

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2020/057673

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
<b>H05K 1/11</b> (2006.01)i; <b>H05K 3/40</b> (2006.01)i		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) H05K		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2008277155 A1 (HORIUCHI AKIO [JP]) 13 November 2008 (2008-11-13) paragraphs [0033], [0038], [0049] - [0055]; figures 2M,2N,4G,4H	1-6,8-17 7,18
X	US 2007096328 A1 (TAKAHASHI MICHIMASA [JP] ET AL) 03 May 2007 (2007-05-03) paragraphs [0045], [0046], [0049] - [0054]; figures 1, 12B	1,2,4-6,8-17
X	EP 1206171 A2 (MATSUSHITA ELECTRIC IND CO LTD [JP]) 15 May 2002 (2002-05-15) paragraphs [0029], [0061], [0089] - [0095]; figure 6	1-6,8-17
X	EP 3200570 A1 (AT&S CO LTD [CN]) 02 August 2017 (2017-08-02) paragraphs [0028] - [0033], [0047], [0048]; figures 1-5	1,2,4-6,8-17
Y	US 2018279472 A1 (SUNOHARA SATOSHI [JP]) 27 September 2018 (2018-09-27) paragraphs [0041] - [0044]; figures 2B-2I	7,18
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "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 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "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 <b>04 June 2020</b>		Date of mailing of the international search report <b>17 June 2020</b>
Name and mailing address of the ISA/EP <b>European Patent Office p.b. 5818, Patentlaan 2, 2280 HV Rijswijk Netherlands</b> Telephone No. (+31-70)340-2040 Facsimile No. (+31-70)340-3016		Authorized officer <b>Goethals, Filip</b> Telephone No.

**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

International application No.

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