and the second group **122** must be disposed in a predetermined pattern over substantially the entire area of the overlapping part between the substrate and the display area of the display panel **110**.

[**0035**] When a finger touches the concave **100***a* on the back surface of the PDA **100**, the capacitance between adjacent electrodes of the first group **121** and the second group **122** varies due to capacitive coupling between the finger touching the concave **100***a* and the adjacent electrodes of the first group **121** and the second group **122**. A variation in the capacitance is electrically measured to detect a touch and the touch position is also found. The detection process is described below. In addition, when the finger approaches the casing, the position of the finger can also be found based on a measurement of the variation in capacitance. As used herein, "approach" means a state in which the finger approaches the vicinity of the casing within, for example, several millimeters from the back surface of the casing.

[**0036**] A particular signal output from a signal source **11** is supplied to the first group **121** in the time-sharing manner via a selector switch **12**. The selector switch **12** permits sequential signal supply to each electrode of the first group **121** from the signal source **11** at predetermined short intervals in a time-sharing manner. A selector switch **13** switches in synchronization with the selector switch **12** to permit sequential signal supply from each electrode of the second group **122** to an amplifier **14** in a time-sharing manner. The selector switches **12** and **13** switch over with the same period. For example, when the selector switch **12** switches so that a signal produced from the signal source **11** is fed into an electrode of the first group **121**, the selector switch **13** switches to select one electrode of the second group **122**, which electrode is adjacent to the selected one of the first group **121**, and allows a signal from the selected electrode of the second group **122** to be fed into the amplifier **14**.

[**0037**] The signal source **11** produces a predetermined signal, such as an alternating current signal having a specific frequency. The signal produced from the signal source **11** is sequentially fed via the selector switch **12** to each electrode of the first group **121**. An electrode of the first group **121** (transmission electrode) sends a signal to the corresponding electrode of the second group **122** (reception electrode). The signal is fed into the amplifier **14** where it is amplified and then fed into the synchronous detector **15**. In the synchronous detector **15**, a signal component contained in the signal from the amplifier **14** synchronized with the frequency of an output signal from the signal source **11** is detected. The detected signal component is fed into a low-pass filter **16** to be converted into a direct current signal. This direct current signal is fed into an analog-to-digital converter **17** where the signal strength of the direct current signal is converted into binary data.

[**0038**] The data produced at the analog-to-digital converter **17** is fed into a controller **18** that controls input/output devices. The controller **18** determines, based on the fed data, the operation state of the back-surface touch sensor **120** to issue a corresponding command from a terminal **19**. In the present embodiment, the controller **18** determines, based on the data supplied via the analog-to-digital converter **17**, the variation in the signal strength which indicates whether the finger touches or the finger approaches the back-surface touch sensor **120** disposed on the back surface of the casing.

[**0039**] In addition, the controller **18** produces a display control signal to control characters and graphics shown on the display panel **110**, which is driven by a display driver **20**. For example, when the controller **18** determines a touch on or an approach to the back-surface touch sensor **120**, the controller **18** causes the display panel **110** to show a mark representing a "touch" mark or an "approach" mark directly above the determined back-surface sensor **120**. The marks representing respective "touch" and "approach" may be displayed in a distinguishable manner, such as by using different colors for the respective marks.

[**0040**] Next, there will be described with reference to **FIGS. 4A and 4B** how the input device of the present invention can detect a touch or an approach of the finger. **FIG. 4A** shows a state in which one finger touches a particular part of the casing directly below a part provided with the electrodes of the first group **121** and the second group **122**. Positions T1, T2, T3, T4, . . . represent touch positions. In **FIG. 4**A, the finger touches substantially the central position between the positions T3 and T4. When this position is thus touched, the intensity of a signal that is detected by the synchronous detector **15** via the electrode corresponding to the angle and position of a touch is less than those of the signals detected via the other electrodes.

[**0041**] For example, it is assumed that the positions T1, T2, T3, T4 . . . correspond to the position of each electrode of the first group **121** disposed at predetermined intervals. When a signal is fed from the signal source **11** to one electrode of the first group **121** at the position T1, a signal from an electrode of the second group **122** that is adjacent to the electrode of the first group **121** at the position T1 is fed into the synchronous detector **15** where it is demodulated. The received signal intensity of the demodulated signal is the intensity of the signal at the position T1. The intensity of the signal is measured over the region where all electrodes of the first group **121** and the second group **122** are disposed, and the controller **18** finds the signal intensity between adjacent electrodes of the first group **121** and the second group **122** using interpolation. Thus, a signal intensity having a normal signal-reception intensity characteristic S0 (shown in **FIG. 4A**) indicating substantially uniform signal intensity over the region can be obtained when the finger or the like is not in the proximity of the concave **100***a* of the casing.

[**0042**] On the other hand, when the finger approaches substantially a central position between, for example, the positions T3 and T4, the signal reception intensity of the position being approached by the finger (hereinafter, referred to as "approach position") is lower than those of the other positions in the region, giving a characteristic S1 shown in **FIG. 4A**. When the approaching finger touches the front surface of the display panel **101**, the signal reception intensity of the touch position decreases further than those of the other positions in the region, giving a characteristic S2 shown in **FIG. 4A**.

[**0043**] A decrease in the signal reception intensity at the touch position occurs due to capacitive coupling between the finger and the corresponding electrodes of the first group **121** and second group **122**, giving the largest decrease at the touch position. The controller **18** determines the decrease in the signal reception intensity to compute the touch position the approach position. In order to be able to distinguish