

The invention comprises a method and a device for the programming of an audio or video appliance in accordance with the preamble of claim 1 or claim 6.

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Methods of the above type are known in particular in the videorecorder field. In these cases - usually when first connecting the recorder to an existing video system - individual so-called programme numbers or
10 programme places on the recorder are assigned a respective frequency or channel for stations receivable at that locality and are stored in a so-called programme memory. The recorder is thus filled or "programmed" with certain "basic knowledge". If the
15 tuner of a recorder is then to be set to a desired station then the user need not enter the corresponding transmission frequency or channel number, which the user frequently is not cognisant with; rather it suffices that he enters the programme number assigned.
20 Via the programme memory the recorder then determines the transmission frequency or channel number belonging to the desired programme and adjusts the tuner accordingly.

25 In the known methods, however, it is disadvantageous that the entering of the frequencies and their assignation to individual programme numbers is time consuming and a source of errors.

30 A source of additional control errors can also occur if the individual components of an audio or video system - for example a radio or television receiver and a videorecorder - have differing assignations of frequencies or channels to programme numbers.

The object of the invention is to provide users with a simple means of programming audio or video appliances with the required tuning data for receiving television and/or radio broadcasts.

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This task is solved by the measures stated in claim 1. This task is also solved by the measures stated in claim 6. According to the invention the tuning data and their assignation to a programme number or
10 identification are loaded automatically from a programme memory of a previously programmed audio or video appliance.

In a typical example of application an existing
15 television set has already been programmed manually. An additionally installed videorecorder is programmed according to the invention in that the tuning data and their assignation to a programme number or identification stored in the programme memory of the
20 television appliance are loaded automatically and transferred to the programme memory of the videorecorder. This transfer is performed preferably via an infrared transmission link.

25 If an appliance, for example a television receiver, has access to a videotext decoder, then the current time received by the videotext system may also be transmitted to the appliance to be programmed in order to reset its internal clock to the current time.

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The transfer of the data may be achieved by utilising an already existing remote control transmission method with a remote controllable audio or video appliance. If for example the data required for programming are
35 fed in a suitable manner to an infrared transmission

unit arranged on a television set then it is possible to simulate the programming of the appliance to be programmed via its corresponding manual infrared remote control device. This has the advantage that on
5 the appliance to be automatically programmed, thus for example on the above mentioned videorecorder, no additional steps have to be taken.

The user can also - for example when undertaking
10 manually the initial programming or renewed programming of an appliance - be requested by the sequence control unit of the infrared transmission unit to enter the type of audio or video appliance to be programmed automatically. If the manually programmed appliance
15 is a television set then such a request can for example be realised in that a selection is to be made using a cursor in a choice menu displayed on the screen of the television set. The infrared transmission unit can then load the appropriate transmission format from a
20 memory in which is stored the assignation of individual types of audio or video appliances to their remote control transmission methods.

Advantageous further developments of the invention are
25 described in the subclaims.

Additional advantages, features and details of the invention are described in the following on the basis of a preferred embodiment illustrated in the figure
30 which shows in a very simplified block circuit diagram a first micro-processor (TV μ P) which belongs to a television set not shown and which transmits via an infrared link (IR) data to a second micro-processor (VCR μ P) belonging to a videorecorder not shown.

Both the first and the second micro-processor (TV μ P) or (VCR μ P) include a so-called programme memory (TVMEMO) or (VCRMemo) into which for each of the programme numbers present (PR) a desired channel (CH) may be entered, to which the corresponding tuner is to be tuned when the programme number (PR) is selected. For example when the programme number (PRO1) is selected channel (CH04) is tuned to, for programme number (PRO2) channel number (CH22), for programme number (PRO3) channel number (CH57) etc.

The programme memory (VCRMemo) of the videorecorder also includes memory space (CLOCK) reserved for the current time.

A videotext decoder unit (VT), which in the example illustrated decodes signals received to display the current time 10:00 (as illustrated) and which is symbolically designated the "videotext clock", is connected to the first micro-processor (TV μ P) via a so-called I²C-Bus (I1) and sends the current time to the micro-processor via this I²C-Bus (I1). From here the current time is also sent over the infrared link (IR) to the second micro-processor (VCR μ P) in the programme memory (VCRMemo) of which it is stored in the memory space (CLOCK) and then serves for the correct setting of an electronic clock belonging to the videorecorder (not shown).

In the first micro-processor (TV μ P) a data path (I2) is schematically shown starting from the programme memory (TVMEMO) and leading to the output point of the infrared link (IR). Data read from the programme memory (TV μ P) are transferred along this data path (I2), for example a signal line input to a driver transistor for an infrared transmitting diode, to an

infrared transmitting unit not shown. The transmitted signals are received in known fashion at the other end of the infrared transmission link (IR) by an infrared receiving unit not shown and passed on from there finally to the programme memory (VCRMEMO) of the videorecorder.

In the example illustrated the user was previously requested to enter the transmission code required for the infrared link (IR) whereby - although not detailed here - the remote control code was selected as already used by the videorecorder having remote control anyway and the remote control code in the present case was stored ready for use in a read-only memory of the first micro-processor (TV μ P) not shown. Thereafter via the internal sequence control of the first micro-processor (TV μ P) there were caused automatically the readout of its programme memory (TVMEMO) and the interrogation of the current time supplied via the I²C-Bus (I1) as well as the transmission of all of this data via the infrared transmission unit. In the example shown these data are - as illustrated - sent successfully, i.e. error-free, to the storage location provided therefor in the programme memory (VCRMEMO) of the videorecorder. In this memory they are now available with the same assignation of programme number to tuning channel as is the case in the television set.

This matching of assignation is not only of advantage to the less technically minded user in providing the above-mentioned simplification of control. Even for example users employing such appliances on a professional basis can benefit. For example at exhibitions, fairs and similar, if it is necessary to programme a large number of appliances then it is

sufficient for one of them to be designed according to the invention. When this single unit has been programmed manually then the other units can be automatically programmed in the manner described
5 whereby - assuming sufficient transmission power for example for the infrared transmission unit and a suitable transmission code - all other units can be automatically programmed in one step.

CLAIMS

1. A method for the programming of an audio or video appliance, especially a videorecorder, with tuning data required for the reception of television and/or radio broadcast transmitters (channel, frequency or the like), in which the tuning data concerning a transmitter can be fed to a programme memory (VCRMEMO) of the audio or video appliance whilst being assigned to a programme number or identification, characterised in that the tuning data and their assignment to a programme number or identification are loaded automatically during read out from a programme memory (TVMEMO) of an already-programmed audio or video appliance especially a television set, that this information is transferred with or without wires from the already-programmed appliance to the appliance to be programmed and that the transferred information is stored in the programme memory (VCRMEMO) of the appliance to be programmed.
2. A method according to claim 1, characterised in that the transfer occurs via an infra-red path (IR).
3. A method according to claim 1 or 2, characterised in that there is used as the transfer code the same code as is provided for a remote control belonging to the appliance to be programmed.
4. A method according to any one of claims 1 to 3 characterised in that during a manual programming of a first appliance there is provided an input option, after actuation of which another appliance, which is predetermined or is to be designated, is automatically programmed with the information contained in the programme memory of the first device concerning the tuning data and their assignment to the respective



programme numbers or identifications.

5. A method according to any of claims 1 to 4, characterised in that in addition to the information concerning the tuning data and their assignment to the respective programme numbers or identifications, there is transferred to the appliance to be programmed the current time received by means of a videotext decoder unit (VT) which serves to set the appliance's own clock.

6. A device for the programming of an audio or video appliance, especially a video recorder, with tuning data required for the reception of television and/or radio broadcast transmitters (channel, frequency or the like), in which the tuning data concerning a transmitter can be fed to a programme memory (VCRMemo) of the audio or video appliance whilst being assigned to a programme number or identification, characterised in that there is provided between a programme memory (TVMemo) of an already-programmed audio or video appliance, especially a television set, and the programme memory (VCRMemo) of the appliance to be programmed, a transfer path without wires (IR) or with wires (I2), via which are automatically transferred the tuning data and their assignment to a programme number or identification from the already-programmed appliance to the device to be programmed.

7. A device according to claim 6, characterised in that the transfer occurs via an infra-red path (IR).

8. A device according to claim 6 or 7, characterised in that there is used as the transfer code the same code as is provided for a remote control belonging to the appliance to be programmed.



9. A device according to any one of claims 6 to 8, characterised in that during a manual programming of a first appliance there is provided an input option,
5 after actuation of which another appliance, which is predetermined or is to be designated, is automatically programmed with the information contained in the programme memory of the first device concerning the tuning data and their assignment to the respective
10 programme numbers or identifications.

10. A device according to any one of claims 6 to 9, characterised in that in addition to the information concerning the tuning data and their assignment to the
15 respective programme numbers of identifications, there is transferred to the appliance to be programmed the current time received by means of a video decoder unit (VT) which serves to set the appliance's own clock.