DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. **3** shows the GUI **50** of a remote control unit incorporating the subject invention. The GUI includes three regions, an information section **52** which includes information for the selected device, a device selection section **54** for displaying control icons for selecting the desired device, e.g., TV **58** and LD (laser disc) **60**, and a control function section **56** for displaying control icons for controlling the desired device, in this case, numbers 1–0 icons **61–70**.

FIG. **4** shows an edge view of the GUI **50** where it will be apparent that surface of the GUI in the vicinity of the icons **62**, **64**, **66**, **68** and **70** is raised. It should be understood that while FIG. **4** only shows some of the icons being raised, the surface of the GUI in the vicinity of other icons, including **58**, **60**, **61**, **63**, **65**, **67** and **69**, may also be raised.

Once a user of the remote control unit **50** is familiar with the layout of the control icons, the user is then able to select the appropriate icon by merely sliding his/her finger across the surface of the GUI thereby detecting the raised areas and then selecting the desired control icon represented by the appropriate raised area.

While this embodiment of the invention allows for a user to discern the various control function by touch, when the raised areas are formed in the surface of the GUI, the layout of the control icons on the display may not be changed.

FIG. **5** shows a second embodiment of the invention in which the touch sensitive display is a flexible display. U.S. Pat. No. 6,368,730 discloses an electroluminescent device which is flexible and may be used for the display in the GUI **50'**. The raised portions **62'**, **64'**, **66'**, **68'** and **70** are formed by actuators **72.0–72.9** arranged beneath the flexible display **50'**. Each of the actuators **72.0–72.9** includes a pusher rod **74.1–74.9** which, upon activation of the respective actuator, presses on the under-surface of the flexible display **50'**. Hence, in order to accommodate the icons forming the numbers "2", "4", "6", "8" and "0", as shown in the GUI **50** of FIG. **3**, the actuators **72.1**, **72.3**, **72.5**, **72.7** and **72.9** are activated, while the actuators **72.2**, **72.4**, **72.6** and **72.8** are deactivated.

In order to accommodate various layouts of control icons on the flexible display **50'**, as shown in FIG. **6**, the actuators may be arranged in an actuator array **80** forming a matrix having a plurality of rows of actuators and columns of actuators. The rows of actuators in the actuator array **80** are addressed by a row interface **82**, while the columns of actuators in the actuator array **80** are addressed by a column interface **84**. An actuator controller **86** is then connected to the interfaces **82** and **84** for activating selected ones of the actuators corresponding to the location of the control icons as controlled by a display controller **88**. With such an arrangement, small control icons may be raised using a single actuator, while larger control icons may be raised using multiple adjacent actuators. In fact, if the actuators are sufficiently small, a plural number of actuators may be used to form a raised distinguishable shape for the icon (e.g., an arrow), or may be used to form a type of rocker switch.

While the invention so far has been described in the sense of forming raised areas on the surface of the display, it should be understood that, instead, depressions in the surface of the display by alternatively be formed. To this end, the pusher rods **74.1–74.9** of the actuators **72.1–72.9** are attached to the under-surface of the display **50'**. Depending on the control signal applied to each actuator **72.1–72.9**, the respective pusher rod **74.1–74.9** may press upwardly on the display (e.g., **74.1**), remain in a neutral position (e.g., **74.2**), or may pull down on the display.

While the invention contemplates touch sensitivity on the part of the display, it should be noted that this feature has not been disclosed for the electroluminescent device of U.S. Pat. No. 6,368,730. Hence, in order to provide for such, the actuator controller **86** may also detect pressure on, for example, the activated actuators, this pressure resulting from a user pressing the desired icon (note the two-way arrows connecting the interfaces **82** and **84** to the actuator array **80**, and the two-way arrows connecting the interfaces **82** and **84** to the actuator controller **86**).

It should be noted that while the above description relates to the GUI layout as shown in FIG. **3**, and in particular, to the bottom row of the GUI therein, the subject invention is applicable to other layouts. For example, the subject invention may be used to impart touch detectability to the display of the remote control unit shown in FIGS. **1** and **2**. In particular, the small icons, e.g., **32**, **34** and **36**, may be accommodated by activating single actuators in the actuator array, while larger icons, e.g., **38**, may be accommodated by activating two or more actuators.

Numerous alterations and modifications of the structure herein disclosed will present themselves to those skilled in the art. However, it is to be understood that the above described embodiment is for purposes of illustration only and not to be construed as a limitation of the invention. All such modifications which do not depart from the spirit of the invention are intended to be included within the scope of the appended claims.

What is claimed is:

1. A control panel for an electrical/electronic device, said control panel comprising:

a graphic user interface (GUI) having a display for displaying various control icons representing various control functions for controlling the electrical/electronic device;

means for rendering touch sensitivity to said display enabling a user of the control panel to select the desired control function by touching the respective control icon; and

means for rendering touch detectability to the control icons on the display enabling a user to differentiate the various control icons by feel.

2. The control panel as claimed in claim **1**, wherein said means for rendering touch detectability comprises changing a surface quality of said display at said control icons such that said control icons may be distinguished, by touch, from surrounding areas of the display.

3. The control panel as claimed in claim **2**, wherein said surface quality is an increased height of the display in the areas of the control icons.

4. The control panel as claimed in claim **2**, wherein said surface quality is a lowering of the height of the display in the areas of the control icons.

5. The control panel as claimed in claim **2**, wherein said display is flexible, and wherein said means for rendering touch detectability comprises an array of actuators positioned beneath said flexible display, and control means for activating select ones of said actuators to locally deform the flexible display in the areas of the control icons.

6. The control panel as claimed in claim **5**, wherein said means for rendering touch sensitivity comprises:

means for detecting pressure on various ones of said select ones of said actuators resulting from a user pressing a corresponding control icon; and

means for identifying the selected control function.

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