

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 October 2005 (27.10.2005)

PCT

(10) International Publication Number
WO 2005/101051 A3

- (51) International Patent Classification:
H01Q 1/38 (2006.01)
- (21) International Application Number:
PCT/US2005/011962
- (22) International Filing Date: 8 April 2005 (08.04.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/561,765 12 April 2004 (12.04.2004) US
- (71) Applicant (for all designated States except US): GHZ TR CORPORATION [US/US]; 34 Fieldstone Drive, Morristown, NJ 07960 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): BONTHRON, Andrew, J. [US/US]; 2130 Linda Flora Drive, Los Angeles, CA 90077 (US).
- (74) Agent: BARCELO, Reynaldo, C.; Irell & Manella LLP, 840 Newport Center Drive, Suite 400, Newport Beach, CA 92660 (US).

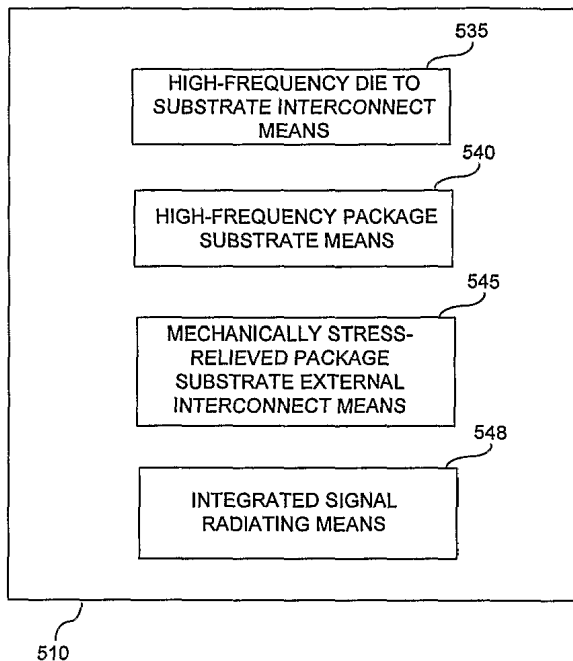
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

- (88) Date of publication of the international search report:
23 April 2009

(54) Title: METHOD AND APPARATUS FOR AUTOMOTIVE RADAR SENSOR



(57) Abstract: An integrated circuit package (510) is disclosed for radar applications. An integrated circuit die is connected to a high-frequency package substrate (540) using a high-frequency die to substrate interconnect (535). The high-frequency package substrate (540) is connected to an external circuit by way of a mechanically stress-relieved package substrate external interconnect (545) and the substrate (540) contains a high frequency signal radiator (548).

WO 2005/101051 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/11962

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **H01Q 1/38**(2006.01)

USPC: 343/700MS

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)

U.S. : 343/700MS, 770, 853

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

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 5,023,624 A (HECKAMAN et al) 11 June 1991 (11.06.1991), column 3, line 8 to column 6, line 32.	1-16, 21, 22 and 24-30 ----- 17-20 and 23
Y	US 6,815,739 B2 (HUFF et al) 09 November 2004 (09.11.2004), column 13, lines 19-50.	17-20 and 23

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	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 27 May 2008 (27.05.2008)	Date of mailing of the international search report 25 JUN 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Michael C. Wimer <i>[Signature]</i> Telephone No. (571) 272-1833