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Datasheet for the decision of 6 May 2014

Case Number: T 1533/10 - 3.4.01

Application Number: 01904652.3

Publication Number: 1254490

IPC: H01Q1/38

Language of the proceedings: EN

Title of invention:
ANTENNA FOR TRANSPONDER

Applicant:
Q-Free ASA

Headword:

Relevant legal provisions:
EPC 1973 Art. 84

Keyword:
Lack of clarity

Decisions cited:

Catchword:

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Case Number: T 1533/10 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 6 May 2014

Appellant: (Applicant)	Q-Free ASA P.O. Box 3974 Leangen 7443 Trondheim (NO)
Representative:	Curo AS Industriveien 53 7080 Heimdal (NO)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 11 March 2010 refusing European patent application No. 01904652.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	P. Fontenay
Members:	H. Wolfrum
	J. Geschwind

Summary of Facts and Submissions

I. European patent application 01 904 652.3 (publication No. WO 01/59879 and EP 1 254 490) was refused by a decision of the examining division dispatched on 11 March 2010 for the reasons of added subject-matter (Article 123(2) EPC) in claim 1 of the sole request then on file and for the reason of insufficiency of disclosure (Article 83 EPC 1973) of the claimed subject-matter.

II. Before having received the decision in writing, the applicant lodged an appeal against the decision on 15 February 2010. The prescribed appeal fee was paid on the same day. A statement setting out the grounds of appeal was filed on 15 April 2010.

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

claims 1 to 11 as filed with the statement of grounds of appeal;
description pages 1 to 5 as published under the PCT;
drawings Figures 1 and 2 as published and Figure 3 as filed with the statement of grounds of appeal.

III. On 11 December 2013 the appellant was summoned to oral proceedings.

In an annex accompanying the summons pursuant to Article 15(1) RPBA the Board addressed *inter alia* several aspects of lack of clarity (Article 84 EPC 1973) in the claims on file, including ambiguities in claim 1 having regard to the structure of the "*excited antenna element*".

IV. In the oral proceedings, which took place on 6 May 2014, the appellant reiterated its request made in writing.

V. Independent claim 1 of the appellant's **request** reads as follows :

"*1. An antenna for sending and receiving microwave radiation signaling, for use in a transponder system for wireless toll payment, comprising: a dielectric antenna substratum (11) having a bearing surface (12), a frame shaped excited antenna element (13) extending in a first plane disposed on the dielectric antenna substratum bearing surface (12), a polarization transformer (22), wherein the excited antenna element (13) is linearly polarized and disposed at a predetermined distance from the polarization transformer (22) to transform linearly polarized radiation to circular or elliptical polarized radiation, and wherein the polarizationtransformer* [sic!] *(22) operates as a director, a reflector disposed at a predetermined distance from the excited antenna element (13), at least one parasite element or director placed in a predetermined distance from the excited antenna element (13), wherein the excited antenna element (13) comprises two substantially equal shaped frames (14, 15) placed at a predetermined distance, and a diode (25) connected between the two frames (14, 15) for demodulation, and a coupling capacitor (23) connected to the frames (14, 15) for the connection of two feeding lines (24).*"

Claims 2 to 11 are dependent claims.

VI. The appellant's arguments, as far as relevant for the present decision, may be summarized as follows:

As regards the structure of the antenna element formed of two substantially equal shaped frames, some confusion was admittedly caused by the fact that the application documents used different words for the same features, such as the words "*loop*", "*loop elements*", "*frames*", "*frame elements*", and "*branches*" and that reference numeral "*15*" in Figure 3 of the application pointed to the wrong spot. However, these inaccuracies did not justify the examining division's erroneous interpretation of the embodiment of said Figure 3 and its description as referring to an antenna element that was formed by two concentrically arranged square frames of slightly different circumference. Such an interpretation ignored the fact that the skilled person in the technical field at issue was able to readily understand Figure 3 and its corresponding description on pages 3 to 5 as referring to a QUAD-type antenna element that was formed by two frame elements 14 and 15 in the shape of a "*C*" or a "*U*" which faced each other at their open sides, separated by a predetermined distance. An example for such an antenna structure in which the free ends were interconnected by a diode and a capacitor, respectively, was known to the skilled person for instance from document D4 (EP-A-0 344 885; Figure 1). More specifically, the skilled reader would understand from the passage on page 3, lines 24-25, of the present description : "*The frames 14 and 15 are made of copper tracks (not further described) having a fixed width and height, …*", that the two lines which formed in Figure 3 the drawing of the antenna element constituted the borders of a single copper track of fixed width and height, just as was shown in Figure 1 of document D4. Since, on the one hand, reference

numeral "*15*" did not point at any feature in Figure 3 and since, on the other hand, the reference numeral "*14*" for one of the frames pointed to the space between the two lines/tracks at one side of the antenna element, it was clear to the skilled person that reference numeral "*15*" should point to the opposite frame element. In this context, the term "*circumference*" had to be understood as referring to that of a respective semi-circle. Finally, in view of the fact that in Figure 3 of the application the free ends of the U-shaped frame elements were hidden below boxes indicating the diode and capacitor, no reasonable doubt was left for the skilled person that the appellant's interpretation was the only correct interpretation.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rule 99 EPC and is, therefore, admissible.

2. Clarity

2.1 Having regard to the matter of clarity of the wording of present claim 1, one of the crucial questions concerns the structure of the "*excited antenna element (13)*", which is defined by the feature "*wherein the excited antenna element (13) comprises two substantially equal shaped frames (14, 15) placed at a predetermined distance*".

2.2 Whereas the appellant understands the feature in question to define an antenna element which is formed from two coplanar, C- or U-shaped frames that face each

other at their free ends, the examining division interprets the same feature as defining a structure which consists of two closed frames of slightly different circumference that are concentrically arranged, one in the other.

Regardless of which of these two different interpretations has more merits, the mere fact that claim 1 can be interpreted in two diverging, mutually incompatible manners as regards the structure of the antenna element is proof for a profound ambiguity. Thus, claim 1 on file does not provide a clear and unambiguous definition of what would fall under its terms.

2.3 The appellant's arguments are unconvincing.

The clarity problem identified above is not based on any of the various inaccuracies in the drawing of Figure 3 and the related description. Thus, it is immaterial whether the notional skilled person would realize to which part of the antenna structure sketched in Figure 3 reference numeral "*15*" should be pointing.

Nor has the reference to a prior art document, such as document D4, any pertinence unless it would be proven that the content of such a document represents common general knowledge.

What matters instead is the fact that the appellant's understanding of claim 1 as defining an antenna element in the form of two coplanar, C-shaped frames that face each other at their free ends, where they are interconnected by a diode and a capacitor, respectively, is not the only technically reasonable interpretation, neither of the definition of the

antenna element in claim 1 nor of what is shown by Figure 3 of the application as originally filed. The examining division's understanding of the claim definition as encompassing an antenna element that consisted of two closed, concentrically arranged frames is also a viable interpretation which even gets support from the application documents as originally filed. In fact, the description refers to the antenna element as being "… *made as a Quad antenna, however, as the antenna element not only consists of a simple, quadratic shaped frame, but consists of two frames 14 and 15 (fig. 3) situated in the same plane, one in the other.*" (page 3, lines 22 to 24 of the application as originally filed and published). The fact that each of the frames forms a Quad antenna on its own (*ie* that it has the shape of a quadratic loop, the circumference of which corresponds in size to the resonance wavelength λ) is further confirmed by original claims 16 to 18 and the passage on page 3, line 26 to page 4, line 2 of the originally-filed application : "*The individual frame parts in the two frames 14 and 15, which extend in parallel, have a predetermined mutual distance. The circumference of the two frames 14 and 15 may be utilized to achieve a significant directional effect, without additional antenna elements amplifying this effect being necessary, and in size is near the wavelength λ. The relatively small difference between the size of the circumferences of the two frames 14 and 15 also means that the resonance frequency of these two frame elements are correspondingly different, such that a certain broad band effect is already achieved through this special combination of two Quad antenna elements.*"

2.4 It follows, that claim 1 of the appellant's request on file does not meet the requirement of Article 84 EPC 1973 having regard to clarity.

3. For the above reasons, the appellant's request for grant of a patent is not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

R. Schumacher P. Fontenay

Decision electronically authenticated