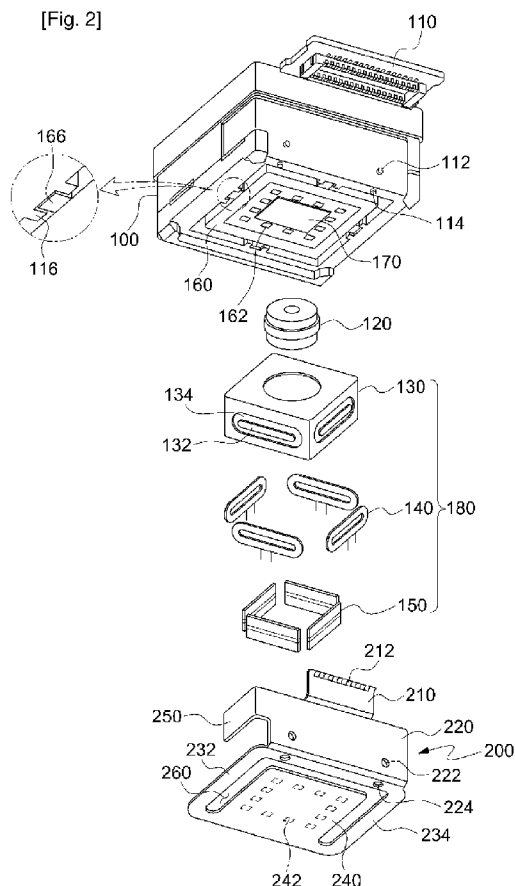




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|---|--|
| (51) International Patent Classification:
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<i>H04N 5/232</i> (2006.01) | (72) Inventor; and
(75) Inventor/Applicant (<i>for US only</i>): KIM, Minsoo
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Jung-gu, Seoul 100-714 (KR). |
| (21) International Application Number:
PCT/KR2012/003253 | (74) Agents: JIN, Cheon Woong et al.; 4th Fl., Deuk-Young
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CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KZ,
LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE,
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| (71) Applicant (<i>for all designated States except US</i>): LG IN-
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[Continued on next page]

- (54) Title:** CAMERA MODULE



- (57) Abstract:** A camera module includes a lens part, an auto focusing (AF) module, an optical image stabilizer (OIS) module, a case and a flexible circuit board. The AF module moves the lens unit in the direction of an optical axis. The OIS module is mounted around a circumference of the AF module and moves the AF module in a horizontal direction. The case accommodates the lens unit, the AF module and the OIS module. The flexible circuit board is connected to a bottom surface of the AF module and applies an electrical signal to the AF module.



(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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International application No.
PCT/KR2012/003253**A. CLASSIFICATION OF SUBJECT MATTER*****H04N 5/225(2006.01)i, H04N 5/232(2006.01)i, H04N 5/238(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04N 5/225; G02B 13/16; H01J 5/02; H04N 5/228; H01J 40/14; G02B 7/08

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: auto focus, lens module, camera module, flexible circuit board

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0197862 A1 (Chien Lih Lung) 07 September 2006 See abstract, column 1, line 19-column 2, line 29; claims 1,7 and figures 1-5.	1-20
A	US 2007-0152147 A1 (Steven Webster) 05 July 2007 See abstract, column 5, line 75-column 7, line 104; claim 1 and figures 12, 15.	1-20
A	JP 2006-038891 A (KONICA MINOLTA PHOTO IMAGING INC) 09 February 2006 See abstract, page 4, line 25-page 5, line 29; claim 1 and figures 1-2.	1-20
A	US 2009-0051776 A1 (WERNERSSON MATS GORAN HENRY) 26 February 2009 See abstract, column 3, line 40-column 7, line 78; claim 1 and figure 1-4.	1-20

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

06 NOVEMBER 2012 (06.11.2012)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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