

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2019/016223

## A. CLASSIFICATION OF SUBJECT MATTER

*H04M 1/725(2006.01)i, H01R 24/58(2011.01)i, H01R 24/60(2011.01)i, H01R 107/00(2006.01)n*

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)

H04M 1/725; G01R 27/26; G06F 1/26; G06F 13/42; G06F 3/14; H04B 1/18; H04M 1/02; H01R 24/58; H01R 24/60; H01R 107/00

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: IPC as above  
Japanese utility models and applications for utility models: IPC as above

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

eKOMPASS (KIPO internal) &amp; Keywords: ground, receptacle, charging, audio, RF, plug

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 10-2018-0056218 A (SAMSUNG ELECTRONICS CO., LTD.) 28 May 2018 See paragraphs [0030], [0038], [0040]-[0041], [0079]-[0082] and figure 12.	1-4,6-12,14-20
A		5,13
Y	KR 10-2018-0124876 A (SONY CORPORATION) 21 November 2018 See paragraphs [0085], [0089], [0104].	1-4,6-12,14-16,18
Y	KR 10-2007-0006078 A (SAMSUNG ELECTRONICS CO., LTD.) 11 January 2007 See paragraphs [0025]-[0034] and figure 1.	17-20
A	WO 2012-027452 A1 (MARVELL WORLD TRADE LTD. et al.) 01 March 2012 See paragraph [0033].	1-20
A	KR 10-2018-0045416 A (SAMSUNG ELECTRONICS CO., LTD.) 04 May 2018 See paragraph [0068].	1-20

 Further documents are listed in the continuation of Box C. 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

"&amp;" document member of the same patent family


Date of the actual completion of the international search

06 MARCH 2020 (06.03.2020)

Date of mailing of the international search report

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Name and mailing address of the ISA/KR


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

International application No.

**PCT/KR2019/016223**

Patent document cited in search report	Publication date	Patent family member	Publication date
KR 10-2018-0056218 A	28/05/2018	CN 108075325 A	25/05/2018
		US 10283920 B2	07/05/2019
		US 2018-0145469 A1	24/05/2018
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		TW 201742314 A	01/12/2017
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		EP 3518508 A1	31/07/2019
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		WO 2018-080109 A1	03/05/2018