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(54) TELEVISION RECEIVER TERMINAL

(71) We, GRUNDIG E.M.V. ELEKTRO-MECHANISCHE VERSUCHSANSTALT MAX GRUNDIG, a German corporate body of Kurgartenstrasse 37, D-8510 Furth, West Germany, do hereby declare

the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed to be particularly described in and by the following statement:-

This invention relates to a television receiver which serves also as an image-reproduction terminal for an electronic peripheral device, wherein a remote-control system operable by the viewer with a data bus for a plurality of instructions is installed.

The need for the invention exists in the cases where the television receiver is provided for other possible uses, apart from the normal television reception, namely as an image terminal with a multiplicity of uses. Thus one additional use may consist in that the television set serves as a monitor for a video-tape device which is adapted for recording independently of the television set. For this purpose a complete television receiving section with automatic transmitter finding and electronic channel storage can be installed in the video-tape device.

A difficult point in the development of new concepts for such additional uses lies in the development of operating comfort. For the operating comfort of television receivers there is a system of integrated circuits with which the functions of the picture and sound adjustment as well as the program selection and program storage can be remotely controlled by the viewer. In detail, the following functions, for example, can be actuated with such a system: switching the device on and off, calling up the program channels, finding, storage of channel numbers, altering the adjustment and basic settings of volume, brightness and colour saturation, switching off the sound and superimposing the time. With a known operating system, up to sixteen channel numbers can be stored so that it is possible to select as many programs directly and to tune the receiver to the associated receiving channel. Known operating systems for the television receivers are therefore designed for about thirty remote-control channels, as is the case for infrared-controlled television receivers. Recently, a system of integrated circuits has become known which can be used for the infrared remote control of the television receiver by the viewer and which, in addition, makes other control instructions available via a data bus, so that the adjustment of any function is possible by means of additional instructions.

If peripheral equipment, for example a video-tape device, is to be connected to the television receiver to an increasing extent, then the need arises for these devices also to be conveniently adjusted by the viewer like the television receiver. It is known to provide video recorders with so-called tip-touch electronic systems instead of buttons with a long travel so that all mechanical wearing parts are eliminated and are replaced by digital control.

This invention provides a television receiver arranged to serve also as an image-reproduction terminal for an electronic peripheral device, wherein a remote-control system operable by the viewer with a data bus for a plurality of instructions is installed, only some of the instructions being for the remotely controllable functions of the receiving and reproducing part of the television receiver, while others of the instructions being for controlling of functions of said electronic peripheral device, said device being connectable to the television receiver, and the data bus associated with these functions being electrically connectable, via an external connection of the television receiver, to corresponding stages

of the peripheral device. Thus, this invention improves still further the operating comfort of a television receiver which can be used as an image-reproduction terminal.

The television receiver according to the invention has the advantage that both the control of functions of the receiving and reproduction part of the television receiver and the control of functions of the peripheral device when connected to the receiver can be brought about with a single remote control operable by the viewer. This solution is distinguished by particular simplicity. Thus the peripheral device is not provided with a separate remote-control system, but the remote-control system operable by the viewer and already installed in the television receiver is used. This is possible as a result of the fact that only some of the instructions of the remote-control system are used for the remotely controllable functions of the television receiver while others of the instructions, which are available via a data bus, serve for the control of functions of the peripheral device. For this purpose, it is necessary, in use, for the data bus of the remote-control system installed in the television receiver, associated with the peripheral equipment, to be electrically connected, via an external connection of the television receiver, to the peripheral device. These devices are only encumbered with slight additional cost by these external connections for television receiver and peripheral device.

The main costs arise through the connecting cable which is necessary between the external connections of the television receiver and of the peripheral device and through an additional device which decodes the data from the data bus and prepares it for the peripheral device. These costs can be reduced by a simplified construction in that the connecting cable, together with the additional device, is constructed in the form of a structural unit. This structural unit can be offered to the user of a television receiver with a peripheral device as an accessory in the development of operating comfort.

The invention can be used to particular advantage in a television receiver with a video-tape device as the peripheral device. The video-tape device is preferably adapted for recording independently of the television receiver so that the latter only serves as a monitor. With such a coupling, the channel-selection control and mechanism control, the control for an electronic time switch and programming of the switching instructions of the video-tape device as well as the control of the functions of the receiving and reproduction part of the receiver can then be brought about by a single operating system, for example by means of a remote-control system installed in the television receiver according to the invention. In this manner, it is possible to use the remote control of the television receiver for the remote control of the video-tape device also, without substantial additional costs.

WHAT WE CLAIM IS:-

1. A television receiver arranged to serve also as an image-reproduction terminal for an electronic peripheral device, wherein a remote-control system operable by the viewer with a data bus for a plurality of instructions is installed, only some of the instructions being for the remotely controllable functions of the receiving and reproducing part of the television receiver, while others of the instructions being for controlling of functions of said electronic peripheral device, said device being connectable to the television receiver and the data bus associated with these functions being electrically connectable, via an external connection of the television receiver, to corresponding stages of the peripheral device.

2. A television receiver as claimed in claim 1, in combination with a connecting cable for interconnecting the external connections of the television receiver and of the peripheral device, together with a decoder which converts the data from the data bus into a code suitable for the direct control of said functions of the peripheral device, said cable and decoder being together in the form of an integral structure.

3. A television receiver as claimed in claim 1 or 2, in combination with the peripheral device, which device is a video-tape device adapted for recording independently of the television receiver, which receiver serves as a monitor.

4. A television receiver as claimed in claim 1 and substantially as herein described.

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