

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year)	09.10.2012
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Applicant's or agent's file reference 12P01831WO	FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/JP2012/069416	International filing date (day/month/year) 31.07.2012	Priority date (day/month/year) 30.03.2012
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International Patent Classification (IPC) or both national classification and IPC
**H04R7/04 (2006.01) i, H04M1/02 (2006.01) i, H04R1/02 (2006.01) i,
H04R3/00 (2006.01) i, H04R17/00 (2006.01) i**

Applicant
KYOCERA CORPORATION

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 66.1bis(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.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/IP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

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International application No.

PCT/JP2012/069416

Box No. 1 Basis of this opinion

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 filed or furnished:
 - a. (means)
 - on paper
 - in electronic form
 - b. (time)
 - in the international application as filed
 - together with the international application in electronic form
 - subsequently to this Authority for the purposes of search
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 in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
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International application No.
PCT/JP2012/069416

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		
1. Statement			
Novelty (N)	Claims	3-6	YES
	Claims	1, 2	NO
Inventive step (IS)	Claims	3	YES
	Claims	1, 2, 4-6	NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims		NO
2. Citations and explanations:			
<p>Document 1: Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 6411/1979 (Laid-open No. 107796/1980) (SONY CORP.) 28 July 1980, fig. 1 and 2 (Family: none)</p> <p>Document 2: JP 2007-82009 A (NEC SAITAMA, LTD.) 29 March 2007, entire text, all drawings (Family: none)</p> <p>Document 3: JP 2002-330496 A (KENWOOD CORP.) 15 November 2002, entire text, all drawings (Family: none)</p> <p style="margin-left: 40px;">The invention as in claims 1 and 2 is not novel and does not involve an inventive step in the light of document 1 cited in the ISR.</p> <p style="margin-left: 40px;">It is found that document 1 discloses an electric/mechanical converting device that has a vibration plate (3) that is supported by a support body (13) and a piezoelectric ceramic (1) that is attached to the vibration plate with a metal plate (2) therebetween.</p> <p style="margin-left: 40px;">In addition, on the basis of fig. 1, it is clear</p>			

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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

that the spacing between the piezoelectric ceramic on the vibration plate and an edge portion of the vibration plate opposing the longitudinal direction of the piezoelectric ceramic is greater than the spacing between the piezoelectric ceramic on the vibration plate and an edge portion of the vibration plate opposing the short direction of the piezoelectric ceramic.

The invention as in claim 3 is novel and involves an inventive step in relation to documents 1-3 cited in the ISR.

Document 1 does not indicate that, when the first spacing is d_1 and the second spacing is d_2 , a relationship $d_1/d_2 \geq 1.5$ is established. Furthermore, not even a person skilled in the art could easily conceive of this feature.

The invention as in claims 4 and 5 does not involve an inventive step in the light of document 1 cited in the ISR.

How to distribute the amplitude of vibration on the vibration plate is found to be a design matter that a person skilled in the art could optimally select as appropriate to achieve the desired characteristics.

The invention as in claim 6 does not involve an inventive step in the light of documents 1 and 2 cited in the ISR.

It is found that document 2 discloses a mobile telephone that is provided with a panel speaker (10) that has a flat panel (14) and a vibrating element (16) that

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is adhered to the panel, a substrate (20) that has a
drive circuit that drives the vibrating element, and an
LCD (24).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 12P01831WO	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2012/069416	International filing date (<i>day/month/year</i>) 31 July 2012 (31.07.2012)	Priority date (<i>day/month/year</i>) 30 March 2012 (30.03.2012)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KYOCERA CORPORATION			

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 5 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:

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

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 01 October 2014 (01.10.2014)
	Authorized officer <p align="center">Yukari Nakamura</p> e-mail: pt07.pct@wipo.int