

## PORTABLE COMPUTING DEVICE WITH SPECIALIZED OPERATING SYSTEM

The present patent application is related to Ser. No. 09/802,299, (pending) entitled "Computing Device Having A Low Power Secondary Processor Coupled To A Keyboard Controller" and assigned to the same assignee.

### BACKGROUND

The present invention pertains to portable computing devices and pertains particularly to a portable computing device with a specialized operating system.

Portable computing systems vary widely in size and functionality. This allows users very wide choice in selecting a portable computing device that satisfies the particular requirements and/or preferences of the user.

For example, many notebook computers provide functionality similar to a desktop computing system. These notebook computers provide a full size keyboard, full size display, a fully functional operating system, and a large selection of input/output ports. In addition, add-on devices that use internal slots and PC card slots provide a great deal of expandability. Hard disk drives, floppy disk drives, compact disk read only memory (CDROM) drives, digital video disk (DVD) drives and so on give a great many storage options for notebook computers.

The advanced features of a notebook computer, however, come with a price. The price is not only monetary, but also can be in inconvenience to the user, such as the increase in size and weight of many notebook computers, the power consumption necessary to support all the functionality and potential functionality of these notebook computers and the boot-up time required to load the operating system at start time.

Some notebook computers have used quick launch keys. The quick launch keys, however, work through the normal operating system of the notebook computer. Thus when using a quick launch key, all components of the operating system need to be completely loaded, the application must be launched, and any connected accessories need to be enabled before functions are ready to be performed by the notebook computer.

An alternative to a notebook computer is a personal digital assistant (PDA). PDAs have the advantage of a reduced size and weight and reduced power consumption. The trade-off, however, is significantly reduced functionality. APDA typically has reduced storage capability, a smaller display screen and a limited keyboard. The operating system for a PDA is often significantly less versatile than that for a notebook computer.

However, PDAs are often very well adapted for particular purposes. For example, a PDA can provide convenient access to features like a calendar, address book, to-do list, e-mail, expense tracking, memo-pad, dictionary, games, image viewers, maps, and so on. Additionally various attachments can be connected to a PDA to add additional functionality. These include, for example, expanded keyboards, global positioning system (GPS) receivers, modems, scanners, digital cameras, and so on. The simplified operating system of a PDA can be an advantage when it allows a quick (even instantaneous) start-up time for the PDA.

### SUMMARY OF THE INVENTION

In accordance with the preferred embodiment of the present invention, upon activation of a portable computer, a

check is made to see if a user has indicated a reduced operating system is to be used. If the user has indicated the reduced operating system is to be used, the reduced operating system is activated. The reduced operating system is stored within a special memory area within the portable computer. The reduced operating system uses less system resources than a full function operating system for the portable computer. If the computer is activated and the user has not indicated the reduced operating system is to be used, the full function operating system of the portable computer is activated.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a simplified diagram that shows a portable computer with several quick launch keys in accordance with a preferred embodiment of the present invention.

FIG. 2 is a simplified functional block diagram of the portable computer shown in FIG. 1 in accordance with a preferred embodiment of the present invention.

FIG. 3 is a simplified flowchart that illustrates activity of a portable computer at start-up in accordance with a preferred embodiment of the present invention.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

In a preferred embodiment of the present invention, upon activation of a portable computer, a check is made to see if a user has indicated a reduced operating system is to be used. If the user has indicated the reduced operating system is to be used, the reduced operating system is activated. The reduced operating system is stored within a special memory area within the portable computer. The reduced operating system uses less system resources than a full function operating system for the portable computer. If the computer is activated and the user has not indicated the reduced operating system is to be used, the full function operating system of the portable computer is activated.

For example, the user indicates the reduced operating system is to be used by selecting a quick launch key. There can be multiple quick launch keys corresponding to multiple application programs. Some of the application programs which can be accessed using quick launch keys are, for example, e-mail, a web browser, a mapping program, a digital camera program, camera program and calendaring. As will be understood by persons of ordinary skill in the art, this is only a partial list as virtually any program supported by a personal digital assistant (PDA)—and some that are not supported by PDAs—can be implemented in the special memory and run using the reduced operating system. To facilitate this, in some embodiments of the present invention, the reduced operating system is compatible with an operating system implemented to run on a personal digital assistant (PDA). Resources on the portable computer that are necessary to perform an application program selected by the user are activated by the portable computer when running the reduced operating system.

For example, the special memory area is a memory module implemented using flash memory, or by any form of memory that is capable of permanently storing data. In one preferred embodiment of the present invention, the full function operating system is loaded into random access memory from a hard disk drive.

The present invention allows users to access PDA-like information (contacts, simple email, web browsing, appointments, etc) with a portable computer, but without the