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**Datasheet for the decision  
of 19 January 2012**

**Case Number:** T 2304/08 - 3.5.05

**Application Number:** 05002407.4

**Publication Number:** 1562103

**IPC:** G06F 3/00

**Language of the proceedings:** EN

**Title of invention:**

Tablet apparatus

**Applicant:**

SMK Corporation

**Headword:**

Mechanism for transmitting vibration feedback to user of  
tablet computer

**Relevant legal provisions (EPC 1973):**

EPC Art. 56

**Keyword:**

"Inventive step - Main and auxiliary requests (no)"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 2304/08 - 3.5.05

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.05  
of 19 January 2012

**Appellant:**  
(Applicant)

SMK Corporation  
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**Representative:**

HOFFMANN EITLE  
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**Decision under appeal:**

Decision of the Examining Division of the  
European Patent Office posted 1 July 2008  
refusing European patent application  
No. 05002407.4 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** A. Ritzka  
**Members:** P. Cretaine  
G. Weiss

## Summary of Facts and Submissions

I. This appeal is against the decision of the examining division, dispatched on 1 July 2008, refusing European patent application No. 05002407.4 on the grounds of non-compliance of the description with the requirements of Article 123(2) EPC, lack of clarity of claim 1 (Article 84 EPC 1973), and lack of inventive step of claim 1 (Article 56 EPC 1973) in the light of the prior art document:

D3: US 2003/0067449.

In an obiter dictum appended to the decision, claim 1 was considered as lacking inventive step in the light of the prior art document:

D1: PATENT ABSTRACTS OF JAPAN vol. 1999, no. 13, 30 November 1999 & JP 11 212725.

II. The notice of appeal was received on 1 September 2008. The appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 10 November 2008. The appellant requested that the decision under appeal be set aside and a patent be granted based, as a main request, on the set of claims 1 to 4 on which the decision under appeal was based, filed with letter of 2 May 2008 and refiled with the statement setting out the grounds of appeal, or, as an auxiliary request, on the set of claims 1 to 4 filed with the statement setting out the grounds of appeal. Oral proceedings were requested on an auxiliary basis.

III. A summons to oral proceedings to be held on 19 January 2012 was issued on 20 October 2011. In an annex accompanying the summons the board did not maintain the objections under Article 84 EPC 1973 and Article 123(2) EPC but expressed the preliminary opinion that the subject-matter of claim 1 according to the main request and of claim 1 according to the auxiliary request did not appear to involve an inventive step (Article 56 EPC 1973) in the light of the disclosure of D3. In addition the board gave its reasons for the objections and explained why the appellant's arguments were not convincing.

IV. Independent claim 1 according to the main request reads as follows:

"A tablet apparatus (1) comprising:  
an operation panel (3) that includes an inputting operation face (3a) and has a rectangular shape;  
a supporting board (4) that supports the operation panel from the back of the operation panel and has a rectangular shape;  
an inputting position detecting portion arranged to detect an inputting operation on the inputting operation face and a position of the inputting operation, and arranged to output data representative of the position; and  
a single pair only of first and second piezoelectric substrates (2,2), on the front face of each of which substrates one drive electrode of a pair is provided and on the reverse face of each of which substrates the other drive electrode of the pair is provided, either the front face or the reverse face being fixed to the operation panel or the supporting board, each of which

substrates is long, slender and belt-shaped, and a length of each of which substrates is shorter than the length of the longitudinal sides of the operation panel or the supporting board, respectively, means for applying a drive voltage upon the pair of drive electrodes, when the inputting operation onto the inputting operation face is detected, such that the first and second piezoelectric substrates expand and contract causing the operation panel and the supporting board to vibrate thereby generating a feeling of the inputting operation, characterised in that the first piezoelectric substrate is fixed to a vicinity of one end of a first of the longitudinal sides and orientated in a longitudinal direction along the first longitudinal side, and the second piezoelectric substrate is fixed to the vicinity of one end of the second of the longitudinal sides and orientated in a longitudinal direction along the second longitudinal side, the one end of the second of the longitudinal sides being diagonally-situated across the operation panel or the supporting board from the one end of the first of the longitudinal sides, so that the amplitude (z) of vibration of the operation panel and the supporting board caused by the first and second piezoelectric substrates can be felt by the operator, via the operation panel (3), at each position on the entire supporting board (4), and a center point of the first piezoelectric substrate in a longitudinal direction thereof is displaced from a center of the first of the longitudinal sides towards the one end of the first of the longitudinal sides, and a center point of the second piezoelectric substrate in a longitudinal direction thereof is displaced from a center of the

second of the longitudinal sides towards the one end of the second of the longitudinal sides."

Independent claim 1 according to the auxiliary request reads as follows:

"A display device including a housing (20), a rectangular tablet apparatus (1) having four corners and respective elastic spacers (11) interposed between the housing and each corner, which tablet apparatus comprises:

an operation panel (3) that includes an inputting operation face (3a) and has a rectangular shape;

a supporting board (4) that supports the operation panel from the back of the operation panel and has a rectangular shape;

an inputting position detecting portion arranged to detect an inputting operation on the inputting operation face and a position of the inputting operation, and arranged to output data representative of the position; and

a single pair only of first and second piezoelectric substrates (2,2), on the front face of each of which substrates one drive electrode of a pair is provided and on the reverse face of each of which substrates the other drive electrode of the pair is provided, either the front face or the reverse face being fixed to the operation panel or the supporting board, each of which substrates is long, slender and belt-shaped, and a length of each of which substrates is shorter than the length of the longitudinal sides of the operation panel or the supporting board, respectively,

means for applying a drive voltage upon the pair of drive electrodes, when the inputting operation onto the

inputting operation face is detected, such that the first and second piezoelectric substrates expand and contract causing the operation panel and the supporting board to vibrate thereby generating a feeling of the inputting operation, characterised in that the first piezoelectric substrate is fixed to a vicinity of one end of a first of the longitudinal sides and orientated in a longitudinal direction along the first longitudinal side, and the second piezoelectric substrate is fixed to the vicinity of one end of the second of the longitudinal sides and orientated in a longitudinal direction along the second longitudinal side, the one end of the second of the longitudinal sides being diagonally-situated across the operation panel or the supporting board from the one end of the first of the longitudinal sides, so that the amplitude (z) of vibration of the operation panel and the supporting board caused by the first and second piezoelectric substrates can be felt by the operator, via the operation panel (3), at each position on the entire supporting board (4), and a center point of the first piezoelectric substrate in a longitudinal direction thereof is displaced from a center of the first of the longitudinal sides towards the one end of the first of the longitudinal sides, and a center point of the second piezoelectric substrate in a longitudinal direction thereof is displaced from a center of the second of the longitudinal sides towards the one end of the second of the longitudinal sides."

- V. The appellant requested in writing that the appealed decision be set aside and that a patent be granted based, in order of preference, on the set of claims according to the main request filed on 2 May 2008 or on

the set of claims according to the auxiliary request filed on 10 November 2008.

- VI. By letter dated 15 December 2011 the board was informed that the appellant's representative did not intend to attend the oral proceedings, and that the appellant was withdrawing the request for oral proceedings and requested a decision based on the file as it stood.
- VII. Oral proceedings were held on 19 January 2012 in the absence of the appellant. After due deliberation on the basis of the written submissions, the board announced its decision.

### **Reasons for the Decision**

1. Admissibility

The appeal complies with Articles 106 to 108 EPC (see Facts and Submissions, point II above). It is therefore admissible.

2. Non-attendance at oral proceedings

By letter dated 15 December 2011 the board was informed that the appellant's representative would not attend the oral proceedings and that the appellant was withdrawing the request for oral proceedings. The board considered it expedient not to cancel the oral proceedings. Nobody attended on behalf of the appellant.

Article 15(3) RPBA stipulates that the board is not obliged to delay any step in the proceedings, including



its decision, by reason only of the absence at the oral proceedings of any party duly summoned. Such a party may then be treated as relying solely on their written case.

Hence, the board was in a position to announce a decision at the end of the oral proceedings.

### 3. Article 56 EPC 1973

#### 3.1 Prior art

D1 discloses a tablet apparatus having piezoelectric substrates placed on the sides of the supporting board, for vibrating the apparatus when an inputting operation is performed. Figures 6 and 23 of the patent show in particular that four substrates, either circular or oblong, may be placed at the four corners of a rectangular supporting board.

D3 is a patent publication assigned to the appellant. It discloses a tablet apparatus having one or two piezoelectric substrates placed on the supporting board. When two substrates are used, they are placed on opposite longitudinal sides of the supporting board.

Since the apparatus described in D3 (see figure 1) has most of its features in common with the apparatus defined in the present application (see figure 1) and may be equipped with two piezoelectric substrates only, D3 represents the closest prior art to the subject-matter of claims 1 of both the main and auxiliary requests.

3.2 Main request:

3.2.1 The subject-matter of claim 1 differs from the disclosure of D3 only in that the first and second piezoelectric substrates are diagonally-situated on opposite longitudinal sides of the supporting board instead of being both centred on the longitudinal sides as is apparent from D3 (see figures 1 and 3(a) and paragraphs 79 and 120).

The distinguishing feature has the technical effect of changing the vibration effect induced by the substrates on the operation panel since the vibration amplitude at a given point of the panel is dependent on its distance to the piezoelectric substrates. The appellant provided evidence that the vibration effect is changed in such a way that a better coverage of the whole operation panel surface is achieved (see figures A and B filed as an annex to the statement setting out the grounds of appeal).

Based on this technical effect, the objective technical problem is formulated as how to improve the area coverage of the vibration signal.

Starting from the apparatus of D3, the skilled person is aware that it has to maintain or even reduce the manufacturing costs (see also D3, paragraph 18). He/she would thus eliminate the solutions consisting in increasing the drive voltage supply or the number or length of the piezoelectric substrates and instead vary the position of the piezoelectric substrates in respect of the operating panel. The skilled person is also

aware that the vibration signal propagated from an excited piezoelectric substrate fixed on one side of the operation panel decreases with the distance from the piezoelectric substrate. Moreover, in the board's judgement, the skilled person has means at his/her disposal to measure the vibration amplitude at each point on the operation panel and to obtain a representation of the measurements as shown in Figures A and B. The problem is thus for the skilled person to enlarge the red area and reduce the blue area in such a representation. By taking a simple trial-and-error approach, operating within the constructional arrangement of the tablet apparatus, the skilled person would shift the piezoelectric substrates along the longitudinal sides of the supporting board and measure the change in the vibration amplitude representation. He/she would thus arrive at the solution as claimed without the exercise of inventive skills.

Moreover it can be deduced from the application that the claimed positioning of the substrates is the result of trial-and-error experiments rather than the result of an analysis involving calculations of the vibration's amplitude induced by the substrates on the operation panel. This is, in the board's judgement, a further indication that a skilled person would have arrived at the same solution without exercising any inventive activity.

For these reasons, the board decides that claim 1 does not meet the requirements of Article 56 EPC 1973.

3.2.2 The appellant has argued that a further technical effect of the alleged invention is the non-obstruction

of connection work carried out for the purpose of connecting external wiring to the tablet apparatus. However, in the board's judgement, this effect is achieved solely by having the piezoelectric substrates shorter than the longitudinal sides of the operation panel, thereby leaving a portion of the operation-panel sides free for the connection work. Since the substrates in D3 fulfil this condition, they achieve the same claimed further technical effect.

### 3.3 Auxiliary request

Claim 1 relates to a display device including a housing and the tablet apparatus according to claim 1 of the main request, with the additional feature that the tablet apparatus has elastic spacers interposed between the housing and each of its four corners. D3 discloses a display device including a tablet apparatus (see figure 1). In D3, the adhesive layer (see Figure 2, reference 5, and paragraphs 62 and 80) plays the role of a spacer interposed between the housing and the tablet apparatus for ensuring the constructional stability of the display device. The only difference between the spacers defined in claim 1 and this adhesive layer is that the adhesive layer extends over the whole periphery, i.e. the longitudinal and lateral sides of the tablet apparatus, whereas the spacers in claim 1 only extend to the four corner's region. The technical effect of this difference is that the vibration damping due to the spacers is limited to the four corners and that access to the operation panel for external connection is increased, as mentioned by the appellant in the statement setting out the grounds of appeal. The objective technical problem is thus

formulated as how to limit the vibration damping of the spacer elements while increasing the access to the operation panel. The board judges that the solution proposed in claim 1 lies within the general design competence of the skilled person, all the more since a prior art device mentioned in D3 (see figure 8) uses cylindrical cushion pillars as spacers. Moreover the technical problem solved by the spacers, which is the damping of the vibration effect, and the technical problem solved by the arrangement of the piezoelectric elements, which is the increase of the vibration effect (see point 4.2.1 above), are disjointed, so no surprising effect is produced by the combination of the two distinguishing features. Therefore, the subject-matter of claim 1 does not involve an inventive step, having regard to the disclosure of D3 (Article 56 EPC 1973).

4. In the absence of an allowable request, the appeal must be dismissed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chair:

G. Magouliotis

A. Ritzka