[0044] In one embodiment, the invention employs key locations that are common to multiple keys, each being used in a different mode. Thus, a first key may appear at a particular location in a first mode of operation, while a second key may appear at the same location in an alternate mode of operation. This "multiple key in the same spot" capability conserves user interface space, thereby facilitating a smaller overall device. Multiple icons or keys may be positioned within a user interface region that would be occupied by a single key in a conventional device.

[0045] The capacitive sensor layer, in one embodiment, enables both navigation and proximity sensing. The capacitive sensor layer may be employed for complex user inputs, including device navigation or scrolling through large lists or menus. Further, the capacitive sensor layer may be used for proximity sensing to determine when the device is about to be touched. Such sensing may be employed to wake the device from an idle mode. Additionally, this sensing may be used to reduce power consumption, perhaps by putting a high resolution display in a power saving mode when the device is being used as a telephone and is being held to the user's head.

[0046] In one embodiment, the invention includes a portable electronic device, wherein the user interface includes both the capacitive sensor layer, acting as a capacitive touch sensor, and a resistive switch layer, acting as a force touch sensor, to detect key actuation. These sensor layers are coupled to the optical shutter, thereby forming the dynamic keypad.

[0047] Turning now to FIG. **1**, illustrated therein is portable electronic device **100** comprising a pixilated display device, one embodiment of which is a high resolution display **101**, and a segmented display device, one embodiment of which is a low resolution display **102**. The segmented display device is configured as an optical shutter to present a mode-based dynamic keypad **103** to a user. In addition to the pixilated display device and the segmented display device, the exemplary embodiment shown in FIG. **1** also includes a navigation device **104**, which may be continually accessible to the user. Alternatively, the navigation device may be selectively hidden and revealed by the low resolution display. The navigation device **104** is disposed—in the embodiment of FIG. **1**.—in the keypad region **106** of the device **100**. This geometric location allows the navigation device **104** to be large and easily accessible. The navigation device **104** is used, among other things, for navigating among different modes of the device **100**.

[0048] The navigation device **104**, in one embodiment, comprises a scroll device, which in the exemplary embodiment is a rounded—or sometimes circular or semi-circular—scroll wheel device. Devices other than a wheel, including strips and other shaped surfaces may also be employed. The scroll wheel may be selectively actuated to allow a user to scroll through long lists. By way of example, where the device **100** includes a music player, a user may be able to slide a finger about the scroll wheel to navigate through the various songs. Similarly, the user may be able to navigate through the various modes of the device using the scroll wheel.

[0049] The pixilated display device, shown in FIG. **1** as a high-resolution display **101**, comprises a liquid crystal display (LCD) configured to present device information to the user. The term "pixilated display device" is used herein to refer to a device that can present text and images to a user by altering a large number of pixels which, when viewed collectively by a user, form the presented text or image. One embodiment of a pixilated display device is a high resolution display device. The term "high resolution" is used herein to mean a display suitable for the presentation of text, information, and graphics on a mobile device with sufficient granularity as to be easily switched between graphics or text. For example, the high-resolution display would be one suitable for presenting an image in the Joint Photographics Expert Group (JPG) format to the user. Such displays generally are configured to turn on and off individual pixels by way of a display driver for the presentation of high-resolution information. Examples include a 256 pixel by 128 pixel reflective or backlit LCD. Such display devices are manufactured by Samsung and Sony.

[0050] The front surface **105** of the device **100** forms the overall user interface. In the keypad region **106**, the optical shutter (described in more detail below) provides a dynamic user input interface. This dynamic user interface is configured to present different indicators, which may appear as keys or actuation targets, across the user interface in the keypad region **106**.

[0051] Turning now to FIG. **2**, illustrated therein is an exploded view of a dynamic user interface **200** for a portable electronic device (**100**) in accordance with one embodiment of the invention. The user interface **200** includes a dynamic keypad region **106** and a display region **201** atop the high-resolution display **209**. The user interface **200** is made from several layers, each layer implementing a different function. While several layers are shown, it will be clear to those of ordinary skill in the art having the benefit of this disclosure that each and every layer may not be required for a specific application. By way of example, a backlight (provided by the electroluminescent layer described below) may not be needed for all devices. The structure of FIG. **2** is exemplary.

[0052] The user interface **200** of FIG. **2** includes the following components: a cover layer **202**; a capacitive sensor **203**; a segmented optical shutter **204**; an electroluminescent device **205**, a resistive switch layer **206**; a substrate layer **207**; and a tactile feedback layer **208**. Additionally, a high-resolution display **209** and filler materials **210** may be included to complete the assembly. While the layers are shown individually, it will be clear to those of ordinary skill in the art having the benefit of this disclosure that some of the various layers may be combined together. For instance, the cover layer **202** and capacitive sensor **203** may be integrated together to form a single layer. Similarly, the tactile feedback layer **208** may be integrated into the cover layer **202**, and so forth.

[0053] Starting from the top with the cover layer **202**, a thin film sheet serves as a unitary fascia member for the device (**100**). A "fascia" is a covering or housing, which may or may not be detachable, for an electronic device like a mobile telephone. While the drawings herein employ a mobile telephone as an exemplary electronic device for discussion, it will be clear to those of ordinary skill in the art having the benefit of this disclosure that the invention is not so limited. The fascia of the present invention could be used for any electronic device having a display and a keypad.

[0054] The cover layer **202**, in one exemplary embodiment, is a thin, flexible membrane. Suitable materials for manufacturing the thin, flexible membrane include clear or translucent plastic film, such as 0.4 millimeter, clear polycarbonate film. In another embodiment, the cover layer **202** is manufactured from a thin sheet of reinforced glass. The cover layer, being continuous and without holes or other apertures or perforations, is well suited to serve as a continuous fascia for the