be positioned for viewing through the touch screen **710**. Graphics, characters, or other indicia can also be provided in front of touch screen **710**.

[**0040**] A Near Field Imaging touch sensor construction was made by the following procedure.

[**0041**] SiO_2 was sputter coated on a 7 mil (about 0.2 mm) sheet of PET to form a 250 Angstrom coating of the SiO_2 substantially covering the PET substrate. The PET substrate used was a standard PET film primed on one surface with a print treatment. The SiO_2 was coated on the non-print treated side. The SiO_2 coating had an index of refraction of about 1.46.

[**0042**] A removable, water soluble, patterning ink was screen printed on top of the SiO_2 in areas where the transparent conductor pattern was not specified, for example between areas specified for the pattern and in a border area.

[**0043**] ITO was sputter coated over both the SiO_2 and screen-printed water soluble ink at a thickness sufficient to achieve a 450 Ohm/square resistivity. ITO can be suitably sputter coated using metal or ceramic targets and over a wide range of temperature and processing conditions.

[**0044**] The patterning ink was removed with water, and the sample was dried, leaving a pattern of ITO bars as the transparent conductor pattern of sensing electrodes.

[**0045**] A silver conductive ink was screen printed on the ITO and SiO_2 and dried to thicknesses of about 0.3 to 0.6 mils (about 8 to 15 microns) to form conductive traces connecting to each of the ITO bars.

[**0046**] A solvent-based epoxy insulator ink was screen printed over the silver conductive ink and thermally cured, leaving vias in the epoxy for electrical connections to be made to an electrical tail. This printing step was repeated to produce two layers.

[**0047**] Silver conductive ink traces were screen printed over the printed insulator and dried to thicknesses of 0.3 to 0.6 mils (about 8 to 15 microns) to make connections through the vias.

[**0048**] A carbon conductive ink was screen printed and dried to a 0.3 to 0.6 mil thickness (about 8 to 15 microns) over the silver ink on the end of the tail to protect the traces from corrosion and abrasion.

[**0049**] A 1.42 mil (about 0.036 mm) PET film was coated with a 0.5 mil (about 13 microns) thick layer of an optical acrylic pressure sensitive adhesive and roll-to-roll laminated to the sample with the adhesive side down, leaving the electrical tail exposed.

[**0050**] The printed-treated side of the first PET film was sputter coated with ITO at a thickness sufficient to achieve a resistivity of about 150 Ohm/square. This ITO forms a shield layer for the touch sensor device.

[**0051**] Silver conductive ink was screen printed around the perimeter of the ITO shield layer and the electrical tail, and dried to a thickness of about 0.3 to 0.6 mils (about 8 to 15 microns mm) for electrical connection to the shield layer.

[**0052**] A solvent-based epoxy insulator ink was screen printed over the silver conductive ink on the shield layer and thermally cured.

[**0053**] Silver conductive ink was screen printed around the perimeter of the second, laminated PET film to form a top guard layer. The silver ink was dried to form a thickness of 0.3 to 0.6 mils (about 8 to 15 microns mm).

[**0054**] A solvent-based epoxy insulator ink was screen printed over the top guard layer and thermally cured.

[**0055**] A 7 mil (about 0.18 mm) thick acrylic hard coated PET film was laminated to a layered construction including an acrylic optical grade pressure sensitive adhesive (0.8 mil (0.02 mm) adhesive/0.92 mil (0.023 mm) PET/0.8 mil (0.02 mm) adhesive) and then laminated over the top guard layer of the construction.

[**0056**] An acrylic optical adhesive/PET/acrylic optical adhesive construction (0.8 mil (0.02 mm) adhesive/0.92 mil (0.023 mm) PET/0.8 mil (0.02 mm) adhesive) with a release liner was laminated to the back shield.

[**0057**] The top surface of the construction was masked with a polyethylene/adhesive mask material, and the construction was cut into sheets, which were then die cut into parts.

[**0058**] The die cut parts were laminated to glass backing panels.

[**0059**] The resulting parts had ITO bars that were very difficult to see either by reflected light or transmitted light, and the ITO bars were configured for connecting to controller electronics for sensing the position of conductive touch implements capacitively coupled to the ITO bars.

[**0060**] Optical modeling was used to compare the internal transmission of visible light for constructions of the present invention and otherwise identical constructions that did not include a lower index coating between a substrate and a transparent conductor. Each construction and its corresponding comparative construction was also compared to a similar control construction that did not include a transparent conductor layer. The difference between the transmission of each construction and the corresponding control construction indicates the relative level of distinguishability of areas covered by a transparent conductor pattern versus areas not covered by a transparent conductor pattern in the constructions in question. The following constructions were evaluated, the layers designated in order for each construction:

[**0061**] Construction 1:

[**0062**] 1.67 refractive index layer (to simulate a PET substrate)

[**0063**] 30 nm thick 1.46 refractive index layer (to simulate silicon oxide)

[**0064**] 20 nm thick 2.0 refractive index layer (to simulate ITO)

[**0065**] 30 nm thick 1.46 refractive index layer (to simulate silicon oxide)

[**0066**] 1.5 refractive index layer (to simulate an optical adhesive)

[**0067**] Comparative Construction C1 (Same as Construction 1 without Coating Between Substrate and ITO):

[**0068**] 1.67 refractive index layer (to simulate a PET substrate)

[**0069**] 20 nm thick 2.0 refractive index layer (to simulate ITO)