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Datasheet for the decision of 7 May 2010

Case Number: T 1217/07 - 3.4.01

Application Number: 01660108.0

Publication Number: 1164657

IPC: H01Q 9/27

Language of the proceedings: EN

Title of invention:
Multiband antenna

Patentee:
Pulse Finland Oy

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Relevant legal provisions (EPC 1973):
EPC Art. 84, 54(1)(2), 56

Keyword:
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Decisions cited:
-

Catchword:
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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1217/07 - 3.4.01

D E C I S I O N
of the Technical Board of Appeal 3.4.01
of 7 May 2010

Appellant: Pulse Finland Oy
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Representative: Vanhala, Jorma Kalevi
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 26 February 2007 refusing European application No. 01660108.0 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: B. Schachenmann
Members: G. Assi
P. Fontenay

Summary of Facts and Submissions

I. The European patent application No. 01660108.0 (publication number 1 164 657) was refused by the examining division which held that the independent claims then on file did not meet the requirements of Articles 123(2), 84 and 56 EPC 1973.

The examining division considered the following prior art document inter alia:
(D1) EP-A-0 736 926.

II. The applicant (appellant) lodged an appeal, received on 24 April 2007, against the decision of the examining division. The appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 16 June 2007.

With the grounds of appeal the appellant produced arguments against the reasons of the appealed decision and requested that the decision be set aside and the application be reconsidered on the basis of a set of amended claims 1 to 7.

With a communication of 27 November 2009 the appellant was summoned to oral proceedings scheduled to take place on 8 February 2010. In an annex to the summons the Board held that the requirement of Article 123(2) EPC and Articles 54, 56 EPC 1973 were met but raised objections under Article 84 EPC 1973 against the claims.

With a letter of 26 January 2010 the appellant's representative notified the Board of the fact that he did not intend to attend the oral proceedings. The

appellant amended the application and requested that the decision under appeal be set aside and a patent be granted on the basis of the following documents:

- Claims 1-6 filed with the letter of 26 January 2010;
- Description page 1 as originally filed;
- Description page 2 filed with a letter of 27 June 2005;
- Description pages 3, 4, 5 filed with the letter of 26 January 2010;
- Figures 1, 2a, 2b, 3, 4, 5 filed with the letter of 26 January 2010.

Oral proceedings took place on 8 February 2010 as scheduled. Nobody was present on behalf of the appellant. After deliberation by the Board, the Chairman declared that the proceedings were continued in writing. The appellant was informed with a communication of 9 March 2010 corresponding to a copy of the minutes of the oral proceedings.

With a further communication of 9 March 2010 the Board proposed the following amended text in which it intended to grant a patent:

- Claims 1-6;
- Description pages 1, 2, 2A, 3, 4, 5;
- Figures 1, 2a, 2b, 3, 4, 5.

Moreover, the Board invited the appellant to state whether it approved the proposed text.

With a reply of 29 April 2010 the appellant approved the text. The appellant also made a remark which, however, was not a condition for the approval.

III. The wording of claim 1 reads as follows:

"*An antenna structure having at least two frequency bands and comprising a helix element (210; 310) with a varying pitch, and a conductive and electrically unshielded joining piece (220; 320) to which the helix element is attached galvanically by its one end,* ***characterized*** *in that the joining piece (220; 320) is arranged to function as a radiator in the lowest frequency band of the antenna structure together with the helix element and in another frequency band, its fundamental resonance frequency being located in said another frequency band, and the joining piece (220; 320) further is extended in the transverse direction in respect of the axis of the helix element to achieve a certain electrical length at said fundamental resonance frequency with a smaller physical length in the direction of the axis of the helix element.*"

The wording of independent claim 6 reads as follows:

"*A radio apparatus (MS) comprising an antenna (500) which has at least two frequency bands and comprises a helix element (510) with a varying pitch, and a conductive and electrically unshielded joining piece (520) to which the helix element is attached galvanically by its one end,* ***characterized*** *in that the joining piece (520) is arranged to function as a radiator in the lowest frequency band of the antenna together with the helix element and in another frequency band, its fundamental resonance frequency being located in said another frequency band, and the joining piece further is extended in the transverse direction in respect of the axis of the helix element to achieve a certain electrical length at said*

fundamental resonance frequency with a smaller physical length in the direction of the axis of the helix element."

Claims 2-5 depend on claim 1.

IV. The revised version of the European Patent Convention or EPC 2000 entered into force on 13 December 2007. In the present decision, reference is made to "*EPC 1973*" or "*EPC*" for EPC 2000 (EPC, Citation practice, pages 4-6) depending on the version to be applied according to Article 7(1) of the Revision Act dated 29 November 2000 (Special Edition No. 1 OJ EPO 2007, 196) and the decisions of the Administrative Council dated 28 June 2001 (Special Edition No. 1 OJ EPO 2007, 197) and 7 December 2006 (Special Edition No. 1 OJ EPO 2007, 89).

Reasons for the Decision

1. The appeal is admissible.

2. Article 123(2) EPC

2.1 Present claim 1 essentially corresponds to claim 1 as filed with the following amendments, for each of which the support in the English translation of the original disclosure is indicated in brackets:

– The antenna structure is defined as "*having at least two frequency bands*" (page 2, lines 10-14 and 27-30; Figure 5 with the corresponding description);

– The joining piece "*is arranged to function as a radiator in the lowest frequency band of the antenna structure together with the helix element*" (page 4, lines 6-8; page 5, lines 3 and 4; Figure 5, first band);

– The joining piece is arranged to function as a radiator "*in another frequency band, its fundamental resonance frequency being located in said another frequency band*" (page 4, lines 5 and 6; page 5, lines 7-10; Figure 5, fourth band);

– The addition of the feature that "*the joining piece further is extended in the transverse direction in respect of the axis of the helix element to achieve a certain electrical length at said fundamental resonance frequency with a smaller physical length in the direction of the axis of the helix element*" (page 4, lines 1, 2; Figure 2; page 4, lines 23-25; Figure 4; claims 4 and 5).

2.2 Present claims 2-5 essentially correspond to claims 2-5 as filed with amendments of purely linguistic nature. In particular, in claim 5 the term "*substantially*" is replaced by "*essentially*" (claim 5 as filed)

2.3 Present claim 6 essentially corresponds to claim 7 as filed with amendments defining the antenna structure as in present claim 1.

2.4 The objection raised in the decision under appeal (point II.1) has been overcome by the amendments made by the appellant to the wording of the present independent claims (grounds of appeal, paragraph a) on pages 1 and 2).

2.5 The description corresponds to the description as filed with the acknowledgement of document D1 and the deletion of the example of original Figure 3 with the corresponding text of the description.

With regard to the acknowledgement of D1, there is no need for the further amendment suggested by the appellant in the letter of 29 April 2010. Indeed, the expression "*support coil*" is mentioned in D1 (column 3, lines 30-37).

2.6 Therefore, the application is not amended in such a way that it contains subject-matter which extends beyond the content of the application as filed.

3. Article 84 EPC 1973

3.1 In the present claims, relative terms like "*vertical*" and "*horizontal*" (claims 6 as filed) have been avoided.

3.2 In present claim 2, the expression "*by varying the pitch of the helix*" (claim 2 as filed) has been amended because it rendered unclear the category of the claim.

3.3 The objections raised in the decision under appeal (point II.2) are not convincing in view of the arguments produced by the appellant (grounds of appeal, paragraphs b), c), d) and e) on pages 2-4).

3.4 The original Figure 3 with its corresponding description has been deleted because it concerns an example that does not fall within the scope of claim 1 as amended.

3.5 Therefore, the claims are clear and are supported by the description.

4. Article 54(1),(2) EPC 1973

4.1 None of the prior art documents on file discloses an antenna structure and a radio apparatus according to present claims 1 and 6.

4.2 Therefore, the subject-matter of present claims 1 and 6 is considered to be new.

5. Article 56 EPC 1973

5.1 In a communication of 3 May 2004 (point 2) and in the decision under appeal (point I.3) the examining division considered that the inclusion of the feature of claim 4 as filed into the independent claims would lead to a positive assessment of inventive step.

5.2 The Board agrees in principle with this view. However, the effect achieved by the provision of a conductive projection 226 (original Figures 2a and 2b) according to claim 4 as filed is also achieved by the provision of a counterpart 425 essentially wider that the rest of the joining piece (original Figure 4) according to claim 5 as filed. Indeed, in the communication of 3 May 2004 only claims 1-3 and 7 as filed were considered to lack inventive step.

Present claim 1 takes account of this in that it recites the feature that "*the joining piece (220; 320) further is extended in the transverse direction in*

respect of the axis of the helix element to achieve a certain electrical length at said fundamental resonance frequency with a smaller physical length in the direction of the axis of the helix element". The same applies for present claim 6.

None of the prior art documents on file suggests such a feature.

5.3 Therefore, the subject-matter of present independent claims 1 and 6 is considered as involving an inventing step. The same applies to the dependent claims.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent on the basis of the following documents proposed with the communication of 9 March 2010 and approved by the appellant with the letter of 29 April 2010:
   - Claims 1-6;
   - Description pages 1, 2, 2A, 3, 4, 5;
   - Figures 1, 2a, 2b, 3, 4, 5.

The Registrar The Chairman

R. Schumacher B. Schachenmann