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D E C I S I O N
of 14 October 1996

Case Number: T 0507/95 - 3.5.1

Application Number: 88112066.1

Publication Number: 0301488

IPC: H04N 5/44

Language of the proceedings: EN

Title of invention:
Television receiver having a memorandum function

Patentee:
SANYO ELECTRIC CO., LTD.

Opponent:
Interessengemeinschaft für Rundfunkschutzrechte E.V.

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
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Case Number: T 0507/95 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 14 October 1996

Appellant: (Proprietor of the patent)
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Representative:
-

Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 19 April 1995 revoking European patent No. 0 301 488 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: A. S. Clelland
C. Holtz

Summary of Facts and Submissions

I. European patent No. 0 301 488 was granted on 7 January 1993.

After opposition the patent was revoked on the ground that the subject-matter of the claims as granted lacked an inventive step (Articles 100(a), 52(1), and 56 EPC), having regard to the following documents:

D1: DE-C-2 301 065 (KIMURA)
D3: Funkschau 26/1986, pages 26-31, H. MITSCHKE: "Bild in Bild"

The written decision was dispatched on 19 April 1995.

II. On 9 June 1995 the Proprietor lodged an appeal against this decision and paid the prescribed fee, and made a subsidiary request for oral proceedings. The written statement setting out the grounds of appeal was received on 24 August 1995.

Oral proceedings were held before the Board on 14 October 1996;

III. The parties' arguments in the appeal proceedings may be summarised as follows:

The appellant argued that the television receiver of the invention contains a plurality of memories which enable the storage and subsequent display. Under the remote control of a plurality of different images taken from a video signal. Document D3 disclosed storing a pair of fields to increase the vertical resolution of a picture-in-picture system. However, the fields were not different images in the sense of the invention. Furthermore D3 was not relevant because it did not

disclose displaying a still image from the television signal itself. Document D1 did not suggest storing more than one image. These documents, therefore, would not have led the skilled person to the invention either alone or in combination with each other.

The respondent argued that the skilled person would combine D1 and D3 because both related to the same type of image processing. Since D3 contained two field memories the skilled person would also consider it obvious to store different images. Moreover, D1 suggested storing more than one image because it referred to viewing details (in the plural) of an image, and to viewing an image in slow motion which necessarily involved more than one image.

IV. The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of either the main request or, the auxiliary request, both received with the grounds of appeal on 24 August 1995. The Respondent requested that the appeal be dismissed.

V. Claim 1 of the main request reads as follows:

"A digital television receiver comprising:
means (120) for storing digital image information,
means (117', 122a) for writing digital image information in said storing means,
means (117', 122b) for reading the image information stored in said storing means, and
means (121, 123, 124, 115) for reproducing the image information on a display screen of a picture tube (116) upon receipt of the output of said reading means,
c h a r a c t e r i z e d in that
said television receiver further comprises
image storage instruction signal generating means (128), said writing means (117', 122a) operating in

response to an image storing instruction signal, image reading instruction signal generating means (129), said reading means (117', 122b) operating in response to an image reading instruction signal for repeatedly reading the image information at a first speed, wherein said image storage instruction signal generating means and said image reading instruction signal generating means are both provided in a remote control transmitter (118) for remote control of said digital television receiver, and wherein said storing means comprises a plurality of storing devices, (120a, 120b) for storing digital information of a plurality of images,
means (117') for generating a first storage device selection signal in response to said storage instruction signal,
means (117') for generating a second storage device selection signal in response to said image reading instruction signal,
means (122c) for selecting a corresponding storage device in response to said first storage device selection signal and coupling the selected storage device to said writing means, and
means (122c) for selecting the corresponding storage device in response to said second storage device selection signal and coupling the selected storage device to said reading means."

VI. Claim 1 of the auxiliary request adds to claim 1 of the main request the following features:

"means (233) for storing a writing order in which information is written in said storage devices, and means (117', 122a, 122c) responsive to said image storage instruction signal, for writing image information into the storage device having the oldest order stored in said writing order storing means."

Reasons for the Decision

1. The appeal complies with Article 106 to 108 and Rule 64 EPC and is, therefore, admissible.

2. *Amendments*

2.1 The respondent has objected that the term "coupling" used in present claim 1 of both requests is broader than "connecting" as used in original claim 3, so that claim 1 violates Article 123(3) EPC. Present claim 1 of both requests includes all the subject-matter of granted claim 1 and most if not all the features of granted claim 3. Such a combination limits the claim with respect to the granted claim 1, even if the new term is broader than granted claim 3; the appellant's objection of claim broadening within the meaning of Article 123(3) EPC is not therefore justified. The Board has also considered whether this amendment is derivable from the application as originally filed or whether objection of added-subject matter arises under Article 123(2) EPC. Figure 13 of the application shows that the storage device and the reading means are not connected to each other directly, but, rather, indirectly via the memory switch 122c. In the Boards´s view this can properly be described as a "coupling".

2.2 The Board is accordingly satisfied that the amended claims of both requests do not contravene Article 123 EPC.

3. *Inventive step (main request)*

3.1 The patent in suit relates to a development of the well-known "picture-in-picture" (PIP) system in a television receiver. Such a receiver contains a memory that can store a still image taken from the received

video signal. This image can then be displayed over the whole or part of the real-time image being displayed on the television screen. The patent acknowledges that at the claimed priority date a television receiver including a digital memory capable of storing an entire television field was "conventional". The Board takes this to mean that it was so well known as to form part of the common general knowledge in the art. Such a receiver provides a PIP image at a predetermined position on the main screen by reading out the contents of the memory. Thus the viewer can temporarily store and subsequently recall a desired image. The patent describes such a prior art arrangement in connection with Figure 10 and a similar arrangement is known from document D3, which, under certain conditions, can also display a still image. These known arrangements form the basis of the preamble of claim 1 of both requests; they also imply the presence of certain features from the characterising part of the claim. In particular, image storing and reading instruction signal generating means, and writing and reading means operating in response to respective instruction signals.

3.2 Claim 1 of the main request differs from this prior art arrangement primarily in two respects. Firstly, a remote control controls the image storing and reading. Secondly, the storing means comprises a plurality of storing devices. The claim also refers to the generation of the necessary control signals; this is however considered to be implicit in any practical system.

3.3 Although the appellant sought to link the use of a remote control to the use of a plurality of memories, the Board takes the view that the two features are not in fact related. It appears rather that two separate

sub-problems are involved, both being indirectly concerned with user convenience. No true technical relationship appears to exist between the use of a remote control and the use of a plurality of memories.

3.4 It is clear that the use of a remote control transmitter to control functions of a television receiver was at the claimed priority date standard in the television receiver art; D3, for example, confirms this in the context of a digital television receiver. D3 moreover suggests that the standard remote control can additionally be used to control the PIP image storing and reproducing functions, see page 26, right-hand column, lines 23 to 34, and page 27 left hand column, lines 24 to 39. Since the use of a remote control was at the claimed priority date known for PIP, it would appear obvious that it should be used for any additional features such as the storage of multiple PIP images.

3.5 The question of inventive step therefore turns on whether or not it would at the claimed priority dates have been obvious to provide a plurality of memories for storing multiple images in the system known from D3. It is noted that D3 does, in fact, disclose two memories, in that it states (page 30, right column, lines 8 to 13) that both fields of a frame may be stored to increase the vertical resolution of the still image. These (two) still images are consecutive fields and are stored as a pair on receipt of a single storage command. However, the Board interprets the expression "plurality of images" in the claim as implying in the context a plurality of <u>different</u> images; the two fields of a frame are not considered to be different images.

3.6 Reference was made to document D1, which discloses an analogue television receiver making use of a storage tube to store a single image taken from the video signal. The image can be displayed as a PIP image on the screen. This known receiver is thus an early, analogue equivalent of the digital system acknowledged in the patent and known from D3.

3.7 Although the embodiment of D1 only envisages storing and displaying a single image, the introductory part of the patent at column 2, lines 53 to 60 laments the fact that the viewer has no possibility of closer examination of details that have not been transmitted as a still picture or in slow motion ("Zeitlupe"). It is therefore clear that from the earliest days of image storage there was a desire to provide in the receiver not merely a single still picture but a succession of images, ideally as a slow motion facility. The recording of a plurality of successive images implies a plurality of memories.

3.8 As explained above, D3, which was published in 1986, shows an example of digital storage of multiple images, i.e. the fields of a frame. D3 also states (last paragraph: "Zusammengefasst") that future VLSI ideas would drastically reduce the components required to implement the picture-in-picture functions.

By the priority dates of the patent in suit the digital storage of images here become available. Thus, the skilled person who knew from D1 the desirability of providing the viewer with a slow motion facility was provided with the technical means to do so in the form of digital memories. The remaining features of the solution, namely providing the associated signal generating and selecting means, follow as matters of normal design procedure.

3.9 The appellant argued that D3 was not relevant because, unlike D1 or the invention, in D3 the source of the image was an external signal and not the television signal itself. Moreover, it did not display a still image. However, it appears to the Board that D3 does disclose both of these features at page 27, left-hand column, lines 45 to 47, and page 31, middle column, lines 10 to 11, respectively. Although the still picture is only displayed when no new data is written into the memory, the skilled person would nevertheless appreciate that this circuit is capable of performing this function. In any case, D3 merely confirms that what the skilled person is taught about digital image processing by the patent in suit was being incorporated in television receivers being sold at the claimed priority dates.

3.10 The appellant furthermore argued that D1 did not in fact suggest the storage of several images as claimed. Although it referred to storage of images in the plural, the term "Einzelheiten" (details) being used, this merely referred to the details of a single image, not to multiple images. The interpretation of this term was discussed at length in the oral proceedings and the Board accepts the Appellant's interpretation. This does not alter the fact however that D1 refers to the desirability of slow motion recording with the implicit storage of several images. It was also argued that, even if the skilled person were to try to provide a slow motion function, this would not necessarily require storing more than one image. For example, storing and displaying a single image for a predetermined time and then storing and displaying a subsequent image for a predetermined time using the

same image memory would slow down the sequence. The Appellant's proposal would not however provide slow motion in the normally accepted sense, but would merely produce several discontinuous snapshots of the sequence having a stroboscopic effect.

3.11 Finally, the Appellant argued that D3 teaches away from controlling the image processing function from the remote controller because it states (page 26, right column, lines 28-30) that the latter should have as few extra buttons as possible. However, this is simply a general requirement that a remote controller should not have too many buttons in order to avoid confusing the user. As noted at point 3.4 above, D3 discloses controlling PIP using the remote controller.

3.12 Thus, the Board finds claim 1 of the main request lacking in inventive step.

4. *Inventive step (auxiliary request)*

4.1 The additional features of claim 1 of the auxiliary request define a writing order for the stored images in which the oldest image is overwritten first. However, such a cyclic addressing technique is considered to be a normal technique for accessing a finite memory resource and is merely an alternative to random addressing where the images could be addressed in any order. In the present case, the chosen technique would depend on how the storage function was to appear to the user. Thus separate memory buttons would permit (but not require) a random addressing technique, whereas a single storage button would require a cyclic addressing scheme. Given the above-mentioned wish that the remote controller should have as few buttons as possible, the cyclic scheme suggests itself. Moreover, the storage of images appears analogous to the storage of channels in a television receiver when the channel memory locations

are to be filled successively. To do this the channel can be addressed either by means of a numerical key pad or an up/down switch. In the latter case, the memory locations will be cycled until after the last memory location is addressed, whereupon the first memory location follows. The subject-matter of claim 1 of the subsidiary request accordingly also lacks an inventive step.

4.2 The Appellant argued that the cyclic addressing scheme is not the simplest possible scheme and is therefore not obvious. It is however clearly one of the two obvious alternatives - random addressing and cycling - which conserve memory resources; the Board is unconvinced by this argument.

5. There being no other requests, it follows that the appeal must be dismissed.

Order

for these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Kiehl P. K. J. van den Berg