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**Datasheet for the decision
of 16 November 2012**

Case Number: T 0294/09 - 3.5.06

Application Number: 02405074.2

Publication Number: 1333359

IPC: G06F 1/20, H05K 7/20, G06F 1/18

Language of the proceedings: EN

Title of invention:
Housing for a passively cooled computer

Applicant:
Kontron AG

Headword:
Passively cooled computer/KONTRON

Relevant legal provisions:
EPC Art. 123(2)
RPBA Art. 12(2), 12(4), 13(1), 13(3)

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

Keyword:
"Admissibility of main request - no"
"Inventive step (auxiliary request 1) - yes"



Case Number: T 0294/09 - 3.5.06

D E C I S I O N
of the Technical Board of Appeal 3.5.06
of 16 November 2012

Appellant:
(Applicant)

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Representative:

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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted 25 September 2008
refusing European patent application
No. 02405074.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: D. H. Rees
Members: G. Zucka
W. Sekretaruk

Summary of Facts and Submissions

I. The appeal is against the decision by the examining division to refuse European patent application 02405074.2, with reasons dispatched on 25 September 2008. This was a "decision on the state of the file", referring to the communication accompanying a summons to oral proceedings, which argued that the subject-matter of the claims was not inventive, Article 56 EPC 1973, in view of the following documents:

D1: DE 27 57 282 A
D2: US 5 671 120 A
D3: US 6 212 644 B1

II. A notice of appeal was received on 22 November 2008, the appeal fee being paid on the same day. A statement of the grounds of the appeal was received on 22 January 2009.

III. The appellant requested that the decision be set aside and a patent granted on the basis of one of the three requests filed with the grounds for the appeal, namely claim 1 as refused, a combination of claims 1 and 2 as refused, or a combination of claims 1, 2 and 4 as refused.

IV. The board issued a summons to oral proceedings. In an annex to the summons, the board set out its preliminary opinion on the appeal. The following documents were introduced by the board:

D4: "The Penguin Dictionary of Electronics, Second edition", E.C. Young, 7 February 1989, ISBN 0-14-051187-3, pages 271-272

D5: "c't - Magazin für Computer Technik", edition 22/2000, 23 October 2000, page 28

V. In reply to the summons, the appellant replaced its three requests. The appellant's auxiliary request 1 was further modified during the oral proceedings.

VI. The appellant's main request is that the decision under appeal be set aside and a patent granted on the basis of the following text:

Description, Pages

1, 1a and 2 (labelled "Main Request") received on 15 October 2012
3 to 9 as originally filed

Claims, Numbers

1 to 12 (labelled "Main Request") received on 15 October 2012

Drawings, Sheets

1 to 3 received on 15 October 2012

VII. The appellant's auxiliary request 1 is that the decision under appeal be set aside and a patent granted on the basis of the following text:

Description, Pages

1 received on 30 August 2006

1a and 2 (labelled "1. and 2. Auxiliary Request")
received on 15 October 2012
3 to 9 as originally filed

Claims, Numbers

1 to 9 (labelled "First Auxiliary Request") filed
during the oral proceedings

Drawings, Sheets

1 to 3 received on 15 October 2012

VIII. The appellant's auxiliary request 2 is that the
decision under appeal be set aside and a patent granted
on the basis of the following text:

Description, Pages

1 received on 30 August 2006
1a and 2 (labelled "1. and 2. Auxiliary Request")
received on 15 October 2012
3 to 9 as originally filed

Claims, Numbers

1 to 8 (labelled "Second Auxiliary Request") received
on 15 October 2012

Drawings, Sheets

1 to 3 received on 15 October 2012

IX. The independent claims of the main request read as follows:

Claim 1

Passively cooled personal computer (2) and a housing (1) accommodating said passively cooled personal computer (2), comprising:

a housing cover (3) arranged on the top of the housing and a housing floor (4) arranged on the bottom of the housing, wherein the housing cover (3) and the housing floor (4) comprise a passive cooling member (3a, 4a),

an insulator member (5) arranged between the housing cover (3) and the housing floor (4) to prevent a thermal flow between the housing cover (3) and the housing floor (4),

the insulator member (5) dividing the volume of the housing (1) in two separate compartments (1a, 1b), a hot compartment (1a) arranged at the top and a cold compartment (1b) arranged at the bottom,

computer elements with higher power dissipation, such as power supply or the microprocessor, being arranged in the hot compartment (1a) of the housing (1), and the computer elements which need to be operated at lower temperature, such as a hard disk drive or a CD-ROM-drive, being arranged in the cold compartment (1b).

Claim 10

Passively cooled personal computer (2) and a housing (1) accommodating said passively cooled personal computer (2), comprising:

an insulator member (5) dividing the volume of the housing (1) in two separate compartments (1a, 1b), a hot compartment (1a) arranged at the top and a cold compartment (1b) arranged at a bottom side (12, 13), said insulator member (5) preventing a thermal flow between said hot compartment (1a) and said cold compartment (1b) and being parallel to a plain [sic] defined by said bottom side (12,13),

a passive cooling member (3a) extending at least across a side of said hot compartment (1a) and said cool compartment (1b),

computer elements with higher power dissipation, such as power supply or the microprocessor, being arranged in the hot compartment (1a) of the housing (1), and computer elements which need to be operated at lower temperature, such as a hard disk drive or a CD-ROM-drive, being arranged in the cold compartment (1b).

X. The independent claim (claim 1) of the auxiliary request 1 reads as follows:

Passively cooled personal computer (2) and a housing (1) accommodating said passively cooled personal computer (2), comprising:

a housing cover (3) arranged on the top of the housing and a housing floor (4) arranged on the bottom of the housing, wherein the housing cover (3) and the housing floor (4) each comprise a passive cooling member (3a, 4a),

an insulator member (5) arranged between the housing cover (3) and the housing floor (4) to prevent a thermal flow between the housing cover (3) and the housing floor (4),

the insulator member (5) dividing the volume of the housing (1) in two separate compartments (1a, 1b), a hot compartment (1a) arranged at the top and a cold compartment (1b) arranged at the bottom,

computer elements with higher power dissipation, such as power supply or the microprocessor, being arranged in the hot compartment (1a) of the housing (1), and the computer elements which need to be operated at lower temperature, such as a hard disk drive or a CD-ROM-drive, being arranged in the cold compartment (1b).

XI. The independent claim (claim 1) of the auxiliary request 2 reads as follows:

Passively cooled personal computer (2) and a housing (1) accommodating said passively cooled personal computer (2), comprising:

a housing cover (3) arranged on the top of the housing and a housing floor (4) arranged on the bottom of the housing, wherein the housing cover (3) and the housing floor (4) comprise a passive cooling member (3a, 4a),

an insulator member (5) arranged between the housing cover (3) and the housing floor (4) to prevent a thermal flow between the housing cover (3) and the housing floor (4),

the insulator member (5) dividing the volume of the housing (1) in two separate compartments (1a, 1b), a hot compartment (1a) arranged at the top and a cold compartment (1b) arranged at the bottom,

computer elements with higher power dissipation, such as power supply or the microprocessor, being arranged in the hot compartment (1a) of the housing (1), and the computer elements which need to be operated at

lower temperature, such as a hard disk drive or a CD-ROM-drive, being arranged in the cold compartment (1b), wherein the passive cooling member (3a, 4a) of the housing cover (3) and/or the housing floor (4) has outwardly projecting cooling ribs.

XII. At the end of the oral proceedings, the chairman announced the board's decision.

Reasons for the decision

1. Reference is made to the transitional provisions in Article 1 of the Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act revising the European Patent Convention of 29 November 2000, 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. As far as the Implementing Regulations are concerned, the board refers to Article 2 of the Decision of the Administrative Council of 7 December 2006 amending the Implementing Regulations of the European Patent Convention 2000.

2. *The admissibility of the appeal*

In view of the facts set out at points I and II above, the appeal is admissible, since it complies with the EPC formal admissibility requirements.

3. *Main request*

According to the appellant, independent claim 10 was introduced in the new main request to cover an aspect of the invention that had not been recognised by the appellant until he had received the board's summons to oral proceedings. This aspect, *i.e.* to have a passive cooling member that extends across a side of both the hot and the cool compartment was argued to be disclosed on page 6, lines 3 to 9 of the original description.

The board points out that appeal proceedings are not a continuation of examination proceedings. Instead, the primary purpose of appeal proceedings is to examine whether the decision from the first instance was correct. In this respect, firstly the grounds of the appeal should contain the appellant's complete case (Article 12(2) RPBA), secondly the board can hold inadmissible requests that could have been presented in the first instance proceedings (Article 12(4) RPBA) and thirdly the board may decide not to admit amendments *inter alia* in view of their complexity and the need for procedural economy (Article 13(1) RPBA).

In the present case, it can be left undecided whether the patent applicant could already have filed during the first instance proceedings a claim covering the alternative where the passive cooling member extends across a side of both the hot and the cool compartment. The mere fact that this alternative had not been recognised by the previous applicant is not in itself a sufficient reason for filing a new independent claim that covers a significantly different aspect to that

which has been claimed throughout the proceedings up until now.

In any case the new claim can also not be said to constitute even a *prima facie* attempt to arrive at patentable subject-matter in the light of the preliminary opinion expressed in the board's summons. On the contrary, the wording of claim 10 raises a new issue, *viz.* that of compliance with Article 123(2) EPC.

The paragraph of the original description cited by the appellant to support the new independent claim 10, *i.e.* page 6, lines 3 to 9, describes alternative housing shapes and sizes. The appellant argues that the last two sentences of that paragraph describe a housing as in claim 10. However, the board holds the view that the disclosure is far from unambiguous. Following the wording of these two sentences, the bottom side of the housing could be the small side, defined by 12 and 13 and the insulator member would then be parallel to that small side. The implication is that the hot and the cold compartments, as well as the insulator member would be turned by 90° in figure 1. According to the appellant, these are the only changes that would be made in the device, the passive cooling member 3a remaining where it is. As a consequence, the passive cooling member would then indeed extend across a side of both the hot and the cold compartments. However, in the board's view, the skilled person would not necessarily read the cited passage in that manner.

It would seem to make more sense, given that the remainder of the description consistently mentions said cooling member as being part of the housing top, also

to turn that cooling member by 90°, leaving it on "top" of the hot compartment. In fact, if the skilled person did not do so, some new issues would arise that have obviously not been envisaged in the original application. For example, if no additional measures were taken, a passive cooling member that extended along the side of both the hot and the cold compartment would cause some heat to "leak" from the hot into the cold compartment, at least partially defeating the purpose of the insulation between these compartments, without any apparent significant compensating advantage.

The board therefore considers that the passage cited by the appellant would not directly and unambiguously lead the skilled person to construct a device as in claim 10. In fact, it would seem that the skilled person would be convinced, on the basis of the disclosure of the original application documents and common general knowledge, that the hot and cold compartments should *not* share a common passive cooling member.

For these reasons, the main request is not admitted under Article 13(3) RPBA.

4. *Auxiliary request 1*

4.1 *Amendments, Article 123(2) EPC*

Claim 1 of the auxiliary request 1 corresponds to a combination of originally filed claims 1, 2, 3, 10 and 11, with the additional restriction that the upper compartment is the hot one, a feature clearly central

to the invention as disclosed in the application as filed. As such, this claim does not extend beyond the content of the application as originally filed. The dependent claims correspond to originally filed dependent claims and the amendments to the description and drawings do not change their substantive content.

4.2 *Clarity, Article 84 EPC 1973*

The appellant has dealt with the objection raised under item 1 of the board's summons and the board considers that the claims of the current auxiliary request 1 satisfy the requirements of Article 84 EPC 1973.

4.3 *Inventive step, Article 56 EPC 1973*

The board considers that D1 represents the closest prior art. The document discloses a housing for a passively cooled electrical, electronic or mechanical device, comprising:

a housing cover ("Verschlussdeckel"; see page 7, lines 9-13) and a housing floor ("Gehäusewand"; see page 7, lines 3-4), wherein the housing cover comprises a passive cooling member (see figure 3),

an insulator member ("thermische Trennwand C"; see page 7, lines 4-9) dividing the volume of the housing in two separate compartments, a hot compartment (B) and a cold compartment (A),

apparatus elements with higher power dissipation being arranged in the hot compartment (B) of the housing, and apparatus elements which need to be

operated at lower temperature being arranged in the cold compartment (A) (see page 5, lines 3-12).

The main difference between the subject-matter of claim 1 of the auxiliary request 1 and the disclosure of D1 is that the cold compartment is also cooled, in view of the fact that in claim 1 the housing floor, where the cold compartment is situated, comprises a passive cooling member. Given that, in D1, the cold compartment typically contains components that have a maximal allowable temperature which is only slightly above the outside temperature (see page 9, line 3), the temperature difference between the inside of the cold compartment and the outside would be small and a passive cooling member would be ineffectual. Therefore, in contrast to what the examining division had stated in point 4.2.1 of its summons to oral proceedings, the skilled person would not be motivated to add such a passive cooling member to the cold compartment. Hence, the skilled person would not arrive at the subject-matter of claim 1 starting from the teaching of D1. Such subject-matter nonetheless solves the technical problem of allowing a "cold" compartment that is significantly warmer than the outside environment.

The subject-matter claimed was all part of the original claims, with the predictable restriction that the upper compartment is the hot one. The board must therefore assume that the search was complete and that D1 is the best prior art to be found. The board therefore concludes that the subject-matter of claim 1 of the auxiliary request 1 is inventive.

4.4 *Decision in respect of the appeal*

The current application documents are not in order for grant. For example, the first sentence on page 1 of the description states that "The invention is directed to a housing...in accordance with the preamble of claim 1, and to a computer...", which contradicts the wording of claim 1. Also, page 3 of the description refers to features relating to "preferred embodiments" of the invention, even though those features are explicitly included in the independent claim. Other discrepancies may exist either in the description or in the drawings. Therefore the board uses its discretion under Article 111 (1) EPC 1973 and remits the case to the examining division for grant on the basis of the submitted claims of the first auxiliary request with a description to be amended accordingly.

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 European patent on the basis of claims 1-9 of the first auxiliary request filed 16 November 2012, together with description and drawings to be adapted as necessary.

The Registrar:

The Chairman:

B. Atienza Vivancos

D. H. Rees