substrate **110**. It will be appreciated that at least a portion of electrodes **130** may also be disposed onto the auxiliary layer.

[0057] **FIG. 2** shows a schematic three dimensional view of a touch sensor **100** according to one aspect of the invention. For ease of illustration and without loss of generality some of the layers and components shown in **FIG. 1** are not reproduced in **FIG. 2**. According to one aspect of the present invention, the touch sensor **100** can be capable of detecting two or more distinct touch locations within the touch sensitive area **195**. For example, touch sensor **100** can be capable of detecting distinct touch locations A, B, C, and X in the touch sensitive area **195**. For ease of illustration and without loss of generality, **FIG. 2** shows a linearizing electrode pattern **140** having a single row of electrically conductive segments **141** along the perimeter of the touch sensitive area **195**, although the linearizing electrode pattern **140** can typically include several rows of such conductive segments. According to the exemplary embodiment of **FIG. 2**, electrodes **130** are positioned near the four corners of the touch sensitive area **195** and make direct electrical contact to the linearization pattern **140**. In general, electrodes **130** may be positioned at multiple locations along the perimeter of the touch sensitive area.

[0058] A conductive touch implement **101**, applied to the touch sensor at location X, generates a signal induced by capacitive coupling between touch implement **101** and conductive film **120**. According to one aspect of the present invention, the induced signal can be detected at a plurality of positions on the conductive film to determine the location X. For example, the induced signal can be detected at four locations **128**A, **128**B, **128**C, and **128**D as shown in **FIG. 2**. The detected signals can be electrically transmitted to electronics and controller **155** via electrodes **130** and electrically conductive leads **131**. The multiple detected signals can be used to detect the touch location X. For example, magnitudes of signals detected at locations **128**A, **128**B and **128**C, relative to the magnitude of the signal detected at location **128**D, can be used to determine the touch location X.

[0059] According to one aspect of the invention, conductive touch applicator **101** can be coupled to touch sensor **100**, for example, via controller **155**. The coupling means can include an electrical connection to, for example, controller **155** via, for example, electrically conductive means **161** as shown in **FIG. 1**. A direct electrical connection can help reduce background noise, thereby increasing the signal-to-noise ratio. An advantage of electrically connecting the touch applicator to the controller is that the thickness of glass layer **160** can be increased since the controller can be capable of detecting smaller touch induced signals. The electrically conductive means **161** can, for example, include electrically conductive wires.

[0060] **FIG. 3** illustrates a schematic side-view of a touch sensor **300** in accordance with one particular aspect of the invention. For ease of illustration and without loss of generality some of the layers and components shown in **FIG. 1** and **FIG. 2** are not reproduced in **FIG. 3**. Touch sensor **300** includes conductive electrodes **130** disposed onto the conductive film **120** and linearization pattern **140** disposed onto the bottom surface of glass layer **160**. As another example, conductive electrodes **130** can be disposed onto the bottom surface of glass layer **160** and linearization pattern **140** can be disposed onto conductive film **120**. Bonding layer **150** can electrically isolate linearization pattern **140** from electrodes **130** except at pre-determined locations where linearization pattern **140** and electrodes **130** are electrically connected through vias **310** formed in bonding layer **150**. Vias **310** can be filled with a conductive material **320** to electrically connect linearization pattern **140** to electrodes **130**. Such a stacked arrangement of linearization pattern **140** and electrodes **130** can reduce the touch panel border. This aspect of the present invention can be particularly useful in applications where it may be desirable to integrate a touch sensor with a small border display device.

[0061] Vias **310** can be formed in bonding layer **150** by punching, die cutting, laser ablation, knife cutting and chemical etching. Conductive material **320** can, for example, be a conductive paste, such as a silver conductive paste, a gold conductive paste, a palladium conductive paste or a carbon conductive paste.

[0062] **FIG. 4** illustrates a schematic cross-section of a display system **400** in accordance with one aspect of the present invention. Display system **400** includes a touch sensor **401** and a display **402**. Display **402** can be viewable through touch sensor **401**. Touch sensor **401** can be a touch sensor according to any embodiment of the present invention. Display **402** can include permanent or replaceable graphics (for example, pictures, maps, icons, and the like) as well as electronic displays such as liquid crystal displays (LCD), cathode ray tubes (CRT), plasma displays, electroluminescent displays, OLEDs, electrophoretic displays, and the like. It will be appreciated that although in **FIG. 4** display **402** and touch sensor **401** are shown as two separate components, the two can be integrated into a single unit. For example, touch sensor **401** can be laminated to display **402**. Alternatively, touch sensor **401** can be an integral part of display **402**.

[0063] **FIG. 6** illustrates a schematic cross-section of an exemplary touch display system where a touch sensor is integrated with a display device according to one particular aspect of the present invention. **FIG. 6** shows a display substrate **610**, an active display component **601**, and a capacitive touch sensor **620**. Touch sensor **620** can be a touch sensor according to any aspect of the present invention. Touch sensor **620** includes a conductive film **120** and a glass layer **160** where film **120** and layer **160** are previously described in reference to **FIG. 1**. Substrate **610** can also serve as a substrate for touch sensor **620**. Active component **601** can, for example, include all the components that may be used in a display system. For example, component **601** can include the active layers typically used in an OLED device including active organic layers, electrodes, insulting layers, polarizers and the like. It will be appreciated that glass layer **160** can effectively seal component **601** and, if desirable, conductive film **120**. Accordingly, glass layer **160** can protect component **601** against extraneous factors such as abrasion and environmental factors such as oxygen and moisture. As another example, component **601** can include the active layers and parts typically used in an LCD display including the liquid crystal cell, polarizers, retarders, backlight, color filters, and the like. Display component **601** may be viewable through touch sensor **620**. A touch input applied to the flexible glass layer **160** in a touch sensitive area capacitively couples with the conductive film **120**, thereby inducing a signal. The touch location may be determined by detecting the induced signal.