

PERSONAL COMPUTER INTEGRATED WITH PERSONAL DIGITAL ASSISTANT

FIELD OF THE INVENTION

[0001] This invention relates to Personal Computers (PCs) and Personal Digital Assistants (PDAs), and more particularly to a PC integrated with PDA functionality permitting a PC to operate in both a PC mode and a PDA mode.

BACKGROUND OF THE INVENTION

[0002] Personal Digital Assistants (PDAs) are growing in popularity especially among business travelers. There are a variety of PDAs on the market today that provide a variety of functions. Most PDAs manage personal information and, as such, perform such tasks as: storing contact information such as names, addresses, phone numbers, email addresses, etc.; writing memos or personal notes; keeping track of appointments; reminding a user of appointments, e.g., by audio alarm; planning projects; keeping track of expenses; and the like. In addition, some PDAs are also able to send and receive email, provide Internet access, play MP3 music files, play MPEG movie files, provide voice recording functionality, and provide other functionality.

[0003] A PC can also provide all the above PDA functions, where a PC includes a desktop computer or a laptop computer. However, compared to a PC, a PDA is smaller and lighter. As such, it is typically powered by small batteries, e.g., some models use alkaline (AAA) batteries. A PDA's size also enables it to be used practically anywhere. Compared to a PC, a PDA has a fast boot up sequence enabling it to be used within a couple of seconds after turning its power on. In addition, a PDA typically has simpler user input devices than a PC. For instance, PDA applications typically require activation of only a few buttons and don't require a larger, more detailed input device such as a keyboard.

[0004] Compared to a PC however, a PDA has several limitations. First, PDAs can be as expensive as a low end PC. Second, PDAs have relatively limited storage capacity given their size, e.g., PDAs cannot support high capacity storage devices such as a hard disk drive. Third, PDAs have limited input devices. For instance, most PDAs include a stylus and touch screen that lets a user launch programs by tapping on the screen with a pen-like stylus. This limits user input speed and makes it difficult to put long messages into the PDA. Fourth, PDAs have limited expansion capability. For instance, flash media card readers and certain universal serial bus (USB) connections may not be supported.

[0005] In other words, the advantages of the PDA are normally the drawbacks of a PC and vice versa. Accordingly, there is a need in the art for a PC that overcomes the above deficiencies in the prior art and can provide a PC integrated with PDA functionality that permits a PC to operate in both a PC mode and a PDA mode.

BRIEF SUMMARY OF THE INVENTION

[0006] A personal computer (PC) adapted to function as a personal digital assistant (PDA) consistent with the invention includes: a central processing unit (CPU) responsive to a control signal to load a first operating system or a second operating system, wherein the first operating system is run

by the PC in a first PC mode and the second operating system is run by the PC in a second PDA mode.

[0007] The PC may also have a first boot up sequence for the first operating system that takes longer than a second boot up sequence for the second operating system. The PC operating in PDA mode may run PDA software applications such as scheduling applications, address book applications, and voice recording applications.

[0008] A method of operating a personal computer (PC) in either a first personal computer (PC) mode or a second personal digital assistant (PDA) mode consistent with the invention includes the steps of: initiating a control signal; and loading a first or second operating system based on the control signal, wherein the first operating system operates the PC is the first PC mode and the second operating system operates the PC is the second PDA mode.

[0009] A personal computer (PC) adapted to function as a personal digital assistant consistent with the invention includes: a central processing unit (CPU); memory; a first operating system configured to control at least the CPU and the memory; and a second operating system configured to control at least the CPU and the memory, the second operating system operating the PC in a personal digital assistant (PDA) mode.

[0010] An integrated circuit (IC) for adapting a personal computer (PC) to function as a personal digital assistant (PDA) consistent with the invention includes: an embedded controller; and a system bus interface configured to accept at least one instruction from the embedded controller and provide at least one instruction to the CPU of the PC, where the instruction indicates whether the PC operates in the PC mode or the PDA mode.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] For a better understanding of the present invention, together with other objects, features and advantages, reference should be made to the following detailed description which should be read in conjunction with the following figures wherein like numerals represent like parts:

[0012] **FIG. 1** is a perspective view of an exemplary PC integrated with PDA functionality;

[0013] **FIG. 2** is a block diagram of a PC consistent with the invention including an integrated circuit (IC) configured to provide PDA functionality to the PC;

[0014] **FIG. 3** is a block diagram of one exemplary embodiment for integrating an IC consistent with the invention into a PC to provide PDA functionality to the PC;

[0015] **FIG. 4** is a block diagram of one exemplary embodiment of an IC consistent with the invention; and

[0016] **FIG. 5** is a flow chart of an exemplary power up of a mini operating system and initiation of PDA functions in one embodiment of the present invention.

DETAILED DESCRIPTION

[0017] Turning to **FIG. 1**, a perspective view of a PC 100 consistent with the invention is illustrated. The PC may be a laptop computer as illustrated in **FIG. 1** or a desktop computer. For purposes of distinction, a laptop is configured to operate as a portable device and has a stand alone power