

be viewed on said display) are no more than 5.5 inches by 4 inches. And a notable subclass of this subclass is devices whose overall dimensions are no more than 5 inches by 3.5 inches.

[0238] For each of the above embodiments having two or more touch sensors, a subclass is one in which each device in the subclass has two independent simple touch sensors along the bottom edge, and at least one more touch sensor on at least one of the vertical edges (left or right), and includes a display with between 500 and 720 pixels horizontally and between 350 and 460 pixels vertically, and where additionally the device's overall dimensions (in at least one configuration where the device can be operated and where content can be viewed on said display) are no more than 5.25 inches by 3.6 inches.

[0239] As described earlier, it is also useful to include a "modifier spot" on hand-held devices. When a user presses the modifier spot (with a finger or thumb of either hand) while simultaneously clicking on an item displayed on the touch-screen (as illustrated in FIG. 14-A and FIG. 15-A), the device will do something different than it would if the user simply clicked on that item without simultaneously pressing the modifier spot.

[0240] FIGS. 12-A and 12-B illustrate a front view and bottom view, respectively, of a portable electronic display device according to another embodiment of the present invention, in which, in addition to six substantially independent touch sensitive areas along the edges (for sensing sliding or tapping by a user's hands), the device also incorporates a modifier spot (item 1201). Such a device would generally include a touch screen—a substantially clear touch sensor that sits over the display, allowing the device to detect when the user clicks on an item being displayed. If the modifier spot is pressed at the same time that a user touches a displayed item, the device can react in a different way than it would if the user touched that displayed item without simultaneously pressing the modifier spot. For example, a modifier spot can serve as a shift key when the user clicks keys on a virtual keyboard (as illustrated in FIG. 15-A). A device could have multiple modifier spots, although only one is included in the embodiment in this illustration. A modifier spot can be implemented using a mechanical switch (i.e. a "button"), but in a preferred embodiment it would be implemented as a simple touch sensitive spot.

[0241] The embodiment of FIGS. 12-A and B comprises modifier spot 1201, in which a single small touch-sensitive area 1201 is positioned just below the display, centered horizontally, with part of the touch-sensitive area extending over the edge onto the bottom side of the device as illustrated in FIG. 12-B item 1201. FIG. 13-A shows a slightly different modifier spot 1201 implementation, in which the touch-sensitive area is a flat area primarily on the front surface just below the display, centered horizontally, without extending much over the bottom edge of the device. In preferred embodiments, the touch-sensitive spot would be implemented without any moving parts (for example, using a resistive or capacitive touch-sensor electronic component). Of course, alternatively, embodiments could use a button with moving parts (such as the typical type of push-button switch found on many devices) for the modifier button.

[0242] So the "modifier spot" is a button or an area outside of the display that the user can press while simultaneously

touching a point on the display with a finger or stylus, and thereby modify the way the device would have responded if the user had touched that point on the display without simultaneously pressing the modifier spot. Taking this element into account, here are a few more classes of devices defined by the present invention.

[0243] One class of embodiments of the present invention is one in which each device in the class includes a touch screen and additionally includes one or more modifier spots, where each modifier spot can be implemented as either a mechanical button (i.e., an electrical-mechanical switch with moving parts) or a touch sensor (i.e., with no significant perceptible moving parts). A notable subclass of this class is one in which at least one of the modifier spots in each device in the subclass can be used as a Shift key as the user clicks on keys displayed on a virtual keyboard on the device's display (at least in some situations). Another notable subclass of this class is one in which at least one of the modifier spots in each device in the subclass can be used to make a menu appear when the user clicks on an item on the screen while pressing that modifier spot (at least in some situations).

[0244] Any device embodiment of the present invention can furthermore include one or more modifier spots. For example, another class of embodiments of the present invention is one in which each device in the class includes a touch screen, one or more modifier buttons, a display whose active area includes between 480 and 800 horizontal effective pixels and between 320 and 600 vertical effective pixels as well as a pixel density between 130 and 162 pixels inclusively, and where the device enclosure (when viewed from the top view looking down on the display) is at most 5.2 inches across horizontally and at most 3.7 inches vertically, and there is no more than 0.5 inches between three outer edges of the enclosure and the corresponding outer edges of the active surface of the display, and no more than 1 inch between a fourth outer edge of the enclosure and the corresponding outer edge of the active surface, and in where the device additionally has at least two substantially independent touch sensitive areas on which the user can slide or tap fingers to control the device in some way.

[0245] Another class of embodiments of the present invention is one in which each device in the class includes one or more modifier spots, where at least one of the modifier spots is implemented with a touch sensor (i.e., without moving parts, which is also referred to here as a touch-sensitive modifier spot).

[0246] Another class of embodiments of the present invention is one in which each device in the class includes a touch screen, and additionally includes one or more touch-sensitive modifier spots, and additionally includes one or more touch sensitive edges (which can be used for scrolling and other functions, as described earlier).

[0247] Another class of embodiments of the present invention is one in which each device in the class includes a touch screen, and additionally includes exactly one modifier spot (either mechanical or touch-sensitive).

[0248] Another class of embodiments of the present invention is one in which each device in the class includes a touch screen, and additionally includes exactly one touch-sensitive modifier spot.