# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

<table>
<thead>
<tr>
<th>Applicant’s or agent’s file reference</th>
<th>FOR FURTHER ACTION</th>
<th>See item 4 below</th>
</tr>
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<tbody>
<tr>
<td>2017OP5E9875</td>
<td>International application No.</td>
<td>International filing date (day/month/year)</td>
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<tr>
<td></td>
<td>11 April 2017 (11.04.2017)</td>
<td></td>
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</table>

International Patent Classification (8th edition unless older edition indicated)

See relevant information in Form PCT/ISA/237

Applicant

SAMSUNG ELECTRONICS CO., LTD.

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1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

   - Box No. I  Basis of the report
   - Box No. II  Priority
   - Box No. III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - Box No. IV  Lack of unity of invention
   - Box No. V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - Box No. VI  Certain documents cited
   - Box No. VII  Certain defects in the international application
   - Box No. VIII  Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

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Date of issuance of this report

15 October 2019 (15.10.2019)

Authorized officer

Sun Hwa Lee

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Form PCT/IB/373 (January 2004)
PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) 20.07.2018

Applicant's or agent's file reference
20170PSE9875

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/KR2018/004205

International filing date (day/month/year) 10.04.2018

Priority date (day/month/year) 11.04.2017

International Patent Classification (IPC) or both national classification and IPC
H04M1/725(2006.01) i, H04M1/02(2006.01) i, A61B5/00(2006.01) i

Applicant
SAMSUNG ELECTRONICS CO., LTD.

1. This opinion contains indications relating to the following items:
   - Box No. I  Basis of the opinion
   - Box No. II  Priority
   - Box No. III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - Box No. IV  Lack of unity of invention
   - Box No. V  Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - Box No. VI  Certain documents cited
   - Box No. VII  Certain defects in the international application
   - Box No. VIII  Certain observations on the international application

2. FURTHER ACTION

   If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1b(c)(b) that written opinions of this International Searching Authority will not be so considered.

   If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

   For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR

Date of completion of this opinion

Authorized officer

Facsimile No.

Telephone No.

Form PCT/ISA/237 (cover sheet) (January 2015)
1. With regard to the language, this opinion has been established on the basis of:
   - ☑ the international application in the language in which it was filed
   - ☐ a translation of the international application into ________________________, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of a sequence listing:
   a. ☐ forming part of the international application as filed:
      - ☐ in the form of an Annex CST.25 text file.
      - ☐ on paper or in the form of an image file.
   b. ☐ furnished together with the international application under PCT Rule 13bis.1(a) for the purposes of international search only in the form of an Annex CST.25 text file.
   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
      - ☐ in the form of an Annex CST.25 text file (Rule 13bis.1(a)).
      - ☐ on paper or in the form of an image file (Rule 13bis.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:
## Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

<table>
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<tr>
<th>Claims</th>
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<tr>
<td>Novelty (N)</td>
<td>1-15</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Inventive step (IS)</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>1-15</td>
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<td>Industrial applicability (IA)</td>
<td>1-15</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

### 2. Citations and explanations:

Reference is made to the following documents:

- **D1**: KR 10-1366701 B1 (G&CS CO., LTD.) 24 February 2014
- **D2**: JP 04-355720 A (MATSUSHITA ELECTRIC IND CO., LTD.) 09 December 1992
- **D3**: KR 10-2016-0051880 A (APPLE INC.) 11 May 2016

1. Novelty and Inventive Step

1.1 Claims 1 to 14

1.1.1 Independent Claim 1

D1, which is the closest prior art document to the invention as set forth in claim 1, suggests an organic light emitting diode display (101) (see figure 3 of D1), comprising: a display panel (DP) (see figure 3 of D1); an electric component (500) positioned between a connection part (400) and a first substrate (100) (see paragraph [0050]; and figure 3 of D1); and the connection part (400) including a circuit board body (410) on which the electric component (500) is positioned, a
connector part (420) having a connector (421) for receiving an external signal, and a substrate connection part (430) electrically connected to a part of an edge region of the first substrate (100) (see paragraph [0049]; and figure 3 of D1).

Claim 1 is different from D1 in that the former comprises a second adhesive member applied on a first adhesive member. However, said difference could easily be derived through a design change to the feature disclosed in D2 of a sealing adhesive (4) for sealing a liquid crystal between electrode substrates, and a moistureproof agent (5) for preventing moisture absorption or moisture permeation from an outer peripheral electrode substrate and an adhesive interface of the sealing adhesive (4) (see paragraph [0013]; and figure 1 of D2). Thus, since the invention as set forth in claim 1 would be obvious to a person skilled in the art from a combination of the invention disclosed in D1 with said feature disclosed in D2, said invention does not involve an inventive step (PCT Article 33(3)).

1.1.2 Dependent Claims 2 to 3 and 8 to 9

The additional feature set forth in claim 2 could easily be derived from the feature disclosed in D1 wherein the connection part (400) on which the electric component (500) is positioned is supported in a housing part (600) by means of an adhesive (AD) (see paragraph [0077]; and figure 3 of D1).

The additional feature set forth in claim 3 could easily be derived from the feature disclosed in D1 of a circuit board body (410) on which the electric component (500) is positioned
The additional feature set forth in claim 8 could easily be derived from the feature disclosed in D1 of an electromagnetic wave shielding sheet disposed on one surface of the first substrate so as to face the electric component (see paragraph [0018] of D1).

The additional feature set forth in claim 9 could easily be derived from the feature disclosed in D1 wherein a second substrate (200) has a smaller area than the first substrate (100), and the second substrate (200), together with the first substrate (100), forms a display panel (DP) (see paragraph [0035]; and figure 3 of D1).

Thus, since claims 2 to 3 and 8 to 9 would be obvious to a person skilled in the art in view of a combination of D1 and D2, said claims do not involve an inventive step (PCT Article 33(3)).

1.1.3 Dependent Claims 4 to 7 and 10 to 14

The additional feature set forth in claim 4 could easily be derived through a design change to the feature disclosed in D3 wherein an optical view could be processed with respect to optical differences detected between the ridges and valleys of the user’s finger, such as any shadowing differences that might be present (see paragraph [0083] of D3).

The additional feature set forth in claim 5 could easily be derived from the features disclosed in D1 wherein an electric component (500) is positioned between a connection part (400).
and a first substrate (100) (see paragraph [0050]; and figure 3 of D1), and the connection part (400) is supported in a housing part (600) by means of an adhesive (AD) (see paragraph [0077]; and figure 3 of D1).

The additional feature set forth in claim 6 could easily be derived from the feature disclosed in D3 of a wirebond (920) for electrically connecting a sensor (810) and a flex assembly (815) (see paragraph [0099]; and figure 9 of D3).

The additional feature set forth in claim 7 could easily be derived from the feature disclosed in D1 wherein the connection part (400) is a flexible printed circuit board, and includes a circuit board body (410) on which the electric component (500) is positioned, a connector part (420) having a connector (421) for receiving an external signal, and a substrate connection part (430) electrically connected to a part of an edge region of the first substrate (100) (see paragraph [0049]; and figure 3 of D1).

The additional feature set forth in claim 10 could easily be derived through a design change to the feature disclosed in D3 wherein a flex circuit (815) generally wraps around and may underlie itself (see paragraph [0103]; and figure 8 of D3).

The additional features set forth in claims 11 and 14 could easily be derived through a design change to the features disclosed in D3 wherein a capacitive plate collects at least some fingerprint image information in response to the ridges and valleys of the user’s finger at one or more pixels in an array thereof (see paragraph [0029] of D3), and a trim (805) is an aperture (807) for receiving a cap (800) (see paragraph 7 of D3).
[0095]; and figure 8 of D3).

The additional features set forth in claims 12 and 13 could easily be derived through a design change to the feature disclosed in D2 of a sealing adhesive (4) for sealing a liquid crystal between electrode substrates, and a moistureproof agent (5) for preventing moisture absorption or moisture permeation from an outer peripheral electrode substrate and an adhesive interface of the sealing adhesive (4) (see paragraph [0013]; and figure 1 of D2).

Thus, since claims 4 to 7 and 10 to 14 would be obvious to a person skilled in the art in view of a combination of D1-D3, said claims do not involve an inventive step (PCT Article 33(3)).

1.2 Claim 15

The invention as set forth in claim 15, which relates to a display device, has substantially the same technical features as those of the invention as set forth in claim 1. Therefore, the invention as set forth in claim 15 is subject to the same reasoning as that applying to the invention as set forth in claim 1. Thus, since the invention as set forth in claim 15 would be obvious to a person skilled in the art in view of a combination of D1 and D2, said invention does not involve an inventive step (PCT Article 33(3)).

2. Industrial Applicability

The invention as in claims 1 to 15 is industrially applicable (PCT Article 33(4)).
Box No. VIII  Certain observations on the international application

<table>
<thead>
<tr>
<th>The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The technical feature of claim 1 is unclear since it is only understood that the first adhesive member and the second adhesive member are used for attachment, and a correlation between the elements is not clearly disclosed. Thus, claim 1 does not clearly define the matter for which protection is sought (PCT Article 6).</td>
</tr>
<tr>
<td>The wording “third adhesive member” disclosed in claim 2 is not explained in the specification. Thus, claim 2 is not fully supported by the specification (PCT Article 6).</td>
</tr>
<tr>
<td>(Note: Referring to the specification, the technical feature of a “fifth adhesive member” explained in paragraphs [0125] and [0126] of the specification is the same as the technical feature of a “third adhesive member” disclosed in claim 2. Thus, the international search report and the written opinion have been established under the assumption that the wording “third adhesive member” of claim 2 is “fifth adhesive member” disclosed in the detailed description of the invention.)</td>
</tr>
<tr>
<td>Claim 10 refers to claim 2. However, it is deemed that claim 10 refers to claim 3 since the working “first circuit board” of claim 10 is disclosed in claim 3, not claim 2. Thus, claim 10 does not satisfy the requirements of PCT Article 6.</td>
</tr>
</tbody>
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