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(71) Applicant: ACCESS BUSINESS GROUP INTERNATIONAL LLC [US/US]; 7575 Fulton Street East, Ada, MI 49355 (US).

(72) Inventors: VAN DEN BRINK, Joseph, C.; 5111 Candlewood Court, Coopersville, Michigan 49404 (US). NGUYEN, Hai, D.; 1261 Ravanna SE, Grand Rapids, MI 49508 (US). MOES, Benjamin, C.; 4611 Chateau Court, Wyoming, MI 49519 (US). KUYVENHOVEN, Neil, W.; 111 Deer Run Court, Ada, MI 49301 (US).

(74) Agents: SHUNTA, Dustin, H. et al.; Warner Norcross & Judd LLP, 900 Fifth Third Center, 111 Lyon Street, N.W., Grand Rapids, MI 49503-2487 (US).

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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, 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, KR, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Published:

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- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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(54) Title: WIRELESS POWER TRANSFER THROUGH CONDUCTIVE MATERIALS

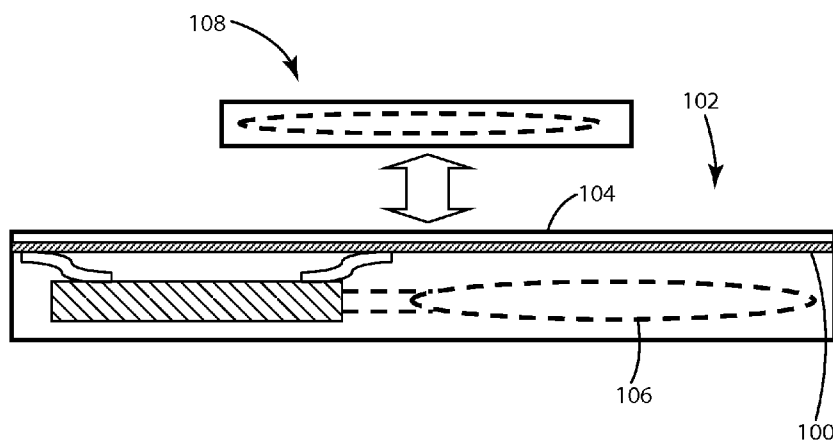


Fig. 1

(57) Abstract: An electrical component with conductive material(s) that is suitable for use within the electromagnetic field path of a wireless power transfer system. The electronic component includes conductive materials that are sufficiently thin to absorb no more than an acceptable amount of the electromagnetic field, yet thick enough to remain sufficiently conductive to perform the desired electrical function. In embodiments in which the wireless power supply delivers up to 20 watts of power, the conductive materials are not substantially thicker than about 1/10 the skin depth of the material at the anticipated wireless power frequency. The electrical component may be disposed at any location between the wireless power supply transmitter and the remote device receiver. The present invention permits the use of a wide range of electrical components in the field path, such as a display, a sensor or a component capable of selectively operating as both.



INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2013/020493

A. CLASSIFICATION OF SUBJECT MATTER  
INV. H02J5/00 H01B7/30 H02J7/02  
ADD.  
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)  
H02J H01B 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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	GB 2 470 577 A (ACCESS BUSINESS GROUP INT LLC [US]) 1 December 2010 (2010-12-01) the whole document	1-3,10, 15,35-39 4-9, 11-14, 17,18, 29-34, 40-43 16
Y A	----- US 2011/057891 A1 (HAM SANG WON [US] ET AL) 10 March 2011 (2011-03-10)  paragraphs [0053], [0064] - [0065]; claims 1,4-6; figures 1,4,7 ----- -/--	4-9, 11-14, 17,18, 29-32, 40-43 16

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

"&" document member of the same patent family

Date of the actual completion of the international search  4 February 2014	Date of mailing of the international search report  09/05/2014
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Tchegho Kamdem, A

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2013/020493

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 793 307 A1 (RESEARCH IN MOTION LTD [CA] BLACKBERRY LTD [CA]) 6 June 2007 (2007-06-06) claim 1; figures 1-3 -----	14, 33, 34
Y	US 2010/188041 A1 (MIZUO YOSHIHIRO [JP]) 29 July 2010 (2010-07-29) figures 16,17,18 -----	29-34

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2013/020493

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-18, 29-43

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18, 29-43

Electrical component suitable for use in and around wireless power supplies

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2. claims: 19-28

System providing selectively a display or sensor mode.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/020493

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
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