Optical Waveguide Touch Screen
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Initial Bidding Guidance: Low 6 Figures

An object of the present invention is to provide a touch screen panel including an optical grid with optical waveguides on a display device, which is capable of sensing a touched portion and a pressure applied to the touched portion through the use of information showing a lowered intensity of output light when touching the optical grid or applying a predetermined pressure to the optical grid.

To achieve these objects and other advantages and in accordance with the purpose of the invention, as embodied and broadly described herein, a touch screen panel comprises a core including a plurality of horizontal and vertical lines provided in a grid shape, wherein the core has a first refractive index, and an upper surface of the core is exposed to the atmosphere; an intermediate clad formed between each of gaps included in the core, wherein the intermediate clad has a second refractive index which is lower than the first refractive index, and a height of the intermediate clad is identical to a height of the core; an optical source configured to apply an optical signal to an input end of each of the plurality of horizontal and vertical lines; and a plurality of receivers configured to sense an intensity of the optical signal passing through an output end of each of the plurality of horizontal and vertical lines, the optical signal applied by the optical source.

In another aspect of the present invention, a touch screen panel comprises a core including a plurality of horizontal and vertical lines provided in a grid shape, wherein the core has a first refractive index; an intermediate clad formed between each of gaps included in the core, wherein the intermediate clad has a second refractive index which is lower than the first refractive index, and a height of the intermediate clad is identical to a height of the core; an upper clad formed on the core and the intermediate clad so as to cover the core and the intermediate clad, wherein the upper clad has a fourth refractive index which is lower than the first refractive index; an optical source configured to apply an optical signal to an input end of each of the plurality of horizontal and vertical lines; and a plurality of receivers configured to sense an intensity of the optical signal passing through an output end of each of the plurality of horizontal and vertical lines, the optical signal applied by the optical source.

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Representative Claim: US 8,248,388 – Claim #1
A touch screen panel comprising: a core including a plurality of horizontal and vertical lines provided in a grid shape, wherein the core has a first refractive index, and an upper surface of the core is exposed to the atmosphere; an intermediate clad formed between each of gaps included in the core, wherein the intermediate clad has a second refractive index which is lower than the first refractive index, and a height of the intermediate clad is identical to a height of the core; an optical source configured to apply an optical signal to an input end of each of the plurality of horizontal and vertical lines; and a plurality of receivers configured to sense an intensity of the optical signal passing through an output end of each of the plurality of horizontal and vertical lines, the optical signal applied by the optical source, wherein a width of the horizontal or vertical lines is increased by a fixed rate at a direction from the input end to the output end whenever passing through the intersection point between the horizontal and vertical lines.

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