

pads described herein. For example, keypads consistent with the principles of the embodiments may be used on desktop communication devices, household appliances, such as microwave ovens and/or appliance remote controls, automobile radio faceplates, industrial devices, such as testing equipment, etc.

**[0031]** FIG. 1 is a diagram of an exemplary implementation of a mobile terminal consistent with the principles of the invention. Mobile terminal **100** (hereinafter terminal **100**) may be a mobile communication device. As used herein, a “mobile communication device” and/or “mobile terminal” may include a radiotelephone; a personal communications system (PCS) terminal that may combine a cellular radiotelephone with data processing, a facsimile, and data communications capabilities; a personal digital assistant (PDA) that can include a radiotelephone, pager, Internet/intranet access, web browser, organizer, calendar, and/or global positioning system (GPS) receiver; and a laptop and/or palmtop receiver or other appliance that includes a radiotelephone transceiver.

**[0032]** Terminal **100** may include housing **101**, keypad area **110** containing keys **112A-L**, control keys **120**, speaker **130**, display **140**, and microphones **150** and **150A**. Housing **101** may include a structure configured to hold devices and components used in terminal **100**. For example, housing **101** may be formed from plastic, metal, or composite and may be configured to support keypad area **110**, control keys **120**, speaker **130**, display **140** and microphones **150** and/or **150A**.

**[0033]** Keypad area **110** may include devices and/or logic that can be used to display images to a user of terminal **100** and to receive user inputs in association with the displayed images. For example, a number of keys **112A-L** (collectively keys **112**) may be displayed via keypad area **110**. Implementations of keypad area **110** may be configured to receive a user input when the user interacts with keys **112**. For example, the user may provide an input to keypad area **110** directly, such as via the user’s finger, or via other devices, such as a stylus. User inputs received via keypad area **110** may be processed by components or devices operating in terminal **100**.

**[0034]** In one implementation, keypad area **110** may be covered by a single plate of glass with characters associated with keys **112** back-printed on the glass cover. Implementations of keys **112** may have key information associated therewith, such as numbers, letters, symbols, etc. A user may interact with keys **112** to input information into terminal **100**. For example, a user may operate keys **112** to enter digits, commands, and/or text, into terminal **100**. In another embodiment, keypad area **110** may be configured as an LCD display, where information associated with each of keys **112** may be displayed via the LCD display.

**[0035]** Control keys **120** may include buttons that permit a user to interact with terminal **100** to cause terminal **100** to perform an action, such as to display a text message via display **140**, raise or lower a volume setting for speaker **130**, etc.

**[0036]** Speaker **130** may include a device that provides audible information to a user of terminal **100**. Speaker **130** may be located in an upper portion of terminal **100** and may function as an ear piece when a user is engaged in a communication session using terminal **100**. Speaker **130** may also function as an output device for music and/or audio information associated with games and/or video images played on terminal **100**.

**[0037]** Display **140** may include a device that provides visual information to a user. For example, display **140** may

provide information regarding information entered via keys **112**, incoming or outgoing calls, text messages, games, phone books, the current date/time, volume settings, etc., to a user of terminal **100**. Implementations of display **140** may be implemented as black and white or color displays, such as liquid crystal displays (LCDs).

**[0038]** Microphones **150** and/or **150A** may, each, include a device that converts speech or other acoustic signals into electrical signals for use by terminal **100**. Microphone **150** may be located proximate to a lower side of terminal **100** and may be configured to convert spoken words or phrases into electrical signals for use by terminal **100**. Microphone **150A** may be located proximate to speaker **130** and may be configured to receive acoustic signals proximate to a user’s ear while the user is engaged in a communications session using terminal **100**. For example, microphone **150A** may be configured to receive background noise as an input signal for performing background noise cancellation using processing logic in terminal **100**.

**[0039]** FIG. 2 illustrates an exemplary functional diagram of mobile terminal **100** consistent with the principles described herein. As shown in FIG. 2, terminal **100** may include processing logic **210**, storage **220**, user interface logic **230**, keypad logic **240**, input/output (I/O) logic **250**, communication interface **260**, antenna assembly **270**, and power supply **280**.

**[0040]** Processing logic **210** may include a processor, microprocessor, an application specific integrated circuit (ASIC), field programmable gate array (FPGA), or the like. Processing logic **210** may include data structures or software programs to control operation of terminal **100** and its components. Implementations of terminal **100** may use an individual processing logic component or multiple processing logic components, such as processing logic components operating in parallel. Storage **220** may include a random access memory (RAM), a read only memory (ROM), a magnetic or optical disk and its corresponding drive, and/or another type of memory to store data and instructions that may be used by processing logic **210**.

**[0041]** User interface logic **230** may include mechanisms, such as hardware and/or software, for inputting information to terminal **100** and/or for outputting information from terminal **100**. In one implementation, user interface logic **230** may include keypad logic **240** and input/output logic **250**.

**[0042]** Keypad logic **240** may include mechanisms, such as hardware and/or software, used to control the appearance of keypad area **110** and to receive user inputs via keypad area **110**. For example, keypad logic **240** may change displayed information associated with keys **112** using an LCD display. In some implementations, keypad logic **240** may be application controlled and may automatically re-configure the appearance of keypad area **110** based on an application being launched by the use of terminal **100**, the execution of a function associated with a particular application/device included in terminal **100** or some other application or function specific event. Keypad logic **240** is described in greater detail below with respect to FIG. 3.

**[0043]** Input/output logic **250** may include hardware or software to accept user inputs to make information available to a user of terminal **100**. Examples of input and/or output mechanisms associated with input/output logic **250** may include a speaker (e.g., speaker **130**) to receive electrical signals and output audio signals, a microphone (e.g., microphone **150** or **150A**) to receive audio signals and output