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D E C I S I O N
of 24 July 1998

Case Number: T 0802/97 - 3.4.2
Application Number: 94302816.7
Publication Number: 0621746
IPC: H05K 1/05, H05K 7/20

Language of the proceedings: EN

Title of invention:

Composite printed circuit board and manufacturing method thereof

Applicant:

LAMBDA ELECTRONICS, INC.

Opponent:

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Headword:

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Relevant legal provisions:

EPC Art. 113(1)

Keyword:

"Refusal after one communication only; right to an opportunity to present comments on all the grounds on which a decision is based"

Decisions cited:

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Catchword:

If a decision includes several grounds, it shall meet the requirements of Article 113(1) EPC with respect of each of the grounds (point 3 of the reasons).



Case Number: T 0802/97 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 24 July 1998

Appellant: Lambda Electronics, INC.
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New York 11749-3700 (US)

Representative: Woodward, John Calvin
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 27 February 1997
refusing European patent application
No. 94 302 816.7 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: E. Turrini
Members: A. G. Klein
B. Schachenmann

Summary of Facts and Submissions

- I. European patent application No. 94 302 816.7 (publication No. 0 621 746) was filed with a set of claims of which claims 1 and 12, the only independent claims, were respectively directed to a composite printed circuit board - composed generally of a metal substrate printed circuit board section and of an insulator substrate printed circuit board section - and to a method for manufacturing such composite printed circuit board.
- II. In its only communication pursuant to Article 96(2) and Rule 51(2) EPC, the Examining Division first raised a number of objections against the clarity of the claims under Article 84 EPC (see point 1 of the communication).

The Examining Division then stated that in view of these difficulties, a complete examination of the claims was not considered economic at that stage, and that it was postponed, accordingly. It was however its provisional opinion that the claims did not define a patentable subject-matter, since the subject-matter of independent claims 1 and 12 was anticipated by each of the documents EP-A-0 264 780 (D1) and US-A-3 912 849 (D2), (see point 2 of the communication).

Finally, the Examining Division in its communication pointed at some further formal amendments to be brought to the claims and description (see point 3 of the communication), and invited the applicant, should he regard some particular matter as patentable, to file an independent claim including such matter and to indicate in the letter of reply the difference of the subject-matter of the new claim vis-à-vis the state of the art and the significance thereof (see point 4 of the communication).

III. In reply to the Examining Division's communication, the applicant filed an amended set of claims of which claims 1 and 12, the only independent claims, read as follows:

"1. A composite printed circuit board comprising a metal substrate printed circuit section (12) having a first layer of a thermally conductive metal (32) for providing high thermal conductivity, a second layer (28) made of a thermally conductive and electrically insulative material disposed adjacently to said first layer, said second layer (28) having an upper surface upon which electrically conductive wiring (26) is disposed; and an insulator substrate printed circuit board section (14) comprising a first layer of insulative material and a second layer of a metallic foil disposed adjacently to at least one side of said first layer of insulative material and forming a conductive wiring layout, characterised in that the insulator substrate printed circuit board section (14) and the metal substrate printed circuit board section (12) together form an integral mounting surface for

electrical components."

"12. A method for manufacturing a composite circuit board comprising the steps of forming a metal substrate printed circuit section (12) having a metal base layer and an insulator upper layer having a top surface upon which electrically conductive wiring is disposed and forming an insulator substrate circuit section (14) integrally with said metal substrate printed circuit section (12), said insulator substrate printed circuit section (14), having a first layer of insulative material, and a second layer of a metallic foil (36) for forming a conductive wiring layout."

The applicant in his reply stressed that claim 1 had been revised to state in the preamble the features known from document D1, those features which were considered to be novel and inventive, i.e. the fact that the insulator and metal substrates printed circuit board sections together formed an integral mounting surface for electrical components, being placed in the characterising portion.

The applicant also analysed the contents of documents D1 and D2, and submitted why, in his opinion, the invention represented a substantial, patentable improvement over the prior art construction. He also identified various further amendments brought to the claims to overcome the formal objections raised in the Examining Division's communication.

IV. After receipt of the applicant's reply, the Examining Division immediately issued a decision rejecting the

patent application.

In the reasons for the decision, the Examining Division first stated that amended claims 1 and 12 had the same scope as original claims 1 and 12, respectively, except for minor amendments brought in response to clarity objections raised in the official communication (see point 1 of the reasons).

The Examining Division then stated that the method of claim 12 lacked novelty in view of the contents of document D1, for the reasons given in the official communication, which were repeated in the decision (see point 2 of the reasons) and that the application was refused, accordingly (see point 3 of the reasons).

In point 4 of the reasons, the Examining Division indicated that, although lack of novelty of the method of claim 12 was the reason for refusal of the application, it considered that the composite printed circuit board of claim 1 also lacked novelty in view of D1. In particular, contrary to the applicant's submissions, the arrangement of D1 was also suitable for mounting components so that they extended over the surfaces of both the insulator and the metal substrate sections. This would depend on the size of the components, but there was no reason to suppose that the space under the cover shown in Figure 6 above the join between the respective substrate sections could not accommodate miniature SMDs as were in use at the priority date.

Finally, the Examining Division concluded that for the

above reasons the application was refused in accordance with Article 97(1) EPC (see point 5 of the reasons).

V. The appellant (applicant) filed an appeal against the decision rejecting the patent application.

As his main request, the appellant requested that the Examining Division's decision be set aside, that a patent be granted on the basis of a set of revised claims labelled A attached to his statement of the grounds of appeal, and that the appeal fee be reimbursed.

The set of revised claims A comprises two independent claims, of which independent claim 1 is identical to independent claim 1 on which the refusal was based, and independent claim 12 reads as follows:

"12. A method for manufacturing a composite circuit board comprising the steps of

a) forming a metal substrate printed circuit section (12) having a first metal base layer (32) and a second insulator layer (28) disposed on said metal layer (32), said second layer (28) having an upper surface upon which electrically conductive wiring (26) is disposed and

b) forming an insulator substrate printed circuit section (14) having a first layer (34) of insulative material, and a second layer of a metallic foil (36) for forming a conductive wiring layout, the method being **characterised by the step of**

c) connecting the insulator substrate circuit section (14) to the metal substrate printed circuit section (12) to form an integral mounting surface for electrical components."

As a subsidiary request, the appellant requested that a patent be granted on the basis of a set of revised claims labelled B, also attached to his statement of the grounds of appeal.

In the event that the Board of Appeal was of the view that his main or subsidiary request should not be allowed, the appellant also requested to be provided an opportunity for further arguments and submissions.

VI. In support of his request for reimbursement of the appeal fee, the appellant submitted that the decision of the Examining Division contravened Article 113(1) EPC because it raised new issues on which he was not given an opportunity to present his comments, so that the decision constituted a substantial procedural violation within the meaning of Rule 67 EPC.

In his view, when replying to the only communication of the Examining Division, he had clearly emphasised the distinguishing feature of an integral mounting surface for electrical components being formed by the combined insulator and metal substrate printed circuit board sections, and also explained in some detail the reasons why this additional feature was considered to distinguish the invention from the closest prior art.

The decision not only was based on a wrong premise in so far it stated that claim 1 had the same scope as originally filed, but it also raised a new issue on which the applicant had not been given the opportunity to present his comments.

Furthermore, the Examining Division should have noticed that independent claim 12 as filed in response to its communication was not consistent with claim 1, since it did not include any limitation directed to the integral mounting surface. The Examining Division did not give the applicant the opportunity of commenting on and/or rectifying this deficiency, and it was only upon receipt of the decision that the appellant realised that independent claim 12 filed with his earlier response was incomplete and that it needed the addition of at least the step of forming an integral mounting surface, to give it novelty over D1 and D2 and to render it consistent with claim 1.

Finally, the issue raised in the decision in relation with claim 1, in particular the suggestion that miniature SMDs could also be mounted on the substrates in document D1, was completely new, and there was absolutely no disclosure or teaching in D1 to suggest that miniature components of this type could be mounted in the way suggested by the examiner. The appellant should therefore have been given an opportunity to comment on these observations particularly as he believed them to be incorrect.

Concerning the patentability of the claimed subject-matter in view of the cited prior art, the appellant

essentially submitted that in the embodiment of Figures 5 and 6 of document D1 as relied upon by the Examining Division, the insulator substrate printed circuit board section and the metal substrate printed circuit board section did not form an integral surface until they were joined by the lid 30. However, once the lid 30 had been secured to the two substrate sections, it effectively denied access to the upper surface of the substrates, which could not therefore be considered to form "an integral mounting surface for electrical components" in the sense of independent claims 1 and 12 of revised claims A, nor "a rigid integral component mounting surface on which electrical components can subsequently be mounted and electrically connected to both substrates" in the sense of independent claims 1 and 12 of revised claims B.

Reasons for the Decision

1. The appeal is admissible.
2. *Refusal of the application after one official communication only*

The reasons for the refusal of the application on the ground that independent claim 12 lacked novelty in view of the contents of document D1 had been duly communicated by the Examining Division to the appellant in its first and only communication. Since the appellant did not in substance modify the scope of independent claim 12 in reply to the official communication, the refusal in respect of these reasons certainly fulfils the requirement of Article 113(1) EPC that decisions may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments.

However, according to Article 96(2) EPC the Examining Division shall invite the applicant **as often as necessary** to file his observations. When applying this provision to determine in a specific case whether an applicant should be given a further opportunity to present comments or amendments before refusing an application after a single official communication, the established practice of the Examining Divisions as set out in particular in the Guidelines for Examination in the European Patent Office is to warn the applicant who had made a **bona fide** attempt to deal with the Examining Division's objections, e.g. by a telephone conversation or by a short further written action, that the

application will be refused unless he can produce further more convincing arguments or makes appropriate amendments within a specified time limit. Only when the applicant has not made any real effort to deal with the objections raised in the first communication, should the Examining Division consider immediate refusal of the application, this however being an exceptional case (see Guidelines C-VI, 4.3).

In the circumstances of the present case, it is to be considered that the only definite objections raised by the Examining Division in point 1 of its communication concerned Article 84 EPC (clarity), whereas it was stated in point 2 of the communication that a **complete examination of the claims** as regards the requirements of Article 52(1) EPC (patentability) was not considered economic at present and **was postponed** pending amendment to meet these and other objections (emphasis added). The further objections raised following this remark and concerning Article 52(1) EPC were explicitly declared as "a provisional opinion" only.

By these statements the Examining Division created the impression that it was sufficient for the applicant to deal in his answer with the objections raised under Article 84 EPC since the final examination as to patentability was postponed pending the removal of the Article 84 - objections. In response to such a communication the Examining Division could not expect the applicant to do more than to amend the claims in order to meet the objections raised under Article 84 EPC, and to file an independent claim with corresponding explanations as indicated at the end of

the communication.

The appellant in response to the Examining Division's communication not only amended all the claims in order to meet all of the outstanding objections raised under Article 84 EPC, but he also introduced into independent claim 1 the limitation directed to the insulator and the metal substrate sections forming an integral mounting surface for electrical components. He also explained in detail why the subject-matter of the thus amended claim 1 was patentable over both citation D1 and D2.

This reply must, therefore be considered to constitute a **bona fide** attempt to deal with the Examining Division's objections.

Accordingly, the immediate refusal of the application without any prior warning to the appellant in the Board's opinion constituted a substantial procedural violation within the meaning of Rule 67 EPC in view of Article 96(2) EPC.

3. *Compliance of the decision with the requirements of Article 113(1) EPC*

In addition to the ground of lack of novelty of the subject-matter of independent claim 12, the Examining Division in the impugned decision also for the first time objected to the novelty of the subject-matter of independent claim 1 as amended by the appellant in reply to the only official communication. The reasons given in the decision in support of this objection,

namely that the suitability of the arrangement of document D1 for mounting components so that they extend over the surfaces of both the insulator and the metal substrate sections depended on the size of the component and that there was no reason to suppose that the space under the cover above the join between the substrate sections could not accommodate miniature SMDs in use at the priority date, had not been communicated to the appellant before the refusal either.

Accordingly, as far as it concerns the ground of lack of novelty of the subject-matter of independent claim 1, the decision is based on grounds on which the appellant had no opportunity to present his comments, in contravention of Article 113(1) EPC.

In the impugned decision, the objection of lack of novelty of the subject-matter of independent claim 1 was introduced by a paragraph stating that, although lack of novelty of the method of claim 12 was the reason for refusal of the application, the Examining Division wished to point out that it considered that the composite printed circuit board of claim 1 also lacked novelty in view of document D1 (see point 4 of the reasons), which might suggest that the latter objection was not actually to be considered a ground on which the decision was based in the sense of Article 113(1) EPC. However, the final paragraph of the decision for its part concluded that the application was refused "for the above reasons", without further distinction.

In the Board's opinion, if a decision of the EPO

includes several grounds supported by respective arguments and evidence, it is of fundamental importance that the decision as a whole meets the mandatory requirements of Article 113(1) EPC. Leaving it up to the deciding body to suggest which of the grounds were to be considered as the basis of the decision and which were not - and did not therefore need to comply with the requirements of Article 113(1) EPC - can only lead to legal uncertainty and confusion of the parties. An exception from the above principle may be *obiter dicta* which are not part of the grounds on which a decision is based.

Moreover, the failing by the Examining Division to rectify its decision under Article 109 EPC after the appellant filed his appeal clearly demonstrates that the second objection of lack of novelty as raised against claim 1 was in fact considered by the Examining Division as constituting a basis of the decision. As a matter of fact, the appellant with his statement of the grounds of appeal filed amended sets of claims, in which independent claim 12 was supplemented with a limitation corresponding to the limitation brought to claim 1, which he had omitted in his reply to the official communication. As a result, the reasons given in the decision in support of the objection of lack of novelty of the subject-matter of independent claim 12 no longer applied to the amended claim. Had this objection been the **only** basis of the decision, the Examining Division should have rectified it in accordance with Article 109(1) EPC, which it obviously did not.

Thus, the fact that the appellant had no opportunity to comment on all grounds on which the decision was based constituted in the Board's opinion a substantial procedural violation within the meaning of Rule 67 EPC in view of Article 113(1) EPC.

4. For these reasons the decision must be set aside and the case be remitted to the Examining Division for further examination of the application (see Article 10 of the Rules of Procedure of the Boards of Appeal, OJ EPO 1980, 171), on the basis of the sets of revised claims A and B as filed by the appellant as his main and auxiliary requests with his statement of the grounds of appeal.

The substantial procedural violations (points 2 and 3 of the reasons) also justify that appellant's request for reimbursement of the appeal fee be allowed.

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 for further prosecution.
3. Reimbursement of the appeal fee is ordered.

The Registrar: The Chairman:

P. Martorana E. Turrini