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D E C I S I O N
of 19 June 1997

Case Number: T 0462/95 - 3.5.1

Application Number: 86310158.0

Publication Number: 0229526

IPC: H04N 5/45

Language of the proceedings: EN

Title of invention:
Picture-in-picture television receivers

Patentee:
Sony Corporation

Opponent:
Philips Electronics N.V.

Headword:
P-I-P TV receiver/SONY

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 0462/95 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 19 June 1997

Appellant: (Opponent)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted 3 April 1995 concerning maintenance of European patent No. 0 229 526 in amended form.**

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: R. Randes
G. Davies

Summary of Facts and Submissions

I. European Patent No. 0 229 526 was granted on 3 March 1993 on the basis of the European patent application No. 86 310 158.0.

II. Claim 1 of the patent read as follows:

"A television receiver comprising:

(a) a cathode ray tube (18) having a picture screen which is divisible into a main picture screen (M) and one or more sub-picture screens (S_1) inset into the main picture screen (M);

(b) a main picture circuit (7M, 8M) for selecting a first video signal from a plurality of video signals (V_1, V_2, V_3, 5M) and supplying the selected video signal as a video signal for the main picture screen (M);

(C) a sub-picture circuit (7S, 25, 8S) for selecting a second video signal from a plurality of video signals (V_1, V_2, V_3, 5S) and supplying the selected video signal as a sub-picture video signal for one or more of the sub-picture screens (S_1); and

(d) a composing circuit (9) for composing the selected video signal for the main picture screen (M) of the cathode ray tube (18) and the selected video signal for the sub-picture screen (S_1) into a composite signal (R,G,B) to be supplied to the cathode ray tube (18);

characterised by

(e) a first adder (19M, 17) at a point in the transmission path between the composing circuit (9) and the cathode ray tube (18) for adding a picture discrimination indication signal to the video signal for the main picture screen (M);

(f) a second adder (19S, 11) at a point in the transmission path between the sub-picture circuit (7S, 25, 8S) and the composing circuit (9) for adding a picture discrimination indication signal to the video signal for the sub-picture screen (S_1); and

(g) a system control circuit (20) for controlling the main picture circuit (7M, 8M), the sub-picture circuit (7S, 25, 8S), the composing circuit (9), the first adder (19M, 17) and the second adder (19S, 11) such that the sub-picture discrimination indication signal is displayed on the sub-picture screen (S1) whenever the sub-picture circuit (7S, 2S, 8S) selects a different one of a plurality of video signals (V_1, V_2, V_3, 5S) as the second video signal".

This claim was followed by 11 dependent claims, as granted numbered 2 to 12.

III. The respondents (opponents) filed an opposition against the European patent on the ground that the subject-matter of the claims lacked an inventive step.

IV. By an interlocutory decision allowing separate appeal within the meaning of Article 106(3) EPC, dated 3 April 1995, the opposition division decided to maintain the European patent in amended form, such that the characterizing features of dependent claims 2 and 3 of the patent were added to Claim 1 of the patent as granted.

V. The appellants (proprietors) lodged an appeal on 19 May 1995, paying the appeal fee on the same day. The Statement of Grounds of Appeal, requesting that the decision be set aside and the patent maintained as granted, was filed on 1 August 1995.

VI. In the Grounds of Appeal the appellants argued that the available prior art did not deprive the claimed subject-matter of an inventive step in the meaning of the Articles 56 and 100(a) EPC. In addition they requested oral proceedings.

In a letter, filed on 19 December 1995, the respondents contested said opinion and held that the patent in unamended form lacked an inventive step. The respondents requested oral proceedings in the case the Board "envisages to maintain the patent with broader claims than granted by the opposition division".

VII. In a communication pursuant to Article 11(2) of the RPBA, issued on 30 April 1997, the Board expressed the provisional opinion that the decision of the opposition division appeared to be correct. The teaching of the relevant documents

D1: DE-B-2 734 196 and

D3: GB-A-2 132 842

appeared to deprive the subject-matter of Claim 1 of an inventive step.

VIII. In the oral proceedings, held on 19 June 1997, the respondents argued along the following lines.

Document D1 covered the prior art portion of Claim 1 and moreover disclosed special display means for indication of the main picture discrimination signal as well as for the sub-picture signal. Those luminous display means were, thus, positioned outside of the screen, but were controlled in such a way that the discrimination signals were indicated whenever the received channels were changed on the screen.

Document D3 disclosed that an on-screen display was known. It disclosed means (14) for adding a picture discrimination indication signal to the video signal just before the CRT.

Therefore, it appeared that, should the skilled person wish to replace the display indication of D1 (e.g. in order to reduce costs) with an on-screen indication he would only have to apply the design of the on-screen display according to D3 twice to arrive at the invention.

Thus, it was obvious for the skilled person that the sub-picture discrimination signal must be added to the sub-picture signal before the P-I-P-circuit (corresponding to box 12 in Figure 1 of the present patent), forming the sub-picture. This was because D3 taught that the discrimination indication signal was synchronized with the associated (received) video signal.

Apparently, the sub-picture signal thus created, with its on-screen indication, had to be input to a composing circuit, which created a composed image of the two pictures. Having regard to the obviously necessary adder for adding also the corresponding indication signal to the main picture signal, it would appear for a skilled person that this adder could be positioned either before or after the composing circuit. The position only depended on the circumstances; if the indication of the main picture was important, then of course the adder had to be positioned after the composing circuit so that the on-screen indication of the main picture could not be covered by the sub-picture. However, under other circumstances it could well be considered desirable to give priority to the sub-picture and, therefore, to locate the first adder before the composing circuit.

IX. The appellants argued as follows:

1. When starting from the teaching of D1, according to the opposition division, the technical problem to be solved was to reduce costs. It is true that the prior art teaching of D3 disclosed that channel- or program indicators could be displayed on-screen. According to the opposition division and the respondent it, therefore, was self-evident to "use the combination of D1 and D3 twice" and so arrive at the invention.

2. However, the solution was not that simple. Since the problem was to reduce costs, it would, firstly, not be obvious to use two expensive adder circuits. However, after having made up his mind to display the indicators of both pictures on-screen and to use two adders, thereby ignoring the cost factors, the skilled person would have been confronted with a "second different technical problem of improving user understanding of sub-picture indicator", meaning that the possibility of quickly enabling the TV-watcher to perceive the correct indication of a sub-picture was enhanced.

In the invention this second problem was solved by adding the indication signal of the sub-picture to the sub-picture signal before the composing circuit. This solution of the second problem was, however, not obvious and, in fact, contrary to what was proposed by D3, since said document taught that the discrimination indication signal should be synchronized with the signals driving the cathode ray tube, and therefore, of course, taught that the adder should be positioned just before the CRT. According to D3, the adding of the picture discrimination indication signal was output from a shift register and was the last act

to be performed before the signal was applied to the cathode ray tube. It was true, that, according to D3, the synchronizing pulses of the indication signal, were also accidentally identical to those of the received signal. The clear teaching of D3, however, was that the indication signal should be synchronized with the signals driving the CRT-tube.

The addition of the sub-picture indication signal before the composer according to the invention, however, had the result that said indication was displayed on the sub-picture itself and automatically moved with the sub-picture irrespective of the position of the picture on the screen.

Also, at the priority date of the present invention, it was not at all self-evident for a skilled person that a discrimination indication on a sub-picture would have been sufficiently visible once said picture had been reduced in size. It could well be imagined that the "normal" way to solve the problem in this respect for the skilled person would have been to display the sub-picture indication as a sufficiently large number on the main picture. This, however, appeared to indicate that the adder should have been positioned just before the CRT-tube, thus after the P-I-P-circuit.

3. Additionally a "third different technical problem of main picture indicator not being overlain by sub-picture" was necessary to solve in order to arrive at the invention. The inventors of the present patent, therefore, deliberately positioned the first adder after the composer, thereby avoiding overlaying of the main picture indicator.

4. In fact, the appellants felt that, having regard to the teaching of D1 and D3 and trying to solve the said main problem, the skilled person would at most have arrived at a TV-receiver having both main picture and sub-picture indications displayed on the main picture, which indication mode apparently would have secured a good visibility of both indications, since the size of the sub-picture indication would not have been reduced. Moreover, this would also have been the cheapest solution, since the shift register of D3 would have been used for producing the sub-picture indication signal as well as the main picture indication signal. No additional circuits (or adders) would have been necessary.

X. Thus, the appellants requested that the decision be set aside and that the patent be maintained in unamended form as granted.

The respondents requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. In the course of the oral proceedings, the respondents closely followed the lines of argumentation used by the Board in the above-mentioned communication pursuant to Article 11(2) RPBA (cf. under VII above) in order to demonstrate that the subject-matter of the granted Claim 1 of the patent was obvious to a skilled person. Nevertheless, in the end the Board found the arguments put forward by the appellants more convincing and decided, therefore, to allow the appeal.

3. The Board agrees with the description of the arrangements disclosed in documents D1 and D3 put forward by the parties (see under VIII and IX above). There were no differences between the parties as to the understanding of the design and functioning of the disclosed arrangements. A discrepancy, however, was apparent in the understanding of how the techniques disclosed in said documents could be combined by a skilled person.

The Board notes that, in the course of the proceedings before the opposition division, it was considered that, starting out from the teaching of D1, the problem to be solved in the present case was to save costs. Also, in the proceedings before the Board of Appeal the parties used the same approach. However, the Board considers that this problem is a bit too general. The skilled person nearly always has to try to minimize costs. This can certainly in most cases be done in many different ways. In the present case, having regard to the teaching of D1, it appears to the Board that it would not even be sure that the skilled person would use the teaching of D3 in order to save costs, since there exist probably other ways of making savings, e.g. by developing new luminous indicators or simplifying circuits. This appears to be supported by the interpretation of D3 made by the appellants (and not contradicted by the respondents - see letter of 19 December 1995, page 2) that applying D3 twice would require the separate provision of two microcomputers performing independent control of their own shift registers. At the priority date such components were certainly not cheap.

4. The Board considers that in the present case an objective **technical/practical problem** could, instead, be seen in that the main- and sub-picture indications

should be formed in such a way that their corresponding channel-or program numbers could be perceived by the user more quickly and with greater certainty than before. This corresponds mainly to the "second problem" identified by the appellants.

5. To arrive at the invention from the said problem, the skilled person firstly has to realize that the teaching of D3 could be used to arrive at a solution and, in particular, that also the sub-picture indicator should be displayed on-screen. Having chosen this line of reasoning, it appears to the Board that the skilled person would most likely have solved the problem by adopting the solution indicated by the appellants as the most probable solution, i.e. to locate both adders immediately before the CRT (see under IX above). This solution would have appeared to be the most economic one (only one circuit with one shift register) and also to offer the best visibility of the sub-picture indication, since the size of such an indication number would not have had to be reduced.

6. In their argumentation the respondents expressed the opinion that the teaching of D3 would have automatically led the skilled person to position the adder of the sub-picture discrimination indication signal before the composing circuit, since, according to D3, this signal was associated with the received video signal. However, they argued that the adder of the main picture discrimination indication signal could be positioned, in accordance with the desired priority of the signals (see under VIII above), either before or after the composing circuit. It appears to the Board, however, that, when using the teaching of D3 twice as proposed by the respondents, the adder of the main picture indication signal would also have been positioned before the composing circuit. This follows when strictly following the respondents interpretation

of D3, since this signal should also, apparently, be closely associated with the received synchronization signal, i.e. added to the received picture signal. The picture signal after the composing circuit is, in principle, not identical to the main picture signal, but belongs to the composed picture signal which is to be displayed on the screen.

7. Thus, it appears to the Board that, even, taking the more specialized problem, one does not in a simple or straight-forward way arrive at the invention. In fact, many different steps are necessary to arrive there and at every step different possibilities arise, the adoption of any of which may lead in different directions.

The Board, however, notes that the invention according to Claim 1 in relation to the prior art provides a TV-arrangement which (for the first time) is capable of displaying also the sub-picture indicator on the TV-screen. Moreover, the arrangement is so designed that the sub-picture indication is displayed on the sub-picture itself and, therefore, provides the advantage that it moves with the sub-picture over the screen when said picture is moved. Finally the main picture discriminating indication can never be covered with the sub-picture.

Therefore, the Board concludes that the subject-matter of Claim 1 of the patent as granted is not obvious within the meaning of Article 56 EPC in the light of the available prior art, but involves an inventive step. It satisfies therefore the requirements of Article 52 EPC. Consequently Claim 1 as granted may be maintained.

Order

For these reasons it is decided that:

1. The decision of the opposition division is set aside.

2. The case is remitted to the first instance with the order to maintain the patent as granted.

The Registrar: The Chairman:

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