

INFORMATION PROCESSING APPARATUS FOR INPUTTING A SIGNAL, AND METHOD THEREFOR

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an information processing apparatus. In particular, the present invention relates to an information processing apparatus capable of identifying an existence of a user without making the user notice the apparatus. Further, the present invention relates to an information processing apparatus and method capable of detecting a coordinate by using an inducing voltage from a human body.

[0003] 2. Description of the Related Art

[0004] For example, a sensor that senses a human body is provided e.g. when an electronic appliance such as a computer is activated only at the timing when the appliance is used. Then, the electrical appliance is made to be in a state where the appliance can be operable when the human body is sensed with the sensor.

[0005] More specifically, an input device having a transparent electrode and superposed on a display screen of a computer or the like is widely used. In such input device, a signal detecting operation is executed by detecting a high frequency signal (radio frequency signal) or the like generated by pressure or by an input pen.

[0006] Additionally, in a large-sized display screen such as a display screen used for a projector, there is a method of recognizing an image of a finger using a video camera in addition to the above-mentioned method.

[0007] However, in the above-mentioned method, there is a problem that a human body can be naturally sensed even only when the human body merely passes through near the sensor, resulting in that an electrical appliance becomes to be in a state where the appliance is activated. Further, in a conventional method, there is a problem that a user must use a specified pen when such a high frequency signal is used. Further, when utilizing pressure for detection, there is a problem that the user or the finger issuing instructions are not identified. Further, when an image recognition of a finger is executed using a video camera, there is a problem that the finger must be not in a dead angle of the video camera, resulting in that the device tends to become complicated.

[0008] The present invention is done in view of such problems that can surely identify an existence of a user without making the user notice a device relating of the invention. Namely, the device relating to the present invention can detect an input coordinate by a simplified construction.

SUMMARY OF THE INVENTION

[0009] An information apparatus of the present invention comprises: a generator that generates an alternating current signal; and an induction unit that has the alternating current signal generated by the generator and induced to a human body.

[0010] The generator can generate an alternating current signal that can be identified with respect to the alternating current signal generated by the other information processing apparatus.

[0011] In the information processing apparatus of the invention, a signal is generated and thus generated signal is induced to a human body.

[0012] More specifically the information processing apparatus comprises: an induction unit that extends in a first and a second directions and induces an inducing voltage from a neighboring human body; an induced voltage detection unit that detects the inducing voltage induced by the induction unit; and an coordination detection unit that detects a coordination at which the induction unit induces the inducing voltage.

[0013] Further, the information processing apparatus can have a frequency identification unit for identifying a frequency of the inducing voltage. Further, the frequency identification unit can identify a frequency of the commercial power supply as the frequency of the inducing voltage.

[0014] The frequency identification unit can identify a frequency of the signal outputted from the other information processing apparatus that is worn on the human body as the frequency signal of the inducing voltage.

[0015] The information processing apparatus can have a reception unit that receives information transmitted from the other information processing apparatus that is worn on the human body.

[0016] The information processing apparatus can have a transmission unit that transmits, by way of the human body, information to the other information processing apparatus that is worn on the human body.

[0017] An information processing method of the present invention comprises the steps of: an induction step of inducing an inducing voltage from a neighboring human body that extends in a first direction and a second direction; an induced voltage detection step of detection the inducing voltage that is induced at the induction step; and a coordinate detection step of detecting a coordinate that induces the inducing voltage at the induction step, based on the inducing voltage that is detected at the induced voltage detection step.

[0018] In the information processing apparatus and method of the present invention, an inducing voltage from a human body can be detected. On the basis of the inducing voltage that is detected, a coordinate at which the inducing voltage is generated can be detected. Thus, the information processing apparatus of the present invention can identify existence of a user (human body) without making the user notice the apparatus. The information processing apparatus and method of the present invention can detect a coordinate using a simplified construction.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] In the accompanying drawings:

[0020] **FIG. 1** shows a basic principle of the present invention;

[0021] **FIG. 2** shows a construction of inside of an amplifier 406 of **FIG. 1**;

[0022] **FIG. 3** shows a construction of an information transmitting system to which the present invention is applied;