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Datasheet for the decision of 12 April 2016

Case Number: T 1390/11 - 3.4.01

Application Number: 03748488.8

Publication Number: 1556710

IPC: G01R33/36

Language of the proceedings: EN

Title of invention:
CONNECTION LEAD FOR AN ELECTRICAL ACCESSORY DEVICE OF AN MRI SYSTEM

Applicant:
Philips Intellectual Property & Standards GmbH
Koninklijke Philips N.V.

Headword:

Relevant legal provisions:
EPC 1973 Art. 84

Keyword:
Claims - clarity - main request (no) - clarity - auxiliary request (no)

Decisions cited:

Catchword:

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Office européen des brevets

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Case Number: T 1390/11 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 12 April 2016

Appellant: (Applicant 1)	Philips Intellectual Property & Standards GmbH Steindamm 94 20099 Hamburg (DE)
Appellant: (Applicant 2)	Koninklijke Philips N.V. High Tech Campus 5 5656 AE Eindhoven (NL)
Representative:	de Haan, Poul Erik Philips International B.V. Philips Intellectual Property & Standards High Tech Campus 5 5656 AE Eindhoven (NL)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 10 February 2011 refusing European patent application No. 03748488.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Assi
Members:	T. Zinke
	F. Blumer

Summary of Facts and Submissions

I. The appeal filed on 22 March 2011 lies from the decision of the examining division, posted on 10 February 2011, refusing European patent application No. 03 748 488.8, published with publication No. 1 556 710 (WO-A-2004/038443). The appeal fee was paid on the same date. The statement setting out the grounds of appeal was filed on 14 June 2011.

II. In its decision the examining division refused the application according to the then pending single request, because claims 1, 2, 4 and 6 to 10 did not meet the requirements of Article 84 EPC 1973 (clarity and support by the description) and amendments made to claims 1, 6, 7, 9 and 10 were considered as contravening Article 123(2) EPC.

III. With the notice of appeal the appellant (applicant) requested that the decision under appeal be set aside and a patent be granted.

IV. With the statement setting out the grounds of appeal, the appellant requested to grant a European patent on the basis of new claims 1 to 10 and amended description pages 2 to 4 and 4a filed therewith.

Moreover, as an auxiliary request the appellant requested oral proceedings.

The appellant provided arguments with regard to clarity and support by the description, original disclosure of the amendments as well as novelty and inventive step of the claims.

In particular, the appellant brought forward that the objections raised in the contested decision under Article 84 EPC 1973 and Article 123(2) EPC *"are not based on and do not consider any understanding and knowledge of a relevant person skilled in the art"*. In view of this, said objections were "*arbitrary and incomprehensible*".

V. By summons of 2 November 2015 the appellant was summonsed to oral proceedings due to take place on 12 April 2016. A communication under Article 15(1) RPBA was issued on 19 February 2016 drawing attention to the issues to be discussed during oral proceedings.

In particular, the Board expressed its preliminary opinion that support for some of the amendments to the claims were doubtful (Article 123(2) EPC).

With regard to Article 84 EPC 1973 the Board noted that several of the examining division's objections appeared to be unjustified or overcome by the amendments made. However, the Board expressed its concerns regarding the feature *"wavelength with which the RF pulses are transmitted"*, an objection in this respect having already been raised by the examining division in a communication of 11 June 2010. Since this wavelength would be necessary in order to check whether the claimed condition *"the length of each lead segment is unequal to n*λ/2, where λ denotes the wavelength with which the RF pulses are transmitted and n=1,2,3..."* is met, the Board considered that the wavelength had to be defined precisely. The Board, however, doubted that a person skilled in the art could derive a corresponding disclosure from the original application (Article 83 EPC 1973). In this respect, the appellant was invited

to provide evidence for the common general knowledge of the skilled person.

VI. In reply to the Board's communication, by letter of 14 March 2016, the appellant filed amended claim sets according to revised main and auxiliary requests. The appellant requested that the impugned decision be set aside and a European patent be granted on the basis of claims 1 to 10 according to the main request or claims 1 to 10 of the auxiliary request, as filed with said letter.

Further, the appellant provided arguments concerning support of the amendments made and clarity of the claims. In particular, with regard to the issue of the wavelength definition, the appellant noted (page 2, third paragraph) that *"The length of the lead segments is specified unequal to an integer number of half-wavelengths. The paragraph bridging page 6 to page 7 explains that in this way the lead segments are non-resonant for the common mode signal. The skilled person will directly infer that this non-resonance must relate to the effective electrical length taking into account the dielectric properties so* [read: of] *the lead segments."*

VII. With a further letter dated 07 April 2016 the Board was informed that the appellant would not be represented at the oral proceedings. The appellant requested that a decision be taken on the basis of the written submissions according to the state of the file, i.e. on the basis of the main and auxiliary requests submitted with the letter of 14 March 2016.

VIII. The oral proceedings took place on 12 April 2016, as scheduled, in the absence of the appellant.

IX. Claim 1 of the main request reads as follows:

"1. An electrical connection lead (13) which is intended to be guided through an examination zone (1) of a magnetic resonance imaging apparatus, which zone is exposed to RF pulses for exciting nuclear spins in an object to be examined, and which connection lead (13) is intended to connect an electrical accessory device (6; 10, 11) to a connection unit (12), wherein the connection lead (13) is composed of a plurality of lead segments (131, 132,...), which are serially connected to one another by means of transformers (141, 142,...),
*characterized in that the connection lead (13) is a two-wire lead and that the length of each lead segment (131, 132,...) is unequal to n*λ/2, where λ denotes the wavelength with which the RF pulses are transmitted and n=1,2,3,..., so that the lead segments (131, 132,...) are non-resonant for common mode signals induced by the transmitted RF pulses in the connection lead (13), wherein the two wires of each lead segment (131, 132,...) are short-circuited at the respective ends of each lead segment, and wherein the transformers are realized in the form of conductor loops (161, 162) wherein each one conductor loop is arranged over adjacent end zones of neighboring lead segments (131, 132,...) for inductively coupling neighboring lead segments (131, 132,...) to one another so that differential mode signals can be conducted via the connection lead (13) between the accessory device (6; 10, 11) and the connection unit (12)."*

X. Claim 1 of the auxiliary request reads as follows:

"1. An electrical connection lead (13) which is intended to be guided through an examination zone (1)

of a magnetic resonance imaging apparatus, which zone is exposed to RF pulses for exciting nuclear spins in an object to be examined, and which connection lead (13) is intended to connect an electrical accessory device (6; 10, 11) to a connection unit (12), wherein the connection lead (13) is composed of a plurality of lead segments (131, 132,...), which are serially connected to one another by means of transformers (141, 142,...),
*characterized in that the length of each lead segment (131, 132,...) is unequal to n*λ/2, where λ denotes the wavelength with which the RF pulses are transmitted and n=1,2,3,..., so that the lead segments (131, 132,...) are non-resonant for common mode signals induced by the transmitted RF pulses in the connection lead (13), wherein each lead segment (131, 132,...) includes two cores which are short-circuited at the respective ends of each lead segment, and wherein the transformers are realized in the form of conductor loops (161, 162) wherein each one conductor loop is arranged over adjacent end zones of neighboring lead segments (131, 132,...) for inductively coupling neighboring lead segments (131, 132,...) to one another so that differential mode signals can be conducted via the connection lead (13) between the accessory device (6; 10, 11) and the connection unit (12)."*

Reasons for the Decision

1. The appeal is admissible.

2. Main request

2.1 Admissibility

The present main request was filed with the letter of 14 March 2016 in reaction to the Board's preliminary opinion expressed in the communication of 19 February 2016. The main request was thus admitted into the appeal proceedings (Article 13(1) RPBA).

2.2 Article 84 EPC 1973

2.2.1 The feature that *"the length of each lead segment (131, 132,...) is unequal to n*λ/2, where λ denotes the wavelength with which the RF pulses are transmitted and n=1,2,3,..., so that the lead segments (131, 132,...) are non-resonant for common mode signals induced by the transmitted RF pulses in the connection lead (13)"* gives rise to criticism.

2.2.2 A person skilled in the art is aware of the fact that the wavelength of an RF electrical signal would depend on whether the signal propagates in air or in an electrical lead due to the different physical properties. This appears to be acknowledged by the appellant in the letter of 14 March 2016 (see passage cited above).

2.2.3 In claim 1, the feature that *"λ denotes the wavelength with which the RF pulses are transmitted"* should be read in connection with the further feature concerning "*RF pulses for exciting nuclear spins in an object to be examined*". The former feature relates to the wavelength of common mode signals induced by exciting RF pulses in the "*connection lead (13)*", whereas the latter concerns the RF exciting pulses generated by the RF transmission coils, propagating in air and then in the tissue to be examined, in which nuclear spins are then excited. Hence, an unclarity results in that the wavelength *λ*, which defines the length of each segment

of the connection lead (n*λ/2) would not correspond to the wavelength with which the RF exciting pulse are transmitted by coils.

Such an inconsistency results in that it is doubtful whether the condition that "*the length of each lead segment (131, 132,...) is unequal to n*λ/2*" is met or not.

2.2.4 Moreover, according to claim 1, the length of each lead segment of the connection lead is such that the lead segments are "*non-resonant for common mode signals induced by the transmitted RF pulses in the connection lead*".

The appellant stated in the letter of 14 March 2016 (page 2) that "*The skilled person will directly infer that this non-resonance must relate to the effective electrical length taking into account the dielectric properties so* [read: of] *the lead segments*".

This understanding, however, is indirectly derived from the mention of a non-resonance condition achieved by an unclear definition of the length of each lead segment being "*unequal to n*λ/2*" for "*n = 1,2,3,...*".

2.2.5 Hence, claim 1 of the main request lacks clarity.

2.3 The main request is not allowable.

3. Auxiliary request

3.1 Admissibility

The auxiliary request was filed with the letter of 14 March 2016 in reaction to the Board's preliminary

objections expressed in the communication of 19 February 2016. The auxiliary request was thus admitted into the appeal proceedings (Article 13(1) RPBA).

3.2 Article 84 EPC 1973

Since the critical feature regarding the length of each lead segment is also present in claim 1 of the auxiliary request, this claim also lacks clarity too.

3.3 The auxiliary request is not allowable.

Order

For these reasons it is decided that:

1. The appeal is dismissed.

The Registrar: The Chairman:

R. Schumacher G. Assi

Decision electronically authenticated