

FORM FACTOR FOR PORTABLE DEVICE

FIELD OF THE INVENTION

[0001] The invention relates generally to portable electronic devices. More specifically, the invention includes a form factor for a portable device that is optimized for viewing and navigating displayed content on a display screen of the device.

BACKGROUND OF THE INVENTION

[0002] A common disadvantage of conventional portable devices, such as mobile telephones and personal digital assistants (PDA), is that they often include small display screens. Small display screens make it difficult for users to view and navigate large data files. For instance, when viewing a web page on a PDA with a small display screen, the user can only view a very limited portion of the web page at a time. The user typically must repeatedly scroll vertically and horizontally to view the entire page.

[0003] In addition, known devices use cumbersome navigational and input mechanisms. For instance, on a typical PDA, a user must use a stylus to touch a small scroll bar displayed on the already small touch-sensitive display screen in order to navigate a document. Interacting with the small scroll bar requires very fine motor skills and is often difficult for many users. Some of these devices (e.g., Palm) provide a soft keyboard that allows a user to enter data by tapping on tiny keys on a keyboard representation on the display.

[0004] Known mobile telephones have similar disadvantages. The user must typically use buttons that act as horizontal and/or vertical scroll buttons. However, the use of buttons for scrolling does not allow a user to accurately select a position in a document except at finite intervals. While this may be acceptable when navigating documents with preexisting finite scroll intervals (such as lines in a text document), this is not acceptable when navigating a document that does not contain finite scroll intervals (e.g., a map).

[0005] Another common disadvantage with mobile telephones is that the speaker takes up some of the limited amount of external space available on the device. If the speaker is placed on the front of the device with the display screen, then the display screen is smaller than it otherwise could be without the speaker on the same face of the device. If the speaker is placed on the back of the device, then the back of the device has less room for other any input device that is also placed on the back of the device. One known solution to these problems is to add an external device that includes the speaker. For example, Handspring® PDAs allow a user to attach an external mobile telephone Springboard® module (VisorPhone®) that includes the speaker through which sound is played. However, this solution requires the addition of new hardware (i.e., the Springboard module) to the underlying PDA.

[0006] Thus, it would be an advancement in the art to provide a portable device that is optimized for viewing data on its display screen, allowing a user to view a larger portion of a data file than previous solutions while maintaining a small form factor and user-friendly input and navigational mechanisms. It would be a further advancement in the art to

provide a portable device in which the speaker does not consume external space beyond that of other input and output devices on the portable device, without requiring the addition of new hardware.

BRIEF SUMMARY OF THE INVENTION

[0007] The inventive system overcomes the problems of the prior art by providing a form factor for a portable device that maximizes a size of a display screen, allowing users to view larger portions of a data file displayed on a display screen. The form factor provides a display screen that utilizes a substantial portion of a front face of the portable device. The display screen may be surrounded by three touch sensitive control strips, each on a different side of the display screen. One of the control strips may be used for movement of a vertical crosshair element, another for movement of a horizontal crosshair element, and the third for zooming in or out of the presently displayed document, optionally centered at the intersection of the crosshair elements.

[0008] The back face of the device may be configured with a touchpad covering a substantial portion of the back face. The touchpad may be used for navigating the presently displayed document by touching a finger to the touchpad and “dragging” the image displayed on the display screen. The back face may also include a microphone for audio input into the device, and a speaker for playing audio output from the device. The speaker may be placed behind the touchpad by including holes in the touchpad through which the speaker sound may be heard.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The present invention is described with respect to the accompanying figures, in which like reference numerals identify like elements, and in which:

[0010] **FIG. 1** illustrates a front face of a device according to an embodiment of the invention.

[0011] **FIG. 2** illustrates a back face of a device according to an embodiment of the invention.

[0012] **FIG. 3** illustrates a cross-section of a touchpad over an A-cover according to an embodiment of the invention.

[0013] **FIG. 4** illustrates a device displaying a soft keyboard according to an embodiment of the invention.

[0014] **FIG. 5** illustrates a device displaying mobile telephone soft buttons according to an embodiment of the invention.

[0015] **FIG. 6** illustrates a schematic diagram of a device according to an embodiment of the invention.

[0016] **FIG. 7** illustrates a device according to an embodiment of the invention.

[0017] **FIG. 8** illustrates a front face of a device according to an embodiment of the invention.

[0018] **FIG. 9** illustrates a back face of a device according to an embodiment of the invention.

[0019] **FIG. 10** illustrates a front face of a device according to an embodiment of the invention.