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**Datasheet for the decision
of 10 May 2007**

Case Number: T 0470/05 - 3.4.01

Application Number: 95402177.0

Publication Number: 0704925

IPC: H01P 3/08

Language of the proceedings: EN

Title of invention:

Composite high frequency apparatus and method for forming same

Patentee:

MURATA MANUFACTURING CO., LTD.

Opponents:

David CLARK
Epcos AG

Headword:

-

Relevant legal provisions:

EPC Art. 100(c), 123(2)

Keyword:

"Added subject-matter (yes, in all requests)"

Decisions cited:

T 0017/86, T 0284/94

Catchword:

-



Case Number: T 0470/05 - 3.4.01

DECISION
of the Technical Board of Appeal 3.4.01
of 10 May 2007

Appellant: MURATA MANUFACTURING CO., LTD.
(Patent Proprietor) 26-10, Tenjin 2-chome
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Respondent: David CLARK
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Respondent: Epcos AG
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 8 February 2005
revoking European patent No. 0704925 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: B. Schachenmann
Members: H. Wolfrum
R. Bekkering

Summary of Facts and Submissions

- I. The appellant (patent proprietor, MURATA MANUFACTURING CO.,LTD) lodged an appeal against the decision of the opposition division, dispatched on 8 February 2005, revoking European patent No. 0 704 925.

The notice of appeal was received on 7 April 2005 and the prescribed fee was paid on the same day. On 16 June 2005 a statement of grounds of appeal was filed.

- II. The oppositions of opponent 01 (DAVID CLARK) and of opponent 02 (EPCOS AG) were based inter alia on the ground of subject-matter extending beyond the content of the application as filed (Article 100(c) EPC).
- III. Oral proceedings were held at the requests of the appellant and the respondent/opponent 02 on 10 May 2007.
- IV. The appellant requested, as their main request, that the decision under appeal be set aside and that the oppositions be rejected, ie the patent be maintained as granted.

Alternatively, the appellant requested, as a first auxiliary request, maintenance of the patent in amended form on the basis of a set of claims 1 to 10 filed on 16 December 2002 as main request, or on sets of claims 1 to 10 filed on 2 November 2004 as second to fifth auxiliary requests, respectively.

- V. The respondents (opponents 01 and 02) requested that the appeal be dismissed.

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

"1. A composite high frequency apparatus comprising a high frequency switch (1) and a high frequency filter (F1), wherein:

the high frequency switch comprises a capacitor (C1, C2, C3, C4, C5, C6), transmission lines (L1, L2, L3) and a diode (D1, D2), the capacitor and at least a transmission line (L2) between a receiving circuit electrode (RX1) and an antenna electrode (ANT1) being formed in a single multilayered unit (10), the diode (D1, D2) being provided on the single multilayered unit (10);

the high frequency filter (F1) comprises a capacitor (C7, C8, C9) and a transmission line (L4, L5), the capacitor and the transmission line being formed in the single multilayered unit;

the high frequency switch and the high frequency filter being electrically connected to each other within the single multilayered unit (10) without a separate impedance matching circuit."

Claims 2 to 5 are dependent claims. Claim 6 is directed to a method of forming an apparatus having the structural features comprised in claim 1. Claims 7 to 10 are dependent method claims.

Claims 1 and 6 of the **auxiliary requests** preserve the respective definitions of claims 1 and 6 of the patent as granted and are further amended by the addition of certain technical details relating to the location of the high frequency filter in the circuit and to the

structure of the capacitor of said filter and/or its location and environment within the multilayered unit.

VII. The appellant essentially relied on the following submissions:

The various features of the apparatus as claimed in claim 1 of the patent as granted were apparent from Figures 1 to 3 and discussed in the corresponding description. Notwithstanding the fact that the figures showed a high-frequency apparatus in more detail than was specified in claim 1, the claim did not define another type of switch and filter than was disclosed. More specifically, for a skilled reader of the originally-filed application documents, the disclosed type of high frequency switch and its function were sufficiently identified by indicating the presence of a capacitor, transmission lines and a diode. Likewise, the high frequency filter of the apparatus according to the present invention was sufficiently defined in claim 1 by specifying that it comprised a capacitor and a transmission line. Finally, the claimed absence of a separate impedance matching circuit was the immediate consequence of the claimed direct electrical connection of the switch to the filter, as was repeatedly indicated in the application description as filed.

The independent claims of the auxiliary requests on file contained additional features which were disclosed for the embodiment of Figures 1 to 3 and were related to particularly favourable arrangements.

VIII. The submissions of the respondents, as far as they are pertinent to the present decision, may be summarised as follows:

The subject-matter of claim 1 of the patent as granted constituted an unsupported intermediate generalisation of the sole disclosed circuit embodiment. In particular, there was no disclosure of a switch having merely one capacitor, one diode, and an unspecified number of transmission lines. Moreover, the original disclosure required all circuit elements of the switch, with the exception of its diodes, to be incorporated in the multilayered unit, whereas the claim wording under consideration covered structures in which some of these elements were provided elsewhere. Another aspect of an undue generalisation was to be seen in the fact that claim 1 as granted defined a desired result, *ie* the high frequency switch and filter being interconnected within the multilayered unit without the need for a separate impedance matching circuit, but failed to indicate the indispensable prerequisite that the circuit elements of the high frequency switch and filter have to be simultaneously designed and formed within the multilayered unit.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. Main request - basis of disclosure (Article 100(c) EPC)
 - 2.1 Pursuant to Article 100(c) EPC the subject-matter of a European patent must not extend beyond the content of the application as filed.

In the present case, the originally-filed claims do not provide a literal basis of disclosure for the individual definitions comprised in claim 1 of the patent as granted, nor for the claimed specific compilation of features, as is uncontested by the appellant.

- 2.2 In fact, the only possible source of disclosure provided by the originally-filed application documents of a composite high frequency apparatus comprising a high frequency switch and a high frequency filter, the circuit elements of which are formed in a single multilayered unit, is given by the sole embodiment described with the help of Figures 2 and 3. These figures show a multilayered unit implementing a specific high frequency circuit using a diode-based switching circuit as shown in Figure 1 of the application.

The function of the switch as originally disclosed is to allow operation of a high frequency apparatus either in a transmitting or a receiving mode. To this end, the

high frequency switch provides electrical connection either of a transmission circuit TX or of a receiving circuit RX to a common antenna ANT1. Hence, the disclosed circuit possesses a common path from the antenna circuit to the switch which branches into a path from the switch to the transmission circuit and a path from the switch to the receiving circuit. Operating with diodes, the switch has in fact one of them in each of said branches. In addition, in order to initiate switching each diode is connected to a respective external control electrode. Moreover, each of the branches is formed as a transmission line and includes, for various purposes, a plurality of capacitors, as is shown in Figure 1.

The high frequency filter as originally disclosed consists of several stages of transmission lines and associated capacitors connected to a common ground. In the example of Figure 1, the filter is provided between the switch and an external electrode TX for connection to the transmission circuit. Alternatively, the filter can be arranged between the switch and an external electrode ANT1 for connection to the antenna circuit or between the switch and an external electrode RX for connection to the receiving circuit (cf for instance Figures 4 and 5 of the application and patent).

In any case, all circuit elements of the high frequency filter and, with the sole exception of the two diodes, those of the high frequency switch are completely arranged and formed within the multilayered unit.

Moreover, it is repeatedly stated in the description (cf the paragraph bridging pages 11 and 12; page 14,

first paragraph; and the paragraph bridging pages 14 and 15 of the originally-filed description) that the need for an impedance matching circuit between the switch and the filter is eliminated due to the fact that the circuits combined in the multilayered unit are simultaneously designed and formed.

- 2.3 Claim 1 as granted, on the other hand, contains a selection of features isolated from the just described specific context of disclosure as is given by the sole embodiment of the invention.

For example, by defining only a receiving circuit electrode and an antenna electrode without mentioning the branch to the transmission electrode, the claim defines only part of the concrete circuit within which the high frequency switch is operative. Moreover, as regards the structure of the high frequency switch as such, the claim requires merely the presence of a single diode, a single capacitor and an unspecified number of transmission lines to make up a high frequency switch. In fact, the claim defines just a small number of the circuit elements present in an operable circuit as it is originally disclosed.

Furthermore, the claim definition requires only the actually mentioned circuit elements to be included in the single multilayered unit.

Finally, the claim mentions an electrical connection between the high frequency switch and filter without a separate impedance matching circuit as a mere fact, omitting any indication as to the conditions disclosed

to be met for rendering such a matching circuit obsolete.

- 2.4 Thus, in the present case, the question arises whether the claimed compilation of pieces of information isolated from the specific context of a certain embodiment, as provided by claim 1 under consideration, constitutes a technical teaching which could be regarded as being disclosed by the originally-filed application documents, as required by Article 100(c) in combination with Article 123(2) EPC.

According to established case law, technical features isolated from a disclosed combination with others may be introduced into a claim without contravening Article 123(2) EPC if it is clear beyond any doubt for a skilled reader from the application documents as filed that the subject-matter of the claim thus amended provides a complete solution to a technical problem unambiguously recognisable from the application (cf T 17/86, OJ EPO 1989, 297, point 2.3 of the reasons of the decision; T 284/94, OJ EPO 1999, 464, headnote I).

This condition is not met for claim 1 as granted.

As it is apparent from the observations given in points 2.2 and 2.3 above, the claimed selection of features from the disclosed embodiment is in fact so rudimentary that even the basic structure of the branched switching circuit between a common antenna electrode, on the one hand, and electrodes of receiving and transmission circuits, on the other hand, and, consequently, the purpose and function of the switch remain obscure. Moreover, an operable high frequency

switch cannot be formed from a single diode and a single capacitor or without any means for external control. Therefore, the Board cannot share the appellant's view that the claim sufficiently identified the disclosed type of high frequency switch and its function.

For these reasons, the subject-matter of claim 1 as granted is to be regarded an arbitrary selection of features from a specific disclosed context, which selection does not serve any meaningful technical purpose and thus has to be judged inadmissible.

Another aspect of added subject-matter lies in the fact that, due to the incomplete definition of the circuit and its elements, essential constituents of the circuit which, according to the original disclosure, have to be incorporated into the multilayered unit as well, could be formed elsewhere, so that the claim definition encompasses structures of a high frequency apparatus which have not been originally disclosed.

Finally, by failing to indicate the indispensable prerequisite that the circuit elements of the high frequency switch and filter have to be simultaneously designed and formed within the multilayered unit, the claim under consideration constitutes an unwarranted generalisation of a specifically disclosed solution to the problem of rendering a separate impedance matching circuit obsolete.

2.5 The above considerations have led the Board to the conclusion that claim 1 of the patent as granted contains subject-matter which extends beyond the content of the application as filed.

Consequently, the appellant's main request is not allowable.

3. Auxiliary requests - basis of disclosure
(Articles 100(c) and 123(2) EPC)

3.1 At the oral proceedings before the present Board it was common ground between the parties that claim 1 of each of the auxiliary requests on file incorporates literally the wording of claim 1 of the patent as granted further amended by the addition of certain technical details.

It is noted that none of the features added to these claim definitions addresses the problems of added subject-matter summarised above for claim 1 of the main request, but rather introduces further aspects of an inadmissible intermediate generalisation.

3.2 In fact, the appellant did not argue that any amendment made to the claims 1 of the auxiliary requests was intended to overcome the objections under Article 100(c) EPC which were raised against the main request.

3.3 Accordingly, the Board has come to the conclusion that none of the appellant's auxiliary requests on file meets the requirement of Article 123(2) EPC.

Therefore, none of the auxiliary requests is allowable either.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

R. Schumacher

B. Schachenmann