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**Datasheet for the decision
of 25 June 2018**

Case Number: T 1614/12 - 3.4.01

Application Number: 05755062.6

Publication Number: 1766723

IPC: H01Q21/00, H01P5/02

Language of the proceedings: EN

Title of invention:

ANTENNA COMPRISING A CONNECTOR ASSEMBLY

Applicant:

Cellmax Technologies AB

Headword:

Relevant legal provisions:

EPC Art. 84

RPBA Art. 13(1)

Keyword:

Claims - clarity (no)

Decisions cited:

T 0190/99

Catchword:



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Case Number: T 1614/12 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 25 June 2018

Appellant: Cellmax Technologies AB
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 24 February
2012 refusing European patent application No.
05755062.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman P. Fontenay
Members: F. Neumann
R. Winkelhofer

Summary of Facts and Submissions

- I. The appeal is directed against the decision of the Examining Division to refuse European patent application 05 755 062.6. The application was refused for lack of clarity of claim 1.
- II. With the statement setting out the grounds of appeal, the Appellant filed a new set of claims 1-12 and requested that the decision under appeal be set aside and that a patent be granted on the basis of this new set of claims.
- III. In a communication in preparation of oral proceedings, the Board set out its preliminary opinion that the claims on file did not meet the requirements of Art. 84 EPC.
- IV. With submission of 24 May 2018, the Appellant filed a further set of claims 1-12. During the oral proceedings the Appellant corrected "coaxial lines" in line 4 of claim 1 to "coaxial line". It was clarified that this latest set of claims (with the correction) formed the basis of a first auxiliary request, the claims filed with the statement of grounds forming the basis of the main request.

In addition thereto, a set of claims 1-11 was filed during the oral proceedings which formed the basis of a second auxiliary request.
- V. The final requests of the Appellant are that the decision under appeal be set aside and a patent be granted on the basis of the claims 1-12 filed with the statement of grounds (main request), or on the basis of claims 1-12 filed with the submissions of 24 May 2018

and with the above-mentioned correction on line 4 (auxiliary request 1), or on the basis of claims 1-11 filed during the oral proceedings (auxiliary request 2).

VI. Claim 1 of the **main request** reads as follows:

"An antenna connector assembly in an antenna (1), said antenna (1) comprising a housing containing coaxial lines (10), where each coaxial line (10) comprises an outer conductor, being formed by walls (4) and a reflector (3), and a center conductor (2) in parallel with the reflector (3), and a connector (8) being connected to the coaxial lines (10) within the housing and to antenna feeder cables and being mechanically attached to the antenna housing, characterised in that the coaxial connector (8) is connected to a first end of a separate coaxial cable (7), and that the second end of the separate coaxial cable (7) is connected to the antenna outer conductor (3, 4) as well as to the center conductor (2)."

Claims 2 to 12 are dependent claims.

Claim 1 of **auxiliary request 1** reads as follows:

"An antenna (1) comprising a housing containing coaxial lines (10), where each coaxial line (10) comprises an outer conductor, being formed by walls (4) and a reflector (3), and a center conductor (2) in parallel with the reflector (3), and a connector (8) being connected to the coaxial line (10) within the housing and connectable to antenna feeder cables and being mechanically attached to the antenna housing, characterised in that a first end of a separate coaxial cable (7) is connected to the coaxial connector (8),

and that a second end of the separate coaxial cable (7) is connected to the antenna outer conductor (3, 4) as well as to the center conductor (2)."

Claims 2 to 12 are dependent claims.

Claim 1 of **auxiliary request 2** reads as follows:

"An antenna (1) comprising a housing containing coaxial lines (10), where each coaxial line (10) comprises an outer conductor, being formed by walls (4) and a reflector (3), and a center conductor (2) in parallel with the reflector (3), and a connector (8) being connected to the coaxial line (10) within the housing and connectable to antenna feeder cables and being mechanically attached to the antenna housing, characterised in that a first end of a separate coaxial cable (7) is connected to the coaxial connector (8), and that a second end of the separate coaxial cable (7) is connected to the antenna outer conductor (3, 4) as well as to the center conductor (2) wherein the separate coaxial cable (7) is provided with a bow and is connected to the antenna coaxial line (10) and its centre conductor (2) in a substantially perpendicular way."

Claims 2 to 11 are dependent claims.

VII. The arguments of the Appellant, insofar as they are pertinent to the present decision, are as set out below in the reasons for the decision.

Reasons for the Decision

Main request

1. Art. 84 EPC requires that the claims be clear and concise and be supported by the description. This means that the claims themselves have to be clear without recourse to any additional explanations or references.
2. Claim 1 is directed to "An antenna connector assembly in an antenna (1), said antenna (1) comprising a housing containing coaxial lines (10), where each coaxial line (10) comprises an outer conductor, being formed by walls (4) and a reflector (3), and a center conductor (2) in parallel with the reflector (3)...".

In the contested decision, the Examining Division held that the term "reflector (3)" was unclear in the context of claim 1. Neither the function of the reflector in the coaxial lines nor its relationship to other features of the antenna was defined.

3. The Appellant explained that an antenna was typically made up of one or more dipoles which were arranged to transmit and receive communication signals, behind which an antenna reflector was arranged. An antenna feeding network was typically arranged on the rear side of the antenna reflector. Such an arrangement was well known to the skilled person as could be seen from a number of patent documents which the Appellant cited. With this structure in mind, it would be clear to the skilled person that the reflector (3) of claim 1 was in fact the antenna reflector. The skilled person would understand that the outer conductor of each coaxial line was made up of a base and walls, the base being the antenna reflector. To illustrate the intended

structure, reference was made to Figure 6 of the Appellant's application WO-A-2005/101566. Here it could be seen that the radiating elements of the antenna were provided on one side of the reflector and the coaxial lines were provided on the other side. The corresponding part of the description stated that the compartments of the coaxial lines were used as the reflector for the dipoles. As shown in Figure 6, the outer conductors of the coaxial lines were formed using the antenna reflector as a base whilst the walls formed the sides thereof. Thus, the "reflector (3)" of claim 1 was actually intended to denote the antenna reflector.

4. It is not contested that the skilled person would understand what is meant by an antenna reflector. However, it is not clear from the wording of claim 1 that the walls of the outer conductor of the coaxial lines are in fact formed directly on the antenna reflector, as explained by the Appellant. It is only possible to come to this understanding after taking into account the Appellant's explanations and studying the patent documents cited by the Appellant. Claim 1 makes no suggestion that the "reflector (3)" could in fact be the antenna reflector. As a matter of fact, the entire application makes no such suggestion.

Claim 1 only refers to "a reflector (3)" in the context of a coaxial line without suggesting that this could be the antenna reflector. Specifically, claim 1 states that the outer conductor of each coaxial line is "formed by walls (4) and a reflector (3)". In the context of the outer conductor of the coaxial lines, there is nothing in claim 1 which would lead the skilled person to deduce that this reflector (3) could in fact be the antenna reflector.

The typical antenna arrangement referred to by the Appellant has not been defined - or even suggested - in claim 1. In fact, claim 1 refers only to an antenna comprising a housing containing coaxial lines and a connector. No relationship between the housing (or the coaxial lines contained therein) and any of the other antenna elements, notably the dipoles or the antenna reflector, is mentioned. There is therefore nothing in claim 1 which could suggest that the reflector (3), which forms part of the outer conductor of each coaxial line, could in fact be the antenna reflector. In the absence of any mention of the antenna reflector, there is simply no way that such a deduction could be made.

5. This problem is exacerbated by the fact that claim 1 defines that the coaxial lines are contained in a housing. This creates the impression that a separate unit is provided in which the coaxial lines are accommodated. This makes it even more unlikely that the outer conductors of the coaxial lines (which are, according to claim 1, located inside the housing) are partially formed from the antenna reflector.
6. Moreover, the fact that the Appellant's own application WO-A-2005/101566 clearly explains that the compartments of the coaxial lines are used as the reflector for the dipoles only underlines that the structural relationship between the coaxial lines and the antenna reflector is missing from the definition of the antenna in claim 1 of the present application.

It is stressed, in this respect, that WO-A-2005/101566 cannot be seen as illustrating common general knowledge in the field of antennas upon which the skilled person could have relied. There is also no suggestion in the

present application that the term "reflector" refers to a reflector in the sense given to that term in WO-A-2005/101566.

7. Even "a mind willing to understand" (see e.g. T 190/99) would have difficulties making the link between the reflector (3) of claim 1 and the antenna reflector. Indeed, a mind willing to understand can only go so far before it has to resort to guesswork and speculation.

The reflector (3) in claim 1 is only mentioned in relation to the outer conductor. It is not at all apparent that this reflector (3) could actually be the antenna reflector. As pointed out by the Examining Division, neither the function of the reflector (3) in the context of the coaxial lines, nor its relationship to the other features is clear. In the absence of any indication in claim 1 that the "reflector (3)" is in fact the antenna reflector, only guesswork could lead the skilled reader to this assumption.

8. The Appellant pointed to paragraph 2 of the description, which stated that "A typical communications antenna consists of a number of radiating elements, a feeding network and a reflector." From this, it was clear that the reflector referred to throughout the application must be the antenna reflector.

However, it would be purely speculative to consider that the reflector (3) referred to in the context of the coaxial lines in claim 1 is in fact the same reflector as that referred to in paragraph 2 of the description. Not even the description of the invention in the paragraph bridging pages 5 and 6 makes a link to the antenna reflector mentioned in paragraph 2. Here it

is merely stated that the coaxial lines are in parallel with "a reflector 3" without suggesting that this unspecified reflector is the antenna reflector. More to the point, it is not clear from claim 1 that the reference to "a reflector (3)" should actually be understood to be a reference to the antenna reflector mentioned in paragraph 2 of the description.

9. Without any further explanation in claim 1 with respect to the reflector (3), it is not even possible to identify what distinguishes the walls of the coaxial lines from said reflector (3). It is therefore not apparent how the outer conductor is constructed, rendering the claim unclear (Art. 84 EPC).
10. As a result the main request is not allowable.

Auxiliary request 1

11. Auxiliary request 1 was filed after the the grounds of appeal had been filed. In accordance with Art. 13(1) RPBA, any amendment to a party's case after it has filed its grounds of appeal may be admitted and considered at the Board's discretion. Thus, before addressing the allowability of the request the Board had to decide on its admissibility.
12. The amendments to claim 1 represent an attempt to address at least some of the objections raised in the communication of the Board. In view of the relative straightforward nature of these amendments, auxiliary request 1 is admitted into the proceedings.
13. Claim 1 has been amended with respect to claim 1 of the main request in that it is now directed to an antenna,

instead of an antenna connector assembly. However, no additional features of the antenna are listed over and above those listed in claim 1 of the main request. Notably, no mention is made of an antenna reflector. This amendment therefore does not help to clarify the significance of the reflector (3). Even if it were implicit that the antenna comprised a reflector, no mention is made of any structural relationship between the coaxial lines and such an antenna reflector. Just as in claim 1 of the main request, the reference to "a reflector (3)" does not specify, either explicitly or by implication, that the reflector (3) is actually the antenna reflector.

Due to the similarity of wording, the above clarity objection raised against claim 1 of the main request applies equally to claim 1 of auxiliary request 1.

14. As a result, auxiliary request 1 is not allowable.

Auxiliary request 2

15. As noted above, Art. 13(1) RPBA allows the Board to exercise its discretion when considering whether to admit any amendment to a party's case made after the grounds of appeal have been filed. Art. 13(1) RPBA also states that the discretion shall be exercised in view of *inter alia* the complexity of the new subject matter submitted, the current state of the proceedings and the need for procedural economy.
16. It is established case law that requests filed very late (i.e. shortly before or during the proceedings) will therefore be admitted only if they are *prima facie* allowable. This means that a new request which is filed

at a very late procedural stage and which is unsuitable for overcoming the doubts as to the allowability of the claims, is unlikely to be admitted (see Case Law of the Boards of Appeal of the European Patent Office, 8th Edition, IV.E.4.2.2).

17. Claim 1 consists of a combination of claims 1 and 2 of the first auxiliary request and now defines the shape and the manner of connection of the separate coaxial cable. This amendment was made in an attempt to overcome an objection raised in the Board's communication and discussed briefly at the oral proceedings with regard to the mechanical stability of the connection.
18. However, none of the objections which were raised against claim 1 of the main request or auxiliary request 1 with respect to the reflector (3) are addressed by this amendment. The claims are therefore not *prima facie* allowable.
19. As a result, auxiliary request 2 is not admitted into the proceedings.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



R. Schumacher

P. Fontenay

Decision electronically authenticated