(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 June 2009 (04.06.2009)

PCT

(10) International Publication Number
WO 2009/070762 A3

(51) International Patent Classification:
G01S 1/00 (2006.01) *H04B 1/707* (2006.01)

(21) International Application Number:
PCT/US2008/085033

(22) International Filing Date:
26 November 2008 (26.11.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/945,269 27 November 2007 (27.11.2007) US

(71) Applicant *(for all designated States except US)*: **SIRF TECHNOLOGY, INC.** [US/US]; 217 Devcon Drive, San Jose, CA 95112-4211 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **LENNEN, Gary** [US/US]; 10375 Rivercrest Ct., Palo Alto, CA 95014 (US). **BABITCH, Daniel** [US/US]; 15115 Clayton Road, San Jose, CA 95127 (US).

(74) Agents: **HAMILTON, Jennifer, H.** et al.; The Eclipse Group LLP, 10605 Balboa Blvd., Suite 300, Granada Hills, CA 91344 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI

[Continued on next page]

(54) Title: GPS SYSTEM UTILIZING MULTIPLE ANTENNAS

(57) Abstract: A GPS Mobile Unit is described. The GPS Mobile Unit may include at least two antennas, at least two GPS receivers, and a position solution module in signal communication with the at least two GPS receivers.

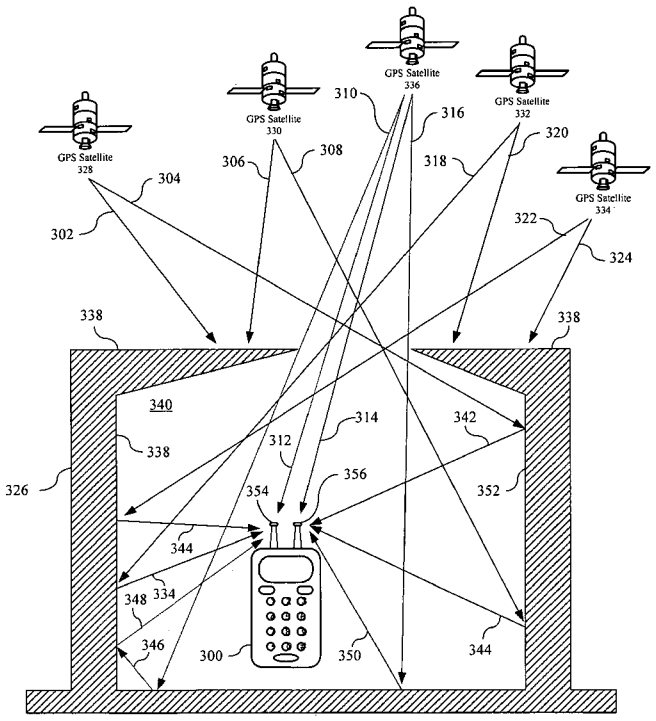


FIG. 3

WO 2009/070762 A3

(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report: 20 August 2009

Published:

— *with international search report (Art. 21(3))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/085033

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01Q1/24 H01Q21/28 G01S1/00

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)
G01S H01Q H04B

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 6 188 357 B1 (RAY JAYANTA K [CA] ET AL) 13 February 2001 (2001-02-13) column 4, lines 37-67; figures 3,4a,4b	1,18 2-9, 19-21
X Y	US 6 828 935 B1 (DUNN CHARLES E [US] ET AL) 7 December 2004 (2004-12-07) figures 1A-1C	1,8 2-9, 19-21
X	US 6 292 132 B1 (WILSON CHRISTOPHER KENNETH HOO [US]) 18 September 2001 (2001-09-18) figures 2,4	1,8

-/--

[X] Further documents are listed in the continuation of Box C.

[X] 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 document 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	Date of mailing of the international search report
30 April 2009	20/05/2009

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Kern, Olivier

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/085033

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 6 784 831 B1 (WANG JAMES JUNE-MING [US] ET AL) 31 August 2004 (2004-08-31) column 2, line 38 - column 3, line 18; figures 1a-1b,4,5 column 11, lines 28-47	10-12, 22-24 13-17,25
X Y	US 6 727 846 B1 (BROWN ALISON K [US]) 27 April 2004 (2004-04-27) column 3, lines 18-47; figures 2,3	10-12, 22-24 13-17,25
X Y	US 6 259 399 B1 (KRASNER NORMAN F [US]) 10 July 2001 (2001-07-10) figure 2a	10-13,22 5,13

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2008/085033

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6188357 B1	13-02-2001	AU 5754799 A	10-04-2000
		CA 2310040 A1	30-03-2000
		WO 0017959 A1	30-03-2000
US 6828935 B1	07-12-2004	NONE	
US 6292132 B1	18-09-2001	NONE	
US 6784831 B1	31-08-2004	NONE	
US 6727846 B1	27-04-2004	NONE	
US 6259399 B1	10-07-2001	AU 7396096 A	30-04-1997
		WO 9714053 A1	17-04-1997