

CONTROLLER FOR INTERACTIVE MULTIMEDIA SYSTEM

FIELD OF THE INVENTION

The present invention is related to a controller for an interactive
5 multimedia system, and more particularly to a controller for an
interactive VCD playing system or an interactive DVD playing system.

BACKGROUND OF THE INVENTION

Conventional audio and video players have been gradually replaced
10 by a variety of new audio/video electronic products such as Video
Compact Disk (VCD) players and Digital Video Compact Disk (DVD)
players. Owing to the multimedia effects and the interactively operative
modes of these new instruments, the functions and performances of
audio/video electronic products have been significantly improved. For
15 example, a user can select and/or edit any desired term according to the
instructions given by the players during the period the compact disk is
being played such that the players can execute the selected term and/or
performs the desired operations rather than just play the disk from
beginning to end. The user-friendliness, however, is accordingly
20 decreased with the complexity of the operations. Consequently, it is
difficult for the illiterates and the electric appliance-unfamiliar people,
especially for the kids and the olds, to manipulate the devices.

SUMMARY OF THE INVENTION

25 Therefore, an objective of the present invention is to provide a
controller for an interactive multimedia system, which makes the
interactive multimedia system more user-friendly and easy to be

operated.

In accordance with the present invention, an especially designed controller is adapted to be used for an interactive multimedia system. The multimedia system includes a software-executing device and an illustrative member showing thereon a group of selective terms, wherein
5 the illustrative member allows a user to give a command to the software-executing device therethrough. The controller according to the present invention includes an input-sensing device associated with the illustrative member, including a plurality of sensors respectively
10 corresponding to the selective terms shown on the illustrative member and outputting a triggering signal represented by one of the plurality of sensor in response to an operation of the user on the illustrative member so as to identify which selective term is to be further executed, and a signal-transmitting device electrically connected to the input-sensing
15 device for transmitting the triggering signal from the input-sensing device to the multimedia system to have the software-executing device execute a function represented by the selected term.

In accordance with another aspect of the present invention, the input-sensing device is a pressure sensing matrix circuit. Alternatively,
20 the input-sensing device may be an analog resistive touch pad.

In accordance with another aspect of the present invention, the multimedia system further includes an IR receiver, and the signal-transmitting device is an IR emitter for transmitting the triggering signal to the IR receiver so as to execute the function of the selected term.

25 In accordance with another aspect of the present invention, the illustrative member is a picture card having an identifying mark thereon, and the controller further comprises a detector for monitoring the

identifying mark, wherein the detector generates a switching signal when the identifying mark is changed, and the switching signal is transmitted to the multimedia system by the signal-transmitting device to have the software-executing device ready for executing another group
5 of selective terms. In a preferred embodiment, the identifying mark is a number of through holes and the detector is adapted to detect a through-hole type of identifying mark. In another embodiment, the identifying mark is a group of bar codes and the detector is adapted to detect a bar-code type of identifying mark.

10 The software-executing device used with the present controller can be a VCD player. Alternatively, the software-executing device can be a DVD player.

The present invention may best be understood through the following description with reference to the accompanying drawings, in which:

15 BRIEF DESCRIPTION OF THE DRAWING

Fig. 1 is a schematic diagram showing a preferred embodiment of a controller according to the present invention and a multimedia system the controller is used with;

Fig. 2 is a schematic block diagram showing a preferred embodiment
20 of a controller according to the present invention; and

Fig. 3 is a schematic block diagram showing another preferred embodiment of a controller according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention will now be described more specifically with
25 reference to the following embodiments. It is to be noted that the following descriptions of preferred embodiments of this invention are presented herein for purpose of illustration and description only; it is

not intended to be exhaustive or to be limited to the precise form disclosed.

Please refer to Fig. 1 which is a schematic diagram showing a preferred embodiment of a controller 12 according to the present invention and a multimedia system 11 the controller 12 is used with. The multimedia system 11 shown in Fig. 1 includes a software-executing device 111, a display 112, and an illustrative member 113. In this embodiment, a VCD player is taken as an example of the software-executing device 111, the display 112 can be a TV monitor or a computer monitor connected to the VCD player 111, and the illustrative member 113 is a picture card having patterns thereon corresponding to the patterns shown on the monitor 112 as selective terms 1131. Preferably, the picture card 113 is placed on an upper face of the casing of the controller 12. For example, if a video CD having contents concerning the introduction of wild animals is to be played, a picture card on which the animal images corresponding to those to be shown on the monitor are previously printed is placed on the controller. When a user is interested in a certain animal, he only needs to touch or press the picture card at the location having the corresponding image, and then the VCD player will execute the programs related to the animal image to display further information, thereby achieving the purpose of interactive operation.

Referring to Fig. 2 which is a circuit block diagram showing a preferred embodiment of a controller 12 according to the present invention, the controller 12 includes an input-sensing device 14 and a signal-transmitting device 15. The input-sensing device 14 is located beneath the illustrative member 113 of the multimedia system 11 and

consisted of a plurality of sensors 141. Each of the selective terms 1131 shown on the illustrative member 113 corresponds to at least one sensor 141. When the user touch or press the selective term, the corresponding sensor(s) will be actuated to output a triggering signal
5 represented by the sensor(s) so as to identify which selective term is to be further executed. Then the signal-transmitting device 15 electrically connected to the input-sensing device 14 transmits the triggering signal to the multimedia system 11 to have the software-executing device 111 execute the function represented by the selected term.

10 In the preferred embodiments of Figs. 1 and 2, the command the user gives through the controller 12 is conveyed to the multimedia system 11 in a wireless transmission manner. For example, the signal-transmitting device 15 may be an IR emitter, and in this case, the multimedia system 11 needs to be installed therein a signal receiver 114, i.e. an IR receiver
15 in this case, for receiving the signal transmitted by the IR emitter.

For advanced VCD contents in which many levels of option are provided, a plurality of picture cards rather than only one picture card are used. In this case, a preferred embodiment of a controller according to this invention is illustrated in Fig. 3. The controller circuit of Fig. 3 is
20 similar to that of Fig. 2 except that an additional detector 121 is provided. Previously, the picture cards 113 are marked with various numbers of through holes or different bar codes 1132 at a specific position thereon for identification. When one of the picture cards 113 is placed on the controller 12, the identifying mark 1132 on the picture
25 card 113 is aligned with the detector 121 of the controller 12 so that the detector 121 can identify which card is in charge and output a switching signal to the VCD player through the IR emitter when the identifying

mark is changed in order to have the VCD player ready for executing another group of selective terms. Depending on the types of the identifying marks, the detector can be a light-responsive sensor or a bar-code reader. In this way, various of operations can be easily made by
5 using the present controller.

Although the controller of the present invention is illustratively used with a VCD player, the present controller can also be used with many other multimedia players such as a DVD player.

While the invention has been described in terms of what are
10 presently considered to be the most practical and preferred embodiments, it is to be understood that the invention need not be limited to the disclosed embodiment. On the contrary, it is intended to cover various modifications and similar arrangements included within the spirit and scope of the appended claims which are to be accorded with the broadest
15 interpretation so as to encompass all such modifications and similar structures.



WHAT IS CLAIMED IS:

1. A controller for an interactive multimedia system, said multimedia system including a software-executing device and an illustrative member showing thereon a group of selective terms, said illustrative member allowing a user to give a command to said software-executing device therethrough, and said controller comprising:
 - an input-sensing device associated with said illustrative member, including a plurality of sensors respectively corresponding to said selective terms shown on said illustrative member and outputting a triggering signal represented by one of said plurality of sensor in response to an operation of said user on said illustrative member so as to identify which selective term is to be further executed; and
 - a signal-transmitting device electrically connected to said input-sensing device for transmitting said triggering signal from said input-sensing device to said multimedia system to have said software-executing device execute a function represented by said selected term.
2. The controller as claimed in claim 1, wherein said input-sensing device is a pressure sensing matrix circuit.
3. The controller as claimed in claim 1, wherein said input-sensing device is an analog resistive touch pad.
4. The controller as claimed in claim 1, wherein said multimedia system further includes an IR receiver, and said signal-transmitting device is an IR emitter for transmitting said triggering signal to said IR receiver so as to execute said function of said selected term.
5. The controller as claimed in claim 1, wherein said illustrative member is a picture card having an identifying mark thereon, and



- 5 said controller further comprises a detector for monitoring said identifying mark, said detector generating a switching signal when said identifying mark is changed, which is transmitted to said multimedia system by said signal-transmitting device to have said software-executing device ready for executing another group of selective terms.
6. The controller as claimed in claim 5, wherein said detector is adapted to detect a through-hole type of identifying mark.
7. The controller as claimed in claim 5, wherein said detector is
10 adapted to detect a bar-code type of identifying mark.
8. The controller as claimed in claim 1, wherein said controller is used for said multimedia system in which said software-executing device is a VCD player.
9. The controller as claimed in claim 1, wherein said controller is used
15 for said multimedia system in which said software-executing device is a DVD player.