

become electrically connected to each other at the touch point. Then, a voltage value of the contact point is output via the transparent electrode, the metal electrode **26a** and the signal line **10b** of the lower substrate **26**, so that Y-axis coordinates are sensed. In addition, another voltage value of the contact point is output via the transparent electrode, the metal electrode **27a** and the signal line **30a** of the upper substrate **27**, so that X-axis coordinates are sensed. Thus, the X-Y coordinates of the contact point are sensed.

[0041] When a user touches a point of the touch panel with a finger in a dry weather, the static electricity may be discharged from the user. Although the static electricity may be discharged, the static electricity discharged will lead to ground via conductive pattern **32** through the top case **29** or the system case (not shown in the drawings), thereby preventing noise from being generated. As a result, it is possible to prevent incorrect operation of the touch panel due to a static electricity discharge.

[0042] In the alternative, a capacitive type touch panel may be applied to the touch panel integrated with the LCD device instead of the resistive type touch panel. FIG. 9 is a cross-sectional view illustrating a capacitive type touch panel integrated with an LCD device according to a second embodiment of the present invention. The capacitive type touch panel integrated with the LCD device according to the second embodiment of the present invention includes an LCD panel **21**, upper and lower polarizing plates **22** and **23**, a backlight **24**, a capacitive type touch panel **35**, a conductive pattern **32**, and a case top **29**. The upper and lower substrates are bonded to each other with a fixed gap therebetween. A liquid crystal is injected into the gap between the upper and lower substrates, thereby forming a LCD panel **21** for displaying a picture image according to external driving and picture signals.

[0043] As shown in FIG. 9, an upper polarizing plate **22** is formed above the LCD panel **21** and a lower polarizing plate **23** is formed under the LCD panel **21** such that light passing through the plates is polarized. A backlight **24** uniformly irradiates light upon the rear of the LCD panel **21**, and the capacitive type touch panel **35** is formed on an upper surface of the LCD panel for detecting a touched point by outputting a different voltage according to the touched point. Then, the conductive pattern **32** is formed on the circumference of an upper surface of the capacitive type touch panel **35**, and the case top **29** is grounded on the conductive pattern **32**, and supports the backlight **24**, the LCD panel **21** and the capacitive type touch panel **35**.

[0044] In the capacitive type touch panel **35**, transparent electrodes are deposited on rectangular-shaped transparent substrates of PET film, and metal electrodes are formed on the transparent electrode corresponding to each corner of the substrate to form a uniform electric field. If a glass substrate is used instead of the substrate of PET film, a system case is grounded on the conductive pattern **32**.

[0045] An operation of the capacitive type touch panel integrated with the LCD device according to the second embodiment of the present invention will be described as follows.

[0046] As mentioned above, a voltage is applied to generate a uniform electric field in the transparent electrode (not shown) of the capacitive type touch panel **35**. When a point

of a display surface is touched with an input device, such as finger or conductive stylus, a voltage drop is created. Then, the voltage drop is detected with a current sensor, and then calculated to sense X-Y coordinates.

[0047] Even though static electricity is discharged when touching the capacitive type touch panel **35** with a finger or stylus, the static electricity is conducted to ground via the conductive pattern through the case top **29** or the system case (not shown). Thus, noise due to a static electricity discharge is prevented from being applied to the current sensor. As a result, it is possible to prevent incorrect operation of the touch panel due to the discharge of static electricity.

[0048] In addition, the touch panel according to the present invention may be applied to CRT, PDP and EL display devices. For example, when the touch panel is formed on a CRT, PDP and EL display devices, the conductive pattern is formed at the periphery of the upper surface of the touch panel. The conductive pattern is connected to the metal material, such as the case, thereby preventing noise from being generated by the discharge of static electricity.

[0049] As mentioned above, the touch panel integrated with the LCD device according to embodiments of the present invention has the following advantages. First, the conductive pattern is formed at the periphery of the touch panel, and the conductive pattern is connected to the case top or the system case. That is, even though the static electricity is discharged when the user touches a portion of the touch panel with an input device, the static electricity is discharged directly to ground via the top case or the system case, thereby preventing noise from being generated in the touch panel. As a result, it is possible to prevent the incorrect operation of the touch panel.

[0050] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention. Thus, it is intended that the present invention covers the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A touch panel for a display device comprising:
  - a display device;
  - a touch panel on the display device;
  - a conductive pattern on an upper surface of the touch panel; and
  - a conductive member connected to the conductive pattern, and supporting the display device and the touch panel.
2. The touch panel of claim 1, wherein the display device is a liquid crystal display (LCD) device.
3. The touch panel of claim 2, wherein the LCD device comprising:
  - an LCD panel displaying a picture image according to external driving and picture signals, the LCD panel having upper and lower substrates bonded to each other with a fixed gap in between, and a liquid crystal layer in the gap between the upper and lower substrates;
  - an the upper polarizing plate on the LCD panel;