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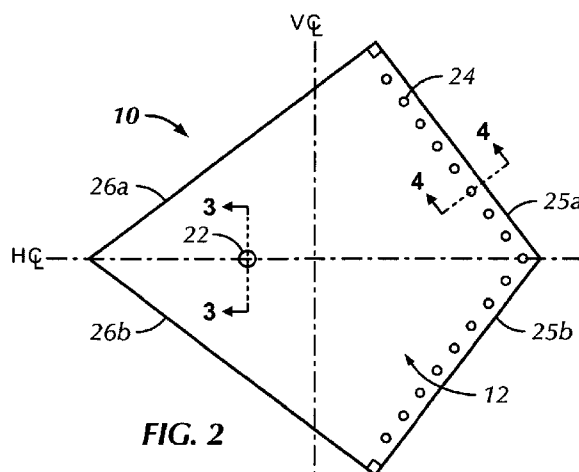
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18 September 2008

(54) Title: ANTENNA FOR THORACIC RADIO INTERROGATION



(57) Abstract: An antenna includes an antenna layer, a ground layer and a dielectric layer between the antenna layer and the ground layer. The antenna layer and the ground layer form a figure in the shape of two identical mirror image triangles joined together at a longest side of each one of the triangles where each side of each triangle is a different length.

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US07/20492

A CLASSIFICATION OF SUBJECT MATTER IPC(8) - H01Q 1/38 (2008 04) 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) IPC(8) - H01Q 1/38, H01Q 5/00, H01Q 9/04, H01Q 1/48, H01Q 13/10, H01Q 13/00 H01Q 15/02, H01Q 15/08, H01Q 19/06 (2008 04) USPC - 343/700MS, 846, 771, 772, 785, 911R 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) Database PatBas β Search Terms dielectric layer, ground layer, antenna layer, right angle, microstrip, triangle, polygon, RFII antenna, thoracic, waveguide																				
C DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 6,411,826 B1 (CAMP, Jr) 25 June 2002 (25 06 2002) entire document</td> <td>1-16</td> </tr> <tr> <td>Y</td> <td>US 7,099,631 B2 (LEE et al) 29 August 2006 (29 08 2006) entire document</td> <td>1-16</td> </tr> <tr> <td>Y</td> <td>US 6,317,094 B1 (WU et al) 13 November 2001 (13 11 2001) entire document</td> <td>6-8, 10-16</td> </tr> <tr> <td>A</td> <td>US 5,945,950 A (ELBADAWY) 31 August 1999 (31 08 1999) entire document</td> <td>1-16</td> </tr> <tr> <td>A</td> <td>US 2006/0109180 A1 (FUKUDA) 25 May 2006 (25 05 2006) entire document</td> <td>1-16</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No	Y	US 6,411,826 B1 (CAMP, Jr) 25 June 2002 (25 06 2002) entire document	1-16	Y	US 7,099,631 B2 (LEE et al) 29 August 2006 (29 08 2006) entire document	1-16	Y	US 6,317,094 B1 (WU et al) 13 November 2001 (13 11 2001) entire document	6-8, 10-16	A	US 5,945,950 A (ELBADAWY) 31 August 1999 (31 08 1999) entire document	1-16	A	US 2006/0109180 A1 (FUKUDA) 25 May 2006 (25 05 2006) entire document	1-16
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☐ Further documents are listed in the continuation of Box C ☐																				
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Date of the actual completion of the international search 28 May 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 Blaine R Copenhaver PCT Helpdesk 571-272-4300 PCT OSP 571-272-7774																		

INTERNATIONAL SEARCH REPORT

International application No

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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 **D** 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 Extra 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 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
1-16

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

INTERNATIONAL SEARCH REPORT

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This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-16, drawn to an antenna.

Group II, claims 17-20, drawn to a method of radiating an interrogation signal into a patient.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention, an antenna comprising a dielectric layer between an antenna layer and a ground layer, each of the antenna layer and the ground layer forming a figure in the shape of two identical mirror image polygons joined together at a longest side of each one of the polygons, at least three sides of each polygon being of a different length as claimed therein, is not present in the invention of Group II, and the special technical feature of the Group II invention, configuring an antenna to have a return loss better than -10dB when the antenna is proximate to a patient and exciting the antenna with the interrogation signal as claimed therein, is not present in the invention of Group I.

Since none of the special technical features of the Group I and II inventions is found in more than one of the inventions, unity of invention is lacking.