

Method of programming for home video equipment

The invention relates to a method for programming a home video equipment in accordance with the first part of claim 1.

A method of the aforesaid type is described in the periodical "Rundfunktechnische Mitteilungen", year 30 (1986) Volume 5, pages 223 - 229 under the title "Videotext programmiert Videoheimmeräte" referred to in short as the VPV method. For the identification of transmissions and for the programming of home video equipment in the known methods, VPV items of data containing special control characters are used, with the help of which, the individual transmissions, mentioned within pages, so-called video text pages, that were transmitted by video text signals and that contain announcements regarding the transmissions, can be unambiguously identified.

In general, for the unambiguous programming of a home video equipment for the reception and/or recording of a wanted transmission, details regarding the starting time, the finishing time, the transmission date, the programme source - e.g. the broadcasting company - and/or possibly, the so-called VPS time are needed. Further particulars relating to questions in connection with the "VPS time" are exhaustively explained in the "Rundfunktechnische Mitteilungen", year 29 (1985) Volume 4, pages 161 - 169.

The object of the invention is to also then enable a simple programming of home video equipment for the user when video text pages are used which deviate from the mentioned VPV proposal.

This object is achieved by the method quoted in claim 1. In accordance with the invention, the items of data necessary for the wanted transmission are extracted automatically insofar as possible from the selected video text page and the necessary items of data are transmitted into the programme store in response to a programming command. Insofar as these items of data are not complete for the full programming of the home video equipment, it is provided that the missing items of data are requested from the user - somewhat in the form of a dialogue - by means of error messages in a display.

If the video text decoder required for the reception of the video text pages is disposed in the home video equipment then the transmission of the items of data into the programme store can be effected over the internal data bus of the home video equipment.

If the video text decoder is disposed outside the home video equipment, for example, integrated into a television receiving equipment, then the transmission of the items of data can be effected by using the remote control transmission process that is already provided in a remotely controlled home video equipment. If, for example, the items of data necessary for the programming which are extracted from the video text page and, if necessary, supplemented, are supplied to the infra red emitter unit associated with the television equipment in a suitable manner, then a programming for the home video equipment can be simulated by the manual infra red remote control transmitter associated therewith. Thereby, the user can be requested by the sequence control of the infra red emitter unit - perhaps during the first time of use of a programming of this type - to enter the type of the home video equipment which is to be programmed, for example, to mark a suggestion list blended into the screen of the television receiving equipment by means of a cursor. The infra red emitter unit can then extract the appropriate transmission format from a store in which an assignment of individual types of home video equipment to their remote control transmission process is stored.

Usually, the programme announcements given in the video text pages contain the starting time and the identification of the respective transmission. In a further development of the invention, it is provided that an adjustable marking, e.g. a cursor, is automatically blended-in in the region or in the line where the first number identified as the time of day occurs. If the home video equipment, usually a video recorder, is to be programmed to the thus identified programme, then the user only has to effect this by a simple operation of the key "Programme" of his VPV remote control device that is provided therefor and that could be incorporated for example in the television remote control unit. In this connection, it can be provided that he receives, either beforehand or afterwards, the request to enter the items of data which are missing for a full programming of the recorder. Such a request occurs for example when the items of data necessary for the programming either could not, or could not be unambiguously, automatically extracted from the relevant video text page

The cursor can be moved forwards and/or backwards from one time of day to another by control commands until a transmission intended for programming is marked by the cursor.

Advantageous developments of the invention are specified in the appendant claims.

Further advantages, features and details of the invention will be explained hereinafter by means of a preferred embodiment with the help of the drawing, which illustrates a partly modified video text page comprising four lines Z1 - Z4.

A written character VPV blended into the line Z1 serves as an indication to the user that a programme mode has been selected for which the items of data needed for the programming are extracted - insofar as possible - from the instantaneously displayed video text page, in the example illustrated, the page 173 as is apparent in line Z1 from the number 173 located next to the term VPV. In the same line, the digits 1 - 7, each separated from each other, then follow; they serve to indicate the store position which is to be currently occupied in the programme store of a - not-illustrated here - home video equipment that is to be programmed. "PRO8" is displayed at the right hand margin of the line Z1. Here, the user has been requested to enter the programme number PRNR under which the frequency or the channel of the transmitter, whose transmission is to be received and/or recorded, is stored in the home video equipment or recorder that is to be programmed.

The abbreviation ARD in line Z2 indicates that the wanted transmission is transmitted in the first German television programme. The user had orientated himself to this when he previously entered the digits "08" in line Z1 as the programme number corresponding to the relationship encountered in his video recorder in response to the automatic request.

Further, the relevant transmission date, the 19.08.1987 in the example illustrated, is indicated in line Z2.

A square marked by hatching can be seen at the start of the line in line Z3. This represents a cursor C which marks a transmission having the title 1 "XXX" that begins at 18.00 hours as can be gathered from further along this line Z3. The subsequent transmission having the starting time 19.00 hours and the title 2 "YYY" is specified in line Z4.

In the example illustrated, in which the home video equipment is to be programmed for recording the transmission having the title 1 "XXX" marked by the cursor C, the time of day disposed in the same line as the cursor is transmitted to the programme store as the starting time START either alone or combined with the transmission of the time of day disposed in the line Z4 as the finishing time STOP, the number 19.08 identified as the date as the transmission date DAT as well as the previously mentioned channel or frequency relationship PRNR as the items of data

needed for the wanted transmission, as is symbolically represented in line Z5 as the set of data comprised by the terms START, STOP, DAT and PRNR, by actuation of a key "Programme" of a not-illustrated VPV remote control device. For better elucidation, the items of data extracted from the lines Z1 - Z4 of the - modified - video text page are boxed and connected by lines provided with arrows to the corresponding parts of the data set to be transmitted from line Z5.

If a VPS time for the wanted transmission is identified, then it can be provided that the VPS time is preferably used for the programming and/or the starting - and/or the finishing time is transferred into the programme store merely as additional security should the VPS characterising signal be subject to interference when receiving the transmission.

After the transmission of a complete data set has occurred, line Z1 is marked to show that of the seven programming positions in the programme store, the first is now occupied; for example, this can be done by means of a colouring - which is not illustrated here - below the digit 1 of the digits 1 - 7 disposed in the centre field of the line Z1.



Claims

1. Method for programming a home video equipment, in particular a video recorder, for the reception or the recording of a transmission announced in a programme pre-view list wherein the items of data identifying the programme source, the transmission date, the starting time, the VPS time and/or the finishing time are contained in full or in part in the programme pre-view list, which items of data can be entered into a programme store of the equipment for a programming after selection of a transmission and the items of data required for a programming are allocated a programme storage position in the equipment, characterised in that, the items of data are automatically checked for the completeness required for the programming and are extracted from the selected video text page in response to a programming command, that if these items of data associated with a transmission which are required for the programming are incomplete, an error message is given in a display whereby the user is requested to enter the missing items of data and that the items of data are transmitted into the programme store.
2. Method in accordance with Claim 1, characterised in that, for the entry of the missing items of data, the channel number, the frequency or the programme number applicable to the television receiver or the home video equipment in respect of the programme source is indicated in the display.
3. Method in accordance with Claim 1 or 2, characterised in that, a channel number, frequency or programme number accepted or entered by the user remains stored in a store as a pointer to the relevant video text page until such time as a different entry for this video text page occurs.
4. Method in accordance with any of the Claims 1 - 3, characterised in that, the video text page is automatically scanned line by line, whereby - with reference to a currently considered line -
 - a) upon the occurrence of a number which consists of three or four digits having a punctuation mark - such as, a full stop, a colon, a semi-colon, a dash, a space or the like - included therebetween, especially insofar as a space, control or colour control character directly follows thereon, then the number is recognised as the time of day



and/or

b) upon the occurrence of

aa) a number which consists of two, three or four digits having a punctuation mark - such as, a full stop, a colon, a semi-colon, a dash, or an oblique dash - included therebetween and directly following the last digit

or

bb) a number which consists of four to eight digits possibly having two punctuation marks - such as, a full stop, a colon, a semi-colon, a dash, an oblique dash, a space or the like - included therebetween

or

cc) a number which consists of one or two digits that is immediately preceded or followed by a punctuation mark - such as, a full stop, a colon, a semi-colon, a dash, an oblique dash, a space or the like - and/or a term derivable from a table of monthly terms - such as, January, February, ..., December; Jan, Feb, ..., Dec; Janvier, Février, ..., Décembre; I, II, ..., XII; or the like,

then the number - possibly having the monthly term replaced by corresponding digits, such as 01, 02, ..., 12 - is recognised as the transmission date

and/or

c) upon the occurrence of a specially marked number which consists of four digits, then the number is recognised as the VPS time and each recognised number is correspondingly used for the programming of a reception and/or recording instruction

and/or

continuously changing numbers - especially at one second intervals - are not taken into consideration.

5. Method in accordance with Claim 4, characterised in that, if ambiguities occur in the recognition of the numbers, the user is automatically requested to assign the currently appropriate interpretation, programme source, transmission date, time of day or VPS time to the numbers concerned.

6. Method in accordance with Claim 4 or 5, characterised in that, an interpretation regarding the identification of numbers that has occurred automatically in accordance with Claim 5 is kept associated with the relevant video text page by means of a store until such time as a different entry for this video text page occurs.



7. Method in accordance with any of the Claims 4 - 6, characterised in that, an adjustable marking e.g. a cursor, is automatically blended-in in the region or in the line of the video text page where the first number identified as the time of day occurs.

8. Method in accordance with Claim 7, characterised in that, the cursor is movable in jumps by control commands such as "forwards" or "backwards" from one number identified as the time of day to the next or to the preceding number identified as the time of day or to its region or line.

9. Method in accordance with any of the Claims 4 - 8, characterised in that, upon the occurrence of the programming command relating to the desired transmission, the following are transmitted into the programme store, the time of day marked by the cursor as the starting time (START), the number identified as the VPS time, the number identified as the next time of day as the finishing time (STOP), the number identified as the transmission date (DAT) and/or the items of data identifying the relevant programme source (PRNR).

10. Method in accordance with Claim 9, characterised in that, the number corresponding to the next day rather than the number identified as the transmission date is transmitted into the programme store insofar as the number identified as the time of day immediately preceding the time of day marked by the cursor is greater than the time of day marked by the cursor and no number identified as a transmission date occurs between these two times of day.

11. Method in accordance with Claim 9 or 10, characterised in that, upon the occurrence of an incomplete set of items of data, the user is requested to enter the missing items of data before the transmission into the programme store.

12. Method in accordance with Claim 9 or 10, characterised in that, the user is requested to enter the missing items of data after the transmission of an incomplete set of items of data into the programme store and these missing items, after they have been completed, are transmitted step-by-step into the programme store.