This is the Translation referred to in the declaration made before me by Lesley Mary Harris

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Video recorders are known which contain a videotext decoder which, in addition to the given actual signal in the form of a composite colour signal or an aerial signal also produce a videotext signal, which can additionally display a text on the screen of the television receiver connected thereto. The text signal produced in the video recorder, for example in the form of the RGB signal and an associated insertion signal can be supplied to the television receiver at an RGB input, or inserted in the given composite colour signal in the video recorder. In this case, supply to the RGB inputs of the television receiver is more advantageous, as it causes less signal distortion. There are on the other hand, television receivers with and without an RGB input. The video recorder, however, has no information on whether the television receiver has an RGB input or whether it is even connected in the television receiver. It would therefore be advantageous for the video recorder to automatically recognise the availability of an RGB input and, dependent thereon, to supply the text signal to the RGB input where an RGB input is available, and where an RGB input is absent, or not connected, to insert the text signal in the given composite colour signal.

The object of the invention is to construct the video recorder so that it recognises the availability of an effective RGB input in the television receiver and, dependent thereon performs the corresponding switching of the supply of the text signal.

This object is met by the invention shown in claim 1. Advantageous developments of the invention are given in the dependent claims.

According to the invention a voltage drop at the output of the video recorder, which results from the internal resistance in the recorder and input resistance of an equal magnitude in the television receiver, can be advantageously used to identify whether the television receiver is connected to the RGB input and therefore can process RGB signals. In this case it is assumed that when the

television receiver cannot process RGB signals, the input resistance is also not effective at the corresponding input, so the connection is open. In this way a switching voltage can be produced which indicates the presence of an effective RGB input of the television receiver. This switching voltage can then serve to undertake a switching in the recorder itself in such a way that the text signals are supplied to the RGB input when an RGB input is available, and when the RGB input is not available, are inserted in the composite colour signal supplied to the television receiver.

The invention will be described with the aid of the drawings and an exemplary embodiment.

The drawing shows the video recorder VR, which is connected to the television receiver FE by means of the cable ÜK. The television receiver FE serves to reproduce the signals recorded by the video recorder VR and in addition, if applicable, a videotext signal which can come from the recorder or also from the aerial input. The recording unit 1 firstly delivers the usual composite colour signal showing the moving picture. This arrives via the switch S2 in the position b, and the output 3 of the recorder VR, and the input 4 of the television receiver FE, to the processor P, which effects the signal processing for controlling the television tube.

In the character generator 5 of the video recorder VR, signals R, G, B are additionally produced, which display a text signal for reproducing a text during several lines of the picture, and also during a whole picture. The generator 5 moreover produces a keying signal (blanking signal) BI which is present during the lines with text replay or during a part of the lines, and effects a switching to text reproduction. The RGB signals can be supplied to the television receiver FE in two ways. The first possibility is the RGB input 6 of the television receiver FE. The other possibility is insertion in the composite colour signal supplied to the input 4. Supply to the input 6 is advantageous because

of lower loss in quality, but is only possible when the input 6 is connected. The video recorder VR now automatically recognises whether the input 6 is connected and whether the RGB signal can be supplied to the input 6 or must be inserted in the video signal. These two cases will be explained below:

1. The television receiver has an effective RGB input. The RGB signal and the blanking signal BI arrive via the resistances 8, 9, 10, 11, each of 75 Ohms, which represent the internal resistances, the RGB output 12 of the video recorder VR, and the cable ÜK, at the RGB input 6 of the television receiver FE and while present there, as defined by the pulse BI, can effect a switching to text reproduction and effect the text reproduction itself. The pulse BI is a switching pulse and has a constant amplitude. The effect of the resistance 11 and the input resistance 13 of equal magnitude, both of 75 Ohms, reduces the amplitude of the pulse BI at point c by 50%. This amplitude reduction is detected in the amplitude sensor 14. From this a switching voltage Us is produced which opens the switch S1.

The blanking pulses BI from the output of the generator 5 thus do not arrive at the switch S2. The switch thus remains in the position b, so that the unaltered composite colour signal arrives at the output 3. Insertion of the text signal by means of the switch S2 into the composite colour signal is then unnecessary and would be illogical, as the text signal is already supplied to the input 6 and from there processed in the processor P for picture reproduction.

2. The television receiver includes no effective RGB input. When the television receiver FE has no effective RGB input 6, the resistance 13 representing the internal resistance is also absent. The point c is then not loaded by the television receiver FE. At the point c the

blanking signal BI appears with full amplitude when the input of the amplitude discriminator is highly resistive. This full amplitude is detected in the amplitude discriminator 14. As a result of this the switching voltage Us alters and closes the switch S1. The blanking signal BI now arrives as a control signal at the switch S2. In this way S2 is always applied in position a during the presence of a text signal, that is during several lines, during a part of several lines or also during a whole picture. In this way a signal FBAS(T) representing the text signal arrives from the output of the encoder 15 which is fed with signals RGB, BI and a synchronising signal at the output of the switch S2. During availability of the text signal the signal FBAS from the recording unit 1 is switched off and instead the signal FBAS(T) for the text signal is inserted, or "impressed" in the signal. During this time, a signal FBAS(T) which displays a text is supplied to the output 3 and the input 4. The RGB signals do indeed arrive nevertheless at the input 6. As this input is not connected, however, they have no effect there.

The signal at the output of the encoder 15 can also be a grey scale brightness signal which is inserted with the switch S2 during text reproduction. The control voltage for the amplitude discriminator 14 could also be derived from the RGB signal at the output 12. In this way, for example during a longer period of time during which RGB signals reliably occur, the amplitude thereof is measured. This is possible because the RGB signals for text reproduction either have the amplitude O or the full amplitude corresponding to the full colour saturation. Because of this an amplitude drop-out due to an input resistance of the television receiver FE can be detected at the RGB outputs. The RGB inputs at input 6 are also terminated by resistances of 75 ohms which are not shown.

The fact that the television receiver FE has an effective RGB input is additionally indicated in the recorder VR by an indicator light 16. The user then knows that the television receiver connected has an effective RGB input and thus this input can be connected to other signal transmitters with an RGB output, such as another video recorder, a text signal generator or a camera.

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Claims



1. Video recorder with text signal generation, which is either supplied to an RGB input (6) of a television receiver (FE), or inserted into a composite colour signal (FBAS) supplied to the television receiver, characterised in that, from the voltage drop at the RGB output (12) of the recorder (VR) due to the internal resistance (13) of the RGB input (6) of the television receiver (FE), a switching voltage (Us) is obtained which effects the insertion of the text signal (FBAS(T)) in the composite colour signal when the RGB input (6) of the television receiver (FE) is not connected.

2. Recorder according to claim 1, characterised in that the signal inserted in the composite colour signal is a grey scale signal or composite colour signal obtained from the RGB signals in a matrix or an encoder (15).

3. Recorder according to claim 1, characterised in that the voltage drop is sensed at an output (c) for a text blanking signal (BI).

4. Recorder according to claim 1, characterised in that the switching voltage (Us) operates a switch (S1) which applies a text blanking signal (BI) to the control input of a further switch (S2), which effects the insertion of the text signal in the composite colour signal.

5. Recorder according to claim 1, characterised in that the switching voltage (Us) additionally operates an indicator (16) in the recorder (VR), to confirm that the television receiver (FE) connected thereto is provided with an effective RGB input (6).