

[0065] The signal IV that is induced to the linear electrode 21X1 of the input device 2 is inputted to the inverter buffer 42X1. Then, a voltage of the output signal Vout is changed over either the high level VH or the low level VL, depending on whether or not the voltage of the signal IV lies over a threshold voltage (e.g. in case of the CMOS gate "14049", the threshold voltage is substantially half of the power supply voltage). In other words, when the inducing voltage IV being an input signal lies over the threshold voltage VT, a voltage of the output signal Vout becomes a voltage of the low level VL. On the other hand, when the inducing voltage IV being an input signal does not reach the threshold voltage VT, a voltage of the output signal Vout becomes the high level VH.

[0066] It is noted that because waveforms of operation of the inverter buffers 42X2 to 42X4 and 42Y1 to 42y4 are substantially as same as those of operation of the inverter buffer 42X1 shown in FIGS. 7A and 7B, the explanation of these waveforms are omitted.

[0067] Following will be explained about the operation. When the human body 1 does not touch the input device 2, any inducing voltage is generated in the linear electrodes 21Xi and 21Yi. In this case, an input portion of the inverter buffer 42X1 is grounded by way of the resistor 43X1, so that the inducing voltage IV of the inverter buffer 42X1 does not reach the threshold voltage VT (refer to FIG. 7A) and a voltage of the output signal Vout is a voltage of the high level VH (refer to FIG. 7B)1. As a result, the LED 4X1 is not illuminated.

[0068] When the human body 1 touches e.g. the linear electrode 21X1 of the linear electrodes array of the input device 2, the inducing voltage IV (refer to FIG. 7A) owing to a commercial alternating current power supply under a predetermined frequency is generated at the linear electrode 21X1 by way of the human body 1. The frequency of the commercial alternating current power supply depends on an area where the power supply is available. When the inducing voltage IV is generated at the linear electrode 21X1, the inducing voltage IV is supplied to the inverter buffer 42X1 by way of the input terminal 41X1. When a value of the inducing voltage IV lies over the threshold voltage VT, the output signal Vout of the inverter buffer 42X1 becomes at the low level VL. Then, the LED 44X1 is illuminated.

[0069] It is noted that because the operation of the detecting unit that detects inducing voltages of the other linear electrodes 21X2 to 21X4 and 21Y1 to 21y4 of the input device 2 is substantially as same as that of the detecting unit that detects an inducing voltage of the linear electrode 21X1 shown in FIG. 6.

[0070] Thus, the LEDs 44Xi and 44Yi corresponding to the linear electrode to which the human body 1 touches are illuminated in synchronization with the inducing voltage. (It is noted that this "illuminated" is strictly speaking, "flickered". However, the illumination can be almost recognized against human eyes.)

[0071] The user can recognize a coordinate of the position the human body 1 touched through the illumination of the LEDs 44Xi and 44Yi. The threshold voltage VT is provided for setting a detection sensitivity of the detecting unit. The user replaces the inverter buffer 42X1 of FIG. 6 by the high input impedance amplifier and thereafter the user sets the gain of the amplifier, so that the detection sensitivity can be freely selected.

[0072] Further, a plurality of users can be identified, by changing frequency of signal generated by the signal generator 404 by each of signal generations. FIG. 8 shows a basic construction of the information transmitting system that identifies frequency of a plurality of signals.

[0073] A transmitter 141 is worn on the human body 1. A tuning circuit type detecting unit 142 is connected to the linear electrode 21X1 of the input device 2, detects an inducing voltage generated by the linear electrode 21X1, identifies the frequency of the inducing voltage, and outputs a detection signal to output terminals 143-1 to 143-n corresponding to any identified frequency.

[0074] FIG. 9 shows an example of construction of inside of the transmitter 141. An oscillator 181 generates an oscillation signal, i.e. generates a signal of a preset and predetermined frequency, and outputs the signal to a buffer amplifier 182. The buffer amplifier 182 amplifies a signal outputted from the oscillator 181 and outputs the amplified signal to the transmission electrode 162.

[0075] A battery 183 supplies necessary electric power to the oscillator 181 and the buffer amplifier 182. The ground electrodes of the oscillator 181, the buffer amplifier 182, and the battery 183 are grounded to the ground electrode 163.

[0076] FIG. 10 shows an example of construction of inside of the tuning circuit type detecting unit 142. An input terminal 201 connected to the input device 2 is connected to a high input impedance amplifier 204. Protection elements 202 and 203 are connected to the input terminal 201 for protection against static electricity.

[0077] An output of the high input impedance amplifier 204 is supplied to a phase-comparator 221 of a PPL (phase locked loop) circuit 205. The phase of output of the amplifier 204 and the phase of VCO (voltage controlled oscillator) 223 are compared by the phase-comparator 221. A low-pass filter 222 of the PLL circuit 205 smoothes the output of the phase-comparator 221. The smoothed output is supplied to an input terminal of one of comparators 224F1 to 224Fn of the VCO 223 and a frequency identification unit 206. The other input terminal of the comparator 224F1 to 224Fn receives mutually different reference voltages V1 to Vn. Here, the reference voltages V1 to Vn satisfy following equation.

$$V_{cc}(\text{source voltage}) > V_1 > V_2 > \dots > V_n > 0$$

[0078] The reference voltages V1 to Vn are set so that frequency of signal transmitted by the transmitter 141 can be identified.

[0079] An output of the comparator 224F1 is supplied to an f1 output terminal 143-1 and an inverter 225F1. An output of the comparator 224F2 is supplied to an AND circuit 226F1 and an inverter 225F1. Likewise, outputs of comparators 224F3 to 224F(n-1), each is supplied to the AND circuits 226f to 226f(n-2) and the inverters 225F3 to 225F(n-1). Further, an output of the comparator 224Fn is supplied to the AND circuit 226F(n-1).

[0080] The AND circuits 226F1 to 226F(n-1), each supplies a logic product of the outputs of the inverters 225F1 to 225F(n-1) and the outputs of the comparators 224F2 to 224Fn, to output terminals 143-2 to 143-n.

[0081] Following will be explained about the operation. The user (human body 1) touches the linear electrode 21X1