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(71) Applicant: **GALTRONICS CORPORATION LTD.**
[IL/IL]; P.O. Box 1589, 1411502 Tiberias (IL).

(72) Inventors: **KIM, Bumjin (Martin)**; E-pyunhan Sesang Apt, 101-dong 1005-ho, 1209, Maetan 2-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-807 (KR). **CHOI, Sunkil (Edgar)**; Samsung Raemian Apt.108-dong 606-ho, 333, Dongtanjiseong-ro, Hwaseong-si, Gyeonggi-do 445-776 (KR). **GIM, Jae Hun (Daniel)**; Hayeong Billa, 103-ho, 1215-6, Maetan 2-dong, Yeongtong-gu, Suwon-si,

Gyeonggi-do 443-807 (KR). **KIM, Sangyup (Andrea)**; Myungsung Billa, 504-ho, 25-1, Woncheon-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-821 (KR). **KIM, Suhyun (Edwin)**; Myungsung Billa, 402-ho, 25-1, Woncheon-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-821 (KR). **HWANG, Jaeyun (Louis)**; Centraus Apt. 106-dong 1102-ho, 371, Seodun-dong, Gwonseon-gu, Suwon-si, Gyeonggi-do, 441-763 (KR).

(74) Agent: **SANFORD T. COLB & CO.**; 4, Shaar Hagai Street, P.O. Box 2273, 76122 Rehovot (IL).

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[Continued on next page]

(54) Title: WEARABLE DEVICE ANTENNAS

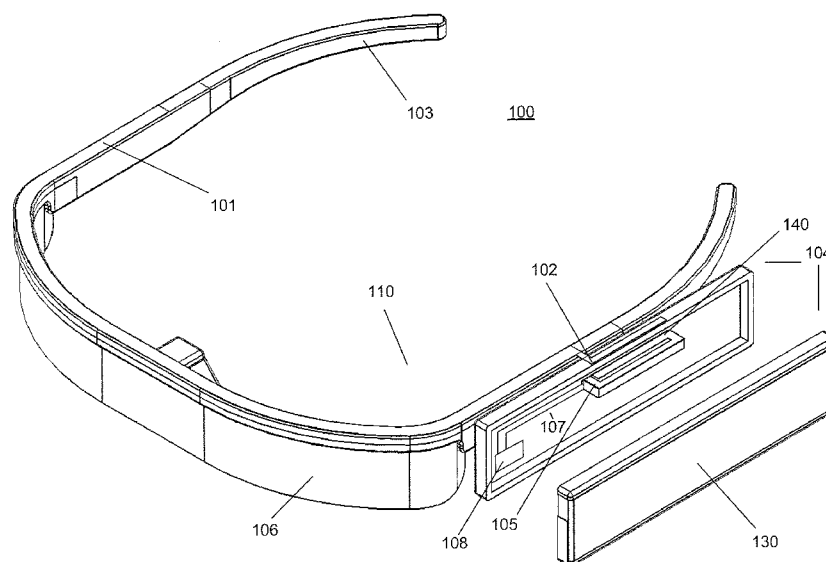


Fig. 3

(57) Abstract: Antennas for wearable wireless devices are provided. A wearable wireless device antenna (110) may include a primary radiating element (101) configured to form at least a portion of a wearable device body (103) and a secondary radiating element (105) configured to couple to the primary radiating element. Each of the primary and secondary radiating elements may be configured to radiate in differing frequency ranges. Wearable device antennas as provided may further be configured as directional antennas.



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, KM, ML, MR, NE, SN, TD, TG).

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A. CLASSIFICATION OF SUBJECT MATTER INV. H01Q1/27 H01Q7/00 H01Q9/42 H01Q5/378 H01Q1/44 H04B1/3827 G04R60/06 G02C11/00 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) H01Q H04B G04R G02C 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 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Category*</th> <th style="width: 70%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width: 20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top;">X</td> <td> US 2008/001833 A1 (KANEoya MASANORI [JP]) 3 January 2008 (2008-01-03) paragraph [0035] - paragraph [0050]; figures 1-3 paragraph [0079] figures 10,11 ----- </td> <td style="text-align: center; vertical-align: top;"> 1-3,7, 9-12,16, 18 </td> </tr> <tr> <td style="text-align: center; vertical-align: top;">X</td> <td> EP 2 562 870 A1 (PULSE FINLAND OY [FI]) 27 February 2013 (2013-02-27) paragraph [0041] - paragraph [0057]; figures 1,1A-C ----- </td> <td style="text-align: center; vertical-align: top;"> 1-4, 7-13, 16-18 </td> </tr> <tr> <td style="text-align: center; vertical-align: top;">Y</td> <td> JP 2002 247484 A (OLYMPUS OPTICAL CO) 30 August 2002 (2002-08-30) abstract; figure 13 ----- -/-- </td> <td style="text-align: center; vertical-align: top;"> 1-3,5,6, 9-12,14, 15,18 </td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 2008/001833 A1 (KANEoya MASANORI [JP]) 3 January 2008 (2008-01-03) paragraph [0035] - paragraph [0050]; figures 1-3 paragraph [0079] figures 10,11 -----	1-3,7, 9-12,16, 18	X	EP 2 562 870 A1 (PULSE FINLAND OY [FI]) 27 February 2013 (2013-02-27) paragraph [0041] - paragraph [0057]; figures 1,1A-C -----	1-4, 7-13, 16-18	Y	JP 2002 247484 A (OLYMPUS OPTICAL CO) 30 August 2002 (2002-08-30) abstract; figure 13 ----- -/--	1-3,5,6, 9-12,14, 15,18
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<div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. </div> <div> <input checked="" type="checkbox"/> See patent family annex. </div> </div>														
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Date of the actual completion of the international search <div style="text-align: center; font-size: 1.2em;">5 November 2015</div>		Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em;">18/11/2015</div>												
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 <div style="text-align: center; font-size: 1.2em;">Kaleve, Abraham</div>												

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International application No
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