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**Datasheet for the decision
of 11 February 2010**

Case Number: T 0893/07 - 3.4.01

Application Number: 04291741.9

Publication Number: 1496564

IPC: H01Q 1/24, H01Q 21/29

Language of the proceedings: EN

Title of invention:
Diversity antenna system

Applicant:
Sony Corporation

Opponent:
-

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56, 111(1)

Keyword:
"Inventive step (no)"
"Request for remittal (declined)"

Decisions cited:
T 0180/95, T 0047/90, T 0139/87, T 0111/98

Catchword:
-



Case Number: T 0893/07 - 3.4.01

D E C I S I O N
of the Technical Board of Appeal 3.4.01
of 11 February 2010

Appellant:

Sony Corporation
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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 5 December 2006
refusing European application No. 04291741.9
pursuant to Article 97(1) EPC 1973.

Composition of the Board:

Chairman: B. Schachenmann
Members: P. Fontenay
H. Wolfrum

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division to refuse European patent application No. 04 291 741.9. The decision was based on the grounds of added subject-matter (Article 123(2) EPC 1973), lack of novelty (Article 54(1)(2) EPC 1973), insofar as claim 1 was considered to be supported, and lack of inventive step (Article 56 EPC 1973) with regard to dependent claim 5. It was dispatched on 6 December 2006.

II. The appellant (applicant) lodged an appeal against this decision by notice filed by facsimile on 18 January 2007. The prescribed appeal fee was paid on the same day and the statement setting out the grounds of appeal was filed on 13 April 2007.

The appellant requested that the impugned decision be cancelled and a patent be granted on the basis of a set of claims 1 to 8 accompanying the statement of grounds.

Oral proceedings were requested in the case the Board contemplated to reject the appeal.

III. On 12 November 2009, the Board issued a summons to attend oral proceedings on 11 February 2010.

In a communication pursuant to Article 15(1) Rules of Procedure of the Boards of Appeal (RPBA) dated 4 December 2009, the Board expressed its provisional opinion with regard to the request then on file. In the Board's view, the claims did not meet the requirements of clarity under Article 84 EPC 1973 and contained added subject-matter, contrary to Article 123(2) EPC.

The Board further indicated that it considered the claimed subject-matter new over the disclosure of US-A-2001/0016477 (D1), relied upon by the examining division in its refusal. The appellant's attention was further drawn to document WO-A-99/55012 (D3), which appeared particularly relevant when deciding on the patentability of the claimed invention, and was therefore introduced *ex officio* into the appeal proceedings. In particular, the subject-matter of independent claim 1 appeared to be anticipated by the teaching of D3.

- IV. Taking into account the observations of the Board in its communication of 4 December 2009, the appellant filed, with letter dated 11 January 2010, a new request comprising new claims 1 to 6 and amended description pages 4, 5. Moreover, remittal of the case to the examining division was requested since, in the appellant's opinion, all the objections that had been raised in the decision under appeal had been overcome. Such a remittal was in conformity with established jurisprudence of the boards of appeal and would ensure that the applicant had the benefit of two instances.
- V. On 27 January 2010, the registrar informed the appellant on behalf of the Board that remittal of a case to the first instance department did not constitute an absolute right and that a decision on this issue would accordingly be taken during the oral proceedings, with the consequence that a decision on the substance of the case could also possibly be reached by the Board during said oral proceedings.

VI. Oral proceedings before the Board of appeal took place on 11 February 2010 in the presence of the appellant's representative. The appellant confirmed its request that the impugned decision be set aside and that a patent be granted on the basis of the following application documents:

Description

pages 1-3 and 6-24, as originally filed;

pages 4,5, as filed with letter of 11 January 2010;

Claims 1-6, as filed with letter dated 11 January 2010;

Drawings sheets 1/7-7/7, as originally filed.

As an auxiliary request, the appellant requested that the case be remitted to the first instance for further prosecution.

VII. Independent claim 1 reads as follows:

"1. An antenna device comprising:
a plurality of radiation elements (ANT1, ANT2);
at least one or more reactance elements (6;6a,6b);
switching means (SW1,SW2;SW1-SW3) adapted, in use,
to adopt switching states which selectively connect
each of said radiation elements either to nothing, to a
receiver/transceiver or to a reactance element, wherein
when the switching means is in a first switching state
said plurality of radiation elements define a first
circuit pattern forming a first antenna being an
antenna of a first antenna-type and when the switching
means is in a second switching state, different from
the first switching state, said plurality of radiation
elements define a second circuit pattern forming a

second antenna being an antenna of a second antenna-type; and

a controller (5) adapted, in use, to control the switching state of the switching means (SW1,SW2;SW1-SW3);

wherein the switching means (SW1,SW2;SW1-SW3) is adapted, in use, under the control of the controller (5), to selectively switch over between said first circuit pattern forming an antenna of a first type where one of said plurality of radiation elements (ANT1,ANT2) is used as a feed element while a reactance element (6;6a,6b) is connected to another of said radiation elements, and said second circuit pattern forming a second-type antenna, said second-type antenna being of an antenna-type selected in the group consisting of:

a) an antenna-type where a predetermined one of said plurality of radiation elements (ANT1,ANT2) is used as a feed element while the other radiation element(s) is/are a non-feed element, and

b) an adaptive array antenna type where said plurality of radiation elements (ANT1,ANT2) are used as feed elements respectively;

characterised in that the controller (5) is further adapted variably to control the reactance value of said reactance element (6;6a,6b)."

Claims 2 to 6 are dependent claims.

VIII. This decision is issued after the entry into force of the EPC 2000 on 13 December 2007. Reference is thus made to the transitional provisions for the amended and new provisions of the EPC, from which it may be derived which Articles of the EPC 1973 are still applicable to

the present application and which Articles of the EPC 2000 shall apply.

Where Articles or Rules of the former version of the EPC apply, their citations are followed by the indication "1973" (cf. office's EPC, Citation practice, pages 4-6).

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 EPC 1973 and Rule 64 EPC 1973. It is, thus, admissible.

2. *Patentability - Inventive step*

2.1 *Closest prior art*

Document D3 relates to the field of antennas and shares a great number of features with the claimed invention. Moreover, document D3 relies on the same basic concept as the invention, namely, the realisation of various antenna-types from a limited number of antenna elements by reconfiguring switching means within an antenna device. For these reasons, D3 is considered to define the closest prior art for the subject-matter of claim 1.

2.2 *Objective problem solved*

More specifically, as acknowledged by the appellant, D3 discloses an antenna device as recited in the preamble of claim 1 (cf. Figure 2; page 6, lines 1-3; page 7, lines 21-30; page 12, lines 4-21). It follows that the

claimed invention is distinguished from the antenna device of D3 in that the controller is further adapted variably to control the reactance value of the reactance element, as recited in the characterising portion of claim 1.

This feature permits to improve the directional characteristic of the antenna device.

The objective problem solved by the invention may thus be defined as to improve the degree of freedom in the control of the antenna configuration in order to generate the directional characteristic best suited to a signal to be received (or emitted) without having to add further antenna elements.

2.3 *Obviousness*

In the appellant's view, document D3 considered in its entirety, did address the problem of providing greater directionality of an antenna device but solved it by increasing the number of antenna elements. Particular reference was made in this respect to Figure 7 and the corresponding description. Consequently, there was no reason to depart from this teaching and to change the nature of the antennas, as required by independent claim 1.

The Board notes, however, that document D3 does not only suggest to increase the number of elements in order to improve directionality, as is indeed suggested in connection with Figure 7, but also discloses to affect the radiation pattern of an antenna device by increasing the number of switching states and by

appropriately selecting the radiation pattern of at least one radiation element, as suggested on page 7, lines 21-30, of D3.

Relying on this teaching, the skilled person would have selected antenna-types which *per se* permit to achieve high directivity in order to further improve directionality of the antenna device.

As acknowledged by the applicant in paragraphs [0013] to [0016] and [0018] of the published application, Electronically Steerable Passive Array Radiator Antennas (ESPAR) belonged to the prior art when the present application was filed and were known to the skilled person. The known principle according to which directivity of such antennas is controlled by controlling the reactance is discussed in the present application in connection with Figure 13. Explicit reference is also made, in this respect, to Japanese patent publication 2001-24431.

Thus, it would have been straightforward for the skilled person to replace at least one of the antenna elements of D3 by an antenna with a controllable reactance value to further increase the possibilities of selecting the antenna directivity best adapted to the signal to be received (or transmitted).

In the Board's judgement, the association of the switching means of D3 with a known ESPAR antenna, as discussed in the present application in connection with JP-2001-24431, does not provide any technical effect which would extend beyond the sum of the effects obtained by these means considered in isolation. The

claimed subject-matter is thus considered to result from the mere aggregation of known device features for which the presence of an inventive step in the sense of Article 56 EPC is denied.

The appellant's request to have a patent granted on the basis of the current request is, hence, rejected.

3. *Request for remittal (Article 111(1) EPC 1973)*

- 3.1 The appellant's representative reminded the Board that the summons to attend oral proceedings before the examining division had been issued after a single communication of the examining division and that, as a consequence, the appellant/applicant had had only limited opportunities to defend his case before the first instance department. She further emphasized that the current request remedied all objections relied upon by the examining division in its refusal and that the jurisprudence of the boards of appeal implied, in such situations, that the case be remitted back to the examining division in order to ensure that the applicant had the benefit of two instances. In support of this view, reference was made *inter alia* to decisions of the boards of appeal T 180/95, T 47/90 and T 139/87. Finally, the appellant stressed that the document reflecting the closest prior art had been introduced *ex officio* by the Board of appeal for the first time into the proceedings in the annex to the summons to attend oral proceedings before the Board.

In conclusion, the appellant's representative held that the balance between conflicting principles such as, on the one hand, the right of the appellant to be heard

and, on the other hand, the right of the public to have a fair knowledge of the rights resulting from a patent application within a reasonable period of time was on the side of the appellant.

- 3.2 The argument based on the fact that the examining division issued just one communication before it summoned to oral proceedings and thus deprived the applicant from further opportunities to defend its case is not convincing. Apart from the fact that the course of action followed by the examining division is in line with common examination proceedings, it is noted that the applicant even did not seize the opportunity to defend its position before the examining division and withdrew its request for oral proceedings one month before they took place. As a consequence, oral proceedings were held in the absence of the applicant.

The Board further observes that document D3 is a family member of a document cited in parallel proceedings before the US Patent Office and that its content was thus known to the appellant. In this context, the appellant could not be considered unprepared to the introduction of D3 into the appeal proceedings.

Furthermore, the Board notes that, contrary to the view defended by the appellant, the jurisprudence of the boards of appeal is not unanimous when deciding on the possible remittal of a case to the department of first instance. As for instance stressed in decision T 111/98, remittal depends on the circumstances of the case. In particular, *"Amendment of the claims in response to the citation of a new document during appeal proceedings is not as such a sufficient reason to remit the case to*

the department of first instance" (cf. T 111/98, headnote; Reasons, point 1.2). In view of this decision, what actually appears to be essential when a board exercises its discretion to remit a case is whether the factual framework has substantially changed during the appeal proceedings.

In the Board's judgement, the introduction of D3 into the present appeal proceedings does not, however, amount to a substantial change in the factual framework. As may be derived from the file wrapper, the problem-solution analysis carried out by the Board starting from document D3 is quite similar to the analysis made by the examining division when starting from document D1. In particular, the distinguishing feature of the claimed invention still resides in the sole feature of the controller being adapted to variably control the reactance value. Similarly, the objective problem to be solved is still considered to be the desire to improve the degree of freedom in the control of the antenna configuration in order to control the antenna device, as established by the examining division in its decision with regard to former dependent claim 5.

- 3.3 The position of the examining division with regard to current claim 1 can thus be reasonably estimated from the previous proceedings before the examining division as may be appreciated from the file wrapper. A remittal to the examining division would therefore appear to be a purely formalistic act and contrary to the principle of procedural economy.

For these reasons, the request that the case be remitted to the examining division for further prosecution is rejected.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

R. Schumacher

B. Schachenmann