



- [54] REMOTE CONTROL DEVICE WITH A GRAPHICAL USER INTERFACE
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- [52] U.S. Cl. 340/825.69; 345/157; 345/168; 341/20; 341/21; 341/22
- [58] Field of Search 340/825.69, 825.72, 340/825.24, 825.25; 341/176, 20, 21, 22; 345/157, 168

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[57] ABSTRACT

A two-way remote control unit with a graphical user interface controls various audio/video devices interconnected in a multimedia system. The remote control unit includes a transceiver for transmitting and receiving control commands to/from multimedia components, which are displayed in the user-friendly format on a display of the remote control unit. The user can scroll, select, browse, etc. through various menu items on the display, and activate any desired function on the multimedia system component by selecting the desired representation of that function on the display. In addition, the remote control unit communicates, also through wireless transmission, with a personal computer and obtains information from remote or local databases for either controlling or enhancing the operation of the multimedia system devices.

[56] References Cited

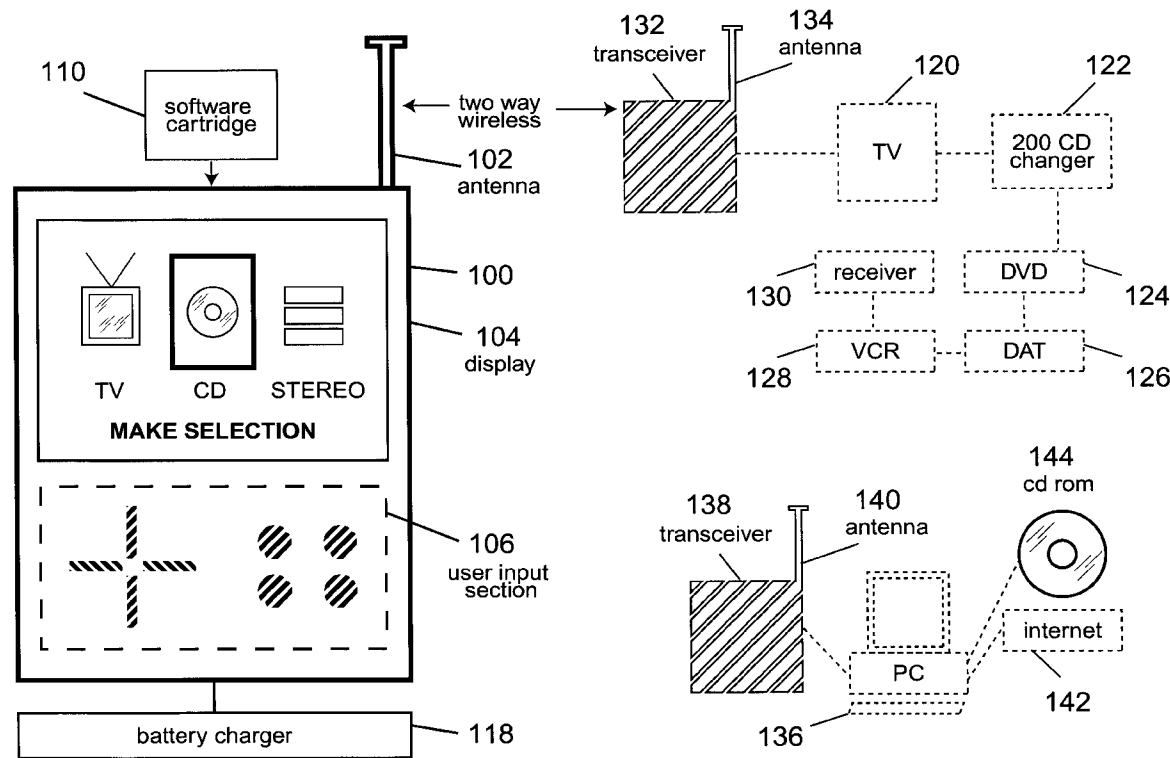
U.S. PATENT DOCUMENTS

5,760,824	6/1998	Hicks, III	348/14
5,802,467	9/1998	Salazar et al.	455/420
5,819,294	10/1998	Chambers	707/104

FOREIGN PATENT DOCUMENTS

0566516A1	3/1993	European Pat. Off.
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10 Claims, 3 Drawing Sheets



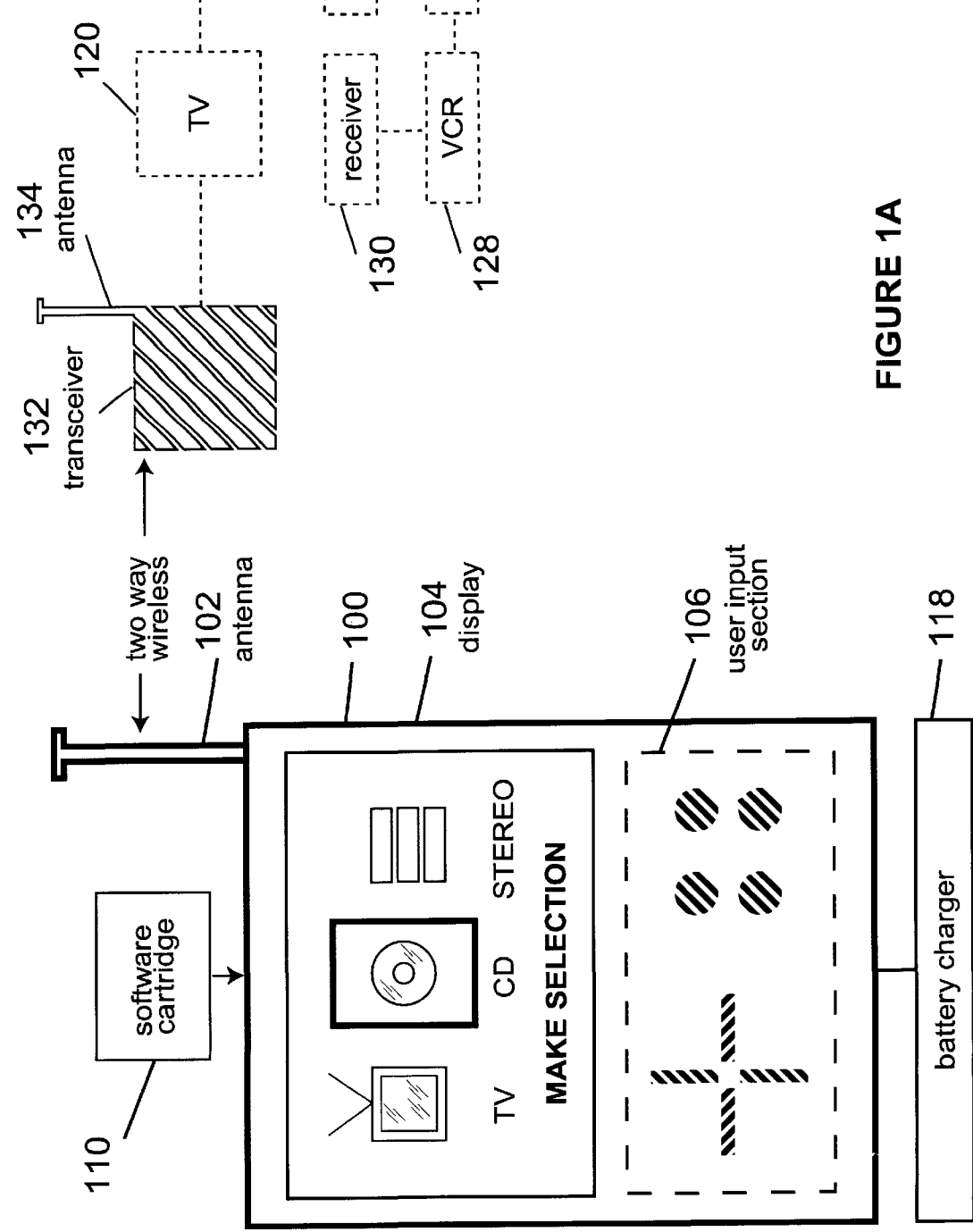


FIGURE 1A

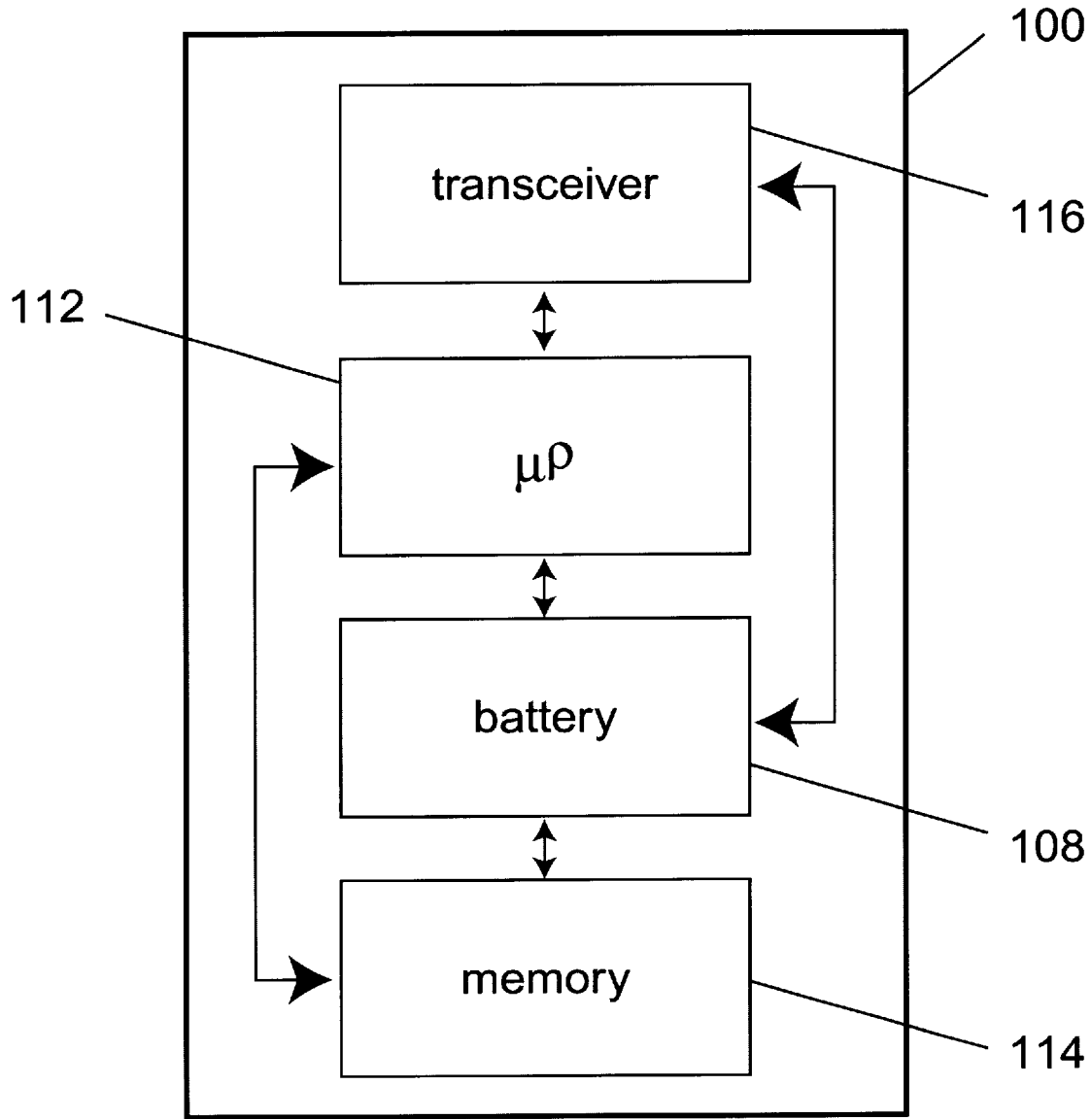


FIGURE 1B

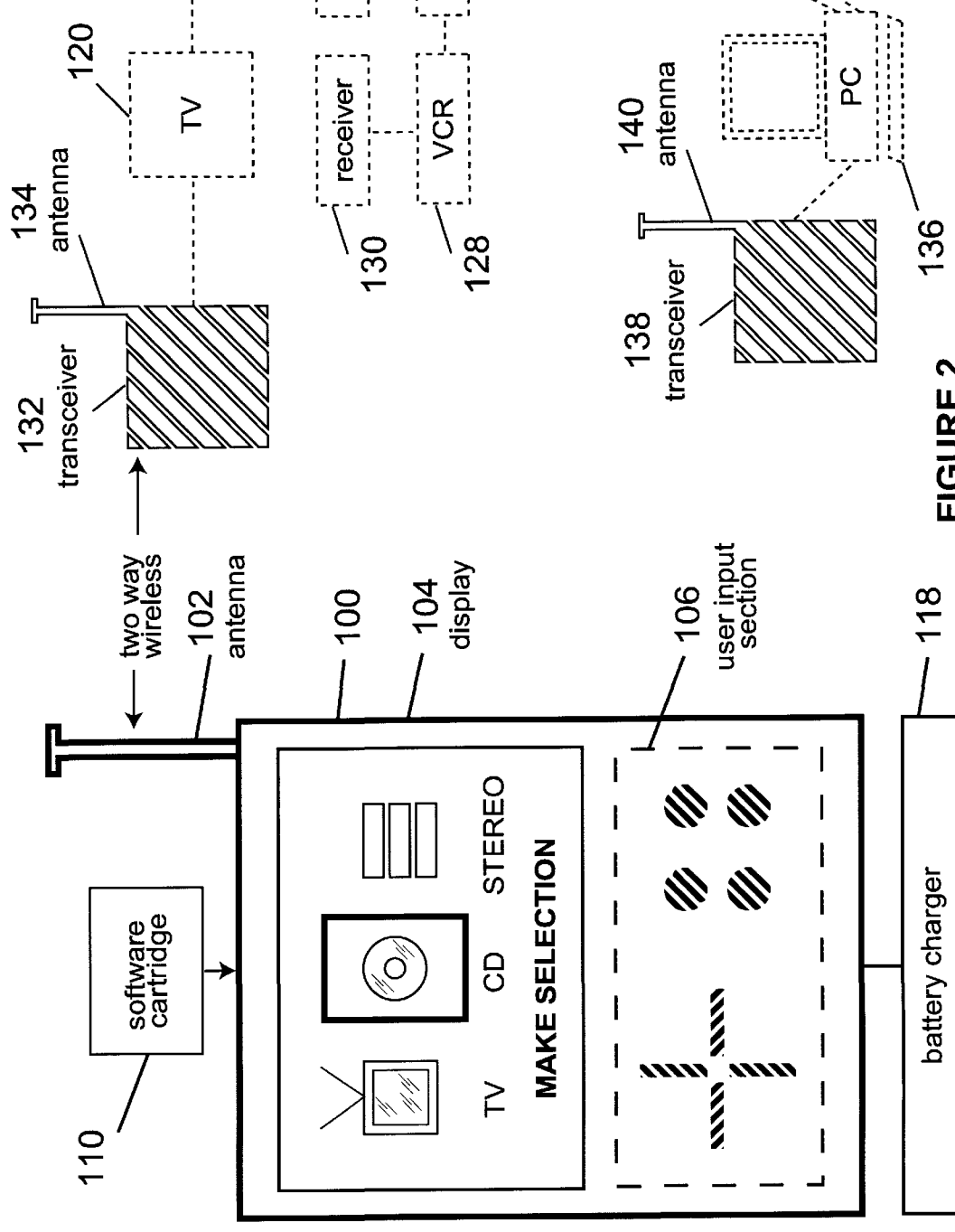


FIGURE 2

REMOTE CONTROL DEVICE WITH A GRAPHICAL USER INTERFACE

BACKGROUND OF THE INVENTION

The present invention is related to wireless data transfer operations and, in particular, to a remote control device with a graphical user interface for controlling various audio/video devices interconnected in a multimedia system in a user-friendly manner.

It is well known how difficult it is to control today's multifunctional and very complex multimedia components. New technological advances, partially driven by consumer demand for new high-tech equipment, spawn more complicated components than ever, such as a 200 compact disk (CD) changer, integrated television/video cassette recorder (TV/VCR), digital audio tape (DAT) device, digital video disk (DVD) device, etc. Each of these devices perform a myriad of functions that may or may not be important to the user, but are certainly available for him to try. To control each device, a remote control unit is provided, sometimes offering all of the functions that can be performed manually, that is without the remote control, by activating switches, buttons, etc. located on the remote control unit. The ubiquitous "12:00" still blinking on many VCRs in peoples' homes still attest to the difficulty of controlling the audio/video components.

For each new multimedia device that becomes a part of the user multimedia system, the user has to study the operations manual of that device to determine what function a particular button on the remote control unit performs. Since conventional remote control units offer only limited space on their surfaces, all of the buttons (switches) located on the remote control unit are cryptically labeled that sometimes require the user to impersonate Sherlock Holmes to decipher their function. Simply looking at the remote control unit is not sufficient to guess as to what the activation of the button entails. Trial and error method of activating a function to find out what it does may not be only frustrating but also perilous as the user may accidentally erase, delete, etc. some information in a storage medium and/or stop the operation of the device without knowing how to return to its normal operation. This "experimentation" may occur at a very inopportune moment causing further frustration and requiring the user to study the operations manual or to abort the operation of the component.

Different manufacturers of system components typically have incompatible remote control units. Thus, even though the remote control unit from one manufacturer is capable of controlling several components, it is so as long as these components are made by the same manufacturer. If, for example, a TV is made by one manufacturer while a DAT is made by another manufacturer, the fact that the remote control unit of the TV is capable of controlling a DAT is of little help because the DAT owned by the user is made by a different manufacturer and cannot be controlled by the remote control unit assigned to the TV.

A conventional so-called universal remote control unit which, as known in the art, combines controlling functions of several components does not alleviate the problem associated with numerous individual remote control units associated with the multimedia components. The conventional universal remote control unit has a limited surface space and is designed to accommodate the most important (basic) functions of the components which it is designed to control. Thus, the user has to either give up those additional features of the components or study the operations manual for each

component and control those additional functions manually by activating the appropriate switches, etc. located on the audio/video components.

In any event, it is inconvenient and time consuming for the user to study the operations manual and juggle several remote control units when controlling devices in his multimedia system.

A need therefore exists for a system and method for overcoming the above disadvantages.

OBJECTS OF THE INVENTION

It is an object of the present invention to provide easy-to-use remote control of audio/video devices in a multimedia system.

It is another object of the present invention to provide a graphical user interface for remotely controlling audio/video devices in a multimedia system.

It is a further object of the present invention to provide a remote control device with a graphical user interface for controlling audio/video devices and for obtaining additional information from a database, as requested from the remote control device, and for displaying the additional information on a display of the remote control device.

SUMMARY OF THE INVENTION

These and other objects, features and advantages are accomplished by a remote control device for wirelessly communicating with a multimedia system comprised of audio/video devices connected with each other, wherein the multimedia system includes a first transceiver for wirelessly transmitting and receiving a number of signals. The remote control device comprises a memory storage for storing specifications data for each of the audio/video devices. The specifications data is operative to have the audio/video devices perform a number of functions in response to command data. Further included is a user input section for inputting the command data representative of a function to be performed in at least one of the audio/video devices. The remote control device also includes a display for displaying a number of graphical objects each corresponding to a respective one of the audio/video devices, and for displaying a menu including the number of functions corresponding to each respective audio/video device such that the function is selected from the menu in response to the user input section. Also included is a programmable controller for processing the input command data corresponding to the selected function on the display. In addition, the remote control device comprises a second transceiver for transmitting to the first transceiver a first signal corresponding to the processed command data such that at least one audio/video device is operative to perform the selected function, and for receiving from the first transceiver a second signal corresponding to status data indicating whether the selected function has been performed.

In accordance with one aspect of the present invention, the remote control device further comprises a general purpose computer and a third transceiver connected to the computer such that the second transceiver transmits a third signal representing a request for information to the third transceiver. The computer accesses a database for responding to the request for information, and transfers response information to the third transceiver for transmitting a fourth signal representing the response information to the second transceiver. After the second transceiver receives the fourth signal, the programmable controller is operative to process

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