

The invention concerns a television receiver according to the preamble of claim 1.

A television receiver of the above-named type is known from GB-A-2 197 104.

5 This known television receiver is provided with a device with which remote control codes which are assigned to another device (video recorder) can be interpreted as if codes assigned to the television receiver were to be processed.

10 In this way a "foreign" remote controller can control the television receiver as well as the device (video recorder) to which it is assigned.

This known television receiver has the disadvantage that when further foreign devices, each with their own remote controllers, are added, the number of
15 remote controllers is not able to be reduced any further. According to previous teaching, a "foreign" remote controller can always be used not only for the "foreign" device concerned, but also for the television receiver. This "foreign" remote controller is however, unsuitable for controlling a second "foreign" device. According to the known device, when there are n remote controllable
20 devices, the total number of remote controllers necessary is merely reducible by $n-1$ remote controllers.

A television receiver known from DE-A-35 44 183 transmits a first code, received from a remote controller and assigned to a function, to a peripherally
25 connected device for controlling this function. In this way, it is true that the same remote controller can be used to control the television receiver as well as the peripheral device connected thereto, in particular a video recorder, and that it is not necessary to have two separate remote controllers for the television receiver and the video recorder. The television receiver also serves
30 as receiving and intermediate station for the commands given by the assigned remote controller and transmits these to the video recorder connected thereto

by means of a cable or an infra-red path.

It is also a condition, that the codes for the individual functions transmitted from the remote controller correspond to the codes assigned to the individual functions in the video recorder. When the television receiver and its remote controller and the video recorder are from the same company, this is normally the case. When, however, the television receiver and the peripherally connected devices of various levels, for example, a television receiver, a video recorder, a CD player and an audio device come from different companies, this correspondence of the codes is often not present.

The object of the invention is to enable control of peripherally connected devices via the television receiver using only one remote controller, even when the television receiver and the peripherally connected device or the peripherally connected devices do not correspond with respect to their remote control codes.

This object is met according to the invention described in claim 1. Further advantageous embodiments of the invention are described in the dependent claims.

In the solution according to the invention, the television receiver performs a learning process, in which it learns and stores the initially unknown codes for the individual functions from the remote controller for the peripheral devices. The television receiver then knows which code for a particular function, initially foreign to it, should be transmitted to the peripheral device, such as the video recorder. When the code assigned to the television receiver comes from its remote controller for a particular function of the video recorder, it automatically converts this code, which is not suitable for the video recorder, into a new type of code suitable for the function concerned. The individual functions of the video recorder, such as, for example, start, time, program, stop, "VPS"

etc, are preferably indicated on the screen. In this way, the user is requested to press buttons, in succession, which correspond to the functions, on the remote controller of the video recorder. These codes are then sent to the television receiver, where they are assigned to the individual functions and
5 stored.

The invention has the advantage that the peripheral devices come from different companies and the codes used for them for the individual functions could be completely different. For controlling all the devices only the remote
10 controller of the television receiver is necessary. All other remote controllers for the peripheral devices can, after the completed learning process, be set aside. The unit of the television receiver and the peripheral devices is then no longer limited to the so-called "in-house language", but can process all the codes from different companies. No alterations to the remote control units are
15 necessary, as the adaptation between the different codes is carried out in the television receiver itself. The invention is usable for all types of control command for the peripheral devices, particularly for video recorders. These are, for example, replay, record, stop, rewind, fast forward, search, start, time, program, "VPS", "VPV" and the like.

20

The invention is now described in one embodiment with the aid of the drawings. In these,

Fig. 1 shows a schematic drawing of the solution according to the
25 invention with as an example a video recorder as the peripheral device and

Fig. 2 shows a table explaining the mode of operation of Fig. 1.

30 In Fig. 1 the television receiver 1 is connected to the video recorder 2 via the cable 5. The television receiver 1 is controllable by a remote controller 3,

which transmits code signals C1. The video recorder 2 is controllable by the remote controller 4, which transmits codes C2. It is assumed that the television receiver 1 comes from a company T, whereas the video recorder 2 comes from a company G. When, for operation of the video recorder 2, the remote controller 3 now transmits the codes C1 normally used by the firm T, control of the video recorder 2 is not possible via the television receiver 1, as said video recorder needs other codes for controlling the individual functions, which are unknown to the remote controller and which it therefore cannot transmit.

10

This difficulty is now solved by the following means. On the screen 6 of the television receiver 1 the user is requested to operate in succession the buttons on the remote controller 4 which are assigned to the individual functions of the recorder 2 and to direct the remote controller 4 towards the television receiver 1. The remote controller 4 now transmits the code C21 to the television receiver 1. The code C21 is stored in the memory as the code for the play function valid with respect to the recorder 2. The television receiver 1 acknowledges this procedure by a corresponding indication on the screen 6, something like "Code for replay function memorised" or "Video replay function learned". In this way the individual functions are interrogated on the screen 6 and the Codes C21 - C25 etc associated with them stored in succession in the memory 7.

20

When the replay button on the remote controller 3 is now pressed, the remote controller 3 transmits the code C11 to the television receiver 1, which would not be correct for the recorder 2. The code C11 is automatically converted in the television receiver 1 by the translator 8 into the code C21 valid for the recorder 2. This code reaches the recorder 2 via the cable 5 and there effects the desired control on the replay function. In this way a translation of all available and controllable functions in the recorder 2 is performed for each of the codes C1 used by manufacturer T into the code C2 used by manufacturer

25

30

G. In this way all of the peripheral devices connected to the television receiver 1 can be controlled with the remote controller 3, even when they are from different companies and have completely different codes for controlling the functions.

5

According to Fig. 2, the remote controller 3 from company T transmits the codes C11 - C15 for the functions shown to the television receiver 1. Because of the learning process of codes C21 - C25, which the video recorder 2 from company G needs for these functions, the codes C11 - C15 are converted in
10 the television receiver 1 into the codes C21 - C25. This conversion by the translator 8, possible because of the learning process, is indicated by the horizontal lines. Corresponding procedures are used for further devices with different codes connected to the television receiver 1, for example a CD
15 player from company H, a normal audio device from company D and a DAT recorder from company F.

Claims

- 5 1. Television receiver (1) which is remotely controllable by a remote controller (3) which transmits a first code (C1), and a device (2) being peripherally connectable to the television receiver (1), which is remotely controllable by means of a second code (C2) which differs from the first code (C1), and in the television receiver (1) a
10 memory (M) for the first code (C1) and the second code (C2) is provided, and a relationship between the codes (C1, C2) is storable, characterised in that the television receiver (1) transmits the first code (C1) which is assigned to a function and is received from the remote controller (3) to the peripherally connected device
15 (2) for controlling this function, wherein a translator (8) is provided, which converts the first code (C1) received from the remote controller (3) into the second code (C2) which is to be passed on to the peripheral device.
- 20
2. Television receiver according to claim 1, characterised in that a remote controller (4) assigned to the peripheral device (2) and which transmits the second code (C2) can be coupled to the
25 television receiver (1) via a wireless path so that the second codes (C2) assigned to the individual functions can be input in succession in the sense of a learning process into the memory (M).
3. Television receiver according to claim 1, characterised in that each
30 function assigned to the code (C2) is shown on the screen (6) in the form of characters.



4. Television receiver according to claim 1, characterised in that instructions are given to the user on the screen (6) for sending, to the television receiver (1) in succession, with the remote controller (4) assigned to the peripheral device (2), the second codes (C2) assigned to the individual functions.

5

