

[0010] The user interface may further be operable to output an output signal indicative of the selected one of the sensing areas.

[0011] The user interface may be based on capacitive effects, i.e. such that the coupling between a pointing object and respective ones of the sensing areas is a capacitive coupling. The user interface may alternatively be based on other coupling mechanisms, for example magnetic coupling.

[0012] By taking account of the positions of sensing areas within the sensing region as well as their associated output signals, the controller is able to more reliably determine which one of a plurality of sensing areas (keys) in a sensing region (keypad/keyboard) in simultaneous detection is intended by a user for selection. This is because the controller may be configured to take account of which keys in a keypad are more likely to be wrongly selected as being intended by a user by virtue of their positions, in particular with respect to the orientation of the pointing object. For example, in a keypad in which a pointing object normally passes over a given key or keys when a user selects a desired key, the controller can in effect suppress signals from the non-user selected keys over which the pointing object passes based on their positions.

[0013] For example, each sensing area may be associated with a predefined priority ranking according to its position within the sensing region, and the controller may be operable to preferentially select sensing areas according to their ranking. Thus for a keypad comprising keys arranged in rows and columns, keys in a top row (relative to the orientation of a pointing object) may be assigned a higher rank than keys in a lower row, and hence be preferentially selected over them.

[0014] The ranking scheme may be applied such that the highest ranked key in a plurality of keys deemed to be in simultaneous activation based on their output signals, is taken to be the user selected key. In the event that multiple activated keys have the same ranking, and this ranking is the highest ranking of all activated keys, conventional techniques may be used to determine which key to select. For example, for the keys having the same (and highest) priority, the key having the biggest output signal, the key being first to be activated, or a random one of the keys, may be selected. Alternatively, a null response may be reported (i.e. no key selected), thus forcing the user to re-adjust their pointing.

[0015] Alternatively, the ranking scheme may be such that the controller is arranged to determine the selected one of the sensing areas by applying a weighting to the output signals according to the positions of the corresponding sensing areas in the sensing region. The weighting may be applied by scaling the output signals by a scale factor associated with the corresponding sensing areas so that sensing areas associated with higher scale factors are preferentially selected over sensing areas having lower scale factors. This has the advantage of allowing an activated key having a lower ranking than another activated key to still be selected if its output signal is sufficiently high, that is to say, a sufficiently high output signal can overcome a lower ranking. This can help, for example, if there is a concern that complete "block out" of the lowest ranked key(s) might otherwise occur.

[0016] The controller may be operable to take account of the positions of the sensing areas within the sensing region

when determining the selected one of the sensing areas by preferentially selecting sensing areas having positions nearer to predefined parts of the sensing region over sensing areas having positions farther from the predefined parts of the sensing region. For example, the predefined parts of the sensing region may be parts that are furthest from the user along a direction in which a pointing object approaches the screen. This in effect suppresses the sensing areas in parts of the sensing region that the pointing object passes over when a user wished to select a sensing area in one of the predefined parts of the sensing region (e.g. a top row, or a top corner) of the sensing region.

[0017] The user interface may be such that in normal use a pointing object approaches the sensing region from a normal approach direction (which will likely also correspond with a direction of extent of the pointing object), and sensing areas are preferentially selected according to their positions along the normal approach direction. Furthermore, the user interface may be such that in normal use the pointing object approaches the sensing region from one of a plurality of normal approach directions, and sensing areas are preferentially selected according to their positions along the more than one normal approach directions. Thus the controller can be operable to determine a user-selected key taking particular account of how the user interface is normally oriented with respect to a user.

[0018] The sensing areas may be arranged in rows and columns, and the controller may take account of the positions of the sensing areas when determining a selected sensing area by preferentially selecting sensing areas in one row over sensing areas in another row. Furthermore, or alternatively, sensing areas in one column may be preferentially selected over sensing areas in another column.

[0019] The touch-sensitive user interface may further comprise a further plurality of sensing areas arranged within a further sensing region, each further sensing area having a position within the further sensing region, wherein the measurement circuit is coupled to the further sensing areas and operable to generate further output signals responsive to a coupling (e.g. a capacitive or magnetic coupling) between the pointing object and respective ones of the further sensing areas; and wherein the controller is further operable to receive the further output signals from the measurement circuit and to determine a selected one of the further sensing areas by taking account of both the further output signals associated with the further sensing areas and the positions of the further sensing areas within the further sensing region.

[0020] Where the touch-sensitive user interface comprises such a further plurality of sensing areas, the controller may be further operable to determine a selected one of the selected one of the first-mentioned sensing areas and the selected one of the further sensing areas based on the output signals associated with these selected sensing areas.

[0021] According to a second aspect of the invention there is provided an apparatus/device comprising a touch-sensitive user interface according to the first aspect of the invention. The apparatus/device, may, for example, be a cellular telephone, an oven, a grill, a washing machine, a tumble-dryer, a dish-washer, a microwave oven, a food blender, a bread maker, a drinks machine, a computer, an item of home audiovisual equipment, a portable media player, a PDA, and so on.