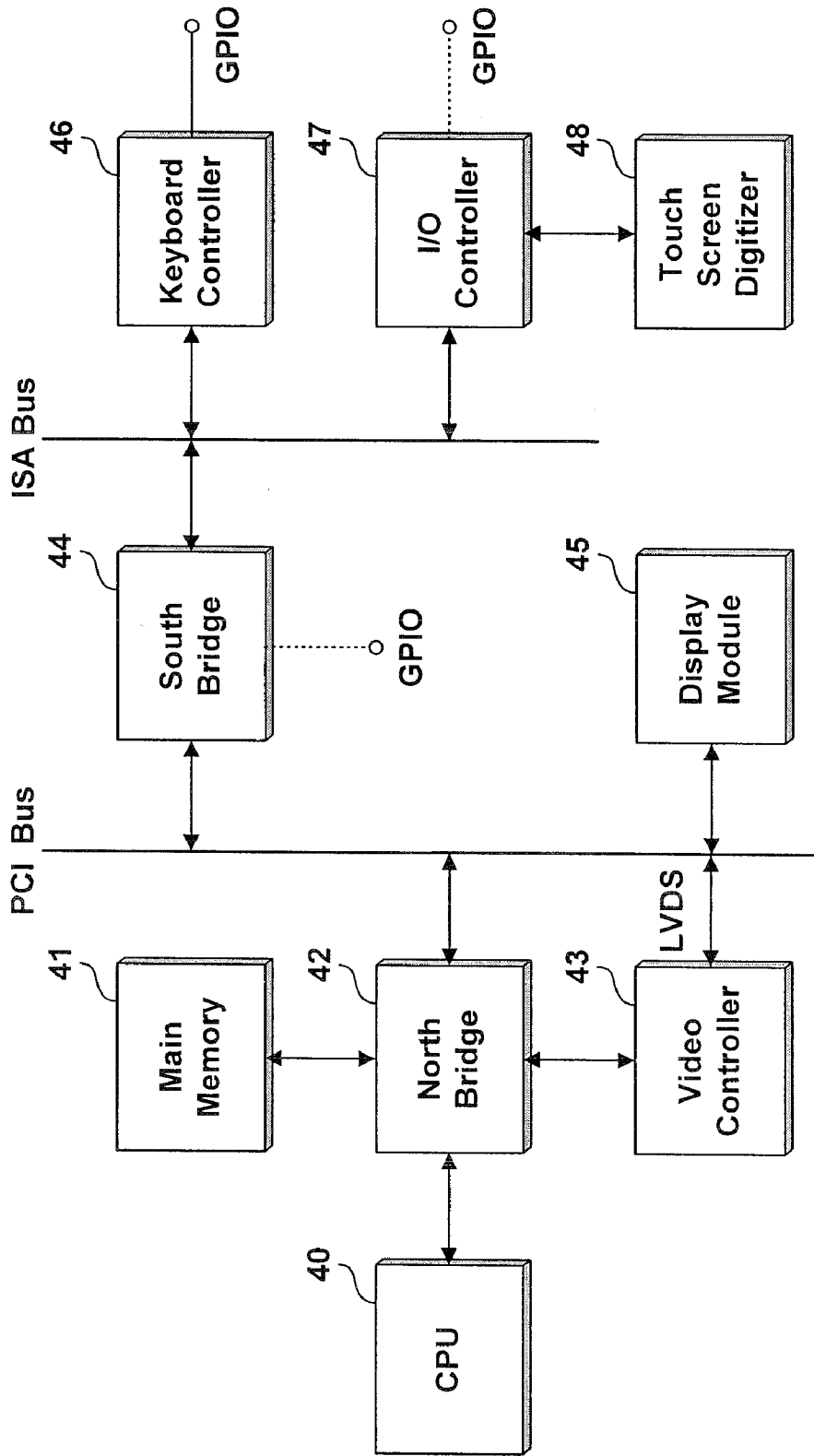


FIG. 3



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.